



PLANNING COMMISSION
AGENDA

TUESDAY, DEC. 18, 2018 – 7:00 P.M.

LOCATION: HILLSIDE MIDDLE SCHOOL – Forum Room, 775 N. CENTER ST.

1. **CALL TO ORDER**
2. **ROLL CALL**
3. **APPROVAL OF THE AGENDA**
4. **MINUTES OF PREVIOUS MEETING** December 4, 2018
5. **CITIZEN COMMENTS** (Limited to brief presentations on matters not on the agenda)
6. **REPORTS & CORRESPONDENCE**
 - A. **CITY ADMINISTRATION**
 - B. **PLANNING COMMISSIONER**
 - C. **OTHER COMMUNITY/GOVERNMENTAL LIAISONS**
 - D. **CORRESPONDENCE**
7. **P.U.D. ELIGIBILITY**

NORTHVILLE DOWNS - 301 S. CENTER – HUNTER PASTEUR

8. **DISCUSSION**

Residential Building Standards – Draft Ordinance Language

9. **ADJOURN**

CITY OF NORTHVILLE
Planning Commission Meeting Minutes
December 4, 2018
Northville City Hall
215 W Main Street, Northville MI 48167
Council Chambers

1. CALL TO ORDER:

Chair Kirk called the meeting to order at 7:00 p.m.

2. ROLL CALL:

Present: Steve Kirk
Andrew Krenz
Carol Maise
Christopher Miller
Ann Smith
Jeff Snyder
Donna Tinberg

Absent: Dave Mielock (excused)
Marc Russell (excused)

Also present: Sally Elmiger, Planning Consultant
Pat Sullivan, City Manager
Patrick Giesa, City Council
Lori Ward, Downtown Development Authority Director
5 residents

3. APPROVAL OF AGENDA:

MOTION by Maise, support by Miller, to approve the agenda as published.

Motion carried unanimously.

4. MINUTES OF PREVIOUS MEETING: November 6, 2018

MOTION by Tinberg, support by Miller, to approve the November 6, 2018 minutes as submitted.

Motion carried unanimously.

5. CITIZEN COMMENTS:

Letters were received regarding the proposed Northville Downs project as follows:

- November 17, 2018 letter from Ryan Bewersdorf, 44255 Cypress Point Drive, Northville 48168. The letter included the following subheads and discussed each separately: zoning, infrastructure, traffic, open space/flood zone, first class and complimentary, parking ratios, impact on current businesses, crime impact, single family homes, Historic

- Commission/District, stay true to intent of Master Plan. Mr. Bewersdorf ended his letter by saying: *Please only permit a development that is of first class quality and complimentary to the existing character of downtown Northville.*
- December 4, 2018 email from Michael Gatt, 475 River Street, addressing concerns about the current road verge/berm along River Street. Mr. Gatt concluded his email by saying: *Our suggestion is that the River St. current road verge be widened, and if possible curbs put in, to remedy the safety issue in this area. Additionally, a widened verge would add room for other aesthetic improvements as a homeowner would have room for landscaping.*

Nancy Chiri, 661 W. Main, said that the links on the new City website for the previous submissions for the proposed Downs project did not work. Ms. Chiri said that while she was not anti-development, in terms of new developments she did ask that the Commission apply the zoning rules for the intended use as opposed to what the applicant said a property could be used for. She was also concerned that the current proposed development for the Downs project was going to be heard the week before Christmas, a very busy time for residents who might like to attend the meeting.

6. REPORTS:

A. CITY ADMINISTRATION:

City Manager Sullivan reported that at last night's City Council meeting, the Council appointed Jeffrey Gaines to the Planning Commission to fill the vacancy left by Commissioner Mielock's resignation. His first meeting would be December 18.

B. PLANNING COMMISSION: None.

C. OTHER COMMUNITY/GOVERNMENTAL LIAISONS: None.

7. FINAL SITE PLAN REVIEW: 335 E. CADY STREET – MIXED USE PROJECT

Referring to her November 13, 2018 review letter, Planning Consultant Elmiger gave the background for this application to construct a new 3-story building (17,062 square feet) on a vacant site on the north side of E. Cady Street. The site was 0.55 acres (24,011 square feet). The building would be occupied by three retail units on the first floor, and office uses on the upper two floors. Parking facilities were proposed at the rear and west side of the building.

All of the proposed uses were permitted uses in the Central Business District and Cady Street Overlay Districts.

The applicant had received Preliminary Site Plan approval from the Planning Commission on November 6, 2018, and had also received approval from the Historic District Commission on November 28, 2018. Tonight the applicant was returning for a Final Site Plan review.

The main issue during the Preliminary Site Plan review was the determination that the site was deficient by up to 8 parking spaces, and the Preliminary Plan Approval was conditioned upon the applicant either developing a parking agreement with a neighbor or asking City Council to allow them to purchase 8 parking credits.

The Preliminary Site Plan approving motion also allowed the Planning Commission to change the number of deficient spaces during Final Site Plan review. It was also determined that the applicant pursue the parking arrangement or credits as a condition of any Final Site Plan approval. Resolving parking issues would be the next step for the applicant if a conditional approval was granted this evening.

The remainder of the November 13, 2018 review letter included a number of comments, which addressed areas that the Planning Commission needed to decide on, including:

- Height of decorative clerestory window (2.5 feet requested), which provided a screen for rooftop equipment. Since the clerestory window was taller than allowed the Planning Commission should address the feature. The Commission did have flexibility to allow this feature under the terms of the Cady Street Overlay Zoning District.
- Approach to mitigating trees on the site, as there were several trees being removed.
- The Commission should determine if parking in the side yard was acceptable, given the configuration of the long narrow lot. Planning Consultant Elmiger said there was really no other place to put the parking, and she recommended that the Commission find the side yard parking was acceptable as described.
- The Commission should determine if sidewalks flush to the curb were appropriate, vs. a 5-foot wide grass panel between the sidewalk and the street. It did not appear there was enough space along Griswold to incorporate the 5-foot greenspace.
- There were many landscaping comments, which would be fairly easy to address.
- There was no lighting information in the packet; this needed to be provided.
- The HDC did approve the architectural and site elements at their November 28th meeting.

Given the number of outstanding issues, Planning Consultant Elmiger recommended that the Plans be referred back to the applicant to be updated. and the applicant then return to the Commission for Final Site Plan approval.

Chair Kirk invited the applicants to make their presentation.

Dominic Maltese, 412 N. Main, Plymouth, was present on behalf of this application. Steven Flum, Architect, 3105 Holbrook, Hamtramck, was also present.

Mr. Maltese said that they had made changes requested by the Planning Commission and they had received unanimous approval from the Historic District Commission. The purchase date had been extended by one month. They hoped to go before City Council and request parking credits in January. They would meet any further requirements of the Planning Commission.

Mr. Flum also affirmed that all outstanding issues in the November 26, 2018 consultant's review could be resolved.

Commissioner Miller asked if there was a viable way forward to resolve the parking space issue. Mr. Maltese said they were short parking spaces; they were willing to pay for parking credits, if the Council so permitted. They were willing to enter into agreements with the neighbors but it appeared that following that path would take time, with an uncertain result. They would present a request to Council for the parking credits or come in with another option before applying for a building permit.

Commissioner Tinberg asked if the plans for the front elevation had been changed. The front elevation now appeared to have a flat front.

Mr. Flum said there was a little difference in the rendering vs. the architectural drawings; the drawings should be used.

Commissioner Maise asked for more information regarding the HDC review of this project. Planning Consultant Elmiger said there was significant discussion by the HDC, but in the end the vote to approve was unanimous, and the HDC liked the project. Mr. Flum said the HDC wanted matching brick around the dumpster, and also wanted to see the sculpture element before it was installed.

In response to a question from Commissioner Tinberg, the applicants said a wrought iron fence from the DDA draft streetscape guidelines would be constructed on top of the retaining wall. Park seating, bike rack, etc., were all as recommended by the City and the DDA.

In response to questions from Commissioner Snyder, the applicants said the stone would be limestone. Mortar would match the brick and the stone so that the design presented a clean look. The detail regarding the screen walls was included in a separate handout. The applicants understood that signage would not be approved tonight, but rather would be approved under a separate submittal process. Drainage would be underground.

Commissioner Snyder said the plans did not indicate direction of flow for water drainage.

Commissioner Snyder thought the small screen walls seemed too close for the parking; parking would overhang them. Mr. Maltese said they would install a car bumper if necessary, or move the wall.

Mr. Flum distributed a schematic of the streetscape details. Downtown Development Authority Director Ward said the bench and the railing were as recommended by the DDA's draft streetscape guidelines. However, the stamped concrete pavement for the plaza area was not. The DDA recommended flat concrete or brick pavers. There was no allowance for stamped concrete.

Chair Kirk wondered if the Planning Commission regulated the color of the pavement. Commissioner Maise thought the Commission did have that authority via the Overlay District.

Mr. Maltese suggested using a stone aggregate pavement for the plaza area. They would comply with any City regulations.

Commissioner Snyder asked if the 3 front doors on the south elevation had been changed from the earlier application, so that now they were all flush with the walls. There was some confusion between what was shown on the renderings and what was shown on the plans.

The applicants said the doors would be flush. The plans showed the correct design; the renderings had not been updated.

In response to a question from Commissioner Maise, the applicants said parking was no longer proposed near the fire hydrant. There would just be a bump-out there, with a light.

Commissioner Tinberg said that at the Preliminary Site Plan review the conclusion was the project was short 8 parking spaces. However, one internal review showed a shortage of 19 parking spaces.

Planning Consultant Elmiger explained that the correct number was 8 spaces, based on calculations of floor area that excluded basement, stairwells, and elevators, resulting in 7,598 square feet of office space and 2,749 square feet of retail space.

In response to a question from Commissioner Snyder, Planning Consultant Elmiger said that if the plan were approved this evening, it should also be conditioned upon lighting being reviewed by City Staff. A correct final site plan would need to be provided before the applicants appeared before City Council. Parking would need to be resolved before any permits were pulled.

In response to a question from Commissioner Tinberg, Planning Consultant Elmiger said she thought lighting and landscaping details could be approved administratively, as a condition of an approving motion. On the other hand, if the Commission preferred, they could ask the applicants to return with those details for Commission review and approval.

Commissioner Snyder asked how deep the clerestory element went on the roof. Mr. Flum said he thought it would go approximately half way across the building. The clerestory window element would hide the elevator shaft and the mechanical equipment. A screen wall around the sides would complete the shielding.

Planning Consultant Elmiger said the Building Official would confirm that the height of the screen wall was appropriate.

Commissioner Snyder wondered if the rooftop equipment would be visible from the nearby apartment building or the credit union. It was important to screen the rooftop equipment so that no matter where someone lived or worked, the equipment would not be visible. Chair Kirk pointed out that there were no windows on the building to the west. Also, the subject site was in a valley while nearby buildings were on a hill; he felt it was unreasonable to expect the applicants to block everything.

Commissioner Maise was concerned about the mass of the west elevation next to the parking lot and the east elevation along Griswold, although the east elevation would be broken up somewhat by the patio features.

In response to a comment from Chair Kirk, Planning Consultant Elmiger said that the City's full engineering review would occur after Final Site Plan Approval. Any approving motion should be conditioned on the applicant working with the DPW Director to make sure all the utilities and public facilities were correctly illustrated and documented.

Commissioner Maise was concerned that none of the renderings had been updated since Preliminary Site Plan Approval, and they did not match the site plan.

Chair Kirk asked about the changes to the driveway off Cady Street, especially as that impacted the pedestrian plaza. Commissioner Maise asked if the 15-foot one-way drive was an ordinance requirement. Planning Consultant Elmiger explained that with a 90-degree, 20-foot parking space requiring that a vehicle back out into a 15-foot drive aisle, there was not enough space. Therefore the maneuvering lane needed to be widened to 20 feet.

Commissioner Maise said it was confusing to look at the plans; they needed to be cleaned up. Was there a way to grant an approval in order to move the applicants to City Council to request the parking credits, and still require that the Commission see plans that were clear and correct?

City Manager Sullivan suggested that if the number of parking spaces was not going to change; i.e., the building envelope, parking, and driveway were set, he would be comfortable with taking a recommendation to City Council regarding purchasing parking credits. Final Site Plan Approval could then occur after City Council action.

The consensus of the Commission was that they needed to see clean drawings that incorporated all the proposed changes before voting on Final Site Plan approval. However, they were comfortable making a recommendation regarding parking to City Council.

DDA Director Ward said that one of the things talked about at the November Planning Commission meeting was that if the fire hydrant were relocated, there was potential to add a couple of street parking spaces in that location. That possibility could be part of the discussion with City Council.

Chair Kirk thought the Planning Commission did not have jurisdiction over the streets. City Manager Sullivan said that DPW would need to be part of that conversation.

Chair Kirk recognized Ms. Chiri. Ms. Chiri said there was a lengthy discussion in November regarding the intended use vs. the allowed use. The original plan showed a coffee shop. Was the basement configured in such a way that it could become useable space? Ms. Chiri was concerned that use changes would impact future parking in the area.

Commissioner Snyder said that if the use changed in the building, the applicants would need to return to the Planning Commission for further approvals.

Chair Kirk recognized Michelle Aniol, Downtown Development Authority Economic Development Committee (EDC) member, who gave the EDC's response to this proposed development. Ms. Aniol also distributed her comments to the Commission.

The EDC had met twice to review the project, and overall, the EDC was pleased with the possibility of development on the site.

Regarding parking, the EDC supported the option of meeting the total deficiency through either a shared parking agreement or by the purchase of parking credits. The EDC supported looking at the hydrant to see if it could be moved to increase street parking. Ms. Aniol noted that the DDA's Parking Committee, working with the DPW and Northville Police Department, conducted a twice monthly occupancy count of the downtown parking decks and lots. The counts consistently showed the Tipping Point Theatre lot significantly underused, though as development occurred to the south, the use of the lot might increase. Again, the EDC supported exploring relocating the fire hydrant on Cady Street to increase street parking.

Regarding green/public space, the EDC supported the creation of the outdoor plaza at the corner of Cady and Griswold Streets, as well as the sitting area to the west of the proposed building. Street furnishings should be consistent with the DDA's draft Secondary Streetscape Design Standards, including bike racks, bollards, fencing, tree grates, sidewalks, and landscaping.

Regarding Design, The EDC had significant concerns regarding the lack of any windows in the east and west elevations. While there was significant glass in the front elevation of the building, there was minimal glass on the other facades. Section 10.06.p specifically stated that blank walls longer than 20 feet shall not face a public street. The blank wall on Griswold presented a cold, institutional look and did not seem to conform to the City’s Master Plan and the Cady Street Overlay District. The entire subparagraph read:

First floor architecture shall be compatible with sidewalk areas and shall provide an attractive interface between buildings and pedestrians. This shall be accomplished with generous window areas, recesses, projections and architectural detail to provide transparency and variation. Blank walls longer than twenty (20) feet shall not face a public street.

After discussion as to whether or not the east wall was broken up by the door, stairwell, etc., and whether the west wall could be enhanced by landscaping and other features, it was the consensus of the Commission to continue the review of this project, including the requirements of the ordinance and intent of the Master Plan regarding blank walls, when the applicants brought the corrected plans back to the Commission.

Commissioner Tinberg pointed out that the south elevation might also need to have *recesses, projections and architectural detail*. The plans presented this evening showed a south elevation that was flat.

After brief further discussion, Chair Kirk indicated he was ready for a motion regarding making a recommendation to City Council as far as whether the Commission felt there was sufficient parking in the area to justify Council selling 8 parking credits to the applicant.

MOTION by Maise, support by Smith, that in the matter of 335 E. Cady, a Mixed-Use Project located on the north side of E. Cady Street, dated November 13, 2018, the Planning Commission recommends that City Council approve the purchase of 8 parking credits, and that the Commission finds that there is adequate parking in the neighborhood to cover the deficiency of up to 8 spaces for this project.

Chair Kirk called for a roll call vote.

Kirk	yes
Krenz	yes
Maise	yes
Miller	yes
Smith	yes
Snyder	yes
Tinberg	yes

Motion carried unanimously.

MOTION by Maise, support by Krenz, that in the matter of 335 E. Cady, a mixed-use project located on the north side of E. Cady Street, dated November 13, 2018, the Planning Commission refer the application for Final Site Plan review back to the applicant for revisions as outlined in the November 26, 2018 Carlisle/Wortman review letter and the minutes of tonight’s meeting.

Chair Kirk called for a roll call vote.

Kirk	yes
Krenz	yes
Maise	yes
Miller	yes
Smith	yes
Snyder	yes
Tinberg	yes

Motion carried unanimously.

Chair Kirk advised the applicants that when they returned to the Commission, the plans should be correctly updated.

8. DISCUSSION

First Discussion Item: Residential Infill – Public Input Summary Results

Referring to the November 28, 2018 document *Public Input Results Summary: City of Northville Residential Infill Study*, along with the full *City of Northville Residential Infill Study Report*, Planning Consultant Elmiger gave a summary of the information received by the Study.

The *Public Input Results Summary* described the quantitative results of the Study, and also provided a summary of the most often given comments, ideas and opinions that were expressed.

There were 341 responses, which represented approximately 12% of the households in Northville. Almost all respondents owned their own home. The questionnaire divided the City into 5 sections, and there was relatively equal representation from each section.

Regarding future plans, most respondents were going to leave their homes as is, with 9% saying they wanted to tear down the existing home and build new.

The remaining questionnaire was divided into 3 sections:

1. Questions about the participant's neighborhood.
2. Questions about other areas of the City other than their own neighborhood.
3. General questions.

Questions regarding In My Neighborhood:

New Homes Replacing Existing Homes:

56% of respondents thought that new homes were too large for the lot, with many expressing concerns about:

- The lack of green space.
- The home being oversized for the size of the lot.
- Lack of space between homes.
- The taller height of the new buildings compared to existing buildings.

38% thought new homes were the right size for the neighborhood, and their responses cited the increase in property values and tax base, and replacement of very small homes as benefits.

13% of respondents stated that there had been no new construction replacing existing homes in their neighborhood.

New Homes on Vacant Lots:

- Answers were similar to “new homes replacing existing homes.”
- Builders/speculators were maximizing the size of the home irrespective of the neighborhood character.
- Lack of individuality in the new home architecture.
- Lack of continuity with surrounding homes (size, height, architectural design).
- Removal of mature trees to accommodate new construction.

26% thought new homes on vacant lots in their neighborhood were the right size, and 14% stated that there were no vacant lots in their neighborhood.

Home additions:

- 55% thought home additions were the right size, and 29% thought they were too big,
- 10% said there were no new additions to homes in their neighborhood,
- Many comments were mixed, saying that some additions were “right-sized” for the home, but other said that additions overwhelm the home or were a virtual tear-down,
- A number of comments relayed disappointment in the changes made over the years in the Historic District, and how those changes had been contrary to preservation of the historic fabric of the District.

Questions regarding *Outside of My Neighborhood*

New homes replacing existing homes:

- Many comments applied to the Historic District and Cabbagetown. Comments also addressed the southwest corner of the City.
- Concerns included architecture that was insensitive to the Historic District, homes that were too large for the lot/street, lack of green space on the lot, taller height of new homes compared to existing homes, loss of small-town character, and loss of affordability for seniors and young families.

New homes on vacant lots:

- Many comments were given about the redevelopment of Northville Downs. Concerns included density, traffic and small-town character. There was significant concern the new homes would be cookie-cutter in design with front facing garages.

Home additions:

- Some respondents were concerned that additions in the Historic District had diminished the value of the District; others felt that additions wherever they were in the City were just fine.

General Questions

Effect on Property Values

- Most respondents agreed that property values were going up, most likely as a result of the construction of new homes.
- Values for older/smaller homes were not increasing at the same level as the new, larger homes. Owners of smaller homes were concerned that their property would be viewed as a tear down, and buyers would only be willing to pay for the lot.
- There was a concern regarding whether the increase in value was worth losing Northville's small-town character, and pricing seniors and young families out of Northville's residential market.
- A number of comments thought that the increase in property values was a positive thing for Northville, and was a result of the new home construction.

Overall Effect on Character of Northville

- 65% of respondents thought that new home construction/home additions were diminishing Northville's character. 26% thought the activity was improving Northville's character; with the remaining respondents thinking new home construction/additions had no effect, or they had no opinion.

Existing Residential Building Ordinances

- 68% thought the existing city ordinances resulted in homes that were too big, and 23% thought the ordinances resulted in homes that were the right size for the neighborhood/street.
- Concerns included requiring enough green space, addressing neighborhood context, and an apparent lack of enforcement consistency, including granting variances to ordinance standards.

Changing Residential Building Ordinances

- 78% thought the ordinances should be changed to address the size of new homes and additions.
- 77% thought the ordinance should limit the size of replacements to the same/similar size as other houses on the street.

Other comments addressed:

- New housing style/character
- Size/siting of new homes
- Impacts of new home construction
- Environmental concerns
- Ordinance enforcement/construction site management

Planning Consultant Elmiger noted that the entire report was on the City's website.

Commissioner Miller thought the study was a helpful first step. Perhaps the next step was to complete a statistically significant survey so that the results could be verified. He was hesitant to make ordinance changes based on a non-scientific survey.

The Commission requested that the Building Office respond to comments on applying the Zoning Ordinance.

After further discussion regarding the study results, the consensus of the Commission was to continue the conversation, including possible options for action, at the next available opportunity, including, if possible, the December 18 Planning Commission meeting.

Second Discussion Item: Seven Mile Property – Analysis of Commercial Development

Planning Consultant Elmiger explained that the developer who proposed The River Townhouse Development on Seven Mile retained Gibbs Planning Group to provide an analysis of the viability of new commercial development on the McDonald Ford site on Seven Mile Road. The developer had also discussed the situation with Sharon Woods with Land Use USA, who provided an additional opinion. Due to those assessments, the developer had decided to discontinue the project.

Commissioner Maise said the Gibbs and Woods responses were both specific to retail use, and had not included office or restaurant use.

From the audience, Ms. Aniol referred to the first paragraph of the October 23, 2018 letter from Gibbs Planning Group:

... the location does not meet generally accepted standards for any shopping center typologies defined by the International Council of Shopping Centers (ICSC), the Urban Land Institute (ULI) or the Congress for the New Urbanism (CNU)...

Referring to a Merriam-Webster definition of *shopping center*, Ms. Aniol said that generally the term applied to restaurants and offices, as well as retail. She thought the area did not have enough population to support a shopping center at this location which meant a successful center would need to draw in customers from outside the area, which would then increase traffic.

Ms. Aniol called the Commissioners' attention to item 10 of the Gibbs Planning Group letter:

The area has numerous stronger shopping centers and retail districts than the subject location and would be difficult to compete with.

Commissioner Miller thought it was not desirable to have a fragmented commercial district throughout the City.

Commissioner Maise pointed out that the Master Plan called for 1st floor commercial in this area; if the Commission wanted to go in another direction they would need to change the Master Plan.

DDA Director Ward asked if the City could discover exactly what the query was to Gibbs Planning Group and Land Use USA. The comments from Land Use USA were especially ironic as previously Sharon Woods at Land Use had said the City could sustain another 50,000 square feet of retail space.

Further discussion included:

- If the City was going to make any changes to the Master Plan, it should first conduct its own study.
- Chair Kirk was open to eliminating the requirement for commercial in this area.
- If data showed that the ceiling for traffic was below the floor for viability for commercial, the Commission had no other choice but to look at changing the Master Plan.

- There were other areas in the City that should be included in this discussion.
- Market studies were not an exact science. Sometimes something worked that could not necessarily be predicted.
- Tonight the Commission had heard a request for 17,000 square feet of commercial space that was a combination office and retail, only ¼ mile away. The Robertson Brothers' River Townhouse Development had only proposed 7500 square feet; this did not seem unreasonable and was consistent with the surrounding land use.
- Robertson Brothers was not a commercial developer; perhaps it was a matter of finding the right developer.

Planning Consultant Elmiger said that the public hearing for the Seven Mile Road Overlay District would be in January. Further discussion could be held at that time.

9. Adjourn

Seeing that there was no further discussion, Chair Kirk asked for a motion to adjourn.

MOTION by Tinberg, support by Snyder, to adjourn the meeting at 9:09 p.m.

Motion carried unanimously.

Respectfully submitted,
Cheryl McGuire

Recording Secretary



November 27th, 2018

Via email: selmiger@cwaplan.com

Ms. Sally Elmiger
Carlisle Wortman Associates
117 N. First Street
Ann Arbor, MI 48104

Re: PUD Eligibility Submittal for The Downs (“Project”)
Hunter Pasteur Homes (“Developer”)

Dear Ms. Elmiger:

We are pleased to present this summary letter together with revised plans and we request to be on the agenda for the December 18th, 2018 Planning Commission meeting for PUD eligibility.

Subsequent to the Planning Commission meeting on October 2nd in which The Downs PUD eligibility application was tabled, Hunter Pasteur Homes (“HPH”) and its development team have spent considerable time and effort to address the issues raised by the community and the planning commissioners. The primary issues that were identified at the October 2nd meeting are:

- Daylighting the Rouge River;
- The Farmer’s Market;
- Project Density;
- Product Diversity and Quality;
- Product Location;
- Traffic;
- Parking;
- Connectivity to Downtown Northville
- Project Phasing.

Daylighting the River:

Based on input from the community and the Planning Commission Members, HPH has modified the project’s site plan and development goals to include daylighting the river.

As part of The Downs' submittal package for the Planning Commission meeting on December 18th, included is an updated site plan that shows the proposed path of the future daylighted river. The thirteen (13) single-family lots proposed on River Street have been eliminated.

With daylighting the river, the development team has expanded to include some of the state's leading consultants for daylight rivers, including King & MacGregor Environmental and Ecological Consulting Services, Friends of the Rouge ("FOTR"), Grissim Metz Andriesse Associates and Seiber Keast Engineering. Each of the previously listed consultants has spent considerable time providing their input regarding the new river, and the development team is working on a plan for the river that will comply and be permittable within all regulatory standards, including MDEQ, while also being aesthetically pleasing and a benefit for the entire community.

HPH and the development team are currently working with FOTR to source capital to fund the daylighting project. HPH is committing private capital towards daylighting the river while FOTR will raise the remaining funds for the project through grants from family offices, endowments and county, state or federal agencies.

The development team is committed to daylighting the river through a private-public partnership. The newly daylighted river will enhance both the development and the community of Northville indefinitely.

The Farmer's Market;

An issue raised during the October 2nd Planning Commission meeting was the size of the relocated Farmer's Market which is smaller than the current farmer's market.

In the plan submitted and presented on October 2nd, the Farmer's Market was going to be approximately 17,000 square feet, which would have been 18,000 square feet less than the current 35,000 square feet used for vendors.

On the latest plan, the development team is proposing two different locations for the Farmer's Market from which the Northville Chamber of Commerce and the City Officials can choose the more desirable location. The two potential locations are the following:

The first option is to keep the Farmer's Market at the northern portion of the linear park, just south of Beal Street and along the daylighted river. In this option, the Farmer's Market would be approximately 25,000 square feet, which is 8,000 square feet larger than what was proposed in the previous plan.

The second option is to locate the Farmer's Market in the 257-space surface parking lot located behind the multi-family rental building on Cady Street. This surface parking lot is currently 80,000 square feet and the development team is proposing that the Farmer's Market use half of the available 80,000 square feet. A 40,000 square foot Farmer's Market would be approximately 5,000 square feet larger than the current Farmer's Market vending area, and the remaining 40,000 square feet can be used for customer and vendor parking

The development team is confident that both of the proposed locations for the Farmer's Market will be a public benefit the project, the Northville community and Downtown Northville.

Project Density:

Based on feedback from the meeting, the developer has reduced the overall density from 577 units to 546 units. The reduction of thirty-one (31) units breaks down as follows:

Townhomes – The townhomes have been reduced from 222 units to 187 units. This reduction of 35 townhomes was achieved by eliminating several clusters of townhomes and replacing the cluster of townhomes along Center Street into single-family homes.

Single-Family – The number of single-family lots increased from 49 to 53. This increase includes the elimination of the 13 lots that were previously proposed along River Street and backed-up to the proposed park.

Multi-Family Rental – The number of rental apartment units remains unchanged between the two plans; there are 306 proposed apartments along Cady Street. The buildings have been reconfigured to accommodate the request to remove the parking lot at the corner of Cady Street and Griswold Street. 160 new parking spaces were added to the apartment garage. These 160 additional spaces have a cost of \$30,000 per space, which comes to cost of \$4.8M.

The development team would like to point out that of the 48.12-acre site, 21.16 acres (43.97%) is a pervious surface or lawn and 2.92 acres (6.07%) is the detention ponds and daylighted river. The remaining 22.79 acres (47.37%), which is less than half of the site, is an impervious service. More than half of the development site is either a pervious surface, lawn or open water.

Lastly, including the detention ponds and the daylighted river, 29.78% of the site is open space. These figures are important to highlight because the development team has carefully planned the site so that it has significant open space and green areas for the proposed density.

Product Diversity and Quality:

Another change of note is the addition of an alleyway behind single-family lots #4 through #17. By adding this alleyway, lots #4 through #10 will not have garages and driveways facing Center Street, which will be aesthetically beneficial as well as reduce the traffic impact to Center Street. Additionally, the alleyway also will create additional diversity among the single-family homes as the single-family homes will have a combination of rear, side and front entry garages. This design diversification will bring product diversity to the homes that the residents requested.

HPH is committed to delivering the highest quality homes to The Downs development, and for this reason, as a result of the negative public feedback the Pulte product received at the October 2nd meeting, HPH has decided to not proceed with Pulte as part of the project.

Product Location:

The development team has received feedback that the proposed location of the townhomes and the single-family homes doesn't exactly align with the proposed densities and product types of the Master Plan. The reason for placing single-family homes between Beal Street and Fairbrook Street and the townhomes south of Fairbrook Street is entirely due to the topography of the site. Typically, townhome units are constructed on almost flat or low sloping areas due to the closely spaced driveways and limited space for grading along the front of and between buildings. The existing slope near the middle of the site is approximately 6% to 8% and if the proposed grading would match existing, it would require stepping the units within a building (which is not feasible with adjacent driveways), unnecessary use of retaining walls throughout the townhome portion of the development and a considerable amount of fill for the site to be graded properly. The proposed single-family home sites between Beal Street and Fairbrook Street offer more grading flexibility as the units are spaced much further apart and changes in grade can be made up more easily on the lots.

Traffic:

The development team continues to work with the city's traffic consultant, OHM. The development team's traffic consultants, Fleis & VandenBrink, have met with OHM and both firms have mutually agreed to expand and update the Traffic Impact Study ("TIS"). Fleiss & VandenBrink has added three (3) additional intersections to the study and an updated Traffic Impact Study is part of the submittal package for the December 18th meeting.

Additionally, Fleis & VandenBrink and OHM, along with Wayne County, continue to discuss other potential traffic improvements and solutions.

Parking:

The revised plan has been modified to include additional public parking in addition to resident parking. The following table summarizes the increase in parking from the October 2nd plan to the December 18th plan:

Parking Space Location:	October 2nd Plan:	December 18th Plan:
Parking Structure to Service Apartment Residents	313	473
Commercial Surface Lot (Behind Apartments)	52	59
Surface Lot	246	257
Street Parking on Beal and Hutton Streets	66	75
Street Parking in Front of Single-Family Homes	0	42
Street Parking in Front of Townhomes	0	115
Total Spaces	677	1,021

Notes to Table:

1. The above table does not include 960 parking spaces that are specifically designated for owners of the single-family homes and townhomes, broken down as follows:
 - a. 106 Single-Family Garage Spaces;

- b. 106 Single-Family Driveway Spaces;
 - c. 374 Townhome Garage Spaces;
 - d. 374 Townhome Driveway Spaces.
2. Total number of spaces within the development is 1,981;

The new plan includes 344 net additional parking spaces. Under the previous plan, when factoring in the city's parking requirements, the 92 spaces removed in the city owned surface lot and the number of parking spaces within 600' of Cady Street, the surplus was only six (6) spaces.

Additionally, 42 street parking spaces will be created in front of the single-family homes between Beal Street and Fairbrook Street. There are three north-south streets that will be part of the project, and each street will hold 14 cars, 7 cars per side. Within the townhome portion of the development, there will be 115 on-street parking spaces.

Under the new plan, considering the same factors, the net increase in parking spaces is 344 spaces. This should be more than sufficient parking for not only the residents of The Downs but for guests of residents and people visiting downtown Northville as well.

Connectivity to Downtown Northville:

One of the comments heard by the development team at the PUD eligibility meeting on October 2nd was the project's lack of connectivity to downtown Northville, which the Northville Master Plan calls for. To address this comment, the development team has adjusted the location of the multi-family apartment buildings along Cady Street to create a pedestrian connection to downtown Northville's Town Square Plaza. This is not only a part of the master plan but a public benefit for the community as The Downs project will have direct pedestrian access to the shops and restaurants of downtown Northville. This will increase foot-traffic and business for all merchants of downtown Northville.

Project Phasing:

The Downs will be developed as a two-phase project. The first phase will consist of approximately 10 acres between Beal Street, Cady Street, Center Street and South Griswold Street. Construction of phase one is expected to begin in the summer of 2019 and construction should last between 24 and 27 months to final completion. The first phase of the project will include the multi-family rental buildings with commercial on the ground floor and the parking garage.

The second phase will consist of the approximately 35-acre site where the Northville Downs Racetrack is currently operating and bounded by Beal Street, Center Street, South Griswold Street and West Seven Mile Road. Also included in the second phase will be the non-contiguous parcels at the corner of West Seven Mile Road and South Center Street and the small parcel between Fairbrook Street and Wing Street on South Center Street. The second phase will include the construction of the townhomes, single-family homes and the linear park with the daylighted river. Construction of the second phase is expected in 2020 and is expected to last between 48 and 60 months.

The expectation is that the 48.12-acre development will be 100% complete and fully built-out by 2025. The linear park with the daylighted river will commence construction by the summer of 2021, as it is the developer's intention to complete this part of the project as soon as possible so that it can be enjoyed by all of Northville's residents.

Hunter Pasteur Homes and its entire development team are confident that the revised plan that will be presented at the December 18th Planning Commission Meeting addresses the concerns and issues identified by the public and the Planning Commission. We look forward to presenting on the 18th.

Conclusion:

The development team has gone to considerable lengths to create a project that maximizes the public benefits for the city of Northville and is confident that this plan achieves that objective. This revised plan includes a daylighted river within an 8.4 acre park, two potential sites to relocate the Farmer's Market, one of which is larger than the current location. We have increased connectivity between the project, downtown Northville and the surrounding parks. We have also added a tremendous amount of free public parking spaces to be used by residents and visitors to downtown Northville. These items are all public benefits to the City of Northville and the development team is confident Northville's residents will enjoy these public benefits for many decades. For the public benefits that The Downs project is creating, we believe that the project qualifies for PUD eligibility.

Hunter Pasteur Homes, LLC

A handwritten signature in black ink, appearing to read 'Randy Wertheimer', with a stylized horizontal line extending to the right.

Randy Wertheimer
Chief Executive Officer

CC: Pat Sullivan, City Manager
Shari Allen, Building Department
Brent Strong, Building Official
Lloyd Cureton, DPW Director

PUD ELIGIBILITY SITE PLAN

THE DOWNS

DOWNTOWN NORTHVILLE

SECTION 3, T1S, R8E, CITY OF NORTHVILLE WAYNE COUNTY, MICHIGAN

PREPARED FOR:

HUNTER PASTEUR, NORTHVILLE, LLC

32300 NORTHWESTERN HWY, SUITE 230
FARMINGTON HILLS, MI 48334

LEGAL DESCRIPTION

OVERALL PARCEL:
PART OF LOT 72, ALL OF LOTS 73-78, PART OF LOT 79, ALL OF LOTS 80-81, AND PART OF LOT 82 OF "ASSESSOR'S NORTHVILLE PLAT NO. 1", AS RECORDED IN LIBER 66 OF PLATS, PAGE 45, WAYNE COUNTY RECORDS; ALSO ALL OF LOTS 171-196 AND PART OF LOT 197 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS; ALSO ALL OF THAT PART VACATED CHURCH STREET AND VACATED BEAL AVENUE AS VACATED PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS;

ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTHWEST CORNER OF LOT 168 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N84°53'43"E 174.61 FEET ALONG THE SOUTH LINE OF CADY STREET (50 FEET WIDE) TO THE NORTHWEST CORNER OF LOT 171 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2" FOR A POINT OF BEGINNING; THENCE ALONG THE SOUTH LINE OF SAID CADY STREET THE FOLLOWING THREE (3) COURSES: 1) N84°53'43"E 682.35 FEET, 2) N79°20'27"E 42.12 FEET, AND 3) N85°47'04"E 218.30 FEET; THENCE ALONG THE WESTERLY LINE OF GRISWOLD STREET (VARIABLE WIDTH) THE FOLLOWING FIVE (5) COURSES: 1) S02°52'19"E 193.33 FEET, 2) S86°05'20"W 3.01 FEET, 3) S04°23'26"E 133.89 FEET, 4) N85°43'59"E 15.98 FEET, AND 5) S04°24'37"E 129.36 FEET; THENCE THENCE N84°12'51"W 100.00 FEET ALONG THE NORTH LINE OF SAID BEAL AVENUE; THENCE ALONG THE WEST LINE OF RIVER STREET THE FOLLOWING THREE (3) COURSES: 1) S09°44'28"E 227.57 FEET, 2) S15°01'28"E 427.16 FEET, AND 3) S15°34'36"E 462.92 FEET; THENCE S85°45'58"W 238.48 FEET; THENCE N89°00'21"W 563.09 FEET; THENCE N43°05'04"W 95.18 FEET; THENCE ALONG THE SOUTH LINE OF SAID LOT 183 THE FOLLOWING FOUR (4) COURSES: 1) S78°36'11"W 254.94 FEET, 2) S78°39'12"W 117.60 FEET, 3) N77°44'48"W 142.02 FEET, AND 4) N57°47'56"W 135.76 FEET; THENCE N05°05'49"W 578.08 FEET ALONG THE EAST LINE OF CENTER STREET (60 FEET WIDE); THENCE N05°12'42"W 537.43 FEET CONTINUING ALONG THE EAST LINE OF SAID CENTER STREET; THENCE N84°59'05"E 130.92 FEET ALONG THE SOUTH LINE OF LOT 164 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N04°02'34"W 179.19 FEET ALONG THE WEST LINE OF SAID LOT 174; THENCE N84°20'38"E 39.77 FEET ALONG THE SOUTH LINE OF LOT 170 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N05°05'12"W 126.38 FEET ALONG THE WEST LINE OF SAID LOT 171 TO THE POINT OF BEGINNING.

NORTH PARCEL:
PART OF LOT 72, ALL OF LOTS 73-78, PART OF LOT 79, ALL OF LOTS 80-81, AND PART OF LOT 82 OF "ASSESSOR'S NORTHVILLE PLAT NO. 1", AS RECORDED IN LIBER 66 OF PLATS, PAGE 45, WAYNE COUNTY RECORDS; ALSO ALL OF LOTS 171-181 AND PART OF LOT 182 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS; ALSO PART OF THAT PART VACATED CHURCH STREET AND VACATED BEAL AVENUE AS VACATED PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS;

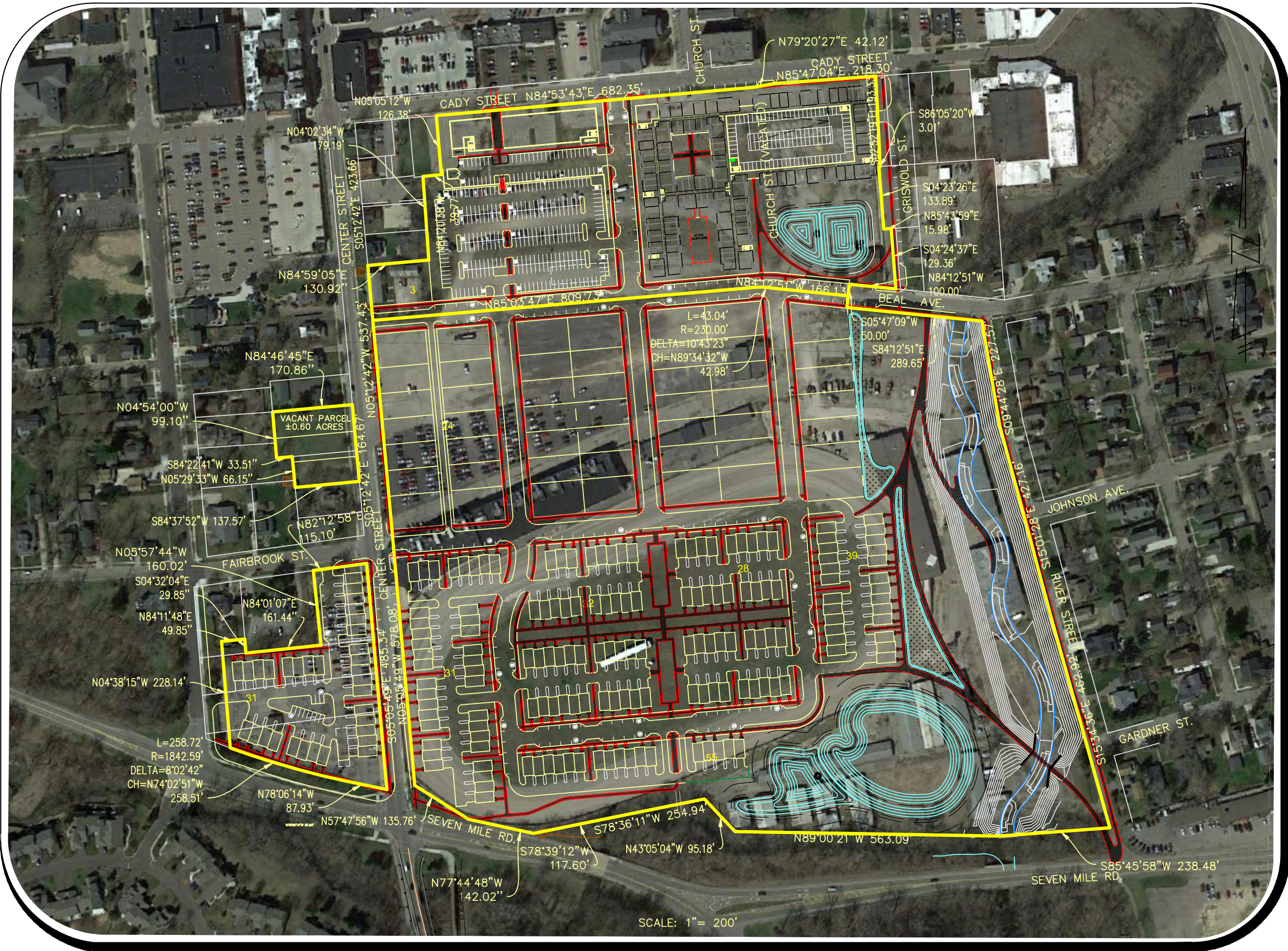
ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTHWEST CORNER OF LOT 168 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N84°53'43"E 174.61 FEET ALONG THE SOUTH LINE OF CADY STREET (50 FEET WIDE) TO THE NORTHWEST CORNER OF LOT 171 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2" FOR A POINT OF BEGINNING; THENCE ALONG THE SOUTH LINE OF SAID CADY STREET THE FOLLOWING THREE (3) COURSES: 1) N84°53'43"E 682.35 FEET, 2) N79°20'27"E 42.12 FEET, AND 3) N85°47'04"E 218.30 FEET; THENCE ALONG THE WESTERLY LINE OF GRISWOLD STREET (VARIABLE WIDTH) THE FOLLOWING FIVE (5) COURSES: 1) S02°52'19"E 193.33 FEET, 2) S86°05'20"W 3.01 FEET, 3) S04°23'26"E 133.89 FEET, 4) N85°43'59"E 15.98 FEET, AND 5) S04°24'37"E 129.36 FEET; THENCE THENCE N84°12'51"W 100.00 FEET ALONG THE NORTH LINE OF BEAL AVENUE (50 FEET WIDE); THENCE S05°47'09"W 25.00 FEET ALONG THE EASTERLY LINE OF THAT PORTION OF VACATED BEAL AVENUE PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS; THENCE N84°12'51"W 166.13 FEET; THENCE 43.04 FEET ALONG A 230.00 FEET RADIUS CURVE TO THE LEFT, SAID CURVE HAVING A CENTRAL ANGLE OF 10°43'23" AND A CHORD WHICH BEARS N89°34'32"W 42.98 FEET; THENCE S85°03'47"W 809.73 FEET; THENCE N05°12'42"W 117.93 FEET ALONG THE EAST LINE OF CENTER STREET (50 FEET WIDE); THENCE N84°59'05"E 130.92 FEET ALONG THE SOUTH LINE OF LOT 164 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N04°02'34"W 179.19 FEET ALONG THE WEST LINE OF SAID LOT 174; THENCE N84°20'38"E 39.77 FEET ALONG THE SOUTH LINE OF LOT 170 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N05°05'12"W 126.38 FEET ALONG THE WEST LINE OF SAID LOT 171 TO THE POINT OF BEGINNING.

