AGENDA
CITY COUNCIL STUDY SESSION
MARCH 13, 2023 - 6:00PM
CITY OF FARMINGTON HILLS
CITY HALL – COMMUNITY ROOM
31555 W ELEVEN MILE ROAD
FARMINGTON HILLS, MICHIGAN
Telephone: 248-871-2410 Website: www.fhgov.com

1. Call Study Session to Order
2. Roll Call
3. Revised Planned Unit Development 3, 2021
4. Redevelopment Liquor License Requirements
5. Adjourn Study Session

Respectfully submitted,

Pamela B. Smith, City Clerk

NOTE: Anyone planning to attend the meeting who has need of special assistance under the Americans with Disabilities Act (ADA) is asked to contact the City Clerk's Office at 248-871-2410 at least two (2) business days prior to the meeting, wherein necessary arrangements/accommodations will be made. Thank you.

Inter-Office Correspondence

DATE: **March 7, 2023 (March 13, 2023, City Council Study Session)**

TO: **Gary Mekjian, City Manager**

FROM: **Charmaine Kettler-Schmult, Director of Planning and Community Development**

SUBJECT: **Revised Planned Unit Development ("PUD") 3, 2021**

Applicant: NWH Holdings, LLC (Robert Asmar)

Owner: NWH Holdings, LLC (Robert Asmar)

Sidwell: 22-23-02-126-130

Zoning: B-2, Community Business and B-3, General Business

Master Plan: Multiple-Family Residential and Non-Center Type Business

Location: 32680 Northwestern Highway

Description:

The applicant has submitted for City Council consideration **Revised PUD Plan 3, 2021** to develop a 5.53-acre parcel located at 32680 Northwestern Highway. The application proposes to use the site for a 217-unit multiple-family residential structure with a central courtyard, and underground and surface parking.

Please see Giffels Webster's review **attached** for a review of the plans and accounting of the deviations from the Zoning Ordinance sought.

Procedural Background:

- February 18, 2021 – Planning Commission qualifies PUD (5-3)
- April 22, 2021 – Planning Commission sets PUD plan for public hearing (5-3)
- July 15, 2021 – Planning Commission holds public hearing on PUD plan and postpones request to August 19, 2021 (9-0) August 19, 2021 – Revised plans presented to Planning Commission—Commission further postpones request to a date uncertain (5-1)
- June 16, 2022 – Revised plans presented to Planning Commission-Commission sets revised PUD plan for public hearing (6-2)
- July 21, 2022 – Commission postpones request to August 18, 2022 (8-0)

- August 18, 2022 – Commission postpones request to September 15, 2022 (8-0)
- September 15, 2022 - Planning Commission holds public hearing on revised PUD plan and recommends PUD plan approval to City Council (7-2) **(minutes)**
- October 24, 2022 – City Council holds public hearing on revised PUD plan and postpones request to a date uncertain (4-3) **(minutes)**
- January 9, 2023 - City Council received a presentation on the background of the project and an alternate plan. City Council determined additional information is necessary to address their concerns. City Council recommendation to place item first on a future study session agenda. **(minutes)**

Summary of Zoning Deviations Sought:

- Permit multiple-family residential uses within B-2 and B-3 Districts at a density of 543 rooms where 230 rooms is the maximum density permitted in the RC-3 District.
- Permit the height of the multiple-family structure to be 55 feet where 50 is the maximum height permitted.
- Permit a 54.47-foot east side yard setback (from residential) where a minimum 75-foot setback is required.
- Permit 365 parking spaces for the site where 436 spaces are required.

Planning Commission Conditions:

The Planning Commission's September 15, 2022, motion recommending approval of the PUD plan to City Council passed subject to the following conditions:

- Green roofs, if structurally feasible.
- Underground water storage requirements as set forth in the June 7, 2022, Environmental Review [**attached**], setting forth the requirements of proper water storage on the premises, including providing calculation details for the underground detention system.
- Higher density of landscape material will be used on the east side of the building, including taller trees that will be green year-round such as arborvitae, and taller deciduous plants, to act as a blockade between the residential condominiums to the east and this project, and in addition, if required by ordinance and/or staff, a six-foot screen wall. The screen wall does not eliminate or reduce the requirement for taller trees and landscaping including shrubs as described.
- Bicycle parking and EV stations be provided, with EV infrastructure installed in the parking structure and elsewhere as appropriate.

Plan Revisions Following October 24, 2022, City Council Meeting:

A noteworthy difference between the previous plans and revised plans before you tonight is that the applicant is now showing two (2) alternative surface parking configurations for the site. On Sheet C-3.0, the parking proposed is essentially the same as when the plan was recommended by the Planning Commission, as it provides 365 spaces where 426 are required. On Sheet C-3.0A, by contrast, the parking proposed shows a number of additional land-banked spaces along the east and south sides of the site, which would result in 411 spaces where 426 are required. Therefore, under the alternative shown on Sheet C-3.0A, the applicant would be just 15 spaces short of meeting the parking requirements of the Zoning Ordinance.

Action Requested:

No formal action is requested. The purpose of this study session item is to discuss the application and provide

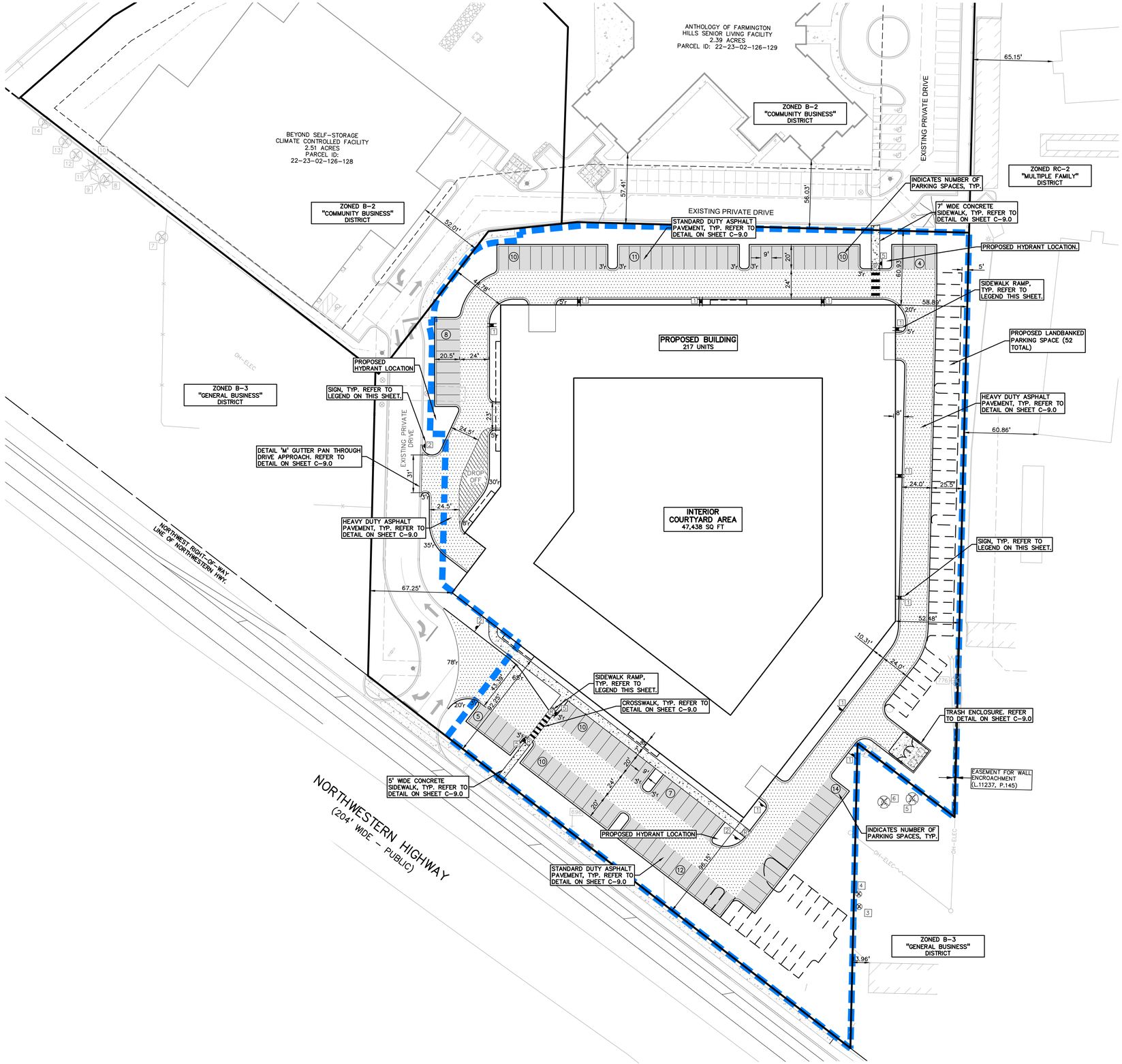
feedback to the applicants.

Department Authorization by: Charmaine Kettler-Schmult, Director of Planning and Community Development

Prepared by: Erik Perdonik, City Planner

Attachments:

- **Revised PUD Plan 3, 2021, dated December 16, 2022 (two (2) sheets)**
- **Giffels Webster's review, dated December 21, 2022**
- **September 15, 2022, Planning Commission meeting minutes**
- **October 24, 2022, City Council meeting minutes**
- **January 9, 2023 City Council meeting minutes**
- **Environmental review, dated June 7, 2022**



LEGEND

IRON FOUND	BRASS PLUG SET
IRON SET	MONUMENT FOUND
NAIL FOUND	MONUMENT SET
NAIL & CAP SET	SEC. CORNER FOUND
	R RECORDED
	M MEASURED
	C CALCULATED

EXISTING	PROPOSED
ELEC., PHONE OR CABLE TV O.H. LINE, POLE & GUY WIRE	
UNDERGROUND CABLE TV, CATV PEDESTAL	
TELEPHONE U.G. CABLE, PEDESTAL & MANHOLE	
ELECTRIC U.G. CABLE, MANHOLE, METER & HANDHOLE	
GAS MAIN, VALVE & GAS LINE MARKER	
WATERMAIN, HYD., GATE VALVE, TAPPING SLEEVE & VALVE	
SANITARY SEWER, CLEANOUT & MANHOLE	
STORM SEWER, CLEANOUT & MANHOLE	
COMBINED SEWER & MANHOLE	
SQUARE, ROUND & BEEHIVE CATCH BASIN, YARD DRAIN	
POST INDICATOR VALVE	
WATER VALVE BOX/HYDRANT VALVE BOX, SERVICE SHUTOFF	
MAILBOX, TRANSFORMER, IRRIGATION CONTROL VALVE	
UNIDENTIFIED STRUCTURE	
SPOT ELEVATION	671.21
CONTOUR LINE	671
FENCE	
GUARD RAIL	
STREET LIGHT	
SIGN	
CONCRETE	STD DUTY, HEAVY DUTY, R.O.W. ONLY
ASPHALT	STD DUTY, HEAVY DUTY, DEEP STRENGTH
GRAVEL SHOULDER	
WETLAND	

FLOODPLAIN NOTE:
BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X', AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP NUMBER 26125C0513F, DATED SEPTEMBER 29, 2006.

SITE DATA TABLE (STONEFIELD OF FARMINGTON HILLS):

SITE AREA:

PARCEL AREA = 5.54 ACRES (241,108 SF)
PUD BOUNDARY = 5.03 ACRES (219,471 SF)

EXISTING ZONING = B-2 & B-3 COMMUNITY BUSINESS DISTRICT
PARCEL ID: 22-23-02-126-130

SETBACKS (BASED ON B-2 REQUIREMENTS):

	REQUIRED	PROVIDED
FRONT (NW HIGHWAY):	75 FEET	96.15 FEET
SIDE YARD (WEST):	20 FEET	49.77 FEET
SIDE YARD (EAST):	75 FEET	50.74 FEET (ADJACENT TO RESIDENTIAL ZONE) (+)
SIDE YARD (NORTH):	20 FEET	60.93 FEET

BUILDING INFORMATION (BASED ON B-2 REQUIREMENTS):

BUILDING FOOTPRINT = ±63,540 SQ .FT. (DOES NOT INCLUDE UPPER STORIES)

MAXIMUM BUILDING HEIGHT ALLOWED = 50 FEET

PROPOSED BUILDING HEIGHT = 55'-0"(+)

BUILDING COVERAGE = 28.95% (63540 / 219471)

PERCENT OPEN SPACE (WITHOUT INTERIOR COURTYARD AND WITH LANDBANKED PARKING) = 16.80% (36872 / 219471)

PERCENT OPEN SPACE (WITH INTERIOR COURTYARD AND WITH LANDBANKED PARKING) = 38.42% (84310 / 219471)

PERCENT OPEN SPACE (WITH INTERIOR COURTYARD AND WITHOUT LANDBANKED PARKING) = 43.46% (95393 / 219471)

PERCENT OPEN SPACE (WITHOUT INTERIOR COURTYARD AND WITHOUT LANDBANKED PARKING) = 21.85% (47955 / 219471)

DENSITY (PER ORDINANCE)

PERMITTED PER RC-3 REQUIREMENTS = 230 ROOMS

PROPOSED = 543 ROOMS (+); ((112 x 2) + (101 x 3) + (4 x 4))

PARKING CALCULATIONS:

217 UNITS; (112-1 BEDROOM UNITS, 101-2 BEDROOM UNITS AND 4-3 BEDROOM UNITS)

PARKING REQUIRED (PER ZONING ORDINANCE) = 2 SPACES FOR 1 AND 2 BEDROOM UNITS; 2.5 SPACE FOR 3 BEDROOM UNITS

REQUIRED PARKING = ((112+101) UNITS x 2 SPACES) + (4 UNITS x 2.5 SPACES) = 426 SPACES

PARKING PROVIDED = 95 SURFACE SPACES + 52 LANDBANKED PARKING + 264 COVERED SPACES = 411 (INC. 9 BARRIER FREE SPACES) (+)

PROPOSED PARKING RATIO = 411 SPACE/217 UNITS = 1.95 SPACES/UNIT

(+) INDICATES THAT A DEVIATION FROM THE ZONING ORDINANCE REQUIREMENT IS BEING REQUESTED AS A PART OF THE PUD APPROVAL.

DEVIATIONS REQUESTED:

HEIGHT: 50' PERMITTED; 55' PROPOSED = 5' DEVIATION
SETBACK (SIDE): 75' REQUIRED; 52.48' PROPOSED = 22.52' DEVIATION
PARKING: 426 REQUIRED; 411 PROVIDED = 15 SPACE DEVIATION
DENSITY: 543 PERMITTED; 230 ROOMS PROPOSED = 313 ROOM DEVIATION

PROPOSED PUD BOUNDARY

NOT FOR CONSTRUCTION

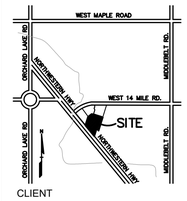
PEA GROUP
t: 844.813.2949
www.peagroup.com

NORTH

0 20 40 80
SCALE: 1" = 40'

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

CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
NWH HOLDINGS, LLC
32825 NORTHWESTERN HIGHWAY
FARMINGTON HILLS, MICHIGAN 48326

PROJECT TITLE
STONEFIELD OF FARMINGTON HILLS
32680 NORTHWESTERN HIGHWAY
FARMINGTON HILLS, MICHIGAN 48326

REVISIONS

PER CITY COMMENTS	04-23-2021
REVISED SUBMITTAL	05-28-2021
REVISED SUBMITTAL	08-02-2021
REVISED SUBMITTAL	04-07-2022
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REVISED SUBMITTAL	07-18-2022
CC STUDY SESSION	12-16-2022

ORIGINAL ISSUE DATE:
MARCH 18, 2020

DRAWING TITLE
PRELIMINARY SITE PLAN

PEA JOB NO.	2020-0129
P.M.	JPB
DN.	JKS
DES.	JDS

DRAWING NUMBER:
C-3.0A

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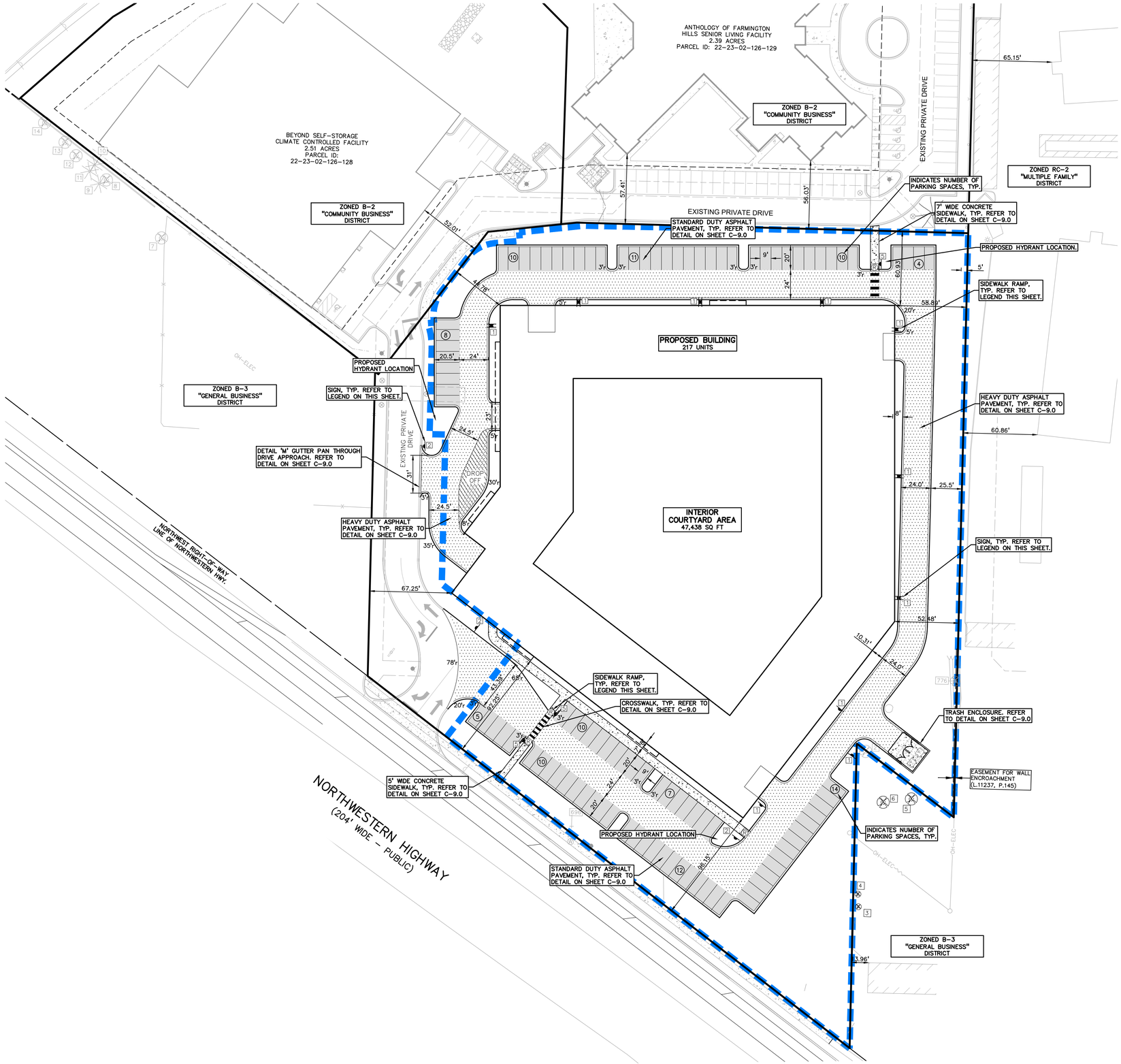

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		FENCE
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		SIGN
CONC.		CONCRETE
ASPH.		ASPHALT
GRAVEL		GRAVEL SHOULDER
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671.21

671

STD DUTY | HEAVY DUTY | R.O.W. ONLY

STD DUTY | HEAVY DUTY | DEEP STRENGTH

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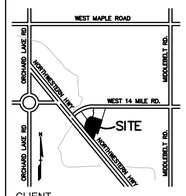

PEA GROUP
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STATE OF MICHIGAN JAMES BUTLER SMITH No. 39805 LICENSED PROFESSIONAL ENGINEER

CLIENT
NWH HOLDINGS, LLC
32825 NORTHWESTERN HIGHWAY
FARMINGTON HILLS, MICHIGAN 48326

PROJECT TITLE
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32660 NORTHWESTERN HIGHWAY
FARMINGTON HILLS, MICHIGAN 48326

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PEA JOB NO.	2020-0129
P.M.	JPB
DN.	JKS
DES.	JDS

DRAWING NUMBER:
C-3.0

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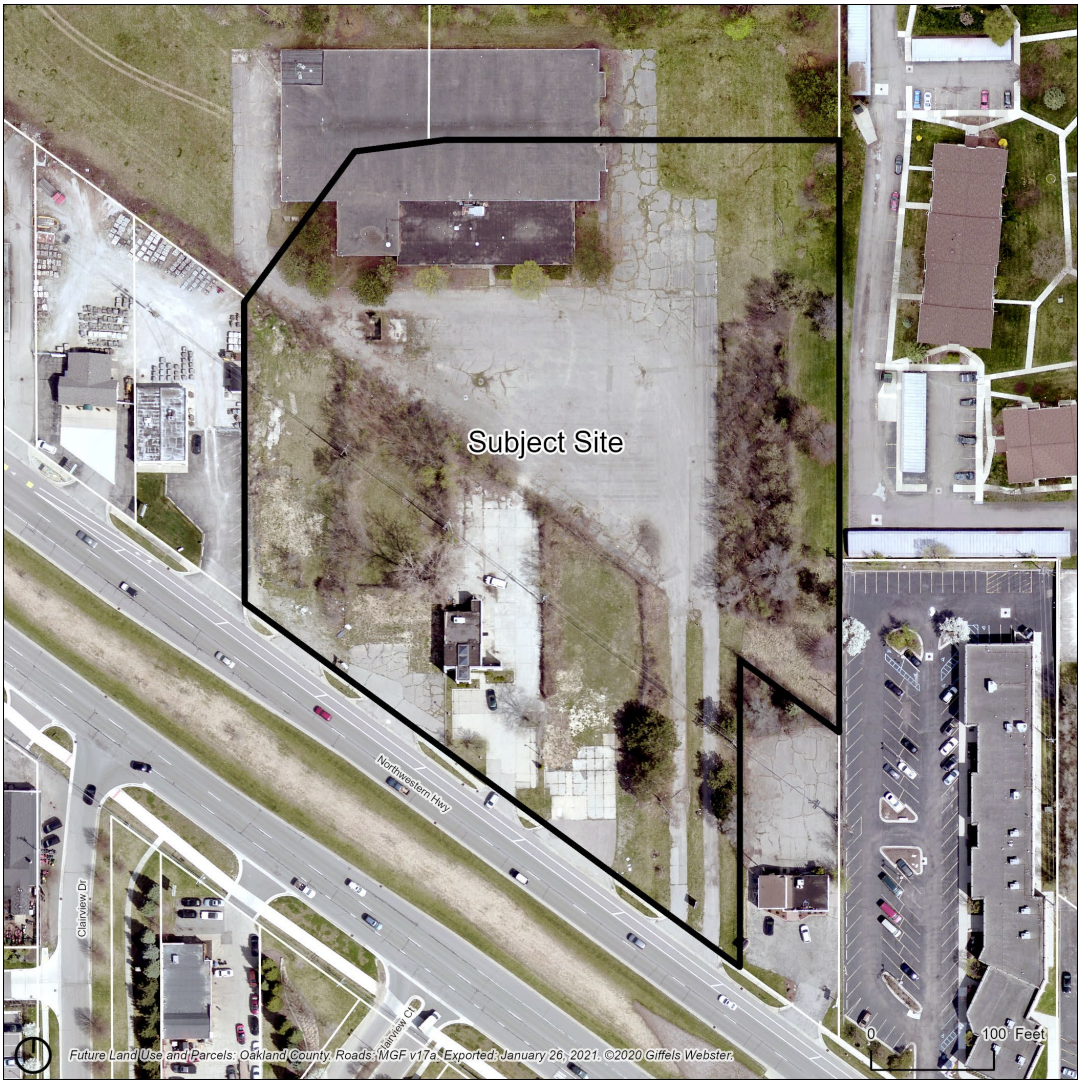
December 21, 2022

Farmington Hills Planning Commission
31555 W 11 Mile Rd
Farmington Hills, MI 48336

PUD – Final Determination

Case:	PUD 3, 2021
Site:	32680 Northwestern Highway (Parcel ID 22-23-02-126-130)
Applicant:	NWH Holdings, LLC/Robert Asmar
Plan Date:	revised 12/16/2022
Zoning:	B-2 Community Business and B-3 General Business

We have completed a review of the application for PUD qualification referenced above and a summary of our findings is below. Items in **bold** require specific action by the Applicant. Items in *italics* can be addressed administratively.



SUMMARY OF FINDINGS

Existing Conditions

1. **Zoning.** The site is currently zoned a mix of B-2 and B-3.
2. **Existing site.** The site is 5.53 acres and is mostly vacant, having been formerly occupied by all or parts of several commercial buildings. The site has no wetlands or other notable natural features.
3. **Adjacent Properties.**

Direction	Zoning	Land Use
North	B-2 w/ PUD (Northpoint)	Senior housing
East	B-3/RC-2 Multiple Family	Commercial/multi-family
South	B-3	Commercial
West	B-2/B-3 w/ PUD (Northpoint)	Commercial

4. **Site configuration and access.** The site is proposed to be accessed from a single driveway, shared with the Northpoint PUD, which occupies the land to the west and north.

PUD Qualification:

Under Section 34-3.20.2, the Planning Commission may make a determination that the site qualifies for a PUD based on the following criteria and procedures. **At its meeting on February 18, 2021, the Planning Commission granted preliminary PUD qualification approval to the site, citing the plan's compliance with all objective viii of Section 34-3.20.2.E. (see discussion of E below). At the time, planning commissioners generally did not take issue with the proposed use, but several expressed reservations about the scale of the use, particularly its density and height. The PUD was also reviewed by the Planning Commission at its meeting of August 19, 2021, and again June 16, 2022; both times, a recommendation was postponed to provide an opportunity for the applicant to amend the plan in response to discussion at the meeting. The motion to postpone included non-binding advice to the applicant to reduce height and overall density, and increase the east side setback. Density and building height have been reduced since the June meeting. The applicant is seeking final PUD qualification, but is not seeking site plan approval concurrent with final qualification. Preliminary approval is not a guarantee of final approval.**

Criteria for qualifications. In order for a zoning lot to qualify for the Planned Unit Development option, the zoning lot shall either be located within an overlay district or other area designated in this chapter as qualifying for the PUD option, or it must be demonstrated that all of the following criteria will be met as to the zoning lot:

A. The PUD option may be effectuated in any zoning district.
B. The use of this option shall not be for the sole purpose of avoiding the applicable zoning requirements. Any permission given for any activity or building or use not normally permitted shall result in an improvement to the public health, safety and welfare in the area affected. *The proposed use—apartments—is not permitted in the B-2 or B-3 districts, though the portion of the site zoned B-2 is planned for multiple-family residential on the Future Land Use map.*
C. The PUD shall not be utilized in situations where the same land use objectives can be accomplished by the application of conventional zoning provisions or standards. Problems or constraints presented by applicable zoning provisions shall be identified in the PUD application.

Asserted financial problems shall be substantiated with appraisals of the property as currently regulated and as proposed to be regulated.
The applicant is proposing significantly more density than is permitted in any of the three RC multiple-family districts (more than twice the permitted density of the RC-3 district). The applicant's narrative provides rationale behind the proposed density, essentially averring that a denser development serves as a step-down to the RC-2 district to the east from the commercial uses and regional thoroughfare to the south and east.

D. The Planned Unit Development option may be effectuated only when the proposed land use will not materially add service and facility loads beyond those contemplated in the Future Land Use Plan unless the proponent can demonstrate to the sole satisfaction of the city that such added loads will be accommodated or mitigated by the proponent as part of the Planned Unit Development.
The number of apartment units proposed on the site clearly exceeds the number of multi-family units that could be built under other multi-family zoning; the site's current commercial designation (primarily B-2) supports uses with a wide array of traffic demands. Nevertheless, this is a large number of units. The applicant provided a traffic study in 2021; we defer to engineering for a review of its findings, and also note that the number of units has increased in the meantime. The complex would utilize the same access point to Northwestern Highway as the rest of the Northpoint PUD; there is not a vehicular connection from the apartments to 14 Mile or the senior housing parking lot.

E. The Planned Unit Development must meet, as a minimum, one of the following objectives of the city (bold items are those directly addressed in the applicant's original narrative):
   - **i. To permanently preserve open space or natural features because of their exceptional characteristics or because they can provide a permanent transition or buffer between land uses.**
     Open space is primarily found on the site in the courtyard commons, though the narrative calls attention to an intent to create a dense buffer to the east and utilize green roofs and landscaping on the building's various tiers to mitigate its overall impact. Plans now show the buffer to the east.
   - **ii. To permanently establish land use patterns which are compatible or which will protect existing or planned uses.**
     The Future Land Use map does identify the northern portion of this property as multiple-family residential. As the planning commission considers the proposed use's compatibility with surrounding uses, the proposed scale of the use should feature prominently in the discussion.
   - iii. To accept dedication or set aside open space areas in perpetuity.
   - iv. To provide alternative uses for parcels which can provide transition buffers to residential areas.
   - **v. To guarantee the provision of a public improvement which could not otherwise be required that would further the public health, safety, or welfare, protect existing or future uses from the impact of a proposed use, or alleviate an existing or potential problem relating to public facilities.**

The applicant's narrative cites the access management benefit of the single driveway to Northwestern Highway, versus the separate driveways that previously served the individual commercial sites here.

vi. **To promote the goals and objectives of the Master Plan for Land Use.**
As noted above, the future land use map does call for multiple-family residential on the B-2 portion of the property, leaving a commercial liner along Northwestern Highway. The proposed project introduces this use, though at a higher density than permitted elsewhere in the city.

vii. **To foster the aesthetic appearance of the city through quality building design and site development, the provision of trees and landscaping beyond minimum requirements; the preservation of unique and/or historic sites or structures; and the provision of open space or other desirable features of a site beyond minimum requirements.**
The applicant notes that the building is designed to create a gateway appearance for the city, fosters further walkability in the area, and is designed not to look monolithic (some conceptual illustrations were provided, though the planning commission is not making any decision on these or any other aspect of the site plan at this time). Building materials are also cited toward meeting this objective. If this PUD is approved, the PUD Agreement should include reference to proposed exemplary design and materials (including brick masonry and fiber cement products, and the green roof elements mentioned above) that are proposed and require that they be a part of the development.

viii. **To bring about redevelopment of sites where an orderly change of use is determined to be desirable.**
The applicant's narrative calls attention to the large number of commercial buildings in the area that are not occupied, or listed for lease or sale, noting that an influx of residents to the area would increase the pool of potential patrons for remaining businesses. The planning commission cited this objective in its motion to grant preliminary PUD qualification.

Though only one objective must be met by the plan, the applicant's original narrative directly addressed objectives i, ii, and v.-viii. ***At the preliminary qualification stage, the motion to grant preliminary qualification cited only objective viii.***

F. The PUD shall not be allowed solely as a means of increasing density or as a substitute for a variance request; such objectives should be pursued through the normal zoning process by requesting a zoning change or variance.
An increase in density is certainly sought by the applicant. Given that the proposed use is not permitted in the underlying district, it appears that the request is not made solely to avoid a variance. However, several deviations from ordinance standards would be requested to facilitate the conceptual plan.

G. Request for qualification:
   i. Any person owning or controlling land in the city may make application for consideration of a Planned Unit Development. Unless otherwise provided, such application shall be made by

submitting a request for a preliminary determination as to whether or not a parcel qualifies for the PUD option.

ii. A request shall be submitted to the city. The submission shall include the information required by subparagraph iii. below.

iii. Based on the documentation submitted, the planning commission shall make a preliminary determination as to whether or not a parcel qualifies for the PUD option under the provisions of Section 34-3.20.2 above. A preliminary determination that the parcel qualifies will not assure a favorable recommendation or approval of the PUD option, but is intended only to provide an initial indication as to whether the applicant should proceed to prepare a PUD plan upon which a final determination would be based. The submittal must include the following:
   a. Substantiation that the criteria set forth in Section 34-3.20.2 above, are or will be met.
   b. A schematic land use plan containing enough detail to explain the function of open space; the location of land use areas, streets providing access to the site, pedestrian and vehicular circulation within the site; dwelling unit density and types; and buildings or floor areas contemplated.
   c. A plan for the protection of natural features. In those instances where such protection is not an objective of the PUD option, the plan need not be submitted.

iv. The planning commission shall approve or deny the applicant's request for qualification. Whether approved or denied, the applicant may then proceed to prepare a PUD plan upon which a final determination will be based.

The applicant has submitted a narrative describing the use, addressing the objectives of 34-3.20.2, and a conceptual plan, including a breakdown of the number and types of units sought.

Request for final determination. Per Section 34-3.20.5.B, the following must be submitted when seeking final determination of PUD qualification:

a. A boundary survey of the exact acreage being requested done by a registered land surveyor or civil engineer (scale not smaller than one inch equals one hundred (100) feet).	Y
b. A topographic map of the entire area at a contour interval of not more than two (2) feet. This map shall indicate all major stands of trees, bodies of water, wetlands and unbuildable areas (scale: not smaller than one inch equals one hundred (100) feet).	Y
c. A proposed land use plan indicating the following at a scale no smaller than one inch equals one hundred (100) feet (1" = 100'):	Y
(1) Land use areas represented by the zoning districts enumerated in Section 34-3.1.1 through Section 34-3.1.30 of this chapter.	*
(2) Vehicular circulation including major drives and location of vehicular access. Preliminary proposals as to cross sections and as to public or private streets shall be made.	Y

(3) Transition treatment, including minimum building setbacks to land adjoining the PUD and between different land use areas within the PUD.	Y
(4) The general location of nonresidential buildings and parking areas, estimated floor areas, building coverage and number of stories or height.	Y
(5) The general location of residential unit types and densities and lot sizes by area.	Y
(6) A tree location survey as set forth in Section 34-5.18, Tree Protection, Removal and Replacement.	Y
(7) The location of all wetlands, water and watercourses and proposed water detention areas.	Y
(8) The boundaries of open space areas that are to be preserved and reserved and an indication of the proposed ownership thereof.	Y
(9) A schematic landscape treatment plan for open space areas, streets and border/transition areas to adjoining properties.	Y
d. A preliminary grading plan, indicating the extent of grading and delineating any areas which are not to be graded or disturbed.	Y
e. An indication of the contemplated water distribution, storm and sanitary sewer plan.	Y
f. A written statement explaining in detail the full intent of the applicant, indicating the type of dwelling units or uses contemplated and resultant population, floor area, parking and supporting documentation, including the intended schedule of development.	Y

* The applicant is proposing only a multi-family residential use for the full site.

The applicant has submitted a package meeting the minimum requirements for final determination. As noted above, this is not a submission for site plan, landscape plan, and tree protection plan approval; all of these will need to be submitted with full detail if the City Council grants a final determination that the site qualifies for a PUD.

Conceptual Site Plan & Use:

1. **Summary of Proposed Use.** The planning commission is not assessing the site plan in detail; the applicant will return with a full site plan. However, the conceptual plans and illustrations provided by the applicant provide an indication of the type of site plan the planning commission can expect if preliminary qualification is granted. The applicant is proposing to construct a 217-unit apartment building around two courtyard commons (earlier conceptual plans had 200 and 253 units, respectively). Access to the site would be from Northwestern Highway, via the same driveway that serves Northpoint Storage. The ground floor of the building is devoted to indoor parking, with all living units on the floors above. The parking lot has been re-configured to eliminate long dead-end aisles and the spaces along the eastern property line.
2. **Density.** The parcel is 241,095 square feet. Density is determined by the number of rooms. To determine the number of rooms, the following standard (Section 34-3.5.2.F.) is applied:

Efficiency unit: 1 room

One-bedroom unit: 2 rooms

Two-bedroom unit: 3 rooms

Three-bedroom unit: 4 rooms

The applicant has reduced the number of proposed units from 253 to 217, and number of each type has been adjusted to 112 one-bedroom units (224 rooms), 101 two-bedroom units (303 rooms), and 4 three-bedroom units (16 rooms) with a total of **543 rooms**, based on the standard above (514 rooms in the initial plan, 505 on the first revision, 633 on the last version). The following densities are permitted under conventional zoning:

District	Lot Area/sq ft	Rooms permitted
RC-1	1,900	126 rooms
RC-2	1,400	172 rooms
RC-3	1,050	230 rooms

The proposed density is about 2.36 times that of the densest multiple-family district in the city. Density has been decreased from the last iteration of the conceptual plan.

3. **Master Plan.** The master plan's Future Land Use map designates the portion of the site zoned B-2 as multiple-family residential, and the portion zoned B-3 as non-center-type business. The B-3 portion of the property is consistent with this designation; the B-2 portion is not. The property is not addressed on the residential density map, though it is adjacent to a high-density area, which is described as consistent with the RC districts. The site is not part of any special planning area.

   Non-Center-Type Business is described as follows in the Master Plan: "*Non-Center Type Business uses are those that are not compatible with shopping centers and that could have an undesirable impact on abutting residential areas. They include most automobile-oriented uses and outdoor uses; e.g. those that have the greatest impact beyond their boundaries in terms of either traffic generation, noise or appearance. These are the uses that are permitted within the B-3 General Business District.*" Generally speaking, the category anticipates stand-alone sites rather than a planned, walkable environment.

2. **Dimensional Standards.** Generally, it appears that the applicant would be seeking relief from the maximum height (55 ft vs 50 ft) and east side setback standards (52.48 ft vs 75 ft) of the underlying districts. The height of the building has been reduced from previous versions of the plan, from 69 feet to 55 feet.

3. **Parking.** 436 spaces are required for the proposed unit counts (the plan says 426, but seems to have missed the 10 spaces for the 3-bedroom units); 365 spaces are proposed (a ratio of 1.68 spaces per unit), which requires relief from ordinance standards.

4. **Trees and Preliminary Landscaping.** The preliminary landscaping plan correctly accounts for replacement and parking lot tree requirements. Where the east property line was previously lined with parking spaces, the plan has removed these and now proposes a landscape buffer area between this development and the multi-family complex to the east. **The Planning Commission and City Council may wish to discuss additional landscaping, particularly along the north, east, and south property lines, as a condition of PUD qualification; details of such additional screening could be finalized at site plan review.**

5. **Bicycles and EVs.** We previously called attention to the lack of a labeled bicycle parking area (preferably within the garage), and electric vehicle parking spaces. The narrative now refers to bike

storage as an amenity. Providing adequate bike storage could mitigate some of the impact of the deviation from parking requirements sought by the applicant. Electric vehicle spaces will be essential to ensuring the property's future marketability to renters; their location can be addressed at site plan review.

6. **Requirements of the B-2 and B-3 districts**:

Standard	B-2 Requirement	B-3 Requirement
Lot Size	--	--
Lot width	--	--
Lot coverage	--	--
Front setback	75 ft	25 ft
Rear setback	20 ft	20 ft
Side setback	20 ft	10 ft
Residential setback	75 ft	20 ft
Side street setback	75 ft	25 ft
Building height	Max. 50 ft/3 stories	Max. 50 ft/3 stories
Front yard open space	20%	50%

Considerations for the Planning Commission and City Council

As this is a planned unit development, and the applicant is seeking some substantial deviations from ordinance standards, the Planning Commission and City Council may wish to discuss with the applicant project elements that bring greater benefit to the wider community such as art or gateway elements on the site that would be visible to pedestrians and motorists traveling in the adjacent right-of-way, public amenities such as a wider sidewalk to accommodate more users, benches along the public sidewalk, greater landscaping in the right-of-way, public art in the right-of-way, or other items.