SOUTH PARCEL:
PART OF LOT 182, ALL OF LOTS 183-196, AND PART OF LOT 197 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS; ALSO PART OF THAT PART VACATED CHURCH STREET AND VACATED BEAL AVENUE AS VACATED PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS;

ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTHWEST CORNER OF LOT 168 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE S05°12'42"E 423.66 FEET ALONG THE EAST LINE OF CENTER STREET (50 FEET WIDE) TO THE POINT OF BEGINNING; THENCE N85°03'47"E 809.73 FEET; THENCE 43.04 FEET ALONG A 230.00 FEET RADIUS CURVE TO THE RIGHT, SAID CURVE HAVING A CENTRAL ANGLE OF 10°43'23" AND A CHORD WHICH BEARS S89°34'23"E 42.98 FEET; THENCE S84°12'51"E 166.13 FEET; THENCE S05°47'09"W 25.00 FEET ALONG THE EASTERLY LINE OF THAT PORTION OF VACATED BEAL AVENUE PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS; THENCE S84°12'51"E 289.65 FEET ALONG THE SOUTH LINE OF BEAL AVENUE (50 FEET WIDE); THENCE ALONG THE WEST LINE OF RIVER STREET THE FOLLOWING THREE (3) COURSES: 1) S09°44'28"E 227.57 FEET, 2) S15°01'28"E 427.16 FEET, AND 3) S15°34'36"E 462.92 FEET; THENCE S85°45'58"W 238.48 FEET; THENCE N89°00'21"W 563.09 FEET; THENCE N43°05'04"W 95.18 FEET; THENCE ALONG THE SOUTH LINE OF SAID LOT 183 THE FOLLOWING FOUR (4) COURSES: 1) S78°36'11"W 254.94 FEET, 2) S78°39'12"W 117.60 FEET, 3) N77°44'48"W 142.02 FEET, AND 4) N57°47'56"W 135.76 FEET; THENCE N05°05'49"W 578.08 FEET ALONG THE EAST LINE OF CENTER STREET (60 FEET WIDE); THENCE N05°12'42"W 419.50 FEET CONTINUING ALONG THE EAST LINE OF SAID CENTER STREET TO THE POINT OF BEGINNING.

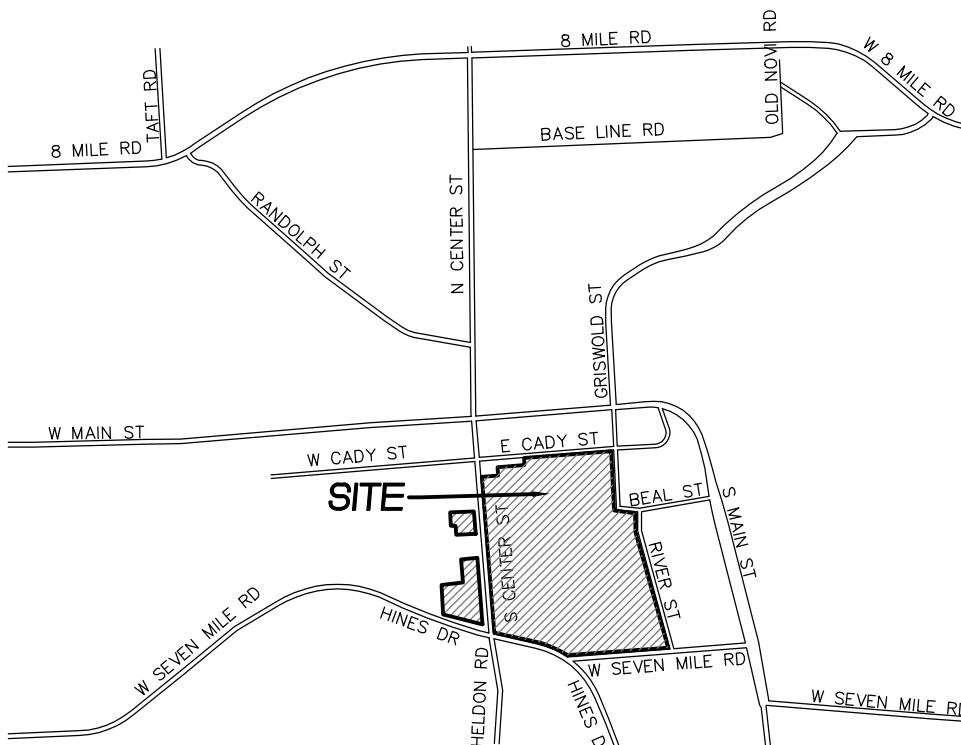
PARKING PARCEL:
LOT 223, LOT 224, LOT 226, LOT 227, LOT 228, AND PART OF LOT 225 OF "ASSESSOR'S NORTHVILLE PLAT NO. 3", AS RECORDED IN LIBER 66 OF PLATS, PAGE 43, WAYNE COUNTY RECORDS, MORE PARTICULARLY DESCRIBED AS: BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 223; THENCE S05°05'49"E 485.34 FEET ALONG THE WEST LINE OF CENTER STREET; THENCE N78°06'14"W 87.93 FEET ALONG THE NORTH LINE OF EDWARD HINES DRIVE; THENCE CONTINUING ALONG THE NORTH LINE OF SAID EDWARD HINES DRIVE, 258.72 FEET ALONG A 1842.59 FOOT CURVE TO THE RIGHT, SAID CURVE HAVING A CENTRAL ANGLE OF 08°02'42", AND A CHORD WHICH BEARS N74°02'51"W 258.51 FEET; THENCE N04°38'15"W 228.14 FEET ALONG THE EAST LINE OF SOUTH WING STREET; THENCE N84°11'48"E 49.85 FEET; THENCE S04°32'04"E 29.85 FEET; THENCE N84°01'07"E 161.44 FEET ALONG THE NORTH LINE OF SAID LOT 226; THENCE N05°57'44"W 160.02 FEET ALONG THE WEST LINE OF SAID LOT 224; THENCE N82°12'58"E 115.10 FEET ALONG THE SOUTH LINE OF FAIRBROOK STREET TO THE POINT OF BEGINNING.

VACANT PARCEL:
LOT 219 AND LOT 220 OF "ASSESSOR'S NORTHVILLE PLAT NO. 3", AS RECORDED IN LIBER 66 OF PLATS, PAGE 43, WAYNE COUNTY RECORDS, CITY OF NORTHVILLE, WAYNE COUNTY, MICHIGAN.



SHEET INDEX

1. COVER SHEET
2. PRELIMINARY PLAN
3. CADY LOT PARKING REPLACEMENT PLAN
4. OPEN SPACE PLAN
- 5.-8. PRELIMINARY UTILITY PLAN
9. FLOOD PLAIN PLAN
- L1. CONCEPTUAL LANDSCAPE PLAN
- L2. CONCEPTUAL LANDSCAPE PLAN ENLARGEMENTS



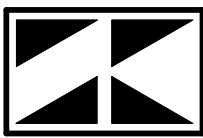
LOCATION MAP

NOT TO SCALE

BENCHMARKS

1. RIM OF SANITARY MANHOLE AT THE INTERSECTION OF CENTER STREET AND FAIRBROOK STREET. MANHOLE IS 3.5' EAST OF THE CENTERLINE OF CENTER STREET AND 17.5' SOUTH OF THE CENTERLINE OF FAIRBROOK STREET. ELEVATION 780.07' (NAVD88)
2. RIM OF SANITARY MANHOLE AT THE INTERSECTION OF RIVER STREET AND BEAL STREET. MANHOLE IS 10' NORTH OF THE CENTERLINE OF BEAL STREET AND 1' WEST OF THE CENTERLINE OF RIVER STREET. ELEVATION 777.58' (NAVD88)

NOTE: ALL ELEVATIONS SHOWN THROUGHOUT THE PLAN SET ARE ON NAVD88 DATUM.



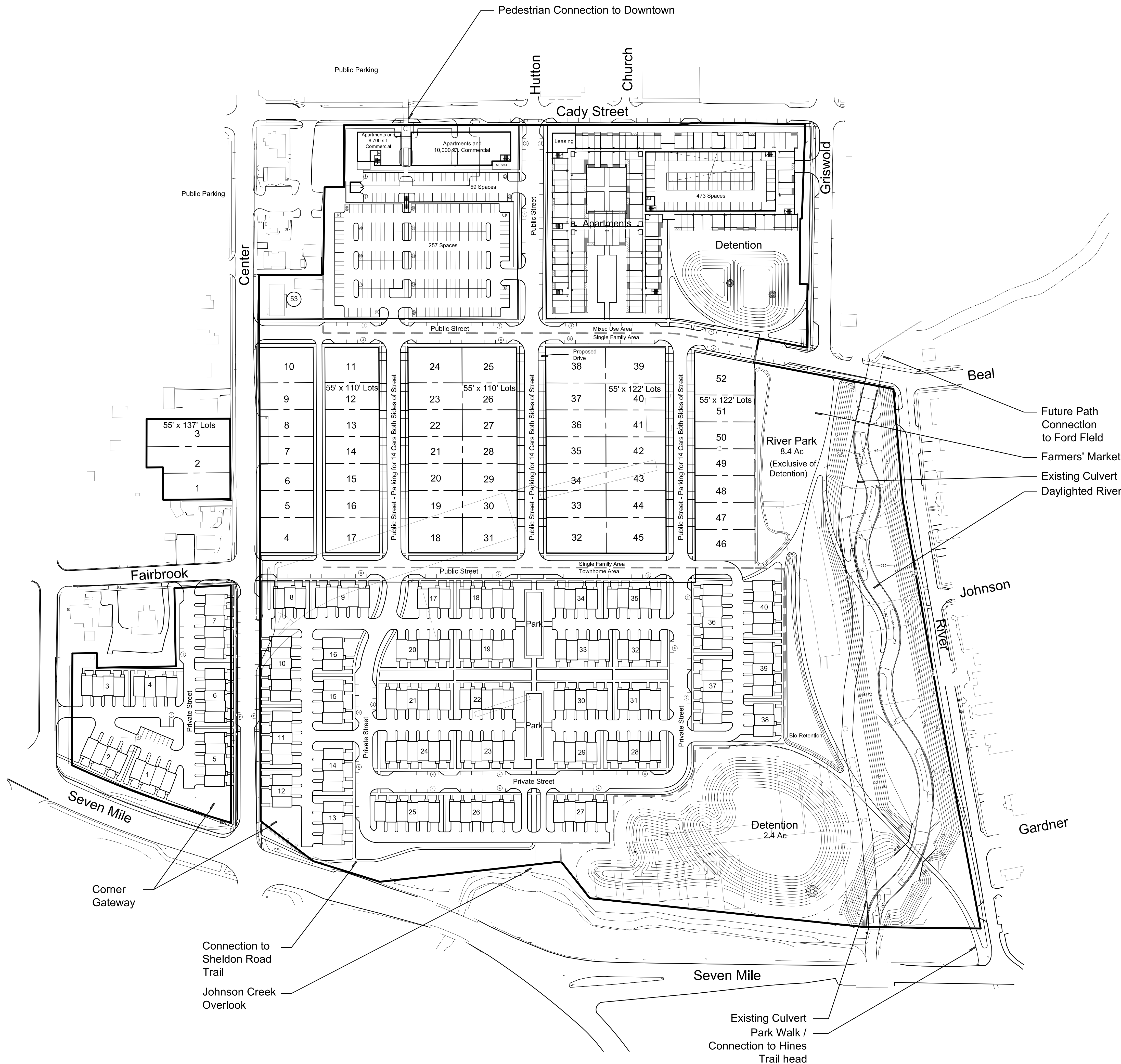
SEIBER, KEAST ENGINEERING, L.L.C.

CONSULTING ENGINEERS

100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331

SURVEY PROVIDED BY:
ALPINE ENGINEERING, INC.
46892 WEST ROAD, SUITE 109
NOVI, MICHIGAN
PHONE: 248.926.3765

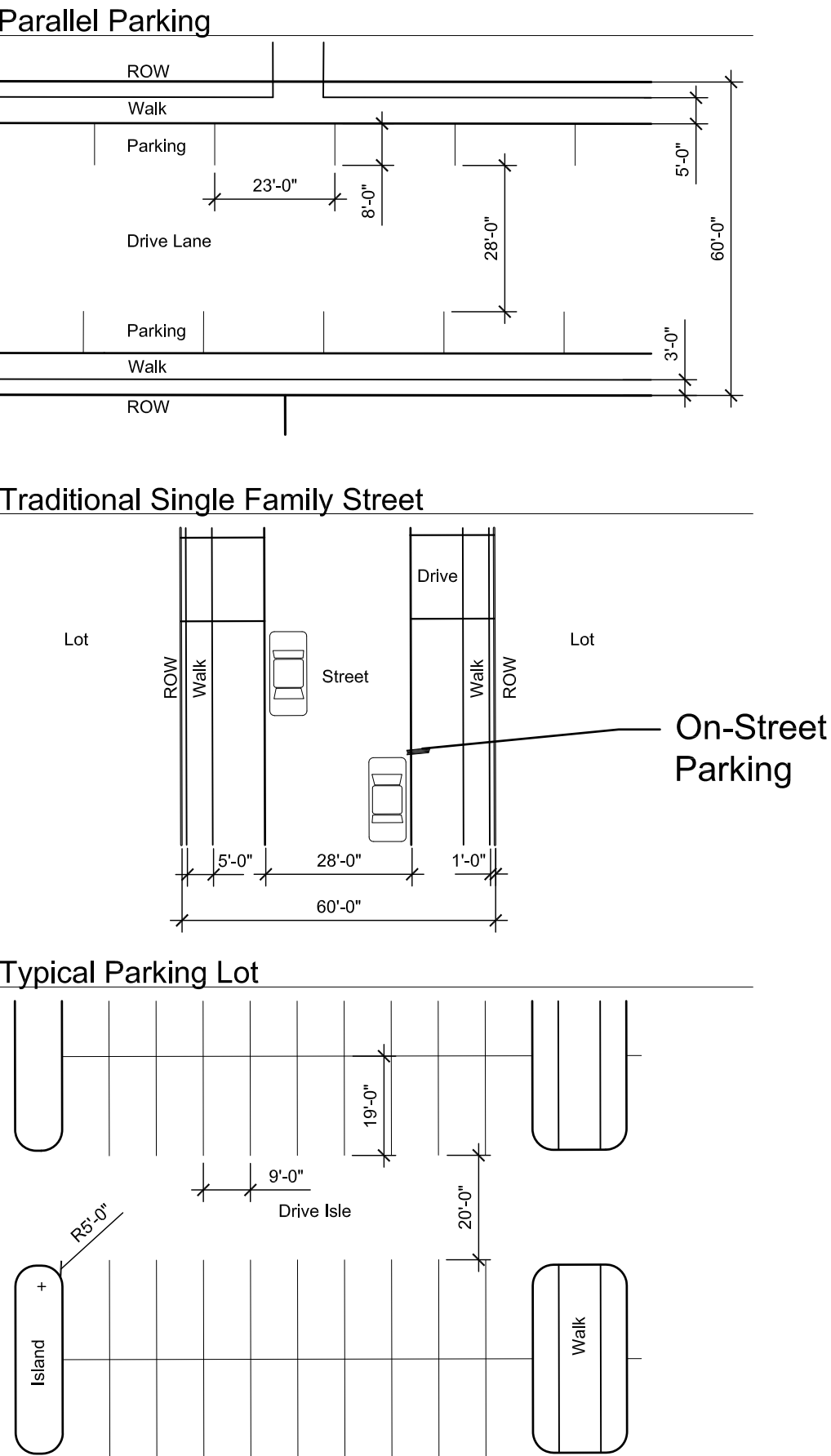
REVISIONS			ENGINEER'S SEAL
NO.	ITEM	DATE	
1.	PER PUD ELIGIBILITY REVIEW	11-27-18	
DATE: 07-16-18			DESIGNED BY: J.E. JOB NUMBER: 18-003 CHECKED BY: R.E. DRAWING FILE: 18003CY.DWG



Site Summary

Site Area	48.12 Acres	Parking Requirements	
Less Internal ROW	5.12 Ac	Single Family	
Net Site Area	43.0 Acres	Parking Required	106 Spaces (2 per Home)
Existing Zoning		Garages	106 Spaces
Proposed Zoning	CBD, RTD, R-2	Drives	106 Spaces
	PUD	On-Street	42 Spaces
		Parking Provided	254 Spaces
Development Breakdown		Apartments	
Residential	9.5 Acres	Parking Required	485 Spaces (485 Beds at 1 per Bedroom)
Less ROW	1.15 Ac	Surface Lot and Deck	695 Spaces
Net Area	8.35 Ac	Beal and Hutton	75 Spaces
Units Shown	306 Units	Parking Provided	770 Spaces
Density Shown	36.6 du/ac (306 / 8.35)	Commercial	
Setbacks		Parking Required	94 Spaces (18,700 s.f. at 1 per 200 s.f.)
Front Yard	14' Cady St., 0' Beal St., 8' & 11' Hutton	Parking Provided	94 Spaces
Side Yard	NA	Townhomes	
Rear Yard	NA	Parking Required	374 Spaces (2 per Unit x 187 Units)
Commercial Use	10,000 s.f. - 18,700 s.f.	Garage and Drives	748 Spaces
Setbacks		On-Street Parking	115 Spaces
Front Yard	12' Cady St. and Hutton St.	Parking Provided	863 Spaces
Side Yard	NA	Overall Parking Required	1,059 Spaces
Rear Yard	NA	Overall Parking Provided	1,981 Spaces
Townhomes	15.7 Ac	Note: Cady Street is not Included in Parking Calculations	
Less ROW	0.61 Ac		
Net Area	15.09 Ac		
Units Shown	187 Units		
Density Shown	12.39 du/ac (187 / 15.09)		
Setbacks			
Front Yard	12'		
Side to Side	16' - 20'		
Rear to Rear	60'		
Single Family Homes	12.0 Ac		
Less ROW	3.36 Ac		
Net Area	8.64 Ac		
Lots Shown	53 Lots (55' x 110', 55' x 122', 55' x 137', 88' x 135')		
Density Shown	6.13 Lots/Ac (53 / 8.64)		
Front Yard	25'		
Side Yard	7', 15' Total		
Rear Yard	25'		
Total Residential	546 Units		
Overall Density	12.69 Units/Ac (546 / 43.0)		

Street and Parking Typicals

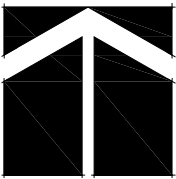


Preliminary Plan
THE DOWNS

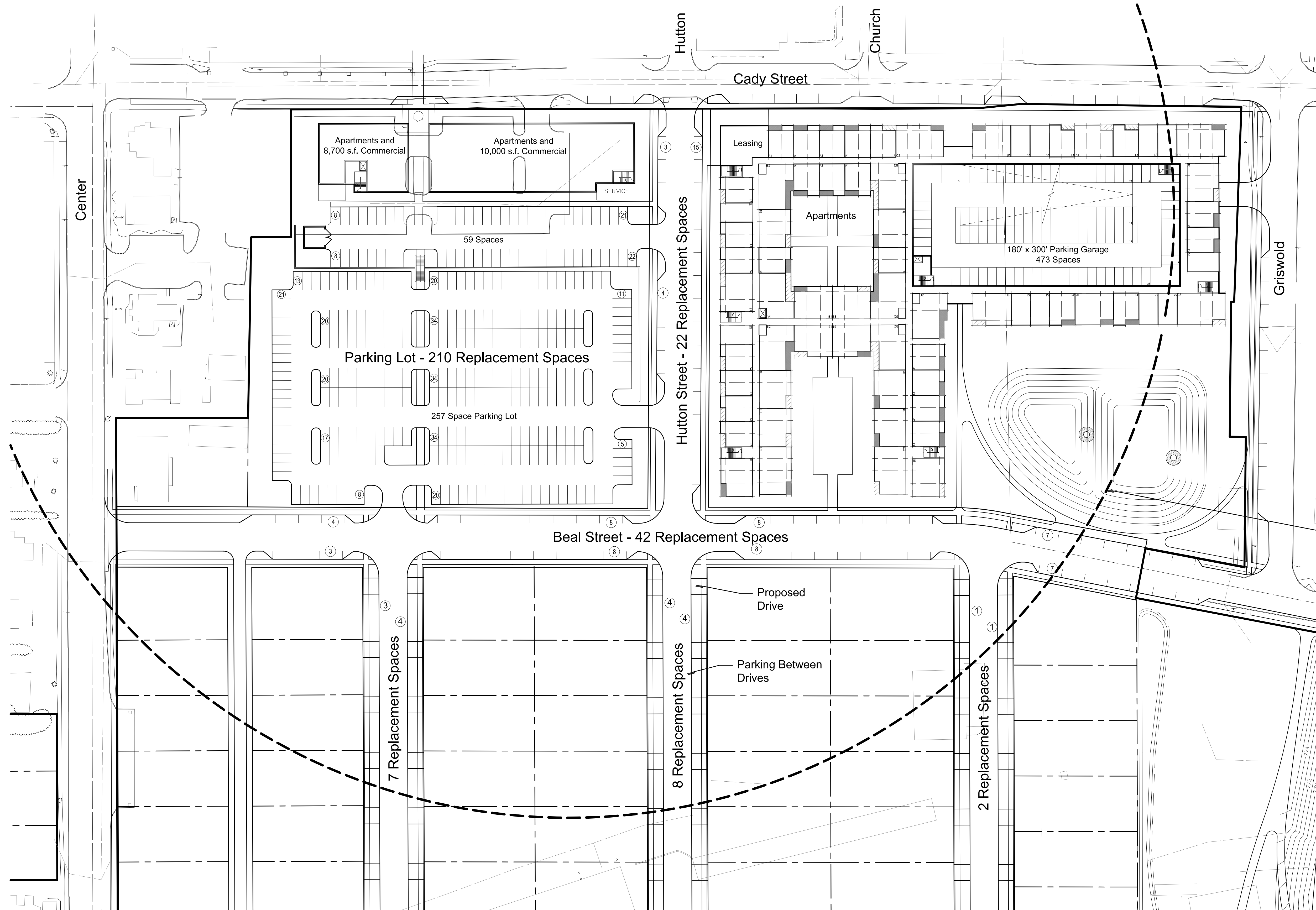
DOWNTOWN NORTHVILLE

Developer: Hunter Pasteur Homes
Farmington Hills, Michigan
Planner: Allen Design
Northville, Michigan

November 27, 2018



North
1"=100'
Sheet 2



Parking Replacement Breakdown

Existing Spaces within Cady Surface Lot	92 Spaces
Spaces Required within 600' of Lots	92 Spaces
New Public Spaces Provided	
Hutton South of Cady	22 Spaces
Beal Between Center and Griswold	42 Spaces
Single Family Streets	21 Spaces
Surface Lot at Beal and Hutton	257 Spaces
Spaces Provided	874 Spaces
Spaces Required by Development	579 Spaces
Spaces Committed to Public Parking	295 Spaces

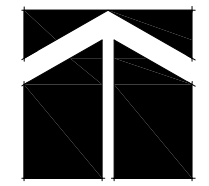
600' Radius From
Cady Street Parking Lot

Cady Lot Parking Replacement Plan

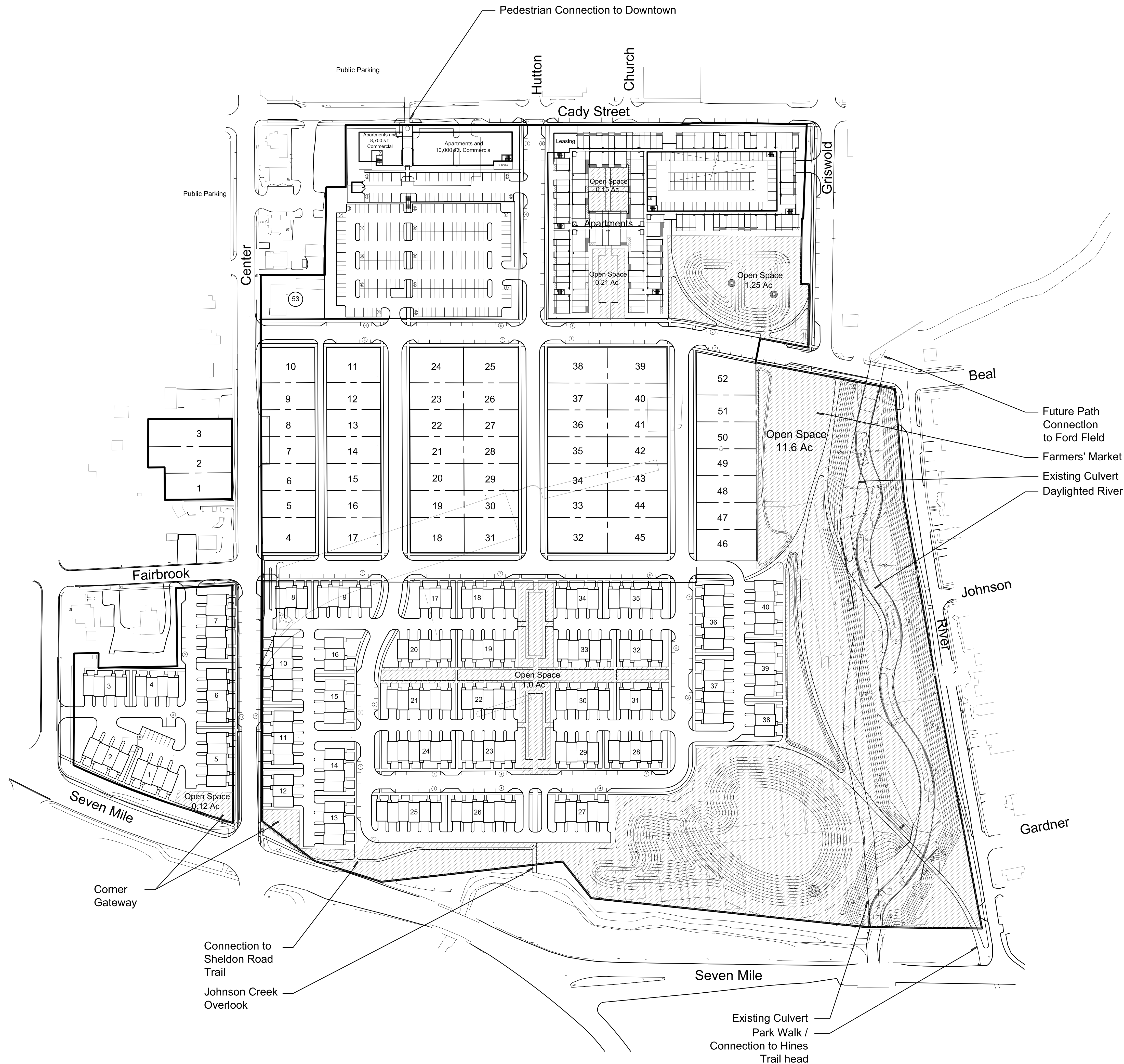
THE DOWNS

DOWNTOWN NORTHVILLE

Developer: Hunter Pasteur Homes
Farmington Hills, Michigan
Planner: Allen Design
Northville, Michigan



North
1"=50'
Sheet 3



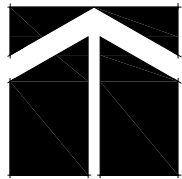
Open Space Summary	
Site Area	48.12 Acres
Open Space Shown	14.33 Acres
Open Space Percentage	29.78%
Open Space Excluding Detention	11.3 Acres
Open Space Percentage	23.5%
Open Space as Shown on Master Plan	9.31 Ac (19.3%)

Open Space Plan

THE DOWNS

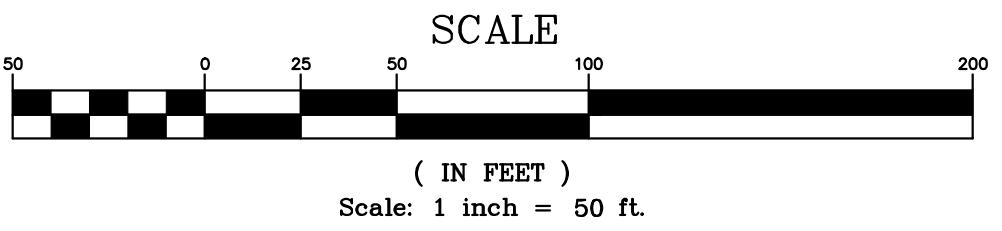
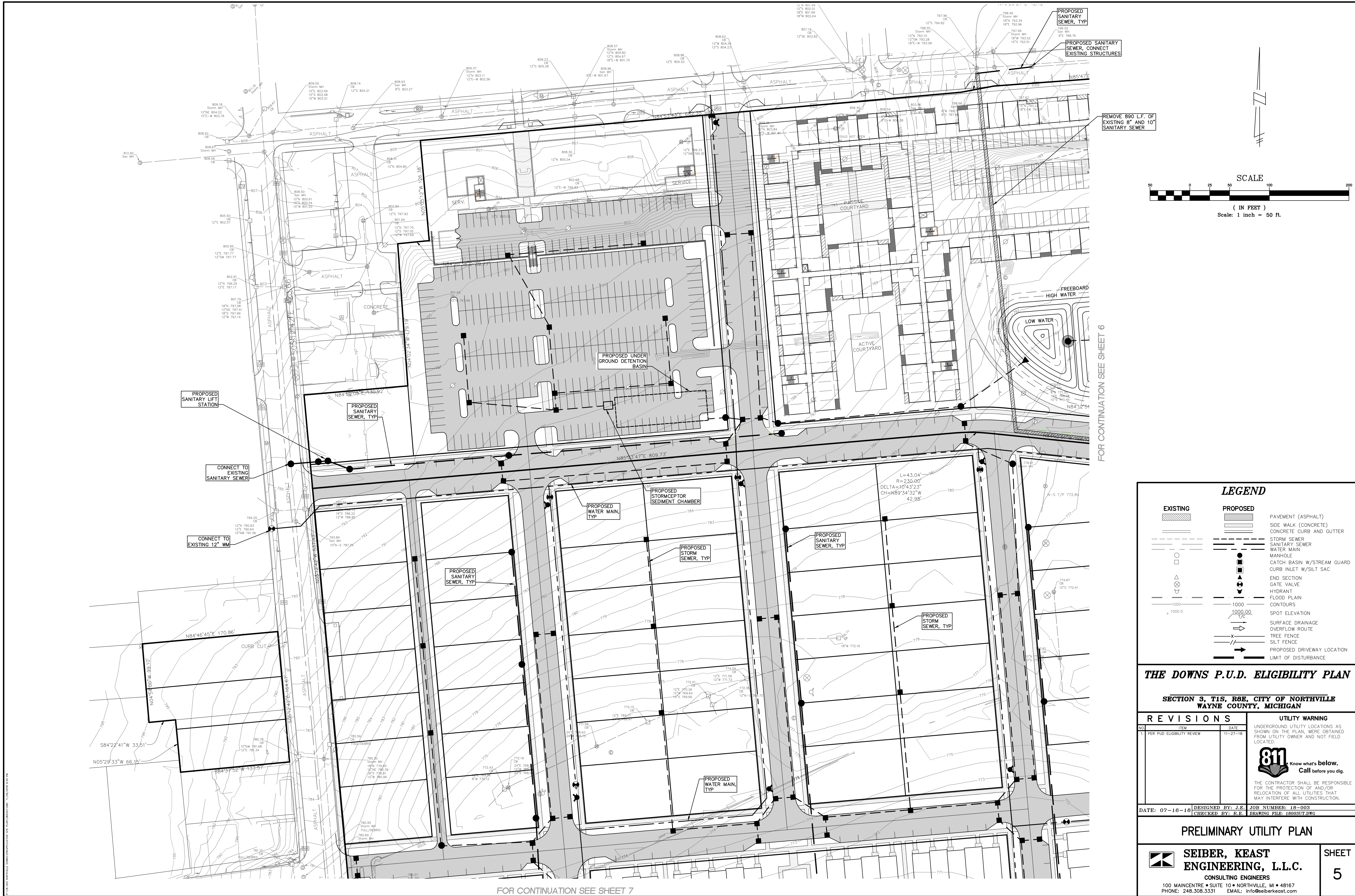
Developer: Hunter Pasteur Homes
Farmington Hills, Michigan
Planner: Allen Design
Northville, Michigan




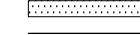

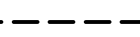




































November 27, 2018



North
1"=100'

Sheet 4



LEGEND		
EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		MANHOLE
		CATCH BASIN W/STREAM GUARD
		CURB INLET W/SILT SAC
		END SECTION
		GATE VALVE
		HYDRANT
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		LIMIT OF DISTURBANCE

THE DOWNS P.U.D. ELIGIBILITY PLAN

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	PER PUD ELIGIBILITY REVIEW	11-27-18

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

811 Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 07-16-18 DESIGNED BY: J.E. JOB NUMBER: 18-003
CHECKED BY: E.E. DRAWING FILE: 18003UT.DWG

PRELIMINARY UTILITY PLAN

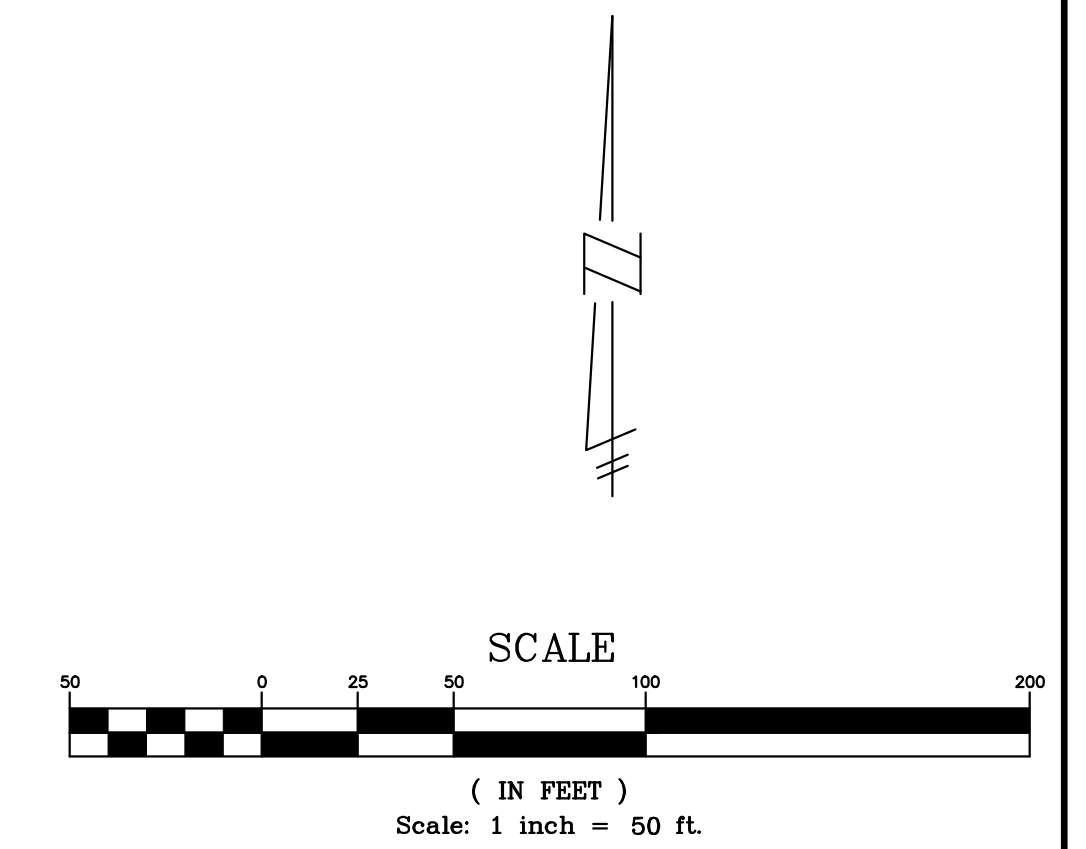
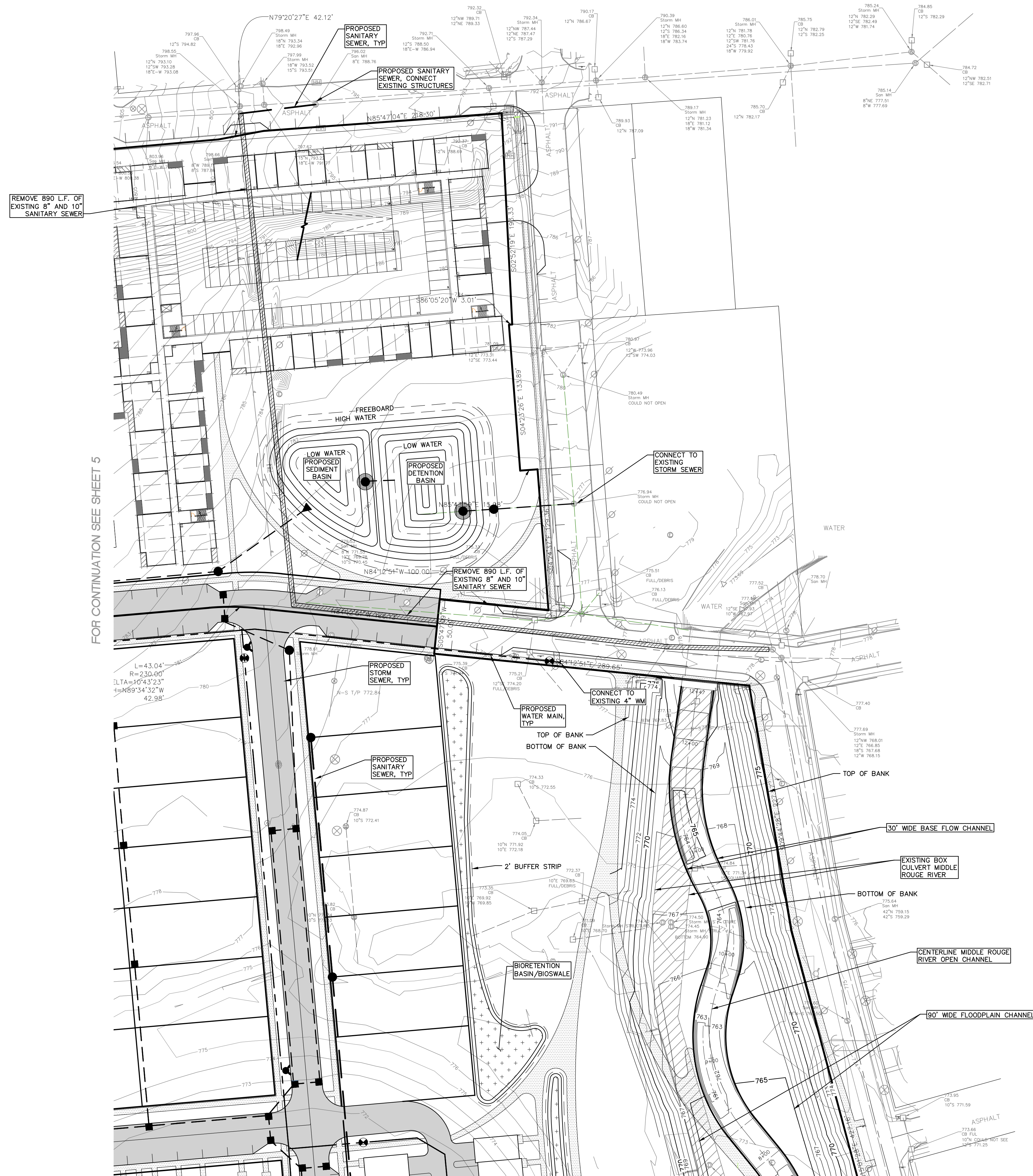
**SEIBER, KEAST
ENGINEERING, L.L.C.**
CONSULTING ENGINEERS
100 MAINCENTRE • SUITE 10 • NORTHVILLE, MI • 48167
PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

SHEET
5

18-003 NORTHVILLE DOWNSPURVE ELIGIBILITY PLAN 11/28/2018 4:50 PM

FOR CONTINUATION SEE SHEET 7

FOR CONTINUATION SEE SHEET 6

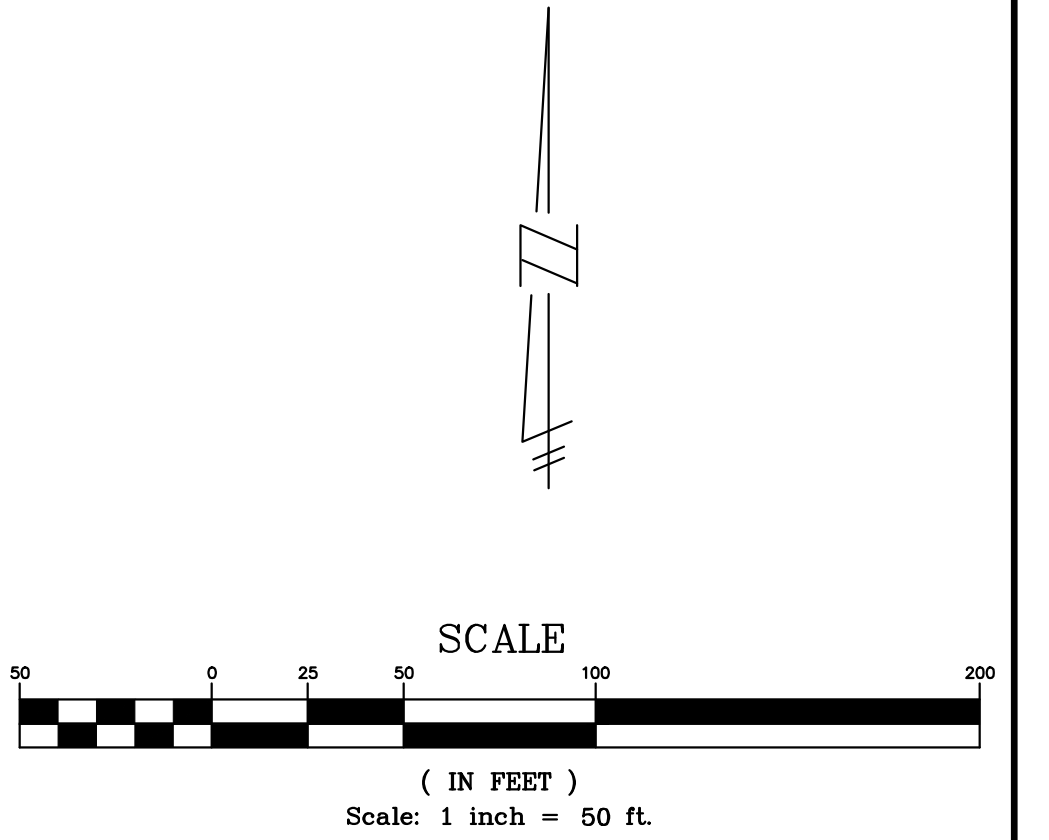


EXISTING

PROPOSED

	PAVEMENT (ASPHALT)
	SIDE WALK (CONCRETE)
	CONCRETE CURB AND GUTTER
	STORM SEWER
	SANITARY SEWER
	WATER MAIN
	MANHOLE
	CATCH BASIN W/STREAM GUARD
	CURB INLET W/SILT SAC
	END SECTION
	GATE VALVE
	HYDRANT
	FLOOD PLAIN
	CONTOURS
	SPOT ELEVATION
	SURFACE DRAINAGE
	OVERFLOW ROUTE
	TREE FENCE
	SILT FENCE
	PROPOSED DRIVEWAY LOCATION
	LIMIT OF DISTURBANCE

FOR CONTINUATION SEE SHEET 5



FOR CONTINUATION SEE SHEET 8

LEGEND	
EXISTING	PROPOSED

THE DOWNS P.U.D. ELIGIBILITY PLAN

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

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811 Know what's below.
Call before you dig.

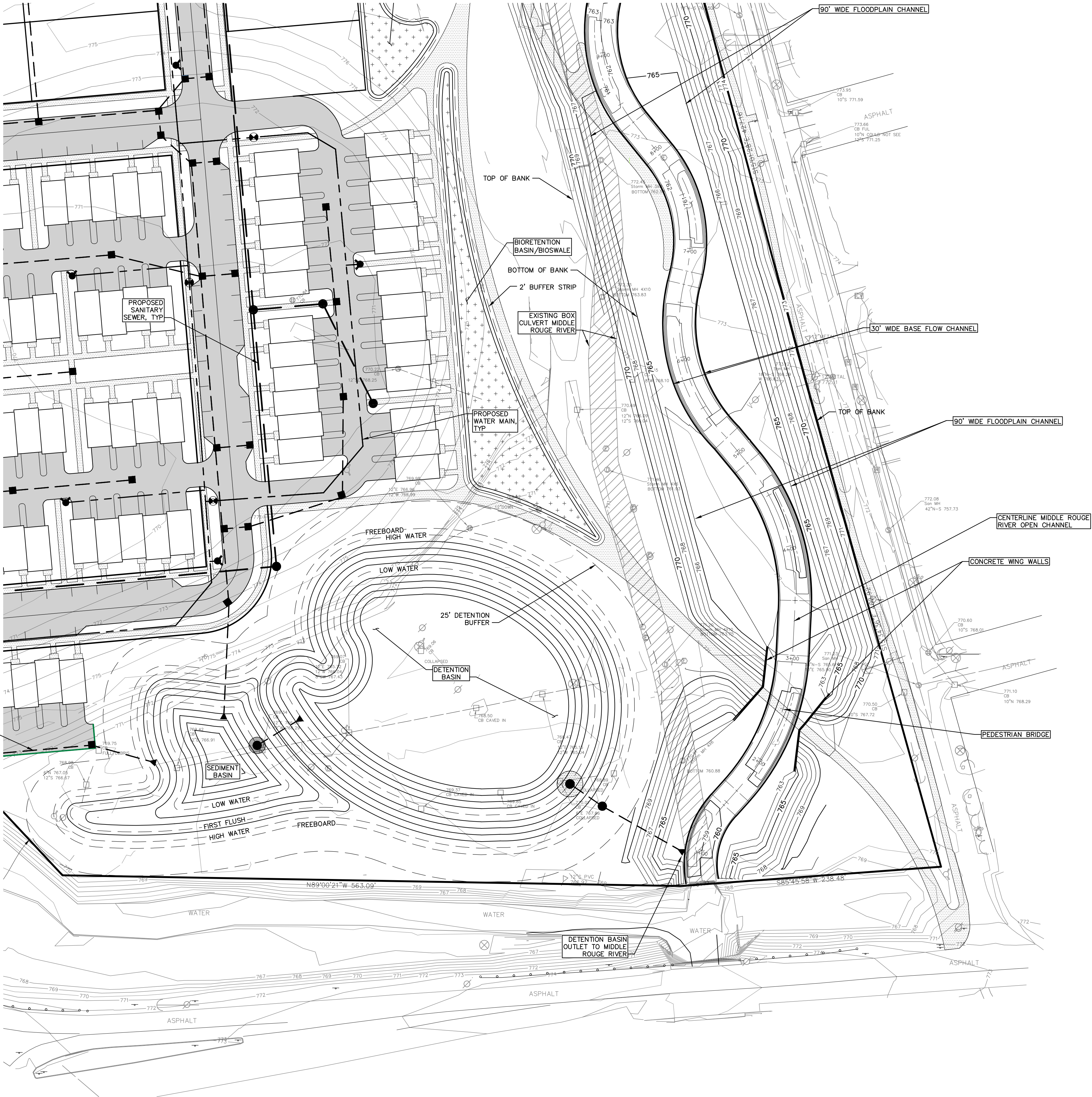
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 07-16-18 DESIGNED BY: J.E. JOB NUMBER: 18-003
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PRELIMINARY UTILITY PLAN

FOR CONTINUATION SEE SHEET 6

FOR CONTINUATION SEE SHEET 7



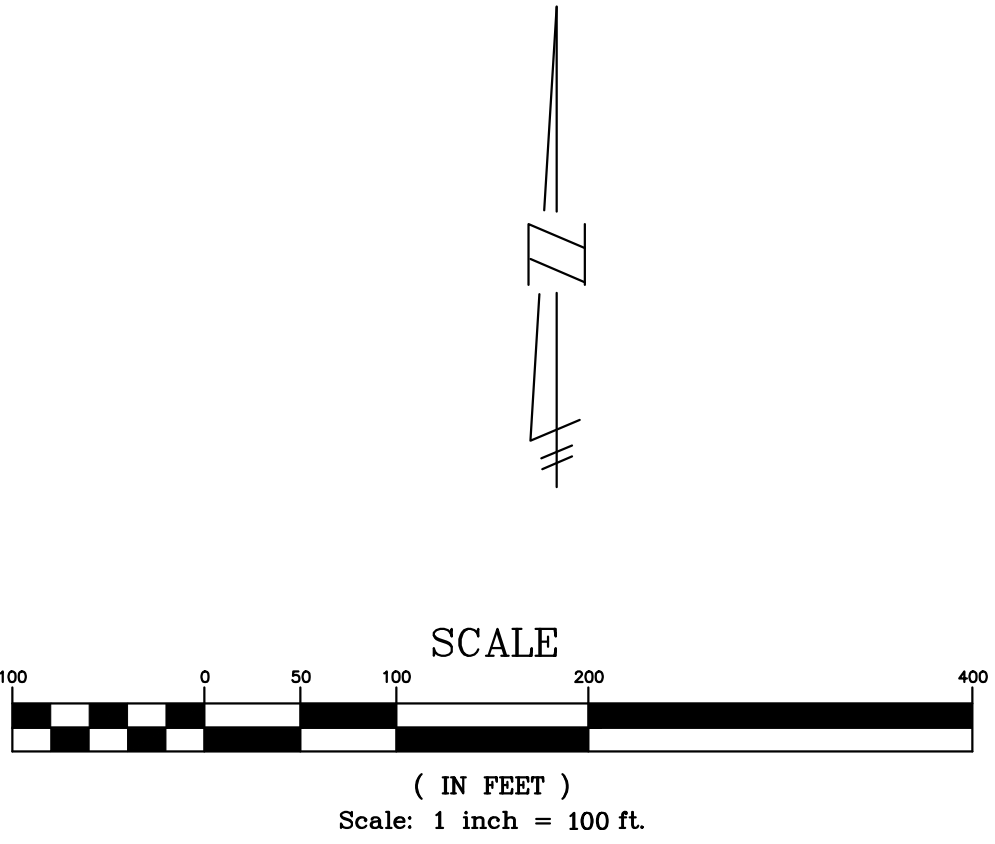
EXISTING 100 YEAR FLOOD
PLAIN LINE PER FEMA FIRM
PANEL: 26163C0036E
EFFECTIVE DATE: 02-02-2012

VACANT PARCEL
20.00 ACRES

POST CONSTRUCTION
FLOODWAY LINE

CENTERLINE OF MIDDLE
ROUGE RIVER OPEN
CHANNEL

POST CONSTRUCTION
100 YEAR FLOOD PLAIN
LINE



THE DOWNS P.U.D. ELIGIBILITY PLAN

**SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN**

REVISIONS

NO.	ITEM	DATE
1.	PER PUD ELIGIBILITY REVIEW	11-27-18

UTILITY WARNING



THE CONTRACTOR SHALL BE RESPONSIBLE
FOR THE PROTECTION OF AND/OR
RELOCATION OF ALL UTILITIES THAT
MAY INTERFERE WITH CONSTRUCTION.

DATE: 07-16-18

DESIGNED BY: J.E.
CHECKED BY: E.E.

JOB NUMBER: 18-003
DRAWING FILE: 18003PT.DWG

FLOOD PLAIN PLAN



**SEIBER, KEAST
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CONSULTING ENGINEERS

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PHONE: 248.308.3331 EMAIL: info@seiberkeast.com

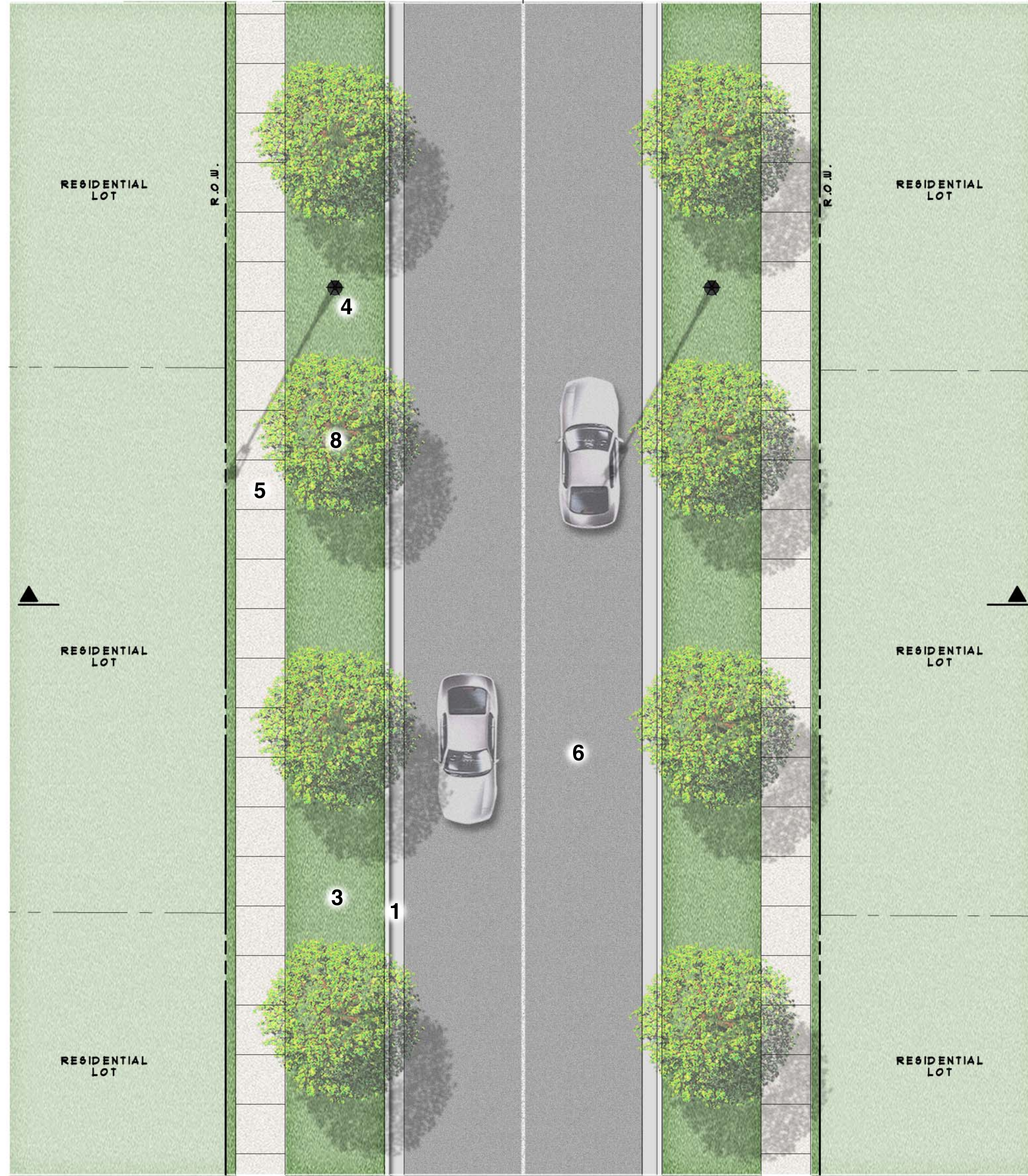
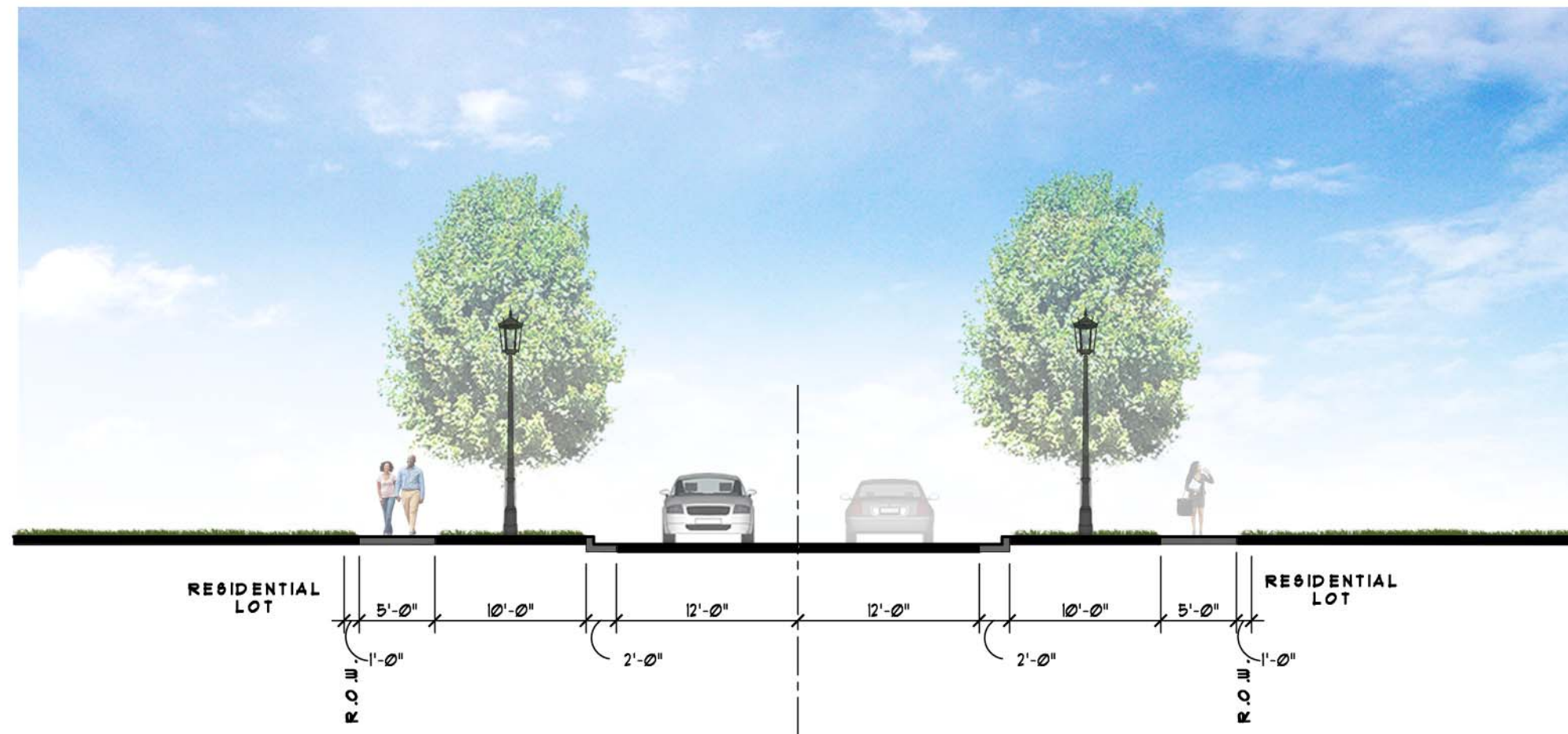
SHEET

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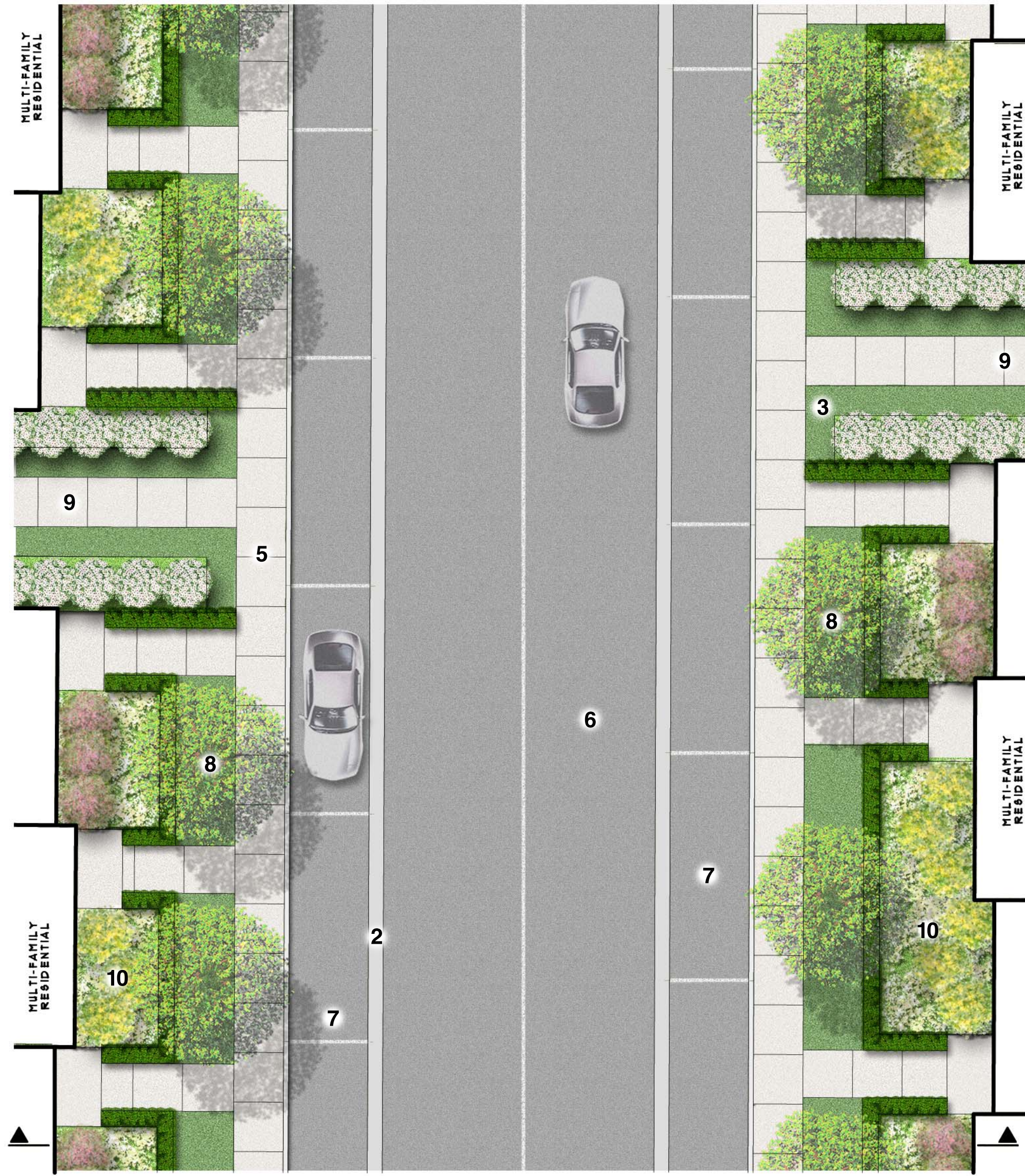
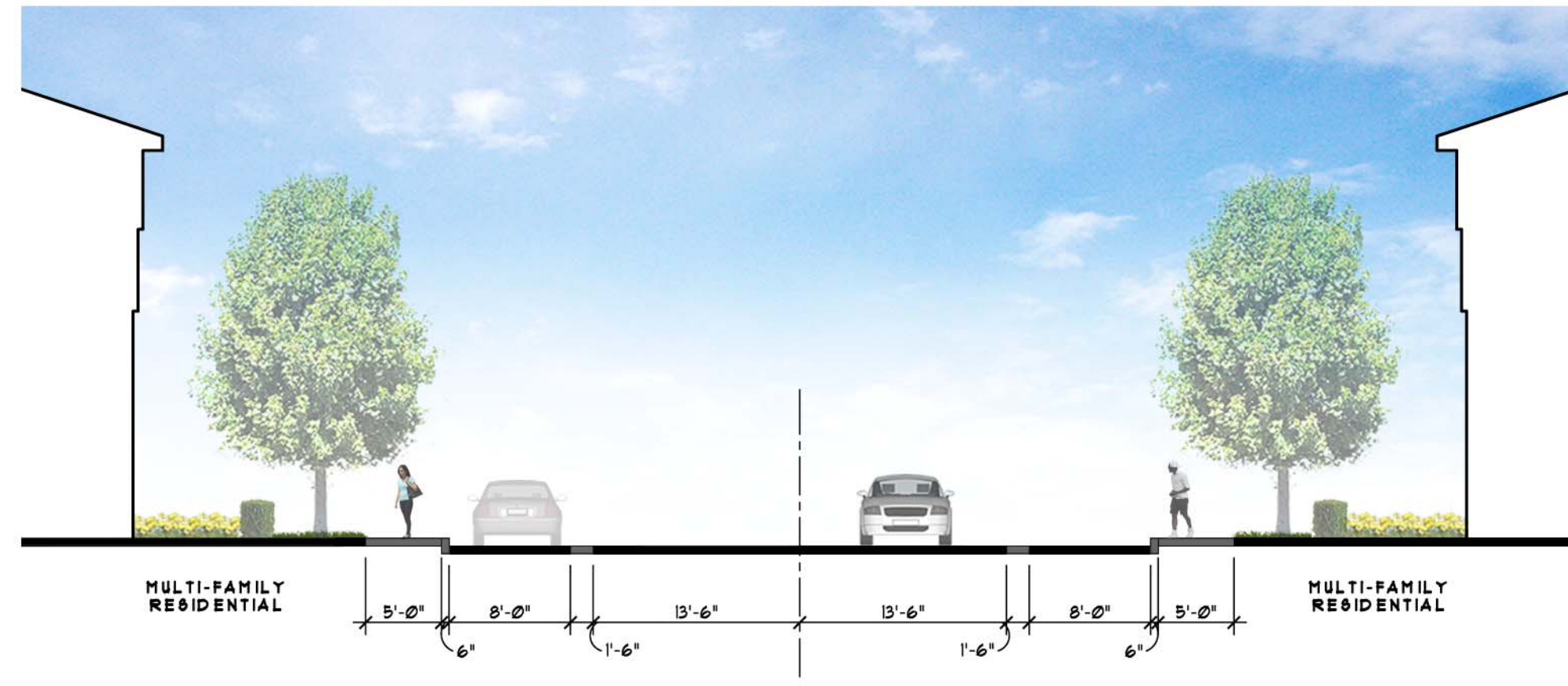
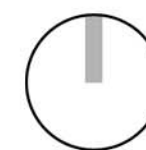


Note Key

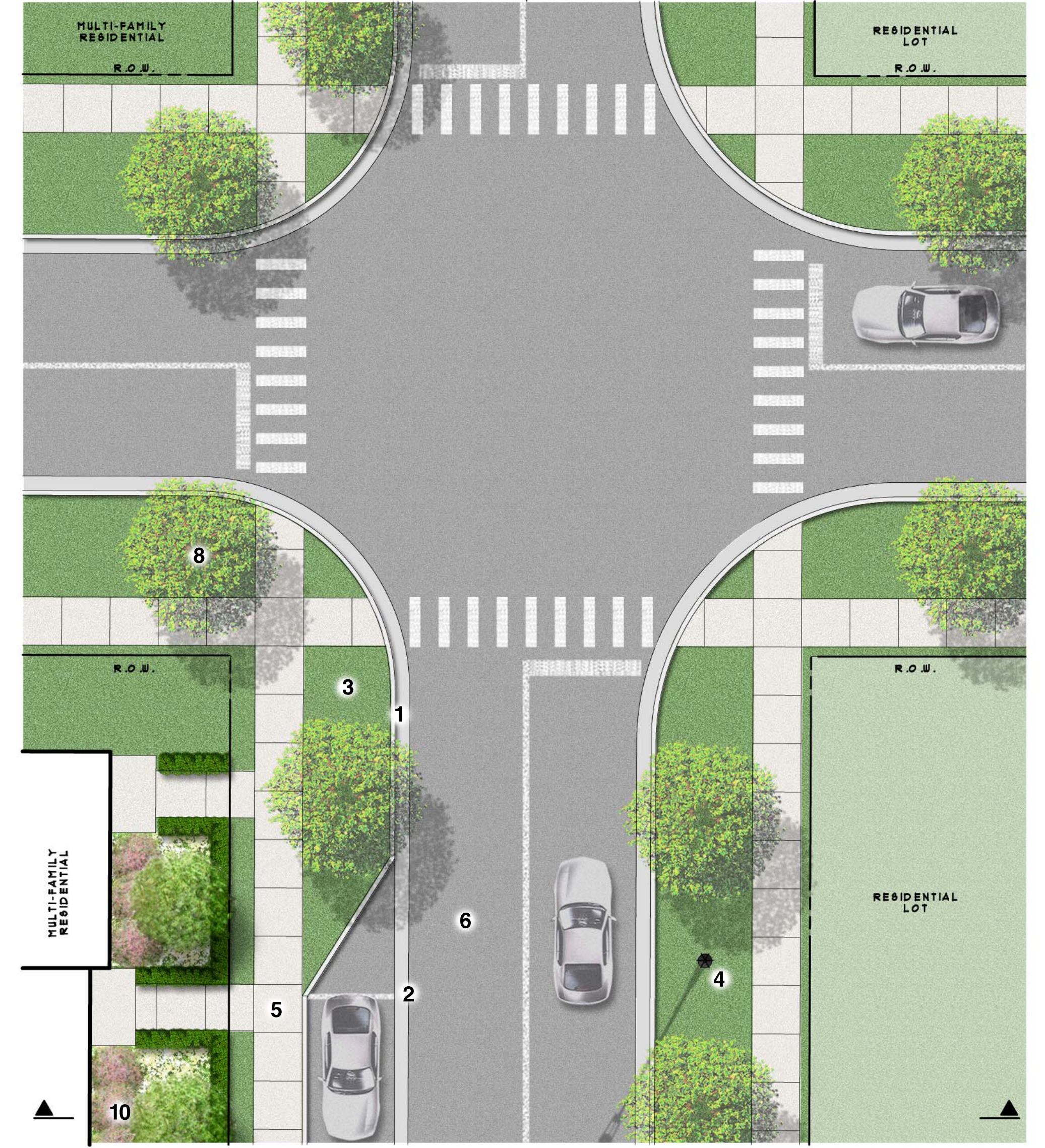
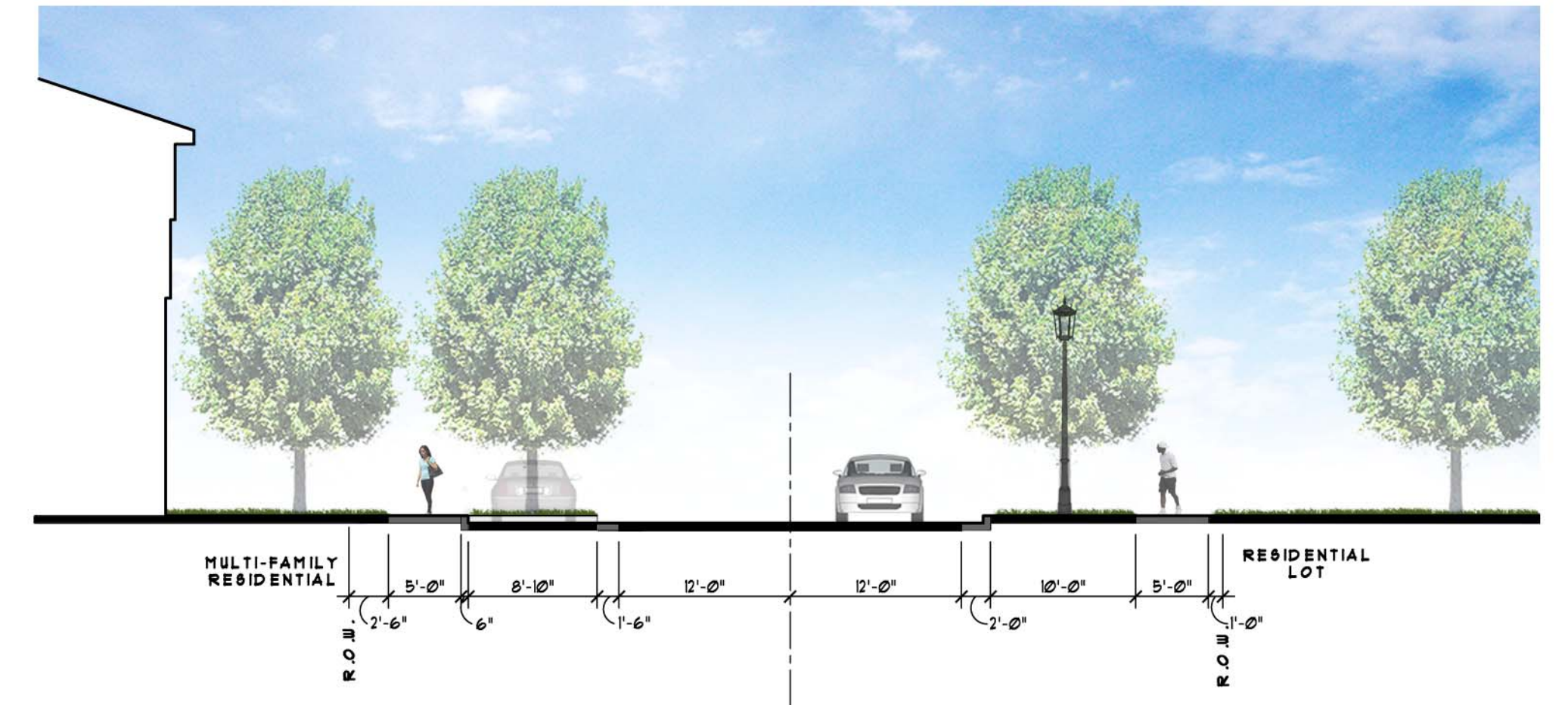
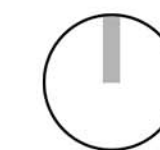
1. Pedestrian River Access
2. Existing Pedestrian Connection to Downtown
3. Substation
4. Mid-Block Pedestrian Connectors
5. Townhome Unit Landscape
6. Landscape Enhancement at Parking Lots
7. Seven Mile / Center Street Gateway
8. Existing Wooded Area and Stream
9. Pocket Parks
10. North South Pedestrian Link
11. Seven Mile / River Street Gateway (River Park Entrance)
12. Native Planted Side Slopes
13. Bio Swales
14. River Park Pedestrian Spine with Lighting and Benches
15. Existing Underground Stream Culvert
16. Meadow Planting
17. Pond Edge Planting
18. Detention Pond
19. Forebay
20. Pedestrian Connection to Neighborhood
21. River Park Gateway Icon
22. Pedestrian Connection to Hines Trailhead
23. New River Course, Min. 30' Wide Bankfull Channel and 90' Wide Floodplain
24. New Pedestrian Connection to Town Square Plaza
25. Pedestrian Bridge



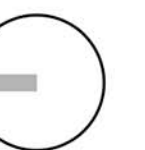
A Typical Single Family Residential Street



B Typical Townhome Residential Street



C Typical Street Intersection and Pedestrian Crossing



Note Key

- | | | |
|-----------------------------|---------------------------------------|--|
| 1. Concrete curb and gutter | 5. Concrete sidewalks | 9. Pedestrian connector |
| 2. Concrete ribbon curb | 6. Asphalt paving | 10. Townhome typical landscape (street side) |
| 3. Irrigated lawn | 7. On street parking | |
| 4. Pedestrian pole lighting | 8. Shade trees (street trees) typical | |



NORTHVILLE DOWNS TRAFFIC IMPACT STUDY

CITY OF NORTHVILLE, MICHIGAN

JUNE 20, 2018

REVISED NOVEMBER 26, 2018



PREPARED FOR:



Hunter Pasteur
HOMES

32300 NORTHWESTERN HWY #125,
FARMINGTON HILLS, MI 4833

PREPARED BY:



27725 STANSBURY BLVD., SUITE 195
FARMINGTON HILLS, MI 48834

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Agency Review	Date	Comments
OHM Advisors	9/10/2018	

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REFERENCES

- AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO). (2011). *A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS*. WASHINGTON DC.
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1 INTRODUCTION

This report presents the results of a Traffic Impact Study (TIS) for the proposed development in the City of Northville, Michigan. The project site is located generally in the northeast quadrant of the Sheldon Avenue/Center Street and Hines Drive/7 Mile Road intersection on the property that was previously occupied by Northville Downs, as shown on **Figure 1**. The proposed development includes the construction of mixed-use office/commercial and residential units. The development includes site access to Cady Street, Griswold Street, Beal Street, Fairbrook Street, and Center Street.

The scope of this study was developed based on Fleis & VandenBrink's (F&V) knowledge of the study area, understanding of the development program, accepted traffic engineering practice and information published by the Institute of Transportation Engineers (ITE). In addition, the City of Northville and the Wayne County Department of Public Service (WCDPS) were contacted regarding the scope of work for this study. The study analyses were completed using Synchro and SimTraffic (Version 10) traffic analysis software. The study intersections analyzed for this TIS include:

- Main Street & Center Street,
- Main Street & Hutton Street,
- Main Street & Griswold Street,
- Cady Street & Center Street,
- Cady Street & Hutton Street,
- Cady Street & Griswold Street,
- Beal Street & Griswold Street,
- Beal Street & River Street,
- Beal Street & Northville Road (S. Main Street),
- Center Street & Fairbrook Street,
- 7 Mile Road/Hines Drive & Center Street/Sheldon Avenue,
- 7 Mile Road & Hines Drive,
- 7 Mile Road & River Street,
- N. 7 Mile Road & Northville Road (S. Main Street),
- S. 7 Mile Road & Northville Road, and
- The proposed site driveway intersections.

The purpose of this study is to identify the traffic related impacts, if any, of the proposed development project on the adjacent road network. Specific tasks undertaken for this study include the following:

1. Obtain and review the proposed site plan which includes the proposed land use, density, and desired site access locations.
2. Provide an analysis of the traffic-related impacts of the proposed development at the study intersections.
3. Conduct a site visit and collect a field inventory for the site locations. The inventory will include: the existing geometries, lane use, and traffic control at the study intersections.
4. Collect weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM) peak period turning movement counts at the study intersections. Weekday counts will be collected on a day in which events are not being held at Northville Downs.
5. Identify the existing AM and PM peak hour traffic volumes at the study intersections based on the traffic count data collected.
6. Calculate the **Existing** vehicle delays, Levels of Service (LOS), and vehicle queues at the study intersections based on the methodologies of the *Highway Capacity Manual, 6th Edition* using Synchro (Version 10) traffic analysis software.
7. Calculate the future background traffic volumes based on an appropriate traffic growth rate to the project build-out year and the applicable background developments (outside of the study area) in the immediate vicinity of the project area as provided by City of Northville Planning Department for use in this study.

8. Calculate the **Background (without the proposed development)** vehicle delays, LOS, and vehicle queues at the study intersections and identify improvements (if any) that would be required to mitigate any unacceptable background traffic conditions.
9. Forecast the number of AM and PM peak hour trips that would be generated by the proposed development based on data published by the Institute of Transportation Engineers (ITE) in *Trip Generation, 10th Edition* and the *ITE Trip Generation Handbook, 3rd Edition*.
10. Assign the trips that would be generated by the proposed development to the adjacent road network based on existing traffic patterns and methodologies outlined in the *ITE Transportation and Land Development, 2nd Edition*.
11. Combine the site-generated traffic assignments with the background traffic forecasts to establish the Future AM and PM peak hour traffic volumes for each alternative.
12. Calculate the **Future (with the proposed development)** vehicle delays, LOS, and vehicle queues at the study intersections.
13. Evaluate the applicable traffic signal warrants using the projected traffic volumes, the traffic volume data collected, and the standards published in the current *Michigan Manual on Uniform Traffic Control Devices (MMUTCD)*.
14. Identification of improvements (if any) for the study road network that would be required to accommodate the site-generated traffic volumes, including the potential need for auxiliary taper/lanes according to City of Northville standards for all scenarios.

Sources of data for this study include traffic counts conducted by F&V subconsultant Traffic Data Collection, Inc. (TDC), information provided by the developer, City of Northville, Wayne County Department of Public Services (WCDPS), and ITE. All background information is provided in **Appendix A**.