Relief from Ordinance Standards

Per the application materials, relief is sought from the following ordinance standards:

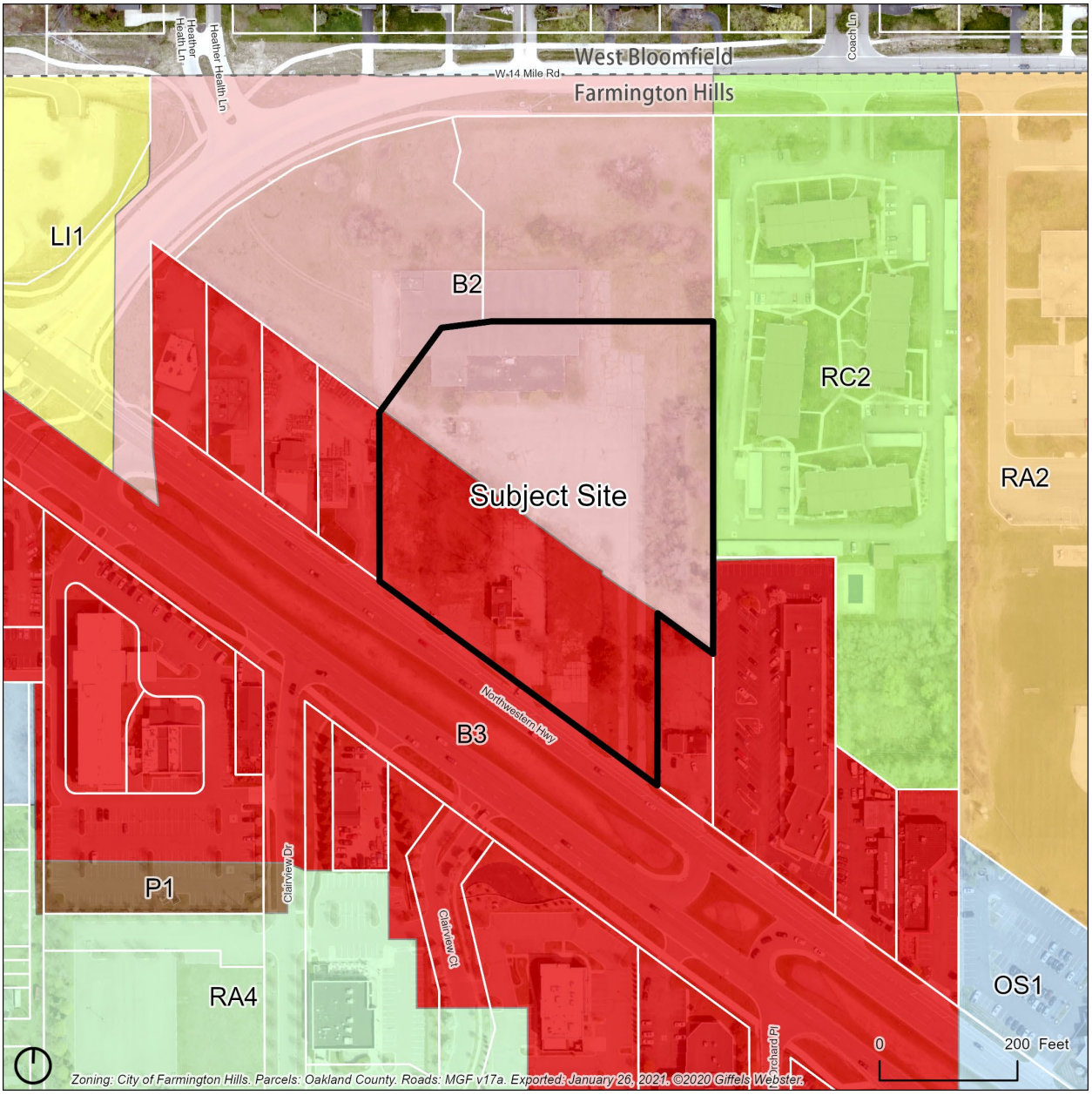
1. **Height**: Proposed maximum height is 55 feet, where 50 feet is permitted in the underlying district (a deviation of 5 feet).
2. **East side setback (to residential)**: 52.48 feet is proposed where the underlying district requires 75 feet (a deviation of 22.52 feet).
3. **Density**. The plan does not specify a base district for density standards. 543 rooms are proposed; the maximum number of rooms permitted in the RC-3 district is 230 (a deviation of 313 rooms).
4. **Parking**. 365 spaces are proposed where 436 are required (a deviation of 71 spaces)

We are available to answer questions.

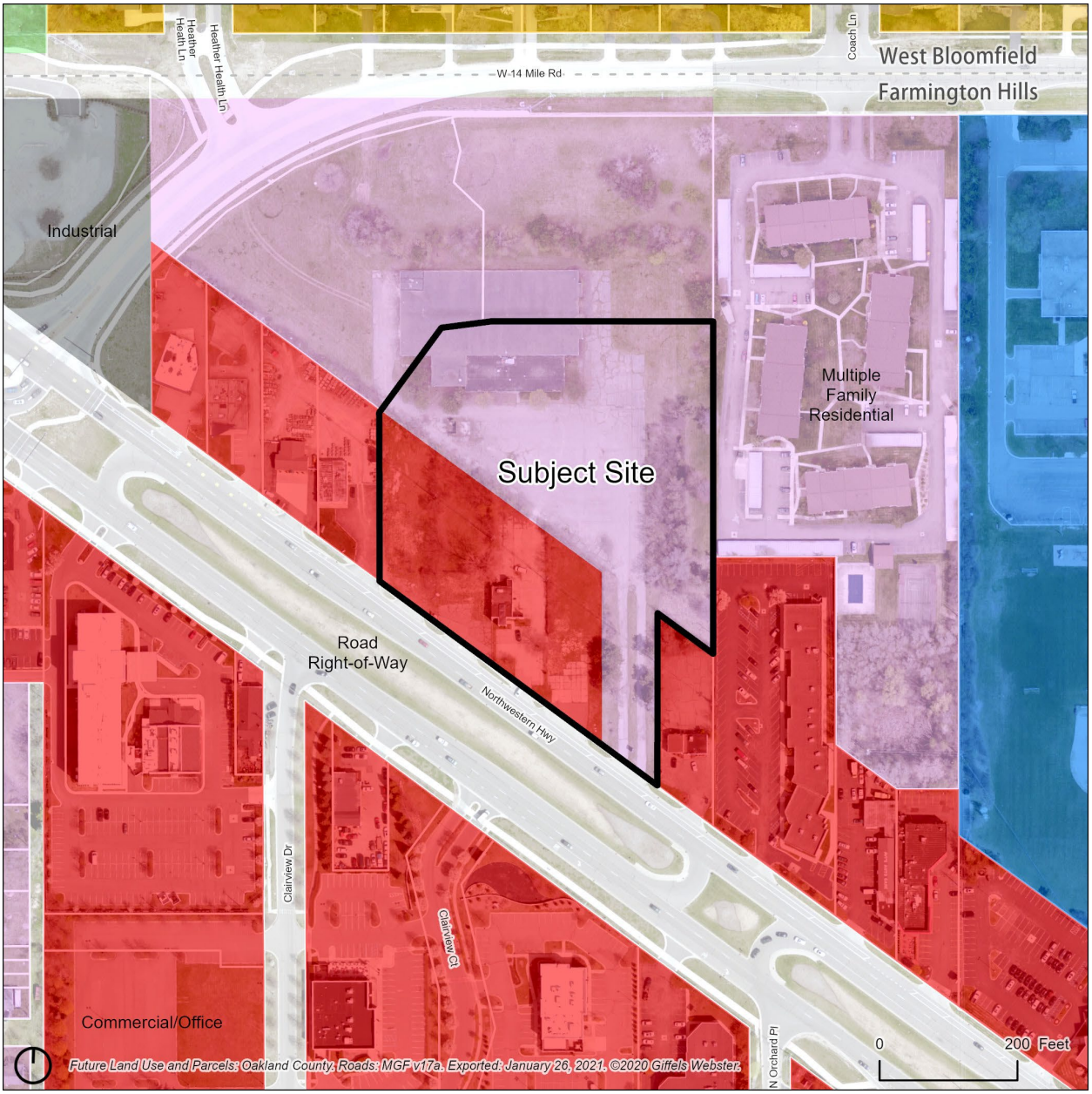
Respectfully,
Giffels Webster

Rod Arroyo, AICP
Partner

Joe Tangari, AICP
Senior Planner



Current zoning



Master Plan designations for this area.


West Bloomfield
Farmington Hills
W-14 Mile Rd
Heather Heath Ln
Heather Heath Ln
Coach Ln
Subject Site
Northwestern Hwy
Clairview Dr
Clairview Ct
N Orchard Pl
0
200 Feet
Future Land Use and Parcels: Oakland County, Roads: MGF v17a. Exported: January 26, 2021. ©2020 Giffels Webster.

MINUTES
CITY OF FARMINGTON HILLS
PLANNING COMMISSION MEETING
31555 W ELEVEN MILE ROAD
FARMINGTON HILLS, MICHIGAN
SEPTEMBER 15, 2022, 7:30 P.M.

CALL MEETING TO ORDER

The Planning Commission Regular Meeting was called to order by Chair Countegan at 7:30 p.m.

ROLL CALL

Commissioners present:	Aspinall, Brickner, Countegan, Grant, Mantey, Stimson, Trafelet,
Commissioners Absent:	Varga, Ware
Others Present:	City Planner Perdonik, City Attorney Schultz, Planning Consultant Tangari, Staff Engineer Alexander

APPROVAL OF THE AGENDA

MOTION by Trafelet, support by Brickner, to approve the agenda as presented.

MOTION carried unanimously by voice vote.

PUBLIC HEARING

A. REVISED PUD PLAN 3, 2021

LOCATION:	32680 Northwestern Hwy
PARCEL I.D.:	23-02-126-130
PROPOSAL:	Construction of a multiple-family apartment building in B-2, Community Business and B-3, General Business Districts
ACTION REQUESTED:	Recommendation to City Council
APPLICANT:	Robert Asmar, NWH Holdings, LLC,
OWNER:	NWH Holdings, LLC

Applicant presentation

Keith Phillips, Think Shop Architects, 1420 Washington Blvd., Suite 430, Detroit MI, and Jim Butler, PEA Group, 1849 Pond Run, Auburn Hills MI, were present on behalf of this application for recommendation for Final Determination to City Council for Revised PUD Plan 3, 2021.

Utilizing a PowerPoint present and a 3-D model (passed around the Commission, and then given back to the applicants), the applicants provided the following information.

Regarding changes to the plan:

- After their last meeting, the applicants re-evaluated their plan, especially relative to some of the issues that were brought up related to height and density. The height was lowered from 69' high to 55' high, by lowering the building into the ground, with ~260 parking spaces provided below the building. The rest of the parking will be surface parking.
- The number of units was reduced from 253 to 217 units.

- The layout remained the same as with previous renditions, with a single access point off Northwestern Highway, and 360 degree circulation around the building. There were 4 access points into the garage all the way around the building.
- The applicants were in conversation with the Fire Marshal regarding circulation and access, and they believed that the Fire Marshal was now comfortable with the plan. Several dead end areas had been removed from the site.
- The reduction in units allowed a courtyard expansion.
- The concept was to try to keep a clean building, and conceal parking with two thirds of the parking below grade.
- The density was comparative to the units across Northwestern, as well as what was going on in neighboring communities.
- They were trying to provide as many amenities on the site as possible.

Regarding the design:
- Lowering the height lessened the impact on neighboring developments; a height deviation of 5' (instead of the previous 18') was requested.
- They tried to break up the massing with building materials, and by enlarging the courtyard by moving parking underground. They were asking for a deviation of 71' parking spaces. They were providing 1.7 parking spaces per unit (instead of the required 2.5 spaces per unit).

In response to a question, the applicants said the 55' height included the parapet, which was 4' tall.

Consultant Report
Referencing his August 9, 2022 memorandum, Planning Consultant Tangari reviewed this request for final PUD qualification:

Regarding PUD qualification, under Section 34-3.20.2, the Planning Commission may make a determination that the site qualifies for a PUD based on ordinance criteria and procedures. At its meeting on February 18, 2021, the Planning Commission granted preliminary PUD qualification approval to the site, citing the plan's compliance with all objective viii of Section 34-3.20.2.E. At the time, Planning Commissioners generally did not take issue with the proposed use, but several expressed reservations about the scale of the use, particularly its density and height. The PUD was also reviewed by the Planning Commission at its meeting of August 19, 2021, and again June 16, 2022; both times, a recommendation was postponed to provide an opportunity for the applicant to amend the plan in response to discussion at the meeting. The motion to postpone included non-binding advice to the applicant to reduce height and overall density, and increase the east side setback. Density and building height had been reduced since the June meeting. The applicant was seeking final PUD qualification, but was not seeking site plan approval concurrent with final qualification. Preliminary approval was not a guarantee of final approval.

In response to questions, Planning Consultant Tangari explained that the Commission would be making a recommendation 1) regarding the use as multi-family residential and 2) on the requested deviations from the ordinance. If there were things the Planning Commission wanted in terms of materials, design, etc., those could be conditions of a recommended approval.

As this was a Planned Unit Development (PUD), and the applicant was seeking some substantial deviations from ordinance standards, the Planning Commission and City Council may wish to discuss with the applicant project elements that bring greater benefit to the wider community such as art or gateway elements on the site that would be visible to pedestrians and motorists traveling in the adjacent

right-of-way, public amenities such as a wider sidewalk to accommodate more users, benches along the public sidewalk, greater landscaping in the right-of-way, public art in the right-of-way, or other items.

City Attorney Schultz explained further that the Planning Commission would be making a recommendation regarding the concept plan presented this evening. If the PUD was approved by City Council the final plans would have to be substantially similar to what was presented. If the final site plan conformed to the PUD agreement and the concept plan, the Planning Commission would have to approve it. Now was the time to list any outstanding concerns or attach conditions.

After reviewing the application against the criteria for PUD qualification in the ordinance (pages 2-7 of the review letter), and reviewing the concept site plan and use (p. 6-8 of the review letter) Planning Consultant Tangari listed outstanding issues as follows:

Relief from Ordinance Standards
Per the application materials, relief was sought from the following ordinance standards:

1. Height: Proposed maximum height of 55', where 50' was permitted in the underlying district (a deviation of 5').
2. East side setback (to residential): 54.47' was proposed where the underlying district requires 75' (a deviation of 20.53').
3. Density. The plan does not specify a base district for density standards. 543 rooms are proposed; the maximum number of rooms permitted in the RC-3 district was 230 rooms (a deviation of 313 rooms).
4. Parking. 365 spaces are proposed where 436 were required (a deviation of 71 spaces). This was a ratio of 1.68 spaces per unit; the Emerson across Northwestern was approved for 1.65 spaces per unit.

If City Council did grant final PUD qualification with the requested deviations, a PUD agreement would be formalized, and the final site plan would come back to the Planning Commission for further review.

Other issues:

- The Planning Commission and Council might want to discuss additional landscaping as a condition of PUD qualification.
- Bike storage could potentially mitigate some of the impact of the deviation from parking requirements.
- Electrical Vehicle charging stations will be essential to future marketability; the location of such stations could be discussed at final site plan review.
- The applicants had changed the architectural appearance in response to previous conversations; the Commission should decide whether the changes are acceptable or if other changes are desired.

Commission discussion

Commissioner Mantey was concerned that green roofs were not mentioned in the environmental review; the applicants had mentioned green roofs in earlier iterations.

Commissioner Mantey said he saw demand for an increase in rooms in order to work at home. He was not too worried about the parking.

Commissioner Brickner noted that the applicants were comparing their design to The Emerson, across Northwestern, in terms of height and density. City Planner Perdonik agreed, while noting The Emerson

was on more acreage. The Emerson was 53' high, and had ~113 rooms per acre. This proposal had ~98 rooms per acre.

In response to a question from Chair Countegan, and noting that only Objective viii. under Section 34-3.20.2.E was listed as being met in the original motion for preliminary qualification, Planning Consultant Tangari explained that a PUD became a zoning district in and of itself, and the applicant was not obligated to develop the property under the B-2 or B-3 districts. The applicant was allowed to propose residential use with the underlying commercial zoning.

Additionally, this proposal was not comparable to any of the multifamily districts in the zoning ordinance. The proposal was similar to The Emerson, which was recently approved in the area, located in one of the most built-up commercial areas in the City. There was not a lot of density that was comparable to this density in the City in general.

Chair Countegan opened the public hearing for public comment. Seeing that no public indicated they wished to speak, Chair Countegan closed the public hearing and brought the matter back to the Commission for discussion and/or a motion.

Commissioner Mantey was concerned with the over use of the PUD process. Hopefully with the Master Plan update, fewer PUD developments would be necessary. He was disappointed that this proposal only meets one of eight objectives listed in the ordinance, which was: *To bring about redevelopment of sites where an orderly change of use is determined to be desirable.* If the green roofs were provided, they would fall under Objective i.: *To permanently preserve open space or natural features because of their exceptional characteristics or because they can provide a permanent transition or buffer between land uses.* He asked that this be discussed during site plan review.

Commissioner Brickner noted that the May 2022 plans in his packet did not show the modifications being discussed this evening. He did think residential apartments were a good use, and the development acted as a buffer. His main concern was regarding the residential condominiums to the east. The greenbelt between this development and the condominiums should include taller trees that offered year-round green buffering, and more landscaping should be included. Regarding density, he hoped there was enough parking. The density was higher than normal but lower than The Emerson across the street. Recommendations by the City's consultants and staff should be included in any approving recommendation.

Commissioner Stimson said if a green roof was desired, it should be included in tonight's motion.

Commissioner Mantey said he did not want to include a green roof as a requirement, because he was unsure of its practicality.

Commissioner Stimson thought the project was too dense for this property, and too tall when it was so close to residential developments. The Emerson did not have the issue of being close to a residential complex. At a minimum, the side next to the residential development should be one less floor to make up for the too-close setback. With one less floor on the residential side, the angle to the top of the building would be the same as if the building were set back 75'. With the proposed height, the setback would be 28% closer than what would normally be allowed.

Commissioner Stimson said he liked the idea of an apartment complex, but this proposal was too massive for the small piece of land and the setbacks from the residential were too close.

Commissioner Trafelet thought the plan was improved from what was previously presented, but he agreed that the proposal was too tall and too dense. He also wanted to require more trees on the eastern side and a masonry wall.

Planning Consultant Tangari said a wall would be required on the eastern side and additional landscaping could be required as well. A 6' screen wall was typical, which would screen the parking from the neighboring use. Again, enhanced landscaping could be required. A solid evergreen screen could also be required, with deciduous trees planted in front of that.

Chair Countegan asked about any environmental aspect argument that had been made or envisioned when the project was first submitted.

Mr. Phillips said the idea was to help mitigate any environmental impacts the building might have. The entire parking structure had a green roof on it; this became the interior courtyard. They were slowing stormwater flow into the system. They had never eliminated environmental mitigation from the project, but instead had reproportioned the environmental mitigation aspects to different parts of the building.

Chair Countegan asked if any baseline environmental studies had been done on the property. Mr. Butler said a Phase I environmental study had been done, and the site was clean.

Chair Countegan said he was comfortable with the project going forward, in terms of density, height, and the location of the building on the property. The Planning Commission had initiated a PUD qualification. Redevelopment was good, and there was comparable development in the proximity of this proposed development that had been successful. While there were impacts on neighbors, any time there was change there was going to be an impact, and it was up to the Planning Commission to help mitigate those effects and make sure the City was doing its best to establish good neighbors and good neighborhoods.

Chair Countegan said the issues of height, density and setback reflected a sense of the current trends, including people working from home and converting bedrooms to offices. As part of the current master planning process the Commission would be discussing how units such as these will be used in the future. He was not overly concerned about the density and he trusted the developers regarding parking – they were the ones risking capital. Again, he was in favor of moving forward.

MOTION by Stimson, support by Trafelet, that the Planning Commission recommend to City Council that PUD Plan 3, 2021, dated May 18, 2022, submitted by NWH Holdings, LLC, **BE DENIED**, for the following reasons:

- Exceeding height and density restrictions, and the setback on the east side.

Motion discussion:
Commissioner Brickner said that using a PUD would allow the Commission to put further conditions on the proposal, in order to protect the residential development to the east and to mitigate other concerns. For too long this property had been undeveloped, and an apartment building was a good use of the site. This proposal would bring something to the community rather than detract from it. He would not support the motion.

Chair Countegan said he would not support the motion.

Motion failed 2-5. (Aspinall, Brickner, Countegan, Grant, Mantey opposed).

Motion by Brickner, support by Aspinall, to recommend to City Council that PUD Plan 3, 2021, dated May 18, 2022, submitted by NWH Holdings, LLC, **BE APPROVED**, because the plans are consistent with the goals, objectives, and policies of the Master Plan and applicable provisions of the Planned Unit Development Option in Section 34-3.20 of the Zoning Ordinance, SUBJECT TO:

1. Modifications of Zoning Ordinance requirements as indicated on the proposed plan.

2. Further modifications of Zoning Ordinance requirements as follows:
   - Height not to exceed 55' in any location on the building.
   - Density not to exceed 217 units in the building.
   - At least 365 parking spaces be provided.
   - Side yard on the east side of the building be no less than 54'.

3. The following conditions:
   - Green roofs if structurally feasible.
   - Underground water storage requirements as set forth om the June 7, 2022 Environmental Review, setting forth the requirements of proper water storage on the premises, including providing calculations details for the underground detention system.
   - Higher density of landscape material will be used on the east side of the building, including taller trees that will be green year round such as arbor vitae, and taller deciduous plants, to act as a blockade between the residential condominiums to the east and this project, and in addition, if required by ordinance and/or staff, a six foot screen wall. The screen wall does not eliminate or reduce the requirement for taller trees and landscaping including shrubs as described.
   - Bicycle parking and EV stations be provided, with EV infrastructure installed in the parking structure and elsewhere as appropriate.

And with the following finding:
The Planning Commission finds that the PUD qualifies under Section 34-3.20.2.E., objectives vii and viii.
vi.: To promote the goals and objectives of the Master Plan for Land Use.
viii: To bring about redevelopment of sites where an orderly change of use is determined to be desirable.

Motion carried 7-2 (Stimson, Trafelet opposed).

REGULAR MEETING

A. ZONING TEXT AMENDMENT 1, 2022

CHAPTER OF CODE:	34, Zoning Ordinance
PROPOSED AMENDMENT:	Amend the time period that recreational equipment or trailers may be parked on a residential premises during loading or unloading.
ACTION REQUESTED:	Set for public hearing
SECTIONS:	34-5.7.1 and 34-5.74

City Planner Perdonik gave the background for this zoning text amendment request. The Planning Commission was being asked to look into the reasonableness of the 24 hour period and see whether the City was in line with other communities. The norm in several other communities was 72 hours. Other communities were silent on this issue.

The question was whether 24 hours placed an undue hardship on people to clean their recreational equipment and prep it for storage. The ordinance should strike a balance between not allowing a recreational vehicle to become a permanent fixture of the neighborhood, but still give people the flexibility to do what they need to do when they're coming and going on vacation.

The requirement for 72 hours *cumulatively over 5 days* actually clarified the requirement in terms of enforcement. The language was written to prevent gaming the ordinance, and emerged as best practice as written and experienced by other communities.

MOTION by Grant, support by Stimson, that Zoning Text Amendment 1, 2022 be set for public hearing for the Planning Commission's next available regular meeting.

Motion carried by voice vote.

APPROVAL OF MINUTES August 18, 2022 Special and Regular meetings

MOTION by Brickner, support by Trafelet, to approve the August 18, 2022 Special Meeting and Regular Meeting minutes as submitted.

Motion carried unanimously by voice vote.

PUBLIC COMMENT

Cynthia Lukotch, 35263 Edythe Drive, spoke in favor of the zoning text amendment just discussed and set for public hearing. She supported the 72 hour requirement.

COMMISSIONERS' COMMENTS

The Commission discussed the new roundabout design relative to vehicles making left turns out of the Hunters Square Shopping Center.

Commissioner Grant supported the proposed change in the time frame allowing people more than 24 hours to take care of their recreational equipment after returning home from trips.

ADJOURNMENT

MOTION by Trafelet, support by Brickner, to adjourn the meeting at 8:45pm.

MOTION carried unanimously by voice vote.

Respectfully Submitted,
Marisa Varga
Planning Commission Secretary

/cem

APPROVED 11/14/2022

MINUTES
CITY OF FARMINGTON HILLS
CITY COUNCIL MEETING
CITY HALL – COUNCIL CHAMBER
OCTOBER 24, 2022 – 7:30 PM

The regular session meeting of the Farmington Hills City Council was called to order by Mayor Barnett at 7:30pm.

Council Members Present:	Barnett, Boleware, Bridges, Bruce, Knol, Massey, and Newlin
Council Members Absent:	None
Others Present:	City Manager Mekjian, City Clerk Smith, Assistant City Manager Valentine, Directors Brockway, Kettler-Schmult, Mondora, Monico and Skrobola, Police Chief King and City Attorney Saarela

PLEDGE OF ALLEGIANCE
Mayor Barnett led the pledge of allegiance.

APPROVAL OF REGULAR SESSION MEETING AGENDA

MOTION by Massey, support by Bridges, to approve the agenda as published.

MOTION CARRIED 7-0.

PROCLAMATION RECOGNIZING NOVEMBER 2022 AS LUNG CANCER AWARENESS MONTH

PUBLIC HEARING
PUBLIC HEARING AND CONSIDERATION OF REVISED PLANNED UNIT DEVELOPMENT PLAN 3, 2021 LOCATED AT 32680 NORTHWESTERN HIGHWAY.
Charmaine Kettler-Schmult, Director of Planning and Community Development, provided an overview of the proposed revised PUD plan and noted that the Planning Commission held their public hearing on this plan and unanimously recommended approval to City Council.

Councilmember Bruce disclosed that when he was not sitting on Council he had met with Mr. Asmar as an adviser for no monetary exchange and also spoke at the Planning Commission meeting as a resident on behalf of the project. He added that he spoke with the City Attorney to make sure there was no conflict of interest with him voting on this issue this evening and the City Attorney indicated that because there was not monetary consideration and he was a private citizen at the time of the consultation, there was no conflict of interest.

Councilmember Bridges stated that he felt Dr. Bruce should recuse himself from voting on this project.

Beth Saarela, City Attorney, spoke to the standards of a conflict of interest that included monetary exchange and it had been confirmed there was no monetary exchange

Jim Butler, representing NWH Holdings, LLC, and project architect provided an overview of the revised PUD plan that included a 4-story 217 unit luxury apartment building 55 feet in height with 365 parking spaces. He noted that 264 spaces would be under the building. The design of the project was an interpretation of what is happening along Northwestern Highway and will have common courtyards, high-intensity roofing and they feel will be the "greenest" building in the community. They are also providing for electric vehicle (EV) parking and additional spots for future EV parking if needed. The amenities were discussed that included walking/biking areas.

Deviations from the ordinance requirements included:

- Height of the building is proposed at 55 feet where 50 feet is the maximum height permitted
- East side setback requirement – 54.47 feet is proposed where 75 feet is the minimum required
- Density of the project – a density of 543 rooms is proposed where 230 rooms is the maximum density permitted
- Parking requirements – 365 spaces proposed where 436 spaces would be required

Council asked questions of the developer and architect with regard to the height, square footage of the units and units per acre and how this project compares to The Emerson project across the street. In the discussions, the following concerns were mentioned:

- The request is for development of apartments and owner-occupied condominiums would be preferred
- Lack of parking spaces and the desire to add additional parking by decreasing the density of the project rather than eliminating green space/landscape
- The height of the building dwarfing what is seen going north on Northwestern Highway
- The project having a negative impact on condominiums and schools in the area

It was noted that additional parking could be provided; however, the developer took direction from the Planning Commission to instead increase landscaping. Mr. Butler added that reducing the number of rooms would not work economically for the project and with the market he believes they could only reduce the number of units to 210.

Council also mentioned that the developer has been before the Planning Commission several times where the Commission required many concessions to the original plan and all of the changes were based on feedback from the Planning Commission. It was pointed out the developer could increase parking and reduce landscaping on the site and there would still be sufficient landscaping for the project.

Mayor Barnett opened the public hearing. There being no public comments, Mayor Barnett closed the public hearing.

MOTION by Massey, support by Boleware, that the application for approval of revised PUD Plan 3, 2021, dated July 18, 2022, is denied because it does not meet all provisions set forth in Section 34-3.20 of the Zoning Ordinance and the proposed development will adversely affect the public health, welfare, and safety for the following reasons:

- It is not in the best interest of the City
- The close proximity to the owner-occupied units to the east based on the setback deviation that would impact those condominiums
- The density of the project
- Preference for owner-occupied condominiums

MOTION by Bridges, support by Knol, that the City Council of Farmington Hills hereby tables the Revised Planned Unit Development Plan 3, 2021 located at 32680 Northwestern Highway.

Mayor Barnett clarified that a motion to table takes precedent and is not debatable.

MOTION CARRIED 4-3 (Barnett, Bruce and Massey opposed)

It was suggested to the developer that they consider the following revisions to their plan to bring back to City Council for consideration:

- Step down the eastern portion of the development to 3-stories that would reduce density and there would be no need to include more parking
- Include owner-occupied condominiums in the development

The architect expressed concern over the process and time they have already spent revising their plan based on feedback from the Planning Commission.

Mayor Barnett explained the PUD approval process and suggested the developer and architect communicate with the Director of Planning and Community Development on their next steps.

ADJOURNMENT

MOTION by Bridges, support by Bruce, to adjourn the regular session City Council meeting at 10:02pm.

MOTION CARRIED 7-0.

Respectfully submitted,

Pamela B. Smith, City Clerk

APPROVED 1/23/2023

MINUTES
CITY OF FARMINGTON HILLS
FARMINGTON HILLS CITY COUNCIL
CITY HALL - COMMUNITY ROOM
JANUARY 9, 2023 – 6:00PM

The study session meeting of the Farmington Hills City Council was called to order by Mayor Barnett at 6:03pm

Council Members Present:	Barnett, Boleware, Bridges, Bruce, Knol, Massey and Newlin
Council Members Absent:	None
Others Present:	City Manager Mekjian, City Clerk Smith, Assistant City Manager Valentine, Directors Brown, Kettler-Schmult, Monico, Schnackel, Skrobola and Winn and City Attorney Joppich

UPDATE FROM SPORT FACILITIES COMPANIES ON THE SPECIAL SERVICES FACILITIES AND OPERATIONS STUDY

City Manager Mekjian stated that approximately a year ago, financial information was brought before City Council with regard to the two community centers and at that time Council consensus was to move forward with hiring a consultant to provide an analysis of the financials and needs going forward for the Costick Center and The HAWK community center. He stated that staff is not looking for any decisions or direction this evening and is only an update for Council on the status of this analysis and options being considered and the final report will be brought to City Council in approximately 30-60 days.

Evan Eleff, representing The Sports Facilities Companies, reviewed the following with City Council:

- Financial history of Special Services and key financial insights
- Scope of the work and project goals that consisted of
    - Establishing a path towards long-term sustainability with the primary focus on The HAWK and The Costick Center
    - Enhancing the reputation of The HAWK as a premier recreation destination that features diverse inclusive and multigenerational programming
    - Maintaining access and options for high-impact participative programs that improve health and social conditions in the city
    - Enhancing Farmington Hills' reputation as a top-tier community to live work and play
- Market and competition analysis
- Work that is in progress and next steps
- Scenarios being analyzed that included the following
    - Do nothing
    - Build out The HAWK 3rd floor, renew the Costick Center
    - Build out The HAWK 3rd floor, retire the Costick Center
    - Build out The HAWK 3rd floor + include The HAWK Annex Building, retire the Costick Center

In summary, Mr. Eleff stated that their work is focused on a combination of improving the effectiveness and performance of owned/operated assets, identifying opportunities to partner and optimizing the Special Services cost recovery based on the service delivery model in Farmington Hills.

In response to Council, it was noted that the final report would include benchmarking information that would compare the size of communities and services provided throughout the county as well as city financial information taking into consideration future trends for revenue/expenditures and options for utilizing outside agencies as a resource.

City Manager Mekjian pointed out that the figures discussed for renewing The Costick Center only includes the pool, mechanical, electrical and plumbing and no other upgrades.

Further discussion was held on the proposed annex building and potential for rebuilding of The Costick Center to the size of the annex building to be more manageable rather than building it at The HAWK.

Concerns or suggestions by Council included:

- Parking for an annex building at The HAWK and access for seniors
- The need for a lap pool and family pool area but also pools with temperatures that could accommodate seniors and swim meets so that the lap pool could be rented out; potentially a third therapeutic pool
- Requested including a 5th scenario to rebuild The Costick Center

City Manager Mekjian reported that the City received $750,000 in grant funding for the innovation center at The HAWK and they are waiting on finalization of that grant agreement.

Ellen Schnackel, Director of Special Services, confirmed that The HAWK space is large enough to accommodate all of the senior programs currently at The Costick Center noting that the 3rd floor alone is larger than The Costick Center space.

Mr. Eleff thanked City Council for their feedback and commented that the city staff has been great to work with and his company would be back in approximately 30-60 days with their final report.

DISCUSSION ON REVISED PLANNED UNIT DEVELOPMENT PLAN 3, 2021 – 32680 NORTHWESTERN HIGHWAY

Erik Perdonik, City Planner, stated that the applicants for the proposed Stonefield Development are present to obtain feedback on an alternative proposal for their development based on City Council comments at a previous meeting where they tabled this matter to date uncertain.

Jim Butler, representing the development, viewed the proposed project and alternate proposal based on previous feedback from City Council that included additional parking.

Sharon Woods, market analyst, discussed rental units versus for-sale units and why rental units in this particular area would work best.

The following concerns were expressed by Council:

- Still have not heard the advantage of a PUD at this location and benefits to the community
- Overbuilding of rental units in this area
- Height of the proposed building at the northeast end adjacent to the condominiums

Due to the time and need to start the regular session portion of the meeting, Mayor Barnett suggested that this item is included on a future study session agenda as the first item of discussion.

ADJOURNMENT

The study session meeting adjourned at 7:29pm

Respectfully submitted,

Pamela B. Smith, City Clerk

FARMINGTON HILLS Michigan

DEPARTMENT OF PUBLIC SERVICES
KAREN MONDORA, P.E., DIRECTOR

City of Farmington Hills
Environmental Review

Project Name: Revised PUD Plan 3

Address: 32680 Northwestern Hwy
Project Job #: 02-21-65 – 22-23-02-126-130
Plan Dated: 04-07-2022

Plan Received: 06-02-2022
Review #: 1
Review Date: 06-07-2022

As requested, I have conducted a plan review of the above reference engineering plans. I have the following comments:

1. There is opportunity for low impact development best management practices to address storm water quality. These techniques include: porous pavement, infiltration trenches, and bioretention/rain gardens. The low impact development techniques would minimize the volume of storm water runoff and provide storm water quality treatment.
2. Provide calculations and details for the storm water quality manufactured treatment units. These units must be approved by the New Jersey Department of Environmental Protection (NJDEP). Use the Oakland County Stormwater standards for sizing of water quality flow.
3. Provide calculations and details for the underground detention system.

Respectfully submitted,

Tyler Sonoga
Civil/Environmental Engineer
Department of Public Services

cc: City of Farmington Hills, J. Cubera

OFFICE OF CITY MANAGER

MEMORANDUM

TO: Gary Mekjian, City Manager
FROM: Cristia Brockway, Economic Development Director
DATE: March 13, 2023
SUBJECT: Redevelopment Liquor Licenses

As it relates to Redevelopment Liquor Licenses (PA 501), a spreadsheet is attached to this memo which includes the amount of real property invested within the Redevelopment Project Area over the past three years. These include eleven new additions to the City of Farmington Hills scattered throughout the district along 12 Mile Road, Northwestern Highway, Hills Tech Drive, 14 Mile Road, and Sunrise Drive. The total investment of all the new real property additions is $48,578,640.

Public Act 501 of 2006, under section 521a (4)a, describes that the total investment within a district area must not be less than $50,000,000. This is for real *and* personal property during the three years preceding the submission of one liquor license applicant. Information that the City was able to pull immediately was real property investment only. Personal property values within this district are to be provided and announced as soon as possible.

REDEVELOPMENT DISTRICT 'ADDITIONS' W/IN BOUNDARIES OF MAP PROVIDED

2023 Additions

PARCEL #	ADDRESS	OWNER/PROJECT	Addition	TCV of Addition	Property Type	What
17-201-015	35917 Twelve Mile	Perimo USA Corp/ JST	$325,000	$650,000	Eng. Design/Office	Partial Const. Value
			"2023" TOTAL TCV ADDNS	***$650,000***		

2022 Additions

02-126-128	32724 Northwestern	PS Mid-West Two, LLC / NEW Self Storage	$3,512,590	$7,025,180	Retail / self storage	New Construction
02-126-129	30367 Fourteen Mile	CA Senior Farmington Hills MI Property Owner,LLC/ANTHOLOGY of FH	$4,683,950	$9,367,900	Senior Apts.- UNITS - 70 Asst'd; 22 Mem. Care	New Construction
17-201-004 (5/22 -017)	35555 Twelve Mile	35659 W Twelve Mile Rd, LLC/MERCEDES Financial	$6,880,110	$13,760,220	Office	New Construction
18-100-021	38000 Hills Tech Dr	Robert Bosch LLC	$21,100	$42,200	Industrial	Mech. Bldg. addn; fencing & equipment shed for DTE substation
18-201-002	39001 Sunrise	Nissan Tech Ctr No America, Inc - Crash Test Facility	$125,020	$250,040	Industrial	Land Impmts. - ashphalt, conc., fencing, block wall
			"2022" TOTAL TCV ADDNS	***$30,445,540***		

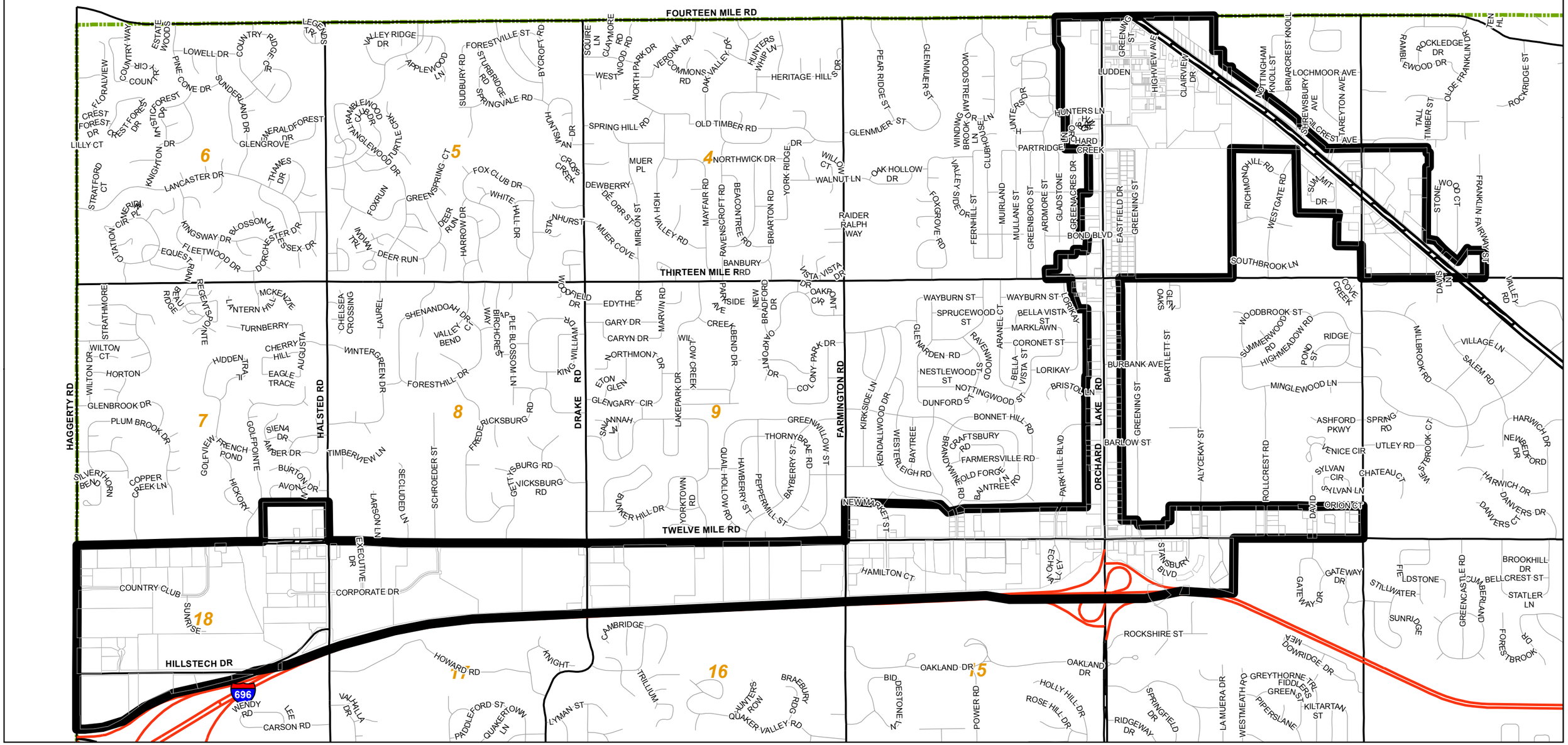
2021 Additions

02-126-128	32724 Northwestern	PS Mid-West Two, LLC / NEW Self Storage	$552,490	$1,104,980	Retail / self storage	New Construction
02-126-129	30367 Fourteen Mile	CA Senior Farmington Hills MI Property Owner,LLC/ANTHOLOGY of FH	$353,820	$707,640	Senior Apts.- UNITS - 70 Asst'd; 22 Mem. Care	Partial Construction value
07-400-028	37900 Twelve Mile	Halsted Village, LLC	$72,740	$145,480	Retail -New PANERA	Rem'd Partial value
17-201-004 (5/22 -017)	35555 Twelve Mile	35659 W Twelve Mile Rd, LLC/MERCEDES Financial	$6,600,000	$13,200,000	Office	New Construction
18-201-002	39001 Sunrise	Nissan Tech Ctr No America, Inc - Crash Test Facility	$1,162,500	$2,325,000	Industrial	Building mostly complete
			"2021" TOTAL TCV ADDNS	**$17,483,100**		
			TOTAL OF all ADDNS	**$48,578,640**		

Redevelopment Project Area

pursuant to

Public Act 501 of 2006 Redevelopment Liquor License



SOURCES: City of Farmington Hills GIS, 2009

Michigan Department of Licensing and Regulatory Affairs
Liquor Control Commission (MLCC)
Constitution Hall – 525 W. Allegan, Lansing, MI 48933
Mailing Address: PO Box 30005, Lansing, MI 48909
Toll Free 866-813-0011 – www.michigan.gov/lcc

New On-Premises Redevelopment (RDA) License – MCL 436.1521a(1)(a) Requirements & General Information

- A license issued under MCL 436.1521a(1)(a) may be a Class C, Tavern, B-Hotel, or A-Hotel license.