FIGURE 1
SITE LOCATION MAP

NORTHVILLE DOWNS TIS - NORTHVILLE, MI

LEGEND

 SITE LOCATION


NORTH
SCALE: NOT TO SCALE

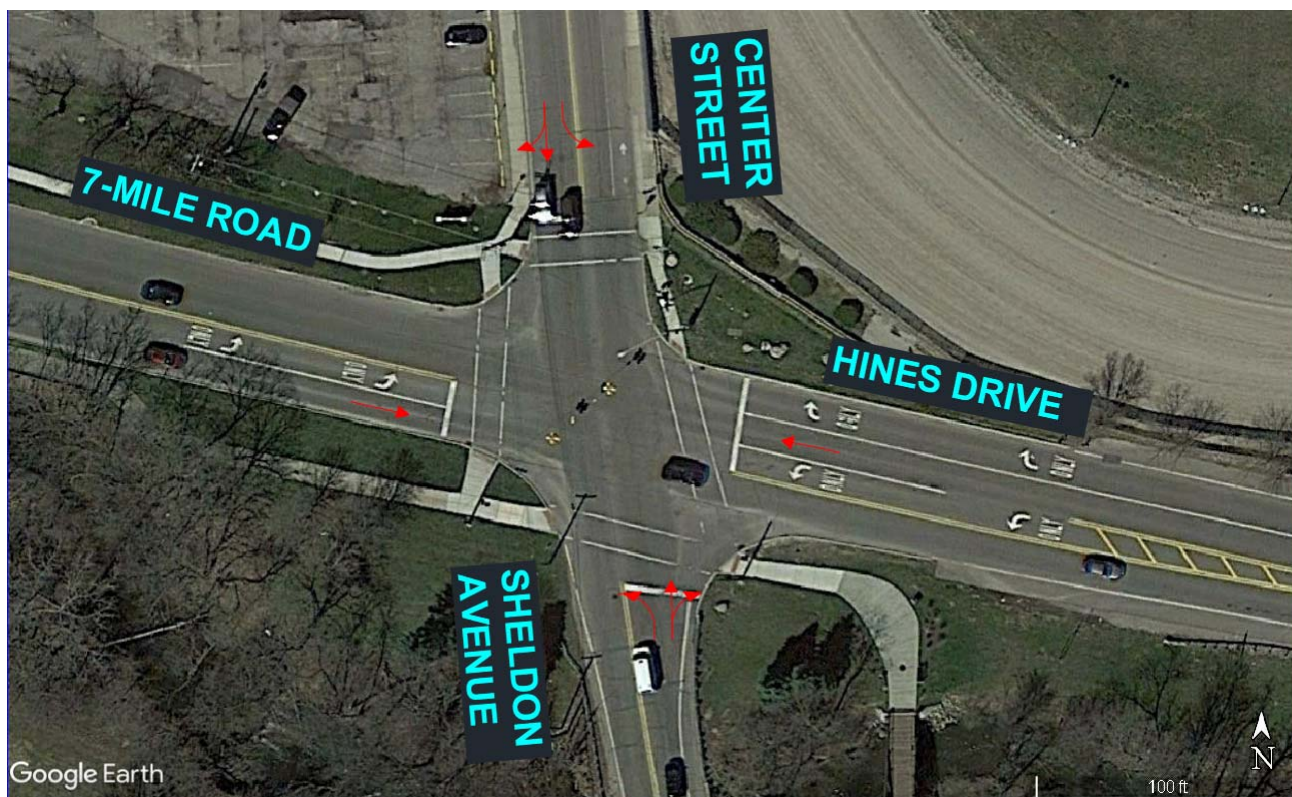


2 BACKGROUND DATA

2.1 EXISTING ROAD NETWORK

Vehicle transportation for the proposed development is provided via Center Street, Cady Street, and Beal Street. Regional transportation is provided via I-96, I-275, and M-14; with access to these routes within 5 miles of the project site location. The lane use and traffic control at the study intersections are shown on **Figure 2** and the study roadways are further described below. For the purposes of this study, all minor streets and driveways are assumed to have an operating speed of 25 miles per hour (mph).

Center Street / Sheldon Avenue runs in the north and south directions. The study section of roadway north of Hines Drive/7 Mile Road is known as Center Street, has an Average Annual Daily Traffic (AADT) volume of 13,166 vehicles per day (SEMCOG 2010), and is under the jurisdiction of the City of Northville. The section of roadway south of 7 Mile Road is known as Sheldon Avenue, has an Average Annual Daily Traffic (AADT) volume of 20,555 vehicles per day (MDOT 2014), and is under the jurisdiction of Wayne County. The study section of roadway has a posted speed limit of 35 mph south of Cady Street and a posted speed limit of 25 mph north of Cady Street. The portion of roadway north of Cady Street has on-street parking and the portion south of Cady Street has on-street bike lanes. The roadway is a typical two-lane cross-section, with one lane in each direction. At its intersection with Hines Drive/7 Mile Road, the roadway is striped as a single shared lane for northbound and southbound traffic. However, vehicles on the northbound and southbound approaches utilize the available pavement width as a short left-turn lane and a shared through/right-turn lane; this is further depicted in the aerial image below. The functional classification of Center Street / Sheldon Avenue through the study area is *Principal Arterial*.

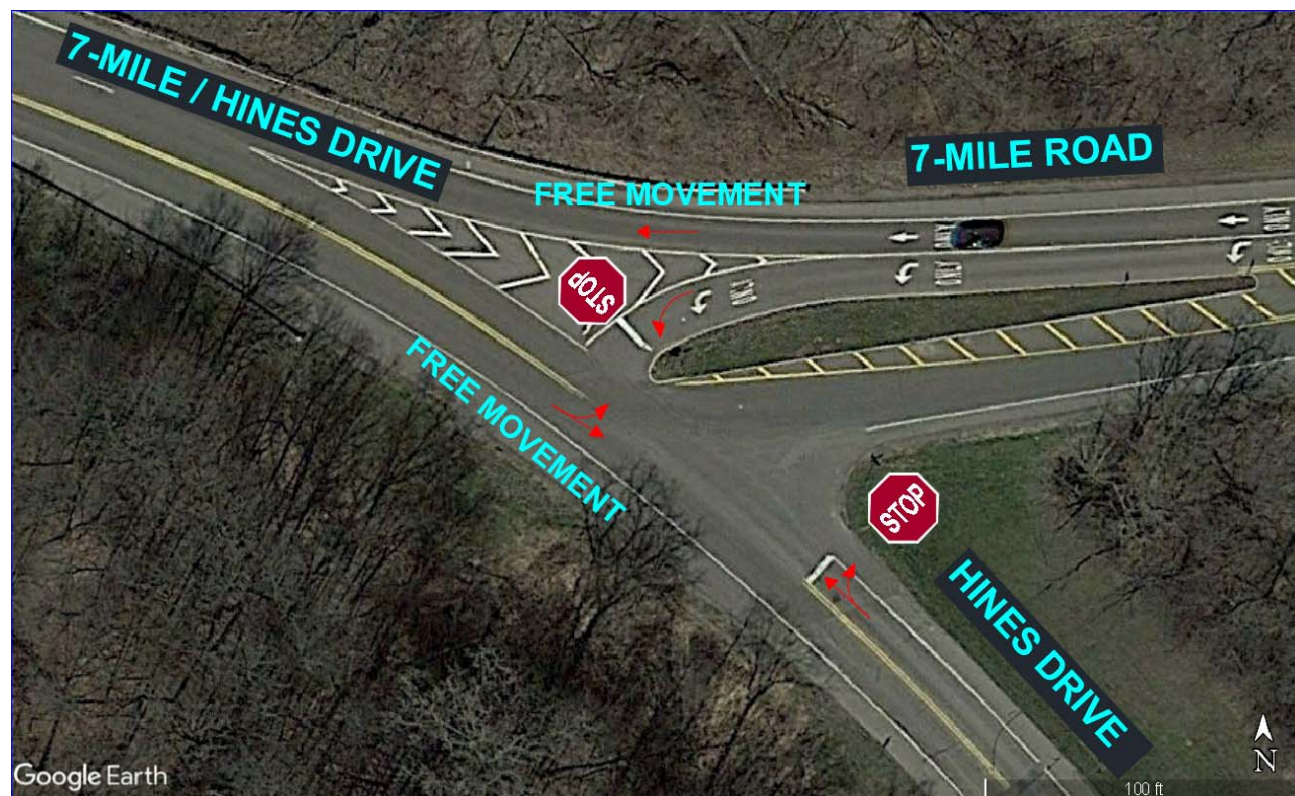


Main Street runs in the east and west directions and has an AADT volume of 7,337 vehicles per day (MDOT 2006). The study section of Main Street is under the jurisdiction of the City of Northville and has a posted speed limit of 25 mph. The roadway is a two-lane cross-section with one lane in each direction and on-street parking on both sides of the road. On-street parking typically ends prior to an intersection, in order to provide short (25-50 ft typical) right-turn lanes at the intersections. The section of roadway east of Griswold Street becomes S. Main Street; for the purposes of this report S. Main Street is labeled Northville Road, specifically at the intersection with Beal Street. The functional classification of Main Street through the study area is *Minor Arterial*.

Northville Road runs in the north and south directions and has an AADT volume of 15,900 vehicles per day (SEMCOG 2009). The study section of Northville is under the jurisdiction of the WCDPS and has a speed limit that varies from 25mph to 40mph. At the intersection of Beal Street and Northville Road (S. Main Street), the speed limit of Northville Road is 25mph in both directions. At the intersection of N. 7 Mile Road and Northville Road (S. Main Street), the speed limit of Northville Road is 35mph in both directions. At the intersection of S. 7 Mile Road and Northville Road, the speed limit of Northville Road in the northbound and southbound directions is 40mph and 35mph, respectively. The roadway is a four-lane cross-section with two lanes in each direction; the roadway begins undivided at S. 7 Mile Road, splits and becomes median separated at N. 7 Mile Road, then reconnects just past Beal Street. At the intersection of Northville Road (S. Main Street) and N. 7 Mile Road, a 30-ft median crossing is provided with yield control for the westbound and eastbound movements to and from 7 Mile Road. The functional classification of Northville Road through the study area is *Minor Arterial*.

7 Mile Road runs in the east and west directions and has an AADT volume of 7,035 vehicles per day (SEMCOG 2009). The study section of 7 Mile Road is under the jurisdiction of WCDPS and has a posted speed limit of 35 mph. The study section of 7 Mile Road is split at Northville Road; for the purpose of this report, the section to the east of Northville Road will be referred to as S. 7 Mile Road. For the intersection of Northville Road and the west portion of 7 Mile Road, the intersection will be referred to as Northville Road and N. 7 Mile Road. The section of roadway to the west is a typical two-lane cross-section with one lane in each direction. The section of roadway to the east is a typical three-lane cross-section, with one lane in each direction and a center two-way left-turn lane. The functional classification of 7 Mile Road through the study area is *Minor Arterial*.

Edward N. Hines Drive generally runs in the north and south directions; however, the study section of Edward N. Hines Drive runs in the east/southeast and west/northwest directions. The study section of Hines Drive is under the jurisdiction of WCDPS, has a posted speed limit of 40 mph south of 7 Mile Road, and has a posted speed limit of 35 mph north of 7 Mile Road. The section of Hines Drive between Center Street and 7 Mile Road has an AADT volume of 10,200 vehicles per day (SEMCOG 2009); the section south of 7 Mile Road has an AADT volume of 2,933 vehicles per day (MDOT 2012). The roadway is a typical two-lane cross-section with one lane in each direction. The functional classification of Edward N. Hines Drive through the study area is *Principal Arterial*. The figure below further depicts the intersection of Edward N. Hines Drive and 7 Mile Road.



Cady Street runs in the east and west directions. The study section of Cady Street is under the jurisdiction of the City of Northville and has a posted speed limit of 25 mph. The roadway has a typical two-lane cross-section with one lane in each direction and has on-street parking on both sides of the road between Hutton Street and Griswold Street. The functional classification of Cady Street through the study area is *Local Road*.

Griswold Street generally runs in the north and south directions and has an AADT volume of 7,018 vehicles per day (MDOT 2012). The study section of Griswold Street has a posted speed limit of 35 mph. Griswold Street is under the jurisdiction of the WCDPS to the north of Main Street and under the jurisdiction of the City of Northville to the south. The roadway is a typical two-lane cross-section with one lane in each direction and has on-street parking, on the west side of the road, south of Main Street. The functional classification of Griswold Street is classified as *Minor Arterial* to the north of Main Street and *Local Road* to the south.

Hutton Street runs in the north and south directions and is under the jurisdiction of the City of Northville with a posted speed limit of 25 mph. The roadway has a typical two-lane cross-section with one lane in each direction and has on-street parking north of Main Street, on both sides of the roadway. The functional classification of Hutton Street through the study area is *Local Road*.

River Street runs in the north and south directions. The study section of River Street is under the jurisdiction of the City of Northville and has a posted speed limit of 25 mph. The roadway has a typical two-lane cross-section with one lane in each direction. The functional classification of River Street through the study area is *Local Road*.

Beal Street runs in the east and west directions and is under the jurisdiction of the City of Northville with a posted speed limit of 25 mph. The roadway has a typical two-lane cross-section with one lane in each direction. The functional classification of Beal Street through the study area is *Local Road*.

Fairbrook Street runs in the east and west directions and is under the jurisdiction of the City of Northville with a posted speed limit of 25 mph. The roadway has a typical two-lane cross-section with one lane in each direction and has on-street parking on both sides of the roadway. The functional classification of Fairbrook Street through the study area is *Local Road*.

2.2 EXISTING TRAFFIC VOLUMES

Existing traffic volume data at the study intersections were collected by F&V subconsultant TDC on May 15, 2018 and October 18, 2018 for the Weekday AM (7:00 AM to 9:00 AM) and PM (4:00 PM to 6:00 PM). The data collection for this site was intentionally taken on a day in which events were not being held at the current Northville Downs racetrack to avoid any additional traffic generated by the current facility. These data were used as a baseline to establish the current peak hour traffic volumes for the analysis of existing traffic conditions. During collection of the manual intersection turning movement counts, pedestrian data and commercial truck percentages were recorded and used in the traffic analysis. Peak Hour Factors (PHFs) were also calculated for each study intersection approach.

The peak hour volumes for each intersection were utilized for this study and the volumes were balanced upward through the study network. At locations where access is provided between study intersections, “dummy” intersections were used to account for sink and source volumes, and through volumes were carried along the main study roadways. The AM and PM peak hours of existing network traffic were identified to generally occur between 8:00 AM to 9:00 AM and 5:00 PM to 6:00 PM, respectively, for a typical weekday. The traffic volume data are included in **Appendix A** and the existing peak hour traffic volumes are summarized on **Figure 3**.

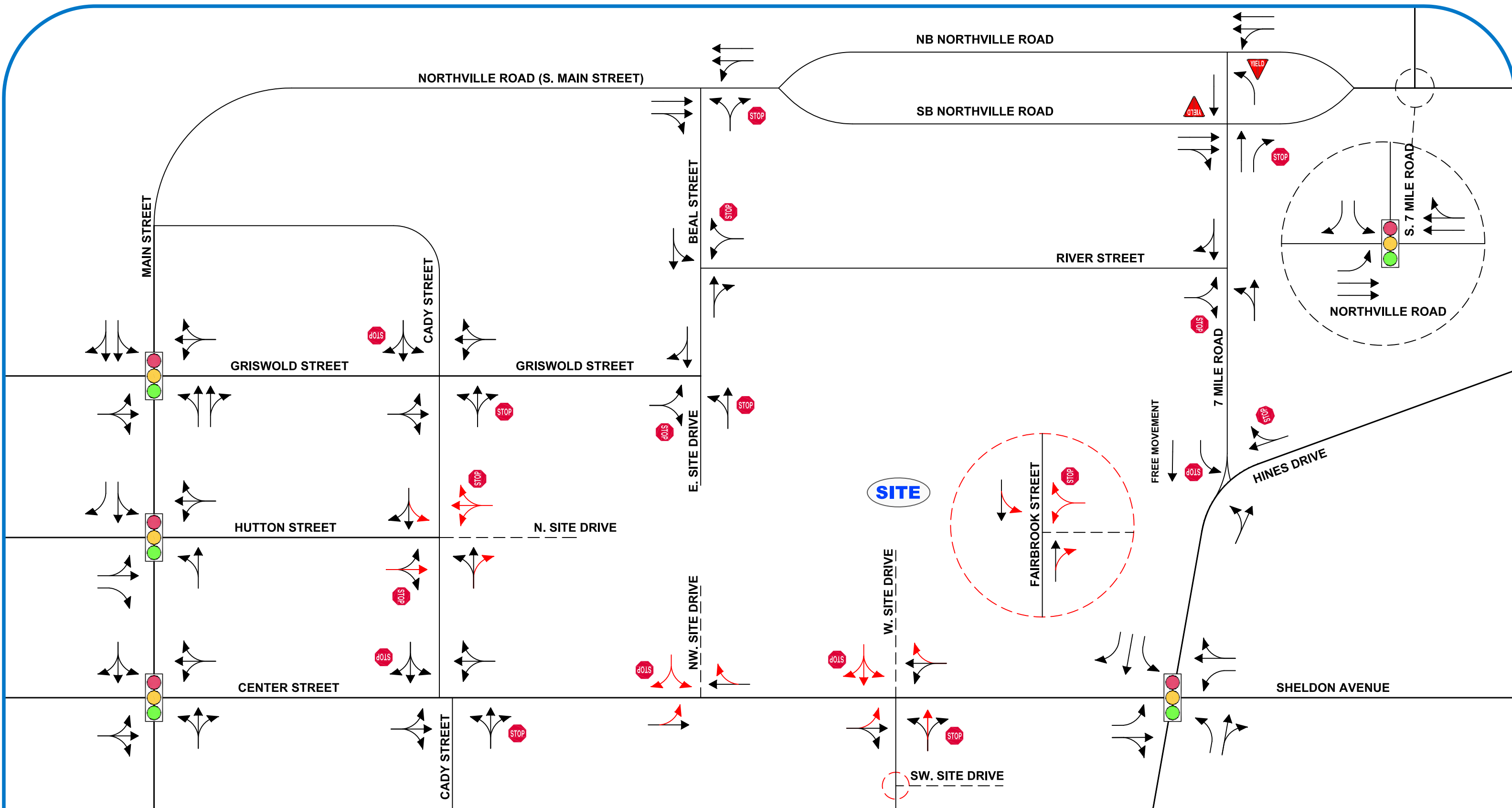


FIGURE 2
LANE USE AND TRAFFIC
CONTROL
 NORTHVILLE DOWNS TIS - NORTHVILLE, MI

LEGEND

	ROADS		EXISTING LANE USE
	PROPOSED ROADS		PROPOSED LANE USE
	SIGNALIZED INTERSECTION		
	UNSIGNALIZED INTERSECTION		

NORTH
 SCALE: NOT TO SCALE



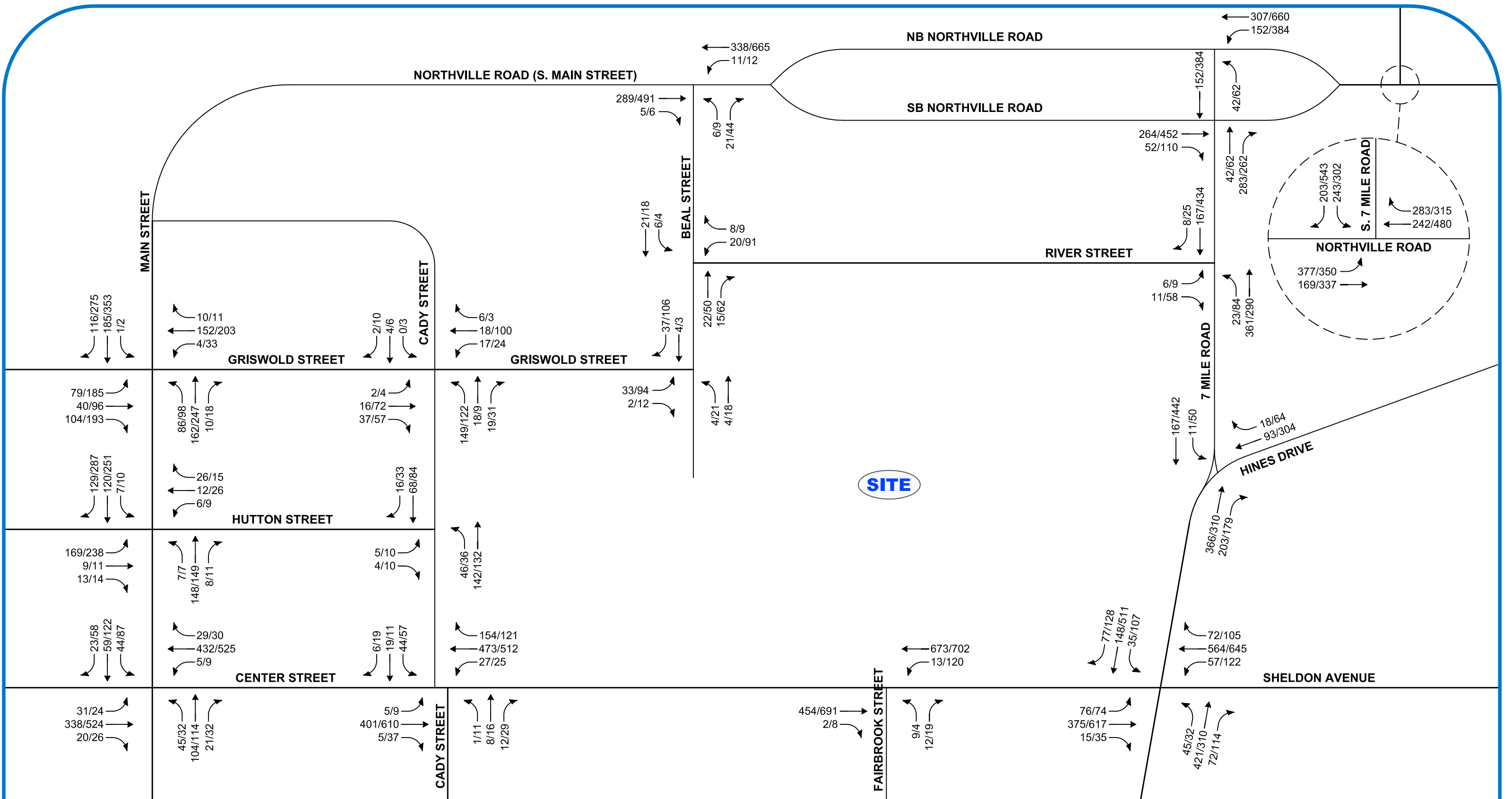
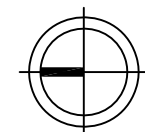


FIGURE 3
EXISTING TRAFFIC
VOLUMES

NORTHVILLE DOWNS TIS - NORTHVILLE, MI

LEGEND

- ROADS
- PROPOSED ROADS
- TRAFFIC VOLUMES (AM/PM)
- SIGNALIZED INTERSECTION
- UNSIGNALIZED INTERSECTION



NORTH
SCALE: NOT TO SCALE



3 ANALYSIS

3.1 EXISTING CONDITIONS

The existing AM and PM peak hour vehicle delays and Levels of Service (LOS) were calculated at the study intersections using Synchro (Version 10) traffic analysis software. The results of the analysis of existing conditions were based on the existing lane use and traffic control shown on **Figure 2**, the existing traffic volumes shown on **Figure 3**, and the methodologies presented in the Highway Capacity Manual (HCM) 6th Edition.

There are several study intersections where the traffic control used are not supported by the HCM 6th Edition analysis methodology; therefore, HCM2000 and SimTraffic simulation delays were determined to be more appropriate for use at these intersections. All remaining study intersections and driveways were analyzed using the HCM 6th Edition methodology. These intersections are summarized below:

- Griswold Street & Beal Street: The two-way stop control (along the eastbound and southbound approaches) for the T-intersection is not supported by the HCM. Therefore, SimTraffic delays were utilized.
- 7 Mile Road & Hines Drive: The stop control for northbound Hines Drive and the westbound left-turn movement for 7 Mile Road is not supported by the HCM. Therefore, SimTraffic delays were utilized.
- Northbound and Southbound Northville Road & N. 7 Mile Road: The yield control for the intersection of N. 7 Mile Road with NB Northville Road and SB Northville Road is not supported by HCM 6th edition. Therefore, HCM 2000 analysis was utilized.

Descriptions of LOS “A” through “F” as defined in the HCM are provided in **Appendix B** for signalized and unsignalized intersections. Typically, LOS D is considered acceptable, with LOS A representing minimal delay, and LOS F indicating failing conditions. The results of the analysis of existing conditions are presented in **Appendix B** and are summarized in **Table 1**.

Table 1: Existing Intersection Operations

Intersection	Control	Approach	Existing Conditions 2018			
			AM Peak		PM Peak	
			Delay (s/veh)	LOS	Delay (s/veh)	LOS
1 Main Street & Center Street	Signalized	EB	19.9	B	20.1	C
		WB	18.9	B	19.2	B
		NB	9.8	A	10.0	A
		SB	8.6	A	10.2	B
		Overall	11.9	B	12.9	B
2 Main Street & Hutton Street	Signalized	EBTL	0.3	A	0.3	A
		EBR	0.0	A	0.0	A
		WBTL	6.7	A	7.6	A
		WBR	7.1	A	9.1	A
		NB	17.2	B	19.1	B
		SBTL	21.4	C	69.3	E
		SBR	16.5	B	16.5	B
		Overall	10.3	B	21.9	C
3 Main Street & Griswold Street	Signalized	EBTL	12.0	B	15.5	B
		EBTR	10.1	B	11.0	B
		WBTL	10.1	B	11.8	B
		WBTR	10.5	B	12.5	B
		NB	15.0	B	16.4	B
		SB	16.8	B	29.3	C
		Overall	12.7	B	17.5	B

	Intersection	Control	Approach	Existing Conditions 2018			
				AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS
4	Cady Street & Center Street	Stop (Minor)	EB	19.3	C	37.7	E
			WB	44.5	E	137.8	F
			NBL	8.4	A	9.2	A
			SBL	9.0	A	8.9	A
5	Cady Street & Hutton Street	Stop (Minor)	EBL	7.6	A	7.6	A
			WB	Free		Free	
			SB	10.7	B	10.2	B
6	Cady Street & Griswold Street	Stop (Minor)	EB	10.7	B	12.8	B
			WB	9.5	A	10.2	B
			NBL	7.4	A	7.6	A
			SBL	7.3	A	7.4	A
7*	Beal Street & Griswold Street	Stop (Minor)	EB	4.2	A	4.8	A
			WB	Free		Free	
			SB	4.2	A	4.7	A
8	Beal Street & River Street	Stop (Minor)	EB	Free		Free	
			WBL	7.3	A	7.4	A
			NB	9.1	A	9.7	A
9	Center Street & Fairbrook Street	Stop (Minor)	EB	22.4	C	27.6	D
			NBL	8.5	A	10.0	A
			SB	Free		Free	
10	Sheldon Avenue / Center Street & 7 Mile Road / Hines Drive	Signalized	EBL	20.5	C	33.5	C
			EBTR	32.9	C	26.5	C
			WBL	37.3	D	38.9	D
			WBT	18.2	B	28.2	C
			WBR	17.3	B	18.2	B
			NBL	20.4	C	40.5	D
			NBTR	21.5	C	26.5	C
			SBL	33.5	C	41.8	D
			SBTR	15.8	B	22.3	C
			Overall	23.6	C	27.0	C
11*	7 Mile Road & Hines Drive	Stop (NB Hines & WBL 7 Mile)	EB	Free		Free	
			WBL	13.7	B	18.0	C
			WBT	Free		Free	
			NBT	17.0	C	50.4	F
12	7 Mile Road & River Street	Stop (Minor)	EBL	7.7	A	8.7	A
			WB	Free		Free	
			SB	11.2	B	13.5	B
15	Northville Road & Beal Street	Stop (Minor)	EB	10.4	B	12.0	B
			NBL	8.0	A	8.5	A
			SB	Free		Free	
16*	SB Northville Road & N. 7 Mile Road	Stop/Yield (Minor)	EBT	11.5	B	14.4	B
			EBR	12.2	B	13.6	B
			WB	14.7	B	101.5	F
			SB	Free		Free	

Intersection		Control	Approach	Existing Conditions 2018			
				AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS
17*	NB Northville Road & N. 7 Mile Road	Yield (Minor)	EBL	14.4	B	32.8	D
			NBTL	4.8	A	5.9	A
			NBT	Free		Free	
18	Northville Road & S. 7 Mile Road	Signalized	WBL	21.5	C	22.3	C
			WBR	9.8	A	15.0	B
			NBT	38.7	D	121.9	F
			NBTR	58.0	E	124.7	F
			SBL	55.2	E	43.5	D
			SBT	11.3	B	12.0	B
			Overall	36.3	D	56.6	E

* Indicates SimTraffic delay or HCM2000 analysis used

The results of the existing conditions analysis indicate that all study intersection approaches and movements currently operate acceptably at a LOS D or better, with the exception of the following:

3.1.1 Main Street and Hutton Street

- The southbound left/through movement currently operates at a LOS E during the PM peak hour.

A review of network simulations indicates acceptable operations and all queues were observed to be serviced within the cycle length.

3.1.2 Main Street and Griswold Street

The intersection LOS on all approaches were seen to operate acceptably; however occasional periods of long vehicle queues were observed on the southbound approach during the PM peak hour. These queues were observed to dissipate and are not present throughout the duration of the peak hour.

3.1.3 Cady Street and Center Street

- The westbound approach currently operates at a LOS E and LOS F during the AM and PM peak hours, respectively. Additionally, the eastbound approach operates at a LOS E during the PM peak hour.

Although intersection LOS analysis indicates poor operations, a review of SimTraffic the simulations indicates that the signalized intersections allow for gaps in traffic, therefore, vehicles on Cady Street are serviced without significant vehicle queues.

3.1.4 Sheldon Avenue/Center Street and 7 Mile Road/Hines Drive

Review of the network simulations indicates acceptable traffic operations during the AM peak hours. During the PM peak hour, long vehicle queues were observed for the northbound approach. These queues exist throughout the entire peak hour and are a result of the approach being near capacity and northbound left-turning vehicles blocking the northbound through traffic while waiting for gaps in the southbound through traffic. Periods of long vehicle queues were also observed on the westbound movements; however, they were not present throughout the entire peak hour. These queues are the result of left-turning vehicle queues exceeding the turn lane storage length and causing backup in the through lane and the right-turn lane. Additionally, occasional periods of long vehicle queues were observed on the southbound approach and were created by southbound left-turning vehicles waiting for gaps in northbound traffic. These queues were observed to dissipate quickly as a result of the northbound left-turning vehicles blocking the northbound through vehicles and therefore creating gaps in traffic for the southbound left-turning vehicles.

3.1.5 7 Mile Road and Hines Drive

- The northbound approach currently operates at a LOS F during the PM peak hour.

Brief periods of long vehicle queues are observed at the northbound approach during the PM peak hour; however, these vehicle queues are a result of the westbound vehicle queues at the intersection of 7 Mile Road

and Center Street. Simulations indicate that the queuing created at the intersection of 7 Mile Road and Center Street causes upstream blocking at Hines Drive for 1% of the PM peak hour. During the remaining portion of the peak hour, the signalized intersection of 7 Mile Road and Center Street allows for gaps in traffic, allowing northbound vehicles to progress through the intersection.

3.1.6 Northville Road (S. Main Street) and N. 7 Mile Road

- The yield-controlled westbound through movement currently operates at a LOS F during the PM peak hour.

Although intersection LOS analysis indicates poor operations, a review of SimTraffic the simulations indicates acceptable operations during both peak periods. Occasional periods of short queues were observed at the yield-controlled intersections; however, these vehicles were observed to find gaps within the opposing traffic, created by the signalized intersections.

Additionally, the most recent available three years of crash data were reviewed to assess any potential safety hazards created by northbound vehicles queuing while attempting to turn onto N. 7 Mile Road. The results of the crash analysis indicated that there were no rear-end crashes at the intersection of Northville Road (S. Main Street) and N. 7 Mile Road, as a result of northbound vehicles waiting to make left turns.

3.1.7 Northville Road and S. 7 Mile Road

- The northbound through/right and southbound left-turn movements currently operate at a LOS E during the AM peak hour.
- The northbound approach currently operates at a LOS F during the PM peak hour.

A review of network simulations indicates occasional periods of long vehicle queues for the southbound left-turn movement during the AM and PM peak periods; however, these queues are typically observed to be serviced within the cycle length. Additionally, brief periods of long vehicle queues were observed for the northbound approach during the PM peak period. These queues were observed to dissipate and are not present throughout the duration of the peak hour.

3.2 EXISTING IMPROVEMENTS

In order to improve traffic operations to a LOS D or better for all intersection approaches and movements in the existing condition, mitigation measures were investigated. Signal cycle length and timing changes were analyzed.

3.2.1 Main Street and Hutton Street

The results of this analysis indicate that signal timing optimization (i.e. providing more green time for the northbound and southbound approaches) is enough to improve all approaches to operating at a LOS D or better during the PM peak period. A review of network simulations confirms acceptable operations.

3.2.2 Main Street and Griswold Street

A review of network simulations indicates that signal timing optimization (i.e. providing more green time for the northbound and southbound approaches) was observed to reduce vehicle queues on the southbound approach.

3.2.3 Sheldon Avenue/Center Street and 7 Mile Road/Hines Drive

Signal timing adjustments were investigated; however, it was determined that signal timing adjustments alone would not address the operational deficiencies previously identified. In order to address the operational deficiencies at this intersection, geometric improvements were investigated. The results of this analysis indicate widening Center Street/Sheldon Avenue to provide an additional through lane in the northbound direction would improve existing operations; however, this improvement is a regional improvement that is outside of the scope of this study. WCDPS should consider improvements on Center Street and 7 Mile Road to increase the capacity of this regional route.

In order to address the operational deficiencies at this intersection, alternative mitigation measures were evaluated. Due to the constrained nature, the alternative measures at this intersection will require considerable modifications to the area. The alternative options and the results of the operational analysis are summarized in **Table 2** and further described below; the existing roadway conditions were included for comparison purposes.

Table 2: Center Street & 7 Mile Road Alternatives Analysis (Existing Conditions)

Peak Period	Approach	Existing Conditions				Signalization Improvement				Increased NB LT Storage				Roundabout			
		Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)
AM	EBL	20.5	C	44	151	23.2	C	52	165	20.6	C	47	158	8.3	A	139*	256*
	EBTR	32.9	C	195	336	49.6	D	261	436	41.9	D	235	432				
	WBL	37.3	D	28	68	28.4	C	26	67	25.1	C	19	52				
	WBT	18.2	B	52	104	27.3	C	65	129	24.4	C	59	118	4.7	A	20	46
	WBR	17.3	B	13	38	23.1	C	21	64	20.4	C	15	51			6	26
	NBL	20.4	C	16	35	20.9	C	31	85	21.0	C	55	215			1246	2562
	NBT	21.5	C	434	869	49.4	D	507	957	38.9	D	317	555	10.7	B		
	NBR									19.7	B	27	79			68	103
	SBL	33.5	C	67*	133*	28.1	C	48	88	25.1	C	45	90	5.1	A	78*	161*
	SBTR	15.8	B	127*	204*	27.6	C	134*	233*	27.7	C	145*	239*			3	18
	Overall	23.6	C	N/A	N/A	39.7	D	N/A	N/A	33.2	C	N/A	N/A	7.9	A	N/A	N/A
PM	EBL	33.5	C	33	111	31.3	C	40	138	28.1	C	42	139	10.1	B	87*	166*
	EBTR	26.5	C	153	249	52.9	D	207	341	45.0	D	265	478				
	WBL	38.9	D	98	159	33.1	C	77	150	29.8	C	86	160				
	WBT	28.2	C	284*	529*	49.3	D	270	425	44.5	D	310	509	8.2	A	46	80
	WBR	18.2	B	136	414	26.4	C	95	256	23.8	C	146	383			17	54
	NBL	40.5	D	21	30	28.0	C	61	102	29.8	C	177	399			2644	5119
	NBT	26.5	C	4389	8588	57.1	E	2517	4997	36.2	D	766	1664	13.8	B		
	NBR									16.8	B	39	94			72	94
	SBL	41.8	D	47	97	29.4	C	46	89	23.8	C	51	107	13.0	B	198*	200*
	SBTR	22.3	C	192*	270*	37.8	D	225*	276*	40.5	D	226*	276*			6	26
	Overall	27.0	C	N/A	N/A	46.0	D	N/A	N/A	37.8	D	N/A	N/A	11.5	B	N/A	N/A

* Indicates that the queue length has exceeded the link distance. Therefore, may not accurately represent intersection conditions

Option 1: Signalization Improvements

The intersection operations with this alternative includes the following:

- Restriping the NB approach to provide a through/right lane and an exclusive 60-ft left-turn lane (*Note: On the NB approach the left-turn storage length would be limited by existing geometric constraints of the bridge*).
- Restriping the SB approach to provide a through/right lane and an exclusive left-turn lane.
- Upgrade to a fully actuated signal.
- Provide permissive/protected left-turn phasing for all approaches (Left-turn Warrant in **Appendix E**).
- Providing overlap phasing for westbound right-turn movement.
- Optimize traffic signal timings and cycle lengths during peak periods.

In order to implement this alternative; the existing traffic signal will need to be replaced and upgraded to a fully actuated signal with left-turn signal heads, and the northbound and southbound approaches will need to be restriped.

The results of the analysis indicates that the through movements and overall intersection showed a degradation in delay and LOS; however, the delay and LOS were improved for the left-turning movements. Although the intersection LOS analysis indicates poor operation for the northbound through movement during the PM peak period, a review of network simulations indicates slightly reduced vehicle queues. Additionally, reduced vehicle queues were observed for the westbound movements during the PM peak period.

Option 2: Increased Northbound Left-Turn Storage

The intersection operations with this alternative includes the following:

- Widening the NB approach to provide a 300-ft left-turn lane and a 50-ft right-turn lane.
- Restriping the SB approach to provide through/right lane and an exclusive left-turn lane.
- Upgrade to a fully actuated signal.
- Provide permissive/protected left-turn phasing for all approaches.
- Providing overlap phasing for northbound and westbound right-turn movements.
- Optimize traffic signal timings and cycle lengths during peak periods.

In order to implement this alternative; the bridge along Sheldon Road across Johnson Creek will need to be widened to provide adequate left-turn storage space.

The results of the analysis are similar to those observed for **Option 1**; indicating that the through movements and overall intersection showed a degradation in delay and LOS, while the delay and LOS were improved for the left-turning movements. A review of network simulations indicate that much greater reduction in vehicle queues on the northbound approach is observed by providing additional northbound left-turn storage. Additionally, reduced vehicle queues were observed for the westbound movements.

Option 3: Roundabout

The intersection operations with this alternative includes constructing a roundabout; the configuration was modeled and evaluated by OHM Advisors. To implement this alternative, the WCDPS will need to acquire significant ROW, in order to fit the roundabout as designed. Additionally, potential wetland mitigation may be needed, as the proposed roundabout extends into the southeast portion of the site.

The Rodel model and analysis performed by OHM Advisors for this intersection indicates that all approaches will experience a reduction in LOS and delay over existing conditions with the installation of a roundabout. F&V performed additional analysis using the HCM methodology and SimTraffic simulations which indicate that the northbound approach during the AM peak periods and the southbound approach during both peak periods were observed to experience significantly increased vehicle queues. Additionally, observations indicate reduced vehicle queues for the eastbound and westbound movements during both peak periods, and slightly reduced vehicle queues for the northbound approach during the PM peak period. Vehicles at the southbound approach were observed to have difficulties in finding gaps in traffic due to the high volume of conflicting movements (i.e. the westbound through and northbound left-turning vehicles). The result of increased vehicle queueing for the southbound approach can be seen throughout the network, with the queues extending down Center Street and eliminating the available gaps in traffic for the minor stop-controlled approaches. The long vehicle queues on the southbound approach were observed to be present and increasing throughout the peak hour.

In general, a roundabout reduces crash severity, but may increase crash frequency. Based on the existing crash data, there is currently not an issue with injury crashes occurring at this intersection. In addition, a roundabout does not provide the safest option for pedestrians and bicycles, as the free-flowing movement does not create consistent gaps for crossing traffic.

3.2.4 7 Mile Road and Hines Drive

The signal improvements at the intersection of 7 Mile Road and Center Street decreased the delay on the northbound approach; however, the westbound queues at 7 Mile Road and Center Street were still observed to back up near the intersection during the PM peak hour. Therefore, further mitigation is recommended through geometric improvements.

- Construct a northbound right turn lane.

3.2.5 Northville Road (S. Main Street) and N. 7 Mile Road

Although microsimulations indicated acceptable operations at the intersection of Northville Road (S. Main Street) and N. 7 Mile Road, several potential mitigation measures were identified to reduce the vehicle delays identified in the LOS analysis and improve safety at this intersection. The potential improvements that the WCDPS may want to consider are as follows:

- Eliminate the bi-directional cross-over.
- Provide a directional northbound left-turn (J-turn) and prohibit eastbound left-turns.
- Provide a median U-turn south of N. 7 Mile Road to facilitate eastbound left-turns.
- Consider intersection signalization.

For the purpose of this report, intersection signalization was evaluated and modeled as a mitigation measure. The applicable traffic signal warrants outlined in the most recent edition of the *MMUTCD* were evaluated at this intersection. At this intersection; Warrant 1 (8-Hour Vehicular Volume), Warrant 2 (4-Hour Vehicular Volume), and Warrant 3 (Peak-Hour) were evaluated. The results of the signal warrant analysis are presented in **Appendix E** and are summarized in **Table 3**.

Table 3: Existing Signal Warrant Analysis Summary

Northville Road and N. 7 Mile Road		
Warrant 1: Eight Hour		YES
Condition A	Hours Met	8
	Warrant Met	YES
Condition B	Hours Met	5
	Warrant Met	NO
Warrant 2: Four-Hour		7
Warrant 3: Peak-Hour	Hours Met	7
	Warrant Met	YES
Warrant 3: Peak-Hour		2
Warrant 3: Peak-Hour	Hours Met	2
	Warrant Met	YES

The results of the signal warrant evaluation indicate that traffic signal **is warranted** at the study intersection under existing conditions.

After analyzing the intersection with signalization, all movements and approaches improved to a LOS C or better. A review of network simulations indicates acceptable operations for all movements.

3.2.6 Northville Road and S. 7 Mile Road

The results of this analysis indicate that signal timing optimization (i.e. providing more green time for the northbound and southbound movements) is enough to improve all approaches to operating at a LOS D or better during the AM and PM peak periods. A review of network simulations confirms acceptable operations.

3.2.7 Existing Conditions with Improvements

Intersection operations and vehicle queues with the recommended improvements are summarized in **Table 4** and **Table 5**, respectively.