- For licenses issued under MCL 436.1521a(1)(a), the investment in the redevelopment project area during the preceding three (3) years must meet at least one (1) of the following requirements:
  1. Investment of not less than $50,000,000.00 in cities, townships, or villages having a population of 50,000 or more.
  2. Investment of not less than an amount equal to $1,000,000.00 per 1,000 people in cities, villages, or townships having a population of less than 50,000.

- The licensed business must be engaged in activities related to dining, entertainment, or recreation and provide that activity not less than five (5) days per week.

- The licensed business must be open to the public not less than 10 hours per day, five (5) days per week.

- The initial enhanced license fee for a license issued under this section is $20,000.00.

- Pursuant to MCL 436.1521a(8) a license issued under MCL 436.1521a(1)(a) cannot be transferred to another location and if the licensee goes out of business the license issued under MCL 436.1521a(1)(a) shall be surrendered by the licensee to the Commission and the Commission will terminate the license.

How to Apply

All applicants requesting a new license under MCL 436.1521a(1)(a) must submit the following:

- **Application Form** – On-Premises Retailer License & Permit Application (Form LCC-100a)

- **License Questionnaire** – New On-Premises Redevelopment or Development District License Questionnaire (Form LCC-109b)

- **Inspection Fee** - A $70.00 nonrefundable inspection fee is required for each license requested in an application. For example, if an applicant has requested a new Class C license under MCL 436.1521a(1)(a) that has a Specially Designated Merchant (SDM) license in conjunction, the inspection fee would be $140.00.

- **License & Permit Fees** – The annual renewal fees vary by the type of on-premises license. Additional fees will vary based upon whether additional licenses and permits are requested in conjunction with the on-premises license. An initial enhancement fee of $20,000.00 will be required if the redevelopment license is approved prior to issuance.

- **Livescan Fingerprints** – Applicants that have never been licensed through the Michigan Liquor Control Commission must submit fingerprints through the Livescan fingerprinting process - Livescan Fingerprint Background Request (LCC-105).

- **Local Governmental Unit Approval** – Local Governmental Approval Form (LCC-106). The city, village, or township must approve the new redevelopment license with a recommendation for the issuance of a "new Class C* license issued under the provisions of MCL 436.1521a(1)(a)". The resolution must specifically state the applicant's name and the proposed licensed address. **You may substitute other license types, such as Tavern, B-Hotel, or A-Hotel licenses, as applicable.*

- **Resolution establishing the redevelopment project area from the local governmental unit where the redevelopment project area is located.**

- **Affidavit from the Assessor** – The affidavit from the assessor must be certified by the city, township, or village clerk and state the following:
  - The amount of investment money expended for manufacturing, industrial, residential, and commercial development within the redevelopment project area during the preceding three (3) years (must specifically state start and end dates for the investment, e.g. January 1, 2013 to December 31, 2015).
  - Statement that the amount of commercial investment in the redevelopment project area constitutes not less than 25% of the total investment in real and personal property in the area.

- **Legible map of the redevelopment project area which clearly labels all street names.**

- **Proof of Attempt to Secure Escrowed License** – Applicants requesting new license under MCL 436.1521(a)(1)(a) must submit documentation that demonstrated they have contacted all holders of escrowed licenses within the same county and have been unable to secure a readily available escrowed license for use at their proposed location. Escrow responses must follow these guidelines:

- MCL 436.1521a(9) requires that the individual signing the application for a license issued under MCL 436.1521a shall state and demonstrate that the applicant attempted to secure a readily available on-premises escrowed license or unissued quota license issued under Section 531 and that, to the best of his or her knowledge, an on-premises escrowed license or quota license is not readily available within the county in which the applicant proposes to operate.
- Applicant will be provided a Licensee Listing Report from the MLCC which lists all on-premises escrowed licensee for the county. Applicant is required to contact all licensees on the report effective as of the date the application is filed with the MLCC.
- Applicant should send certified letters of inquiry as to the availability of the license to each licensee either at the business address or escrow contact address listed on the report.
- Applicant should submit copies of the letters sent, certified tags, signed certified return receipts, copies of any envelopes returned by the USPS, and copies of any correspondence received from the licensees.
- Applicant should provide dates, the name of the person contacted, and a synopsis of the conversation, if escrowed licensees are contacted by telephone.
- Applicant should provide documentation regarding the fair-market value of the license based on where the applicant will be located, if determinable, the size and scope of the proposed operation, and/or the existence of mandatory contractual restrictions or inclusion attached to the sale of the license when indicating to the MLCC that purchase of a license is not economically feasible or the license is not readily available.
- Applicant should provide a notarized affidavit outlining all attempts and responses (or lack thereof) to secure a readily available license.

- **Property Document** – Applicants must provide documentation that demonstrates they will have control over the property that comprises the proposed licensed premises. Property documents include deeds, land contracts, and lease agreements.
  - A provision to reassign the license in the event of a default on a land contract or termination of a lease agreement may be included, but may only provide for the reassignment subject to Commission approval.
  - If the applicant is a company and its members or stockholders own the real estate as individuals or under another company, a lease agreement is needed.
  - If the applicant is an individual and he or she owns the real estate with a spouse or someone else who will not be named on the license, a lease between the applicant and the owners of the real estate is needed.

In addition to the documents required by all applicants:

Corporations must submit the following information per Administrative Rule R 436.1109:

- Copy of current, filed Articles of Incorporation.
- Current Certificate of Good Standing from the state where incorporated and Certificate of Authority to Do Business in Michigan, if incorporated outside of this state.

- Certified copy of the minutes of a meeting of its board of directors or a statement signed by an officer of the corporation naming the persons authorized by corporate resolution to sign the application and other documents required by the Commission (or Part 3 of Form LCC-301).
- Report of Stockholders/Members/Partners (LCC-301)

Limited Liability Companies (LLC) must submit the following information pursuant to Administrative Rule R 436.1110:

- Copy of Articles of Organization and copies of any amendments to the Articles of Organization.
- Current Certificate of Authority to Do Business in Michigan, if the LLC is a non-Michigan LLC.
- Copy of Operating Agreement entered into by members.
- Copy of most recent annual statement filed with the Corporations Division, if an existing LLC.
- Statement signed by a manager of the limited liability company or by at least 1 member if management is reserved to the members naming the person authorized to sign the application and other documents required by the Commission (or Part 3 of Form LCC-301).
- Report of Stockholders/Members/Partners (LCC-301)

Partnerships must submit the following information per Administrative Rule R 436.1111:

- Partnership Agreement, if a Limited Partnership.
- Report of Stockholders/Members/Partners (LCC-301)

Licensing Process

- The Licensing Division reviews the application and corresponding documents for completeness and verifies the appropriate fees have been received. If additional documents, fees, or corrections to documents are needed, Licensing will notify the applicant.

- Once all the necessary documents have been received Licensing will submit the request to the Enforcement Division for its investigation. If an applicant has applied for and meets the requirements for a conditional license, the request will be considered by the Commission.

- The Enforcement Division will contact the applicant to schedule an interview with the applicant (and current licensee for license transfers). At this meeting an investigator will review with the applicant documents, including:
  - purchase agreement
  - financial documents
  - property documents
  - other items pertaining to the application

- After the interview, the investigator will prepare a report for the Commission regarding the investigation and submit the request back to Licensing for further processing.

- Licensing reviews the report from Enforcement and any additional documents received during the interview process. The request is prepared for the Commission to consider and placed on a docket for an upcoming licensing meeting.

- The Commission considers the request, including:
  - the liquor license operating history of the applicant (if a current or prior licensee)
  - the arrest and conviction record of the applicant
  - whether the applicant meets the requirements for a license
  - the applicant's financial information
  - opinions of the local legislative body or police department, if received.

- The Commission will approve or deny the request based on these factors. Occasionally, the Commission will request more information from the applicant before making a final decision.

- After the Commission makes a decision on the request, the file is returned to Licensing for final processing.
  - Approval orders are sent to the applicant requesting any final items before the issuance of the license.
  - Denial orders are sent to the applicant and the applicant may appeal the decision.

- When all the final items are received by Licensing, the completed request is forwarded to the Renewal Unit for the issuance of the physical license documents.
  - Any changes in financial provisions at the time of closing which do not conform to the terms previously indicated and investigated may require submission of new forms and possible additional investigation.

Churches & Schools

A new application to sell alcoholic beverages at retail may be denied if the proposed location is within 500 feet of a church or school. The Commission may waive the church/school provision if the church or school does not file an objection to the proposed license. If the church or school does file an objection, the Commission shall hold a hearing before making a decision on the issuance of the license.

Michigan Department of Licensing and Regulatory Affairs
Liquor Control Commission (MLCC)
Toll-Free: 866-813-0011 - www.michigan.gov/lcc

Business ID: _____

Request ID: _____

(For MLCC Use Only)

New On-Premises Redevelopment or Development District License Questionnaire

Complete and submit this questionnaire along with a fully completed On-Premises Retailer License & Permit Application (LCC-100a) with the documents required to be submitted with that form and any other documents required as listed below.

Part 1 - Applicant Information

Individuals, please state your legal name. Corporations or Limited Liability Companies, please state your name as it is filed with the State of Michigan Corporation Division.

Applicant name(s):		
Address to be licensed:		
City:	Zip Code:	
City/township/village where license will be issued:	County:	
Contact Name:	Phone:	Email:
Mailing address *(if different from above)*:		
City:	Zip Code:	

I am applying for the following on-premises redevelopment or development district license:

☐ **MCL 436.1521a(1)(a) - Redevelopment (RDA) License - Complete Parts 2a, 3, 4, & 5**

Select one: ◯ Class C ◯ B-Hotel ◯ Tavern ◯ A-Hotel

- The proposed licensed premises must be located in a redevelopment project area defined by the local governmental unit and the investment in the redevelopment project area must meet one (1) of following requirements:
  - Investment of not less than $50 million in cities, townships, or villages having a population of 50,000 or more
  - Investment of not less than $1 million per 1,000 people in cities, townships, or villages having a population of less than 50,000
- The licensed business must be engaged in activities related to dining, entertainment, or recreation and provide that activity not less than five (5) days per week
- The licensed business must be open to the public not less than ten (10) hours per day, five (5) days per week
- The initial enhanced license fee for a license issued under this section is $20,000.00

☐ **MCL 436.1521a(1)(b) - Development District (DDA) License - Complete Parts 2b, 3, 4, & 5**

Select one: ◯ Class C ◯ B-Hotel ◯ Tavern ◯ A-Hotel

- The proposed licensed premises must be located in one of the development districts or areas listed in MCL 436.1521a(1)(b):
  - Tax Increment Finance Authority District Under Part 3 of Public Act 57 of 2018 (Formerly Public Act 450 of 1980)
  - Corridor Improvement Authority Act Development Area under Part 6 of Public Act 57 of 2018 (Formerly Public Act 280 of 2005)
  - Downtown Development Authority (DDA) District under Part 2 of Public Act 57 of 2018 (Formerly Public Act 197 of 1975)
  - Principal Shopping District under Public Act 120 of 1961
- The total investment in real and personal property within the development district or area shall not be less than $200,000.00 over a period of the preceding five (5) years.
- The building may be new construction or the restoration or rehabilitation of an existing building.
- The building that will house the proposed licensed premises must have at least $75,000.00 expended for new construction or the rehabilitation or restoration of the building over the preceding five (5) years or a commitment for a capital investment of at least $75,000.00 in the building that must be expended before the license is issued.
- The licensed business must be engaged in activities related to dining, entertainment, or recreation.
- The licensed business must be open to the general public and have a seating capacity of not less than 25 persons.
- The initial enhanced license fee for a license issued under this section is $20,000.00.

Please Note: Pursuant to MCL 436.1521a(8) a license issued under MCL 436.1521a cannot be transferred to another location and if the licensee goes out of business the license issued under MCL 436.1521a shall be surrendered by the licensee to the Commission and the Commission will terminate the license.

Part 2a - MCL 436.1521a(1)(a) - Redevelopment (RDA) License Required Documents

☐ Resolution from local governmental unit establishing the redevelopment project area

☐ Affidavit from the assessor, certified by the city, township, or village clerk, which states the following:

- The amount of investment money expended for manufacturing, industrial, residential, and commercial development within the redevelopment project area during the preceding three (3) years (must specifically state start and end dates for the investment, i.e. January 1, 2013, to December 31, 2015).
- Statement that the amount of commercial investment in the redevelopment project area constitutes not less than 25% of the total investment in real and personal property in the area.

☐ Legible map of the redevelopment project area which clearly labels all street names

Part 2b - MCL 436.1521a(1)(b) - Development District (DDA) License Required Documents

☐ Resolution from local governmental unit establishing the development district or area which specifically references the statute under which the area was established:

- Part 3 of Public Act 57 of 2018 (Formerly Public Act 450 of 1980) for Tax Increment Finance Authorities
- Part 6 of Public Act 57 of 2018 (Formerly Public Act 280 of 2005) for Corridor Improvement Authorities
- Part 2 of Public Act 57 of 2018 (Formerly Public Act 197 of 1975) for Downtown Development Authorities
- Public Act 120 of 1961 for Principal Shopping Districts

☐ Affidavit from the assessor, certified by the city, township, or village clerk, which states the following:

- The total amount of public and private investment in real and personal property within the development district or area over a period of the preceding five (5) years (must specifically state start and end dates for the investment, i.e. January 1, 2011, to December 31, 2015).

☐ Legible map of the development district or area which clearly labels all street names

Part 3 - Available License Search

MCL 436.1521a(9) requires any person signing an application for an on-premises Redevelopment or Development District license to verify that he or she attempted to purchase any of the on-premises licenses that are in escrow that do not have a pending transfer on file with the MLCC within the county in which the applicant for the on-premises Redevelopment or Development District license proposes to operate.

You should not apply for an on-premises Redevelopment or Development District license if there is an available quota license in the local governmental unit in which the proposed licensed business will be located. You may verify the availability of quota licenses on the Commission's website using the Local Government Quota search page.

☐ I verify that I have attempted to purchase any readily available on-premises escrowed licenses that do not have pending transfers on file with the MLCC in the county where the proposed licensed business will be located.

- Applicant should provide a notarized affidavit outlining all attempts and responses (or lack thereof) to secure a readily available on-premises license.
- Applicant should send certified letters of inquiry as to the availability of the license to each licensee at the address listed on the licensee listing report provided by the MLCC.
- Applicant should submit copies of the letters sent, certified tags, signed certified return receipts, copies of any envelopes returned by the USPS, and copies of any correspondence received from the licensees.
- Applicant should provide dates, the name of the person contacted, and a synopsis of the conversation if escrowed licensees are contacted by telephone.
- Applicant should provide documentation regarding the fair market value of the license based on where the applicant will be located, if determinable, the size and scope of the proposed operation, and/or the existence of mandatory contractual restrictions or inclusion attached to the sale of the license when indicating to the MLCC that purchase of a license is not economically feasible or the license is not readily available.

☐ There are no readily available on-premises licenses in escrow in the county where the proposed licensed business will be located.

☐ There are no unissued, on-premises quota licenses readily available in the local governmental unit where the proposed licensed business will be located.

Part 4 - Local Governmental Approval

An applicant for a new on-premises Redevelopment or Development District license requires approval by the legislative body of the local governmental unit in which the licensed premises will be located. Applicants for a license in a city that has a population of 600,000 or more do not require local governmental approval. Please use the Local Governmental Unit Approval Form (LCC-106) or obtain a resolution from the local governmental unit that contains the same information required on the form. The form or a resolution from the city, village, or township must specifically state the applicant's legal name, if an individual person, or the corporate name of the business, the proposed licensed address, and contain a recommendation for the issuance of a license under one of the two following options:

- New Class C* license issued under the provisions of MCL 436.1521a(1)(a)
- New Class C* license issued under the provisions of MCL 436.1521a(1)(b)

**May substitute other license types such as Tavern, A-Hotel, or B-Hotel licenses*

Part 5 - Signature of Applicant

I certify that the information contained in this form is true and accurate to the best of my knowledge and belief. I agree to comply with all requirements of the Michigan Liquor Control Code and Administrative Rules. I also understand that providing **false** or **fraudulent** information is a violation of the Liquor Control Code pursuant to MCL 436.2003.

I certify that I understand that pursuant to MCL 436.1521a(8) a license issued under MCL 436.1521a cannot be transferred to another location and that if the licensee goes out of business the license issued under MCL 436.1521a shall be surrendered by the licensee to the Commission and the Commission will terminate the license.

Print Name of Applicant & Title	Signature of Applicant	Date

Please return this completed form along with corresponding documents:
Michigan Liquor Control Commission
Mailing address: P.O. Box 30005, Lansing, MI 48909
Hand deliveries: Constitution Hall - 525 W. Allegan, Lansing, MI 48933
Overnight packages: 2407 N. Grand River Ave., Lansing, MI 48906
Fax to: 517-763-0059

AGENDA
CITY COUNCIL MEETING
MARCH 13, 2023 – 7:30PM
CITY OF FARMINGTON HILLS
31555 W ELEVEN MILE ROAD
FARMINGTON HILLS, MICHIGAN
Telephone: 248-871-2410 Website: www.fhgov.com
Cable TV: Spectrum – Channel 203; AT&T – Channel 99
YouTube Channel: https://www.youtube.com/user/FHChannel8

REQUESTS TO SPEAK: Anyone requesting to speak before Council on any agenda item other than an advertised public hearing issue must complete and turn in to the City Clerk a blue, Public Participation Registration Form (located in the wall rack by the south door entering the council chambers).

REGULAR SESSION MEETING BEGINS AT 7:30P.M. IN THE CITY COUNCIL CHAMBER

STUDY SESSION (6:00 P.M. Community Room – See Separate Agenda)

REGULAR SESSION MEETING

CALL REGULAR SESSION MEETING TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

1. Approval of regular session meeting agenda

2. Proclamation recognizing March 2023 as Women's History Month

3. Proclamation recognizing March 19-25, 2023 as Severe Weather Awareness Week

4. Oakland County Treasurer's Office Foreclosure Prevention Information

CORRESPONDENCE

CONSENT AGENDA - (See Items No. 9-17)

All items listed under Consent Agenda are considered routine, administrative, or non-controversial by the City Council and will be enacted by one motion. There will be no separate discussion of these items, unless a Council Member or citizen so requests, in which event the items may be removed from the Consent Agenda for consideration.

CONSENT AGENDA ITEMS FOR DISCUSSION

PUBLIC QUESTIONS AND COMMENTS

Limited to five (5) minutes for any item of City business not on the agenda.

COUNCIL MEMBERS COMMENTS AND ANNOUNCEMENTS

CITY MANAGER UPDATE

UNFINISHED BUSINESS:

5. Consideration of approval of the ENACTMENT of Ordinance C-4-2023 to amend the Farmington Hills Code of Ordinances Chapter 33, "Water and Sewers," to add Division 2, "Stormwater Engineering Design Standards" to Article IX, "Stormwater Management," to adopt and enact Engineering Design Standards developed by the Oakland County Water Resource Commissioners Office, and approval of summary for publication CMR 3-23-35

NEW BUSINESS:

6. Consideration of approval of amendment to the city's Liquor License Policy.

7. Consideration of approval of setting the budget study session meeting dates of May 15 and 16, 2023.

8. Consideration of approval of setting a special joint study session meeting with the Planning Commission and City Council for April 20, 2023.

CONSENT AGENDA:

9. Recommended adoption of resolution supporting the Grant Application to the Michigan Department of Transportation Local Bridge Program for the Tuck Road Bridge Replacement. CMR 3-23-36

10. Recommended approval of resolution recognizing Another Way Pregnancy Center as a non-profit organization operating in the community for the purpose of obtaining a charitable gaming license.

11. Recommended approval of award of contract for DPW Garage Painting Project to Northstar Painting in an amount not to exceed $151,509. CMR 3-23-37

12. Recommended approval of award of contract for the Normandy Hills Subdivision Road Reconstruction Project to F.H. Paschen, S.N. Nielson & Associates in the amount of $4,578,636.00. CMR 3-23-38

13. Recommended approval of award of bid for Police and Fire Uniforms and related accessories to Allie Brothers in an estimated amount of $128,000 for a two year period, with possible extensions. CMR 3-23-39

14. Recommended approval of award of bid for the 2023 As-Needed Guardrail Repair Program to RDM Holdings in the amount not-to-exceed $50,000 per year, with possible extensions. CMR 3-23-40

15. Recommended approval of award of bid for the Sidewalk Replacement Program to Olson Cement Work, Inc in the amount of $202,150.00, with possible extensions. CMR 3-23-41

16. Recommended approval of City Council study session meeting minutes of February 27, 2023.

17. Recommended approval of City Council regular session meeting minutes of February 27, 2023.

ADDITIONS TO AGENDA

18. Attorney Report

CLOSED SESSION:

19. Consideration of approval to enter into a closed session to discuss pending litigation in the matter of *Hurley v. City of Farmington Hills et al, Case #22-12408*. (Note: Council will return to open session immediately following the closed session to take action if needed and to close the meeting)

ADJOURNMENT

Respectfully submitted,

Pamela B. Smith, City Clerk

NOTE: Anyone planning to attend the meeting who has need of special assistance under the Americans with Disabilities Act (ADA) is asked to contact the City Clerk's Office at 248-871-2410 at least two (2) business days prior to the meeting, wherein necessary arrangements/ accommodations will be made.

PROCLAMATION
Women's History Month
March 2023

WHEREAS, throughout history, extraordinary women of every race, class, ethnicity, and socioeconomic background have made significant contributions to our nation in countless ways, both recorded and unrecorded; and

WHEREAS, through leadership, ingenuity, and hard work, generations of women have made significant contributions in science, medicine, technology, business, politics, entrepreneurship, arts and culture, and the military; and

WHEREAS, women worked to secure their own rights of suffrage and equal opportunity, and played vital roles in the abolitionist, emancipation, civil rights, and industrial labor movements, as they worked to create a more just and fair society for all; and

WHEREAS, women play critical economic, cultural, and social roles in our society and constitute a significant portion of the labor force working both inside and outside the home; and

WHEREAS, as we venture into the future, gender will be no obstacle to what women can accomplish as they open new doors, embrace innovative ideas, and continue to create a profound and positive impact on our society.

NOW, THEREFORE, BE IT RESOLVED that I, Vicki Barnett, Mayor of the City of Farmington Hills, on behalf of the City Council, do hereby proclaim March 2023 as **Women's History Month** and call upon our citizens, public and private institutions, businesses, and schools to celebrate the history and achievements of the countless women who have helped to promote a more equitable society and created possibilities for generations of women to come.

Vicki Barnett

Vicki Barnett, Mayor

PROCLAMATION
Severe Weather Awareness Week
March 19 – 25, 2023

WHEREAS, Governor Gretchen Whitmer and Oakland County Executive David Coulter have declared the week of March 19 – 25, 2023 as Severe Weather Awareness Week in Michigan; and

WHEREAS, the Oakland County Homeland Security Division will engage in public education efforts during Severe Weather Awareness Week to help minimize the loss of life, destruction of property, and disruption of daily activities that can result from severe weather including tornadoes, flooding, high winds, and other weather patterns; and

WHEREAS, to further raise the awareness level of severe weather safety and to promote tornado safety preparedness, Oakland County will conduct a special test of its Outdoor Warning System sirens on **Wednesday, March 22, 2023 at 1:00 p.m.**

NOW, THEREFORE, BE IT RESOLVED that I, Vicki Barnett, Mayor of the City of Farmington Hills, on behalf of the City Council, do hereby proclaim March 19 – 25, 2023 as **Severe Weather Awareness Week** in Farmington Hills and encourage all residents, schools, and businesses to test their severe weather action plans to ensure the safety of everyone in our community.

Vicki Barnett

_____

Vicki Barnett, Mayor

OAKLAND COUNTY MICHIGAN
TREASURER'S OFFICE

1200 N. Telegraph Road, Dept. 479
Pontiac, MI 48341-0479
(248) 858-0611
oakgov.com/treasurer

Robert Wittenberg, Treasurer

Jody Weissler DeFoe, Chief Deputy Treasurer

Oakland County Treasurer's Office Foreclosure Prevention

The Oakland County Treasurer's Office is in the final stretch of our Foreclosure Prevention efforts. The tax foreclosure deadline for the 2020 or prior year taxes is on March 31st, 2023. That means if these taxes aren't paid off by March 31st or any interested party hasn't entered into a repayment schedule with the Treasurer's office by then, the property will be foreclosed.

Since December of 2022, the Treasurer's office has conducted over a thousand Taxpayer Assistance Meetings to assist taxpayers with keeping their properties by working with them to get on a repayment schedule and/or by identifying resources that may be beneficial to them and their situation. We are here to help and strongly encourage taxpayers to contact us before the tax foreclosure deadline if they have delinquent taxes for 2020 or prior tax years. Taxpayers interested in scheduling a Taxpayer Assistance Meeting may call us at 248-858-0611 or they may visit www.oakgov.com/treasurer

Some of the resources available to assist taxpayers include:

- **Michigan Homeowners Assistance Fund (MIHAF)** which is a state grant that will cover up to $25K for delinquent taxes (2019 and forward), mortgage payments, and utility bills. Must be a primary residence, make <150% AMI, and prove covid hardship in order to qualify. Apply at mihaf.michigan.gov.
- **Financial Empowerment Center** in the Treasurer's Office which provides one-on-one financial coaching and services to help taxpayers achieve their financial goals. Contact Reda at nafsor@oakgov.com or 248-807-5287.
- **Lakeshore Legal Aid** provides free legal services to people who are low income and seniors. 1-888-783-8190 is the number for new clients.

Again, we are here to help and strongly encourage taxpayers to contact the Treasurer's office if they have delinquent taxes for 2020 or prior tax years. If taxpayers are interested in scheduling a Taxpayer Assistance Meeting, they may call us at 248-858-0611 or they may visit www.oakgov.com/treasurer.

Thank you!

Robert Wittenberg
Oakland County Treasurer

REPORT FROM THE CITY MANAGER TO CITY COUNCIL – MARCH 13, 2023

SUBJECT: AN ORDINANCE TO AMEND THE FARMINGTON HILLS CODE OF ORDINANCES TO AMEND CHAPTER 33, "WATER AND SEWERS," TO ADD DIVISION II "STORMWATER ENGINEERING DESIGN STANDARDS" TO ARTICLE IX, "STORMWATER MANAGEMENT", TO ADOPT AND ENACT STORMWATER ENGINEERING DESIGN STANDARDS DEVELOPED BY THE OAKLAND COUNTY WATER RESOURCE COMMISSIONERS' OFFICE.

Administrative Summary

- The City of Farmington Hills maintains a National Pollutant Discharge Elimination System (NPDES) Permit for its Municipal Separate Storm Sewer System (MS4) from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) as required by the US Environmental Protection Agency (EPA) and the Federal Clean Water Act.

- EGLE has indicated that the City and other MS4 permit holders in the State of Michigan are required to adopt an Ordinance regulating post construction storm water site design on public and private sites in order to comply with the updated requirements of the MS4 permit.

- The ordinance will identify engineering design requirements of storm water systems for private and public development. These requirements include water quality, storm water detention volume, water discharge or release rates, etc. The updated storm water standards were developed via a regional approach with Oakland, Macomb, Livingston, and Wayne Counties and were negotiated with EGLE to ensure uniform application throughout the region.

- EGLE has reviewed and approved of the Ordnance language and has indicated that adoption would meet MS4 permit requirements.

- The City Attorney has prepared the attached code amendment and staff is recommending adoption of the Ordinance language.

RECOMMENDATION

RESOLVE that City Council hereby approves the ENACTMENT of an Ordinance amending the City Code, Chapter 33, to add Division II Stormwater Engineering Design Standards to Article IX, Stormwater Management.

Support Documentation

The City has maintained permit coverage for its municipal separate storm sewer system since the State of Michigan's program inception in 1999. The latest changes to the program rules indicate that MS4 permittees adopt an updated set of standards for post construction stormwater. These updated standards include requirements for water quality, specifically for infiltration of storm water runoff of the first 1.3 inches of rainfall to the maximum extent practicable. The updated standards only apply for sites proposing 1-acre or more of construction area disruption. Adoption of the Stormwater Engineering Design Standards ordinance will ensure permit compliance, as well as continued water quality and flood protection for the City's rivers and streams.

Prepared by: Tyler Sonoga, Civil/Environmental Engineer
Reviewed by: Karen Mondora, PE, Director of Public Services
Approval by: Gary Mekjian, PE, City Manager

ORDINANCE NO. C-_____-2023

CITY OF FARMINGTON HILLS
OAKLAND COUNTY, MICHIGAN

AN ORDINANCE TO AMEND CITY OF FARMINGTON HILLS CITY CODE, CHAPTER 33, WATER AND SEWERS, TO ADD DIVISION 2, STORMWATER ENGINEERING DESIGN STANDARDS TO ARTICLE IX, STORMWATER MANAGEMENT, TO ADOPT AND ENACT STORMWATER ENGINEERING DESIGN STANDARDS DEVELOPED BY THE OAKLAND COUNTY WATER RESOURCE COMMISSIONERS OFFICE FOR COMPLIANCE WITH THE CITY'S PART 31, MS4 GENERAL PERMIT, WATER RESOURCES PROTECTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED AND THE CITY'S MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY (MDEGLE), WASTEWATER DISCHARGE PERMIT, RULE 323.2161A, POST-CONSTRUCTION REQUIREMENTS.

THE CITY OF FARMINGTON HILLS ORDAINS:

Section 1 of Ordinance. Ordinance Amendment.

The Farmington Hills City Code, Chapter 33, "Water and Sewers," is hereby amended to add Division 2, "Stormwater Engineering Design Standards," to Article IX, "Stormwater Management," to read as follows:

ARTICLE IX. STORMWATER MANAGEMENT

DIVISION 2. STORMWATER ENGINEERING DESIGN STANDARDS

Sec. 33-320. Adoption of Stormwater Engineering Design Standards

(a) The City of Farmington Hills hereby adopts Section I of the Stormwater Engineering Design Standards developed by the Oakland County Water Resources Commissioner, as amended, as set forth in **Appendix B** to this Code.

(b) Variances from the Channel Protection Performance standards may only be considered by the City in accordance with the alternative standard provided by the Michigan Department of Environment, Great Lakes, and Energy Stormwater Permit dated June 24, 2021, as set forth in Part I, Section A.3.f.1.b).

Sec. 33-321. Amendments, additions, and deletions.

The following provisions of the Stormwater Engineering Design Standards are amended, added or deleted as follows:

(a) All references throughout the Stormwater Engineering Design Standards to "OCWRC" or "County" shall mean and refer to "the City of Farmington Hills."

(b) Part B: Authority is hereby amended to state:

The City will apply these standards within its legal authority and jurisdiction as outlined in the following regulations:

1. Part 31, MS4 General Permit, Water Resources Protection, Natural Resources and Environmental Protection Act, 1994 PA 451, as amended.

2. MDEGLE Wastewater Discharge Permit, Rule 323.2161a, Post-Construction Requirements.

3. Section 6.1 of the City of Farmington Hills Zoning Ordinance, Site Plan Review.

(c) References to "Non-County Stormwater Systems" in Part H shall mean and refer to "Privately-Owned Stormwater Systems within the City."

Section 2 of Ordinance. Repealer.

All ordinances, parts of ordinances, or sections of the City Code in conflict with this ordinance are repealed only to the extent necessary to give this ordinance full force and effect, and the Farmington Hills Ordinance Code shall remain in full force and effect, amended only as specified above.

Section 3 of Ordinance. Savings.

The amendments of the Farmington Hills Code of Ordinances set forth in this ordinance do not affect or impair any act done, offense committed, or right accruing, accrued, or acquired or liability, penalty, forfeiture or punishment, pending or incurred prior to the amendments of the Farmington Hills Code of Ordinances set forth in this ordinance.

Section 4 of Ordinance. Severability.

If any section, clause or provision of this ordinance shall be declared to be unconstitutional, void, illegal or ineffective by any court of competent jurisdiction, the validity of the ordinance as a whole, or in part, shall not be affected other than the part

invalidated, and such section, clause or provision declared to be unconstitutional, void or illegal shall thereby cease to be a part of this Ordinance, but the remainder of this ordinance shall stand and be in full force and effect.

Section 5 of Ordinance. Effective Date.

The provisions of this ordinance are ordered to take effect twenty-one (21) days after enactment.

Section 6 of Ordinance. Date and Publication.

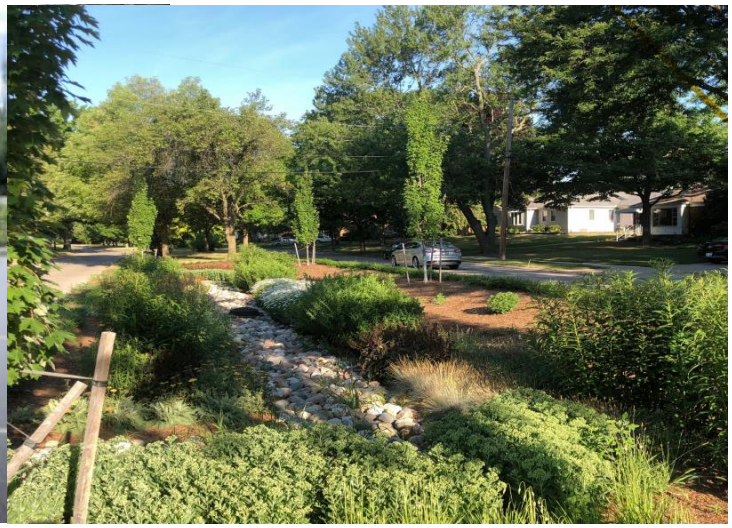
This ordinance is declared to have been enacted by the City Council of the City of Farmington Hills at a meeting called and held on the ____ day of _____, 2023, and ordered to be given publication in the manner prescribed by law.

Ayes:
Nays:
Abstentions:
Absent:

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

I, the undersigned, the qualified and acting City Clerk of the City of Farmington Hills, Oakland County, Michigan, do certify that the foregoing is a true and complete copy of the Ordinance adopted by the City Council of the City of Farmington Hills at a meeting held on the _____ day of _____, 2023, the original of which is on file in my office.

_____
PAMELA B. SMITH, City Clerk
City of Farmington Hills



WRC
WATER RESOURCES COMMISSIONER
Jim Nash

OAKLAND COUNTY
WATER RESOURCES COMMISSIONER

Stormwater Engineering Design Standards

Requirements, Rules, and Design Criteria for Stormwater Management

11/22/2021

Table of Contents

Section I - Oakland County Stormwater Standards

Part A: Standards

The Environmental Protection Agency (EPA) through the Michigan Department of Environment, Great Lakes, and Energy (EGLE) requires the County of Oakland and other regulated entities to comply with the National Pollutant Discharge Elimination System (NPDES) Phase II Municipal Separate Storm Sewer System (MS4) permit requirements. The purpose of these standards is to address Post-Construction Stormwater Runoff Controls required under this permit.

These standards are a result of ongoing regional collaboration between Oakland, Wayne, Macomb and Livingston Counties with the following overall objectives:

1. Provide a comprehensive framework for managing stormwater that addresses surface water quality, channel and infrastructure protection, localized flood control and long-term operations and maintenance.
2. Incorporate design standards that control both the quantity and quality of stormwater runoff.
3. Require volume reducing Low Impact Development (LID) design measures, or Best Management Practices (BMPs), such as infiltration, preservation of natural areas, enhanced vegetation and reduced imperviousness to control runoff volume to the Maximum Extent Practicable (MEP).
4. Strengthen the protection of natural features.
5. Protect public health, safety and welfare.
6. Promote economic development using straightforward and uniform drainage standards for site development throughout Oakland County, as well as across Southeast Michigan.
7. Provide guidelines and additional resources for the selection of effective structural and vegetative stormwater BMPs for development sites.
8. Enhance the sustainability of stormwater management practices in Oakland County including performance, longevity, safety, maintenance, community acceptance, and environmental benefits.
9. Establish a framework to increase the likelihood of long-term operation and maintenance of the stormwater management practices.
10. Use the most currently published, relevant rainfall statistics.
11. Promote a consistent design process by using a set of simple equations to determine runoff rates, detention volumes, water quality treatment and infiltration requirements.

WRC's Stormwater Rules address water quality, volume, and flood control. Section I includes an overview of the rules, including key equations used to demonstrate compliance with the standards.

Part B: Authority

The Oakland County Water Resources Commissioner's (WRC) office will apply these standards within its legal authority and jurisdiction as outlined in the following regulations:

1. The Subdivision Control Act, Act 288 of the Public Acts of Michigan of 1967, as amended.
2. The Michigan Drain Code, Public Act 40 of 1956, as amended.
3. The Mobile Home Commission Act, Act 96 of the Public Acts of Michigan of 1987, as amended.
4. Part 31, MS4 General Permit, Water Resources Protection, Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Oakland County's MS4 permit covers regulated county stormwater systems under the jurisdiction of the OCWRC office (direct discharges to County Drains), the Oakland County Parks and Recreation Commission and the County of Oakland. The Road Commission for Oakland County should be contacted for applicable standards within their stormwater jurisdiction.
5. EGLE Wastewater Discharge Permit, Rule 323.2161a, Post-Construction Requirements.

To promote consistent regional site development stormwater practices, communities and other entities responsible for the management of stormwater systems and MS4 permit compliance are encouraged to adopt these standards. Additionally, communities that operate combined sewer systems and are party to CSO permit compliance are also encouraged to adopt these standards. Local municipalities may elect more restrictive standards and when conflicting standards arise, the more stringent requirements shall govern. These standards establish minimum requirements for the design, construction and maintenance of stormwater systems for subdivisions, site condominiums, commercial, industrial and other development and redevelopment projects.

All construction activity within the WRC's stormwater permitting authority will be reviewed by the WRC's Permitting Department to determine if the activity is regulated. The WRC's office will use the following applicability criteria to assist in making this determination and to clarify which stormwater standards apply to the proposed construction activity.

These rules were developed in close coordination with Wayne, Macomb, and Livingston Counties, as well as the City of Detroit. This provides a generally consistent set of standards across Metro Detroit.

Part C: Applicability

These standards shall apply to development and redevelopment projects with construction activity greater than or equal to 1 acre, or part of a common plan of development resulting in a development or redevelopment activity greater than or equal to 1 acre in size, including without limitation, clearing, grading, excavating, construction and paving, that results in an earth change or disturbance in the existing cover or topography of land, including any external demolition, modification, or alteration of a site or the footprint of a building.

Common exemptions to these stormwater standards include the following:

1. Resurfacing of an asphalt, concrete, or similar surface (i.e., 'mill and fill') that does not expose the aggregate or subgrade or result in replacement of the onsite drainage system.
2. The practices of clearing, plowing, and tilling soil and harvesting for the purpose of crop production.
3. The project does not meet the development or redevelopment criteria in this standard.
4. The development or redevelopment project construction activity is less than 1.0 acre.
5. The development or redevelopment project is for one single family detached dwelling that is not part of a common plan of development.
6. The development or redevelopment project is for emergency maintenance and work performed to protect public health and safety.
7. The development or redevelopment project discharges solely to a RCOC stormwater system or right-of-way. Contact the RCOC permit staff at the Road Commission for Oakland County Official Website (rcocweb.org) for RCOC-specific stormwater requirements.
8. Other exemptions listed herein or approved by the OCWRC office.

These rules apply to development within WRC's stormwater jurisdiction & MS4 permit jurisdiction.

At the community's discretion, they can also adopt these rules to meet their stormwater & MS4 permit needs.

To protect all water resources under WRC stormwater jurisdiction, WRC requires applicable standards to be implemented for development and redevelopment projects located both inside and outside the Regulated MS4 Area. Similarly, to protect all water resources under WRC stormwater jurisdiction, WRC requires applicable standards to be implemented for development and redevelopment projects regardless of whether they discharge stormwater to a MS4 or not.

The WRC office continues to collaborate with the George W. Kuhn Combined Sewer District communities in adopting Post-Construction stormwater standards to meet its Combined Sewer System NPDES permit requirements. Many of these communities have both separate and combined systems and the goal is to adopt similar Post-Construction standards that meet local and regional needs for both types of systems. Currently, the standards outlined herein are encouraged to be used in the GWK combined district; collaboration continues with a goal of adoption of these standards in both MS4 and combined sewer communities.

These standards supersede all previous versions and revisions, and updates will be available on the WRC's website (www.oakgov.com/water) including registration information to receive revisions and updates to these standards as they become available. These standards are intended to be a living document and updated as necessary to reflect ongoing changes in climate and regulatory conditions. Before submitting a site plan for stormwater permitting, please refer to the WRC website above for the most recent version of the standards.

Part D: Channel Protection Volume Control

Channel Protection Volume Control (CPVC) is necessary to protect natural watercourses from increased erosion and sedimentation as a result of increased imperviousness and runoff volume as development occurs. CPVC also promotes groundwater recharge, stabilizes flow rates and baseflow in our natural watercourses, and addresses water quality control criteria (Total Suspended Solids).

CPVC shall be implemented to the Maximum Extent Practicable (MEP). The required Channel Protection Volume (V_{CP-R}) is the post-development site runoff volume from a 1.3-inch rainfall event.

The following CPVC implementation process is summarized in Appendix A (Channel Protection Flowchart).

The Channel Protection Volume Control (CPVC) volume is intended to control runoff volume under post-development conditions for a 1.3-inch rainfall event

1. Implement land use practices that limit the increase in runoff volume, such as LID practices including (but not limited to) a design emphasis on naturalized areas (i.e., meadow or wooded areas vs. turf grass), reduced impervious coverage, etc.

2. Calculate the required Channel Protection Volume using the following equation:

Eq. I-1	$V_{CP-R} = 4{,}719\ x\ C\ x\ A$
C =	Post-development runoff coefficient
A =	Contributing area in acres
V_{CP-R} =	Required CPVC volume in cubic feet

3. Provide adequate infiltration and/or storage/reuse BMPs, to the MEP, to provide the calculated CPVC volume. This may include (but is not limited to) bioretention, rain gardens, bio-swales, pervious pavement, cisterns, green roofs, and infiltration trenches. For water reuse BMPs (i.e., cisterns), water demand (such as gray water or irrigation water) must be established and documented to show adequate drawdown times.

   a. When the measured in-situ infiltration rate is above 0.5 in/hr., supplemental measures, such as subsoil amendments and/or a perforated underdrain system, are not required.

   b. When the measured in-situ infiltration rate is between 0.24 in/hr. and 0.5 in/hr., soils are marginally suitable for infiltration BMPs, and supplemental measures are required. Supplemental measures may include subsoil amendment, or an underdrain located at the top of the storage bed layer to maximize infiltration.

c. When the measured in-situ infiltration rate is less than 0.24 in/hr., infiltration is deemed impractical, and the use of this BMP is therefore waived. When infiltration is waived, other volume-reducing LID practices must be implemented to the MEP.

d. Infiltration BMPs shall completely dewater in less than 72 hours, consisting of 24-hour dewatering for the surface volume, and 48-hour dewatering of the void space (soil storage) volume. Water storage/reuse BMPs shall also be designed to fully dewater within 72 hours.

4. Pretreatment is required for all BMPs to remove fine sediment, trash, and debris to preserve the longevity and function of the BMPs.

a. Common methods of BMP pretreatment include mechanical separators, sediment forebays, vegetated filter strips, vegetated swales, constructed filters, and curb cuts with sediment traps.

5. To incentivize and encourage stormwater infiltration on all sites, the *provided* Channel Protection Volume, (V_{CP-P}) can be subtracted from the required 100-year detention volume, V_{100D} (see equations in Part G below). Upon subtracting the provided Channel Protection Volume from the required 100-year detention volume, the resulting volume cannot be less than the Extended Detention Volume (V_{ED}, see Part E below).

Channel Protection Volume Control (infiltration) is required when the measured in-situ infiltration rate is ≥ 0.24 inches/hour and groundwater is at least 2 feet below the bottom layer of the proposed BMP

For underground infiltration BMPs that are not easily accessible for inspection and maintenance, such as underground detention system infiltration, this Channel Protection Volume is generally not credited and will be evaluated on a case-by-case basis by the OCWRC's office.

Infiltration BMPs are prohibited in areas containing contaminated soils/groundwater, wellhead protection areas, high seasonal groundwater (less than 2 feet from the bottom of the stone storage layer of the infiltration BMP to the seasonally high groundwater table) and in areas with hotspot activities and setback restrictions (foundations, property lines, drinking wells, septic fields, pavement, etc.) as defined in the standards. When any of the above adverse conditions are demonstrated, other volume-reducing LID practices must be implemented to the MEP.

Part E: Channel Protection Rate Control: Extended Detention

Channel Protection Rate Control (CPRC) is necessary to protect natural watercourses from increased erosion and sedimentation as a result of increased imperviousness and runoff rates as development occurs. Channel protection rate control is based on a 2-year / 24-hour storm event. The CPRC shall be implemented to the MEP as outlined below.

1. Extended Detention is required for the site's post-development runoff volume from a 1.9-inch rainfall event. This Extended Detention Volume (V_{ED}) shall be dewatered in not less than 48 hours.
2. Calculate the required Extended Detention Volume using the following equation:

Eq. I-2	$V_{ED} = 6{,}897\ x\ C\ x\ A$
C =	Post-development runoff coefficient
A =	Contributing area in acres
V_{ED} =	Required Extended Detention Volume in cubic feet

3. The Extended Detention requirement effectively maintains the 2-year pre-settlement peak flow rates, to the MEP, for new developments and reduces the existing 2-year peak flow rates for redevelopments.

Part F: Water Quality Control

Water Quality Control (WQC) focuses on limiting the concentration of Total Suspended Solids (TSS) in post-development runoff to either of the following water quality standards: 80 mg/L, or 80% TSS reduction. WQC shall be implemented to the MEP as outlined below.

WQC can be achieved one of several ways:

1. Infiltration (i.e., runoff volume-reducing) or water reuse BMPs that achieve the required Channel Protection Volume (V_{CP-R}, see Part D) meet the TSS requirements for only areas tributary to an infiltration BMP. If any areas on a site plan bypass infiltration BMPs, those areas must receive alternative TSS treatment (see below for other options).

2. Mechanical separators designed for the required TSS removal at a peak flow rate (Q_{WQ}) generated by a 1-year peak flow as calculated below:

Eq. I-3	$Q_{WQ} = C\ x\ I_1 x\ A$
Q_{WQ} =	Peak flow rate for mechanical separator design in cfs
C =	Post-development runoff coefficient
I_1 =	Rainfall intensity in inches/hour
A =	Contributing area in acres

Eq. I-4	$I_1 = \frac{30.20}{(T_C\ +\ 9.17)^{0.81}}$
I_1 =	Rainfall intensity in in/hr
T_C =	Time of Concentration (minutes)

3. Sediment forebay(s), when combined with downstream Extended Detention. Forebays shall be designed with a volume equal to 15% of the Water Quality Volume (0.15 x V_{WQ}) and capture heavy sediment at inlet pipe locations. Access shall be provided to accommodate sediment removal equipment. The required sediment forebay volume, V_F, is calculated below:

Eq. I-5	$V_F = 0.15V_{WQ} =\ 545\ x\ C\ x\ A$
C =	Post-development runoff coefficient
A =	Contributing area in acres
V_{WQ} =	Required Water Quality Volume in cubic feet

4. The following treatment methods are effective at meeting the OCWRC water quality requirements:
   a. Bioretention BMPs (infiltration), discharging to a conventional detention basin* (wet or dry)
   b. Mechanical separator(s), discharging to a conventional detention basin* (wet or dry)
   c. Sediment forebay(s), discharging to a conventional detention basin* (wet or dry)

   * *Conventional detention basins include hydraulic controls for both V_{ED} and V_{100D}*

Part G: Detention & Flood Control

Detention and flood control is a critical component in stormwater design as it helps to prevent excess peak flows and reduces the likelihood of flooding downstream of a development site. The regional collaboration has resulted in the following Detention and Flood Control standards.

Detention and Flood Control shall be implemented to manage the ***100-year peak runoff rate*** for developed sites as outlined below. The allowable 100-year post-development peak flow rate (Q_{100P}) shall be approved by the WRC office on a case-by-case basis and will be calculated one of two ways:

1. Using the Variable Release Rate (see equations below)
2. County-determined peak flow rate based on a documented County Drain flow capacity or other known downstream capacity limitations (flow rate provided in cfs/acre)

WRC (or any local review authority) reserves the right to set a specific discharge rate that is below the Variable Release Rate where outlet capacity is restricted

Prior to commencing with site plan design, please contact the WRC Permitting Department to confirm which of the above methods are more restrictive and will apply to your site. The chosen method to determine the 100-year post-development peak flow rate can have a significant impact on required detention pond volume.

The Variable Release Rate and corresponding post-development peak flow rate are calculated as follows:

Eq. I-6	$Q_{VRR} = 1.1055 - 0.206\ln(A)$
Q_{VRR} =	Allowable release rate in cfs/acre
A =	Contributing area in acres
	The variable release rate (cfs/acre) is capped at 1.0 cfs/acre for developments 2 acres or less. For all developments equal to or greater than 100 acres, the variable release rate is 0.15 cfs/acre.

Eq. I-7	$Q_{100P} = Q_{VRR}\ x\ A$
Q_{100P} =	Allowable 100-year post-development peak flow rate in cfs
A =	Contributing area in acres

If downstream capacity is insufficient for the proposed development, the developer can make improvements that may include construction of additional off-site conveyance capacity, improvements to the existing drain, acquisition of easements from downstream property owners, etc. The developer is responsible for securing all necessary easement(s) from downstream property owners and is responsible for all improvement costs.

All stormwater discharges from the proposed development site shall outlet within the watershed where the flows originated, unless approval is obtained from the WRC's office. Offsite runoff shall bypass the proposed site's stormwater system. If this cannot be achieved, detailed hydrologic and hydraulic calculations shall be provided to the WRC office to demonstrate that no adverse impacts will occur downstream from the 10-year and 100-year storm events.

When calculating the required detention volume, all on-site contributing drainage areas shall be used in the calculation. Volume stored within the forebay and extended detention area may be applied towards the required detention volume. Please refer to Appendix C for typical detention basin profiles and stormwater design calculations.

The required 100-year detention volume (V_{100D}) is calculated as follows:

1. Calculate the total 100-year runoff volume (V_{100R}) under post-development conditions:

Eq. I-8	$V_{100R} = 18{,}985\ x\ C\ x\ A$
C =	Post-development runoff coefficient
A =	Contributing area in acres
V_{100R} =	Post-development 100-year runoff volume in cubic feet

2. Calculate the 100-year peak inflow rate, Q_{100IN}, into the detention basin; this is the post-development peak instantaneous flow prior to (upstream of) the detention basin:

Eq. I-9	$Q_{100IN} = C\ x\ I_{100}\ x\ A$
Q_{100IN} =	100-year post-development peak inflow rate in cfs
C =	Post-development runoff coefficient
I_{100} =	100-year peak rainfall intensity in inches/hour
A =	Contributing area in acres

3. Calculate the Storage Curve Factor for the 100-year detention volume (R):

Eq. I-10	$R = \left[0.206 - 0.15 \ln\left(\frac{Q_{100P}}{Q_{100IN}}\right)\right]$
R =	Storage Curve Factor (dimensionless)
Q_{100P} =	100-year post-development peak flow rate in cfs
Q_{100IN} =	100-year post-development peak inflow rate in cfs

4. Finally, calculate the 100-year detention basin size, identifying any credits to the detention basin volume to reflect the provided Channel Protection Volume (V_{CP-P}))

Eq. I-11	$V_{100D} = (V_{100R}\ x\ R) - V_{CP-P}$
V_{100D} =	Required 100-yr detention volume in cubic feet
V_{100R} =	100-year runoff volume in cubic feet
R =	Storage Curve Factor (dimensionless)
V_{CP-P} =	**Provided** CVPC volume in cubic feet
	KEY RULE: $V_{100D} \geq V_{ED}$

Check to verify the adjusted 100-year detention basin volume is equal to or greater than the Extended Detention Volume (V_{ED}). Under no circumstances shall the adjusted detention basin volume be less than V_{ED}.

Part H: Operations and Maintenance

Long-term Operations and Maintenance (O&M) Plans are required for County Stormwater Systems and Non-County Stormwater Systems and are summarized below. To facilitate routine inspections, all O&M requirements and documents listed below shall be incorporated into the plan set on dedicated O&M-specific plan sheets. When O&M responsibilities or requirements are modified or updated, the respective O&M Plan sheet(s) shall be updated accordingly.

County Stormwater Systems

The following MS4 Permit O&M requirements apply to all regulated County Stormwater Systems owned, operated and maintained by the WRC's office, the Oakland County Parks and Recreation Commission and the County of Oakland, hereafter referred to as County Departments:

1. Prior to the start of any development or redevelopment activity meeting the criteria defined in Part C: Applicability, the County Department shall obtain a Drain Permit from the WRC's Permitting Department. Coordination with the WRC's Permitting Department is recommended at the conceptual stage of development projects to ensure that permit requirements are clearly identified early in the planning process.

2. To ensure consistent perpetual O&M of the site's stormwater system and to enhance water quality protection, prior to Drain Permit issuance, the WRC's Permitting Department shall review and approve the County Department's site-specific Stormwater Management O&M Plan with the following requirements:

   a. Purpose of the plan.

   b. Drainage area description and details.

   c. Description of the stormwater system and its individual components.

   d. Specific short-term, intermediate and long-term maintenance tasks.

   e. Inspection and maintenance tasks, frequencies and responsibilities.

   f. Employee and contractor training requirements and responsibilities.

   g. Approved construction drawings including stormwater calculations, details, elevations and a location map, etc.

   h. Approved O&M Plan sheet(s) to facilitate routine O&M inspections.

   i. County Departments shall submit an Annual Stormwater System O&M Summary, for their stormwater systems, to the WRC's Environmental Department for County MS4 permit

Maintaining stormwater systems is critical for ensuring they meet ongoing water quality and flood control needs. Individual County Departments are responsible for completing all (perpetual) O&M tasks and for maintaining detailed O&M tracking records for their stormwater systems.

reporting. Individual County Departments are responsible for completing all O&M tasks and for maintaining detailed O&M tracking records for their stormwater systems.

Non-County Stormwater Systems

The following MS4 Permit O&M requirements apply to all regulated Non-County Stormwater Systems owned, operated and maintained by others, which directly connect to a County Stormwater System:

1. Prior to the start of any development activity meeting the site applicability criteria defined in Part C: Applicability, a Drain Permit shall be obtained from the WRC's Permitting Department. Coordination with the WRC's Permitting Department is recommended at the conceptual stage of development projects to ensure that permit requirements are clearly identified early in the planning process.
2. To ensure consistent perpetual O&M of the site's stormwater system and to enhance water quality protection, prior to Drain Permit issuance, the WRC's Permitting Department shall review and approve the site-specific Stormwater Management O&M Agreement between the community and property owner. A fully executed Stormwater Management O&M Agreement is required prior to issuance of the Drain Permit. This agreement shall consist of the following requirements which will be incorporated into the O&M Plan sheet(s):
    a. Legal Description: A legal description and reduced copy map to identify the land parcel(s) affected by this Agreement. This map shall be prepared for each site and must include a reference to a Subdivision Plat, parcel survey, or Condominium Master Deed, and a map to illustrate the affected parcel(s).
    b. Stormwater System Description and Map: A location map of the entire stormwater system. This map must be prepared for each site and the scale of the map shall show necessary detail.
    c. Stormwater O&M Plan Sheet(s): The site-specific Stormwater O&M Plan shall include the following requirements:
        - Description of the stormwater system, drainage area, and its individual components.
        - Specific short-term, intermediate and long-term maintenance tasks.
        - Inspection and maintenance tasks, frequencies and responsibilities (matrix/table).
        - Employee and contractor O&M training requirements, certifications, and responsibilities.
        - BMP Details
        - Property owners are responsible for completing all O&M tasks and maintaining O&M records for their stormwater systems. Upon request, property owners shall submit an Annual Stormwater System O&M Summary to OCWRC's Permitting Department for

The community is responsible for enforcement of the O&M requirements as outlined in the Stormwater Management O&M Agreement and their MS4 permit.

tracking only. The community is responsible for enforcement of the O&M requirements as outlined in the Stormwater Management O&M Agreement and their MS4 permit.

d. Memorandum of Stormwater Management Operations and Maintenance Agreement: This O&M Memorandum acknowledges a perpetual requirement of stormwater system operations and maintenance, which is recorded with the Register of Deeds to put any future property owners, or interest holders, on notice of the Stormwater System and the Stormwater O&M Plan. This O&M Memorandum references the required Stormwater Management O&M Agreement, which resides with the local community to ensure consistency and periodic updates as necessary. A copy of the recorded document shall be submitted to OCWRC prior to closure of the Drain Permit.

Appendix G-Stormwater Management O & M Agreement is an approved "example" agreement. However, the WRC office recognizes that community-specific O & M agreements, ordinances and programs may also be proposed and submitted to the WRC for approval. When developing alternative O & M programs for consideration, the community should reference EGLE'S Post-Construction Stormwater Runoff Controls Program Compliance Assistance Document (available on EGLE's website) and their MS$ permit.

Part I: Stormwater Tracking & Mapping

Collecting data on site runoff characteristics is critical for WRC and the local review jurisdiction (if applicable) to meet ongoing EGLE permit requirements. This will be accomplished with a ***Land Use Summary Table***, which must be included on the O&M Plan Sheet of each submitted site plan (see table below). Additionally, GIS-based site data (in the form of a shapefile) will be required as a condition of site plan approval. GIS data will be limited to key stormwater components that will require future inspection and maintenance.

Land Use Summary

must be included on the O&M Plan Sheet for all site plans

	Characteristic	Existing Conditions	Proposed Conditions
Land Use Data	**Total Development Area (ac)**		
	Impervious Area (ac)		
	Total Pervious Area (ac)		
	Pervious Area Breakdown by Cover Type		
Pervious Area	***Meadow/fallow/natural areas (non-cultivated)***	x.xx acres	x.xx acres
	Predominant NRCS Soil Type (A, B, C, or D)		
	Improved areas (turf grass, landscape, row crops)	x.xx acres	x.xx acres
	Predominant NRCS Soil Type (A, B, C, or D)		
	Wooded Areas	x.xx acres	x.xx acres
	Predominant NRCS Soil Type (A, B, C, or D)		
	CPVC Volume ***Calculated*** (cubic feet)		
	CPVC Volume ***Provided*** (cubic feet)		
	CPRC Volume Provided (cubic feet)		

The Professional Engineer who signs and seals this site plan certifies that the values in this table reflect the WRC stormwater calculations required for this development and that geotechnical investigations were performed that provide conclusive documentation that demonstrates whether infiltration (i.e., CPVC Volume Control) is practicable.

Notes:

- *The Professional Engineer Certification Statement (see above) must be included with the Land Use Summary Table.*
- *Areas to be shown to the nearest 0.01 acre*
- *'Predominant' soil type shall the soil type with the largest percentage coverage over the designated land use (e.g., 70% Soil Type B and 30% Soil Type C shall be listed in the table as "Soil Type B")*
- *USDA soil types cannot be used to determine site suitability for infiltration and meeting the CPVC volume standard; direct infiltration testing will be required to determine site suitability for infiltration*

- *If CPVC requirement is waived, enter ZERO for the 'CPVC Volume Provided'*
- *When more than one soil type exists in one area, assign the predominant soil type for that area*
- *Use NRCS/USDA Online Soil Survey Map to determine soil type (A, B, C, or D):*

  https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

In addition to the Land Use Summary table, the applicant must include the following stormwater system information in the submittal:

1. Project name
2. Project location
3. City / Township / Village name
4. Applicant name and contact information
5. Engineer and owner names, including contact information
6. Description of work and other relevant information
7. ***Stormwater Design Narrative*** (separate document), consisting of the following minimum components:
   a. Summary of the proposed stormwater management system
   b. Geotechnical investigations (e.g., soil borings, infiltration tests, and/or an Environmental Site Assessment)
      i. *NOTE: the stormwater review cannot be approved without the submittal of in-situ soil characteristics and/or evidence of existing soil contamination; this information is necessary to determine whether the Channel Protection Volume Control standard will be required.*
   c. All stormwater calculations, including a list of all assumptions, site characteristics, and other information to support the calculations.
   d. If mechanical separators are to be used, attach the NJDEP certification letter including all NJDEP unit sizing and TSS removal efficiencies.
   e. Figures/schematics of the stormwater management system, including clear references to existing wetlands, floodplains, woodlands or other protected natural features.
   f. Outlet hydraulic calculations, including (if requested by the WRC) calculations and certifications for the hydraulic capacity of the receiving system.
   g. Operations & Maintenance (O&M) Plan for all proposed stormwater components (collection system, water quality treatment, infiltration, extended detention, and flood control) shall be included on the O&M Plan sheet(s).
8. Construction plans developed in accordance with WRC requirements
9. Executed Stormwater Management O&M Agreement
10. Recorded Memorandum of Stormwater Management O&M Agreement

A stormwater report (narrative) is a required component of each site plan submittal; a concise and well-organized report will help to expedite the site plan review process

A final component of the site plan review process is the submittal of a GIS shapefile containing, at a minimum, the layers listed below, which consist of points and polygons that reflect the key components of the stormwater system. This information will be provided only after the technical review is completed. The GIS shapefile must reflect the final approved design and include the following layers (use the layer naming conventions listed below for ease of storing and tracking the GIS data):

1. Development Site – Area (ac), GIS area **polygon** (DSA-1, DSA-X)
    a. This area should reflect the entire area for which the stormwater system is designed
2. Site Discharge Point(s), GIS **points** (D-1, D-2, etc.)
    a. These points should reflect the location of each site discharge point; this is typically the point of connection to a County Drain, city storm sewer, or other drainage feature downstream of the detention basin discharge structure
3. Dry Detention Basins, GIS area (ac) **polygons** (DBASIN-1, etc.)
    a. The polygon should reflect the detention basin footprint up to and including the berm and any associated maintenance buffer
4. Wet Detention Basins, GIS area (ac) **polygons** (WBASIN-1, etc.)
    a. The polygon should reflect the detention basin footprint up to and including the berm and any associated maintenance buffer
5. Retention Basins (no outlet), GIS area (ac) **polygons** (RBASIN-1, etc.)
    a. The polygon should reflect the detention basin footprint up to and including the berm and any associated maintenance buffer
6. Sediment Forebays, GIS area (ac) **polygons** (Forebay-1, etc.)
    a. The polygon should reflect the detention basin footprint up to and including the berm and any associated maintenance buffer
7. Mechanical Separators, GIS **points** (MS-1, etc.)
    a. The points can be placed at a maintenance access point for each structure. If multiple mechanical separator units are proposed, create a point for each unit.
8. Bioretention/Bioswales – GIS area (ac), GIS **polygons** (BR-1, etc.)
    a. The polygon should reflect the bioretention/bioswale footprint including any maintenance or safety buffers
9. Porous Pavement – GIS area (ac), GIS **polygons** (PP-1, etc.)
10. Cisterns/Rain Barrels, GIS **points** (RB-1, etc.)

Section II – Submittal and Review Procedures

Part A: General Requirements

Introduction

The general standards set forth are applied by this office for the review of the following:

1. Subdivisions being established under Act 288 of the Public Acts of 1967.
2. Mobile home plans prepared under P.A. 96 of 1987.
3. Applications for permits to discharge to a County Drain under P.A. 40 of 1956, as amended.
4. Review of stormwater system plans in other classes of developments or re-developments, when requested by local governments.
5. Review of developments being established as Chapter 18 County Drains.

Pre-Application Meeting

The pre-application meeting is a recommended step (not required) for the design and construction of a site that is covered under these standards. There are no fees required for the pre-application meeting.

The purpose of the pre-application meeting is to discuss the WRC standard requirements, existing site characteristics, identify existing in-situ soil conditions (which will determine whether infiltration will be required), Best Management Practices (BMPs) proposed for use on the site, long-term maintenance needs, and the capacity of the stormwater outlet. At this meeting, WRC staff will also confirm whether the development/redevelopment is within a drainage system that has a restricted outlet. This will determine the methodology that shall be used for determining the allowable peak discharge rate. This meeting may allow for a faster, more cost-effective site design by identifying the stormwater management issues early in the design process.

The Property Owner/Applicant will provide the following general information about the proposed development site for review during the meeting with WRC staff:

1. General Site Description / Site Plan
2. Topography
3. Land cover
4. Known environmental concerns (e.g. contaminated soils, “Due Care” Plan)
5. Location of and characteristics of environmental features, including wetlands, undrained areas, woodland areas, etc.
6. Soil types - (Soil survey with USDA NRCS soil group classifications, well/septic records and, if available, soil borings)
7. Potential locations for infiltration BMPs
8. Site environmental history (i.e., Phase 1 ESA)

Electronic Submission of Application and Plans

All Application submittals involving a County owned or operated Drain/Watermain/Sanitary Sewer/Soil Erosion must be made electronically to the WRC Office via our interactive EnerGov Permit Portal. Please refer to **Appendix J**-EnerGov Citizen Self-Service Portal User Guide.

1. You will first need to log into the WRC EnerGov site and register as a user to be able to submit an Application for review and approval.
2. Applications must be submitted by System and/or Property owners or their designated representatives.
3. Once an application has been submitted, the Applicant may invite others giving them permission to interact with the Application submittal process or simply to view the Permit Status.
4. Construction and site plans must be in PDF format with layers flattened, optimized and compressed.
5. JPG format is acceptable for documents or letters.
6. Maximum file size for each file should not exceed 50MB.
7. Below is the URL for our Live EnerGov CSS Portal Site
    - Full URL: https://oaklandcountymi-energovpub.tylerhost.net/apps/selfservice#/home
    - Friendly Link (share in emails): WRC Permitting & Soil Erosion Application Portal

Conceptual Plan Review Requirements

An application for review must be submitted for conceptual plan reviews. WRC will perform a cursory review of the plans and will advise the applicant if an application fee is required. Conceptual plan submittal and review is not a required step for the design and construction of a site. However, if a developer chooses to pursue a conceptual plan review, it may allow for a faster, more cost-effective process by identifying potential stormwater management issues early in the design phase of the project, particularly for sites that have unique characteristics and/or hydraulically restricted outlets. If conceptual plans are submitted, they shall include the following required information and will be submitted prior to the preliminary plat or plan:

1. A brief drainage narrative describing the proposed stormwater management system.
    a. On-site drainage infrastructure.
    b. Off-site drainage patterns of adjacent properties.
    c. Evidence of off-site outlet adequacy by means of certification. See Engineer's Certificate of Outlet in Appendix H.

2. Calculations determining the detention or retention volume requirements for the development.
3. Proposed topography for the detention or retention basin(s) in one-foot intervals.
4. Known environmental concerns and "Due Care" plans.
5. Calculations verifying that the soils provide the percolation rate required for the selected BMPs.
6. Schematic layout for the proposed drainage collection system.
7. Evidence of in-situ soil permeability, prevailing groundwater levels, and the location of proposed BMPs.
8. Soil types and areas of each soil based on USDA Soil Conservation Service classification system. (Please note that this is *not* a substitute for geotechnical investigations to demonstrate in-situ soil permeability).
9. Existing natural features, including wetlands and woodland areas.
10. Limits of disturbance (including consideration of topographical requirements for excavation).
11. Existing FEMA flood zones (Zone A or AE), if applicable.
12. If the development is proposed in an area where flooding problems exist or are anticipated at the site, on adjacent properties or downstream, include a plan for how these issues will be addressed.

After the above items, the WRC will determine if the submittal is sufficient for conceptual approval. The submittal must be complete, correct, and feasible in order to be conceptually approved. If it is determined that the information submitted is insufficient the WRC will advise the applicant of the deficiencies.

Application for Review

An application for review must accompany all plans submitted to WRC for review. The application shall be submitted by the Owner/Developer or the Design Engineer on behalf of the Owner/Developer. Application for review shall be made prior to the start of any work requiring a permit from WRC.

For project sites that will be developed in phases, an application is required for the initial work and new applications will be required for additional work not indicated on the original application.

WRC will perform a cursory review of the plans and will advise the applicant if an application fee is required. The total review, permit, and inspection fees will be determined upon completion of the review.

The review period begins upon the receipt of a completed application, plans and application fees.

Part B: Subdivisions- Sites to be platted under Act 288

Preliminary Plat

General Requirements

A preliminary or tentative plan showing the layout of the area intended to be platted shall be submitted by the Proprietor. This plan shall be prepared under the direction of and sealed by a registered professional engineer. The plan shall be drawn to a standard engineering scale no smaller than 1" = 100' and the sheet(s) of paper must not be larger than 24” x 36”. This preliminary plan is what the Subdivision Control Act of 1967 refers to in Section 111 as a "preliminary plat".

Section 114, Sub-section (3) of the Subdivision Control Act of 1967 requires that the Water Resources Commissioner approve or reject preliminary plats within 30 days of their receipt.

Three copies of the preliminary plat, prepared in accordance with the following requirements, shall be submitted with a letter of transmittal requesting that the preliminary plan be reviewed and, if found satisfactory, approved. The names of the Proprietor and engineering or surveying firm with mailing addresses, telephone, e-mail, and fax numbers for each shall be included with the transmittal.

The preliminary plat shall include:

1. The location of the proposed subdivision with reference to the section and part of section in which the parcel is situated, the name of the township, city or village, a proposed legal description of the site, the number of acres proposed to be platted and a location map with north arrow.
2. The proposed street and alley layout and approximate lot and plat dimensions.
3. All on-site and off-site pertinent factors, the existence and description of which might be of value in determining the overall requirements for the subdivision, such as:
   a. Adjoining roads, subdivisions, and parcels.
   b. Railroads.
   c. High-tension tower lines, underground transmission lines and gas pipelines.
   d. Cemeteries and parks.
   e. Rivers, natural water courses, county drains, lagoons, slips, waterways, streams, lakes, bays, canals, wetlands, wetland boundaries and floodplains.
   f. Existing utilities; storm drains, sanitary sewers, water main, telephone, cable, or fiber optic lines.
   g. Existing and proposed easements for all drainage facilities, including BMP’s and buffer strips.
4. Contour information in two-foot intervals with North American Vertical Datum of 1988 (NAVD 88), or most current national datum, shall be shown on the same plan, otherwise it shall be submitted on a separate sheet.
5. A drainage map, using a United States Geological Survey (USGS) topographic map, or equivalent, that shows the existing drainage area and flow patterns and indicates the proposed drainage pattern.

Inasmuch as improper utility easement location can result in a change in plat layout, the Proprietor is advised to consult with the respective utility companies before presentation of the preliminary plan for approval.

In the case where the Proprietor wishes to subdivide a given area but wishes to begin with only a portion of the total area, the original plan shall include the proposed general layout for the entire area. The part that is proposed to be subdivided first shall be clearly superimposed upon the overall plan in order to clearly illustrate the method of development which the Proprietor intends to follow. Each subsequent plat shall follow the same procedure until the entire area controlled by the Proprietor is subdivided. The final acceptance of a subdivision that is a partial development of a larger general layout does not automatically insure the final acceptance of the overall layout. The intent is to permit some flexibility in the overall layout if future conditions make it desirable or necessary to make any changes.

If the proposed preliminary plan as submitted meets with all the requirements, one approved copy of the preliminary plan will be returned. Approval of the preliminary plan is recommended before proceeding with the preparation of final construction plans. If the proposed plan is not approved as originally submitted, the Commissioner notifies the Proprietor in writing setting forth the reasons for withholding approval and requests that the necessary changes be made, and the revised layout resubmitted.

In accordance with Section 560.120 of Act 288, the preliminary plat approval is valid for two years. If construction plans have not been submitted within that time, a new preliminary plat must be submitted and approved. The two-year period may be extended if applied for by the proprietor and approved by the Water Resources Commissioner in writing.

Drainage Requirements

The preliminary plat must include the general drainage scheme for the proposed subdivision, or the plan will be rejected. The general drainage scheme shall indicate how storm drainage will be provided and where it will outlet. Preliminary calculations for detention and contributing off-site flow must be included on the plan. Additionally, the preliminary plat shall indicate locations of proposed BMP's, soil types and percolation rate(s).

Drainage proposed for subdivisions shall conform to established County Drain districts, existing natural drainage patterns and community master plans. The design shall consider the effect that the drainage proposed in the subdivision has upon the entire drainage basin.

The preliminary plat shall indicate in general, on a USGS topographic map, any drainage originating outside of the subdivision limits which has previously flowed onto or across the subdivision, as well as any natural watercourses and County Drains that traverse or abut the subdivision.

The preliminary plat shall indicate in general any proposed onsite and/or offsite facilities, proposed or existing, required to conduct the drainage to an adequate outlet.

The Water Resources Commissioner's office is not responsible for roadside ditches. Road drainage ditches are under the jurisdiction of the Road Commission for Oakland County (RCOC) or other authority. Any drainage plan that proposes to outlet storm water to a road ditch must be approved by the RCOC or authority that has jurisdiction.

The Water Resources Commissioner shall require that the developer provide assurance of adequate maintenance and inspection of the installation of both the external and internal storm drainage facilities.

Easement Requirements

The following minimum easement widths are required for all storm drainage facilities within the boundaries of the subdivision:

1. Open drains and watercourses:

   The extreme width of the drain or watercourse plus 15 feet from top of bank on both sides of the channel.

2. Enclosed drains:

   A minimum of twenty (20) feet centered on the centerline of the pipe. However, larger pipe size, certain soil conditions, or depth of pipe may require larger easements.

3. Rear yard drains:

   For pipe sizes less than 12 inches in diameter, a minimum of twelve (12) feet centered on the centerline of the pipe.

4. Pump stations, detention/retention basins and other storm drainage facilities shall have sufficient easement area to allow for operation and maintenance of the entire facility, including freeboard area, the banks, and any berms at the top of the banks.

5. BMPs and buffer strips shall have adequate easements to maintain and/or replace the device.

Easement widths for legally established County Drains shall be determined by the WRC. In general, these will conform to the above referenced requirements. Additional easements may be required by the Water Resources Commissioner's office should soil, construction conditions or other circumstances so warrant.

Easement information shall be shown on the preliminary plan, final construction plans and final mylar plat.

The wording relative to easement information shown on the final plat shall be as specifically required by the Water Resources Commissioner's office. All County Drain easements shall be labeled as follows: "Permanent private easement for the NAME County Drain". In Addition, restrictive deed covenants for the development shall include county drain language as described in the appendix.

The Oakland County Water Resources Commissioner's office reserves the right to modify easement requirements at its discretion.

Subdivision Construction Plans

The Proprietor will submit final construction plans that have been prepared under the direction of, and sealed by, a Professional Engineer licensed in the State of Michigan with a completed application form. The Water Resources Commissioner's Office will review the plans for adequacy of storm water management design to ensure that the proposed storm water drainage system has the capacity to handle all contributing flow without diminution of the existing off-site natural drainage patterns.

One set of complete, electronic final construction plans shall be submitted. The plans must be drawn to a scale not smaller than 1" = 50' on sheets no larger than 24" x 36" and designed in accordance with the design criteria presented herein.

Required Information

The plans should include, at minimum, the following:

1. A cover sheet which includes a site legal description and location map with north arrow and the number of acres proposed to be platted. For phased developments, clearly indicate the phase limits and the number of acres in each phase.
2. Subdivision layout of lots, roads, and all existing and proposed easements.
3. Plans, profiles and details of all road and storm sewers. The storm sewer details will include type and class and size of the pipe, length of run, percent of slope, invert elevations, rim elevations, and profile of the hydraulic gradient.
4. A description of the drainage course that will be utilized as the stormwater outlet and evidence that it is adequate for the proposed discharge. It is noted that controlling flow to a rate that is equal to or below the pre-development rate may not be considered to be evidence of adequacy. The Engineer's Certificate of Outlet, must be provided, including the signature and seal of the professional engineer responsible for determining adequacy.
5. Plans and details of the soil erosion and sedimentation control measures. Indicate which measures are temporary or permanent and the party responsible for maintaining the control measures.
6. Plans, cross-section views and details of the detention or retention basins and the outlet. If an existing basin on or off-site will be used, then as-built information must be provided.
7. Topographic map or maps at two-foot contour intervals with North American Vertical Datum of 1988 (NAVD 88), or most current national datum, showing existing topography and proposed grades of the entire area to be subdivided, as well as offsite topography for at least 150' of the adjoining property to the extent that off-site contributing flow can be determined. All off-site contributing flow must be accommodated. This map or maps shall also show all existing watercourses, lakes, and swamps.
8. Calculations, design data and criteria used for sizing all infiltration facilities, drainage structures, open channels and retention/detention facilities including curve numbers or weighted runoff coefficient calculations.

9. Storm drain calculations indicating the number of acres, calculated to the nearest tenth of an acre, contributing to each specific inlet/outlet, the calculated hydraulic gradient elevation, maximum flow in ft^3/sec and the flow velocities for enclosed systems. The calculations shall also include detention/ retention and runoff coefficient calculations as well as design calculations for all drainage swales and overflow structures. Overflow structures must be sized to pass all contributing off-site flow.
10. Specifications governing construction, i.e. material specifications, pipe bedding, construction notes, compaction requirements, etc.
11. Maximum flow in cubic feet per second for both the 10-year and 100-year recurrence interval storm events.
12. Flow velocities for the 10-year recurrence interval storm event.
13. Locations of all drain fields and of all expansion areas. Drain fields shall not be located within drainage easements.
14. Plans and details of proposed infiltration facilities with soil test pits or other testing methods detailed elsewhere in these rules, to verify that the facilities will function per the proposed design.
15. Plans and details of proposed retention/detention facilities. Soil borings may be required at the sites of these facilities.
16. A drainage area map, overlaid onto a copy of the site grading plan, which clearly shows the sub-areas tributary to each drainage structure, BMP and/or retention/detention facility, including acreage curve number (CN) and runoff coefficient (C factor) for each sub-area.
17. Plans, profiles, and details of all stormwater management system including but not limited to the following:
    - Porous Pavement
    - Dry Wells
    - Structural Infiltration Basins
    - Subsurface Infiltration Beds
    - Infiltration Trenches
    - Vegetated Filter Strips
    - Bioretention Systems/Bioswales (Rain Gardens)
    - Green Roofs
    - Water Reuse
    - Retention/Detention Facilities
18. Engineer's certificate attesting to the infiltration rate of the soils being used for BMPs.
19. Details of all drainage structures including but not limited to the following:
    - Manholes
    - Catch basins

- Inlets
- Outlet structures
- Overflow structures
- Check dams

20. A Stormwater Management Operation and Maintenance Agreement, plan, and a proposed schedule for the perpetual maintenance of the complete storm drainage system. Indicate who will be the primary party responsible (i.e. municipality or homeowners' association) for the maintenance. If a Homeowners Association will be the primary party responsible for maintenance of the stormwater system, an appropriate governmental unit shall be named as having underlining authority in perpetuity for overseeing the maintenance of the system, including the responsibility to perform maintenance in the event the Homeowners Association fails to do so. The responsibility for maintenance of the stormwater system shall be included in the subdivision deed restrictions and recorded with the plat. An example of a Stormwater Management Operation and Maintenance Agreement may be found in Appendix G. A copy of the subdivision deed restrictions and executed Agreement must be submitted to the Water Resources Commissioner prior to construction plan approval.

    - Reference Part I for requirements for the GIS data layers for key stormwater management features.

Review Time

The Proprietor shall prepare and submit a preliminary plat and final construction plans to WRC prior to submitting a final (Mylar) plat for approval. WRC shall tentatively approve or reject the preliminary plat within 30 days. A preliminary plat must be submitted and approved prior to submitting the final construction plans. Approval of the preliminary plat and final construction plans is required prior to the Water Resources Commissioner signing the final (Mylar) plat. The construction plan approval is valid for one (1) year. The one-year period may be extended if applied for by the proprietor and approved by the Water Resources Commissioner in writing.

Changes to the Plans

Approval of the final construction plans is intended to be final approval, and the actual signing of the mylar plat is only a formality, as long as there are no changes in the final construction plans from what was approved. If either the Proprietor or the Water Resources Commissioner find it advantageous to make changes before the mylar plat is presented to the Water Resources Commissioner for signature, such changes can be made, provided that the same procedures outlined above are repeated with each change in the layout. The Proprietor is reminded that approval of the proposed subdivision by the local governing body is also required under the Plat Act. Such changes shall be incorporated in the layout and revised construction plans shall be resubmitted even though the original layout may have already been approved by the Water Resources Commissioner. If the Proprietor does not present his mylar plat to the Water Resources Commissioner for approval within a period of one year after receiving approval of the final construction plans, it may be necessary that he resubmit the construction plans for review in the light of new information which may have become available during the interim.