Table 4: Existing Intersection Operations with Improvements

Intersection		Control	Approach	Existing Conditions 2018				Existing Conditions 2018 (With Improvements)			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1	Main Street & Hutton Street	Signalized	EBTL	0.3	A	0.3	A	No Change		18.0	B
			EBR	0.0	A	0.0	A			15.6	B
			WBTL	6.7	A	7.6	A			13.4	B
			WBR	7.1	A	9.1	A			17.0	B
			NB	17.2	B	19.1	B			14.5	B
			SBTL	21.4	C	69.3	E			42.2	D
			SBR	16.5	B	16.5	B			10.6	B
			Overall	10.3	B	21.9	C			21.9	C
3	Main Street & Griswold Street	Signalized	EBTL	12.0	B	15.5	B	No Change		23.3	C
			EBTR	10.1	B	11.0	B			15.4	B
			WBTL	10.1	B	11.8	B			16.5	B
			WBTR	10.5	B	12.5	B			17.8	B
			NB	15.0	B	16.4	B			11.9	B
			SB	16.8	B	29.3	C			18.0	B
			Overall	12.7	B	17.5	B			16.9	B
11*	7 Mile Road & Hines Drive	Stop (NB Hines & WBL 7 Mile)	EB	Free		Free		Free		Free	
			WBL	13.7	B	18.0	C	16.5	C	24.5	D
			WBT	Free		Free		Free		Free	
			NB	17.0	C	50.4	F	20.2	C	48.3	E
16 & 17	Northville Road & N. 7 Mile Road	Stop/Yield Signalized [IMP]	EBL	14.4	B	32.8	D	31.5	C	26.8	C
			EBR	12.2	B	13.6	B	14.7	B	13.6	B
			WB [NBL]	14.7	B	101.5	F	3.2	A	9.2	A
			NBT	Free		Free		0.1	A	0.3	A
			SBT	Free		Free		25.0	C	30.1	C
			SBTR	Free		Free		25.1	C	30.4	C
			Overall	N/A	N/A	N/A	N/A	12.5	B	13.5	B
18	Northville Road & S. 7 Mile Road	Signalized	WBL	21.5	C	22.3	C	34.8	C	33.0	C
			WBR	9.8	A	15.0	B	12.9	B	21.9	C
			NBT	38.7	D	121.9	F	28.5	C	40.7	D
			NBTR	58.0	E	124.7	F	33.9	C	41.9	D
			SBL	55.2	E	43.5	D	31.6	C	29.3	C
			SBT	11.3	B	12.0	B	10.1	B	0.6	A
			Overall	36.3	D	56.6	E	27.0	C	27.9	C

* Indicates SimTraffic delay analysis used

Table 5: Existing Vehicle Queues (feet) with Improvements

Intersection		Control	Approach	Existing Conditions 2018				Existing Conditions 2018 (With Improvements)			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Avg	95th %	Avg	95th %	Avg	95th %	Avg	95th %
2	Main Street & Hutton Street	Signalized	EBTL	No Changes		45	95	No Changes		69	135
			EBR			4	22			9	32
			WBTL			76	149			91	173
			WBR			61	106			73	116
			NB			21	49			14	36
			SBTL			102	165			79	139
			SBR			6	23			5	19
3	Main Street & Griswold Street	Signalized	EBTL	No Changes		97	163	No Changes		113	186
			EBTR			65	118			83	140
			WBTL			64	108			76	127
			WBTR			106	167			126	195
			NB			74	114			74	119
			SB			216	391			159	267
11	7 Mile Road & Hines Drive	Stop (NW Hines & WBL 7 Mile)	EB	Free		Free		Free		Free	
			WBL	0	0	2	15	0	0	1	9
			WBT	Free		Free		Free		Free	
			NB	51	89	193	407	47	85	167	413

3.3 BACKGROUND CONDITIONS

Historical traffic volume data was not available in the area; therefore, population and employment data were used in order to determine the applicable growth rate for the existing traffic volumes to the project build-out year of 2023. The SEMCOG community profile for the City of Northville was reviewed and showed an average annual growth rate of 0.20% population growth and a 0.07% employment growth from 2015 to 2045. Therefore, a growth rate of 0.2% per year along all roadways was utilized in this study for the analysis of background conditions ***without the proposed development***.

In addition to background growth, it is important to account for traffic that will be generated by approved and/or proposed developments within the vicinity of the study area that have yet to be constructed or are currently under construction. The following developments were identified by the City of Northville:

- Cady Project – 6 unit condominium (South side of Cady Street, east of Center Street)
- Corner House – 11 unit condominium (NW corner of Griswold Street and Cady Street)
- McDonald Ford Site – 60 unit townhouses (South side of 7 Mile Road, near S. Main Street)
- Foundry Flask – 140 unit apartments (SE corner of Griswold Street and Cady Street)

The number of AM and PM peak hour vehicle trips that would be generated by the proposed developments were forecast based on data published by ITE in the *Trip Generation Manual, 10th Edition* and the *ITE Trip Generation Handbook, 3rd Edition*. The trip distribution that was determined for the proposed Northville Downs development was used to distribute the trip projections for these developments. The background 2023 traffic volumes are shown on **Figure 4**.

3.4 BACKGROUND OPERATIONS

The background traffic growth was applied to the existing traffic volumes shown on **Figure 3** to determine the background traffic volumes shown on **Figure 4**. Background peak hour vehicle delays and LOS were calculated based on the existing lane use and traffic control shown on **Figure 2**, the background traffic volumes shown on **Figure 4**, and the methodologies presented in the HCM. The results of the analysis of background conditions are presented in **Appendix C** and are summarized in **Table 6**.

Table 6: Background Intersection Operations

Intersection		Control	Approach	Existing Conditions 2018				Background Conditions 2023			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1	Main Street & Center Street	Signalized	EB	19.9	B	20.1	C	20.0	B	20.1	C
			WB	18.9	B	19.2	B	18.9	B	19.4	B
			NB	9.8	A	10.0	A	10.0	B	10.1	B
			SB	8.6	A	10.2	B	8.7	A	10.4	B
			Overall	11.9	B	12.9	B	12.0	B	13.1	B
2	Main Street & Hutton Street	Signalized	EBTL	0.3	A	0.3	A	0.3	A	0.3	A
			EBR	0.0	A	0.0	A	0.0	A	0.0	A
			WBTL	6.7	A	7.6	A	6.7	A	7.6	A
			WBR	7.1	A	9.1	A	7.1	A	9.2	A
			NB	17.2	B	19.1	B	17.3	B	19.4	B
			SBTL	21.4	C	69.3	E	21.5	C	70.5	E
			SBR	16.5	B	16.5	B	16.5	B	16.5	B
			Overall	10.3	B	21.9	C	10.3	B	22.2	C

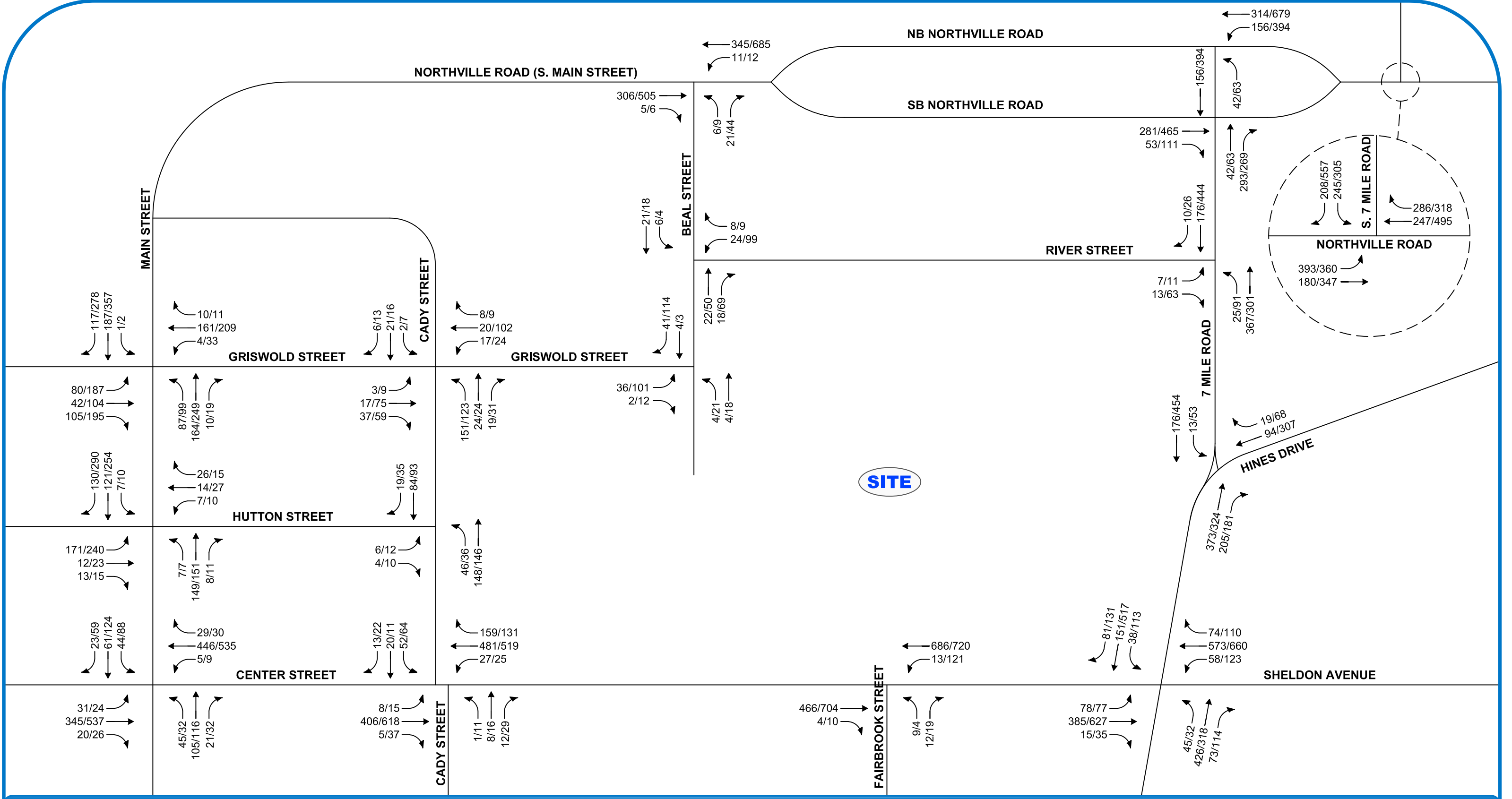


FIGURE 4
BACKGROUND TRAFFIC
VOLUMES
NORTHVILLE DOWNS TIS - NORTHVILLE, MI

- LEGEND**
- ROADS
 - PROPOSED ROADS
 - TRAFFIC VOLUMES (AM/PM)
 - SIGNALIZED INTERSECTION
 - UNSIGNALIZED INTERSECTION



Intersection		Control	Approach	Existing Conditions 2018				Background Conditions 2023			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
3	Main Street & Griswold Street	Signalized	EBTL	12.0	B	15.5	B	12.0	B	15.7	B
			EBTR	10.1	B	11.0	B	10.1	B	11.1	B
			WBTL	10.1	B	11.8	B	10.1	B	11.8	B
			WBTR	10.5	B	12.5	B	10.5	B	12.5	B
			NB	15.0	B	16.4	B	15.1	B	16.5	B
			SB	16.8	B	29.3	C	16.9	B	31.0	C
			Overall	12.7	B	17.5	B	12.8	B	18.1	B
4	Cady Street & Center Street	Stop (Minor)	EB	19.3	C	37.7	E	19.9	C	41.2	E
			WB	44.5	E	137.8	F	52.9	F	199.4	F
			NBL	8.4	A	9.2	A	8.4	A	9.3	A
			SBL	9.0	A	8.9	A	9.1	A	9.0	A
5	Cady Street & Hutton Street	Stop (Minor)	EBL	7.6	A	7.6	A	7.6	A	7.6	A
			WB	Free		Free		Free		Free	
			SB	10.7	B	10.2	B	11.1	B	10.5	B
6	Cady Street & Griswold Street	Stop (Minor)	EB	10.7	B	12.8	B	11.3	B	14.1	B
			WB	9.5	A	10.2	B	9.9	A	11.1	B
			NBL	7.4	A	7.6	A	7.4	A	7.6	A
			SBL	7.3	A	7.4	A	7.3	A	7.5	A
7*	Beal Street & Griswold Street	Stop (Minor)	EB	4.2	A	4.8	A	4.7	A	5.1	A
			WB	Free		Free		Free		Free	
			SB	4.2	A	4.7	A	4.3	A	4.8	A
8	Beal Street & River Street	Stop (Minor)	EB	Free		Free		Free		Free	
			WBL	7.3	A	7.4	A	7.3	A	7.5	A
			NB	9.1	A	9.7	A	9.2	A	9.7	A
9	Center Street & Fairbrook Street	Stop (Minor)	EB	22.4	C	27.6	D	23.3	C	29.1	D
			NBL	8.5	A	10.0	A	8.5	A	10.1	B
			SB	Free		Free		Free		Free	
10	Sheldon Avenue / Center Street & 7 Mile Road / Hines Drive	Signalized	EBL	20.5	C	33.5	C	20.6	C	33.9	C
			EBTR	32.9	C	26.5	C	33.6	C	27.0	C
			WBL	37.3	D	38.9	D	38.3	D	40.9	D
			WBT	18.2	B	28.2	C	18.2	B	28.6	C
			WBR	17.3	B	18.2	B	17.4	B	18.3	B
			NBTL	20.4	C	40.5	D	20.8	C	42.3	D
			NBR	21.5	C	26.5	C	21.9	C	28.2	C
			SBL	33.5	C	41.8	D	34.9	C	45.7	D
			SBTR	15.8	B	22.3	C	16.0	B	22.8	C
			Overall	23.6	C	27.0	C	24.1	C	28.0	C
11*	7 Mile Road & Hines Drive	Stop (NB Hines & WBL 7 Mile)	EB	Free		Free		Free		Free	
			WBL	13.7	B	18.0	C	13.3	B	16.5	C
			WBT	Free		Free		Free		Free	
			NB	17.0	C	50.4	F	16.8	C	87.7	F
12	7 Mile Road & River Street	Stop (Minor)	EBL	7.7	A	8.7	A	7.7	A	8.8	A
			WB	Free		Free		Free		Free	
			SB	11.2	B	13.5	B	11.4	B	14.2	B

Intersection		Control	Approach	Existing Conditions 2018				Background Conditions 2023			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
15	Northville Road & Beal Street	Stop (Minor)	EB	10.4	B	12.0	B	10.5	B	12.2	B
			NBL	8.0	A	8.5	A	8.0	A	8.5	A
			SB	Free		Free		Free		Free	
16*	SB Northville Road & N. 7 Mile Road	Stop/Yield (Minor)	EBT	11.5	B	14.4	B	11.7	B	14.6	B
			EBR	12.2	B	13.6	B	12.5	B	13.9	B
			WB	14.7	B	101.5	F	15.2	C	118.7	F
			SB	Free		Free		Free		Free	
17*	NB Northville Road & N. 7 Mile Road	Yield (Minor)	EBL	14.4	B	32.8	D	14.7	B	35.1	E
			NBTL	4.8	A	5.9	A	4.9	A	5.9	A
			NBT	Free		Free		Free		Free	
18	Northville Road & S. 7 Mile Road	Signalized	WBL	21.5	C	22.3	C	21.5	C	22.4	C
			WBR	9.8	A	15.0	B	9.9	A	15.3	B
			NBT	38.7	D	121.9	F	39.3	D	131.2	F
			NBTR	58.0	E	124.7	F	59.3	E	133.6	F
			SBL	55.2	E	43.5	D	63.4	E	45.6	D
			SBT	11.3	B	12.0	B	11.4	B	12.1	B
			Overall	36.3	D	56.6	E	38.7	D	60.1	E

* Indicates SimTraffic delay or HCM2000 analysis used

The results of the background conditions analysis indicate that all study intersection approaches and movements will continue to operate in a manner similar to existing conditions, with the exception of the following:

- The westbound approach at the unsignalized intersection of **Cady Street & Center Street** will degrade to a LOS F during the AM peak hour.
 - Although increased delay during the AM and PM peak periods was observed, network simulations indicate that the gaps provided by the signalized intersections provide acceptable operations for Cady Street, with minor vehicle queues being observed.
- The northbound approach at the unsignalized intersection of **7 Mile Road & Hines Drive** showed a noticeable increase in delay during the PM peak hour.
 - Brief periods of long vehicle queues continue to occur at the northbound approach of 7 Mile Road and Hines Drive during the PM peak hour; however, these vehicle queues continue to be present as a result of the westbound vehicle queues at the intersection of 7 Mile Road and Center Street. Simulations indicate that the queuing created at the intersection of 7 Mile Road and Center Street causes upstream blocking at Hines Drive for 9% of the PM peak hour.
- The eastbound left-turn movement at the yield-controlled intersection of **NB Northville Road (S. Main Street) & N. 7 Mile Road** will degrade to a LOS E during the PM peak hour
 - Although increased delay during the AM and PM peak periods was observed, network simulations indicate that the gaps provided by the signalized intersections provide acceptable operations for vehicles attempting to make left-turns.

3.5 BACKGROUND IMPROVEMENTS

In order to improve traffic operations to a LOS D or better for all intersection approaches and movements under background conditions, mitigation measures that were identified under existing conditions were applied. The results of this analysis are summarized in **Table 8** and indicate that all study intersection approaches and movements would operate acceptably at a LOS D or better during both peak periods, with the exception of following:

3.5.1 Main Street and Hutton Street

The results of this analysis indicate that signal timing optimization (i.e. providing more green time for the northbound and southbound approaches) is enough to improve all approaches to operating at a LOS D or better during PM peak period. A review of network simulations confirms acceptable operations.

3.5.2 Main Street and Griswold Street

A review of network simulations indicates that signal timing optimization (i.e. providing more green time for the northbound and southbound approaches) was observed to reduce vehicle queues on the southbound approach.

3.5.3 Sheldon Avenue/Center Street and 7 Mile Road/Hines Drive

In order to address the operational deficiencies at this intersection, the previously identified alternative mitigation measures were again evaluated. The alternative options and the results of the operational analysis are summarized in **Table 7**.

Table 7: Center Street & 7 Mile Road Alternatives Analysis (Background Conditions)

Peak Period	Approach	Existing Conditions				Signalization Improvement				Increased NB LT Storage				Roundabout			
		Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)
AM	EBL	20.6	C	51	165	23.6	C	49	162	20.9	C	49	165	8.6	A	133*	263*
	EBTR	33.6	C	215	406	52.1	D	256	446	44.0	D	275	544				
	WBL	38.3	D	36	85	29.2	C	24	67	25.8	C	20	51	4.8	A	24	51
	WBT	18.2	B	52	118	27.8	C	61	120	24.9	C	55	113				
	WBR	17.4	B	16	50	23.4	C	18	53	20.7	C	15	50				
	NBL	20.8	C	15	33	21.4	C	32	82	21.5	C	58	225	11.3	B	1148	2353
	NBT	21.9	C	402	747	52.8	D	574	1117	40.7	D	341	703				
	NBR									20.0	B	30	84				
	SBL	34.9	C	81*	184*	29.7	C	46	89	25.9	C	47	93	5.2	A	81*	168*
	SBTR	16.0	B	131*	221*	28.3	C	142*	236*	28.6	C	151*	254*				
	Overall	24.1	C	N/A	N/A	41.7	D	N/A	N/A	34.5	C	N/A	N/A				
PM	EBL	33.9	C	25	83	31.3	C	42	146	28.6	C	33	117	10.7	B	77	140
	EBTR	27.0	C	159	277	53.8	D	251	433	47.1	D	244	407				
	WBL	40.9	D	102	168	34.5	C	84	155	31.9	C	84	154	8.7	A	49	84
	WBT	28.6	C	369*	666*	49.3	D	306	514	45.9	D	298	483				
	WBR	18.3	B	237*	614*	26.3	C	123	366	24.2	C	138	374				
	NBL	42.3	D	21	32	30.1	C	57	102	31.6	C	148	357	15.5	C	3031	5765
	NBT	28.2	C	5772	10682	66.2	F	3541	7401	38.2	D	813	1730				
	NBR									17.1	B	31	85				
	SBL	45.7	D	43	93	32.4	C	52	100	24.7	C	45	88	14.1	B	198*	198*
	SBTR	22.8	C	203*	274*	39.9	D	231*	272*	42.0	D	235*	260*				
	Overall	28.0	C	N/A	N/A	49.3	D	N/A	N/A	39.4	D	N/A	N/A				

* Indicates that the queue length has exceeded the link distance. Therefore, may not accurately represent intersection conditions

Option 1: Signalization Improvements

The results of the analysis are similar to existing conditions, indicating that the through movements and overall intersection show a degradation in delay and LOS; however, the delay and LOS were improved for the left-turning movements. Although the intersection LOS analysis indicates poor operation for the northbound through movement during the PM peak period, a review of network simulations indicates slightly reduced vehicle queues. An increased delay and reduced LOS were also observed for the westbound approach during the PM peak period; however, the vehicle queues observed in network simulations were noticeably reduced.

Option 2: Increased Northbound Left-Turn Storage

The results of the analysis are similar to **Option 1**, with much greater reductions in northbound vehicle queues observed during the PM peak period. The through movements and overall intersection show a degradation in delay and LOS; however, the delay and LOS were improved for the left-turning movements. Additionally, reduced vehicle queues were observed during the PM peak period for the westbound movements.

Option 3: Roundabout

The results are similar to existing conditions, with the Rodel analysis indicating that the installation of a roundabout at this intersection will result in decreased delays for all approaches. A review of network simulations however, indicates similar operations to those observed in existing conditions, with long southbound vehicle queues forming and causing back-ups throughout the network.

3.5.4 7 Mile Road and Hines Drive

The signal improvements at the intersection of 7 Mile Road and Center Street significantly decreased the delay on the northbound approach; however, the westbound queues at 7 Mile Road and Center Street were still observed to back up near the intersection during the PM peak hour.

3.5.5 Northville Road (S. Main Street) and N. 7 Mile Road

The results of this analysis indicate that, with intersection signalization, all movements and approaches improved to a LOS C or better. A review of network simulations indicates acceptable operations for all movements.

3.5.6 Northville Road and S. 7 Mile Road

The results of this analysis indicate that signal timing optimization (i.e. providing more green time for the northbound and southbound movements) is enough to improve all approaches to operating at a LOS D or better during the AM and PM peak periods. A review of network simulations confirms acceptable operations.

3.5.7 Background Conditions with Improvements

Intersection operations and vehicle queues with the recommended improvements are summarized in **Table 8** and **Table 9**, respectively.

Table 8: Background Intersection Operations with Improvements

Intersection		Control	Approach	Background Conditions 2023				Background Conditions 2023 (With Improvements)			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
2	Main Street & Hutton Street	Signalized	EBTL	0.3	A	0.3	A	No Change		18.7	B
			EBR	0.0	A	0.0	A			16.2	B
			WBTL	6.7	A	7.6	A			14.3	B
			WBR	7.1	A	9.2	A			18.4	B
			NB	17.3	B	19.4	B			14.4	B
			SBTL	21.5	C	70.5	E			39.9	D
			SBR	16.5	B	16.5	B			10.0	A
			Overall	10.3	B	22.2	C			22.1	C
3	Main Street & Griswold Street	Signalized	EBTL	12.0	B	15.7	B	No Change		23.7	C
			EBTR	10.1	B	11.1	B			15.4	B
			WBTL	10.1	B	11.8	B			16.5	B
			WBTR	10.5	B	12.5	B			18.0	B
			NB	15.1	B	16.5	B			12.0	B
			SB	16.9	B	31.0	C			18.4	B
			Overall	12.8	B	18.1	B			17.1	B
11*	7 Mile Road & Hines Drive	Stop (NB Hines & WBL 7 Mile)	EB	Free		Free		Free		Free	
			WBL	13.3	B	16.5	C	20.4	C	22.2	D
			WBT	Free		Free		Free		Free	
			NB	16.8	C	87.7	F	20.1	C	45.4	E
16 & 17	Northville Road & N. 7 Mile Road	Stop/Yield Signalized [IMP]	EBL	14.7	B	35.1	E	31.5	C	26.9	C
			EBR	12.5	B	13.9	B	15.0	B	13.7	B
			WB [NBL]	15.2	C	118.7	F	3.3	A	9.5	A
			NBT	Free		Free		0.1	A	0.3	A
			SBT	Free		Free		25.2	C	30.5	C
			SBTR	Free		Free		25.4	C	30.8	C
			Overall	N/A	N/A	N/A	N/A	12.8	B	13.6	B
18	Northville Road & S. 7 Mile Road	Signalized	WBL	21.5	C	22.4	C	35.0	C	33.2	C
			WBR	9.9	A	15.3	B	13.0	B	22.6	C
			NBT	39.3	D	131.2	F	28.7	C	42.3	D
			NBTR	59.3	E	133.6	F	34.2	C	43.6	D
			SBL	63.4	E	45.6	D	32.8	C	30.7	C
			SBT	11.4	B	12.1	B	10.2	B	0.6	A
			Overall	38.7	D	60.1	E	27.4	C	28.8	C

* Indicates SimTraffic delay analysis used

Table 9: Background Vehicle Queues (feet) with Improvements

Intersection		Control	Approach	Background Conditions 2023				Background Conditions 2023 (With Improvements)			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Avg	95th %	Avg	95th %	Avg	95th %	Avg	95th %
2	Main Street & Hutton Street	Signalized	EBTL	No Changes		47	97	No Changes		68	122
			EBR			6	26			8	32
			WBTL			84	164			97	187
			WBR			66	112			77	119
			NB			21	52			16	41
			SBTL			104	176			83	140
			SBR			7	25			4	18
3	Main Street & Griswold Street	Signalized	EBTL	No Changes		100	172	No Changes		119	198
			EBTR			75	134			86	148
			WBTL			66	110			79	133
			WBTR			109	170			129	188
			NB			81	127			79	124
			SB			346	580			189	355
11	7 Mile Road & Hines Drive	Stop (NW Hines & WBL 7 Mile)	EB	Free		Free		Free		Free	
			WBL	0	3	1	10	0	0	0	5
			WBT	Free		Free		Free		Free	
			NB	48	89	295	864	50	92	161	332

3.6 SITE TRIP GENERATION

The number of AM and PM peak hour vehicle trips that would be generated by the proposed development was forecast based on data published by ITE in the *Trip Generation Manual, 10th Edition* and the *ITE Trip Generation Handbook, 3rd Edition*. Additional data published by SEMCOG was also used in the analysis in conjunction with the ITE methodology. The trip generation analysis summarized below considers all multi-modal impacts (vehicles, pedestrians, transit and bikes). By using the national database for the proposed development and then adjusting based on local data, we have presented a conservative approach tailored to the specific needs of the City of Northville.

3.6.1 Vehicular Trip Generation Analysis

The first step in evaluating the trip generation for the proposed development is to calculate the trip generation using the *ITE Trip Generation Manual (10th Edition)*. The proposed development includes 53 single-family units, 493 multi-family units, and 18,700 square feet of commercial development. The ITE Trip Generation Manual Land Uses 210, 221, and 820 (Single-Family Detached Housing, Mid-Rise Multifamily Housing, and Shopping Center) were used for this study as they represent the best fit for this development. The land use descriptions are summarized below, and **Table 10** and **Table 11** shows the corresponding trip generation (vehicle trips) for the proposed commercial and residential developments.

Land Use 210-Single-Family Detached Housing: Single-family detached housing includes all single-family detached homes on individual lots. A typical site surveyed is a suburban subdivision.

Land Use 221-Multifamily Housing, Mid-Rise: Mid-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have between three and 10 levels (floors).

Land Use 820-Shopping Center: shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's composition is related to its market area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands.

Table 10: Commercial Development Trip Generation

Land Use	ITE Code	Amount	Units	Average Daily Traffic (vpd)	AM Peak Hour (vph)			PM Peak Hour (vph)		
					In	Out	Total	In	Out	Total
Retail	820	18,700	SF	1,923	11	7	18	75	82	157
Total Internal Capture					2	1	3	8	21	29
Pass-By (34%)					3	2	5	23	21	44
Total New Trips					6	4	10	44	40	84

Table 11: Residential Development Trip Generation

Land Use	ITE Code	Amount	Units	Average Daily Traffic (vpd)	AM Peak Hour (vph)			PM Peak Hour (vph)		
					In	Out	Total	In	Out	Total
Single-Family Detached Housing	210	53	D.U.	580	11	31	42	35	20	55
Multifamily Housing (Mid-Rise)	221	493	D.U.	2,685	42	121	163	125	80	205
Total Trips					53	152	205	160	100	260
Total Internal Capture					1	2	3	21	8	29
Total New Trips					52	150	202	139	92	231

Internal trip capture is the portion of trips generated by a mixed-used development that would begin and end within the development; resulting in no additional trips added to the adjacent road network. The internal trip capture spreadsheet is provided in **Appendix A**. Additionally, a portion of the site-generated commercial trips are already present on the adjacent road network and are interrupted to visit the site. These trips are known as "pass-by" trips and result in turning movements at the site driveways, but do not increase traffic volumes on

the adjacent road network. The percentage of pass-by trips was determined based on the rates published by ITE in the Trip Generation Handbook, 3rd Edition.

3.6.2 ITE Residential Modal Split

The vehicle trips for the residential development in **Table 11** were then converted to person trips by using the baseline vehicle mode split and baseline vehicle occupancy rates published by ITE in Appendix B of the ITE *Trip Generation Handbook, 3rd Edition*. The vehicle mode splits and vehicle occupancy rates for the studies contained within the *Trip Generation Manual* are provided below.

AM PEAK HOUR					
Inbound			Outbound		
Personal Vehicle	Truck	Vehicle Occupancy	Personal Vehicle	Truck	Vehicle Occupancy
0.892	0.070	1.13	0.968	0.010	1.09
PM PEAK HOUR					
Inbound			Outbound		
Personal Vehicle	Truck	Vehicle Occupancy	Personal Vehicle	Truck	Vehicle Occupancy
0.963	0.010	1.15	0.947	0.015	1.21
WEEKDAY					
Personal Vehicle		Truck	Vehicle Occupancy		
0.943		0.010	1.145		

The above factors were applied to the total new vehicle trips generated by the residential development in **Table 11** to provide the total number of person-trips generated by the proposed residential development. This was accomplished by dividing the number of total site-generated vehicle trips by the personal vehicle mode split (i.e. "personal vehicle" in the tables above) and multiplying by the vehicle occupancy to obtain the total number of site-generated person-trips. The total person trips are summarized in **Table 12**.

Table 12: Person-Trip Generation per ITE Trip Generation Handbook, 3rd Edition

Land Use	Amount	Units	Average Daily Traffic	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Single-Family & Multi-Family Housing	546	D.U.	3,967	65	169	234	164	116	280

3.7 CITY OF NORTHVILLE MODAL SPLIT

With the trips converted to Person-Trips using the ITE methodology, a modal split was applied to determine the number of site-generated trips using a variety of mode choices (*Note: Approximately 8% of residents worked from home and therefore did not generate any commuting trips*). This was calculated by applying the modal splits for the City of Northville as published by SEMCOG:

Commuting Modal Splits in Northville	
Vehicle	0.879
Walk	0.032
Bike	0.011
Transit	0.000

These factors were applied to the Person-Trips in **Table 9** to calculate the modal split trip generation for the proposed residential development. For walking, cycling, and transit mode choices, one person-trip corresponds to one pedestrian, bike, or transit trip, and no further adjustment were required. However, site-generated vehicle trips must be adjusted to reflect appropriate vehicle occupancy in accounting for multiple-occupant vehicles. Therefore, the SEMCOG *Transportation Demand Management (TDM) in Southeast Michigan* document was referenced to obtain vehicle occupancy rates relevant to Michigan communities. The document specified an average vehicle occupancy of 1.1 persons/vehicle for work-related trips and 1.4 persons/vehicle for non-work-

related trips. Therefore, it was assumed that residential site-generated vehicle trips would have a vehicle occupancy of 1.1 persons/vehicle for AM and PM peak hour trips and an average of 1.25 persons/vehicle for daily trips. The modal split trip generation for the proposed residential development is summarized in **Table 13**. *Note: The values have been rounded up to the nearest whole number.*

Table 13: Residential Modal Split Trip Generation

Mode of Transportation	Average Daily Traffic	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Vehicular	2,790	52	135	187	131	92	223
Walk	127	2	6	8	6	4	10
Bike	44	1	2	3	2	2	4

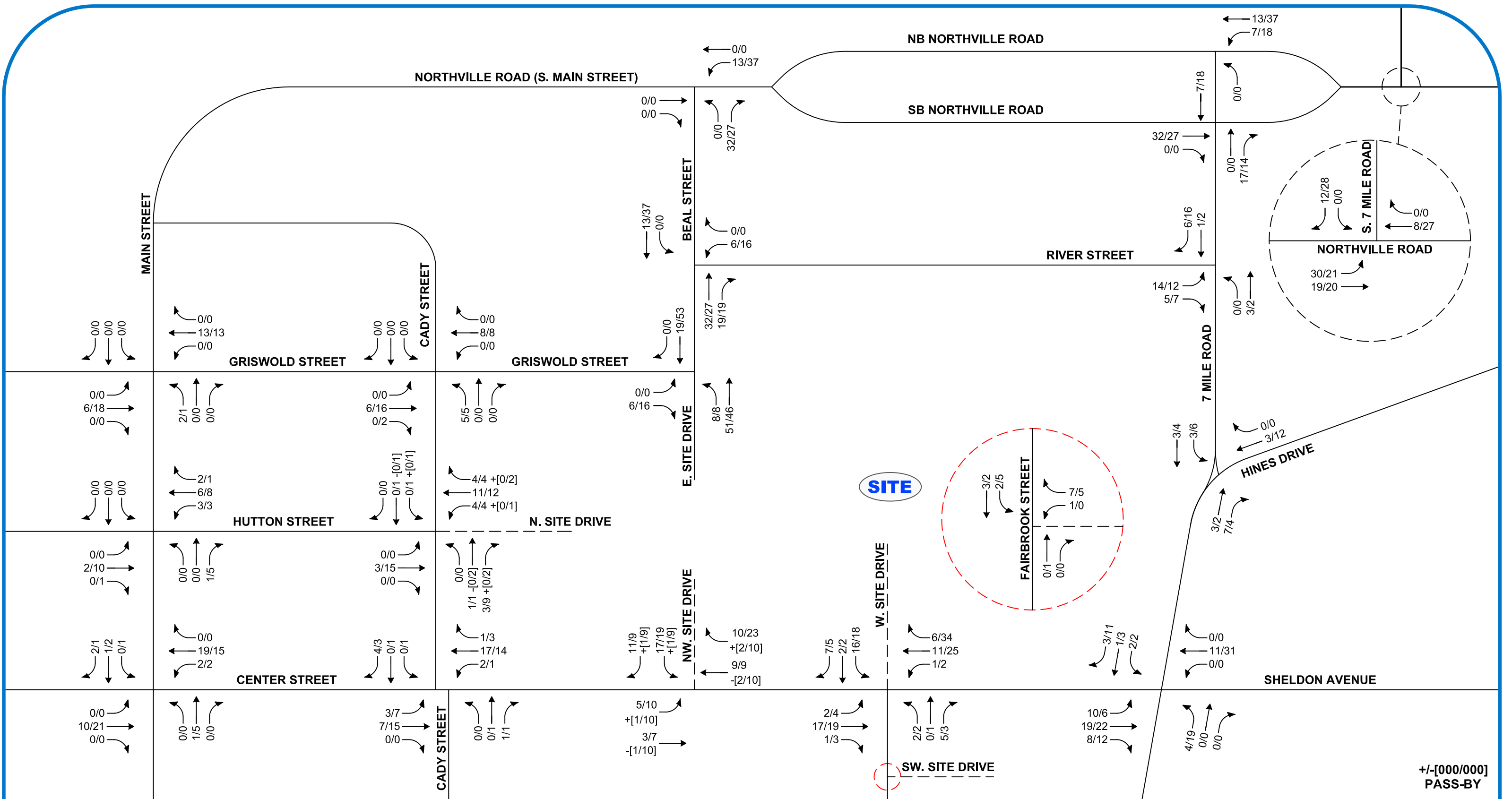
3.8 SITE TRIP DISTRIBUTION

The vehicular trips that would be generated by the proposed development were assigned to the study roads based on existing peak hour traffic patterns in the adjacent roadway network and the methodologies published by ITE. The adjacent street traffic volumes were used to develop the trip distribution. To determine trips distribution for residential developments using the adjacent street traffic it is assumed that the trips in the AM are home-to-work based trips, and in the PM are work-to-home based trips. Therefore, the global trip generation is based on trips in the AM going from the residential development exiting the study network and returning to the study network in the PM. The ITE trip distribution methodology assumes that new trips will return to their direction of origin, while pass-by trips enter and exit the development in their original direction of travel. The site trip distributions used in the analysis are summarized in **Table 14**.

Table 14: New Site Trip Distribution

New Trips					
Residential				Commercial	
AM	PM	To/From	Via	AM	PM
16%	12%	North	Center Street	12%	12%
5%	5%		Hutton Street	6%	7%
11%	10%		Griswold Street	7%	12%
15%	18%	South	Sheldon Avenue	21%	17%
7%	8%		Hines Drive	3%	5%
13%	16%		Northville Road	15%	13%
21%	17%	East	7-Mile Road	13%	13%
3%	4%	West	Main Street	5%	3%
2%	1%		Cady Street	1%	1%
0%	0%		Fairbrook Street	1%	3%
7%	9%		7 Mile Road	16%	14%
100%	100%	Total		100%	100%
Commercial Pass-by Trips					
From / To		Via		AM	PM
North to South		Center Street		35%	44%
South to North		Center Street		49%	41%
East to West		Cady Street		5%	6%
West to East		Cady Street		11%	9%
Total				100%	100%

The vehicular traffic volumes shown in **Table 10** and **Table 13** were distributed to the roadway network according to the distribution shown in **Table 14**. As the proposed development has several access points, the internal distribution is fairly evenly distributed, which minimizes the overall impact on the study network. The site generated trips are shown on **Figure 5** and were added to the future background traffic volumes shown on **Figure 4** to calculate the future peak hour traffic volumes shown on **Figure 6**.



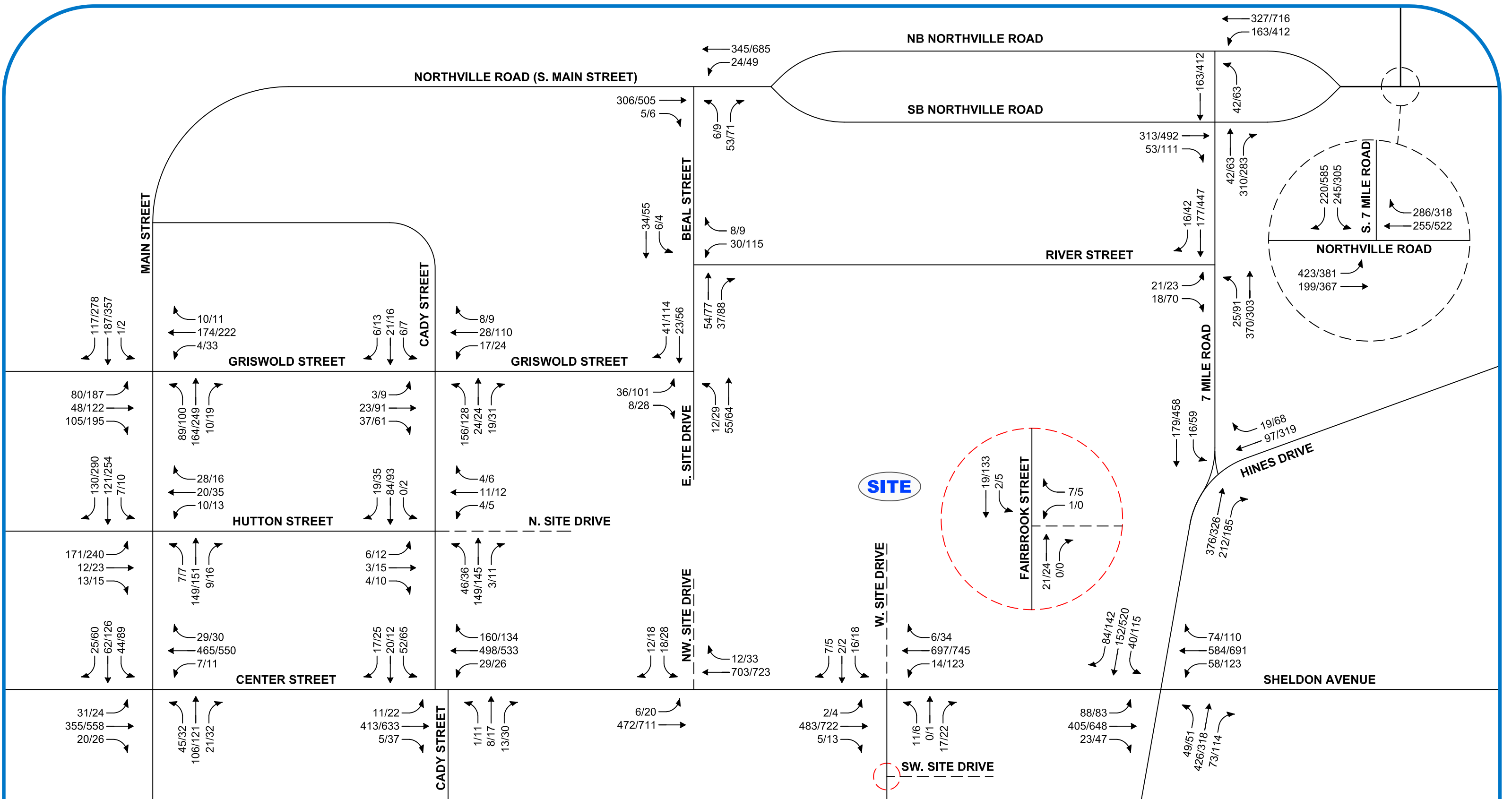


FIGURE 6
FUTURE TRAFFIC
VOLUMES
 NORTHVILLE DOWNS TIS - NORTHVILLE, MI

- LEGEND**
- ROADS
 - PROPOSED ROADS
 - TRAFFIC VOLUMES (AM/PM)
 - SIGNALIZED INTERSECTION
 - UNSIGNALIZED INTERSECTION

NORTH
 SCALE: NOT TO SCALE



3.9 FUTURE CONDITIONS

Future peak hour vehicle delays and LOS *with the proposed development* were calculated based on the existing lane use and traffic control shown on **Figure 2**, the proposed site access plan, the future traffic volumes shown on **Figure 6**, and the methodologies presented in the HCM. The results of the future conditions analysis are presented in **Appendix D** and are summarized in **Table 15**.