Final Plat

The Proprietor shall submit the final mylar plat to the Water Resources Commissioner for certification. The plat will be reviewed for accurate drainage easements and equivalence with the approved construction plans. If the Commissioner approves the plat, he will affix his signature to it and the plat will be executed. If the Water Resources Commissioner rejects the plat, written notice of such rejection and the reasons therefore are given to the Proprietor within ten days.

Prior to the Proprietor submitting the final mylar plat for certification, the following is required:

1. Approval of the preliminary plat.
2. Approval of the final construction plans.
3. Assurance of adequate maintenance and inspection of the installation of both the external and internal storm drainage facilities.
4. A soil erosion and sedimentation control permit under Part 91 of Act 451 of the Public Acts of 1994 as amended.
5. Payment by the Proprietor of the plat review fee, according to the latest schedule posted on the Oakland County Water Resources Commissioner's website: www.oakgov.com/water.
6. A minimum, non-refundable application fee is required upon submittal of the preliminary plat and the construction plans.
7. Easements:
   a. Easement provisions shall conform to the widths indicated in "Preliminary Plat Easement Requirements" of this Section.
   b. All drainage easements, including freeboard, BMPs and buffer strips, shall be so designated on the plans as well as on the mylar plat.
   c. All existing easements are to be shown and identified on the mylar plat including the Liber and Page.
   d. Existing County Drain easements shall be indicated on the plans as well as the mylar plat and shall be designated as "XX feet wide easement for the "Name" (County) Drain as recorded in Liber___ , Page___".
   e. In cases where storm water is discharged to a drain or watercourse on adjoining private property, an improvement to the drain and an agreement with the property owner may be necessary. An off-site drainage easement will be required if:
      - The watercourse is not depicted as a blue line on a USGS map.
      - It is not indicated on the MIRIS map.
      - The watercourse is not considered wetlands by the governing municipality.

Part C: Mobile Home Developments

Public Act 96 of 1987, The Mobile Home Commission Act, requires a developer of a Mobile Home Park to submit a preliminary plan to the Water Resources Commissioner.

Preliminary Plan

The preliminary plan shall include the location, layout, general design, and a general description of the project. The following information shall be submitted for review:

1. Calculations, design data and criteria used for sizing all infiltration facilities, drainage structures, channels and retention/detention facilities including curve numbers or weighted runoff coefficient calculations.
2. Plans and details of proposed infiltration facilities with soil test pits or other testing methods detailed elsewhere in these rules, to verify that the facilities will function per the proposed design.
3. Plans and details of proposed retention/detention facilities. Soil borings may be required at the sites of these facilities.

Outlet Drainage

The Water Resources Commissioner must review and may approve the outlet drainage for the Mobile Home Park. The design requirements covered in these standards will be used for this review. All pertinent design calculations must be submitted. The interior drainage within the park will not be reviewed unless the park storm drain system is to be established as a County Drain under Chapter 18 of the Drain Code.

The Water Resources Commissioner may approve or reject preliminary plans within 60 days of their receipt; otherwise the plan is considered approved.

Mobile home park construction plans are reviewed by the Mobile Home Commission.

Part D: Drains under the Jurisdiction of the Water Resources Commissioner

Permits

The review application and application fee must be submitted before a site plan is reviewed. Permit fees and inspection deposits are determined on a site-specific basis after the review is completed. A permit shall be required from WRC prior to performing any work to a County Drain or its appurtenances. The following are examples of work:

a. Connecting to any part of an open ditch, enclosed drain or manhole or drainage structure. A tap can be a direct connection or a pipe outlet.

b. Crossing any part of an open ditch or enclosed pipe. Examples of crossings are utility lines, driveways, culverts, and bridges. A minimum clearance of five (5) feet for an open ditch drain and eighteen (18) inches for an enclosed drain must be maintained between the drain and any proposed utility or other underground crossings of the drain.

c. Relocating any part of a County Drain.

d. Enclosing any portion of an existing open ditch County drain.

e. Performing work within a County Drain easement.

f. When the installation of a fence, driveway, patio, pool, or other structure that does not have a foundation, encroaches into the County Drain easement.

g. Any development that will outlet stormwater directly to a County Drain will be reviewed by the Water Resources Commissioner for adequate stormwater management and outlet drainage. All other involvements will have a drainage review performed relevant to the work proposed.

h. The Proprietor shall submit one (1) set of electronic construction plans with a transmittal requesting plan review. The plans must be prepared in accordance with the design standards presented herein and sealed by a Professional Engineer licensed in the State of Michigan. All pertinent design calculations must be submitted with the final construction plans. Preliminary plans may be submitted but are not required.

General Permit Information Requirements

All plans shall include the following information:

a. The location of the proposed development by means of a location map at sufficient scale.

b. Legal description for the parcel to be developed.

c. The number of acres to be developed.

d. Contours, at two-foot intervals or less, with U.S.G.S. datum.

e. The proposed drainage system for the development.

f. The proposed street, alley and lot layouts and approximate dimensions.

g. Soil survey information with USDA NRCS soil group Classification.

h. Known environmental concerns and/or "Due Care" plan.

i. Engineer's certificate attesting to the infiltration rate of the soils. test pits or other testing methods detailed elsewhere in these rules, will be required at the location of all infiltration facilities, including but not limited to:

- Bioretention Systems/Bioswales (Rain Gardens)
- Porous Pavement
- Dry Wells
- Structural Infiltration Beds
- Subsurface Infiltration Beds
- Infiltration Trenches
- Vegetated Filter Strips

j. Soil tests may be required at various other locations including the sites of proposed retention/detention facilities, and as needed in areas where high ground water tables exist.

k. Certain County Drains have limited hydraulic capacity. These drains are listed in Appendix C. The allowable discharge to these drains will be dictated by the Water Resources Commissioner and may be more stringent than these design requirements.

l. The proprietor will prepare a maintenance plan for the long-term maintenance of the stormwater system. The proprietor shall enter into a Stormwater Management Operations and Maintenance Agreement with the local city, village, or township for the continued maintenance of the stormwater system. An example of a Stormwater Management Operations and Maintenance Agreement can be found in the Appendix G. The Agreement must describe the mechanism to be established for long-term maintenance of the stormwater management system, and the responsible government agency for maintenance oversight if maintenance is to be performed by a private entity. An executed copy of the Agreement shall be submitted to the WRC prior to approval of the permit.

m. Should the proprietor plan to develop a site but wishes to begin with only a portion of the total area, the original preliminary plan must include the proposed general layout for the entire area. The first phase of the development will be clearly superimposed upon the overall plan in order to clearly illustrate the method of development that the proprietor intends to follow. Each subsequent phase will follow the same procedure until the entire area controlled by the proprietor is developed.

Permit Requirements

a. The review application and application fee, appropriate permit fee and inspection deposit must be submitted before the permit is issued. Permit fees are determined on a site-specific basis.

b. A notice of 48 hours must be given to the Water Resources Commissioner's Inspection Department prior to any construction affecting the drain. In the event that our Inspection Department is not notified as stipulated herein the entire inspection deposit will be forfeited.

c. Flow shall be maintained in the drain at all times during construction.

d. All work shall be completed in accordance with the plans and specifications approved by the Water Resources Commissioner.

e. A cash deposit in an amount satisfactory to the Water Resources Commissioner to cover WRC inspection services shall be deposited to insure satisfactory completion of the project in accordance with the approved plans. The permittee shall contact the Water Resources Commissioner to perform an inspection of the permitted activity. Failure to contact the WRC for inspection of the work will result in forfeiture of all deposit money.

f. The contractor performing the work must have current cash and surety bonds with the WRC.

g. Work performed on the County Drain or its appurtenances must be performed in accordance with the Water Resources Commissioner's Storm Drain Notes and Details Sheet.

h. A drain permit issued by the Water Resources Commissioner's Office will not relieve the applicant and/or his contractor of the responsibility of obtaining permits, approvals or clearances as may be required from federal, state or local authorities, the public utilities and private property owners.

i. An as-built plan of the drain involvement must be submitted.

j. The Water Resources Commissioner shall be notified in writing within ten days of the completion of a project so that a final inspection of the permitted work can be performed.

k. All permit requirements must be completed prior to the Water Resources Commissioner refunding any remaining inspection deposit money.

l. A permit shall expire when work has not commenced within one year of the date of issuance. The Water Resources Commissioner may extend the permit for a period of time upon the request of the Owner/Developer in writing.

m. The Water Resources Commissioner may revoke a permit if there is a violation of the conditions of the permit or if there is a misrepresentation or failure to disclose relevant facts in the application.

n. A drain permit is separate from a Soil Erosion Control Permit.

Drainage Districts and Easements

County Drain Drainage District limits must be followed when designing the site. Drainage Districts do not necessarily conform to existing topography. If drainage originating outside of a certain district is discharged within the district, a revision to the drainage district boundaries will be required. Contact the Water Resources Commissioner's office regarding this process.

Drains constructed prior to 1956 may not have a recorded easement. However, the easement exists in the permanent records at the Water Resources Commissioner's office. At that time easements for drainage purposes were not required to be recorded with the County Clerk; it was legally sufficient to have them on file at the drain office. Therefore, it may be necessary to record a new County Drain easement, depending upon the work that is proposed, and the County Drain involved. If a new easement is required, contact the Water Resources Commissioner's Office regarding this process.

Part H: Operations and Maintenance

Long-term Operations and Maintenance (O&M) Plans are required for County and Non-County Stormwater Systems directly connected to a County Stormwater System as summarized below. To facilitate routine inspections, all O&M requirements and documents listed below shall be incorporated into the plan set on dedicated O&M-specific plan sheets. When O&M responsibilities or requirements are modified or updated, the respective O&M Plan sheet(s) shall be updated accordingly.

County and Non-County Stormwater Systems

The following MS4 Permit O&M requirements apply to all regulated County Stormwater Systems owned, operated, and maintained by WRC's office, the Oakland County Parks and Recreation Commission and the County of Oakland, hereafter referred to as County Departments and all regulated Non-County Stormwater Systems owned, operated, and maintained by others, which directly connect to a County Stormwater System:

A WRC approved O & M Plan Sheet, fully executed Stormwater Management O&M Agreement and recorded Memorandum of Stormwater Management O & M Agreement, are required prior to issuance of the Drain Permit.

1. Prior to the start of any development activity meeting the site applicability criteria defined in Part C: Applicability, a Drain Permit shall be obtained from WRC's Permitting Department. Coordination with WRC's Permitting Department is recommended at the conceptual stage of development projects to ensure that permit requirements are clearly identified early in the planning process.

2. To ensure consistent perpetual O&M of the site's stormwater system and to enhance water quality protection, prior to Drain Permit issuance, WRC's Permitting Department shall review and approve the site-specific Stormwater Management O&M Agreement between the community and property owner. A fully executed Stormwater Management O&M Agreement is required prior to issuance of the Drain Permit. This agreement shall consist of the following requirements which will be incorporated into the O&M Plan sheet(s):

    a. Legal Description: A legal description and reduced copy map to identify the land parcel(s) affected by this Agreement. This map shall be prepared for each site and must include a reference to a Subdivision Plat, parcel survey, or Condominium Master Deed, and a map to illustrate the affected parcel(s).

    b. Stormwater System Description and Map: A description of the stormwater system and its individual components and a location map of the entire stormwater system. This map must be prepared for each site and the scale of the map shall show necessary detail.

    c. Stormwater O&M Plan Sheet(s): The site-specific Stormwater O&M Plan shall include the following requirements:

        - Property information and property owner.
        - Brief description of the stormwater system, drainage area, and its individual components.

- Description of maintenance responsibility and manner of ensuring maintenance responsibility, such as employee and contractor O&M training requirements, certifications, and responsibilities.
- O&M Matrix (see table below)
    - Specific short-term, intermediate, and long-term maintenance tasks.
    - Inspection and maintenance tasks, frequencies, and responsibilities.
- BMP detail sheets and/or manufacturer specifications
- Approved construction drawings including stormwater calculations, details, elevations, a location map, and engineer's certification of construction.
- Land use summary table (see Part I of this section for table of submittal requirements).
- The O&M plan must be approved and signed by a certified person. The following certifications are approved by WRC: Professional Engineer (PE), National Green Infrastructure Certification Program (NGICP) by WEF, Construction Storm Water Operator (CSWO) certification by EGLE, or Certified Stormwater Manager (CSM) by American Public Works Association (APWA).

Example Operations and Maintenance Matrix

Maintenance Activities	Frequency	Stormwater Management Practices								
		Forebay	Inlet Structure	Bioretention Practices (bioswales, rain gardens)	Pavement Areas	Permeable Pavement	Subsurface Detention	Surface Detention	Catch Basins	Outlet Structure
Inspect for Trash, litter and/or debris accumulation	12 times per year									
Inspect For Floatable, Dead Vegetation, and Debris	12 times per year									
Overgrown vegetation that interferes with access, line of sight or safety	2-12 times a year									
Inspect all components during wet weather and compare to as-builts	2 times per year									
Inspect for sediment accumulation	2 times per year									
Vacuum/street sweeping	2 times per year									
Erosion stabilization/control	1 time per year									
Remove and replace dead vegetation	1 time per year									
Remove floatables, dead vegetation and debris	1 time per year									
Sweeping of paved and pervious pavement surfaces	As Needed									
Replacement of mulch layer and top 6 inches of bioretention soil	1 time every 2-3 years									
Fertilization for first year of vegetation	1 time initially									
Remove accumulated solids by vactoring	2-4 times per year or as recommended by vendor									

Repair and Replacement	Frequency									
Replace fill material for permeable pavement	As Needed									
Structural repairs	As Needed									
Structural replacement	As Needed									
Wildlife management	As Needed									
Replace stone filter material around outlet structure	Every 3 to 5 years									

Note(s):

Mechanical separators follow the manufacturer's guidelines for operation and maintenance.

d. Annual Stormwater System O&M Summary: Property owners and Individual County Departments are responsible for completing all O&M tasks and maintaining O&M records for their stormwater systems. Property Owners and County Departments shall submit an Annual Stormwater System O&M Summary to WRC's Permitting Department for tracking only. The community is responsible for enforcement of the O&M requirements as outlined in the Stormwater Management O&M Agreement and their MS4 permit. The summary shall include the following:

    - Property information and property owner.
    - Description of the stormwater system, drainage area and its individual components.
    - Description of maintenance responsibility.
    - O&M matrix filled out for each stormwater management practice with inspection date, inspector, field notes, and signed certification of qualified inspector.
    - Maintenance or repairs needed for each stormwater management practice.
    - Maintenance or repairs completed to date for each stormwater management practice.

e. Memorandum of Stormwater Management Operations and Maintenance Agreement: This O&M Memorandum acknowledges a perpetual requirement of stormwater system operations and maintenance, which must be recorded with the Register of Deeds to put any future property owners, or interest holders, on notice of the Stormwater System and the Stormwater O&M Plan. This O&M Memorandum references the required Stormwater Management O&M Agreement, which resides with the local community to ensure consistency and periodic updates as necessary. A copy of the recorded document shall be submitted to WRC prior to closure of the Drain Permit.

Appendix G - Stormwater Management O&M Agreement is an approved **"**example" agreement, however, WRC's office recognizes that community-specific O&M agreements, ordinances and programs may also be proposed and submitted to OCWRC for approval. When developing alternative O&M programs for consideration, the community should reference EGLE's Post-Construction Stormwater Runoff Controls Program Compliance Assistance Document (available on EGLE's website) and their MS4 permit.

Part I: Stormwater Tracking & Mapping

Collecting data on site runoff characteristics is critical for WRC and the local review jurisdiction (if applicable) to meet ongoing EGLE MS4 permit requirements. This will be accomplished with a ***Land Use Summary Table***, which must be included on the O&M Plan Sheet of each submitted site plan (see table below). Additionally, GIS-based site data (in the form of a shapefile) will be required as a condition of site plan approval. GIS data will be limited to key stormwater components that will require future inspection and maintenance.

Land Use Summary

must be included on the O&M Plan Sheet for all site plans

	Characteristic	Existing Conditions	Proposed Conditions
Land Use Data	**Total Development Area (ac)**		
	Impervious Area (ac)		
	Total Pervious Area (ac)		
	Pervious Area Breakdown by Cover Type		
	Meadow/fallow/natural areas (non-cultivated)	x.xx acres	x.xx acres
	Predominant NRCS Soil Type (A, B, C, or D)		
	Improved areas (turf grass, landscape, row crops)	x.xx acres	x.xx acres
	Predominant NRCS Soil Type (A, B, C, or D)		
Pervious Area			
	Wooded Areas	x.xx acres	x.xx acres
	Predominant NRCS Soil Type (A, B, C, or D)		
	CPVC Volume ***Calculated*** (cubic feet)		
	CPVC Volume ***Provided*** (cubic feet)		
	CPRC Volume Provided (cubic feet)		

The Professional Engineer who signs and seals this site plan certifies that the values in this table reflect the OCWRC stormwater calculations required for this development and that geotechnical investigations were performed that provide conclusive documentation that demonstrates whether infiltration (i.e., CPVC Volume Control) is practicable.

Notes:

- *The Professional Engineer Certification Statement (see above) must be included with the Land Use Summary Table.*
- *Areas to be shown to the nearest 0.01 acre*
- *'Predominant' soil type shall the soil type with the largest percentage coverage over the designated land use (e.g., 70% Soil Type B and 30% Soil Type C shall be listed in the table as "Soil Type B")*
- *USDA soil types cannot be used to determine site suitability for infiltration and meeting the CPVC volume standard; direct infiltration testing will be required to determine site suitability for infiltration*
- *If CPVC requirement is waived, enter ZERO for the 'CPVC Volume Provided'*
- *When more than one soil type exists in one area, assign the predominant soil type for that area*
- *Use NRCS/USDA Online Soil Survey Map to determine soil type (A, B, C, or D):*

Submitting GIS data is a new, but important, requirement; it allows for the development of a database for WRC and municipalities to track the location of stormwater BMPs for future inspection and enforcement activities

https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm

In addition to the Land Use Summary table, the applicant must include the following stormwater system information in the submittal:

A final component of the site plan review process is the submittal of a GIS shapefile containing, at a minimum, the layers listed below, which consist of points and polygons that reflect the key components of the stormwater system. This information will be provided only after the technical review is completed. The GIS shapefile must reflect the final approved design and include the following layers (use the layer naming conventions listed below for ease of storing and tracking the GIS data):

1. Development Site – Area (ac), GIS area **polygon** (DSA-1, DSA-X)
    a. This area should reflect the entire area for which the stormwater system is designed
2. Site Discharge Point(s), GIS **points** (D-1, D-2, etc.)
    a. These points should reflect the location of each site discharge point; this is typically the point of connection to a County Drain, city storm sewer, or other drainage feature downstream of the detention basin discharge structure
3. Dry Detention Basins, GIS area (ac) **polygons** (DBASIN-1, etc.)

   a. The polygon should reflect the detention basin footprint up to and including the berm and any associated maintenance buffer

4. Wet Detention Basins, GIS area (ac) **polygons** (WBASIN-1, etc.)
   a. The polygon should reflect the detention basin footprint up to and including the berm and any associated maintenance buffer
5. Retention Basins (no outlet), GIS area (ac) **polygons** (RBASIN-1, etc.)
   a. The polygon should reflect the detention basin footprint up to and including the berm and any associated maintenance buffer
6. Sediment Forebays, GIS area (ac) **polygons** (Forebay-1, etc.)
   a. The polygon should reflect the detention basin footprint up to and including the berm and any associated maintenance buffer
7. Mechanical Separators, GIS **points** (MS-1, etc.)
   a. The points can be placed at a maintenance access point for each structure. If multiple mechanical separator units are proposed, create a point for each unit.
8. Bioretention/Bioswales– GIS area (ac), GIS **polygons** (BR-1, etc.)
   a. The polygon should reflect the bioretention footprint including any maintenance or safety buffers
9. Porous Pavement – GIS area (ac), GIS **polygons** (PP-1, etc.)
10. Cisterns/Rain Barrels, GIS **points** (RB-1, etc.)

Part F: Chapter 18 Drains

Chapter 18 Drains are new developments within Oakland County where the local municipality has passed an ordinance that requires all residential and certain commercial drainage systems to be established as County Drains in accordance with the provisions of Section 433, Chapter 18 of the Public Acts of 1956, as amended, the Michigan Drain Code. At present, Oakland and West Bloomfield Townships each have such an ordinance. Please refer to Section IV, “Establishing a Chapter 18 Drain” for additional information.

Section III General Design Criteria

Part A: Determination of Surface Runoff

Rational Method

The Rational Method assumes uniform rainfall intensity and is best suited for small or individual sites and can be used for sizing swales, open channels, enclosed drains, BMP volumes, manufactured stormwater treatment systems and culverts. For site design purposes, the Modified Rational Method will be used, which takes into consideration both land use and soil types. The Modified Rational Method will be used to determine flows for the 1-year, 10-year and 100-year storm events. The 1-year storm will be used to size manufactured stormwater treatment systems, flows into individual BMP's, and the Water Quality Volume (V_{WQ}). The Modified Rational Method is defined as follows:

Eq. III-1	$Q = C \times I \times A$
Q =	Peak Runoff (ft^3/s)
C =	Composite Runoff Coefficient for the Drainage Area
I =	Average Rainfall Intensity (in/hr).
A =	Drainage area (Acre)

Coefficient of Runoff

A representative coefficient of runoff, (C), will be used based upon the imperviousness of the contributing acreage. The range of this coefficient may vary from 0.15 to 1.00. The runoff coefficient calculation must be included with on the drainage breakup sheet with the submittal. Certain calculations require a composite runoff coefficient value. A composite runoff coefficient is calculated as follows:

C Values		
Green Space	HSG A	0.15
	HSG B	0.20
	HSG C	0.25
	HSG D	0.30
Impervious Areas		0.95
Water		1.00

*HSG = Hydrological Soil Group

Eq. III-2	$C = \frac{\sum_{i=1}^{n}(A_i \times C_i)}{\sum_{i=1}^{n} A_i}$
C =	Composite Runoff Coefficient for the Drainage Area
n =	Total number of sub-areas
C_i =	Runoff coefficient for each sub-area
A_i =	Drainage area for each sub-area (Acre)

Modified Rational Method

The Modified Rational Method will be used to calculate many of the required volumes. The value 3630 is a constant to convert the (inch)(acre) to ft^3 [1-inch = 1/12 ft; 1-acre = 43,560 ft^3]. The modified rational method is used to calculate the water quality volume (V_{WQ}), the Channel Protection Volume (V_{CP-R}), the Forebay Volume (V_F), the Extended Detention Volume (V_{ED}), and the 100-Year Storm Volume (V_{100R}).

Eq. III-3	$V = 3{,}630\ x\ P\ x\ C\ x\ A$
V =	Required volume in cubic feet
P =	Precipitation depth in inches
C =	Post-development composite runoff coefficient
A =	Contributing area in acres

Rainfall Depths

Rainfall depths used within the Modified Rational Method to calculate the required volumes are:

	Rainfall Depths (inch)	
90th percentile storm (1-inch) for Water Quality	P_{wq}=	1.00
1.30-inch for Channel Protection Volume Control	P_{cpvc}=	1.30
1.90-inch for Channel Protection Rate Control-Extended Detention	P_{cprc}=	1.90
15 percent of the Water Quality Volume for the Forebay	P_{fb}=	0.15
10-year 24-hour storm for Conveyance	P_{10} =	3.41
100-year 24-hour storm for Flood Control	P_{100}=	5.40

Time of Concentration

The time of concentration (T_c) is the time required for water to travel from the hydraulically most remote point of the drainage sub-area to a design point. The T_c is used in the Rational Method to estimate peak flow for sizing storm sewer systems, or for applying unit hydrographs and NRCS curve number methods to generate and route runoff hydrographs for sizing storm sewer systems and stormwater controls.

When determining the time of concentration for a pipe network, an initial time of concentration of 20 minutes for the farthest upstream inlet will be used for residential developments and 15 minutes for commercial or industrial developments. For sites less than 5 acres, an initial time of concentration of 10 minutes will be used.

When determining the time of concentration for a pipe network, an initial time of concentration of 20 minutes for the farthest upstream inlet will be used for residential developments and 15 minutes for commercial or industrial developments. For sites less than 5 acres, an initial time of concentration of 10 minutes will be used. The time of concentration is calculated using travel time for the 10-year discharge through the system where Manning's equation is used to compute velocity.

Eq. III-4	$T_t = \frac{\mathrm{L}}{3{,}600v}$
Tt =	Travel time in hours
L =	Flow length in feet
v =	Average velocity in feet/second as determined by Manning's equation for pipe flow

Eq. III-5	$v = \mathrm{K} \times \mathrm{S}^{1/2}$
v =	Average velocity in feet/second
S =	Slope of flow path in percent
K =	Coefficient *K* = 0.48 for Sheet Flow *K* = 1.20 for Swales or Shallow Drainage Course *K* = 2.10 for Ditches and Watercourses

Eq. III-6	$T_c = \frac{\mathrm{L}}{60V}$

T_C =	Time of concentration in minutes
L =	Flow length in feet
V =	Flow velocity in feet/second

For overland flow, the velocity is calculated for each of the flow characteristic types present along the longest flow path across the drainage area.

Rainfall Intensity

The rainfall intensity used for stormwater design is based on NOAA Atlas 14 Precipitation-Frequency Atlas of the United States, Volume 8 Version 2: Midwestern States, including Michigan, based on the average of the Pontiac WWTP, Troy-Rockwell, Eastpointe, Washington, Howell WWTP, Detroit Metro AP, and Wayne-Canton stations. This regional rainfall data average was then converted into an IDF curve equation used for all storm return periods for ease of use.

Eq. III-7	$I = \frac{30.20p^{0.22}}{(T_c + 9.17)^{0.81}}$
I =	Average rainfall intensity in inches/hour
p =	Design storm return period in years
T_C =	Time of concentration in minutes

Regional* 24-Hour Average Rainfall Amounts

Storm Event	Rainfall Amount (inch)
1 Year	2.07
2 Year	2.38
5 Year	2.87
10 Year	3.32
100 Year	5.23
* Region includes Livingston, Macomb, Oakland and Wayne counties	

Part B: Stormwater Conveyance

Stormwater conveyance systems may consist of open ditch drains, swales, closed conduits or a combination of methods to convey stormwater. Design and construction of stormwater conveyance will follow WRC's specifications, as a minimum. Other more stringent standards such as: Michigan Department of Transportation, Road Commission for Oakland County, or local community, shall also be followed.

For work involving County Drains, please refer to WRC construction specifications, available from WRC's website, for approved construction materials.

Drainage Structures

The flows to specific catch basin or inlet covers shall conform to the following:

1. Combination curb and gutter inlet (MDOT Cover K, or equivalent): A maximum of 3.1 ft^3/sec at 0% grade (sump condition), and then decreasing as grade increases.
2. Gutter inlet (MDOT Cover D, or equivalent): A maximum of 3.2 ft^3/sec as 0% grade (sump condition), and then decreasing as grade increases.
3. Rear yard or ditch inlet (MDOT Beehive Cover E, or equivalent): In general, a maximum of 2.5 ft^3/sec at 0% grade (sump condition), and then decreasing as grade increases. However, a smaller or larger maximum inflow may be allowed as is warranted by surrounding finished grading.

Drainage inlets or manholes shall be located as follows:

1. To assure complete positive drainage of all areas of the site.
2. At all low points of streets and rear yards. Runoff shall not flow across a street Intersection.
3. Maximum of 600 feet of drainage from any developed point on the site to a structure or BMP.
4. Manholes shall not be spaced more than 400 feet apart for pipes less than 48" in diameter. Longer pipe runs may be allowed for larger sized pipe, but in all cases maintenance access must be determined to be adequate.
5. Any change in pipe direction requires a manhole or catch basin.
6. All materials will be of such quality as to guarantee a maintenance-free expectancy of at least 50 years and will meet all applicable A.S.T.M standards.

Outlet velocities greater than 5 ft/sec will require energy dissipation measures.

Stormwater Outlets

1. The velocity at a pipe outfall should be no greater than 10 ft/sec to prevent scouring. Outlet velocities greater than 5 ft/sec will require energy dissipation measures.

2. Riprap shall be installed at all outlets according to the Oakland County Water Resources Commissioner's Storm Drain Notes and Details Sheet.
   a. Riprap may consist of minimum 8" diameter to 15" diameter fragmented limestone or other suitable rock set on a stone bedding underlain with geotextile fabric. Larger diameter outlets may require larger riprap as velocity and flow conditions dictate.
   b. Cobblestone, broken concrete, or grouted riprap are not acceptable.
3. A bar screen is required for all pipe outlets and inlets 18" diameter and larger.
4. Outlets to open channels shall be installed at the bottom of the open channel with headwalls or flared end sections.

Enclosed Storm Drains

An enclosed storm drain system must be designed to accommodate the storm water runoff from a 10-year storm event from the site and any offsite contributing runoff. The Manning Equation (Eq. 8) will be used to check the pipe size.

Eq. III-8	$Q_{10} = \frac{1.486}{n} \; x \; A_{pipe} \; x \; R^{2/3} \; x \; s^{1/2}$
Q_{10} =	10-year flow rate cubic feet/second
n =	Manning coefficient of roughness (See Table Below)
A_{pipe} =	Cross-sectional area of pipe
R =	Hydraulic radius of pipe (A_{pipe}/P) in feet
P =	Wetted perimeter in feet
s =	Pipe slope (ft/ft)

n value based on pipe material	
n value	Pipe Material
0.013	smooth concrete pipe
0.013	approved flexible pipe (plastic)
0.025	unlined corrugated metal pipe

*Refer to WRC specification "Materials- Storm Drain" for approved pipe materials for County Drains

1. The hydraulic grade line is calculated for the entire system with an assumed downstream elevation of 0.80 x diameter of the outlet pipe or the permanent pool elevation, whichever is greater.
2. The enclosed storm drain should be designed to flow full, i.e. with a hydraulic grade line at or near the top of pipe. The pipe will be allowed to surcharge in certain circumstances, but the peak hydraulic grade line must be a minimum of one (1) foot below grade.

3. The minimum pipe size for storm drains accepting surface runoff is 12" diameter.
   a. Rear yard pipes or sump pump collector pipes may be smaller, but must be used in conjunction with a drainage swale that directs runoff to a minimum 12" diameter pipe structure.
4. Pipe joints shall have premium rubber gaskets designed to prevent excessive infiltration.
5. Storm drains shall be designed flowing full to have a minimum velocity of 2.5 ft/sec and a maximum velocity of 10 ft/sec.
6. The minimum depth of pipe shall be 42 inches from grade to the springline (i.e. horizontal midpoint) of the pipe.
7. In areas where local ordinance requires sump pump leads to be connected into an enclosed system, these taps shall be made directly into storm sewer structures or into cleanouts.

Open Watercourses

1. Appropriate permits from agencies such as the Michigan Department of Environment, Great Lakes, and Energy (EGLE) must be obtained and submitted to the WRC's office.
2. The SCS method, Rational Method, or other prior approved method will be used to determine the amount of flow contributing to the watercourse. All watercourses must be sized to accommodate the runoff from a 10-year storm event. WRC's office will use the Manning Equation (EQ. 8). to check the capacity of the watercourse. The appropriate values for "*n*" are as follows:

n Value Based on Open Channel Conditions	
n value	Channel Condition
0.025-0.030	Maintained grass channel, rear yard swales
0.030-0.035	Natural channels, some grass and weeds, little or no brush
0.035-0.050	Dense growth of weeds, depth of flow greater than weed height
0.035-0.050	Some weeds, light brush on banks

3. Open channel flow velocities shall be neither siltative nor erosive. In general, the minimum acceptable non-siltative velocity will be 2.5 ft/sec.
4. Erosion protection shall be placed at bends, drain inlets and outlets, and other locations as required in all open ditches.
5. Side slopes of channels shall be no steeper than 1 foot vertical to 3 feet horizontal, unless fencing is provided. Ditches with steep grades shall be protected by sod, vegetation or other means to prevent scour.
6. All bridges shall be designed to provide a 2-foot minimum 100-year flood stage freeboard to the underside of the bridge. The bridge footings shall be deep enough to be below the frost line and to

allow a 5-foot channel deepening. Bridge footings and columns may not be located within the open channel.

7. Areas within open drain rights-of-way, which have been cleaned, re-shaped or in any manner disturbed shall be seeded and mulched, sodded or re-vegetated with other plant materials.

Determination of Culvert Size

All culvert design calculations must be submitted to this office for review. Culverts serving an upstream watershed equal to or greater than two square miles will also require an EGLE permit (Part 31 of Water Resources Protection Act, Public Act 451 of 1994, as amended). Calculations must be sealed by a Professional Engineer and must include:

1. Delineation on a topographic map of the area contributing to the culvert.
2. Hydrologic calculations to determine the flow.
3. Hydraulic calculations used to determine the size of the culvert.
4. Calculations for depth of cover and expected loads.
5. When an existing culvert is proposed to be modified, backwater calculations and/or downstream calculations may also be required for review.
6. This office will use the Rational Method, SCS Method, or other prior approved method to determine the flow contributing to the culvert. Culverts are sized to pass a minimum 10-year storm event or the governing design storm of the watercourse, whichever is greater.
7. The velocity within the culvert shall be neither siltative nor erosive.
8. The Manning Equation or inlet headwater control or outlet tailwater control nomographs will be used to check the culvert design.

Part C: Channel Protection Volume Control

Both onsite water quantity and quality must be managed to control flooding, reduce downstream erosion and protect water quality. Channel Protection Volume Control shall be implemented to the Maximum Extent Practicable (MEP), and in general, should follow the guidelines recommended by SEMCOG Low Impact Development Manual for Michigan: A Reference Guide for Implementers and Reviewers and The City of Detroit: Stormwater Management Design Manual. Several non-structural and structural Best Management Practices (BMPs) are referenced within this Section.

Non-Structural BMPs

The use of Non-Structural BMPs is an important part of a project's stormwater management system. The following Non-Structural BMPs are self-crediting; use of these BMPs automatically provides a reduction in impervious area and/or stormwater runoff resulting in a lessor runoff coefficient, larger time of concentration, and lower peak flows. A corresponding reduction in the stormwater management requirements set forth by these rules occurs. Additionally, the use of these BMPs may be affected by other regulations/guidance (Master Plans, zoning, subdivision, etc.). These BMPs are strongly encouraged:

- Protect Natural/Special Value Features
- Protect/Conserve/Enhance Riparian Areas
- Protect/Utilize Natural Flow Pathways
- Preserve Open Space (e.g. clustering)
- Reduce Street Width/Area
- Reduce Parking Width/Area
- Minimize Disturbed Area (Cluster Developments)
- Protection of Existing Trees (part of minimizing disturbance)
- Re-Vegetate and Re-Forest Disturbed Areas
- Rooftop Runoff (downspout) Disconnection
- Disconnection of Impervious Areas (Non-Roof)

Structural BMP General Requirements

All runoff generated by a proposed development should be conveyed into a stormwater BMP facility for infiltration, evapotranspiration, and/or water quality treatment, to the MEP.

The following criteria will apply to the design of all stormwater BMPs:

1. Preform initial NRCS soil classification (from soil survey) and infiltration testing to determine the feasibility of infiltration practices and eliminate unsuitable areas.
2. In multi-ownership developments, locate BMPs facilities on common-owned property within an easement. BMPs facilities shall not be located on private lots, condominium units, or located within a County Drain, sewer, or water easements.

3. Infiltration/reuse BMPs are engineered to dewater surface water in 24-hours and completely within 72-hours from the end of a storm event. Dewatering is defined as having no excess stormwater from an event present in the BMP including both surface ponding and subsurface storage.

Infiltration BMPs should completely dewater in 72 hours including 24 hours for surface ponding and 48 hours for subsurface storage.

4. BMPs incorporating pumps are discouraged. In rare cases where pumping is justified, additional design provisions are required, including but not limited to backup power and gravity-based overflow routing.
5. A recommended horizontal distance of 4 ft and a minimum horizontal distance of 2 feet between the seasonal high-water table and bottom of infiltration facilities is required.
6. In areas where the infiltration rate varies across the development, the developer shall maximize the use of infiltration BMPs within areas of having the most favorable ($K_{sat} \geq 0.50$ inches/hour) soils.
7. Pre-treatment of all stormwater is required before entering a BMP facility to prevent premature failure of the system. Pre-treatment can be accomplished by the following:
    a. Vegetative Filter Strips
    b. Vegetative Swales
    c. System inlets with sumps
    d. Centralized infiltration BMPs (i.e. infiltration basins) pre-treatment consists of a forebay or manufactured treatment system
    e. Other methods of pre-treatment will be considered by this office on a case-by-case basis
8. The use of decentralized stormwater BMPs are preferred unless the developer can demonstrate that decentralized stormwater infiltration and/or Total Suspended Solids (TSS) removal is not practical.
9. A minimum of one infiltration test per proposed infiltration BMP location is required.
10. For large, centralized infiltration BMPs, exceeding 10,890 square feet (1/4 acre), multiple infiltration tests are required at a minimum of four tests per acre, rounded up. For example, a BMP with an area of 0.4 acre would require 2 infiltration tests.
11. The use of heavy equipment within infiltration areas should be avoided during construction to prevent compaction of soils. Locations of infiltration BMPs should be identified and sectioned off during construction to limit access.
12. Prior to installation of an infiltration BMP, the in-situ soils should be prepared by adding additional soil amendments (such as sand or compost) and/or through mechanical loosening of soil. Examples of mechanical loosening include rototilling or scarifying the soil with a long-toothed backhoe bucket. These techniques will improve infiltration underneath the infiltration BMP.
13. Generally, infiltration BMPs should be avoided in the following areas:
    a. In areas with compacted fill soils.
    b. In areas with high pollutant loads, including sites that receive constant sediment, trash, other debris, and places where chemicals are stored or handled.

c. In areas where it will be difficult to access the BMP, on a regular basis, for maintenance or cleaning.

d. In areas where materials, especially landscaping supplies, are stockpiled.

e. In areas there are routinely wet.

The required Channel Protection Volume Control (V_{CP-R}) is based on the 1.30-inch rain depth over the site using Eq. 9. The simplified form is:

Eq. III-9	$V_{CP-R} = 4{,}719\ x\ C\ x\ A$
V_{CP-R} =	Required CPVC volume in cubic feet
C =	Post-development composite runoff coefficient
A =	Contributing area in acres

Technical Infeasibility

For projects where technical infeasibility exists, the design engineer must document and quantify that stormwater strategies, such as infiltration, evapotranspiration, water harvesting and water reuse, have been used to the maximum extent possible and that implementation of these methods are infeasible due to site constraints and not economic considerations. The burden of proof of Technical Infeasibility lies with the design engineer. Documentation of technical infeasibility should include, but may not be limited to, engineering calculations, geological reports, hydrological analyses and site maps. A determination that the performance design goals cannot be achieved on the site should include analyses that rule out the use of an adequate combination of infiltration, evapotranspiration, and water use measures. Adequate documentation must be submitted to WRC for review and final determination. Examples of site conditions that may prevent the application of stormwater BMP's to the METF includes*:

The use of infiltration BMPs to the MEP is based on site constraints and not economic considerations.

1) The conditions on the site preclude the use of infiltration practices due to the presence of shallow bedrock, contaminated soils, high ground water or other factors, such as underground facilities, utilities or location of the development within a wellhead protection area.

2) The design of the site precludes the use of soil amendments, plantings of vegetation or other designs that can be used to infiltrate and evapotranspirate stormwater runoff.

3) Water harvesting and reuse are not practical or possible due to the volume of water used for irrigation, toilet flushing, industrial make-up water, wash-waters, etc. is insignificant to warrant the application of water harvesting and use systems.

4) Modifications to an existing building to manage stormwater are not feasible due to structural or plumbing constraints or other factors.

5) Sites where the site area is too small to accommodate adequate infiltration practices for the impervious area to be served.

6) Soils that cannot be sufficiently modified to provide reasonable infiltration rates.

7) Situations where site use is inconsistent with the capture and use of stormwater or other physical conditions on site that preclude the use of plants for evapotranspiration or bioinfiltration.

8) Retention and/or use of stormwater onsite or discharge of stormwater onsite by infiltration having an adverse effect on the site, gradient of surface or subsurface water, receiving watershed, or water body ecological processes.

9) Federal, state of local requirements or permit conditions that prohibit water collection or make it technically infeasible to apply LID practices.

* Adapted from EPA Section 438 Technical Guidance December 2009.

Infiltration Testing

The infiltration testing must provide information related to the conditions at the bottom of the infiltration BMP. General infiltration test guidelines are as follows:

1. Any test used to determine infiltration rates for BMPs, shall be performed at the location and extend to the bottom elevation of the proposed infiltration BMP.
2. Infiltration tests must not be conducted in the rain, within 24 hours of significant rainfall events (>0.5 inches), when the ground is frozen, or when the temperature is below freezing.
3. Infiltration tests should be conducted in the field.
4. All infiltration rates used for the design of BMPs must be certified by a Professional Engineer licensed in the State of Michigan and submitted to the WRC's office.
5. Following all testing, the surface must be restored.
6. Additional infiltration tests may be necessary due to subsurface variability, water table depth or topography. The WRC's office will determine if more tests will be required.