Table 15: Future Intersection Operations

Intersection		Control	Approach	Background Conditions 2023				Future Conditions 2023			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
1	Main Street & Center Street	Signalized	EB	20.0	B	20.1	C	20.0	B	20.3	C
			WB	18.9	B	19.4	B	19.0	B	19.6	B
			NB	10.0	B	10.1	B	10.3	B	10.3	B
			SB	8.7	A	10.4	B	8.8	A	10.7	B
			Overall	12.0	B	13.1	B	12.1	B	13.3	B
2	Main Street & Hutton Street	Signalized	EBTL	0.3	A	0.3	A	0.3	A	0.3	A
			EBR	0.0	A	0.0	A	0.0	A	0.1	A
			WBTL	6.7	A	7.6	A	6.7	A	7.6	A
			WBR	7.1	A	9.2	A	7.1	A	9.2	A
			NB	17.3	B	19.4	B	17.5	B	20.4	C
			SBTL	21.5	C	70.5	E	21.5	C	74.3	E
			SBR	16.5	B	16.5	B	16.5	B	16.5	B
			Overall	10.3	B	22.2	C	10.5	B	23.5	C
3	Main Street & Griswold Street	Signalized	EBTL	12.0	B	15.7	B	12.2	B	15.9	B
			EBTR	10.1	B	11.1	B	10.1	B	11.1	B
			WBTL	10.1	B	11.8	B	10.1	B	11.8	B
			WBTR	10.5	B	12.5	B	10.5	B	12.5	B
			NB	15.1	B	16.5	B	15.4	B	16.8	B
			SB	16.9	B	31.0	C	17.0	B	34.0	D
			Overall	12.8	B	18.1	B	12.9	B	19.1	B
4	Cady Street & Center Street	Stop (Minor)	EB	19.9	C	41.2	E	20.5	C	47.0	E
			WB	52.9	F	199.4	F	60.4	F	271.4	F
			NBL	8.4	A	9.3	A	8.4	A	9.3	A
			SBL	9.1	A	9.0	A	9.2	A	9.1	A
5	Cady Street & Hutton Street	Stop (Minor)	EBL	7.6	A	7.6	A	7.6	A	7.6	A
			WBL	Free		Free		0.0**	A	7.5	A
			NB	N/A		N/A		12.0	B	11.5	B
			SB	11.1	B	10.5	B	11.7	B	11.5	B
6	Cady Street & Griswold Street	Stop (Minor)	EB	11.3	B	14.1	B	11.6	B	14.9	B
			WB	9.9	A	11.1	B	10.0	B	11.3	B
			NBL	7.4	A	7.6	A	7.4	A	7.6	A
			SBL	7.3	A	7.5	A	7.3	A	7.5	A
7*	Beal Street & Griswold Street	Stop (Minor)	EB	4.7	A	5.1	A	4.9	A	5.8	A
			WB	Free		Free		Free		Free	
			SB	4.3	A	4.8	A	4.6	A	5.0	A
8	Beal Street & River Street	Stop (Minor)	EB	Free		Free		Free		Free	
			WBL	7.3	A	7.5	A	7.5	A	7.6	A
			NB	9.2	A	9.7	A	9.7	A	10.5	B

Intersection		Control	Approach	Background Conditions 2023				Future Conditions 2023			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
9	Center Street & Fairbrook Street	Stop (Minor)	EB	23.3	C	29.1	D	25.3	D	44.8	E
			WB	N/A		N/A		35.7	E	162.3	F
			NBL	8.5	A	10.1	B	8.6	A	10.2	B
			SBL	Free		Free		9.3	A	9.5	A
10	Sheldon Avenue / Center Street & 7 Mile Road / Hines Drive	Signalized	EBL	20.6	C	33.9	C	20.8	C	36.9	D
			EBTR	33.6	C	27.0	C	33.6	C	27.0	C
			WBL	38.3	D	40.9	D	38.7	D	41.2	D
			WBT	18.2	B	28.6	C	18.3	B	28.8	C
			WBR	17.4	B	18.3	B	17.5	B	18.5	B
			NBTL	20.8	C	42.3	D	22.0	C	48.7	D
			NBR	21.9	C	28.2	C	22.4	C	31.2	C
			SBL	34.9	C	45.7	D	37.8	D	53.8	D
			SBTR	16.0	B	22.8	C	16.7	B	24.8	C
	Overall	24.1	C	28.0	C	24.5	C	29.9	C		
11*	7 Mile Road & Hines Drive	Stop (NB Hines & WBL 7 Mile)	EB	Free		Free		Free		Free	
			WBL	13.3	B	16.5	C	14.7	B	25.3	D
			WBT	Free		Free		Free		Free	
			NB	16.8	C	87.7	F	15.9	C	217.0	F
12	7 Mile Road & River Street	Stop (Minor)	EBL	7.7	A	8.8	A	7.8	A	8.8	A
			WB	Free		Free		Free		Free	
			SB	11.4	B	14.2	B	12.8	B	16.5	C
13	Center Street & NW. Site Drive	Stop (Minor)	WB	N/A		N/A		23.5	C	40.6	E
			NB					Free		Free	
			SBL					9.3	A	9.6	A
14	Fairbrook Street & SW. Site Drive	Stop (Minor)	EB	N/A		N/A		Free		Free	
			WBL					7.3	A	7.3	A
			NB					8.5	A	8.4	A
15	Northville Road & Beal Street	Stop (Minor)	EB	10.5	B	12.2	B	10.4	B	12.5	B
			NBL	8.0	A	8.5	A	8.0	A	8.7	A
			SB	Free		Free		Free		Free	
16*	SB Northville Road & N. 7 Mile Road	Stop/Yield (Minor)	EBT	11.7	B	14.6	B	12.0	B	15.0	C
			EBR	12.5	B	13.9	B	13.2	B	14.6	B
			WB	15.2	C	118.7	F	16.2	C	155.8	F
			SB	Free		Free		Free		Free	
17*	NB Northville Road & N. 7 Mile Road	Yield (Minor)	EBL	14.7	B	35.1	E	15.1	C	40.0	E
			NBTL	4.9	A	5.9	A	4.9	A	6.0	A
			NBT	Free		Free		Free		Free	
18	Northville Road & S. 7 Mile Road	Signalized	WBL	21.5	C	22.4	C	21.5	C	22.4	C
			WBR	9.9	A	15.3	B	10.0	B	16.1	B
			NBT	39.3	D	131.2	F	40.4	D	144.9	F
			NBTR	59.3	E	133.6	F	59.3	E	146.9	F
			SBL	63.4	E	45.6	D	81.5	F	51.2	D
			SBT	11.4	B	12.1	B	11.4	B	12.2	B
			Overall	38.7	D	60.1	E	43.6	D	65.5	E

* Indicates SimTraffic delay or HCM2000 analysis used

** Indicates no traffic volume present

The results of the future conditions analysis indicate that all study intersection approaches and movements will continue to operate acceptably at a LOS D or better with the exception of the following as shown in **Table 15** and summarized below:

3.9.1 Main Street and Hutton Street

- The southbound left/through movement will continue to operate at a LOS E during the PM peak hour.

A review of network simulations indicates acceptable operations and all queues were observed to be serviced within the cycle length.

3.9.2 Main Street and Griswold Street

The intersection LOS on all approaches were seen to operate acceptably; however occasional periods of long vehicle queues were observed on the southbound approach during the PM peak hour. These queues were observed to be present throughout the duration of the peak hour.

3.9.3 Cady Street and Center Street

- The westbound approach will operate at a LOS F during the AM and PM peak hours. Additionally, the eastbound approach will operate at a LOS E during the PM peak hour.

Although intersection LOS indicate failing operations along Cady Street; a review of the simulations indicates that the signalized intersections allow for gaps in traffic, therefore, vehicles on Cady Street are serviced with only minor vehicle queues.

3.9.4 Center Street and Fairbrook Street

- The westbound approach will operate at a LOS E and LOS F during the AM and PM peak hours, respectively. Additionally, the eastbound approach will operate at a LOS E during the PM peak hour.

A review of network simulations indicates that during the AM peak period, the signalized intersections allow for gaps in traffic, therefore, vehicles on Fairbrook Street are serviced with only minor vehicle queues. During the PM peak hour, brief periods of vehicle queues were observed on the eastbound approach; however, these queues were observed to dissipate quickly and were not present throughout the entire peak hour. Periods of long vehicle queues were also observed for the westbound approach; however, they were not present throughout the entire peak period.

3.9.5 Sheldon Avenue/Center Street and 7 Mile Road/Hines Drive

During the PM peak hour, long vehicle queues were observed for the northbound approach and were present during the entire peak period. A review of network simulations indicates that brief periods of long vehicle queues were also observed on the southbound approach during the PM peak hour. These queues were observed to dissipate quickly, as the northbound through traffic was stopped often by northbound left-turning vehicles, which created many opportunities for southbound left-turning vehicles to progress through the intersection. Periods of long vehicle queues were also observed on the westbound movements and were present for the majority of the peak hour.

3.9.6 7 Mile Road and Hines Drive

- The northbound approach will operate at a LOS F during the PM peak hour.

Brief periods of long vehicle queues are observed at the northbound and westbound approaches during the PM peak hour; however, these vehicle queues are a result of the westbound vehicle queues at the intersection of 7 Mile Road and Center Street. Simulations indicate that the queuing created at the intersection of 7 Mile Road and Center Street causes upstream blocking at Hines Drive for 13% of the PM peak hour. During the remaining portion of the peak hour, the signalized intersection of 7 Mile Road and Center Street allows for gaps in traffic, allowing northbound vehicles to progress through the intersection.

3.9.7 Center Street and NW. Site Drive

- The westbound approach will operate at a LOS E during the PM peak hour.

Although intersection LOS indicate poor operations along the site drive; a review of the simulations indicates that egress vehicles easily find gaps in traffic; therefore, vehicles on NW. Site Drive are serviced with only minimal vehicle queues.

3.9.8 Northville Road (S. Main Street) and N. 7 Mile Road

- The yield-controlled westbound through movement will operate at a LOS F during the PM peak hour.
- The yield-controlled eastbound left-turn movement will operate at a LOS E during the PM peak hour.

Although intersection LOS analysis indicates poor operations, a review of SimTraffic the simulations indicates acceptable operations during both peak periods. Occasional periods of short queues were observed at the yield-controlled intersections; however, the gaps provided by the signalized intersections provide acceptable operations for vehicles attempting to make left-turns.

3.9.9 Northville Road and S. 7 Mile Road

- During the AM peak hour, the northbound through/right and southbound left-turn movements currently operate at a LOS E and LOS F, respectively.
- The northbound approach currently operates at a LOS F during the PM peak hour.

A review of network simulations indicates occasional periods of long vehicle queues for the southbound left-turn movement during the AM and PM peak periods; however, these queues are typically observed to be serviced within the cycle length. Additionally, brief periods of long vehicle queues were observed for the northbound approach during the PM peak period. These queues were observed to dissipate and are not present throughout the duration of the peak hour.

3.10 FUTURE IMPROVEMENTS

In order to improve traffic operations to a LOS D or better for all intersection approaches and movements under future conditions, mitigation measures that were identified under existing and background conditions were applied. The results of this analysis are summarized in **Table 17** and indicate that all study intersection approaches and movements would operate acceptably at a LOS D or better during both peak periods, with the exception of 7 Mile Road & Hines Drive.

3.10.1 Main Street and Hutton Street

The results of this analysis indicate that signal timing optimization (i.e. providing more green time for the northbound and southbound approaches) is enough to improve all approaches to operating at a LOS D or better during PM peak period. A review of network simulations confirms acceptable operations.

3.10.2 Main Street and Griswold Street

A review of network simulations indicates that signal timing optimization (i.e. providing more green time for the northbound and southbound approaches) was observed to reduce vehicle queues on the southbound approach.

3.10.3 Sheldon Avenue/Center Street and 7 Mile Road/Hines Drive

In order to address the operational deficiencies at this intersection, the previously identified alternative mitigation measures were again evaluated. The alternative options and the results of the operational analysis are summarized in **Table 16**.

Table 16: Center Street & 7 Mile Road Alternatives Analysis (Future Conditions)

Peak Period	Approach	Existing Conditions				Signalization Improvement				Increased NB LT Storage				Roundabout			
		Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)	Delay (s/veh)	LOS	Average (ft)	95th % (ft)
AM	EBL	20.8	C	48	154	24.1	C	46	155	21.6	C	37	127	9.8	A	170*	293*
	EBTR	33.6	C	194	329	54.3	D	256	418	45.7	D	229	426				
	WBL	38.7	D	32	79	29.8	C	23	58	26.6	C	24	63	5.1	A	23	54
	WBT	18.3	B	48	102	28.3	C	59	121	25.6	C	60	123				
	WBR	17.5	B	19	51	23.9	C	19	59	21.3	C	17	50				
	NBL	22.0	C	15	31	21.8	C	33	86	22.2	C	71	255	13.2	B	1985	3694
	NBT	22.4	C	482	891	54.8	D	622	1245	42.5	D	408	827				
	NBR									20.1	C	30	82				
	SBL	37.8	D	87*	169*	33.2	C	52	100	27.1	C	53*	113*	5.6	A	117*	221*
	SBTR	16.7	B	136*	224*	29.4	C	160*	245*	29.9	C	158*	254*				
	Overall	24.5	C	N/A	N/A	43.1	D	N/A	N/A	35.8	D	N/A	N/A	9.2	A	N/A	N/A
PM	EBL	36.9	D	61	155	32.0	C	52	153	30.3	C	63	176	12.7	B	94	178
	EBTR	27.0	C	188	346	53.1	D	235	413	46.7	D	235	401				
	WBL	41.2	D	105	163	34.6	C	82	153	33.1	C	93	160	11.2	B	67	213
	WBT	28.8	C	415*	713*	52.3	D	295	479	49.4	D	322	528				
	WBR	18.5	B	309*	738*	27.0	C	139	377	25.9	C	171	424				
	NBL	48.7	D	21	30	36.4	D	64	103	39.1	D	177	401	24.0	C	3859	7360
	NBT	31.2	C	6991	14061	78.5	F	3677	7116	43.5	D	1906	4129				
	NBR									17.7	B	32	87				
	SBL	53.8	D	58*	128*	34.7	C	62	135	27.0	C	50	94	18.2	C	197*	200*
	SBTR	24.8	C	211*	286*	46.1	D	232*	265*	49.1	D	237*	257*				
	Overall	29.9	C	N/A	N/A	54.6	D	N/A	N/A	43.3	D	N/A	N/A	17.3	C	N/A	N/A

* Indicates that the queue length has exceeded the link distance. Therefore, may not accurately represent intersection conditions

Option 1: Signalization Improvements

The results of the analysis are similar to background conditions, indicating that the through movements and overall intersection show a degradation in delay and LOS; however, the delay and LOS were improved for the left-turning movements. Although the intersection LOS analysis indicates failing operations for the northbound through movement during the PM peak period, a review of network simulations indicates slightly reduced vehicle queues. Additionally, reduced vehicle queues were observed for the westbound movements. During the AM peak hour, network simulations show acceptable operations with only minor increases in vehicle queues.

Option 2: Increased Northbound Left-Turn Storage

The results of the analysis are similar to **Option 1**, with much greater reductions in northbound vehicle queues observed during the PM peak period. Additionally, increased delays and reduced LOS were observed for the westbound approach; however, reduced vehicle queues were observed. During the AM peak hour, network simulations show acceptable operations with only minor increases in vehicle queues.

Option 3: Roundabout

The results are similar to background conditions, with the Rodel analysis indicating that the installation of a roundabout at this intersection will result in decreased delays for all approaches. A review of network simulations however, indicates similar operations to those observed in background conditions, with long southbound vehicle queues forming and causing back-ups throughout the network.

3.10.4 7 Mile Road and Hines Drive

The signal improvements at the intersection of 7 Mile Road and Center Street significantly decreased the delay on the northbound approach; however, the westbound queues at 7 Mile Road and Center Street were still observed to back up near the intersection during the PM peak hour.

3.10.5 Northville Road (S. Main Street) and N. 7 Mile Road

The results of this analysis indicate that, with intersection signalization, all movements and approaches improved to a LOS C or better. A review of network simulations indicates acceptable operations for all movements.

3.10.6 Northville Road and S. 7 Mile Road

The results of this analysis indicate that signal timing optimization (i.e. providing more green time for the northbound and southbound movements) is enough to improve all approaches to operating at a LOS D or better during the AM and PM peak periods. A review of network simulations confirms acceptable operations.

3.10.7 Future Conditions with Improvements

Intersection operations and vehicle queues with the recommended improvements are summarized in **Table 17** and **Table 18**, respectively.

Table 17: Future Intersection Operations with Improvements

Intersection		Control	Approach	Future Conditions 2023				Future Conditions 2023 (With Improvements)			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
2	Main Street & Hutton Street	Signalized	EBTL	0.3	A	0.3	A	No Change		19.3	B
			EBR	0.0	A	0.1	A			16.8	B
			WBTL	6.7	A	7.6	A			15.1	B
			WBR	7.1	A	9.2	A			19.9	B
			NB	17.5	B	20.4	C			14.9	B
			SBTL	21.5	C	74.3	E			36.9	D
			SBR	16.5	B	16.5	B			9.4	A
			Overall	10.5	B	23.5	C			22.1	C
3	Main Street & Griswold Street	Signalized	EBTL	12.2	B	15.9	B	No Change		26.1	C
			EBTR	10.1	B	11.1	B			16.4	B
			WBTL	10.1	B	11.8	B			17.6	B
			WBTR	10.5	B	12.5	B			19.3	B
			NB	15.4	B	16.8	B			11.4	B
			SB	17.0	B	34.0	D			17.7	B
			Overall	12.9	B	19.1	B			17.6	B
			11*	7 Mile Road & Hines Drive	Stop (NB Hines & WBL 7 Mile)	EB	Free		Free		Free
WBL	14.7	B				25.3	D	18.8	C	27.5	D
WBT	Free					Free		Free		Free	
NB	15.9	C				217.0	F	19.3	C	71.8	F
16 & 17	Northville Road & N. 7 Mile Road	Stop/Yield Signalized [IMP]	EBL	15.1	C	40.0	E	31.5	C	26.9	C
			EBR	13.2	B	14.6	B	15.4	B	13.9	B
			WB [NBL]	16.2	C	155.8	F	3.4	A	10.3	B
			NBT	Free		Free		0.1	A	0.3	A
			SBT	Free		Free		25.7	C	31.4	C
			SBTR	Free		Free		25.8	C	31.6	C
			Overall	N/A	N/A	N/A	N/A	13.2	B	14.0	B

Intersection		Control	Approach	Future Conditions 2023				Future Conditions 2023 (With Improvements)			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS	Delay (s/veh)	LOS
18	Northville Road & S. 7 Mile Road	Signalized	WBL	21.5	C	22.4	C	35.0	C	33.2	C
			WBR	10.0	B	16.1	B	13.2	B	24.2	C
			NBT	40.4	D	144.9	F	29.1	C	45.0	D
			NBTR	59.3	E	146.9	F	34.2	C	46.3	D
			SBL	81.5	F	51.2	D	35.2	C	34.1	C
			SBT	11.4	B	12.2	B	10.3	B	0.6	A
			Overall	43.6	D	65.5	E	27.9	C	30.5	C

* Indicates SimTraffic delay analysis used

Table 18: Future Vehicle Queues with Improvements

Intersection		Control	Approach	Future Conditions 2023				Future Conditions 2023 (With Improvements)			
				AM Peak		PM Peak		AM Peak		PM Peak	
				Average (ft)	95th % (ft)	Average (ft)	95th % (ft)	Average (ft)	95th % (ft)	Average (ft)	95th % (ft)
2	Main Street & Hutton Street	Signalized	EBTL	No Changes		47	98	No Changes		70	129
			EBR			9	32			13	39
			WBTL			84	167			97	191
			WBR			68	112			74	118
			NB			26	60			21	52
			SBTL			117	196			83	140
			SBR			8	26			5	19
3	Main Street & Griswold Street	Signalized	EBTL	No Changes		105	182	No Changes		127	212
			EBTR			78	137			88	146
			WBTL			70	117			78	124
			WBTR			109	158			129	189
			NB			78	124			70	116
			SB			358	568			184	360
11	7 Mile Road & Hines Drive	Stop (NW Hines & WBL 7 Mile)	EB	Free		Free		Free		Free	
			WBL	0	0	19	151	0	0	1	10
			WBT	Free		Free		Free		Free	
			NB	45	78	620	1652	48	83	244	546

4 CONCLUSIONS

The conclusions of this TIS are as follows:

4.1 EXISTING CONDITIONS

The results of the existing conditions analysis showed that all study intersection approaches and movements currently operate acceptably at a LOS D or better during all peak periods, with the exception of the following:

4.1.1 Main Street and Hutton Street

The SB left/through movement currently operates at a LOS E during the PM peak hour.

4.1.2 Main Street and Griswold Street

The SB left/through movement at Main Street and Griswold Street currently operates at a LOS E during the PM peak hour. The SB approach was observed to have occasional periods of long vehicle queues during the PM peak period. These queues were observed to dissipate and not present throughout the peak hour.

4.1.3 Cady Street and Center Street

The WB approach at Cady Street and Center Street currently operates at a LOS E and LOS F, during the AM and PM peak periods, respectively. Additionally, the EB approach currently operates at a LOS E during the PM peak hour. Network simulations indicate that the signalized intersections allow for gaps in traffic and therefore Cady Street traffic is serviced with minimal vehicle queues.

4.1.4 Sheldon Avenue/Center Street and 7 Mile Road/Hines Drive

The NB approach was observed to have long vehicle queues during the PM peak period. These queues are the result of insufficient capacity on Sheldon Avenue to accommodate the existing vehicular demand. The existing bridge on Sheldon Avenue on the south leg of this intersection limits the space available for northbound left-turning vehicles to queue, thus blocking through traffic on the northbound approach.

In addition, the WB approach was observed to have periods of long vehicle queues during the PM peak period. These queues are the result of left-turning vehicles exceeding the turn lane storage length and blocking the through and right-turn lanes.

To mitigate the existing intersection delays at this intersection, two alternative measures were evaluated:

Option 1: Intersection Signalization Improvements

This alternative measure would require that the existing traffic signal be replaced and upgraded to a fully actuated signal with left-turn signal heads. The proposed intersection configuration is as follows:

- Restriping the NB approach to provide a through/right lane and an exclusive 60-ft left-turn lane (*Note: On the NB approach the left-turn storage length would be limited by existing geometric constraints of the bridge*).
- Restriping the SB approach to provide a through/right lane and an exclusive left-turn lane.
- Upgrade to a fully actuated signal.
- Provide permissive/protected left-turn phasing for all approaches (Left-turn Warrant in **Appendix E**).
- Providing overlap phasing for westbound right-turn movement.
- Optimize traffic signal timings and cycle lengths during peak periods.

The results of the analysis indicates that the through movements and overall intersection showed a degradation in delay and LOS; however, the delay and LOS were improved for the left-turning movements. Although the intersection LOS analysis indicates poor operation for the northbound through movement during the PM peak period, a review of network simulations indicates slightly reduced vehicle queues. Additionally, reduced vehicle queues were observed for the westbound movements during the PM peak period.

Option 2: Increased Northbound Left-Turn Storage

This alternative measure would require the widening of the Sheldon Avenue bridge across the Johnson Creek in order to provide adequate left-turn storage. The proposed intersection configuration is as follows:

- Widening the NB approach to provide a 300-ft left-turn lane and a 50-ft right-turn lane.
- Restriping the SB approach to provide through/right lane and an exclusive left-turn lane.
- Upgrade to a fully actuated signal.
- Provide permissive/protected left-turn phasing for all approaches.
- Providing overlap phasing for northbound and westbound right-turn movements.
- Optimize traffic signal timings and cycle lengths during peak periods.

The analysis results for this alternative are similar to those observed for **Option 1**; indicating that the through movements will experience increased delays, however, the left-turn movements will experience decreased delays. Network simulations indicate that the northbound approach will experience significant decreases in vehicle queuing; additionally, reduced vehicle queues were observed for the westbound approach.

Option 3: Roundabout

This alternative includes the installation of a roundabout at this intersection. OHM Advisors provided the preliminary design and Rodel model that was used in the intersection analysis. To implement this alternative measure, the WCDPS would need to acquire significant ROW, in order to fit the roundabout as designed. Additionally, wetlands are a concern in the southeast portion of the site; therefore, potential mitigation may be required.

The Rodel model and analysis performed by OHM Advisors; indicates that all approaches will experience a reduction in delay and LOS over existing conditions. F&V performed additional analysis using the HCM methodology and SimTraffic simulations which, indicates that the southbound approach will experience significantly increased vehicle queues during both peak periods. These queues are expected to back up along Center Street, eliminating the potential gaps for the minor stop-controlled intersections. The long southbound vehicle queues were not observed to dissipate and are present throughout the peak periods.

4.1.5 7 Mile Road and Hines Drive

The NB approach of 7 Mile Road and Hines Drive currently operates at a LOS F during the PM peak period. Network simulations indicate that the delay is caused by the WB queue spillback from the adjacent intersection of Sheldon Avenue/Center Street and 7 Mile Road/Hines Drive.

4.1.6 Northville Road (S. Main Street) and N. 7 Mile Road

The yield-controlled westbound through movement currently operates at a LOS F during the PM peak hour. Although intersection LOS analysis indicates poor operations, a review of SimTraffic the simulations indicates acceptable operations during both peak periods. Occasional periods of short queues were observed at the yield-controlled intersections; however, these vehicles were observed to find gaps within the opposing traffic, created by the signalized intersections.

- Several potential mitigation measures were identified to reduce vehicle delays and improve safety. The potential improvements that the WCDPS may want to consider are as follows:
 - Eliminate the bi-directional cross-over
 - Provide a directional northbound left-turn (J-turn) and prohibit eastbound left-turns
 - Provide a median U-turn south of N. 7 Mile Road to facilitate eastbound left-turns.
 - Consider intersection signalization
 - A signal warrant analysis indicates that a signal **is warranted** for existing conditions.

4.1.7 Northville Road and S. 7 Mile Road

The northbound through/right and southbound left-turn movements currently operate at a LOS E during the AM peak hour. Additionally, the northbound approach currently operates at a LOS F during the PM peak hour. A review of network simulations indicates occasional periods of long vehicle queues for the southbound left-turn

movement during the AM and PM peak periods; however, these queues are typically observed to be serviced within the cycle length. Additionally, brief periods of long vehicle queues were observed for the northbound approach during the PM peak period. These queues were observed to dissipate and are not present throughout the duration of the peak hour.

4.2 BACKGROUND CONDITIONS

- An average annual background growth rate of 0.2% was applied to the existing 2018 traffic volumes to calculate the future 2023 background traffic volumes. In addition, several proposed developments planned in the vicinity of the site were identified and included as part of the background traffic volumes.
- The 2023 background traffic operations ***without the proposed development*** will continue to operate in a manner similar to existing conditions. The mitigation measures identified in the existing conditions were applied and found to adequately mitigate the projected delays.

4.3 FUTURE CONDITIONS

With the addition of the development, several study intersection approaches and movements will continue to operate at a LOS E or F during the peak periods and with long vehicle queues. The mitigation measures identified in the existing condition analysis were therefore considered for the future conditions and along with additional signal timing optimizations were found to mitigate the delays created by the development. All proposed signal timing modifications are provided in **Appendix D**.

- **No additional improvements are recommended to mitigate future conditions.**

Overall, the operational deficiencies within the study network are due to existing conditions and not the addition of site generated traffic. The impact of this development on the roadway network is lessened by the following factors:

Site Access

The proposed development is located within an existing roadway network. As a result, there are many different roadways in which traffic will enter and exit the network. Additionally, the proposed development has numerous points of access into the site. Both of these factors create an even distribution throughout the study network and does not overly impact any one site driveway or intersection within the network.

Trip Generation

The proposed development generates a relatively low number of trips for development of this size. This is due to 1) the primary land use is residential, and 2) it is located within a downtown community. In addition, the current land use for site (Horse Race Track) has the potential to generate more traffic during the evening and weekends than the proposed residential development is expected to generate.

Land Use	Average Daily Traffic	AM Peak Hour			PM Peak Hour		
		In	Out	Total	In	Out	Total
Residential	2,790	52	135	187	131	92	223
Commercial	1,923	11	7	18	44	40	84
Total New Vehicular Trips	4,713	63	142	205	175	132	307

5 RECOMMENDATIONS

The recommendations of this TIS are as follows:

	Existing	Background	Future
2. Main Street & Hutton Street			
Optimize traffic signal timings during PM peak period (Provide more NB/SB green time)	X		
3. Main Street & Griswold Street			
Optimize traffic signal timings during PM peak period (Provide more NB/SB green time)	X		
10. Sheldon Avenue/Center Street & 7 Mile Road/Hines Drive			
Mitigation	X		
11. 7-Mile Road & Hines Drive			
Construct a northbound right-turn lane on Hines Drive	X		
15-16. Northville Road (S. Main Street) & N. 7 Mile Road			
Mitigation	X		
17. Northville Road & S. 7 Mile Road			
Optimize traffic signal timings during peak periods (Provide more NB/SB green time)	X		

INTERNAL SITE PLAN REVIEW

DATE: November 28, 2018,

SITE: 301 S. CENTER – HUNTER PASTEUR HOMES – P.U.D. ELIGIBILITY

REVIEWED BY:

DATE:

 **BUILDING:**

RS [signature]

12/10/18

D.P.W./ENGINEERING: _____

FIRE: _____

POLICE: _____

DDA: (If applicable) _____

ADDITIONAL COMMENTS: _____

None

PLEASE RETURN REVIEW **AND APPLICATION/PLANS** TO THE BUILDING
DEPT. BY **12:00 P.M. THURSDAY, DEC. 6, 2018.**

INTERNAL SITE PLAN REVIEW

DATE: November 28, 2018,

SITE: 301 S. CENTER – HUNTER PASTEUR HOMES – P.U.D. ELIGIBILITY

REVIEWED BY:

DATE:

BUILDING: _____

D.P.W./ENGINEERING: _____

FIRE: _____


POLICE: _____

DDA: (If applicable) _____

ADDITIONAL COMMENTS: Please see attached

PLEASE RETURN REVIEW AND APPLICATION/PLANS TO THE BUILDING
DEPT. BY 12:00 P.M. THURSDAY, DEC. 6, 2018.

The Department of Public Works has no objection to the requested PUD. If approved, a full engineering review will be required, and the associated consulting fees. The City's engineering consultant, OHM advisers will be reviewing the recent information submitted as part of the traffic study and will provide their recommendations to the commission.

 12-06-18

INTERNAL SITE PLAN REVIEW

DATE: November 28, 2018,

SITE: 301 S. CENTER – HUNTER PASTEUR HOMES – P.U.D. ELIGIBILITY

REVIEWED BY:

DATE:

BUILDING: _____

D.P.W./ENGINEERING: _____

✓ FIRE: Ag. Work Full

11/29/18

POLICE: _____

DDA: (If applicable) _____

ADDITIONAL COMMENTS: NO ISSUES AT THIS TIME.

PLEASE RETURN REVIEW AND APPLICATION/PLANS TO THE BUILDING
DEPT. BY 12:00 P.M. THURSDAY, DEC. 6, 2018.

INTERNAL SITE PLAN REVIEW

DATE: November 28, 2018,

SITE: 301 S. CENTER – HUNTER PASTEUR HOMES – P.U.D. ELIGIBILITY

REVIEWED BY:

DATE:

BUILDING: _____

D.P.W./ENGINEERING: _____

FIRE: _____

POLICE: Dust / R #270

11-29-2018

DDA: (If applicable) _____

ADDITIONAL COMMENTS: • Data regarding traffic Volumes is between 4 to 9 years old (MDOT BSEM06) - Volumes have probably Increased, with Population Increases in Area • Traffic Study Sample Size (8 Hours over 2 days) Seems a bit Small • 7 mile S Center Continues to be the major traffic area Problem w/ No Easy Solution • Daylight River Stated as being a "Private/Public" Partnership - does this include the cost? • Size of the Current Farmers Market lot which includes available lot Parking is

PLEASE RETURN REVIEW AND APPLICATION/PLANS TO THE BUILDING DEPT. BY 12:00 P.M. THURSDAY, DEC. 6, 2018.

Approximately 115,000 Square feet - wondering how the Square Footage compares to their proposed Parking lot location • Increased Population will put an increased demand on public Services (DPW, Fire, Police) & infrastructure.

INTERNAL SITE PLAN REVIEW

DATE: November 28, 2018,

SITE: 301 S. CENTER – HUNTER PASTEUR HOMES – P.U.D. ELIGIBILITY

REVIEWED BY:

DATE:

BUILDING: _____

D.P.W./ENGINEERING: _____

FIRE: _____

POLICE: _____

DDA: (If applicable)

Ward

12/6/18

ADDITIONAL COMMENTS: Pedestrian bridge needed over River to connect neighborhood with new development. Funding for project needs to be identified. Developer needs to meet with Chamber of Commerce to identify needs + location. Commercial square footage is limited. Single family housing should be alley accessed with rear garages to avoid frequent

PLEASE RETURN REVIEW AND APPLICATION/PLANS TO THE BUILDING DEPT. BY 12:00 P.M. THURSDAY, DEC. 6, 2018.

curb cuts and provide more on-street parking. Upgrades to transportation issues not resolved. This is the single biggest issue and no changes were noted. Several of the amenities ~~are~~ used to meet PUD eligibility are in Phase II. How do you guarantee amenities provided later to issue permits for phase I. How are the developers paying for the project amenities used to meet PUD Eligibility. A report/statement from the Economic Development Committee will be issued next week prior to Planning Commission packets.

What are the other items on the agenda?

By Council. Committee on the Transportation, Finance &

Public Works Committee, and the Planning & Economic Development

Committee. The Committee on the Transportation, Finance &

Public Works Committee, and the Planning & Economic Development

Committee. The Committee on the Transportation, Finance &



Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

Date: September 12, 2018

Rev.: December 13, 2018

**Planned Unit Development (PUD)
Eligibility Review
For
City of Northville, Michigan**

Applicant:	Hunter Pasteur Northville LLC 32300 Northwestern Highway, Suite 230 Farmington Hills, MI 48334
Project Name:	The Downs Planned Unit Development (PUD)
Plan Date:	August 13, 2018
Latest Revision:	November 27, 2018
Location:	Vacant parcels on the south side of Cady St. (between S. Center and Griswold), the Northville Downs racetrack property south of Cady St. (between S. Center St. and River St.), and two areas on the west side of S. Center St.
Zoning:	CBD – Central Business District CSO – Cady Street Overlay District RTD – Racetrack District R-2 – Second Density Residential District
Action Requested:	PUD Eligibility
Required Information:	As noted within this review

PROJECT AND SITE DESCRIPTION

The applicant is requesting review of Planned Unit Development (PUD) Eligibility for a residential and commercial project on 48.12 acres of land that is currently vacant or occupied by the Northville Downs Racetrack. The project is proposing 18,700 square feet of commercial space and apartment buildings along Cady Street. South of these buildings are single-family homes, and townhomes. Townhomes are also proposed on two smaller parcels on the west side of S. Center St.

The three types of residential units that are proposed include:

- Apartments: 306 Units; average 947 s.f.; 4-5 stories (*No change from previous plan*)
 - Townhomes: 187 units (*down from 222 Units*); 1,580 – 2,335 s.f.; 3 stories
 - Single-Family Dwellings: 53 units (*up from 49 Units*); 2,300 – 3,100 s.f.; 2 stories
- Total: 546 Residential Units (*Down 31 total units from previous plan*)

Figure 1 – Subject Sites



PUD PROCESS

Section 20.05 of the Zoning Ordinance outlines the procedure to review a Planned Unit Development (PUD). Per this process, the applicant met with City Staff twice (February and July, 2018) for Pre-Application Meetings, where the project team and Staff discussed the proposal.

The next step in the process is for the Planning Commission to evaluate the proposal against the PUD Eligibility Criteria in the ordinance, and convey written or verbal comments to the applicant. The eligibility criteria are broad-based criteria. They are to be used to determine if the benefits

of the project justify the requested deviations from the zoning requirements, and that the project couldn't be built without these deviations.

We provided a review (dated September 12, 2018) on the previous submittal, and the applicant attended and presented their project at the October 2, 2018 Planning Commission meeting. Based on the meeting minutes, the following concerns and comments were expressed. (Note: We have organized the comments in the same order as presented in the applicant's response memo, and included additional items not in their memo at the end of the list.)

1. **Middle Rouge River/Linear Park:**
 - a. Prepare approach to financing and implementation of daylighting the river. Describe how a public/private partnership would work.
 - b. Concern that linear park is perceived as "private" given that it runs behind homes and townhomes. Park should be fronted on a public street.
 - c. Master Plan has open space all along 7-Mile; the proposal doesn't include this connection (between River St. and S. Center St.).
2. **Farmer's Market:**
 - a. Obtain Chamber of Commerce input on proposed location and size of Farmer's Market.
 - b. Consider possibility of amenities (i.e. pavilion, restrooms, etc.) at Farmer's Market site.
3. Proposed **density** is too high.
 - a. Denser than provided for in the Master Plan.
 - b. Generates concerns about parking, traffic, and impact on schools.
4. **Product Diversity and Quality (Building Architecture):**
 - a. Concerns that proposed design of single-family and townhouse product "fit" within the small-town, unique and historic character of Northville.
 - b. Scale of proposed homes in relationship to the scale of the existing surrounding homes.
 - c. Concerns about quality of construction.
5. **Product Location:** Provide additional explanation for location of single-family homes and townhomes (in contrast to Master Plan).
6. Concern about **traffic** congestion and vehicles "cutting-through" existing neighborhoods.
7. Information regarding infrastructure costs to all City residents due to this benefit (i.e. water rates due to renegotiated agreement with the Great Lakes Water Authority).
8. Concerns about **parking**.
9. **Connectivity to Downtown Northville (Non-Motorized Facilities):**
 - a. Pedestrian connectivity between project and downtown Northville, and Hines Park pathways needs to be improved.
 - b. Concern about bike path on S. Center St. given widening needed to accommodate traffic.
10. **Project phasing/development schedule** needs to be provided.

Additional items noted in the meeting minutes:

11. **"Central" park** element in Master Plan needs to be increased in size.
12. Minimal amount of **commercial/retail space** proposed.
13. **Gateway:**
 - a. More opportunities exist for appropriate gateway emphasis.
14. Address questions about how **"single ownership"** of the project would be accomplished with the number of developers involved. Asked for opinion from City's Attorney.

The applicant has responded to most of the comments made at this meeting from the Planning Commission and public with the current submission. We have reviewed the proposal in light of the PUD Eligibility Criteria, these comments, and the applicant's new submittal. The next section of this review lists the criteria and our comments after each.

PUD ELIGIBILITY CRITERIA

Section 20.05(2)(a) of the City of Northville Zoning Ordinance establishes PUD criteria which determine the overall eligibility for a Planned Unit Development. The applicant for a PUD must demonstrate all of the following criteria as a condition to being entitled to PUD treatment. These criteria are provided below.

Criterion No. 1: Grant of the planned unit development will result in one of the following:

- a. A recognizable and material benefit to the ultimate users of the project and to the community, where such benefit would otherwise be unfeasible or unlikely to be achieved without application of the planned unit development regulations; or
- b. Long-term protection and preservation of natural resources and natural features of a significant quantity and/or quality, where such benefit would otherwise be unfeasible or unlikely to be achieved without application of the planned unit development regulations; or
- c. Long-term protection of historic structures or significant architecture worthy of historic preservation; or
- d. A non-conforming use shall, to a material extent, be rendered more conforming, or less offensive, to the zoning district in which it is situated.

The PUD identifies the following features as public benefits of the project:

1. Linear park
2. Daylighting the river (added by this current submission)
3. Pocket parks
4. Farmer's market relocation
5. Traffic improvements
6. Eliminating outdated buildings currently on site

7. Re-locating sanitary sewer pipe currently spanning the river (north of Beal St.)
8. Stormwater management improvements

We have provided comments (in italics) after each:

- i. **Linear Park, Daylight River, Pocket Parks: Applicant's Submittal:** The linear park has been increased from 6.3 acres to 8.4 acres (exclusive of detention basins), and is proposing to daylight the river. The 13 home sites along River Street have also been removed, allowing the park to front onto River Street. The park will be improved with paved walking/biking trails, river overlook, benches, lighting and extensive landscaping. While not mentioned in this submittal, we assume that the park will still be deeded to the City and annual maintenance costs of the park will be borne by the Homeowner's Association as previously stated.

CWA Comment: As in our previous review, we consider the 8.3-acre park with walking/biking trail, benches, landscaping and lighting to be a public benefit, the extent of which based on how much the applicant is proposing to construct. We also consider daylighting the river to be a public benefit, again the extent of which based on the level of participation by the applicant. We've commented on each item separately below:

Linear Park:

1. *The applicant has responded to comments provided, and removed the 13 home sites along River St., increasing the size of the park by 30%, and providing a public street frontage to the new park. This is a positive change to the plans.*
2. *The Landscape Plan also shows a pedestrian connection between the pathways in the linear park to S. Center St. While parkland is not dedicated in this area as shown in the Master Plan, a pedestrian connection around the detention basins and behind the most southerly-row of townhomes is proposed. In our opinion, this addresses the Master Plan vision of providing a pedestrian connection along 7-Mile Road. (Note that this connection also needs to be reflected on the Preliminary Plan.)*
3. *It is unclear how much of the park development will be completed by the applicant. Is this proposal offering to build the features shown on the site plan? If so, we consider this a public benefit. If some other arrangement is being offered (i.e. only deeding the land, or only installing some of the features, and leaving development of all or some portion of the park to the City), this needs to be clarified.*
4. *City Council will need to decide if accepting this park is in the best interest of the community. The Planning Commission's recommendation regarding the PUD will help inform Council on this topic.*
5. *The park maintenance will need to be conducted and administered by the City, requiring personnel and coordination.*
6. *Regarding maintenance costs, the PUD Agreement would need to clearly describe how the costs (current and future) would be determined and transferred from the Homeowner's Association (HA) to the City each year. While it may seem beneficial*

that the HA pay for the park maintenance, implementation of this arrangement could become problematic in the future.

Daylighting the River:

7. As mentioned above, the 13 home sites have been removed along River Street, allowing the park to front on to a public street, and increasing the size of the area that can be used to daylight the river. We consider this a positive change and in response to the many comments regarding this issue at the previous meeting.
8. The site plan shows a conceptual location of the daylighted river, which is consistent with the Master Plan. The applicant's response states that the development team is working on a construction plan for the river that will comply and meet permit requirements within all regulatory standards.
9. The submission also includes a description of how the financing of this proposal could work. They have described work with Friends of the Rouge (FOTR) to source capital for daylighting the river. The applicant is also committing private capital towards this project, with FOTR raising the remaining funds through grants.

We consider this approach reasonable, but we recommend that a more comprehensive funding plan for this element of the project be provided, that includes the following information:

- a. Approximately how much will daylighting the river cost?
- b. What level of capital is the applicant willing to commit to daylight the river? Will it consist of direct payments, or some other funding mechanism, such as tax abatements?
- c. We consider grants a reasonable method to assist in financing the daylighting. However, what happens if grants are not available?
- d. Has the City been approached to participate in this public/private partnership? If so, how the City is involved should be described.