Infiltration tests may include, but not limited to, the following methods:

1. Test Pits used in conjunction with any of the infiltration tests listed below
    a. Double-ring Infiltrometer test – estimate for vertical movement of water through the bottom of the test area
        i. ASTM 2003 Volume 4.08, Soil and Rock (I): Designation D 3385-03, Standard Test Method for Infiltration Rate of Soils in Field Using a Double-Ring Infiltrometer
        ii. ASTM 2002 Volume 4.09, Soil and Rock (II): Designation D 5093-90, Standard Method of Field Measurement of Infiltration Rate Using a Double-Ring Infiltrometer with a Sealed-Inner Ring
    b. Percolation tests – estimate for vertical movement of water through the bottom and sides of the test area

c. Encased falling head permeability test – estimate for vertical movement of water through the bottom of the test area

d. Guelph permeameter

e. Constant head permeameter (Amoozemeter)

2. When using test pits, a minimum of 2 infiltration tests are required per test pit.

3. Soil Borings

a. The use of soil borings to determine infiltration rates is discouraged. If soil borings are used in lieu of test pits, a safety factor of 2 is applied to the final K_{sat} value. This is due to the limited sample and the inability to test in-situ soil characteristics when preforming a soil boring.

Note: Other tests selected by the design engineer that can accurately represent the in-situ infiltration rate may be used at the discretion of this office.

The following infiltration (K_{sat}) values shall be used to determine the appropriate design methods for infiltration BMPs:

K_{sat} Values	
Ksat ≥ 0.50 in/hr	No supplemental measures are required for Infiltration BMPs to provide the infiltration volume
0.50 in/hr≥ Ksat ≥ 0.24 in/hr	Install supplemental measures, which may include subsoil amendment, or an underdrain placed at the top of the storage bed layer to ensure dewatering in the event underlying soils fail to provide adequate drawdown or dewatering time. If underdrains are selected, design shall allow stormwater to percolate through the soils first, with the underdrain serving as a secondary outlet, by placing the underdrain in the upper level of the BMP, with pipe perforations located along the underdrain invert.
Ksat ≤ 0.24 in/hr	***Soils are not suitable for infiltration. Alternative volume reducing LID practices must be used to the MEP to reduce stormwater volume.***

BMP Volume Calculations

The most practical way to reduce stormwater runoff is to incorporate infiltration based structural BMPs. Infiltration based BMPs include bioretention basin/rain garden, vegetated bioswales, porous pavement, infiltration basins, subsurface infiltration beds, dry wells, and infiltration trenches. These BMPs share the common feature of storing stormwater on the surface or in a subsurface matrix and allowing the water infiltrate over a period of 24 to 48 hours depending on the BMP. For BMPs that incorporate vegetation, stormwater runoff is also reduced through evapotranspiration. Other structural BMPs, such as vegetated roofs and water harvesting / reuse systems can also provide volume reduction and be used to meet the Channel Protection Volume Requirement (V_{CP-R}) The basic calculations for the V_{CP-R} achieved for BMPs are as follows:

Bioretention Basin/Rain Garden

The Infiltration Area is the average area of a Bioretention Basin or Rain Garden is defined as:

Eq. III-10	$A_t = \frac{A_1 + A_2}{2}$
A_t =	Average infiltration area in square feet
A_1 =	Area of bioretention at ponding depth in square feet
A_2 =	Bottom bioretention surface area in square feet

Volume Calculations

The storage volume of a Bioretention Basin or Rain Garden is defined as the sum of surface storage, subsurface void space within the engineered soil media and/or stone layer, and the infiltration volume occurring during a six-hour period. The infiltration volume is calculated using the in-situ infiltration rate of the underlying soils.

Eq. III-11	$V_{ss} = A_t \; x \; H$
V_{ss} =	Surface storage volume in cubic feet
A_t =	Average infiltration area in square feet
H =	Maximum BMP ponding depth in feet

Eq. III-12	$V_{subsurface} = (h_{soil} \; x \; e_{soil} + h_{stone} \; x \; e_{stone}) \; x \; SA$
$V_{subsurface}$ =	Storage volume in the soil and/or stone layer in cubic feet
h_{soil} =	Engineered soil depth in feet
h_{stone} =	Stone depth in feet (if stone is present)
SA =	Bottom surface area in square feet
e_{soil} =	Void ratio of engineered soil (unitless)
e_{stone} =	Void ratio of stone (unitless) (if stone is present)

Eq. III-13	$V_i = \frac{K_{sat} \; x \; S_f \; x \; 6 \; x \; A_t}{12in}$
V_i =	Infiltration volume in cubic feet during a six hour period
K_{sat} =	Infiltration rate in inches/hour
S_f =	K_{sat} safety factor
A_t =	Average infiltration area in square feet

Eq. III-14	$V_{tbr} = V_{ss} + V_{subsurface} + V_i$
V_{tbr} =	Total bioretention volume in cubic feet
V_{ss} =	Surface storage volume in cubic feet
$V_{subsurface}$ =	Storage volume in the soil and/or stone layer in cubic feet
V_i =	Infiltration volume in cubic feet

Bioswale

Bioswales are linear bioretention basins that convey stormwater in addition to providing infiltration. If check dams are utilized within the bioswale, the volume behind each check dam can be estimated from the following:

The infiltration volume for Bioswales can be calculated using the Bioretention/Rain Garden equations. (EQ 10 through 14)

Eq. III-15	$V_t = 0.5\ x\ L_{swale}\ x\ H_{swale}\ x\ \frac{W_t + W_b}{2}$
V_t =	Storage volume in cubic feet
L_{swale} =	Length of swale in feet
H_{swale} =	Depth of swale check dam in feet
W_t =	Top width of swale check dam in feet
W_b =	Bottom width of swale check dam in feet

Infiltration Basin/Trench

Infiltration area and volume calculations are the same as for Bioretention BMPs.

Porous Pavement

The infiltration area and volume calculations are the same as bioretention BMPs. However, the reservoir layer is the layer of open-graded stone beneath the pavement layer and there is no surface storage. Use Eq. 16 to calculate the volume in the stone using H as the thickness of the open-graded stone below the pavement. For the infiltration volume (V_i see above Eq. 15).

Eq. III-15	$V_t = 0.5\ x\ L_{swale}\ x\ H_{swale}\ x\ \frac{W_t + W_b}{2}$
V_t =	Storage volume in cubic feet
L_{swale} =	Length of swale in feet
H_{swale} =	Depth of swale check dam in feet
W_t =	Top width of swale check dam in feet
W_b =	Bottom width of swale check dam in feet

Eq. III-16	$V_{tpp} = V_{stone} + V_i$
V_{tpp} =	Total pervious pavement volume in cubic feet
V_{stone} =	Stone storage volume in cubic feet
V_i =	Infiltration volume in cubic feet

Vegetated Roofs

Vegetated roofs, also known as green roofs or living roofs, are very effective as reducing rooftop runoff from small to medium sized storm events. Vegetated roofs reduce volume by intercepting rainfall in a layer of growing media and/or in a retention layer. The water is then evapotranspirated back into the atmosphere. Volume reduction credit for a vegetated roofing system will be evaluated on a case-by-case basis since most vegetated roofing systems are proprietary.

Water Reuse

Water reuse consists of storage vessels, such as cisterns, which store a specified volume of stormwater runoff and release (reuse) the runoff volume for onsite irrigation or internal uses such as industrial water or sanitary systems. The total aggregate storage volume credit shall be equal to the total storage volume of all storage vessels identified in the site plan that also include a documented reuse plan. The reuse plan demonstrates how the stored water will be used in between rain events such that the storage vessels are ready to receive stormwater runoff from the next rainfall event.

The consideration of other volume reducing BMP's will be evaluated by OCWRC on a case-by-case basis.

Part D: Water Quality Control

All detention and retention basins shall have a sediment forebay, manufactured treatment system, or BMPs upstream to treat the water quality volume entering the flood control basin. Water quality devices must be installed to treat all incoming flow into the basin. If there is no stormwater detention requirement, water quality treatment is still required to reduce Total Suspended Solids (TSS) concentrations to a maximum of 80 mg/L, or a 80% TSS removal before discharging from a site.

Water quality treatment is automatically achieved if Channel Protection Volume Control requirements are met.

The Water Quality Volume can be calculated as follows

Eq. III-17	$V_{wq} = 3{,}630 \times C \times A$
V_{wq} =	Water Quality volume in cubic feet
C =	Composite runoff coefficient
A =	Contributing area in acres

The Water Quality Rate is used to design Manufactured Stormwater Treatment Systems and can be calculated using the following equation:

Eq. III-18	$Q_{wq} = C \times A \times \frac{30.20}{(Tc + 9.17)^{0.81}}$
Q_{wq} =	Water Quality rate in cubic feet per second
C =	Composite runoff coefficient
A =	Contributing area in acres
Tc =	Time of concentration in minutes

Manufactured Stormwater Treatment Systems

Manufactured stormwater treatment systems (MSTS) are used to remove sediment and other particulate matter from stormwater runoff. However, they are not to be used for soil erosion control during construction. The following are requirements for manufactured treatment systems:

1. MSTS must be installed upstream of the stormwater detention system. If the site is not required to provide stormwater detention, a manufactured treatment system must be installed upstream of the connection to the receiving system.
2. The MSTS shall be designed off-line to allow continuance of flow in the event the manufactured treatment system becomes obstructed.
3. Calculations for sizing mechanical treatment devices shall be based on the following:
   a. The 1-year peak flow rain event (2.07" rainfall) using the Modified Rational Method as shown in Eq. III-3.
   b. Site specific time of concentration (T_c) and associated rainfall intensity (I)
   c. The area shall include all post-developed, disturbed areas contributing to the MSTS.
   d. Tributary areas to volume reducing BMPs, located within the overall contributing drainage area to the manufactured treatment system, may be subtracted from the manufactured treatment system's contributing drainage area for design purposes.
4. The MSTS shall conform to the standards set forth and certified by the New Jersey Department of Environmental Protection (NJDEP) for manufactured treatment systems, as defined at http://www.njstormwater.org/treatment.html, including offline use, manhole diameter size, and custom or multiple units.
5. The NJDEP certified treatment flow rate (cfs) for a manufacturer and model shall be higher than the calculated peak discharge for a particular site and documentation of how the MSTS meets the WRC water quality control standards shall be submitted.
6. Please refer to WRC construction specifications for approved manufacturers of manufactured treatment systems installed on County Drains.

When using manufactured treatment systems, Extended Detention is still required for rate control.

Forebay Design

The purpose of the forebay is to capture and collect silt, trash and debris into one area, and prevent sediment buildup in the main flood control basin., The forebay shall be a separate basin, which can be formed within the flood control basin by constructing a separation with an earthen berm, concrete retaining wall or other divider.

The required forebay volume (V_F) is the based on the 0.15-inch rainfall using the Modified Rational Method (Eq. III-3). Please note that the design criteria below is for the permanent forebay and not for a sediment forebay used for soil erosion control during construction.

The volume of the forebay may be credited towards the total stormwater detention volume for the site.

Eq. III-19	$V_F = 545\ x\ C\ x\ A$
V_F =	Forebay volume in cubic feet
C =	Composite runoff coefficient
A =	Contributing area in acres

When calculating the volume of an irregularly shaped basin or forebay the WRC's office will use Eq. III-20 for calculating the volume of a frustum of a circular cone. The procedure consists of determining the volumes of successive layers of frustums, and then summing these volumes to obtain the total volume of the basin.

Eq. III-20	$V = \frac{H_1}{3}(A_1 + A_2 + (A_1\ x\ A_2)^{\frac{1}{2}}$
V =	Forebay volume in cubic feet
H_1 =	Difference in depth between two successive depth contours feet
A_1 =	Area of the basin within the outer depth contour being considered in square feet
A_2 =	Area of the basin within the inner depth contour being considered in square feet

1. The forebay shall be designed to dewater using the same number of orifices required for the extended detention volume.
2. A permanent standpipe with gravel filter is required for the forebay outlet control structure.
3. The forebay should have a sump at a minimum of 2 feet below the outlet to capture sediment and prevent resuspension of sediment. The bottom of the basin should slope toward the sump area to capture the sediment.
4. The forebay should also have a fixed sediment depth marker to measure the amount of sediment that has accumulated. The sediment should be removed when half of the sediment storage capacity has filled in.
5. The forebay is designed with the same general considerations given to Detention Basins. See Part G: Detention & Flood Control Facilities

Part E: Channel Protection Rate Control: Extended Detention

A portion of the flood control storage volume is designated the Extended Detention Volume (V_{ED}). The V_{ED} is intended to control approximately a 2-year rate (1.90" rainfall) to the MEP to protect channels from erosive release rates. Extended Detention also meets the Water Quality requirement. The V_{ED} is designed to release over a period of 48-hours to the MEP. The V_{ED} is calculated as follows:

Eq. III-21	$V_{ED} = 6{,}897\ x\ C\ x\ A$
V_{ED} =	Extended detention volume in cubic feet
C =	Composite runoff coefficient
A =	Contributing area in acres
Eq. III-22	$H_{ED} = \frac{V_{ED}}{4{,}666 \times \sqrt{h_{ED}}}$
H_{ED} =	Number of 1" holes needed to control the extended detention release rate
h_{ED} =	Total head on the orifices in feet

Note: This formula is used for 1" circular holes only.

Part F: Detention & Flood Control Facilities

On-site detention of stormwater runoff is required for sites as outlined in Section I. Cases where the outlet or community allows for the undetained stormwater discharge will be evaluated on a case-by-case basis. However, Water Quality and Channel Protection Volume and Extended Detention Rate Control requirements will still apply.

General Detention System Design Requirements

The required 100-year detention volume (V_{100D}) is calculated based on the following:

1. The peak 100-year inflow (Q_{100IN}) from a particular site based on:
   a. The 100-year rain event using the Modified Rational Method (Eq. III-3).
   b. Site specific time of concentration (T_c).
   c. The area shall include all post-developed, on site, areas contributing to the detention system.

Eq. III-23	$Q_{100IN} = C\ x\ I_{100}\ x\ A$
Q_{100IN} =	100-year post-development peak inflow rate in cubic feet per second
C =	Composite runoff coefficient
I_{100} =	100-year rainfall intensity
A =	Contributing area in acres

Eq. III-24	$I_{100} = \frac{83.3}{(T_c + 9.17)^{0.81}}$
I_{100} =	100-year rainfall intensity
T_C =	Site-specific time of concentration for the development in minutes

The peak allowable 100-year discharge (Q_{100P}) is the lesser of:

1. The restricted rate for the drain (ft^3/Acre)
2. The prorated share of the drain's capacity (ft^3/Acre)
3. The Variable Release Rate (Q_{VRR}) (ft^3/Acre)

Eq. III-25	$Q_{VRR} = 1.1055 - 0.206\ x \ln(A)$
Q_{VRR} =	Allowable release rate in cfs/acre (Max 1.0 ft^3/acre)
A =	Contributing area in acres

Note: The discharge rates are in ft^3/acre, for Q_{100P} multiply by A.

The modified TR-55 storage curve is used to calculate the storage curve factor (R).

Eq. III-26	$R = 0.206 - 0.15\ x \ln\left(\frac{Q_{100P}}{Q_{100IN}}\right)$
R =	Storage curve factor
Q_{100P} =	100-year post-development peak discharge flow rate in cfs
Q_{100IN} =	100-year post-development peak inflow rate in cfs

The total volume from the 100-year storm is based on Eq. 27:

Eq. III-27	$V_{100R} = 18{,}985\ x\ C\ x\ A$
V_{100R} =	Post-development 100-year runoff volume in cubic feet
C =	Composite runoff coefficient
A =	Contributing area in acres

Note: $\frac{5.23in}{12in} 1\ ft\ x\ 43{,}560\ \frac{sf}{acre} = 18{,}985\ (rounded)$

The required 100-year detention volume V_{100D} is:

Eq. III-28	$V_{100D} = V_{100R}\ x\ R - V_{cp-p}$
V_{100D} =	100-year detention volume in cubic feet
V_{100R} =	100-year runoff volume in cubic feet based on Eq. III-27
R =	Storage curve factor

Note: The Volume of Extended Detention (V_{ED}) and Forebay Volume (V_F) are counted toward the V_{100D} requirement.

General Detention Basin Requirements

1. Detention volume on a basin is defined as the volume of detention provided above the invert of the outflow pipe and calculated using Eq. III-28. Other calculation methods may be used subject to pre-approval, on a case-by-case basis.
2. Any volume provided below the invert of the outflow pipe is considered as a permanent pool of water and is not included as storage volume.
3. An irregular basin shape is preferred with flow entering the basin being evenly distributed to minimize stagnant zones. The distance between the inlet and the outlet should be maximized to obtain the greatest flow distance during periods of low flow.
4. Basin side slopes may not exceed 1 foot vertical to 6 feet horizontal for a wet basin or basins with a permanent water feature, and 1 foot vertical to 4 feet horizontal for a dry basin unless fencing is provided. Additional fencing will be required as needed, depending upon basin depth, depth of permanent pool, etc. Requirements regarding fencing will be evaluated on a case-by-case basis.
5. One foot of freeboard shall be provided above the 100-year stormwater elevation. A vertical distance of 0.50' shall be provided between the 100-year storage elevation and the emergency overflow spillway.
6. A primary overflow structure (standpipe or overflow manhole) shall be provided with its rim set at the 100-year storm elevation.
7. All basins must be permanently stabilized to prevent erosion.
8. Adequate, unrestricted maintenance access from a public or private right of-way to the detention system must be provided. The access must be on a slope of 6:1 or less, designed to withstand H25 loading, and will provide direct access to the detention or retention facility, forebay, control structure, and outlet.
9. Detention basins constructed by building up on existing grade must have compacted berms with a clay core keyed into native soils.
10. For dry basins, the use of swales or berms, on the bottom of the basin, is required to provide positive flow to the outlet.
11. In-line detention basins are strongly discouraged and are prohibited on watercourses having an upstream watershed greater than 2 square miles or on a County Drain. In-line basins are also prohibited if the waterway to be impounded traverses any area outside of the proposed development.
12. It is recommended that a permanent buffer strip of natural vegetation extending at least 15 feet in width beyond the freeboard elevation be maintained or restored around the perimeter of all stormwater storage facilities. No lawn care chemicals should be applied within the buffer area. This requirement should be cited in the Subdivision Restrictions, Maintenance Agreement and/or Master Deed documents.
13. Basin designs must include a landscaping plan that incorporates plant species native to the local region and indicates how aquatic and terrestrial areas will be vegetated, stabilized and maintained. It is

recommended that native wetland plants shall be used in the retention/detention facility design, either along the aquatic bench, fringe wetlands, safety shelf and side slopes, or within the shallow areas of the pools.

Detention System Outlet and Overflow Structure Design

All detention systems must have a method of dewatering to the proposed bottom of storage. The use of an outlet control structure with internal weir or orifices appropriately sized to restrict the discharge rate to Q_{100P} and Q_{ED} is required. When checking the outlet rate the standard orifice equation (Eq. III-29) will be used:

Eq. III-29	$Q_p = C_O \; x \; A_O \; x \; \sqrt{2 \; x \; g \; x \; h}$
Q_P =	Allowable outflow in cubic feet per second
C_O =	Orifice coefficient (0.62 if standard opening)
A_O =	Orifice area in square feet
g =	Gravity constant (32.2 ft/s^2)
h =	Total head on orifice in feet

For outlet control sizing, the minimum orifice size is 3" without clogging protection. If a 3" diameter orifice permits discharge in excess of the allowable outflow, then a different restricted outlet design will be required, such as a weir or standpipe with stone filter. The minimum orifice size for standpipe design is 1" diameter.

The following equations will be used to check weir design:

Eq. III-30	$Q_{weir} = 3.33 \; x \; L_{weir} \; x \; h_{weir}{}^{3/2}$
Q_{weir} =	Discharge over the weir in cubic feet per second
L_{weir} =	Length of weir crest in feet
H_{weir} =	Head above the weir crest in feet

Eq. III-31	$Q_{weir} = 2.5 \; x \; h_{weir}{}^{5/2}$
Q_{weir} =	Discharge over the weir in cubic feet per second
H_{weir} =	Head above the weir notch bottom in feet

Eq. III-32	$Q_{weir} = 3.33\ x\ L_{weir}\ x\ h_{weir}^{3/2}$
Q_{weir} =	Discharge over the weir in cubic feet per second
L_{weir} =	Length of weir crest in feet
H_{weir} =	Head above the weir crest in feet

Eq. III-33	$Q_{weir} = 3.367\ x\ L_{weir}\ x\ h_{weir}^{3/2}$
Q_{weir} =	Discharge over the weir in cubic feet per second
L_{weir} =	Length of weir crest in feet
H_{weir} =	Head above the weir crest in feet

Michael R. Lindeburg, P.E., Civil Engineering Reference Manual, Professional Publications, Inc., CA, 1999

1. The outlet pipe or drainage path must be designed to carry the flow from all on-site and off-site contributing drainage areas.
2. A cut-off collar or anti-seep diaphragm may be required to be installed around the outlet pipe within the bank of the basin, depending on the depth of storage in the basin.
3. All detention basins must have an overflow structure located at the design 100-year (V_{100D}) storage elevation. This structure will route the stormwater past the restrictor in emergency situations. The overflow must have the capacity to pass the 10-year on-site flow plus the off-site tributary flow. The overflow structure shall have a bar screen or trash hood.
4. All detention basins must also have an emergency overflow structure or spillway. The emergency overflow invert shall be set at the 100-year elevation plus 0.5 ft and be sized to convey the 100-year peak detention pond inflow rate plus the offsite tributary flow.
5. Calculations supporting the primary and secondary emergency overflow hydraulic capacities shall be submitted for review. An adequate flow path for detention system overflow (including easements, if necessary) shall be detailed in the site plan.
6. Use of a pumped outlet is discouraged. However, if no feasible gravity outlet is available, stormwater pump stations with emergency backup generators may be used.
7. For storm drain systems being established as Chapter 18 Drains, the restrictive orifice outlet must be grouted inside a minimum 12" diameter pipe located downstream of the Extended Detention standpipe. The restrictor must be sized for the on-site flow that is tributary to the basin. The basin overflow structure shall be sized to pass the on-site flow and the off-site tributary flow. Please see Section IV Chapter 18 Drains, for additional design requirements.

Underground Detention Facilities

1. Underground detention facilities may be allowed on sites where traditional stormwater management measures are not feasible. Each site will be evaluated on an individual basis.
2. Complete details, calculations and specifications must be submitted for the facility. The underground facility must comply with all standards imposed on traditional facilities; including, but not limited to, a restricted outlet, overflow structure, overflow route, and a perpetual maintenance plan.
3. Due to the difficulty of removing silt and sediment from the aggregate, the void space of the aggregate bedding and backfill around the underground detention facilities will not be considered as detention volume.
4. Underground detention facilities are prohibited in developments where the storm water detention facilities are under the jurisdiction of this office.

Utilizing Wetlands, Waterbodies and Natural Low Areas as an Ultimate Outlet

1. Prior to approval of any proposed plan to use existing wetlands or waterbodies for detention purposes, permits from the appropriate state and local agencies must be obtained. Proof of such permits must be submitted.
2. Calculations must be submitted that indicate the stage rise of the wetland or waterbody due to the developed runoff. Each site is entitled to their pro-rata share of the capacity of the wetlands.
3. A freeboard elevation must be established at one foot above the calculated stage rise.
4. The stage rise should be calculated from the ordinary high-water elevation.
5. There shall no direct discharge of stormwater to wetlands. The discharge must be routed through an upstream forebay or mechanical treatment device, followed by a level spreader or rip rap, on the wetland fringe, prior to discharging to the wetlands.
6. A natural buffer strip is required around the perimeter. A drainage easement that encompasses the entire area on site, including freeboard and buffer strip, will be required. In addition, off site easements may be necessary due to the increase in impoundment height.
7. The character of the wetlands must not be altered by the addition of the storm water. A control structure must be constructed at the outflow of the wetland area to release stormwater at a restricted rate as determined by these rules. The wetland must return to its normal water level within 48 hours.
8. Stormwater runoff directed to natural low areas will be considered the same as retention. The area must have the capacity to hold two consecutive 100-yr storm events and have a designated overflow route. Each site adjacent to the wetlands is entitled to their pro-rata share of the capacity of the depression for the land area tributary to it. A drainage easement that includes the entire area, including off-site properties, encompassing the freeboard elevation will be required.

Retention Basin Design

A “no-outlet” retention basin is only permissible subject to certain conditions that include, but are not limited to, the following:

1. There is no other available positive outlet for the stormwater runoff from the property. Every effort should be made to provide a means to de-water the basin, including a pump outlet and possible downstream improvements.
2. The Volume of the Retention Basin is calculated as follows:

Eq. III-34	$V_{RB} = (18{,}985\ x\ C\ x\ A\ x\ 2) - V_C$
V_{RB} =	Total retention basin volume in cubic feet
C =	Composite runoff coefficient
A =	Contributing area in acres
V_c =	Volume of 100% BMP Credit in cubic feet

3. The permeability of the soils shall follow all requirements set forth for large BMPs with the exception of the following:
   a. The Basin shall be able to dewater a 100-year storm (V_{100R}) within 72 hours based on the infiltration rates.
   b. When calculating the volume of storage, no credit will be given for infiltration volume within the basin. However, infiltration volume from upstream BMPs may be credited towards the total retention volume required.
4. An infiltration trench is not considered an acceptable substitution for permeable soils.
5. The general requirements for retention basins shall follow the requirements for detention basins.
6. An overflow route from the retention basin must be provided. Elevations of surrounding buildings, development or other features that would be impacted by a basin overflow must be indicated. The overflow route may not endanger any existing structures or features. Downstream drainage easements may be required for the overflow route.
7. The proprietor must submit a soil boring log taken within the basin bottom area to a depth of 25 feet below existing ground or 20 feet below proposed basin bottom elevation.
8. WRC reserves the right to require additional storage up to that required by two consecutive 100-year storm events based on the results of soils data or the overflow assessment.

Part G: Maintenance Requirements

An executed Stormwater Management Operations and Maintenance Agreement for the proposed stormwater system shall be submitted prior to this office granting final approval of the development. The WRC will not accept the responsibility for the maintenance of any stormwater system unless it is being constructed as part of a County Drain.

The maintenance plan must include the following:

1. The locations of all the stormwater system components, structures and BMPs
2. Specific maintenance requirements for the stormwater components including the required inspection cycle, personnel, training, inspection activities, and preventative maintenance required to ensure that the stormwater system functions properly.
3. The owner shall retain the services of a qualified individual, which may include a Licensed Professional Engineer, Certified Professional in Storm Water Quality (CPSWQ), NICET Certified Engineering Technologist in Stormwater and Wastewater System Inspection, or EGLE Certified Stormwater Operator (NPDES construction sites) to provide inspection and maintenance services.
4. A log of all inspections, maintenance activities and repairs are required. The log must provide, the date of activity, name of person performing activity and the description of activity performed.
5. Provisions for establishing and maintaining vegetation that is integral to the proper functioning of the stormwater system.
6. Identify the entity responsible for the maintenance and/or repair of the stormwater system, including modifying or reconstructing the system, if the system does not function as designed.
7. A schedule for implementing the activities necessary for proper functioning of the system.
8. A maintenance agreement must allow the local government the right to access, inspect, and maintain the stormwater system. The maintenance agreement shall allow the local community to complete the following:
    a. Inspect the structural or vegetative BMPs;
    b. Perform necessary maintenance or corrective actions neglected by the BMP owner
    c. Track the transfer of the operation and maintenance responsibility of the BMP in the event ownership of the property changes.
9. A copy of the Stormwater Management Operations and Maintenance Agreement or Memorandum of Stormwater Management Operations and Maintenance Agreement shall be recorded at the Register of Deeds.
10. A copy of the executed agreement of memorandum must be submitted prior to WRC's approval of the plans.
11. An example of the Agreement is included in the Appendix.

Part H: Drains Under the Jurisdiction of the Water Resources Commissioner

When a County Drain is the proposed outlet for a site's storm drainage system, the standards outlined herein regarding stormwater storage volume and allowable outflow must be followed. There may be cases where the existing outlet has limitations due to downstream conditions. In this situation, the discharge from the site will be restricted to conform to the governing downstream conditions. The allowable outflow from the proposed site will be limited to the pro-rata share of the capacity of the drain. The site's pro-rata equitable share of the outlet capacity should be calculated and shown on the construction plans.

There may also be cases where the outlet has already reached capacity. The burden is on the developer/proprietor to design and construct, at his expense, any necessary improvements to the downstream outlet. Such designs will be reviewed by the WRC office for adequacy.

Locations, easements and drainage service area boundaries for County Drains are available from the WRC Office. Permanent structures may not be constructed within the easement of a County Drain. This includes stormwater storage facilities or BMPs. All basins and BMPs must be located entirely outside of the County Drain permanent easement.

Easements

1. Prior to 1956, County Drain easements were not required by statute to be recorded with the County Clerk; it was legally sufficient to have them on file at the drain commissioner's office. Therefore, it is necessary to check the permanent records of the Water Resources Commissioner's Office to see if a drain easement is in existence on the subject property.
2. It may be necessary to record a new easement for that part of the County Drain that traverses the site. The existing easement may be abandoned in consideration for the granting of the new easement.
3. For open ditch drains, the easement must be at minimum, wide enough to include the extreme width of the open ditch drain plus 15' on each side measured from the top of bank. In addition, a vegetated buffer strip may be required. For enclosed drains, the easement must be a minimum of twenty (20) feet centered on the centerline of the pipe. However, larger pipe size, certain soil conditions, or depth of pipe may require larger easement widths.
4. The proposed easement must be submitted to this office for review. Upon completion of the project, the owner's engineer is required to provide the WRC Right-of-Way Department with an existing or "as-built" metes and bounds centerline description of the entire length of the drain through the referenced property. Upon submittal of the description, along with proof of property ownership, WRC Right-of-Way Department will prepare the necessary documents for execution by the owner(s).

5. This office must also be provided with one set of digital As-Built engineering drawings, cleaned of all background debris, showing plan, profile and the new easement of the drain.
6. Proposed County Drain easements shall be indicated on the plans as well as the mylar plat and shall be designated as 'permanent private easement for the "Name" (County) Drain'. In addition, the following note must be added to the mylar plat:
    a. The use of the word "private" does not limit in any way the scope of the easement granted to the "Name" (County) Drain Drainage District"

Drainage Service Areas (Districts)

1. A Drainage Service Area and Special Assessment District are each a legally established boundary for the area served by a County Drain. Drainage Service Areas do not always match the topographical area tributary to a County Drain. Drainage Service Areas shall not be violated when designing a drainage system.
2. Alterations to a Drainage Service Area and/or a Special Assessment District may be made by following the procedure established in the Drain Code. Approval must be granted by the Water Resources Commissioner or the Drainage Board.

Connections to County Drains

1. Taps to pipe and manholes shall be cored (sawed) wherever possible. If the tap cannot be cored, the proposed opening shall be star-drilled or cut with a concrete saw to establish a diameter prior to using a hammer to make the tap opening.
2. All taps shall be located to provide a minimum of one foot of manhole wall between tap openings.
3. Taps to manholes shall be pointed on the inside of the structure.
4. Taps shall be cut flush with the inside wall of the manhole and not protrude into the structure.
5. Depending on the location of the tap, manhole steps may need to be relocated at the applicant's expense.
6. No taps are allowed at a pipe joint.
7. Taps to open channel drains shall have a flared end section installed on a 42" minimum depth concrete footing. Taps 18" and larger to open channels shall have bar screens.
8. Riprap shall be installed at all outlets according to the Oakland County Water Resources Commissioner's Storm Drain Notes and Details Sheet. Riprap may consist of 8" to 15" diameter fragmented limestone or other suitable rock on a stone bedding underlain with geotextile fabric. Cobblestone, broken concrete or grouted riprap are not acceptable. Larger diameter outlets may require larger riprap as velocity and flow conditions dictate.
9. In areas where local ordinance requires sump pump leads to be connected into an enclosed system, these taps shall be made directly into storm sewer structures or into cleanouts.

10. Sump pump lines and connections shall not fall under the long-term operation and maintenance of the Water Resources Commissioner's Office and will not become part of an established County Drain. Maintenance of such lines will be the responsibility of the property owners and shall be so specified in subdivision restrictive covenants or condominium master deed agreements.

Crossing County Drains

1. A minimum clearance of 5 feet is required between open swale/ditch inverts and underground utilities unless special provisions are employed. Special provisions include encasement of utility lines in concrete or installation of the utility inside a steel casing when crossing under the open channel.
2. All bridges shall be designed to provide a 2-foot minimum flood stage freeboard to the underside of the bridge. The bridge footings shall be deep enough to be below the frost line and to allow a 5-foot channel deepening. Bridge footings and columns may not be located within the open channel.
3. A minimum clearance of 18 inches from the outside wall of an enclosed County Drain to any proposed utility or other underground crossing of the drain shall be provided.

Soil Erosion and Sediment Control

Soil erosion and sediment control devices shall be installed as required by the Water Resources Commissioner's "Erosion Control Manual" within municipalities where the Soil Erosion and Sedimentation Control Program is administered by WRC. The following points should be kept in mind when designing an erosion control plan for a site:

1. Areas within open drain rights-of-way, which have been cleaned, re-shaped or in any manner disturbed shall be seeded and mulched or otherwise vegetated.
2. The smallest practical area of raw land should be exposed at one time during development.
3. When raw land is exposed during development, the exposure should be kept to the shortest practical period of time.
4. Temporary vegetation and/or mulching should be used to protect critical areas exposed during development.
5. The permanent final vegetation and structures should be installed as soon as practicable in the development.
6. The development plan should be fitted to the topography and soil type so as to create the least erosion potential.
7. Wherever feasible, natural vegetation should be retained and protected.

   Proposed BMP locations should be protected at all times during construction to prevent sedimentation and compaction of soils that could lead to underperformance or failure of BMPs. This includes but is not limited to stabilizing surfaces adjacent to BMPs and installing temporarily erosion and sedimentation control structures at outlets to BMPs.

Part I: Assets Under Local Jurisdictions

For discharges into a non-county asset, some communities may have more restrictive standards than presented herein and those standards would supersede these standards. For all non-county assets, it is recommended that designers still consider the following when designing their stormwater management systems to local jurisdiction codes:

- Verify adequate outlet to community watercourses or pipes.
- Consider all potential hydraulic restrictions at outlet and assume full tailwater conditions when calculating release rates from basins and hydraulic grade line through the pipe network.
- Provide vertical separation (recommend two feet) between site stormwater design and receiving pipe or open watercourse.
- Verify the drainage area that will trigger a stormwater review (some communities might have a threshold lower than 1 acre).
- Determine whether the development is within a stormwater master planning area that could impact site specific standards for water quality and peak flow control.

Section IV – Chapter 18 Drains

The purpose of this standard is to guide the Owner/Developers of new developments within Oakland County communities which require drainage systems to be established as County Drains in accordance with the provisions of Section 433, Chapter 18 of the Public Acts of 1956, as amended, the Michigan Drain Code.

Plan requirements shall follow those identified in Section III for Subdivision Construction Plans with the following additions:

1. A plan and recommended schedule for the perpetual maintenance of the complete storm drainage system. Note that a Stormwater Management Operation and Maintenance Agreement is not required for Chapter 18 County Drains.
2. An access road shall be provided for all forebay and detention/retention facilities. The access road shall be designed to support heavy equipment (H25 loading).

Design of the Chapter 18 Drain shall follow the criteria set forth in Section III, WRC Specification Materials-Storm Drain, and WRC Drain Standard Detail Sheet, with the following additional requirements:

Pipe:

- 12” Minimum Pipe Size
- 10-Year Storm Design
- Hydraulic Grade Line in Pipe
- Velocity Less than 10 f.p.s.

Sump Pump:

- Serving More than One (1) Dwelling Unit 8” Minimum Size
- Minimum Size for House Leads is 4”
- All Connections to Storm Drains are Pre-manufactured
- Refer to WRC Drain Standard Detail Sheet

In areas where local ordinance requires sump pump leads to be connected into an enclosed system, these taps shall be made directly into storm sewer structures or into cleanouts.

Sump pump line connections shall not fall under the long-term operation and maintenance of the Water Resources Commissioner's Office and will not become a part of an established County Drain. Maintenance of such lines will be the responsibility of the property owners, and shall be so specified in the subdivision restrictions or condominium master deed agreements.

Stormwater Basins:

Please refer to the equations in Section III-General Detention System Design Requirements

Outflow from Basin

Outflow will be restricted per Section III. Downstream effects of storm water discharge will be the major consideration in sizing the outlet.

Outlets

Riprap shall be installed at all outlets according to the WRC Storm Drain Notes and Details Sheet. Riprap may consist of minimum 8" diameter to 15" diameter fragmented limestone or other suitable rock underlain with geotextile fabric. Cobblestone, broken concrete or grouted riprap is not acceptable. Larger diameter outlets may require larger riprap as velocity and flow conditions dictate.

A bar screen is required for all pipe outlets and inlets 18" diameter and larger.

Stormwater Treatment

1. Sediment forebays or manufactured stormwater treatment systems with external by-pass, and/or L.I.D. practices may be considered for stormwater treatment, but subject to OCWRC approval
2. The manufactured stormwater treatment system shall conform to the standards set forth and certified by the New Jersey Department of Environmental Protection (NJDEP) as listed at http://www.njstormwater.org/treatment.html, including offline use, manhole diameter size, and custom or multiple units.
3. The NJDEP Certified Treatment Flow rate (cfs) for a manufacturer and model shall be higher than the calculated peak discharge (qp) for a particular site.
4. Only the manufactured stormwater treatment systems specified in WRC specification Materials-Storm Drain are approved for County Drains.

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NOTE: All drainage systems will be evaluated on a case-by-case basis. Local conditions/ requirements/situations may cause exceptions to the above requirements, the published Design Criteria for Subdivisions, Standard Details or other rules which may apply.

Part B: Easement Requirements

The Developer and/or Land Owner shall provide to this office permanent easements for the proposed County Drain drainage facilities. Easement requirements vary with the type of site being developed. If the site is a platted subdivision, the easements must be shown on the final digital plat and the standard WRC easement language must be included in the Deed Restrictions. If the site is a condominium development, the easements must be shown on the "Exhibit B" drawings and the standard WRC easement language must be included in the Master Deed. A copy of the proposed Deed Restrictions/Master Deed must be submitted to this office for review. A recorded copy must be on file at this office prior to the final construction plan approval.

Easement requirements are as follows:

1. The minimum acceptable easement for a storm drain shall be 20 foot wide. Extreme depth and/or large pipe may require a wider easement.
2. The minimum acceptable easement for 8" diameter sump pump lines shall be 12 foot wide.
3. The minimum acceptable easement for a detention/retention basin shall be 12 feet from the high water elevation or at the one (1) foot freeboard elevation, but may not be less than 12 feet.
4. Language for Subdivision Plats (Must be on Final Digital):
5. Use of the word "private" does not limit in any way the scope of the easement granted to the Name (County) Drainage District.

WRC reserves the right to modify the easement requirements at its discretion.

Typical Easement for Subdivision

The following language shall be included in the deed restrictions for the subdivision:

. . . subject to a perpetual and permanent easement in favor of the Oakland County Water Resources Commissioner, the _____ Drainage District, a Michigan statutory public corporation as represented by the Oakland County Water Resources Commissioner (referred to as "grantee") and grantee's successors, assigns and transferees, in, over, under and through the property described on Exhibit A (or plat, liber, page) hereto, which easement may not be amended or revoked except with the written approval of grantee, and which contains the following terms and conditions and grants the following rights:

1. The easement shall be for the purposes of developing, establishing, constructing, repairing, maintaining, deepening, cleaning, widening and performing any associated construction activities and grading in connection with any type of drainage facilities or storm drain in any size form, shape or capacity;
2. The grantee shall have the right to sell, assign, transfer or convey this easement to any other governmental unit;

3. No owner in the subdivision shall build or convey to others any permission to build any permanent structures on the said easement;
4. No owner in the subdivision shall build or place on the area covered by the easement any type of structure, fixture or object, or engage in any activity or take any action, or convey any property interest or right, that would in any way either actually or threaten to impair, obstruct, or adversely affect the rights of grantee under the said easement;
5. The grantee and its agents, contractors and designated representative shall have right of entry on, and to gain access to, the easement property;
6. It is understood that under Michigan law, the Drainage District is comprised of all of the owners of the subdivision and that any and all expenses, claims or damages in any way arising from or incident to the construction, operation and maintenance of the drain and easement will be assessed against the Drainage District.

The rights granted to the Oakland County Water Resources Commissioner, the _____ _____ Drainage District, and their successors and assigns, under Section _____of these restrictions may not, however, be amended without the express written consent of the grantee hereunder. Any purported amendment or modification of the rights granted thereunder shall be void and without legal effect unless agreed to in writing by the grantee, its successors or assigns.