Pocket Parks:

10. In our previous review, we asked if the pocket parks shown at the terminus of Hutton St. are proposed as public parks?
11. At the previous meeting, a comment was made regarding the small size of the pocket parks in relation to the "central" park in the Master Plan illustration. Comparing the current plan with the previous plan, the size of the parks have not changed. Both pocket parks equal approximately 5,000 s.f. within the sidewalk area.

- ii. **Farmer's Market: Applicant's Submittal:** The project proposes to re-locate the Farmer's Market. This submission provides two possible options for the Farmer's Market. One is an area of 25,000 s.f. located in the linear park (Note that the current Farmer's Market sales area is approximately 35,000 s.f.) The second is proposing to use 40,000 s.f. of the large parking lot along the Beal Street extension, south of the apartment/commercial buildings for the market. The applicant is leaving it up to the Chamber of Commerce and the City to decide which location is better.

CWA Comments: The previous plan showed a Farmer's Market area of approximately 17,000 s.f. This plan has increased the area by 8,000 – 23,000 s.f. The park location for the market is still smaller than the current Farmer's Market (by 10,000 s.f.), but less so than the previous proposal; the parking lot location is larger than the current market by 5,000 s.f. If either location is determined to meet the Chamber of Commerce's needs without negatively impacting parking, we would consider this a public benefit. We have the following comments/questions:

1. In our opinion, locating the farmers market in a park setting is positive. Because the park area has been increased, the area dedicated to the Farmer's Market does not have as much of an impact on greenspace than the previous proposal.
2. Locating the Farmer's Market in the surface parking lot has the advantage of using the pavement for multiple purposes. Locating it here would also eliminate the paving in the linear park.

Forty-thousand (40,000) s.f. would take up 120 spaces in the large surface lot, leaving 137 spaces in the lot, and 80 on-street spaces within the vicinity. Based on our parking analysis on Page 9, this would occupy the 94-retail spaces, plus an additional 20 spaces. Given the seasonal and short time-frame the market operates, we think this lot could be shared with the retail uses. However, information about the number of apartments in the two buildings directly adjacent to the surface lot should be provided to ensure that residents' cars aren't displaced by the Farmer's Market sales area.

3. Has the applicant discussed either location with the Chamber of Commerce? As mentioned at the previous meeting, the Chamber needs to provide their thoughts on these proposals.
 4. If the Farmer's Market is located in the linear park, a pavilion, restrooms, or other amenities would benefit this location for the market as well as other public events and activities, such as concerts, plays, social gatherings, etc. This comment was made at the previous meeting, and the applicant should address it in their response.
- v. **Traffic. Applicant's Response:** Project proposes traffic signalization improvements.

CWA Comments: An updated Traffic Impact Study (Revised November 26, 2018) has been submitted. As requested, the study looks at the impacts of the development on the following intersections:

1. Northville Road & Beal Street
2. SB Northville Road & N. 7-Mile Road (portion of 7-Mile west of Northville Rd.)
3. NB Northville Road & N. 7-Mile Road (portion of 7-Mile west of Northville Rd.)
4. Northville Road & S. 7-Mile Road (portion of 7-Mile east of Northville Rd.)

The updated study also evaluated the following improvements for the Sheldon/S. Center St. and 7-Mile Road/Hines Drive intersection, as follows:

1. Signalization improvements

2. Increased north-bound left-turn storage
3. Roundabout

In the previous submission, the traffic improvements the applicant proposed include:

1. Traffic signal timing changes at the following intersections:
 - Main Street and Griswold Street
 - Sheldon/Center St. and 7 Mile Road
 - Main Street and Hutton Street
2. Re-stripe the northbound and southbound approaches at the Sheldon/Center and 7 Mile Road intersection. This would require widening Center Street north of the intersection to provide these lanes and maintain existing bike lanes.
3. Upgrade the signal at Sheldon/Center and 7 Mile intersection to provide protected/permissive left-turning phases for all approaches.
4. They will not widen the bridge south of the Sheldon/Center and 7 Mile Road intersection to increase storage of turn lane.

The applicant's response memo states that they continue to work with their traffic consultant and the City's traffic/engineering consultant to resolve this issue.

On December 12, 2018, a meeting was convened with Wayne County Road Commission, the City's Traffic Engineer, the applicant and their traffic engineer, the DPW Director and City Planner. The purpose of the meeting was to find out what the Road Commission would support at the S. Center St./7-Mile intersection, and to discuss options for the 7-Mile/S. Main St. intersection. The City's Traffic Engineer (OHM) is providing a response memo to the revised Traffic Impact Study, which will also include a description of the results of today's meeting. In short, the current preferred approaches by all involved include:

1. **S. Center/7-Mile:** A round-about that is minimally sized to accommodate passenger vehicles and larger trucks that will provide a LOS (Level of Service) of "B," and have pedestrian amenities (refuge islands, activated signals, bicycle ramps, etc.). Of the solutions provided, a round-about is the only solution that actually increases the LOS at this intersection. OHM is preparing a conceptual plan for Wayne County Road Commission's review, who will provide comments to Northville. They are working to get both concept and review done in time for the upcoming Planning Commission meeting. Note that federal grants were also discussed that may be available to help fund a round-about.
2. **7-Mile/S. Main St.:** A Michigan-style boulevard with turning lanes incorporated into the boulevard. This will require expanding the median on S. Main St. and reduce the number of travel lanes on the east side (northbound) of S. Main St. Both traffic teams consider this the safest option of the possible solutions to this intersection. The applicant will provide an illustration of this solution at the Planning Commission meeting.

The City's Traffic Engineer is preparing a separate report that will be included in the Planning Commissioner's packets.

- iv. **Previous PUD narrative:** While not part of the discussion at the Planning Commission meeting, the applicant also proposed that elimination of outdated buildings, structures, outdoor storage uses, and other existing features on site would constitute a public benefit. Our response, as in the previous review, is provided below.

***CWA Comments:** In our opinion, any redevelopment of this site will eliminate the existing structures. In our opinion, this does not constitute a public benefit that is unfeasible without application of the PUD regulations. The applicant disagrees, and states in their response that all of the demolition, environmental remediation, and site earthwork of the southern 40 acres will be done at one time, and that the buildings and structures on site could remain for a long time if not part of a comprehensive project. While that may certainly be possible, our point is that we don't think it requires a PUD to redevelop the site.*

The previous PUD narrative also listed construction of berms adjacent to the park and single-family lots/townhomes as a public benefit. These berms have been removed from the plan. They also listed stormwater improvements as a public benefit; however, any project will need to meet the current stormwater management standards of Wayne County. Lastly, relocation of exposed sanitary sewer pipe currently crossing the river (north of Beal St.) was listed as a public benefit. We deferred evaluation of this statement to the DPW Director.

Criterion No. 2: The proposed type and density of use shall not result in an unreasonable increase in the need for or burden upon public services, facilities, roads, and utilities.

We have updated this section of the review with the relevant information in the applicant's response memo supplied with the current submission.

The PUD narrative in the previous submission lists this criterion as #3. The narrative states that the development has been designed to reduce City needs, and lists six features of the proposal. These features are listed below. We provide comments after each:

- a) **PUD Narrative:** Replacement of potentially hazardous sanitary sewer pipe currently located in the river. (No change offered in current submission).

***CWA Comments:** See our comments above.*

- b) **PUD Narrative:** The PUD narrative stated that the project is creating 98 parking spaces, available to the public, in close proximity to the downtown shopping area. The current submission is offering 92 public parking spaces.

***CWA Comments:** As explained previously, City Council approved an option agreement with Hunter Pasteur Homes (HPH) to purchase the City-owned parking lot on the south side of Cady Street, conditioned upon HPH providing at least 92 public parking spaces located within 600 feet of the existing lot.*

The project submission includes a sheet titled: "Cady Lot Parking Replacement Plan," showing the required 92 spaces in various locations (see table below). Based on our analysis, we count a total of 80 (vs. 85) on-street spaces within 600 feet of the existing lot, with 12 remaining spaces in the surface lot.

The applicant's respond memo with the previous submission states the following mix of apartment units:

- 160 studios and one-bedroom units
- 123 two-bedroom units
- 23 three-bedroom units

The table below calculates required parking under the current zoning requirements for the Cady Street development area only.

	Cady Street Area Required Parking	Cady Street Area Proposed Parking	Difference
Replacement Spaces for City Parking Lot	92 spaces	92 spaces <ul style="list-style-type: none"> • 22 Hutton • 41 Beal • 17 SF Streets • 12 surface lot 	- 0 -
General Retail	1 space/200 s.f. or 18,700/200 = 94 spaces	94 spaces <ul style="list-style-type: none"> • 94 surface lot 	- 0 -
Multi-Family*:			
Studio & One Bedroom	2 spaces/dwelling unit or 160 x 2 = 320 spaces	683 spaces <ul style="list-style-type: none"> • 473 in parking structure • 210 in surface pkg. lot 	- 14 -
Two Bedroom	2.5 spaces/dwelling unit or 123 x 2.5 = 308 spaces		
Three+ Bedroom	3 spaces/dwelling unit or 23 x 3 = 69 spaces		
	883 spaces	869 spaces	- 14 spaces

*The breakdown of the multi-family units has not been updated in this submission. Therefore, we have used the break-down provided in the previous submission to calculate the number of spaces required in the ordinance.

Note that there are 12 on-street spaces on Cady Street that were not counted toward the "replacement spaces" (as shown on the Cady Lot Parking Replacement Plan).

As mentioned in our previous review, the ordinance calculations can be used as a comparison for the proposal. The revised proposal is much more consistent with the parking requirements in the zoning ordinance. This proposal is only deficient by 14 spaces. We would consider this an acceptable deviation, given that it's likely some of the studio and one-bedroom tenants will only require one parking space. The plans state that the project is allowing one parking space per bedroom (or 475) spaces, per the breakdown provided. Therefore, studios and one-bedroom apartments will have one dedicated parking space, while two-bedroom apartments will have two spaces, and three-bedroom apartments will have three spaces.

In addition, Section 20.04 of the PUD Ordinance states that where warranted by overlapping or shared parking arrangements, the Planning Commission and City Council may reduce the required number of parking spaces. As stated in the Cady Street Overlay District, shared parking may allow a reduction of up to thirty percent (30%) from the parking requirements,

subject to City Council approval. We would consider it reasonable to allow this small reduction (approx. 1.5%) for the apartment parking requirements. Or, during the site plan review stage of the project, a condition could be added to a motion requiring that 14 units only are allowed one parking space.

Parking for the single-family residential uses, and the townhome uses, are within ordinance requirements. If the townhome streets are "private," how can these parking space be available to the public? This question should be addressed.

- c) **PUD Narrative:** Improvements to the traffic signalization and traffic control devices. (This topic is being studied further as described above.)

CWA Comments: See our comments above.

- d) **PUD Narrative:** Elimination of current racetrack use which imposes a lot of needs of City services. (No change offered in current submission)

CWA Comments: See our comments above.

- e) **PUD Narrative:** Creation and dedication of public park spaces which will be maintained by non-public funds.

CWA Comments: See our comments above.

- f) **PUD Narrative:** This information has not been updated per the current submission. The PUD narrative that was part of the previous submission cited the creation of over \$5,440,000 in annual taxes for *all* taxing jurisdictions, as compared to only \$423,000 in current tax generation of which only \$106,000 is generated to the City of Northville. Of the \$5,440,000 projected generation of taxes, the majority of these taxes go directly to the City of Northville, DDA and Northville School District. The City Assessor was asked to review the numbers provided for Northville only, and his comparison is shown in the table below:

Taxing Jurisdiction	Applicant's Calculations	Assessor's Calculations
Northville Operating	\$801,664	\$798,900
Northville Street Improvements	\$99,867	\$99,500
D.D.A Operating Millage	\$85,336	\$34,800
D.D.A. Capture	\$1,228,430	\$501,600
Northville Schools	\$1,335,345	\$706,100
TOTAL	\$3,550,642	\$2,140,900

In addition, the Assessor estimates that taxes generated for *all* taxing jurisdictions would equal \$3,811,400 (vs. \$5,440,000). This difference was because of the estimated valuation of the apartment building and mixed-use buildings.

The information in the table above is based on 577 dwelling units proposed by the previous plans; the current plan is proposing 546 units, or 31 fewer residential units.

CWA Comments: The proposal consists of two land use types: commercial space, and residential dwelling units. We don't consider these land use types to result in an unreasonable burden upon public services.

The proposed residential density, as presented, would add 546 dwelling units to the City. This total has been reduced by 31 units. To estimate the increase in population, we used the following assumptions:

- The average household size in Northville is 2.34¹ persons. Since most of Northville's housing units are single-family homes, we consider this a reasonable estimate for the 53 new single-family homes, an increase in 4 units from the previous plan.
- Regarding the townhomes, we would expect most to be occupied by empty nesters. Therefore, we would use an average townhome size of 2 persons.
- Regarding the apartments, we would expect the apartment units to be occupied by singles or couples; therefore, we would use an average apartment size of 1.5 persons.
- Therefore, we estimate that this proposal could add 957 new residents to the City. In comparison to the previous proposal, this represents 61 fewer new residents. Northville's population in 2017 is estimated at 5,835¹. This new development would increase that population by approximately 16%. This represents a 1% reduction from the previous proposal.

¹Source: SEMCOG Community Profiles (SEMCOG.org).

We defer evaluation of how this proposal could affect existing utilities to the City Engineer. The City Engineer has developed a Utilities Master Plan for this part of the City. Regarding sewer and water, there are engineering solutions to accommodate this proposal. However, the applicant will need to review the Utilities Master Plan and determine if they want to commit to this, or a similar plan acceptable to the City, as part of their responsibility in developing this project. In addition, the Planning Commission asked for an idea of how much the costs for public utilities would increase for all City residents, if at all, if the proposed project were constructed?

Regarding traffic, see our comments for Criterion 1 above.

Criterion No. 3: The proposed planned unit development shall be harmonious with public health, safety and welfare of the City.

We have updated this section of the review with the relevant information in the applicant's response memo supplied with the current submission.

The PUD narrative in the previous submission lists this criterion as #4. It states that the developer and its team have worked diligently to create a plan designed to meet the City's Master Plan, incorporating all of the elements important to City residents including public spaces, increased commercial development, and the continuation of the City's street grid pattern.

CWA Comments: Regarding consistency with the Master Plan, please see our comments after Criterion No. 7 below.

Constructing a residential project in this part of Northville does not in itself raise any concerns regarding health, safety and welfare. However, the proposed density could have significant impacts on traffic and traffic safety of surrounding residential neighborhoods. As mentioned above, the traffic question is still being studied. We defer evaluation of the Traffic Impact Study and proposed road network to the City Engineer.

In our previous review, we cited a concern with retaining the underground river, and the possibility of future sink holes close to residential properties. However, because this proposal daylight the river, this is no longer a concern.

Criterion No. 4: The proposed planned unit development shall not result in an unreasonable negative environmental impact or loss of a historic structure on the subject site or surrounding land.

We have updated this section of the review with the relevant information in the applicant's response memo supplied with the current submission.

The PUD narrative in the previous submission lists this as criterion #5. It states that the proposed project will not result in unreasonable negative environmental impact or loss of historical structures. It also states that the project will remove existing unsightly buildings, outdoor storage, overhead power lines and neglected parking lots associated with the current uses.

CWA Comments: See our comments above regarding removal of existing site features.

The project sites have been cleared of most of their environmental features. However, the Middle Rouge River flows underneath the Downs property. The Master Plan describes daylighting the Rouge River as part of redeveloping the property as a goal. This submission includes daylighting the river, and offers a conceptual approach to obtaining the funding for this project. As mentioned above, more details regarding this approach need to be provided. The project design provides, in our opinion, enough space that realistically incorporates the river with sufficient distance between the river and residential homes. This is a very positive aspect of the plan.

Criterion No. 5: The proposed planned unit development shall not result in an unreasonable negative economic impact upon surrounding properties.

We have updated this section of the review with the relevant information in the applicant's response memo supplied with the current submission.

The PUD narrative in the previous submission lists this as criterion #6. It states that the proposed PUD will result in a significant positive economic impact in several areas:

- a) **PUD Narrative:** It will add high-quality housing units, increasing the value of the surrounding property values.

CWA Comments: At the last Planning Commission meeting, concerns were expressed about that proposed single-family and townhouse style “fitting in” the small-town, unique and historic character of Northville. The applicant has responded to this comment by adding an alley behind the single-family homes fronting S. Center St., so that these homes can have garages in the rear, and not front-facing garages. We consider this a positive change, which could be refined across all single-family lots through the site plan review process.

Another comment regarding the proposed residential units was the scale of the proposed homes in relationship to the scale of the existing surrounding homes. In the previous submission, the applicant stated that the new homes would be between 2,300 s.f. and 3,100 s.f. In comparison the homes on S. Center St. (up to Cady), are turn-of-the-century (1900s) homes between 1,238 – 2,331 s.f., with most being between 1,600 – 1,800 s.f. in size. The homes on the east side of River St., between Beal and Johnson, are a mix of small, older homes, and new homes, and range in size between 768 – 2,974 s.f. The location of the smaller and larger proposed homes in relation to existing homes could be further discussed during site plan review.

Lastly, a concern was expressed regarding the quality of the proposed construction. The applicant has responded, stating that the concerning company identified is no longer participating in this project.

- b) **PUD Narrative:** It will add a stronger residential base in a short walking distance to the downtown commercial area, significantly increasing the use and support of the downtown merchants, restaurants and other commercial establishments. (No change offered in current submission)

CWA Comments: Agreed.

- c) **PUD Narrative:** It will reduce the flood plain classification area benefiting other residential homeowners. (No change offered in current submission)

CWA Comments: We agree that redevelopment of the Northville Downs property will significantly reduce the current floodplain boundaries. As part of this project, the applicant has applied to FEMA for an amended floodplain boundary taking the existing topography into account.

- d) **PUD Narrative:** It will significantly increase tax revenue to the City of Northville, public school district, Wayne County and DDA. (No change offered in current submission)

CWA Comments: The City Assessor will evaluate the Real Property Tax Revenue Analysis provided in the submission.

- e) **PUD Narrative:** It will provide a wide mix of housing types to service the needs of existing and future Northville residents in an urban city environment.

CWA Comments: The mix of housing types (apartments, townhomes and single-family homes) is a positive aspect of this plan, and in line with the City's Master Plan.

Overall, redevelopment in this part of Northville could have a positive economic impact on the surrounding properties as long as the development is in harmony with the surrounding area, and does not negatively impact the functioning of the area. The amount of new traffic generated by the proposal, and its effect on surrounding neighborhood streets, is being assessed by the City Engineer, who will identify the needed improvements to accommodate the additional traffic. Our comments regarding density and conformance with the Master Plan are provided below.

Criterion No. 6: The proposed planned unit development shall be under single ownership and/or control such that there is a single person, corporation, or partnership having responsibility for completing the project in conformity with this Ordinance.

We have updated this section of the review with the relevant information in the applicant's response memo supplied with the current submission.

The PUD narrative in the previous submission lists this as criterion #7. It states that the PUD is being proposed by a single ownership entity and that the ultimate development will be governed by a development agreement between the City and the ownership.

CWA Comments: This question came up at the last Planning Commission meeting. The City Manager asked for an opinion from the City Attorney, who provided the following options:

1. Amend Section 20.05 to specifically allow a mixed-use PUD with multiple developers, so long as each of them signs and consents to the development agreement;
2. Interpret the ordinance to allow for a contractual agreement between the original developer and subsequent developers that would provide for assurances of completion.
3. Have original developer create a new entity (partnership, LLC, etc.) whose members would be the individual developers for each phase.

The City Attorney thinks any of these options could work, but prefers 1 & 2. However, option 1 would take time to develop and adopt ordinance language. In our opinion, if the developer consents to participating in either option 2 or 3 at this stage, we would leave it up to the City Attorney to work with the developer to create the appropriate agreement later in the process. Note that it's at the developer's own risk to agree now to one or both of these two options, go through site plan review, and then decide later that either option won't work.

Criterion No. 7. The proposed planned unit development shall be consistent with the Goals and Policies of the City of Northville Master Plan.

We have updated this section of the review with the relevant information in the applicant's response memo supplied with the current submission.

The PUD narrative in the previous submission lists this as criterion #8. It states that the PUD is consistent with the goals and policies of the Master Plan.

CWA Comments: For clarity, we have divided the project into three areas according to the Sub Areas found in the Master Plan: Cady Street (in blue), the Racetrack property (in yellow), and the S. Center Street area (in red). An illustration of the three areas is shown on the next page:

Figure 3– Subject Sites Showing Master Plan Sub Areas



A. Cady Street Area:

- The Master Plan shows “transitional/mixed-use commercial/residential” along Cady St. The project proposal indicates two buildings with commercial on the first floor and one large apartment building with no commercial uses. The configuration of the large building has been changed. The building is now located at the corner of Cady and Griswold, a positive change. This building also wraps around the proposed parking structure, screening the structure from both Cady and Griswold streets, and fronts one façade of the building on the stormwater management basins. We also think this is a positive change.
- Our previous review stated that while this project is “mixed-use,” it is heavily skewed toward residential development and is proposing only 18,700 square feet (or 6% of the total floor space) to commercial uses. This was also mentioned at the last Planning Commission meeting. Could an additional corner (Cady & Griswold) retail unit be added to the residential building?
- The Master Plan calls for reduction in density as you move from Cady Street south. The applicant was asked to provide further justification for the proposed configuration (vs. what is found in the Master Plan). They have provided an explanation that additional grading, fill, and retaining walls would be needed to locate the townhomes adjacent to the apartments.
- The renderings of the large apartment building show it at four stories tall. The accompanying write up describes this building between four and five stories. To qualify for a bonus fifth-floor, public amenities such as public plaza, public art, pedestrian connections, etc. need to be provided. While the linear park that is part of the overall plan could be determined to meet this standard, we would suggest that some type of public plaza be located along Cady Street.
- The Master Plan states that the height, scale and mass of the buildings along Cady St. are similar or compatible with surrounding existing buildings. Illustrations should be provided to show how the new buildings coordinate with the existing Cady Street streetscape.
- The architectural renderings of the apartment building, and the two mixed-use buildings provide elements stated in the Master Plan, such as generous window areas, recesses, projections and architectural details. However, the renderings of the large apartment building illustrate commercial uses on the first floor. Since the buildings have been reconfigured, revised illustrations should be provided showing the accurate location for commercial uses along Cady St.
- The Master Plan calls for extending City streets, and connecting pedestrians with the downtown. This proposal extends Hutton St. south, and Beal Street west to complete the existing street grid, which is positive.
- The Master Plan also calls for a pedestrian connection with the downtown. This connection has been improved, and is now directly in line with the existing pedestrian connection on the north side of Cady St.

B Racetrack Area:

- This review has thoroughly discussed the Master Plan goal for daylighting the Rouge River, and the applicant’s approach to meeting this goal.
- Regarding the uses, the Master Plan calls for a mix of single-family and multi-family residential densities decreasing in intensity from the north and west portions of the

property. The portion south of Beal Street is identified as 6-12 dwelling units per acre. Section 20.02 of the PUD Ordinance states that density is calculated exclusive of road rights-of-way. We have included a table that compares the proposed density and the density permitted in zoning districts for similar residential land uses. These comparisons will provide a basis against which to evaluate the proposed density.

Residential Type	Proposed Density - Using PUD Density Standard (Excludes ROW) ¹	Estimated Permitted Density: R-4 ²	Estimated Permitted Density: R-3 ³	Permitted Density: R-1B ⁴
Apartments (306 units)	26 units / acre (11.95 ac.)			
Townhomes (187 units)	10 units / acre (18.0 ac.)		5 units/ acre (27 "rooms"/ acre)	
Single-Family Dwellings (53 units)	4.3 units / acre (12.24 ac.)			6 units/ acre
Total (546 units)	546 units = 12.9 units / acre (42.19 ac.)			

¹Acreage for the park (8.4) and detention basin (2.3) has been evenly divided between the three residential types.

²Density in the R-4 District is determined through setback, height, and parking limitations. A comparison figure cannot be calculated using the information provided.

³The applicant's response states that 80% of the townhomes will be limited to 3 bedrooms and the remaining townhomes limited to 4 bedrooms.

⁴Density for single-family residential units is calculated by using a minimum lot size of 7,200 s.f.

The comparison in the table above against the ordinance requirements for R-3, R-4 and R-1B are informative, but the vision for this part of the City is better illustrated, in our opinion, in the Master Plan. The Master Plan calls for higher density along Cady St., and decreased density as you move south to 7 Mile Road, but higher densities overall.

The plans were amended to exclude the public road right-of-ways, and private road easements from the land area used to calculate the proposed density. However, scaling the plan indicates that the private road easement area encompasses 1.3 acres (vs. 0.61 acres) as shown on the Preliminary Plan.

We used this adjustment in the table above. It shows that the plans indicate an overall density of 12.9 units to the acre. The previous plan proposed an estimated 15 units to the acre.

Reduction in the number of units is positive. In our opinion, the density is slightly higher than intended. We would suggest the following be further considered:

1. The proposed home sites are between 6,050 and 6,710 s.f. in size. This is slightly smaller than the 7,200 s.f. standard single-family lot size in the ordinance. Also, the single-family lots are 5-feet narrower than the standard 60-foot single-family lot width. If the lots that are 122-feet deep were increased to 60-feet wide, they would be 7,310 s.f. in size, and could better accommodate the larger (3,100 s.f.) proposed house style. This would eliminate 3 single-family homes from the proposal.
 2. Eliminate some of the townhomes on either side of the pocket park at the terminus of Hutton St. to increase the width of this public area.
 3. Reduce the number of townhomes on northwest corner of S. Center/ 7 Mile intersection to provide usable greenspace.
- Heights are listed at up to three-stories on the north side of Beal Street, and 2.5 stories south of Beal St. South of Beal, the proposed single-family homes are shown at 2 – 2.5 stories, and the townhomes are shown at 3 stories. The townhome designs will be limited to three- and four-bedroom styles. Limiting height could also help to reduce the number of vehicles using each townhome. The Planning Commission will need to determine if the three-story townhomes are a desired deviation.
 - The proposed grid road layout is consistent with the Master Plan.
 - We consider the pocket park terminus of Hutton Street a positive aspect of the plan, and addressing the “central square” idea in the Master Plan. Widening the pocket park would improve it, as mentioned at the last Planning Commission meeting.
 - The Racetrack Sub Area Plan also calls for a walking/biking connections from Hines Drive to the downtown. This is consistent with the City’s 2014 Non- Motorized Plan, which shows a pedestrian crossing at 7 Mile/River Street, as well as a sidewalk along the north side of 7 Mile Road. The proposal provides a walking path through the linear park that ends at River St./7 Mile Road, but doesn’t provide a crossing or any pedestrian improvements along 7 Mile Road. We would recommend a HAWK pedestrian crossing signal at this location to assist pedestrian and bicycles crossing to Hines Park. This detail can be further refined during site plan review.

The applicant’s response states that over half of the proposed apartment units are studios and one-bedroom units with average size less than 1,000 square feet. We consider this a positive aspect of the proposal, as it provides a different housing product for the City.

C. S. Center Street Area:

- The Master Plan calls for 10-15 residential dwelling units on the west side of S. Center Street. We consider townhomes appropriate here. The proposal also locates the townhomes facing S. Center Street, and within the desired 10-20 foot setback.
- The Master Plan calls for heights of 2.5 stories; the townhomes are proposed at 3 stories. This deviation will need to be considered by the Planning Commission.

- The Master Plan calls for continuing the farmer's market at its current location until an alternative location is found. This proposal includes two alternative locations. See our comments regarding the farmer's market above.
- As stated in the Master Plan, parking for the townhomes is located in the rear of the buildings, and screened from view of the street.
- An entryway plaza or feature is called for at the corner of S. Center Street and 7 Mile. The plans indicate a corner gateway. However, the illustrations shown at the Planning Commission meeting were showing large signage identifying the development, and not the City of Northville. We consider this a gateway to the City, and the gateway features should illustrate this. This gateway could welcome visitors into the City or Northville, as well as include some type of historic recognition of the role Northville Downs Racetrack has played in the City's development. This needs to be addressed.
- A question was raised at the Planning Commission meeting regarding the existing bike lanes on S. Center St. Will the improvements to the S. Center/7-Mile intersection or the added parking along S. Center St. eliminate the existing bike lanes? This question should be addressed.

Criterion No. 8. The proposed use or uses shall be of such location, size, density and character as to be in harmony with the zoning district in which it is situated, and shall not be detrimental to the adjoining zoning districts.

We have updated this section of the review with the relevant information in the applicant's response memo supplied with the current submission.

The PUD narrative in the previous submission lists this criterion as #9. It states that the proposed uses are consistent and complimentary to the adjoining zoning districts, and great care has gone into the design, which is of benefit to the adjacent uses and natural features of the surrounding properties.

CWA Comments: A Planned Unit Development rezones property to "PUD" in an effort to accomplish a better development than either the underlying zoning would allow, or that straight zoning of another district would allow without deviations.

In the Cady Street area, the underlying zoning is mixed (Central Business District (CBD), Cady Street Overlay District (CSO), and Racetrack District (RTD)). The Cady Street Overlay District does allow mixed-used (commercial/office/residential) buildings to create a more urban character that has a dynamic pedestrian environment. We consider the proposed use to generally be in harmony with the CSO; although modifications to the amount of commercial space, and other issues listed above should be considered.

In the Racetrack area, the underlying zoning is Racetrack District. This district does not permit residential development. However, the Master Plan calls for this type of development, and provides guidance as to the configuration and density of such development. As mentioned above, we have discussed a number of issues that should be addressed to ensure that the development is the right scale and intensity to be in harmony with adjoining land uses.

In the S. Center Street area, the underlying zoning is Racetrack District on the east side of Center St. and on the Farmer's Market property. The underlying zoning of the mid-block parcels further

north is R-2, Second Density Residential District. Comments regarding density in all of these areas have been provided above. We believe slightly reducing the density more than proposed will help to harmonize the new development with existing conditions.

Criterion No. 9. The planned unit development is not proposed in an attempt by the applicant to circumvent the strict application of zoning standards.

We have updated this section of the review with the relevant information in the applicant's response memo supplied with the current submission.

The PUD narrative in the previous submission lists this criterion as #10. It states that the PUD is not proposing to circumvent the zoning standards and has been designed with those standards in mind, consistent with the Master Plan.

CWA Comment: While we haven't reviewed the plans as if this were a site plan review, the project is proposing deviations from the zoning ordinance in exchange for various public features. The PUD process is used to determine if the deviations are justified by the development and public benefits offered.

PROJECT PHASING

The Planning Commission asked the applicant to supply a development schedule or project phasing schedule that identifies the implementation timeframe of all the project components.

We have converted the applicant's response into a table for easier comparison:

Phase	Timeframe	Project Components
Phase I	Summer 2019 – Fall 2021	<ul style="list-style-type: none">• Multi-family commercial/buildings• Parking garage (10 acres between Beal, Cady, Center and Griswold)
Phase II	2020 – 2025	<ul style="list-style-type: none">• Single-family homes• Townhomes• Linear park• Daylighted river (2021) (35 acres between Beal, Cady, 7-Mile & River St. & parcels on west side of S. Center)

We see the elements of the project that could constitute a "public benefit" as the linear park, daylighting the river, the pocket parks (if public), the Farmer's Market location, and traffic improvements. Given this phasing schedule, only the traffic improvements and the relocated Farmer's Market into the surface parking lot could be included in Phase I of the project. The remaining public benefits will be included in Phase II. While this is helpful to see the applicant's thoughts, the phasing schedule (which is included in the PUD Agreement) will be a topic of discussion during the site plan review.

RECOMMENDATIONS

The revised proposal, in our opinion, has made many improvements, including:


1. Conceptual approach to daylighting the river
2. Increasing the size of the linear park
3. Reducing the proposed density
4. Increasing the proposed parking
5. Extending the apartment building to Griswold, and wrapping the parking structure with the building facades
6. Increasing the size of the Farmer's Market sales area
7. Improving the pedestrian connection to downtown Northville

However, there continue to be some outstanding issues, which isn't surprising given the complexity of the project. The applicant needs to provide additional information to give more details about what the project is offering. Also, the City Engineer's opinion about the traffic impacts and the needed solutions need to be discussed further.

In summary, the outstanding issues include:

1. Comprehensive funding plan to daylight the river. At a minimum, the plan should describe the expected cost, who will pay these costs, and where the funds will come from. We support a public/private partnership, and consider grants a reasonable approach to making this happen. However, a clear picture of how the project will be funded and by whom needs to be provided.
2. The project offers an 8.3-acre linear park. It is not clear if the applicant is offering to also construct the elements in the park (walkways, river overlook, lighting, landscaping, Farmer's Market area (if located here), etc.). This needs to be clarified.
3. City Engineer's opinion about needed traffic improvements, and whether or not the applicant agrees to making them.
4. Refinements to density
5. Pocket park status (public or private?) and size
6. Input from the Chamber of Commerce regarding the re-located Farmer's Market
7. Use of parking spaces by the public on private streets in townhouse development
8. Five-story height of the proposed apartment building, and three-story height of townhomes.
9. Lack of greenspace in townhome cluster on northwest corner of S. Center/7-Mile intersection.
10. Gateway features that emphasize the entrance to the City of Northville (vs. the Downs development).
11. Non-motorized bicycle and pedestrian amenities along S. Center and to Hines Park pathway.

We consider this proposal conceptual (for Eligibility purposes), and that the plan will continue to evolve and change during the site plan review process. This step in the process simply acknowledges that the proposed public benefits, as currently described, justify the requested deviations in the ordinance to qualify it as a Planned Unit Development. The additional information will help in making this determination.


CARLISLE/WORTMAN ASSOC., INC.
Sally M. Elmiger, AICP, LEED AP
Principal

153-1801

cc: Pat Sullivan, City Manager
Shari Allen, Building Department
Brent Strong, Building Official
Loyd Cureton, DPW Director

From: [Andrew Daily](#)
To: [Dianne Massa](#)
Subject: THE DOWNS Returning - PUD Eligibility submitted 11/27/18 - PUD SITE PLAN
Date: Friday, December 14, 2018 12:48:14 PM

City Council & Planning Commission,

Church Street and East Cady Street has become increasingly more popular over the past few years with regards to parking and traffic volume alike.

For example:

- First Presbyterian Church of Northville can provide services to hundreds at Worship, throughout the week, evenings and holidays. Special events and non-church related factions are held at the site. The church relies on public parking and has no self parking what-so-ever. The church provides an educational program, cars are instructed to line-up and wait to be summoned to the church door one-by-one for drop off due to the busy traffic environment on East Cady and Church Street.
- Starbucks has hundreds if not thousands of customers per day that travel on Church Street on to East Cady Street.
- East Cady Street provides a main thoroughfare for the City of Northville's Emergency Fire, Medical and Police Services.

I believe it is imperative that Church Street is provided continuity into THE DOWNS for any proposed development project at THE DOWNS.

THE DOWNS PUD Site Plan development demonstrates that the developer shows the need for the additional traffic flow within THE DOWNS between the single family home lots 39 - 52, however the unnamed road fails to continue to provide a northern point of ingress and egress for the community.

It would be reasonable to anticipate, with only one northern public street access point planned of ingress and egress onto East Cady Street, which is the continuation of Hutton Street, for the whole THE DOWNS development, peak flowing times of traffic are likely to create congestion along East Cady Street.

An additional point of concern is that the proposed apartment building from Hutton Street to Griswold Street is located within the Historic District; the current conceptual designs last provided to the public did not seem compliant with the Historic District Building Design Standards.

The massing of such a large apartment building is reminiscent of Main Center; a building that many in Northville if they had the chance, perhaps would have made alternative decisions

regarding in terms of size and style.

The large apartment building also appears to create a 4 to 5 story massive street scape walled effect; the Master Plan call for this building style to be avoided. This is an often discussed, feared and opposed architectural design outcome among committees.

With Respect,

Andrew Daily
Andrew@AndrewDaily.com
734-560-7000

Home
300 East Cady Street, Condo 303
Northville, MI 48167

Real Estate Office
120 West Main Street, Suite 201
Northville, MI 48167

Delano Development Building
106 East Cady Street
Northville, MI 48167

Downtown Development Authorities (DDA) Economic Development Committee (EDC)
Comments in response to “The Downs” PUD Eligibility Application
December 18, 2018

The EDC is designed to be a resource for the Planning Commission, City, Developers, Residents, etc. The purpose of the Economic Development Committee is to advise the City Council on matters related to promoting vital and inviting business areas and advancing economic development within the City. The Committee shall assess the current and ongoing business climate in the City and submit recommendations to the City Council intended to maintain a strong economic base in the City. In an effort to support each of those entities, the EDC has prepared comments on The Downs PUD Eligibility Application. The EDC was pleased to hear that the developer was working towards a development that meets the needs of the community such as daylighting the river, providing a Farmers’ Market location, etc.. In reviewing the PUD Eligibility Application, there were several issues that repeatedly received comments. Those issues include traffic, green / public space, Commercial / Retail Space, design of the residential products and density. Below are the EDC’s comments on each of the issues.

1. Traffic / Parking:

- a. The proposed project will have a significant impact on the whole Northville Community. With the new residential and commercial space, will come new cars and the EDC wants to ensure that they are properly accounted for and do not provide an increased burden on the parking and circulation system in Northville. If the congestion increases, motorists may bypass the downtown, finding another route to avoid the congestion. This would have a negative financial impact on the downtown.
- b. Traffic and congestion is still a major concern and the EDC members did not feel it has been properly addressed in the new proposal.
- c. The project needs another North to South through-road to dissipate the traffic generated from the development. The best option is an extended Hutton Street down to the mouth of East Hines Drive, where there could be a roundabout.
- d. The EDC is pleased that the developer is providing additional parking.
- e. Parking: If two North to South streets are created (N-S Street south of Town Square and N-S Street between Hutton and Griswold) there will be more on-street parallel parking North of the extended Beal Street and within walking distance of the Town Square. More parking could provide more visitors to the downtown.

2. Green / Public Space:

- a. The EDC is pleased that the developer has chosen to daylight the river, as well as remove the Residential lots on the East side of the River to make it a more welcoming and usable park. Providing a daylighted river and linear park will create a recreational draw for the entire area and bring more visitors to town as well as providing a passive recreational space for residents of Northville.

- b. The bridge location is not ideal for public access. The optimal location of the bridge should be investigated as well as a second bridge connecting the neighborhood with the park, perhaps at the western end of Johnson Street. Daylighting the river will need to be included in the first phase to ensure completion.
- c. The EDC prefers that the project include retention ponds rather than dry detention ponds. It should look like an attractive water feature, not a depression.
- d. Proper maintenance of the area should be further vetted but concerns with the HOA being in charge of the upkeep of a publicly used space. The proper maintenance and upkeep of these public areas needs to be up to City Standards.
- e. The retention of the Farmers' Market in the downtown area is a substantial benefit to the community. The Market is a regional draw and many visitors stay in downtown after their visit to the market to shop, dine, or conduct business. The developer has recently met with the Northville Chamber of Commerce to discuss location and requirements for the Farmers' Market to stay downtown. The Chamber believes that the parking lot will work well for the Farmers Market if they can utilize the full lot. Also, the site north of the daylighted river would be a good location for public events that could entice visitors to the community.
- f. The creation of berms was listed as a public benefit. The EDC feels that the use of berms in this project is a suburban solution and not in keeping with urban residential development.

3. Commercial / Retail Space:

- a. Current design only includes 18,700 sq/ft of commercial space in the project. The EDC is concerned that the proposed commercial development will only include private apartment amenities and sales office. Cady Street becomes a transition area between the historic downtown and the single family and townhouses to the south. The Cady corridor, with proposed first floor commercial and upper floor apartments, is the area that connects the historic downtown with the proposed new residential development to the south. It is important from an economic development standpoint, to have a strong first floor use that activates the street front and draws residents from the south up and to the historic downtown.
- b. As part of the DDA's 2017 Strategic Plan for Downtown Northville, a retail marketing analysis was completed by LandUSA. The results of the marketing analysis show that the Northville trade area can support at least 35,000 square feet of new retail space plus a boutique hotel.

4. Design of the Residential Products:

- a. The EDC is pleased to hear the developer heard the concerns with the Residential developer and the designs included in the previous PUD Eligibility application. We are curious who the new developer would be and what the product would look like. The committee has reviewed the residential products

proposed within this application but will provide more feedback later in the development and approval process as this document is focusing on the PUD Eligibility application. That being said, we hope future designs are less suburban and generic options.

In addition to the feedback listed above, the committee is concerned with the timeline of the two phases of the project. Several amenities presented in this application are not part of the first phase of the project making those amenities at risk if the development is delayed or later phases are not completed. This needs to be addressed in this application to ensure that these are completed as part of the project.

The developer has indicated that they will be seeking public funding to assist with the public amenities included in the PUD Eligibility. It is the EDC's opinion that these areas of funding should be presented to the Planning Commission as part of this application. It is necessary to include which amenities are intended to be funded by the public and those amenities should not be included as criteria for PUD eligibility as they are not being provided by the developer, rather they would be funded by the public.

The intent of this feedback is to specifically address only items in reference to the PUD Application Eligibility currently being discussed. The Economic Development Committee has additional feedback on the overall project which will be shared at later phases of the project approval process.

December 17, 2018

Northville Planning Commission
City of Northville
215 W Main Street
Northville, MI 48167

Re: Daylighting the Rouge River

Dear Northville Planning Commission,

On behalf of the Friends of the Rouge (FOTR), we wish to submit a formal statement regarding our involvement with the Northville Downs' developer, Hunter Pasteur Homes ("HPH"). Primarily, it should be noted that FOTR is not a consultant, but rather an independent environmental nonprofit that provided unbiased feedback to HPH at their request. FOTR will not receive any monetary compensation for providing feedback on the development plans. We wish to remain independent in form and in public perception. We will continue to provide feedback as necessary to guide HPH in a direction that fits with our mission.