Typical Easement for Condominium

The following language shall be included in the deed restrictions for the condominium complex:

> . . . subject to a perpetual and permanent easement in favor of the Oakland County Water Resources Commissioner, the _____ Drainage District, a Michigan statutory public corporation, as represented by the Oakland County Water Resources Commissioner (referred to as "grantee"), and grantee's successors, assigns and transferees, in, over, under and through the property described on Exhibit A hereto, which easement may not be amended or revoked except with the written approval of grantee, and which contains the following terms and conditions and grants the following rights:
>
> 1. The easement shall be for the purposes of developing, establishing, constructing, repairing, maintaining, deepening, cleaning, widening and performing any associated construction activities and grading in connection with any type of drainage facilities, storm drains or related appurtenances, in any size form, shape or capacity;
> 2. The grantee shall have the right to sell, assign, transfer or convey this easement to any other governmental unit;
> 3. No owner in the condominium complex shall build or convey to others any permission to build any permanent structures on the said easement;
> 4. No owner in the condominium complex shall build or place on the area covered by the easement any type of structure, fixture or object, or engage in any activity or take any action, or convey any property interest or right, that would in any way either actually or threaten to impair, obstruct, or adversely affect the rights of grantee under the said easement;

5. The grantee and its agents, contractors and designated representatives shall have right of entry on, and to gain access to, the easement property;
6. It is understood that under Michigan law, the Drainage District is comprised of all of the owners of the condominium complex and that any and all expenses, claims or damages in any way arising from or incident to the construction, operation and maintenance of the drain and easement will be assessed against the Drainage District.

The rights granted to the Oakland County Water Resources Commissioner, the _____ _____ Drainage District, and their successors and assigns, under Section _____ _____of this master deed may not, however, be amended without the express written consent of the grantee hereunder. Any purported amendment or modification of the rights granted thereunder shall be void and without legal effect unless agreed to in writing by the grantee, its successors or assigns.

Part C: Request to Establish a County Drain

The Developer must first submit to this office one set of electronic construction plans and one digital copy, sealed by a Licensed Professional Engineer, for the proposed development along with a letter requesting that the development's drainage facilities be established as a County Drain. WRC's Engineering Design Standards for Storm Water Facilities and Standard Details for (County) Drains must be followed when designing the drain.

Submission of the following information is required:

a. Request to establish the _____ County Drain.
b. Engineer's certification of the adequacy of the drainage outlet.
c. Title work for the property being served by the Drain.
d. Names, titles, addresses or parties to execute the Drain Agreement.
e. Unified/Single property description with acreage, sidwell number(s) and a survey closure document.
f. Construction cost estimate for all drainage facilities.
g. All applicable fees and deposits.
h. Signed Deed Restrictions with County Drain language.
i. Maps and legal description of any right of ways or off site easements that may be necessary for drainage facilities.

Plan Submittal

Plan submittal must be in accordance with the regulations of the municipality where the development is located. It is the responsibility of the Developer to contact the municipality and confirm whether plans should be submitted directly to WRC or to the municipality first.

This office will review the construction plans and a determination will be made as to the adequacy of the design with respect to the Oakland County Water Resources Commissioner's requirements and to applicable laws and standards. If the local municipality has more stringent standards, then the municipality standards shall govern. Revisions to the plans or additional information may be requested at this time.

Final construction plan approval will not be granted until the Agreement is executed and all required documents and fees have been received. This office will issue a letter of construction approval with conditions. If the conditions as set forth in our construction plan approval letter are met, this office will then provide construction inspection of the drainage facilities. Construction of the storm drain system may not begin until the construction plans have been approved. After the construction plans have been approved, this office will process the final subdivision plat as set forth in the Subdivision Control Act of 1967, as amended.

In the case where the Chapter 18 Drain development will be a platted subdivision, the procedures for a preliminary and final plat must also be followed.

Agreement to Establish a County Drain

Upon approval of the construction plans by this office, the Developer and/or Land Owner of Record must enter into an agreement to establish the new County Drain or Branch Drain of an existing legally established County Drain. A district enlargement may also be necessary for the Branch Drain. The Developer and/or Land Owner must provide this office with a copy of the Title Policy or other proof of land ownership. A metes and bounds property description, with closure and Sidwell numbers, an estimate of the proposed construction cost of the drainage facilities, and the names, titles, addresses and companies of the people who will execute the Agreement shall also be submitted.

Once this office has received all of the above information, we will prepare an Agreement for signature by the involved parties. After the Agreement has been signed by all parties and notarized, the Water Resources Commissioner will have the Agreement recorded with the Oakland County Clerk's Office. The Agreement must be executed prior to construction plan final approval.

Engineer's Certification Outlet

Prior to approval of the construction plans, the Developer's Engineer must certify that the outlet for the proposed drain is adequate and will not cause detriment or diminution of the drainage services it now provides. An example of the Engineer's Certificate may be found in the Appendix.

Fee Schedule

Administrative Costs	1% but not less than $1,050.00	$	_____
Maintenance Fund	5% but not to exceed $2,500.00	$	_____
Inspection Deposit	To be calculated	$	_____
Contingency Deposit	10% of Drain construction estimate	$	_____

Note: Fees are based on percentage of storm drain system construction cost. All fees are in cash. Make checks payable to the Oakland County Water Resources Commissioner. Please indicate the name of the project or Drain on the check

Part D: Inspections

This office will provide full time construction inspection of the storm drain system. Drainage facilities constructed without appropriate inspection by this office or its designated representative may not be accepted by this office as a County Drain.

The Developer and/or Land Owner are responsible for the liabilities, operation and maintenance of the storm drainage system until it is accepted for service by the Water Resource Commissioner's Office.

This office or its designated representative will perform daily inspection of the storm drainage facility construction. This is to ensure that the storm drainage system is constructed according to the plans and specifications approved by this office.

This office will issue a series of construction inspection approvals at several milestones of the project, which will indicate that the contractors have successfully completed various phases of the construction.

WRC's Inspection Department must be notified **3 WORKING DAYS** prior to commencing construction and for all acceptance inspections.

Full time inspection is required for all aspects of storm drain construction.

The system must be constructed in accordance to the Oakland County Water Resources Commissioner's specifications.

All field changes must be **PRE-APPROVED** by the Oakland County Water Resources Commissioner prior to installation.

First Inspection

The purpose of the Construction Inspection approval is to release the underground contractor from responsibility of damage to the underground drainage system by others during future construction on this project site:

Requirements of the First Inspection:

a. All pipes and structures are to be free of dirt and debris.
b. Structures must be complete, plastered or pointed, channels, benches and castings in place.
c. All inlets and outlets must be completed with riprap in place.
d. All storm water detention/retention facilities and forebays must be constructed and stabilized.
e. All erosion control measures in place as well as a stated policy to maintain the soil erosion controls.
f. The storm drainage system must be completed and fully functional.

Second Inspection

The Second Inspection will be performed after the pavement has been completed. The purpose of the Second Inspection is to relieve the Pavement Contractor from responsibility for future damage to the storm drainage system.

Third Inspection

The purpose of the Third Inspection is to accept the drainage system for conditional maintenance and operation by the Oakland County Water Resources Commissioner and to relieve the Developer and/or Land Owner from the responsibility for maintenance of the storm drainage system.

The Developer and/or Land Owner are still responsible for the systems integrity until the completion of the final accounting and acceptance by the Oakland County Water Resources Commissioner.

All easements for the operation and maintenance of the County Drain including "Exhibit B" drawings, offsite drainage easements and recorded Deed Restrictions or a Master Deed with the appropriate drain easement language, along with As-Built plans for the Drain, must be submitted to this office and approved prior to this office scheduling the Third Inspection.

The Third Inspection will consist of a thorough and complete inspection of the entire storm drain system. A punch list of any outstanding construction items will be prepared and forwarded to the Developer and/or Developer's representative for resolution. Once these punch list items have been addressed and corrected, then a Third Inspection approval may be issued.

The Third Inspection can be scheduled after the following requirements have been met:

a. All disturbed areas have been re-vegetated and that the right of ways and all easements, detention basins, forebays and swales are sodded or vegetated with an approved plant material. All easement area vegetation must be established.
b. That the local governing body has no objections to the finalization of the project.
c. That there are no outstanding soil erosion issues and no history of poor soil erosion practices by the Developer and/or Land Owner.
d. All required documents and fees have been submitted and approved.

Final Acceptance

One year after conditional acceptance of the Drain for operation and maintenance, the Developer is allowed to request, in writing, that a final accounting be made by this office. The project will be reviewed by this office and our Inspection Unit will perform a final walk through inspection of the Drain if the following requirements have been met:

a. All conditions of the Agreement are satisfied.
b. The drain is functional and serviceable.
c. There are no outstanding liens or judgements against the storm drainage system.
d. A Developer's Declaration and Developer's affidavit are on file in this office.

If all the requirements have been met, a final accounting will be performed and a letter of final acceptance will be issued along with any remaining refundable deposits.

Please note that if the Developer fails to complete the requirements of the Agreement, the project will be declared abandoned, and the storm drainage system will not be maintained by the Oakland County Water Resources Commissioner's Office and all deposit moneys will be forfeited.

Part E: As-Built Drawings Requirements

Immediately following the completion of construction, the Developer and/or Land Owner shall furnish this office with a set of As-Built Drawings corrected to indicate as-built conditions. Upon approval of these drawings, the Developer and/or Land Owner shall submit one (1) set of reproducible drawings and one digital copy of the as-built construction drawings.

The following information shall be required on the as-built drawing and digital copy of the construction plan of the drain:

1. A Cover Sheet, which includes:
   a. Drain Name
   b. Location map with north arrow
   c. Drainage District (Property) legal description
   d. Storm sewer pipe manufacturer (type, class & joint)
   e. Manhole manufacturer
   f. Casting type and manufacturer
   g. Fitting type, class and manufacturer
2. A General Site/Utility Plan with boundary designation
3. A Grading Plan, which includes:
   a. Storm sewer as-built rim elevations
   b. As-built contours of all detention or retention basins and BMPs
   c. The location and permanent easement of all basin access drives
4. Plan and Profile views of all storm sewer 12” diameter and larger, which includes:
   a. As-built pipe length and slope
   b. As-built rim and invert elevations
   c. Show the sump pump lead locations on the plan view
   d. Road culverts with as-built information
   e. Top of pipe or invert elevation of the utility for all utility crossings. There should be a minimum of 18” clearance between the storm sewer and the utility.
   f. Note any special bedding, undercutting or piling extent and depth
   g. The term AB should follow all verifications.
5. A Drainage Area Map Sheet
6. Hydraulic calculations for storm sewer pipe and design calculations for all detention or retention basins, basin overflow structures and drainage swales. The as-built volume of all basins must be calculated.

The as-built plans must be submitted and approved prior to the third inspection being scheduled.

Appendices

Appendix A: Terms and Definitions

100-Year Storm: A rainfall depth that has a 1% chance of being exceeded in a given year.

10-year Storm: A rainfall depth that has a 10% chance of being exceeded in a given year.

1-year Storm: A rainfall depth that has a 100% chance of being exceeded in a given year.

90th Percentile Storm: A rainfall depth in which 90 percent of the rainfall events that produce runoff will be less than or equal to this depth.

Aquatic Bench or Safety Shelf: A bench, usually 4-feet to 5-feet wide, that is constructed around the inside perimeter of a permanent pool with depths that range from 0 inches to 12 inches. Typically vegetated with emergent plants, the bench augments pollutant removal, provides habitat, conceals trash, changes in water level, and enhances safety.

Bankfull Flow: A condition where flow completely fills the stream channel to the top of the bank. In undisturbed watersheds, this occurs on average every 1 to 2 years and controls the shape and form of natural channels.

Best Management Practice (BMP): Structural and non-structural practices and techniques that mitigate the adverse impacts caused by land development on water quality and/or water quantity.

1. **Buffer Strip:** A zone that is used for filtering direct stormwater and stormwater runoff into a stormwater management system and for providing maintenance access to a stormwater management system.
2. **Cistern:** Containers that store large quantities of stormwater above or below ground. They can be used on residential, commercial, and industrial sites.
3. **Dry well:** Small infiltration pits or trenches filled with aggregate that receive clean runoff primarily from rooftops.
4. **Green infrastructure (GI):** Management of wet weather flows using BMPs that use or mimic natural processes and result in improved water quality, evapotranspiration, or infiltration. This is a cost-effective, resilient approach to managing wet weather impacts that provides many community benefits, and reduces and treats stormwater at its source while delivering environmental, social, and economic benefits.
5. **Green Roof:** Conventional rooftops that include a thin covering of vegetation allowing the roof to function more like a vegetated surface. The layer thickness varies between 2-6 inches and consists of vegetation, waterproofing, insulation, fabrics, growth media, and other synthetic components.
6. **Pervious Pavement:** An infiltration technique that combines stormwater infiltration, storage, and structural pavement that consists of a permeable surface underlain by a storage reservoir.
7. **Planter Box:** A device containing trees and plants near streets and buildings constructed to prevent stormwater from directly draining into drainage systems.

8. **Pretreatment System:** A structure, feature, or appurtenance, or combination thereof, that is used as a component of a stormwater management system to remove incoming pollutants from stormwater.

9. **Riparian Buffer:** An area next to a stream, river, or lake that preserves water quality by filtering sediments and pollutants from stormwater before it enters the water body. It also protects banks from erosion, provides natural storage for flood waters, preserves open space, and provides habitat for wildlife. Development is often restricted or prohibited in this area. The buffers should be vegetated with herbaceous and woody native plants, or left in their natural state.

10. **Vegetated Filter Strip:** Uniformly graded vegetated surface located between pollutant source areas and downstream receiving waters.

11. **Vegetated Swale:** A conveyance, open to the atmosphere, consisting of a broad, shallow channel lined with vegetation to slow and filter stormwater runoff and promote infiltration. (Note: this swale has no in-soil storage)

12. **Bioretention:** A water quality practice that utilizes landscaping plantings and soil media to treat stormwater runoff by collecting it in shallow depressions before being absorbed by the soil and vegetation. There are three main types of bioretention.

    a. **Rain Garden:** A small, simple bioretention system associated with single family homes or small commercial development. This system has no regulated infiltration rate and as such only qualifies for the water quality requirement. However, as such this system does not require infiltration testing to construct or maintain.

    b. **Bioretention Basin:** A large bioretention system associated with commercial and industrial development. This system has water quality, volume reduction capabilities, and requires infiltration testing.

    c. **Bioretention swale:** A linear bioretention system associated with stormwater conveyance and Check Dams to slow, filter, and infiltrate the stormwater. This system has both water quality and volume reduction capabilities and requires infiltration testing.

CFS: Cubic feet per second.

Check Dam: A crushed rock or earthen structure used in vegetated swales to reduce water velocities, promote sediment deposition, and enhance infiltration.

Closed Conduit: An enclosed conveyance system designed to carry stormwater runoff such that the surface of the water is not exposed to the atmosphere, including without limitation, storm sewers, culverts, enclosed County drains, and pipes.

Construction Activity: A human-made activity, including without limitation, clearing, grading, excavating, construction and paving, that results in an earth change or disturbance in the existing cover or topography of land, including any modification or alteration of a site or the “footprint” of a building that results in an earth change or disturbance in the existing cover or topography of land.

Conveyance: Any structure or other means of safely conveying stormwater or stormwater runoff within a stormwater management system, including without limitation, a watercourse, closed conduit, culvert, or bridge.

County Drain: Drains established pursuant to the Michigan Drain Code of 1956, MCL 280.1 et seq., as amended, that are under the jurisdiction of the WRC.

Culvert: A structure, including supports, built to carry a feature over a surface water or watercourse, with a clear span of less than 20 feet measured along the center of the feature being carried.

Design Storm: The rainfall event used as the basis of design for stormwater drainage facilities.

Design Water Level: The water surface elevation in a detention system at which the storage volume in the system (above the permanent pool water level, if any) equals the required flood control storage volume.

Detention System: A component of a stormwater management system, either aboveground or belowground, that detains stormwater and stormwater runoff. Detention systems can be classified as follows:

1. **Dry Detention Basin:** A basin that remains dry except for short periods following rain storms or snow melt events.
2. **Extended Dry Detention Basin:** A dry detention basin that has been designed to increase the length of time that stormwater will be detained beyond the normal dewatering time of 24-48 hours.
3. **Wet Detention Basin:** A basin that contains a permanent pool of water that will effectively remove nutrients in addition to other pollutants.
4. **Extended Wet Detention Basin:** A wet detention basin that has been designed to increase the length of time that stormwater will be detained beyond the normal dewatering time of 24-48 hours.
5. **Regional Detention Basin:** A wet or dry detention basin that receives water from multiple sites as an alternative to storage on-site.
6. **Underground Detention System:** One or more underground pipes and/or other structures that are utilized as a detention system.
7. **Constructed Wetland:** An open detention basin that uses a variety of water depths and wetland plants to provide pollutant removal and provide temporary storage of stormwater runoff to prevent downstream flooding and the attenuation of runoff peaks.

Discharge: The flow rate of water passing through the outlet at a given time, usually expressed as cubic feet per second (CFS).

Disturbed Area: An area where human activity has removed or altered the natural vegetative soil cover and the soil is susceptible to erosion.

Drainage Area: The entire upstream land area from which stormwater runoff drains to a particular location, including any off-site drainage area.

Detention time: The time required for the gradual reduction in water level in a BMP due to the combined effect of infiltration, evaporation and discharge from the peak or storage to full dewatering to the lowest outlet elevation. (i.e. in a bioretention area this would include dewatering of the soil media)

Easement: A legal right, granted by a property owner to another entity, allowing that entity to make limited use of the property involved for a specific purpose. Easements are recorded on the title to the land and transfer with the sale of land.

Emergency Spillway: A channel constructed in the embankment of an open detention or retention basin that is used to control flows in excess of the overflow structure capacity to prevent erosion of the berm.

Floodplain: For a given flood event, that area of land adjoining a continuous watercourse that has been covered temporarily by water. This design standard, the term floodplain includes all physical floodplains weather or not they have been officially mapped by FEMA.

Flow Path: The distance that a parcel of water travels through a stormwater detention pond or wetland. It is defined as the distance between the inlet and outlet, divided by the average width. [defines the time of concentration calculation] – or just move it to the Tc definition.

Flow Restrictor: A structure, feature, or device in a detention system or pretreatment system that is used to restrict the discharge from the system for specified design storm(s).

Forebay: A small, separate storage area near the inlet to a detention basin, used to trap and settle incoming sediments before they can be delivered to the basin.

Freeboard: The vertical distance from the design water level to the top of the embankment of an open detention basin or retention basin.

French Drain: A subgrade drain consisting of a trench filled with aggregate to permit movement through the trench and into the soil. The trench may also contain perforated pipe to enhance the efficiency of the system. [reference in Underdrain definition]

Ground Water Table: The uppermost extent of naturally existing water beneath the earth's surface between saturated soil particles and rock that supplies wells and springs. At least two feet of separation is required between the normal ground water elevation and the bottom of the bioretention filter media.

Impervious Surface: A surface that prevents the infiltration of water into the ground such as all roofs, streets, sidewalks, driveways, parking lots, highly compacted soils, and gravel.

Infiltration Rate: The rate of infiltration (inches/hour) of in-situ soils at the base (subgrade) of a designed BMP, as determined by on-site soil evaluation certified by a Professional Engineer. Also referred to as Saturated Soil Conductivity (K_{sat}) or In-Situ Infiltration Rate.

Inlets: A stormwater collection structure designed to collect and convey surface water into the stormwater management system via a grated cover.

1. **Standard Inlet:** A stormwater collection structure designed to collect and convey surface water from a paved area into the stormwater management system. An Inlet is normally 2 feet in diameter, is

designed so that stormwater is collected via a grated cover and falls directly into the storm drain. (GIS Feature Class HydroDrainInlet, Subtype 1 Standard Inlet)

2. **Catch Basin:** A stormwater collection structure designed to collect and convey surface water from a paved area into the stormwater management system. A catch basin is normally 4 feet in diameter, is designed so that stormwater is collected via a grate cover and sediment falls to the bottom of the catch basin sump not directly into the storm drain. (GIS Feature Class HydroDrainInlet, Subtype 2 CatchBasin)
3. **Rear Yard Catch Basin:** A stormwater collection structure designed to collect and convey surface water from an unpaved area into the stormwater management system. A rear yard catch basin is normally 4 feet in diameter, is designed so that stormwater is collected via a grate cover and sediment falls to the bottom of the catch basin sump not directly into the storm drain. (GIS Feature Class HydroDrainInlet, Subtype 3 RearYardCatchBasin)
4. **Yard Inlet:** A stormwater collection structure designed to collect and convey surface water from an unpaved area into the stormwater management system. A yard inlet consists of a 2 ft. diameter manhole, is designed so that stormwater is collected via a grated cover and falls directly into the storm drain then into a water quality BMP. (GIS Feature Class HydroDrainInlet, Subtype 4 YardInlet)
5. **Leaching Basin:** A stormwater collection structure designed to collect and convey surface water into the soil subgrade. A leaching basin consists of a square or round structure with perforated sides and no base cookie, is designed so that stormwater is collected via a grated cover or delivered through a connecting storm drain and is filtered through stone and infiltrated the soil. (GIS Feature Class HydroDrainInlet, Subtype 5 LeachingBasin)

Level-Spreader: A device used to spread stormwater runoff uniformly over the ground surface as sheet flow to prevent concentrated, erosive flow from occurring, and to enhance infiltration.
Manhole: A stormwater structure designed to allow access into a closed conduit or other underground component of a stormwater management system. A manhole has a minimum diameter of 4 feet, is designed with a concrete flow channel at the bottom of the manhole and is fitted with a solid cover.
Manufactured Treatment Device: A pre-fabricated stormwater treatment structure utilizing settling, filtration, absorptive/adsorptive materials, vortex separation, vegetative components, and/or other appropriate technology to remove pollutants from stormwater runoff. The TSS removal rate for manufactured treatment devices must meet the NJDEP certification of the pollutant removal rates.

Municipal Separate Storm Sewer System (MS4): A system of conveyances that include, but are not limited to, catch basins, curbs, gutters, ditches, man-made channels, pipes, tunnels, and/or storm drains, and similar means of collecting or conveying runoff that do not connect with a wastewater collection system or treatment plant and instead discharge into Waters of the State.

Native Plants: Plant species that occurs naturally in the Southeast Michigan ecosystem, and habitat without direct or indirect human actions.

Natural Resources Conservation Service (NRCS): A federal agency of the United States Department of Agriculture (USDA) that works with farmers, ranchers, forest landowners, local and state governments, and other federal agencies to maintain healthy and productive working landscapes, and to protect our natural resources through conservation.

Natural Wetland: Michigan's wetland statute, Part 303, Wetlands Protection, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, defines a wetland as "land characterized by the presence of water at a frequency and duration sufficient to support, and that under normal circumstances does support, wetland vegetation or aquatic life, and is commonly referred to as a bog, swamp, or marsh." The definition applies to public and private lands regardless of zoning or ownership. Many wetland areas have only a high ground water table and standing water may not be visible. Types of wetlands include deciduous swamps, wet meadows, emergent marshes, conifer swamps, wet prairies, shrub-scrub swamps, fens, and bogs.

Non-point Source Pollution: Stormwater conveyed pollution that is not identifiable to one particular source, and is occurring at locations scattered throughout the drainage basin. Typical sources include erosion, agricultural activities, and runoff from urban lands.

Non-structural BMPs: Stormwater runoff treatment techniques that use natural measures to reduce pollution levels that do not involve the construction or installation of devices (e.g. management actions). [site BMPs]

Ordinary High Water Mark: The line between upland and bottomland which persists through successive changes in water level, below which the presence of water is so common or recurrent that the character of the soil and vegetation is markedly different from the upland.

Outlet Control Structure: A horizontal pipe or series of pipes or vertical riser pipe designed to gradually release stormwater from a pond over a 24 to 48-hour interval.

Overflow Structure: A structure designed to allow unrestricted discharge from a component of a stormwater management system when the water level exceeds the design water level. [cross reference with emergency overflow]

Peak Discharge or Flow Rate: The maximum instantaneous rate of flow during a storm, usually in reference to a specific design storm event.

Permanent Pool: A pool in a wet detention system that provides additional removal of pollutants through settling and biological uptake.

Pervious or Porous Pavement: Traditionally impervious surfaces designed to allow stormwater to be stored in a layer of open graded stone and then infiltrate into the ground. (Pervious Concrete, Pervious Asphalt, Pervious Pavers)

Plunge Pool: A small permanent pool located at either the inlet to, or outfall from a BMP. The primary purpose of the pool is to dissipate the velocity of stormwater runoff, but it can also provide some pre-treatment.

Ponding Area: In bioretention areas, the area where excess stormwater runoff is temporarily stored prior to infiltration into the ground.

Professional Engineer (PE): Only an engineer licensed in the State of Michigan may prepare, sign and seal, and submit engineering plans and drawings for approval. PEs must continuously demonstrate their competency and maintain and improve their skills by fulfilling the State of Michigan continuing education requirements.

Regulated Wetland: Any wetland protected by federal, state, and or local government regulation.

Rational Method Formula: A technique for estimating peak flow rates at a particular location within a stormwater management system, based on the rainfall intensity, watershed time of concentration, and a runoff coefficient. Q = ciA

Release Rate: The rate of discharge in volume per unit time from a detention facility [reference PEAK flow and differentiate between pre-vs post and prescribed rate]

Retention Basin: The holding of runoff in a basin without release except by means of evaporation, infiltration, or emergency bypass. Retention is discouraged under all circumstances unless there is no practical way to provide an outlet. Pre-treatment in the form of infiltration BMPs, sediment forebays, and mechanical separators is required for sediment removal.

Return Interval: A statistical term for the average time of expected interval that an event of some kind will equal or exceed given conditions (e.g., a stormwater flow that occurs every 2 years).

Riprap: A combination of large stone, cobbles, and boulders used to line watercourses, stabilize banks, reduce runoff velocities, or filter out sediment.

Riser: A vertical pipe extending from the bottom of a basin that is used to control the discharge rate from the basin for a specified design storm. When this is used for soil erosion control during construction it is considered temporary.

Runoff: The excess portion of precipitation that does not infiltrate into the ground, but "runs off" into streams, water bodies, and/or storm sewers.

Runoff Coefficient: The ratio of the amount of water that is NOT absorbed by the surface to the total amount of water that falls during a rainstorm [define and differentiate from percent impervious] – cross reference with rational method. State when it is used and when CN is used.

Saturated Soil Conductivity (K_{sat}): The rate of infiltration (inches/hour) of in-situ soils at the base (subgrade) of a designed BMP, as determined by on-site soil evaluation certified by a Professional Engineer. Also referred to as Infiltration Rate or In-Situ Infiltration Rate.

Sediment: Soil material that is transported from its site of origin by water. May be in the form of bed load, suspended or dissolved.

Sheet Flow: Runoff which flows over the ground surface as a thin, even layer, not concentrated in a channel. Maximum allowable sheet flow length is 100 feet.

Short Circuiting: The passage of runoff through a BMP in less than the theoretical or design detention time.

Soil Erosion: The increased loss of the land surface that occurs as a result of the wearing away of land by the action of wind, water, gravity, or a combination of wind, water, gravity or human activities.

Soil Group, Hydrologic: A classification of soils by the NRCS into four runoff potential groups. The groups range from "A Soils" which are very permeable and produce little runoff, to "D Soils" which are relatively impermeable and produce much more runoff.

Spillway: A depression in the embankment of a pond or basin, used to pass peak discharges in excess of the design storm.

Stabilization: The establishment of vegetation or the proper placement, grading, or covering of soil to ensure its resistance to soil erosion, sliding, or other earth movement.

Stormwater: Water resulting from precipitation, including without limitation rain, snow, snowmelt. Also referred to as "runoff".

Stormwater Management Plan: Ordinances, orders, rules, regulations, and other mechanisms that provide for the management of stormwater to prevent flooding and to ensure the restoration and/or protection of surface waters.

Stormwater Management System: Any structure, feature, or appurtenance subject to the Ordinance, or a rule promulgated pursuant to the Ordinance, that is designed to collect, detain, retain, treat, or convey stormwater runoff, including without limitation buffer strips, swales, gutters, catch basins, closed conduits, detention systems, pretreatment systems, wetlands, pavement, unpaved surfaces, structures, watercourses, or surface waters.

Stream: By MDEQ definition: "a river, creek, or surface waterway that may or may not be defined by Act 40, P.A. of 1956; has definite banks, a bed, and visible evidence of continued flow or continued occurrence of water, including the connecting water of the Great Lakes." Even if water flow is intermittent, it is classified as a stream.

Surcharge: A condition in which the water level in a storm drain rises above the crown of the conduit.

Surface Water: A body of water, including without limitation seasonal and intermittent waters, in which the surface of the water is exposed to the atmosphere, including without limitation lakes, open detention basins, forebays, watercourses, bioretention areas, retention basins, wetlands, and impoundments.

Tailwater: The depth of water at the downstream end of a culvert or crossing. [mention potential for tailwater to impact detention pond outlet]

Technical Infeasibility: Each site proposed for development is unique due to soils, land cover, topography, location, etc. Therefore, waivers or variances from certain provisions of these standards may be requested when it can be demonstrated that these standards are technically infeasible. In these situations, alternatives consistent with the overall intent of these standards must be proposed for consideration.

For projects where technical infeasibility exists, the design engineer must document and quantify that stormwater strategies, such as infiltration, evapotranspiration, and harvesting and water use have been used to the maximum extent technically feasible (METF) and that implementation of these methods are infeasible due to site constraints. The burden of proof of Technical Infeasibility lies with the design engineer. Documentation of technical infeasibility should include, but may not be limited to, engineering calculations, geological reports, hydrological analyses and site maps. A determination that the performance design goals cannot be achieved on the site should include analyses that rule out the use of an adequate combination of infiltration, evapotranspiration, and water use measures. Adequate

documentation must be submitted to WRC for review and final determination. Examples of site conditions that may prevent the application of stormwater BMP's to the METF includes:

1. The conditions on the site preclude the use of infiltration practices due to the presence of shallow bedrock, contaminated soils, high ground water or other factors, such as underground facilities, utilities or development location within a wellhead protection area.
2. The design of the site precludes the use of soil amendments, plantings of vegetation or other designs that can be used to infiltrate and evapotranspirate stormwater runoff.
3. Water harvesting and use are not practical or possible due to the volume of water used for irrigation, toilet flushing, industrial make-up water, wash-waters, etc. is insignificant to warrant the application of water harvesting and use systems.
4. Modifications to an existing building to manage stormwater are not feasible due to structural or plumbing constraints or other factors.
5. Sites where the site area is too small to accommodate adequate infiltration practices for the impervious area to be served. (Less than one acre)
6. Soils that cannot be sufficiently modified to provide reasonable infiltration rates.
7. Situation where site use is inconsistent with the capture and use of stormwater or other physical conditions on site that preclude the use of plants for evapotranspiration or bio-infiltration.
8. Retention and/or use of stormwater onsite or discharge of stormwater onsite by infiltration having an adverse effect on the site, gradient of surface or subsurface water, receiving watershed, or water body ecological processes.
9. Federal, state of local requirements or permit conditions that prohibit water collection or make it technically infeasible to apply LID practices.

Adapted from EPA Section 438 Technical Guidance December 2009.

Time of Concentration (T_C): The time duration (typically in minutes) that is required for stormwater runoff from the most remote area of the watershed to reach a given location in a stormwater management system.

Total Suspended Solids: Particles or other solid material suspended in stormwater or stormwater runoff. "Total suspended solids" is commonly expressed in concentration (mg/l).

Underdrain: One or more underground pipes installed beneath bioretention areas, terraced side slopes, or other structures to facilitate conveyance of stormwater runoff from beneath the structure to another part of the stormwater management system.

Upland Zone: The area within an open detention basin or retention basin between the bank full elevation to the 100- year flood elevation and beyond.

Watercourse: A natural or artificial channel for flowing water.

Watershed: The complete area or region of land draining into a single outlet, watercourse, surface water, or closed conduit that is separate from other watersheds by a divide.

Waters of the State (Michigan): Any groundwater, lakes, including the Great Lakes bordering the state, rivers, streams, and all other water courses and bodies of water within the jurisdiction of the state including wetlands.

Weir: A structure that extends across the width of a body of water, channel, watercourse, or closed conduit, and is used to impound, measure, or in some way alter the flow of water through the channel.

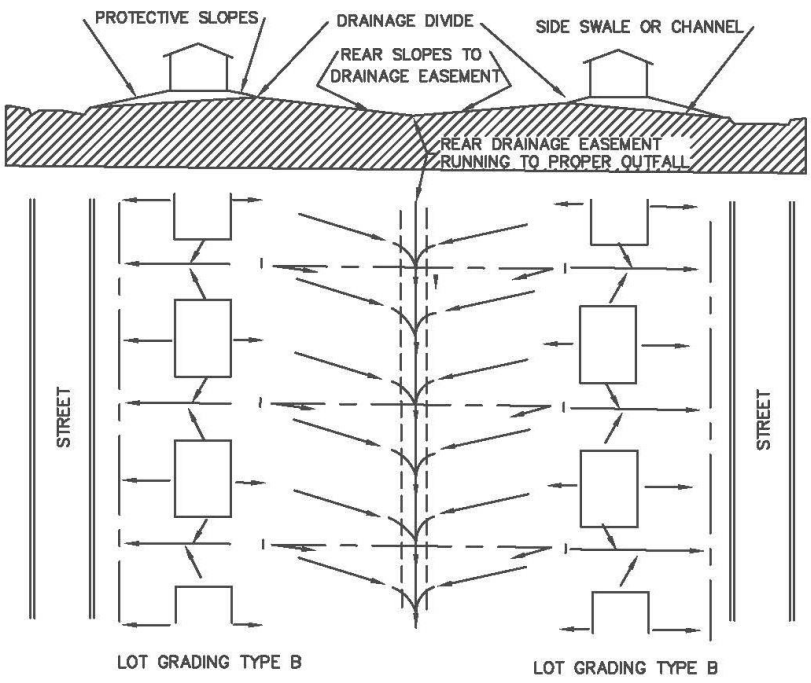
Wetland: An area that is saturated by surface or groundwater with vegetation adapted for life under those soil conditions, such as swamps, bogs, fens, marshes and estuaries.

Wetland Mitigation: A regulatory term that refers to the process of constructing new wetland acreage to compensate for the loss of natural wetlands during the development process. Mitigation seeks to replace structural and functional qualities of the natural wetland type that has been destroyed. Stormwater wetlands typically do not count for credit as mitigation, because their construction does not replicate all the ecosystem functions of a natural wetland.

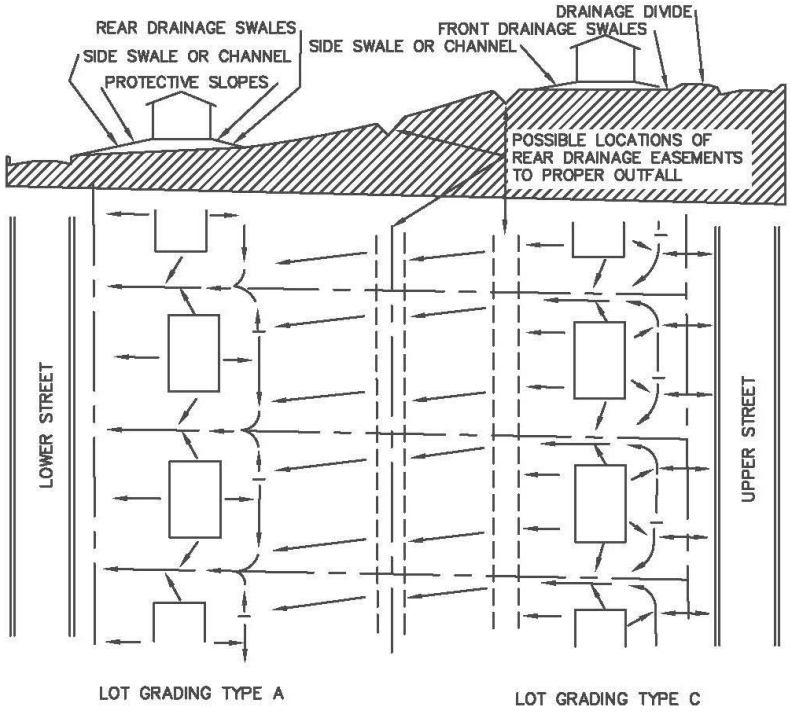
Appendix B: Lot Grading

The Oakland County Water Resources Commissioner will review the grading plan for sites that will be platted under Act 288 and a subdivision or site condominium included in the Chapter 18 Drain program. Positive drainage is required. Final lot grading inspection is under the jurisdiction of the local municipality. The minimum requirements are as follows:

1. The grading of the lot shall be such that surface runoff is directed away from homes and towards swales, ditches or drainage structures. Provision for drainage either by filling and grading or by providing some type of outlet shall be made for all areas within the proposed subdivision.
2. A proposed finished floor grade and proposed lot grading must be shown for each home or structure. A minimum of ½ foot of fall is required away from the home and between lots. Proposed grades may be indicated with spot grades or contours. A distinction between existing and proposed grades should be evident on the plans.
3. Where a walkout or daylight basement is proposed, sufficient grades should be shown at the location of the walkout to indicate positive drainage away from the walkout. Additional spot grades at the house corners and rear yard should be shown.
4. Where finished grades indicate a substantial amount of drainage across adjoining lots, a drainage swale of sufficient cross-section and slope shall be provided on the lot line to intercept this drainage.
5. Sufficient off-site topography must be shown to determine the extent of contributing runoff. Provisions must be made to accommodate the off-site contributing flow.
6. Lots that lie within a flood plain shall satisfy the EGLE and FEMA requirements for subdivisions within a flood plain. In no case will the filling of a lot be permitted if the flood plain is so restricted as to cause possible flooding or back up of the stream.



BLOCK GRADING TYPE 4: VALLEY ALONG REAR LOT LINES



BLOCK GRADING TYPE 3: STEEP CROSS SLOPE

Appendix C: Reference Materials

Site Plan Example 1

The example site is a proposed commercial development. Total development area of the site is 10.32 acres consisting of primarily HSG Type B soils under a mixture of impervious cover, turf grass, meadow and woods. Infiltration tests conducted on the site yielded an observed infiltration rate of 1 inch/hour. A minimum of one infiltration test per BMP location is required, but for this example, a single infiltration rate is applied. A mechanical separator or sediment forebay is not required given the use of infiltration BMPs for water quality treatment. The site has a 1% slope.

Area, A	10.32	acres
Proposed Impervious Acres	4.80	acres
Proposed Pervious Acres	5.52	acres
Infiltration Rate	1	in/hr
Runoff Coefficient, C	0.59	
100-yr peak intensity	6.31	in/hr

Infiltration Feasibility

Test pit infiltration tests were performed at the bottom of each proposed infiltration BMP and resulted in a 1 inch/hour infiltration rate for each BMP. No supplemental measures are required for infiltration BMPs at this site.