With that being said, the language submitted by HPH to the Northville Planning Commission on November 27, 2018, p.2 states that *"With daylighting the river, the development team has expanded to include some of the state's leading consultants for daylight rivers, including King & MacGregor Environmental and Ecological Consulting Services, Friends of the Rouge ("FOTR"), Grissim Metz Andriesse Associates and Seiber Keast Engineering. Each of the previously listed consultants has spent considerable time providing their input regarding the new river, and the development team is working on a plan for the river that will comply and be permittable within all regulatory standards, including MDEQ, while also being aesthetically pleasing and a benefit for the entire community."*

We want to reiterate to the Northville Planning Commission that we are not part of the "development team" as the other consultants who receive monetary compensation for their work. We provide our collaborative feedback based solely in response to the mission of FOTR which is to restore, protect, and enhance the Rouge River watershed through stewardship, education, and collaboration.

The FOTR board, however, did agree to something more formalized regarding our assistance in searching for funding opportunities and acting as fiduciary should funding become available. If

this occurs, we will respectfully be requesting compensation for this service from the developer. We will work with our legal counsel to reach a more formal arrangement with the Developer in the upcoming months. It should be noted, that before we proceed any further with this endeavor, HPH should be ready to make a formalized monetary commitment in the amount of two million dollars as mentioned in previous conversations.

In our opinion it will be virtually impossible to secure additional funding until the HPH money has been secured by a third party with restrictions on that money for daylighting in perpetuity regardless of the outcome of the larger development. For some of the various avenues explored for funding, the potential additional partners would need to see all the related documents executed before moving forward with any commitments.

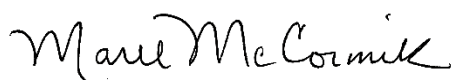
Therefore, the following statement should be noted with care: *"HPH and the development team are currently working with FOTR to source capital to fund the daylighting project. HPH is committing private capital towards daylighting the river while FOTR will raise the remaining funds for the project through grants from family offices, endowments and county, state or federal agencies."*

We wish to make it clear that though we have investigated funding opportunities for daylighting the Rouge River, the Northville Planning Commission should not have the impression that funding will be worked on now. Nor is there a guarantee for funding. The formal monetary commitment from HPH must be finalized before FOTR will seek commitments to daylighting funds.

FOTR greatly appreciates the opportunity to provide feedback on the plans as subsequent drafts emerge and has been encouraged by the progress, and acceptance of some of our suggestions.

Daylighting the Rouge River offers the City of Northville an incredible opportunity to drastically improve the quality of life for all of us and for many generations to come. We are excited to be a part of a unique opportunity to revitalize a stretch of the Walled Lake Branch of the Rouge River -something that will not likely be an option again in any of our lifetimes.

Respectfully,

A handwritten signature in black ink that reads "Marie McCormick". The signature is written in a cursive, flowing style.

Marie McCormick, Executive Director

October 15, 2018

To: City of Northville Planning Commission

RE: Proposed PUD for Northville Downs Development

Dear Planning Commission Members,

I attended the October 2nd PUD review meeting and had a chance to voice a concern towards the end of the meeting. It was a last minute decision to speak so I didn't feel I had enough time and reflection for my thoughts to fully come to form. Thus my follow up with a letter.

I echo support for many of the concerns expressed at the meeting: traffic, density, aesthetics, opening the river, etc. My point was regarding the developer's plans for x-amount of square feet of retail and commercial space. The developer did not present much information about this, and I question whether or not Northville needs additional retail and commercial spaces. It seems shops and businesses struggle to fill the existing space downtown. Perhaps this is not a fully informed statement on my part, but it is my impression.

I am curious to know what planning and thought is behind accepting more retail and commercial as part of the PUD. Does the developer have a real plan about how that would play out given the quantity of residential spaces in their proposal and an analysis of existing residences and businesses in town? Has the City put thought into how that would roll out? How businesses, retail and commercial would be courted? What types of businesses? Is this well thought out with data behind it, or is it just a "shiny object" promise that is simply a buzz word commonly rolled into discussions about "multi-use development."

One of the key charms of Northville is our lack of chain businesses.....retail, restaurants, etc. (excepting of course, Starbucks and Kroger). Our businesses are as unique as our neighborhoods. Our City is a localized area where small retailers and businesses do not have immediate, next door competition from chain outlets. Preserving that local business atmosphere is critical to the uniqueness of Northville and the draw of visitors, as well as the preservation of residents' ability to shop local.

I, personally have experienced first-hand, the failed outcome of a developer's attempt to contrive a downtown / village-type atmosphere. Manfred and I lived in the Cherry Hill Village area of Canton, which was an effort to create a quaint Northville / Plymouth style downtown area.

We lived there from 2007 – 2015, prior to coming to Northville. In that timeframe we saw many local shops come and go. The coffee shop changed proprietorship 3 – 4 times, finally closing up for good by the time we had moved. Gift shops and small grocery markets struggled to survive, but ultimately closed. Even the local Huntington Bank branch closed after a few years as it did not have enough traffic. This 3 – 4 block area is located smack in the middle of an

enormous apartment complex and surrounded by multiple single-family home sub-divisions, all within walking distance. **None of the businesses managed to stay open** -> coffee shop, grocery store, sandwich shop, restaurant, gift shop, bank branch.

Northville is a TRUE community. A neighborhood that has developed and sustained itself over a couple of centuries. A community like this cannot be created overnight by a master plan drawn up on some developer's architectural software. It is organic. It takes time, people, community. "Build it and they will come" doesn't work. Planned urban developments do not necessarily translate into successfully building "community."

I feel it is important to evaluate and understand the buyers who opt in to developments like this one proposed for The Downs property. It would be interesting to see data from the developer that demonstrates PUD's can and do successfully support the proposed commercial and retail space. It has been my personal experience that this is not the case.

I implore you to consider Brian Turnbull's closing words at the meeting. For City leadership, this may be the most important and impactful decision for the future of Northville.

Respectful Regards,

A handwritten signature in dark ink, appearing to read 'Lisa Schon', with a stylized, cursive script.A handwritten signature in dark ink, appearing to read 'Manfred Schon', with a stylized, cursive script.

Lisa and Manfred Schon
306 S. Rogers Street
Northville



ST. LAWRENCE ESTATES

October 23, 2018

Mr. Steve Kirk, Chair

Northville Planning Commission

215 W. Main Street

Northville, MI 48167

Re: Current Northville Downs Development

Dear Mr. Kirk,

On behalf of the Co-Owners of St. Lawrence Estates Condominium Association (SLECA), I would like to express that the potential and impending development of the Northville Downs properties is of particular interest to the Board of Directors that represent 96 Co-Owners, some of whom have resided in our great and unique City for over 25 years.

As a neighbor to this property, we look forward to dialog and input to development issues affecting the opportunities and challenges that affect our daily life and assurances of the reinforcement of the qualities and values that allow us to enjoy life in Northville.

At the October 6, 2018 Planning Commission Meeting, it was discussed that the proposed development corporation was in contact with and had engaged with neighboring residential districts to discuss common goals. As a property neighbor, St. Lawrence estates has not been contacted by any stakeholder of the proposed development.

We are especially concerned about the impacts and benefits to our SLECA community related to:

- Vehicular Traffic Impacts
- Non motorized vehicle pathways and circulation
- Maintaining our property values by complementary development
- Noise and Dust control
- Public Safety
- Adherence to the Northville Master Plan in all aspects
- Impacts to our school system
- Impacts to our utilities and cost of services
- Preservation of the Farmers Market
- Development and opportunity for neighborhood retail and commercial growth.

We would like to make ourselves available for discussions and request our Association be kept informed about the development planning progress for a successful and mutually beneficial project.

Regards,

Kirk D. Yuhasz, Vice President

St. Lawrence Estates Condominium Association

326 St. Lawrence Blvd.

Northville, MI 48168

Email: kyarch@yahoo.com





December 17, 2018

Loyd Cureton
DPW Director
CITY OF NORTHVILLE
215 W. Main Street
Northville, MI 48167

RE: The Downs Planned Unit Development
Site Layout & Transportation Impact Study Review

Dear Mr. Cureton:

We have completed the review of the Transportation Impact Study (TIS) and revised site layout in regards to the traffic circulation of both pedestrians and vehicles for the above referenced project. The site plan dated November 27, 2018, was prepared by Seiber Keast Engineering. The TIS report was prepared by Fleis & Vandenbrink, originally dated June 20, 2018, with a revision date of November 26, 2018.

A meeting was held on December 12, 2018 at City Hall to review TIS comments and recommendations. In attendance were representatives from the developer, Wayne County, the City of Northville, Carlisle Wortman and OHM Advisors.

PROJECT DESCRIPTION:

The site is bordered by E. Cady Street to the north, 7 Mile Road to the south, S. Center Street/Wing Street to the west and River Street/S. Griswold Street to the east. The applicant is proposing to construct a mixed used Planned Unit Development (PUD) on approximately 48 acres of land zoned Central Business District (CBD), Race Track District (RTD) and Second Density Residential District (R-2). The proposed site includes townhomes, single family homes, apartments, commercial use buildings and associated parking.

REVIEW COMMENTS:

INTERSECTION REVIEW:

Intersection No. 10: Sheldon Avenue/Center Street & 7 Mile Road/Hines Drive

1. The recommended treatments to improve traffic flow at this intersection were discussed at the review meeting. Wayne County representatives were supportive of a roundabout concept at this location but ask for additional considerations to be taken into account when determining the required geometry and footprint to implement a roundabout, such as increased pedestrian connectivity and enhanced future PM Level of Service (LOS). The developer representatives stated that they would be willing to remove up to ten (10) townhome units to accommodate a roundabout at Intersection #10 (I#10).



- a. OHM revised the proposed geometry of the composite roundabout used in the TIS to a 130' inscribed circle that includes larger splitter islands to accommodate offset crosswalks ("zee" pedestrian paths) and larger pedestrian refugee areas. The "zee" paths allow for storage of vehicles exiting the circle that are yielding to pedestrians in the crosswalks. Additionally, if warranted in the future, this configuration could be retrofitted with pedestrian signals such as a HAWK Beacon to provide a protected pedestrian crossing. This geometry can be viewed on the attached exhibit which is overlaid with the most recent site layout and shows that up to eight (8) townhome units would be impacted by the layout.
- b. Though the evaluation of the traffic mitigation alternatives indicates that a roundabout would provide the highest LOS under future volumes, the PM LOS is still being forecasted as a LOS C. Per Wayne County's request, it was determined that to raise the intersection to a LOS B in the PM, the roundabout would need to be a two-lane design. The current composite concept would allow for retrofitting the southern half of the circle to a two-lane design; the interior circle could remain in the same location and the northern half would remain relatively untouched. This would require a widening of the southern leg in order to accommodate the merging of two exiting lanes to one southbound lane on Sheldon. The current constraint to this widening is the bridge over the Johnson Creek, however, future planning for the replacement of the bridge once it has reached the end of its lifecycle could accommodate a widening for the merge. The exhibit was provided to Wayne County for further comment but they were unable to provide any written documentation prior to the PC meeting on December 18th.

2. Option No. 1 for I#10 calls for adding a permissive/protective left turn signal phase. This option is unwarranted per the analysis provided in Appendix E and should not be considered. (TIS Section 3.2: Existing Improvements)
3. Statements that refer to pedestrian safety do not appear to be in line with information presented in both the TRB's National Cooperative Highway Research Program (NCHRP) Report 672: Roundabouts: An Informational Guide the Second Edition, and the Roundabout Guidance Document from MDOT. If designed properly roundabouts can provide safe pedestrian refuge and crossing. (TIS Section 3.2: Existing Improvements)

Intersection Synchro/Sim Traffic Results

4. A roundabout treatment cannot be adequately modelled utilizing Synchro/SimTraffic for operational analysis, nor is Synchro/SimTraffic a reliable tool for calculating queue lengths or evaluating asymmetrical roundabout geometry such as the proposed concept. The report should instead use the delay, LOS, and queue lengths from a Rodel analysis (first preference) or SIDRA. If microsimulation is to be performed, then either VISSIM or Paramics should be used. Tables within the TIS following sections include incorrectly calculated queue lengths and delay times due to Synchro/Sim usage: Section 3.2: Existing Improvements, Section 3.5: Background Improvements, and Section 3.10: Future Improvements.



Intersection Nos. 16, 17 & 18: Northville Road & N. 7 Mile Road/S. 7 Mile Road

At the meeting held last week, additional discussion was had regarding Section 3.2.5 referencing the four proposed treatment options at Northville Road and N. 7 Mile Road. The developer's representatives stated that their engineers would further analyze the reconfiguration of the median into two unidirectional turn lanes to facilitate left turns from both sections of 7 Mile Road. This was viewed as the best option for mitigating the delays at this location. It is our understanding that the developer will provide a concept of this reconfiguration at the PC meeting.

TIS CLARIFICATION NEEDED:

1. Clarification is needed regarding operational values at some intersections. It appears there are discrepancies from the previous TIS submission in comparison to the revised TIS submission.
 - a. In Table 4, at the intersection of 7 Mile Road and Hines Drive (Intersection #11), the PM Peak northbound thru movement delay decreased from 131.5 seconds to 50.4 seconds, while the existing traffic volumes at the intersection have not changed from the draft TIS submittal. (TIS Section 3.1: Existing Conditions)
 - b. Table 7 outlines that with the addition of background traffic growth, the anticipated northbound queue lengths at Intersection No. 10 should provide lesser queue lengths than the existing conditions currently do. Clarification is needed as to how the existing conditions were analyzed, as this should not be true with such an increase in traffic volume. (Section 3.5: Background Improvements)
 - c. The previous TIS submission specified that congestion at the intersection of Hines/Sheldon was queuing to create an upstream block up to 13% of the PM peak hour. The revised report indicates an upstream block of 1% of the PM peak. Clarification is needed regarding this change in percentage. (TIS Section 3.1: Existing Conditions)
2. The queue lengths for the following intersections should be included in Table 5, Table 9, and Table 18: Intersection No. 16 at SB Northville Road & N. 7 Mile Road, Intersection No. 17 at NB Northville Road & N. 7 Mile Road, and Intersection No. 18 at Northville Road & S. 7 Mile Road. (TIS Section 3.2: Existing Improvements, Section 3.5: Background Improvements, and Section 3.10: Future Improvements)
3. Figure 4 shows intersection control symbols in the legend, however these symbols are not shown at any intersection in the main network layout. (Section 3.4: Background Operations)

FOR FUTURE CONSIDERATION:

The following comments are to be considered during the future design of this project but do not effect the concept proposed by the developer.

1. It was discussed at the December meeting that accessible parking spaces and an accessible route will be provided in the upper lot adjacent to the proposed apartment and commercial buildings on Cady Street between Center and Hutton.
2. The proposed mid-block pedestrian crossing of Center Street, between Fairbrook and Hines



Drive was discussed at the meeting and all parties agreed that this shall be removed.

3. In general sidewalks shall be constructed a minimum of 5-foot from the back of curb. The existing sidewalk located at back of curb along the frontage of Wing Street should be relocated to provide proper separation from the road.
4. Traffic calming measures shall be implemented in future submittals to reduce the requests for unwarranted stop signs.
5. The proposed sidewalks shall be continuous through the proposed driveways that lead to the service drives for the Townhomes.
6. Pedestrian street crossings should be evaluated, particularly for the Townhome units proposed south of Fairbrook Street, with the potential elimination of some on-street parking. Crossings should be adjusted for pedestrians, as some locations propose sidewalks that cross into parking stalls.
7. Sidewalk proposed adjacent to parallel parking is recommended to be seven (7) feet wide. This is to prevent open vehicle doors overhanging the sidewalk reducing the available width to below that required for ADA pedestrian passage.
8. It is recommended that parking lot islands be one (1) to two (2) feet shorter than the parking stalls for increased maneuverability and for easier snow plow operations.

If you have any questions or are in need of any further information, please feel free to contact our office.

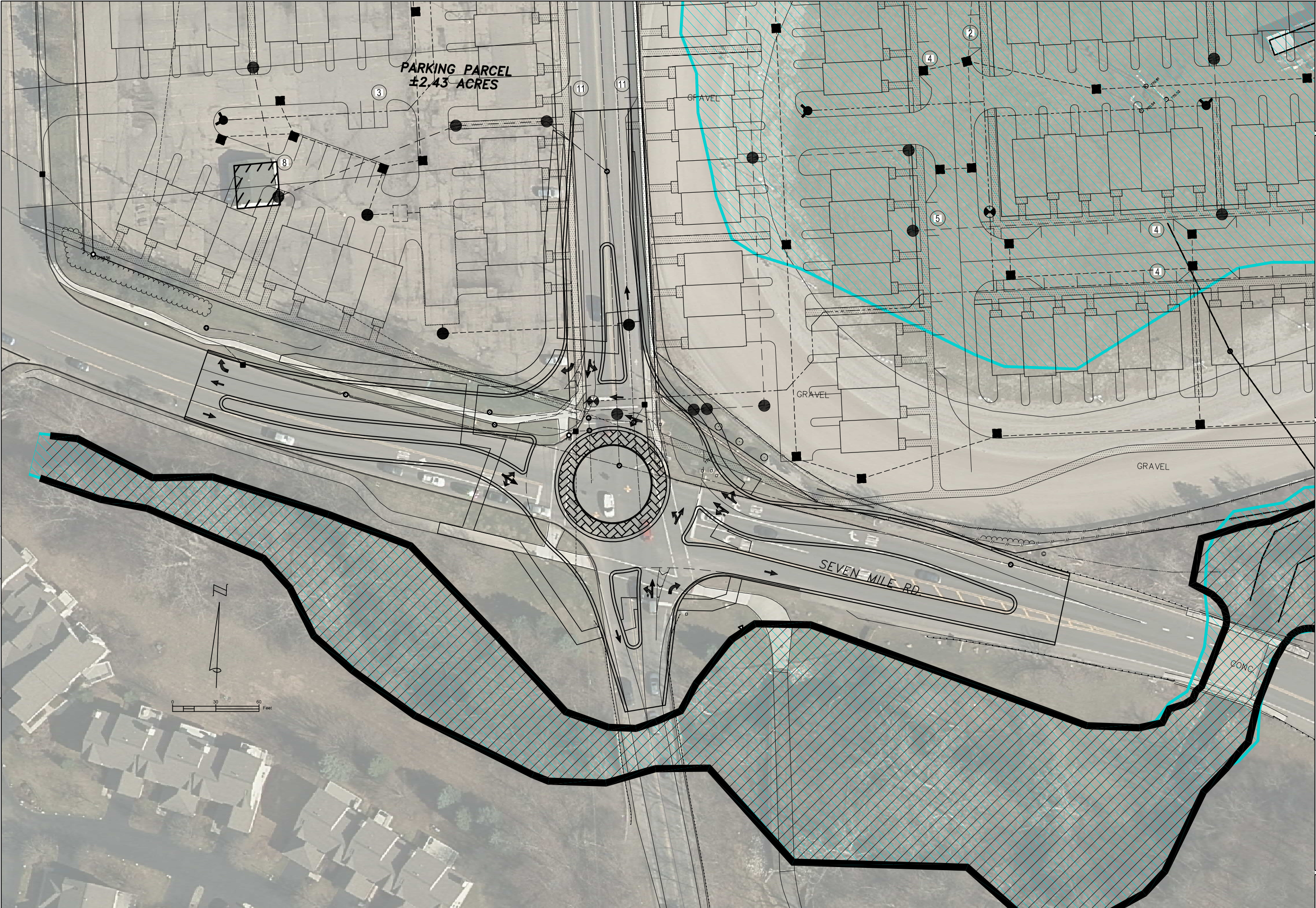
Sincerely,
OHM Advisors


Jessica L. Katers, P.E.

Transmitted via e-mail to Loyd Cureton

cc: file

DRAWING PATH: P:\0126_01650\152180050_Northville_Downs_CLOMR_Review\Drawings\Civil\Plans_Const\Seven Mile RAB Concept CON.dwg Dec 14, 2018 - 4:59pm



 ARCHITECTS ENGINEERS PLANNERS 34000 Plymouth Road Livonia, MI 48150 P (734) 522-6711 F (734) 522-6427 OHM-ADVISORS.COM									
REVISIONS:									
CITY OF NORTHVILLE ROUNDABOUT CONCEPT 7 MILE AND SHELDON									
SHEET	DATE	PROJ NUMBER	ENG	PROJ INCH	CAD	COUNTY	CITY/TOWNSHIP	SCALE	VERT DATUM
	12/11/17	01650-152180050	Value	1/8"	JM	GENESSEE	FENTON	1"=30'	NAD 83 (SEA)

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Public Benefits vs. Requested Zoning Deviations Comparison

The Downs - PUD Eligibility
City of Northville

December 18, 2018

Proposed Benefits	Questions/Issues Identified for Benefits	Requested Deviations	Some remaining questions
8.3 acre park with maintenance paid for by Homeowners Association.	1. How much of the park features will be constructed/installed by the applicant?	1. Parking deficient by 14 spaces (when comparing proposed parking against ordinance requirements; also when counting on-street spaces)	1. Is the applicant willing to commit to the City's Utilities Master Plan as part of their responsibility in building this development?
	2. Park maintenance conducted/managed by City, requiring personnel and coordination.	2. Consistency with Master Plan: Project is heavily skewed as a residential development, but is characterized as "mixed use."	2. Is the applicant committed to financing the round-about if deemed the best solution for the S. Center / 7-Mile intersection?
	3. Annual coordination of maintenance costs transferred from Homeowners Association to City.	3. Consistency with Master Plan: Proposed density across entire project is slightly higher than the maximum density in Master Plan.	
Daylighting the river	Comprehensive Funding Plan, including answers to the following questions:	4. Consistency with Master Plan: Project insert single-family residential units in the middle of the project, rather than keeping higher density housing closer to the downtown.	
	1. Approximately how much will daylighting the river cost?	5. Proposed apartment building height 4-5 stories; 5-stories requires public plaza/art/ pedestrian connection.	
	2. How much of that cost will be provided by the applicant? How will this capital be funded (direct payment, tax abatement)?	6. Proposed townhome buildings 3 stories (vs. 2-2.5 stories).	
	3. What happens if grants are not available?	7. Proposed single-family home sites smaller than ordinance requirements (lot width & lot size).	
Alternative Farmer's Market Location	4. Has the City been approached to participate in the public/private partnership?		
	1. Chamber's preferred location.		
	2. Park location approx. 28% smaller than current sales area.		
Traffic Management Improvements	3. Parking lot location may displace vehicles parking for proposed uses (retail & apartments).		
	1. City Engineer's review of proposed traffic improvements		
	2. Community reaction to potential round-about at S. Center / 7-Mile intersection.		
Eliminate all existing structures at one time.			
Relocation of exposed sanitary sewer pipe.	1. DPW Director's review of this change.		

From: [OC](#)
To: [Dianne Massa](#)
Subject: Northville Downs Development
Date: Tuesday, December 18, 2018 3:08:46 PM

Dear Members of City Council

Due to a medical issue, I am unable to attend this vitally important meeting regarding the future of Northville in person. Let that not be mistaken for apathy!

I have previously written to the mayor and city Council about my deep and abiding concerns around this development. This will change the face of Northville forever. It will cut off downtown completely which is the heart and soul of Northville, providing opportunities for community, family outings, dining, shopping and the heartbeat of our community.

I believe this development is irresponsible on multiple levels, deliberately and willfully allowing money to literally bulldoze local cherished values in favor of cash.

The scope this development does not seem to align with protection of our natural resources, the historic character of Downtown, or building a lasting legacy of thoughtful and prudent use of the most irreplaceable asset Northville has.

I live on East Cady Street, and I completely agree with Mr. Daily's Assessment of the increased traffic volume that exists already on Cady, Church and Hutton Streets. Church Street can be a pain to navigating an obstacle course already, given both the pedestrian traffic and the automobile traffic in that short block. Can be a pain to navigating an obstacle course already, given both the pedestrian traffic and the automobile traffic in that short block which includes the Presbyterian Church and Starbucks.

If this development proceeds, we will be left with the shambles of seriously congested roads, the fracturing of the core of Northville, the responsibility for increasing local temperatures by cementing over the green space, increased pollution, increased noise, a complete loss of charm, character, historical context and the evaporation of a vibrant, forward-thinking future for our community.

What happens with The Downs will become a lesson for other small towns and enclaves around the country, for better or for worse. So why don't we take the leadership role, and write a history that is a beacon for historic communities, that charts an integrated course, not simply balancing progress with history, but integrating Northville's history to design aspirational, progressive momentum that ensures the vitality of this community for generations?

Let other towns look to our choices with admiration and appreciation for the care taken with our resources. Let them find their paths by the honest diligence and hard work done here of leveraging our finest ideas on the fulcrum of history to create a wildly amazing future? Why not?

Lastly, please feel free to read my letter at the meeting tonight since I cannot be in attendance to represent my perspective. If that's not possible, I would like it to be part of the official records somehow. Many thanks.

With respect and hope,

O.C. O'Connell
300 E. Cady St. #201
Northville, MI 48167

303-883-3241



Carlisle | Wortman
ASSOCIATES, INC.

117 NORTH FIRST STREET SUITE 70 ANN ARBOR, MI 48104 734.662.2200 734.662.1935 FAX

MEMORANDUM

TO: City of Northville Planning Commission

FROM: Sally M. Elmiger, AICP

DATE: December 11, 2018

RE: Front Porch & Rear Garage Incentive, Residential Building Standards

As discussed at the October 16, 2018 Planning Commission meeting, we have incorporated the ordinance language that incentivizes front porches for single family properties that choose to locate a garage in the rear of the property into Northville's Zoning Ordinance. This draft also includes the following:

1. Residential building standards
2. Requirements for front-facing attached garages
3. Provisions for porte-cochere's on residential buildings

Per the discussion in October, we used the language from Plymouth's ordinance verbatim as a springboard for further discussion. However, we did make the following revisions:

1. We modified the requirement that a detached garage had to be in the rear third of the lot, to instead require that a detached garage had to be behind the rear "building line" of the house. We have defined the term "rear building line" in the draft.
2. Regarding the front porch incentive for existing homes, we added language to allow the porch in the "averaged" front yard setback. (Note: This will need to be studied further to ensure this allowance is not in conflict with the Paved Surface Limitations in front yards, or Footnote 25, Section 15.02).

We look forward to discussing this topic at our upcoming meeting.



CARLISLE/WORTMAN ASSOC., INC.

Sally M. Elmiger, AICP, LEED AP

Principal

Cc: Pat Sullivan
Dianne Massa
Brent Strong

Front Porch & Rear Garage Incentive, Porte-Cochere, Residential Dwelling Standards

ARTICLE 18 GENERAL PROVISIONS

SECTION 18.11 GENERAL EXCEPTIONS

Section 18.11.8 Porches

An open, unenclosed, and uncovered porch or paved terrace may project into a required front yard for a distance not exceeding ten (10) feet, but this shall not be interpreted to include or permit fixed canopies. However, sections 18.11.8.1 and 18.11.8.2 allow a porch with a fixed canopy to be located in the required front yard for a distance of up to four (4) feet if the standards in these sections are met.

Section 18.11.8.1 Front Porch Exception for New One Family Dwellings

New one family dwellings are encouraged to positively contribute toward neighborhood enhancement and the walkability of the city. Walkability is the extent to which walking is readily available as a safe, connected, accessible and pleasant mode of transport. One way to accomplish walkability is to locate garages at the rear of a lot. Garages at the rear of a lot (whether attached to the dwelling or as a free-standing detached garage) help to support walkability by:

- Minimizing the width of the driveway at the front of the dwelling, allowing more space in the front yard for trees and vegetation, and more space along the street for street trees;
- Minimizing the potential of parked cars left in front of the garage door to block the sidewalk;
- Allowing space on the dwelling's front façade for windows and other human-scaled architectural elements; and
- Allowing space on the dwelling's front façade for a porch, where residents can interact with neighbors on the sidewalk and observe activities on the street.

To encourage locating garages at the rear of a lot, new one family residential projects that locate the garage in the rear, or retain an existing garage at the rear, may also locate a covered front porch in the front yard setback by up to four (4) feet. In addition, the area that the covered front porch occupies in the front yard setback shall not be considered in calculating lot coverage. To be eligible for this exception, the proposed construction must meet all of the following standards:

- a. The project includes construction of a new one family dwelling on the lot.
- b. The project includes construction of a new garage which is located either in the rear of the new dwelling (attached) or behind the rear building line of the home (detached), or retains an existing detached garage for continued use as a garage which is behind the rear building line of the home.
- c. The front porch that is located in the front yard setback must:
 - 1) Be single-story in height, no higher than fifteen (15) feet, and as measured per the procedures described in section 26.02 of the zoning ordinance for building height; and

- 2) Contain a deck that is no more than eight and one-quarter inches from the elevation of the finished first floor (i.e., at-grade decks and patios are not eligible for the front yard porch exception); and
 - 3) Be a minimum of six feet in depth (distance between the front exterior wall of the residence and the edge of the porch deck); and
 - 4) Be covered with a roof; and
 - 5) Be unenclosed by walls, windows or other enclosure at the time it is constructed or at any time in the future. This standard does not include open railings and balustrades.
- d. The front setback line used to determine where the front porch can be located on the lot shall equal the setback required by sections 15.01 and 15.02.
 - e. On corner lots, porches may be constructed on either or both front facades, or built as one wraparound porch as long as the porch(s) meets the requirements in "a" through "d" above.
 - f. The final Certificate of Occupancy for the residential dwelling shall not be issued until construction of the qualifying garage is complete.

18.11.8.2 Front Porch Exception for Existing One Family Dwellings

To support walkability throughout the city as described in 18.11.8.1 above, existing one family dwellings which construct a new garage in the rear, or have an existing garage in the rear, may also locate a covered front porch in the front yard setback by up to six feet. In addition, the area that the covered front porch occupies in the front yard setback shall not be considered in calculating lot coverage. To be eligible for this exception, the existing dwelling must be occupied as of (DATE). Also, the proposed construction must meet all of the following standards:

- a. The project includes construction of a new garage which is located either in the rear of the existing residential dwelling (attached) or behind the rear building line of the home (detached), or retains an existing detached garage for continued use as a garage which is behind the rear building line of the home.
- b. The front porch that is located in the front yard setback shall:
 - 1) Be single-story in height, no higher than fifteen (15) feet, and as measured per the procedures described in section 78-21 of the zoning ordinance for building height; and
 - 2) Contain a deck that is no more than eight and one-quarter inches from the elevation of the finished first floor (i.e. at-grade decks and patios are not eligible for the front yard porch exception); and
 - 3) Be a minimum of six feet in depth (distance between the front exterior wall of the residence and the edge of the porch deck); and
 - 4) Be covered with a roof; and
 - 5) Be unenclosed by walls, windows or other enclosure at the time it is constructed or at any time in the future. This standard does not include open railings and balustrades.

- c. The front setback line used to determine where the front porch can be located on the lot shall be established using all of the following standards:
 - 1) The front setback line shall equal the setback required by sections 15.01 and 15.02; and
 - 2) If front yard setback averaging applies to the lot, the porch may be located within the average front yard setback, as described in section 15.02.16; and
 - 3) For existing dwellings whose front exterior wall closest to the street is greater than the minimum front yard setback required in Section 15.01, then the distance between the front setback line and the exterior wall shall be subtracted from the width of porch allowed in the front setback. For example, if a residential dwelling is setback 27 feet (or two feet more than the 25-foot minimum front yard setback), then two feet shall be subtracted from the porch width allowed within the front yard setback. This results in a maximum width porch in the front yard setback of four feet.
- d. On corner lots, porches may be constructed on either or both front facades, or built as one wraparound porch as long as the porch(s) meets the requirements in "a" through "c" above.
- e. The qualifying existing garage or new garage must be constructed before constructing the front porch.
- f. Existing residential dwellings with an existing attached garage that faces the street are not eligible for this front porch exception.

Section 18.11.9 Projections Into Yards

Section 18.11.9.1 Architectural Features.

Architectural features, not including vertical projections, may extend or project into a required side yard not more than two (2) inches for each one (1) foot of width for such side yard; and may extend or project into a required front yard or rear yard not more than three (3) feet.

(NOTE TO COMMISSIONERS: "ARCHITECTURAL FEATURE" IS DEFINED AS FOLLOWS:

"Architectural features of a building shall include cornices, eaves, gutters, belt courses, sills, lintels, bay windows, chimneys and decorative ornaments.")

Section 18.11.9.2 Porte-Cocheres on Single-Family Dwellings.

Porte-cocheres on single family dwellings. One porte-cochere, as defined by this chapter, may be attached to a single family dwelling over a driveway to provide shelter for passengers entering and existing vehicles parked in the driveway. A porte-cochere may only be attached to a residential dwelling if the residential dwelling is set back a minimum of 13 feet from the side property line. A porte-cochere shall be included in the lot coverage calculation and shall be constructed to meet all of the following standards:

- a. Only one porte-cochere is allowed per lot.
- b. The porte-cochere shall not be greater than 250 square feet in area.

- c. The porte-cochere shall meet the front yard setback requirement, and be located behind the front building line of the house.
- d. The porte-cochere may be located within a side yard setback if the following requirements are met:
 - i. The existing lot width is 60 feet wide or less;
 - ii. The porte-cochere is placed over a driveway that has a minimum width of nine (9) feet;
 - iii. The minimum distance between the dwelling wall and the opposite porte-cochere columns shall be 9.5 feet;
 - iv. No element of the porte-cochere is located closer than two feet from the side property line, including overhangs and similar elements, but excluding gutters; and
 - v. Columns located in the side yard setback shall not be greater than 18 inches square in size.
- e. The clearance between the ground and the ceiling of the porte-cochere shall be a minimum of eight feet.
- f. The maximum height to the top of the roof shall be no taller than the finished floor elevation of the second floor. The roof structure shall not exceed a 3/12 pitch.
- g. The porte-cochere shall be entirely open and shall be supported only by the residential dwelling on one side and modest columns on the other. It shall be unenclosed by walls, windows or other enclosure at the time it is constructed or at any time in the future.
- h. The roof of the porte-cochere shall not be enclosed with railings, shall not be accessible from an opening in the residential dwelling, and shall not be used as a porch, balcony, or similar use.
- i. The porte-cochere shall be constructed of materials consistent with the main structure.

SECTION 15.01 SCHEDULE OF REGULATIONS (Rev. 7/17)

Symbol	Use District	Minimum Lot Size		Maximum Building Height		Minimum Yard Setback in Feet				Maximum Floor Area Ratio	Minimum Landscape Area Percent of Lot	Maximum Lot Area Coverage Percent of Lot	Minimum Floor Area
		Area	Width	Number of Stories	In Feet	Front	Side yards		Rear				
							Least Side	Total of Two					
R-1A	First Density	12,000 (1) (17)	100 (1)	2 ½ (20)	(20) (24)	30 (2) (3) (16)	8 (3) (20)	20 (3) (20)	35 (3)	N/A	35 (25)	30 (4) (26)	(15)
R-1B	Residential Districts	7,200 (1) (17) (19)	60 (1)	2 ½ (20)	(20) (24)	25 (2) (3) (16)	7 (3) (20)	15 (3) (20)	25 (3)	N/A	35 (25)	30 (4) (19) (26)	(15)
R-2	Second Density Residential District	7,200 (1)	60 (1)	2 1/2 (5)	30 (5)	25 (2) (3)	5 (3)	15 (3)	25 (3)	N/A	25 (25)	35 (4) (26)	(15)
R-3	Third Density Residential District	10,000 (1) (6)	75 (1) (6)	2 1/2 (5)	30 (5)	25 (2) (3) (7)	15 (3) (7)	30 (3) (7)	35 (3) (7)	0.50 (9)	40 (25)	35 (4)	(15)
R-4	Fourth Density Residential District	10,000 (1)	N/A	5 (5)	60 (8)	30 (2) (3) (7) (8)	15 (3) (7) (8)	30 (3) (7) (8)	30 (3) (7) (8)	0.50 (9)	35 (25)	50 (4)	(15)
PBO	Professional/Business/Office	N/A	N/A	3	30	20	10	20	25	0.50 (9)	10	50 (4)	N/A
OR	Office/Research District	N/A	75	2	30	20	10	20	25	0.50	10	N/A	N/A
LCD	Local Commercial District	N/A	N/A	N/A	30	25	(10) (11)	(10) (11)	20	N/A	10	N/A	N/A
CBD	Central Business District	N/A	N/A	3 (18)	42 (18)	N/A	(10)	(10)	20 (12)	3.0 (9)	N/A	N/A	N/A
CBD-O	Central Business District – Overlay	N/A	N/A	3	42	10	(10) (21)	(10)	(21)	3.0 (9)	10	N/A	N/A
CSO	Cady Street Overlay	N/A	N/A	(22)	(22)	(22)	(22)	(22)	(22)	(22)	(22)	(22)	(22)
GCD	General Commercial District	N/A	N/A	2	30	20	10	20	20	N/A	10	N/A	N/A
RTD	Racetrack District	N/A	N/A	N/A	(13)	(14)	(14)	N/A	N/A	N/A	N/A	N/A	N/A
PR-1	Performance Regulated Industrial.	N/A	N/A	3	30	20/50 (23)	10	20	25/50 (23)	0.50 (9)	10	50 (4)	N/A
PR-2	Performance Regulated Industrial.	N/A	N/A	3	30	20/50 (23)	10	20	25/50 (23)	0.50 (9)	10	50 (4)	N/A

Please refer to Section 15.02 for applicable footnotes.

SECTION 15.02 FOOTNOTES TO THE SCHEDULE OF REGULATIONS

16. The established front setbacks for construction within established R-1A and R-1B neighborhood areas shall be at least one foot more than the average front yard setback of surrounding buildings. The average setback and front building line shall be determined by examining existing buildings located on the same side of the street and within two hundred (200) feet of the subject parcel in both directions. For a one family residential project that meets the "front porch exception" standards listed in 18.11.8.1 or 18.11.8.2, the average front setback shall be calculated using the front wall of the surrounding buildings rather than the edge of any existing porches. In any case, the minimum average front yard setback for an incentive porch shall not be less than fifteen (15) feet. The building official may exclude structures used in calculating average front setbacks when the structure deviates by more than twenty five (25) feet forward or back from the average setbacks of other structures found within two hundred (200) feet. The applicant shall submit calculations prepared by the applicant or property owner used to determine average front setbacks. (Rev. 9/15)

26. For projects that meet the standards listed in 18.11.8.1 or 18.11.8.2 and construct an eligible front porch, the area of the eligible front porch located in the front yard setback shall be excluded from the lot coverage calculation.

SECTION 26.01 CONSTRUCTION OF LANGUAGE

109. Lot Coverage: The part or percent of the lot occupied by the buildings, accessory buildings and structures, and any other building components that have a roof or fixed canopy, such as a covered porch, breezeway, etc. However, per Sections 18.11.8.1. and 18.11.8.2, the area of an eligible front porch located in the front yard setback shall be excluded from the lot coverage calculation. The area of cantilevered projections of any floor, excluding roof overhangs, shall be included in the calculation of lot coverage. (Rev. 4/17)

144. Porte-cochere means an unenclosed, roofed structure located on the same lot, which extends from the principal dwelling over an adjacent driveway that is designed to let vehicles pass under and used for the shelter of those getting in and out of vehicles.

SECTION 18.26 SINGLE FAMILY DWELLING UNIT STANDARDS

No residential structure, garage (attached or detached), mobile home, manufactured home, modular home or prefabricated home shall be built unless the dwelling unit has been reviewed by the building official subject to the following conditions:

- (1) Dwelling units shall conform to all applicable city codes and ordinances and state and federal requirements with respect to the construction of the dwelling.
- (2) Dwelling unit shall be permanently attached to a perimeter foundation. In instances where the applicant elects to set the dwelling on piers or other acceptable foundations which are not at the perimeter of the dwelling, then a perimeter wall shall also be constructed. Any such perimeter wall shall be constructed of durable materials and shall also meet all local requirements with respect to materials, construction and necessary foundations below the frost line. Any such wall shall also provide an appearance which is compatible with the dwelling and other dwellings in the area.
- (3) Dwelling unit shall be provided with exterior finish materials similar to the dwelling unit on adjacent properties or in the surrounding residential neighborhood.

- (4) Dwelling unit shall be provided with roof designs and roofing materials similar to the dwelling unit on adjacent properties or in the surrounding residential neighborhood.
- (5) Dwelling unit shall be provided with an exterior building wall configuration which represents an average width to depth or depth to width ratio which does not exceed three to one, or is in reasonable conformity with the configuration of dwelling unit on adjacent properties or in the surrounding residential neighborhood.
- (6) The dwelling shall contain storage capability in a basement located under the dwelling, in an attic area, in closet areas, or in a separate structure of standard construction similar to or of better quality than the principal dwelling, which storage area shall be equal to ten percent of the square footage of the dwelling or 100 square feet, whichever is less.
- (7) The building official may request a review by the planning commission of any dwelling unit with respect to subsections (3), (4), and (5) of this section. The building official or planning commission shall not seek to discourage architectural variation, but shall seek to promote the reasonable compatibility of the character of dwelling unit, thereby protecting the economic welfare and property value of surrounding residential uses and the city at large. In reviewing any such proposed dwelling unit, the building official may require the applicant to furnish such plans, elevations and similar documentation as is deemed necessary to permit a complete review and evaluation of the proposal. When comparing the proposed dwelling unit to similar types of dwelling areas, consideration shall be given to comparable types of dwellings within 300 feet. If the area within 300 feet does not contain any such dwellings, then the nearest 25 similar type dwellings shall be considered.
- (8) Attached garages that face the street are allowed on lots that are 60 feet wide or greater.
- (9) The total width of a garage attached to a single family dwelling shall:

 - a. Not exceed 50 percent of the width of the entire front façade of the residential dwelling; and
 - b. Be a minimum of 22 feet wide, measured from the exterior of the garage walls.
- (10) Attached garages shall be located at least four feet behind the front façade of the front exterior wall of the residential dwelling, but in no case shall be closer than 30 feet from the front property line.

INFORMATION

2019 Meeting Dates

Planning Commission – 1 st and 3 rd Tuesday, 7pm at City Hall, 215 W. Main St. (248-449-9902)

January 15*	February 5 & 19	March 5 & 19	April 2 & 16
May 7 & 21	June 4 & 18	July 16*	August 6 & 20
September 3 & 17	October 1 & 15	November 5 & 19	December 3 & 17

*First meeting of the month falls on holiday and canceled per PC action on 11/7/17

**First meeting falls near July 4 holiday, and canceled per PC action on 10/16/18

Meetings held in the Lower Level Meeting Room:

February 19 (Council will meet same night due to Presidents Day)

May 7 (possible Election Day)

August 6 (possible Election Day)

September 3 (Council will meet same night due to Labor Day holiday)

November 5 (Election Day)