K_{sat} Values	
Ksat ≥ 0.50 in/hr	No supplemental measures are required for Infiltration BMPs to provide the infiltration volume
0.50 in/hr≥ Ksat ≥ 0.24 in/hr	Install supplemental measures, which may include subsoil amendment, or an underdrain placed at the top of the storage bed layer to ensure dewatering in the event underlying soils fail to provide adequate drawdown or dewatering time. If underdrains are selected, design shall allow stormwater to percolate through the soils first, with the underdrain serving as a secondary outlet, by placing the underdrain in the upper level of the BMP, with pipe perforations located along the underdrain invert.
Ksat ≤ 0.24 in/hr	***Soils are not suitable for infiltration. Alternative volume reducing LID practices must be used to the MEP to reduce stormwater volume.***

Land Use Summary

must be included on the COVER SHEET for all site plans

Pervious Area Land Use Data

Characteristic	Existing Conditions	Proposed Conditions
Total Development Area (ac)	10.32	10.32
Impervious Area (ac)	0	4.80
Total Pervious Area (ac)	10.32	5.52
Pervious Area Breakdown by Cover Type		
Meadow/fallow/natural areas (non-cultivated)	4.00 acres	0 acres
Predominant NRCS Soil Type (A, B, C, or D)	Type B	Type B
Improved areas (turf grass, landscape, row crops)	2.32 acres	5.05 acres
Predominant NRCS Soil Type (A, B, C, or D)	Type B	Type B
Wooded Areas	4.00 acres	0 acres
Predominant NRCS Soil Type (A, B, C, or D)	Type B	Type B
Proposed Pond Area (acres)		0.47
Required CPVC Volume (cubic feet)		28,733
Provided CPVC Volume (cubic feet)		***29,400***
Required ED Volume (cubic feet)		41,994
Provided ED Volume (cubic feet)		***42,000***

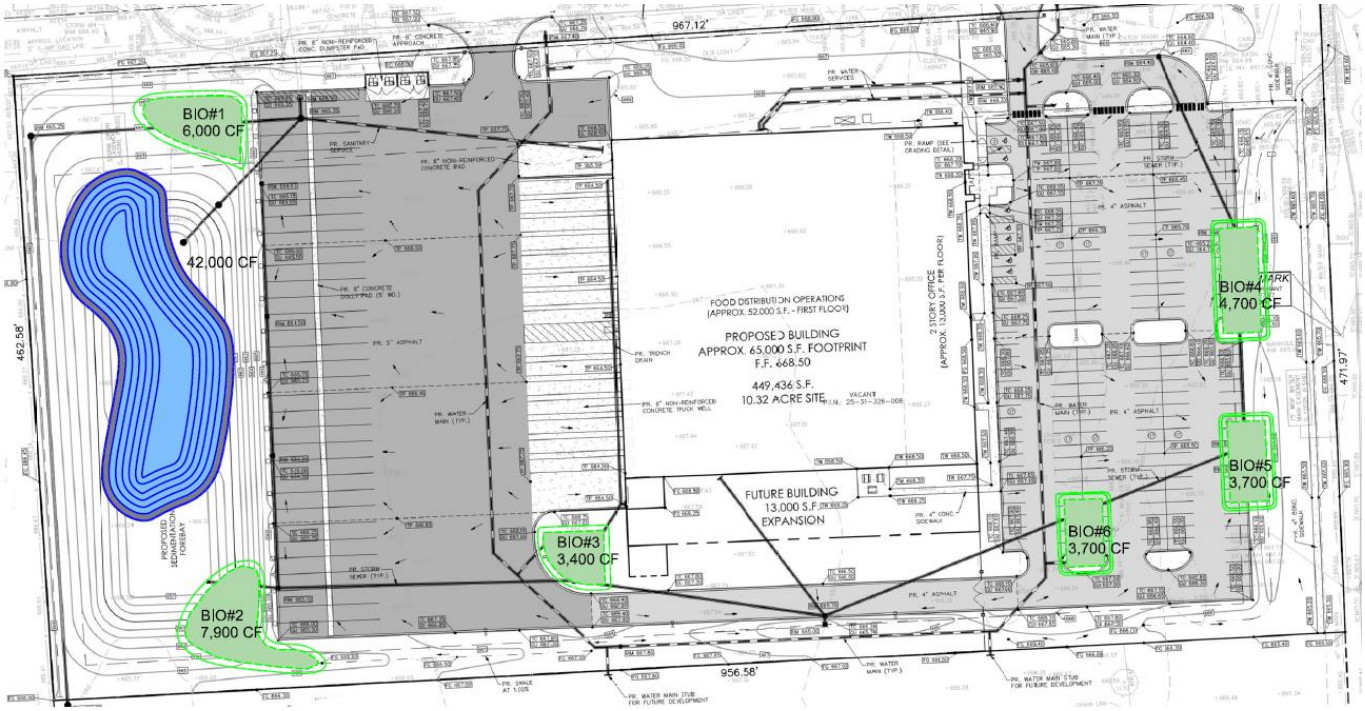


Figure 1 - Example 1 Commercial Site

Calculate the Composite Runoff Coefficient

$$C = \frac{\sum_{i=1}^{N}(A_i x C_i)}{\sum_{i=1}^{N} A_i}$$

$$C = \frac{(4.80x0.95) + (5.05x0.20) + (0.47x1)}{10.32} = 0.59$$

C Values		
Green Space	HSG A	0.15
	HSG B	0.20
	HSG C	0.25
	HSG D	0.30
Impervious Areas		0.95
Water		1.00

Calculate Time of Concentration

Sheet Flow

$$v = K\ x\ S^{0.5}$$

$v = 0.48\ x\ 1^{0.5} = 0.48\frac{ft}{s}$

$T_t = \frac{\text{L}}{3600v}$

$T_t = \frac{120\text{ ft}}{3600\left(0.48\frac{ft}{s}\right)} = 0.0694\ hrs = 4.2\ min$

Waterway Flow

$v = K\ x\ S^{0.5}$

$v = 1.2\ x\ 1.3^{0.5} = 1.37\frac{ft}{s}$

$T_t = \frac{\text{L}}{3600v}$

$T_t = \frac{300\text{ ft}}{3600\left(1.37\frac{ft}{s}\right)} = 0.0609\ hrs = 3.7\ min$

Pipe Flow

$v = 3\frac{ft}{sec}$rom pipe network calculations – not shown)

$T_t = \frac{\text{L}}{3600v}$

$T_t = \frac{1300\text{ ft}}{3600\left(3\frac{ft}{s}\right)} = 0.1204\ hrs = 7.2\ min$

$T_c = 4.2\ min + 3.7\ min + 7.2\ min = 15.1\ min$

Calculate 100-year Peak Intensity

$$I_{100} = \frac{83.3}{(T_c + 9.17)^{0.81}}$$

$T_c = 15.1\ minutes$

$$I_{100} = \frac{83.3}{(15.1 + 9.17)^{0.81}} = 6.29\frac{in}{hr}$$

Calculate Channel Protection Volume

$V_{CPVC} = 4{,}719\ x\ C\ x\ A$

$V_{CPVC} = 4{,}719\ x\ 0.59\ x\ 10.32\ acres = 28{,}733\ cubic\ feet$

Calculate Channel Protection Rate Control: Extended Detention

$V_{ED} = 6{,}897\ x\ C\ x\ A$

$V_{ED} = 6{,}897\ x\ 0.59\ x\ 10.32\ acres = 41{,}994\ cubic\ feet$

Calculate 100-year Peak Inflow

$Q_{100IN} = C\ x\ I_{100}\ x\ A$

$I_{100} = 6.29\frac{in}{hr}$ (Calculated on previous page)

$Q_{100IN} = 0.59\ x\ 6.29\frac{in}{hr}\ x\ 10.32\ acres = 38.30\ cfs$

Determine the Peak Allowable 100-year Discharge

Q_{100P} is the lesser of:

1. The restricted rate for the drain (ft^3/Acre)
2. The prorated share of the drain's capacity (ft^3/Acre)
3. The Variable Release Rate (Q_{VRR}) (ft^3/Acre)

In this example, it is assumed the drain capacity is capable of receiving the runoff from the site and the variable release rate will be utilized.

Calculate the Variable Release Rate

$Q_{VRR} = 1.1055 - 0.206\ x\ \ln(A)$

$Q_{VRR} = 1.1055 - 0.206\ x\ \ln(10.32\ acres) = 0.625\frac{cfs}{acre}$

$Q_{100P} = Q_{VRR}\ x\ A$

$Q_{100P} = 0.625\frac{cfs}{acre}\ x\ 10.32\ acres = 6.45\ cfs$

Calculate Storage Curve Factor

$$R = 0.206 - 0.15\ x \ln\left(\frac{Q_{100P}}{Q_{100IN}}\right)$$

$$R = 0.206 - 0.15\ x \ln\left(\frac{6.45\ cfs}{38.30\ cfs}\right) = 0.473$$

Calculate the 100-year Runoff

$$V_{100R} = 18{,}985\ x\ C\ x\ A$$

$$V_{100R} = 18{,}985\ x\ 0.59\ x\ 10.32\ acres = 115{,}596\ cubic\ feet$$

Calculate the 100-year Storage Volume

$$V_{100D} = V_{100R}\ x\ R$$

$R = 0.474$ (Calculated on Previous Page)

$$V_{100D} = 115{,}596\ x\ 0.473 = 54{,}677 \text{ cubic feet}$$

The site plan must be designed to accommodate the following volumes:

- V_{CPVC}: 28,733 cubic feet
- V_{ED}: 41,994 cubic feet
- V_{100D}: 54,677 cubic feet

  * If the volume control requirement is met, the CPVC volume can be subtracted from (credited against) the 100-year flood control volume.

Outlet Calculations

Note: If the CPRC volume is at or above the flood control volume, a single control (CPRC) is only for the orifice. Volume above the 100-year allowable will be controlled by the outlet pipe (overflow weir). Additionally, for pipe sizing downstream of the detention pond, supporting calculations would need to be provided (not shown here).

Calculate the Extended Detention Release Rate

$$Q_{ED} = \frac{V_{ED}}{172{,}800}$$

$$Q_{ED} = \frac{41{,}994\ cubic\ feet}{172{,}800} = 0.24\ cfs$$

Orifice Calculations

Extended Detention Orifice Design

$$Q_p = C_O\ x\ A_O\ x\ \sqrt{2\ x\ g\ x\ h}$$

$$Q_p = 0.62\ x\ 0.022\ x\ \sqrt{2\ x\ 32.2\ x\ 3.6} = 0.21\ cfs$$

0.62 used for standard orifice opening

h = water level at 50% V_{ED} (based on Extended Detention basin design)

2" orifice opening will need additional protection from clogging.

Orifice sized for extended detention allowable discharge rate (0.21 cfs).

Infiltration BMP Calculations

Average Infiltration Area (Bioretention Cell 1)

$$A_t = \frac{A_1 + A_2}{2}$$

$$A_t = \frac{2{,}650\ sf + 3{,}500\ sf}{2} = 3{,}075\ square\ feet$$

Surface Storage Volume (Bioretention Cell 1)

$$V_{ss} = A_t\ x\ H$$

$$V_{ss} = 3{,}075\ sf\ x\ 1\ ft = 3{,}075\ cubic\ feet$$

Subsurface Storage Volume (Bioretention Cell 1)

$$V_{soil} = h\ x\ SA\ x\ e$$

Void ratio 0.30 (max)

$$V_{soil} = 1.5\ ft\ x\ 3{,}075\ sf\ x\ 0.3 = 1{,}384\ cubic\ feet$$

Infiltration Storage (Bioretention Cell 1)

$$V_i = \frac{K_{sat}\ x\ S_f\ x\ 6\ x\ A_t}{12in}$$

$$V_i = \frac{1\frac{in}{hr}\ x\ 1\ x\ 6\ x\ 3{,}075\ sf}{12in} = 1{,}538\ cubic\ feet$$

Bioretention Total Storage Volume (Bioretention Cell 1)

$$V_{tbr} = V_{ss} + V_{subsurface} + V_i$$

$$V_{tbr} = 3{,}075\ cf + 1{,}384\ cf + 1{,}538\ cf = 5{,}997\ cubic\ feet$$

Rounded to 6,000 cubic feet.

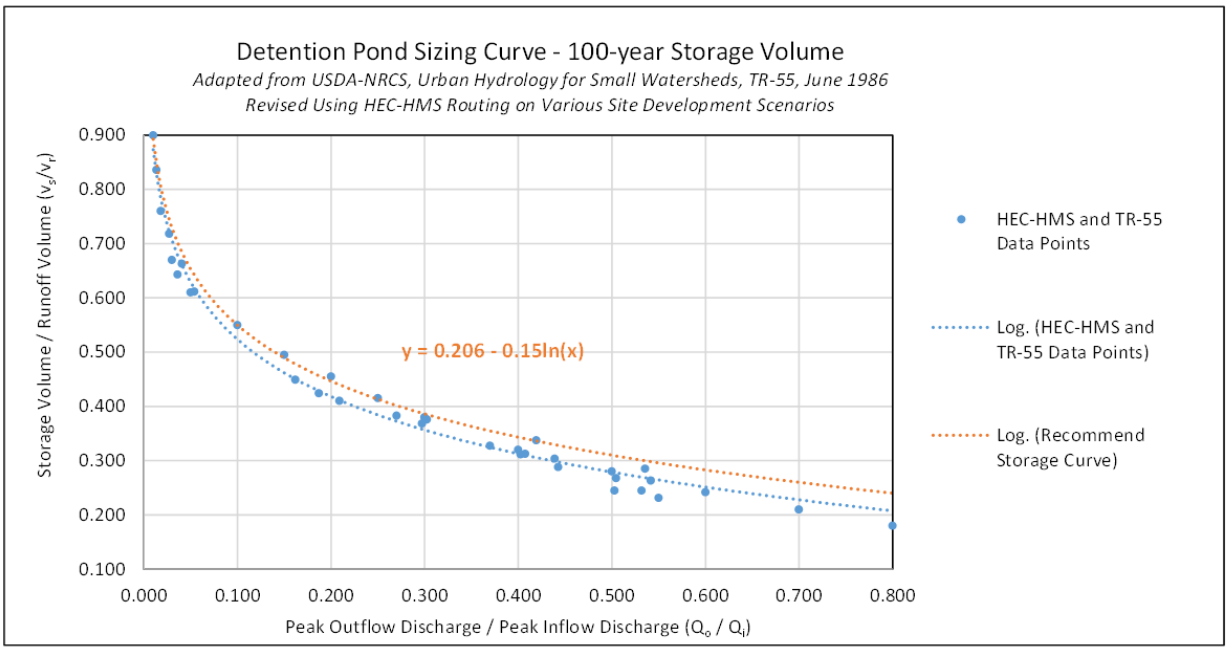
Summary of Bioretention Cell Storage

Location	Bottom Contour Area (SF)	Top Contour Area (SF)	Avg Area (SF)	Surface Storage (CF)	Soil Storage (CF)	Infiltration Storage (CF)	Total Storage (CF) (Rounded)
1	2,650	3,500	3,075	3,075	1,384	1,538	6,000
2	3,300	4,800	4,050	4,050	1,823	2,025	7,900
3	1,400	2,100	1,750	1,750	788	875	3,400
4	1,400	2,400	1,900	1,900	855	950	3,700
5	2,000	2,800	2,400	2,400	1,080	1,200	4,700
6	1,400	2,400	1,900	1,900	855	950	3,700
Total Volume Provided				**15,075**	**6,785**	**7,538**	**29,400**

Total volume provided by infiltration BMPs exceeds the required Channel Protection Volume (28,733 cf).

Please note that since the CPVC is met, the Water Quality requirement is also achieved.

Detention Pond Sizing Curve



Original TR-55 Table included Qo/Qi values ranging from 0.10 to 0.80

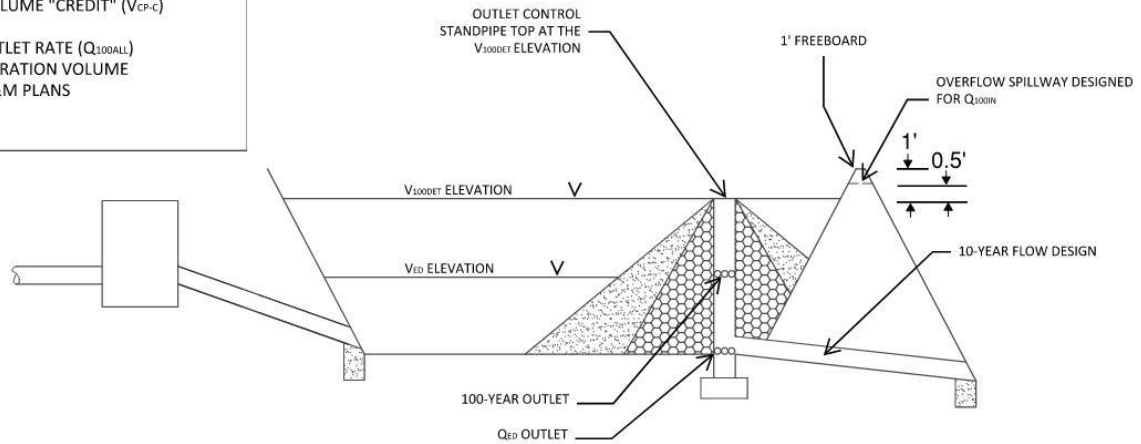
Additional values added using HEC-HMS routing, including Qo/Qi values less than 0.10

Typical Detention Basin/Forebay Cross Sections

TYPICAL DETENTION BASIN WITH MECHANICAL SEPERATOR

REQUIRED PROFESSIONAL ENGINEER CERTIFICATIONS

-CHANNEL PROTECTION VOLUME "CREDIT" (V_{CP-C})
-INFILTRATION RATES
-100-YEAR ALLOWABLE OUTLET RATE (Q_{100ALL})
-MEP FOR ACHIEVED INFILTRATION VOLUME
-STORMWATER SYSTEM O&M PLANS



MECHANICAL SEPARATOR

REQUIRED WATER QUALITY TREATMENT IS 80 MG/L TSS, OR 80% TSS REMOVAL

SIZED BASED ON THE 1-YEAR WATER QUALITY PEAK FLOW RATE (Q_{WQ})

$Q_{WQ}= (C)(I_1)(A)$

REPLACES FOREBAY REQUIREMENT

INSTALLED OFFLINE AND UPSTREAM OF ANY DETENTION OR RETENTION BASIN

NOTES:
-MUST BE NJDEP CERTIFIED
-EXCLUDES UPSTREAM CONTRIBUTING AREA'S WHERE 1-INCH WATER QUALITY CONTROL IS PROVIDED THROUGH OTHER BMP'S

EXTENDED DETENTION VOLUME (V_{ED})

EXTENDED DETENTION CONTROLS THE 2-YEAR BANK FULL RELEASE RATE BY DEWATERING THE V_{ED} OVER 48-HOURS

$V_{ED}= (6,897)(C)(A)$

EXTENDED DETENTION OUTLET RATE

$Q_{ED}=(V_{ED})/(172,800)$

$H_{ED}=(V_{ED})/((4,666)(h)^{(1/2)})$

H_{ED}= NUMBER OF 1-INCH DEWATERING HOLES
h=TOTAL HEAD ON THE ORIFICES

100-YEAR POST-CONSTRUCTION INLET RATE (Q_{100IN})

$Q_{100IN}=(C)(I_{100})(A)$

$I = [(30.2033)(P^{0.2203})]/[(T_C + 9.1747)^{0.8069}]$

100-YEAR ALLOWABLE OUTLET RATE (Q_{100ALL})

THE ALLOWABLE 100-YEAR OUTLET RATE IS THE LESSER OF:

-OCWRC RESTRICTED RATE FOR THE DRAIN (Q_R)
-PRO-RATED SHARE OF THE DRAINS CAPACITY (Q_P)
OR
-THE VARIABLE RELEASE RATE (Q_{VRR})

$Q_{VRR}=1.1055 - 0.206LN(A)$

100-YEAR DETENTION VOLUME (V_{100DET})

$R=0.206-(0.15)(LN(Q_{100ALL}/Q_{100IN}))$

R=STORAGE CURVE FACTOR

$V_{100RUN}=(18,900)(C)(A)$

$V_{100DET}=(V_{100RUN})(R)-V_{CP-C}$

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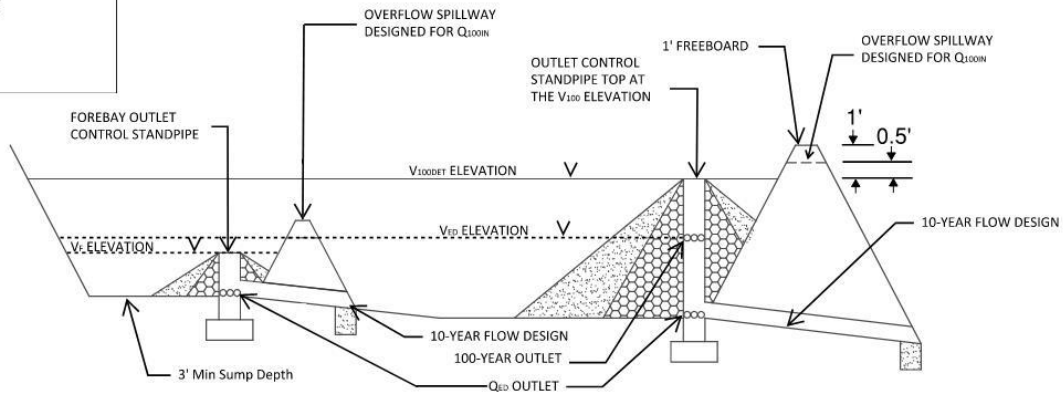
TYPICAL DETENTION BASIN WITH FOREBAY

REQUIRED PROFESSIONAL ENGINEER CERTIFICATIONS

-CHANNEL PROTECTION VOLUME "CREDIT" (V_{CP-C})
-INFILTRATION RATES
-100-YEAR ALLOWABLE OUTLET RATE (Q_{100ALL})
-MEP FOR ACHIEVED INFILTRATION VOLUME
-STORMWATER SYSTEM O&M PLANS



FOREBAY VOLUME (V_F)

A FOREBAY FOR ALL INLETS SHALL CAPTURE SILT, SAND, TRASH AND DEBRIS FOR REMOVAL. THEY ARE SIZED AT 15% OF THE WATER QUALITY VOLUME (V_{WQ})

$V_F = (545)(C)(A)$

V_F IS A MINIMUM OF V_{WQ} WHEN DOWNSTREAM INFILTRATION IS PROPOSED

FOREBAY OUTLET SIZE

THE FOREBAY OUTLET SIZE IS THE SAME AS THE EXTENDED DETENTION OUTLET SIZE

NOTE: ALTERNATIVE FOREBAY OUTLETS REQUIRE PRE-APPROVAL FROM THE OCWRC

EXTENDED DETENTION VOLUME (V_{ED})

EXTENDED DETENTION CONTROLS THE 2-YEAR BANK FULL RELEASE RATE BY DEWATERING THE V_{ED} OVER 48-HOURS

$V_{ED} = (6,897)(C)(A)$

EXTENDED DETENTION OUTLET RATE

$Q_{ED}=(V_{ED})/(172,800)$

$H_{ED}=(V_{ED})/((4,666)(h)^{(1/2)})$

H_{ED}= NUMBER OF 1-INCH DEWATERING HOLES
h=TOTAL HEAD ON THE ORIFICES

100-YEAR POST-CONSTRUCTION INLET RATE (Q_{100IN})

$Q_{100IN}=(C)(I)(A)$

$I = [(30.2033)(P^{0.2203})]/[(T_C + 9.1747)^{0.8069}]$

100-YEAR ALLOWABLE OUTLET RATE (Q_{100ALL})

THE ALLOWABLE 100-YEAR OUTLET RATE IS THE LESSER OF:

-OCWRC RESTRICTED RATE FOR THE DRAIN (Q_R)
-PRO-RATED SHARE OF THE DRAINS CAPACITY (Q_P)
OR
-THE VARIABLE RELEASE RATE (Q_{VRR})

$Q_{VRR}=1.1055 - 0.206LN(A)$

100-YEAR DETENTION VOLUME (V_{100DET})

$R=0.206-(0.15)(LN(Q_{100ALL}/Q_{100IN}))$

R=STORAGE CURVE FACTOR

$V_{100RUN}=(18,900)(C)(A)$

$V_{100DET}=(V_{100RUN})(R)-V_{CP-C}$

REV-11/22/2021

List of County Drains with Hydraulically Restricted Outlets

Drain	Capacity (cfs/acre)
John E. Olsen	0.0776
Brown	0.1
Taylor-Ladd	0.1
Dry Run	0.1
Sinking Bridge	0.0776
Holland	0.0776
New Hudson East of Airport	0.068
Vinewood	0.0776
Galloway	0.09
Blackwood	0.03

Appendix D: George W. Kuhn Combined Sewer District Requirements

Appendix E: Standard Variables

TC: Contributing Area Time of Concentration (Minutes)

A: Contributing Area (Acres)

C: Composite Post-Construction Runoff Coefficient for the Drainage Area

H_{ED}: Number of 1-inch Holes Required for Dewatering

Q_{ED}: Extended Detention Outlet Rate (CFS)

Q_{100IN}: 100-year Post-Construction Inlet Rate (CFS)

Q_{100ALL}: 100-year Allowable Outlet Rate (CFS) is the lesser of Q_R, Q_P, Q_{VRR}

Q_R: Restricted Outlet Rate (CFS) – Request from OCWRC office

Q_P: Pro-rated Share of the Drain Capacity (CFS)

Q_{VRR}: Variable Release Rate (CFS)

Q_{WQ}: 1-year Water Quality Design Rate for Mechanical Separators (CFS)

R: Storage Curve Factor

V_F: Forebay Volume (CF)

V_{ED}: Extended Detention Volume Required (CF)

V_{ED-P}: Extended Detention Volume Provided (CF)

V_{100IN}: 100-year Inlet Volume (CF)

V_{100DET}: 100-year Detention Volume (CF), where $V_{100DET} = V_{100RUN} \times R - V_{CP-C}$

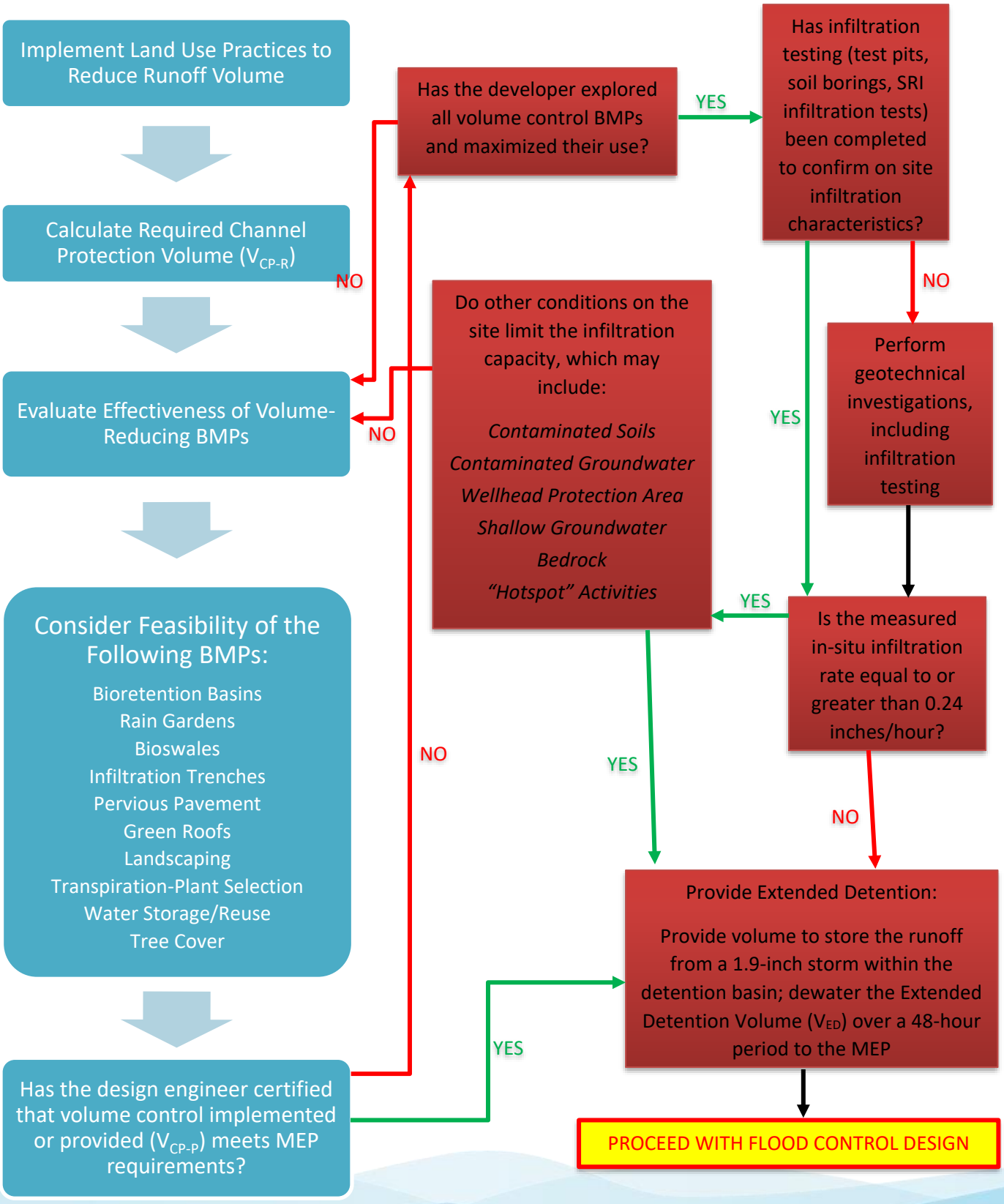
V_{CP-R}: Channel Protection Volume - Required (CF)

V_{CP-P}: Channel Protection Volume - Provided (CF)

V_{CP-C}: Channel Protection Volume - Credit (CF), where $V_{CP-C} = V_{CP-P}$ and $V_{CP-C} \leq V_{CP-R}$

V_{WQ}: Water Quality Volume (CF)

Appendix F: Channel Protection Flow Chart


Implement Land Use Practices to Reduce Runoff Volume
Calculate Required Channel Protection Volume (V_{CP-R})
Evaluate Effectiveness of Volume-Reducing BMPs
Consider Feasibility of the Following BMPs:
Bioretention Basins
Rain Gardens
Bioswales
Infiltration Trenches
Pervious Pavement
Green Roofs
Landscaping
Transpiration-Plant Selection
Water Storage/Reuse
Tree Cover
Has the design engineer certified that volume control implemented or provided (V_{CP-P}) meets MEP requirements?
NO
YES
Has the developer explored all volume control BMPs and maximized their use?
NO
YES
Has infiltration testing (test pits, soil borings, SRI infiltration tests) been completed to confirm on site infiltration characteristics?
NO
YES
Perform geotechnical investigations, including infiltration testing
Do other conditions on the site limit the infiltration capacity, which may include:
Contaminated Soils
Contaminated Groundwater
Wellhead Protection Area
Shallow Groundwater
Bedrock
"Hotspot" Activities
YES
Is the measured in-situ infiltration rate equal to or greater than 0.24 inches/hour?
NO
YES
Provide Extended Detention:
Provide volume to store the runoff from a 1.9-inch storm within the detention basin; dewater the Extended Detention Volume (V_{ED}) over a 48-hour period to the MEP
PROCEED WITH FLOOD CONTROL DESIGN

Appendix G: Maintenance Agreement

Stormwater Management Operations and Maintenance Agreement

This Agreement is made on [DATE], by and between [Community Name], (hereinafter "Community") whose address is [address] and [Owner Name], whose address is [address], (hereinafter "Owner"). Community and Owner agree as follows:

Article I. The Subject Property.

1.1 Owner owns the property located at and commonly known as [address or general description] (hereinafter the "Subject Property"). The legal description of the Subject Property is set forth at ***Exhibit A***.

Article II. The Stormwater System.

2.1 Owner, in accordance with Oakland County Stormwater Standards and State Municipal Separate Storm Sewer System permit requirements, agrees to install and maintain a Stormwater System on the Subject Property in accordance with approved plans and conditions. The Stormwater System is set forth at ***Exhibit B***.

2.2 After construction has been verified and accepted by the Community for the Stormwater System, the Owner shall file with the Community the "as-built" documents showing the design and construction details and shall reference this Agreement.

2.3 The Stormwater System will be governed by the terms and conditions in this Agreement.

Article III. The Stormwater O&M Plan.

3.1 The Owner shall be solely responsible for the installation, maintenance, and repair of the Stormwater System, drainage easements, and associated landscaping identified in Exhibit B in accordance with the Stormwater Management Operations and Maintenance Plan, hereinafter the "Stormwater O&M Plan" set forth at ***Exhibit C*** to this Agreement.

3.2 The Stormwater O&M plan is subject to approval by the Community.

3.3 The Owner agrees that the Stormwater O&M Plan is intended to and will serve the Subject Property in perpetuity.

3.4 The Owner, at its expense, shall secure from any affected owners of land all easements and releases of right-of-way necessary for implementation of the Stormwater O&M Plan and shall record them with the Oakland County Register of Deeds. These easements and releases of rights-of-way shall not be altered, amended, vacated, released, or abandoned without prior written approval of the Community.

3.5 No alterations or changes to the Stormwater O&M Plan shall be permitted unless they are deemed to comply with this Agreement and are approved in writing by the Community.

3.6 The Owner shall retain the services of a qualified inspector as described in Exhibit C – Maintenance Requirement 1) to operate and ensure the maintenance of the Stormwater O&M Plan.

3.7 The Owner shall annually, by December 30th, provide to the Community records (logs, invoices, reports, data, etc.) of inspections, maintenance, and repair of the Stormwater System in compliance with the Stormwater O&M Plan.

3.8 The Community agrees to enforce compliance with the annual inspection, maintenance and repair records as set forth in 3.7 above, such enforcement may require an ordinance.

Article IV. <u>Access and Enforcement</u>.

4.1 The Community or its designee is authorized to access the property as necessary to conduct inspections of the Stormwater System, implication of the Stormwater O&M Plan, or drainage easements to ascertain compliance with the intent of this Agreement.

Upon written notification by the Community or their designee of required maintenance or repairs, the Owner shall complete the specified maintenance or repairs within a reasonable time frame determined by the Community. The Owner shall be liable for the failure to undertake any maintenance or repairs so that the public health, safety and welfare shall not be endangered nor the road improvement damaged.

4.2 If the Owner does not keep the Stormwater System in reasonable order and condition, or complete maintenance activities in accordance with the Stormwater O&M Plan, or the reporting required in 3.7 above, the Community is authorized, but not required, to perform the specified inspections, maintenance or repairs in order to preserve the intended functions of the Stormwater System and prevent the Stormwater System from becoming a threat to public health, safety, general welfare or the environment.

4.3 In the case of an emergency, as determined by the Community, no notice shall be required prior to the Community performing emergency maintenance or repairs. The Community may levy the costs and expenses of such inspections, maintenance or repairs against the Owner.

The Community, at the time of entering upon said Stormwater System for the purpose of maintenance or repair, may file a notice of lien in the office of the Register of Deeds of Oakland County upon the property affected by the lien. If said costs and expenses are not paid by the Owner, the Community may pursue the collection of same through appropriate court actions and in such a case, the Owner shall pay in addition to said costs and expenses all costs of litigation, including attorney fees.

4.4 The Owner hereby conveys to the Community an easement over, on and in the property described in Exhibit A for the purpose of access to the Stormwater System for the inspection, maintenance and repair thereof, should the Owner fail to properly inspect, maintain and repair the Stormwater System.

Article V. Term and Covenants.

5.1 The Owner agrees that this Agreement shall bind all current and future owners of the property. The Owner agrees in the event that the Subject Property is sold, transferred, or leased to provide information to the new owner, operator, or lessee regarding proper inspection, maintenance and repair of the Stormwater System and Stormwater O&M Plan. The information shall accompany the first deed transfer and include Exhibits B and C and this Agreement. The transfer of this information shall also be required with any subsequent sale, transfer or lease of the Subject Property.

5.2 The Owner agrees that the rights, obligations and responsibilities hereunder shall commence upon execution of the Agreement.

Article VI. The Memorandum.

6.1 The Owner shall record with the Oakland County Register of Deeds a Memorandum of Stormwater Management Operations and Maintenance Agreement which serves as notice of this Agreement in a title search, the template for which is set forth at ***Exhibit D*** to this Agreement.

Article VII. Claims and Authority.

The Owner, its agents, representatives, successors and assigns shall defend, indemnify and hold Community harmless from and against any claims, demands, actions, damages, injuries, costs or expenses of any nature whatsoever, hereinafter "Claims", fixed or contingent, known or unknown, arising out of or in any way connected with the design, construction, use, maintenance, repair or operation (or omissions in such regard) of the Stormwater System, appurtenances, connections and attachments thereto which are the subject of this Agreement. This indemnity and hold harmless shall include any costs, expenses and attorney fees incurred by Community in connection with such Claims or the enforcement of this Agreement.

7.1 The parties whose signatures appear below hereby represent and warrant that they have the authority and capacity to sign this agreement and bind the respective parties hereto.

IN WITNESS WHEREOF, the Owner and Community have executed this agreement on the day and year first above written.

Owner

By: _____

Its: _____

STATE OF MICHIGAN)

)ss.

_____ COUNTY)

The foregoing instrument was acknowledged before me on this_____ day of _____, 20 ___, by _____, the _____ of _____.

_____

Notary Public

Community

By: _____

Its: _____

STATE OF MICHIGAN)

)ss.

_____ COUNTY)

The foregoing instrument was acknowledged before me on this_____ day of _____, 20 ___, by _____, the _____ of _____.

_____

Notary Public

Explanation of Exhibits

Exhibit A – Legal Description: Provide a legal description and reduced copy map to identify the land parcel(s) affected by this Agreement. This exhibit must be customized for each site. It must include a reference to a Subdivision Plat, Certified Survey number, or Condominium Plat, and a map to illustrate the affected parcel(s).

Exhibit B – Stormwater System Description and Map: Provide a written description and location map of the Stormwater System. This exhibit must be customized for each site. Map scale must be sufficiently large enough to show necessary detail.

Exhibit C – Stormwater O&M Plan: This exhibit explains the basic function of the stormwater management operation and maintenance plan, schedule, and budget providing the minimum specific maintenance activities and frequencies for each practice. The minimum elements of this exhibit include a description of the drainage area and the installed Stormwater System, a description of the specific maintenance activities which should include the following in addition to specific maintenance actions:

- Employee training and duties,
- Routine service requirements,
- Operating, inspection, and maintenance schedules, and
- Detailed construction drawings showing all critical components and their elevations.

The plan must include maintenance tasks and schedules. Refer to the Low Impact Development Manual for Michigan for maintenance task checklists for permanent BMPs and create a table of applicable maintenance tasks and schedules.

Exhibit D – Template for Memorandum of Stormwater Management Operations and Maintenance Agreement: This exhibit contains a template for said Memorandum to be recorded with the County Register of Deeds to put any future owners, or interest holders, on notice of the Stormwater System and the Stormwater System O&M Plan.

Memorandum of Stormwater Management Operations and Maintenance Agreement

The "Owner" _____ and the "Community" _____ have entered into a Stormwater Management Operations and Maintenance Agreement dated _____ for real property located in the State of Michigan, County of Oakland, City of _____ and further described as follows:

[real property description]

Commonly known as: _____

Parcel ID: _____

The Stormwater Management Operations and Maintenance Agreement provides for a stormwater management operation and maintenance plan for a stormwater system located on the real property. It authorizes easements for the local community to take enforcement action if the Agreement is breached. This Agreement runs with the land, binds all current and future owners of the real property and serves the real property in perpetuity.

Owner:

By: _____

Its: _____

STATE OF MICHIGAN)

)ss.

_____ COUNTY)

The foregoing instrument was acknowledged before me on this_____ day of _____, 2017, by _____, the _____ of _____.

_____

Notary Public

Recording Fee: $15.00

Drafted by and Return to:

Appendix H: Engineer's Certificate of Outlet

Date:

Oakland County Water Resources Commissioner

Building 95 West – One Public Works Drive

Waterford, Michigan 48328-1907

Attention: _____

Reference: Proposed _____

Location _____

Gentlemen:

ENGINEER'S CERTIFICATION

This is to certify that existing drain or watercourse (select one) is the only reasonable outlet for the proposed _(name of development)_____, located in the city/township/village (select one) of _____and that the existing drain or watercourse (select one) has sufficient capacity to serve as an adequate outlet for __(name of development)_____without detriment or diminution of the drainage services which the outlet presently provides.

_____

Registration No.: _____

SUMMARY
ORDINANCE NO. C-4-2023
CITY OF FARMINGTON HILLS
OAKLAND COUNTY, MICHIGAN

NOTICE OF AN ORDINANCE TO AMEND CITY OF FARMINGTON HILLS CITY CODE, CHAPTER 33, WATER AND SEWERS, TO ADD DIVISION 2, STORMWATER ENGINEERING DESIGN STANDARDS TO ARTICLE IX, STORMWATER MANAGEMENT, TO ADOPT AND ENACT STORMWATER ENGINEERING DESIGN STANDARDS DEVELOPED BY THE OAKLAND COUNTY WATER RESOURCE COMMISSIONERS OFFICE FOR COMPLIANCE WITH THE CITY'S PART 31, MS4 GENERAL PERMIT, WATER RESOURCES PROTECTION IN ACCORDANCE WITH THE REQUIREMENTS OF THE NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT, 1994 PA 451, AS AMENDED AND THE CITY'S MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES & ENERGY (MDEGLE), WASTEWATER DISCHARGE PERMIT, RULE 323.2161A, POST-CONSTRUCTION REQUIREMENTS.

A full copy of the Ordinance is on file in the Clerk's Office for public review between the hours of 8:30am and 4:30pm Monday through Friday.

Section 1, Ordinance Amendment
Section 2, Severability
Section 3, Savings
Section 4, Repealer
Section 6, Effective Date — The provisions of this Ordinance are ordered to take effect twenty-one (21) days after enactment.

PAMELA B. SMITH, City Clerk

Publish: March 19, 2023

OFFICE OF CITY CLERK

TO: Mayor and City Council

FROM: Pamela B. Smith, City Clerk

DATE: March 13, 2023

SUBJECT: Liquor License Policy

At the study session meeting held February 27, 2023, City Council reviewed the city's current liquor license policy and suggested some amendments at that time.

The proposed amendments from the February 27th study session have been incorporated into the policy that is before council this evening for consideration together with several formatting changes and language updates as proposed by the City Attorney.

RECOMMENDATION:
That the City Council hereby approves the amendments to the city's Liquor License Policy as submitted to Council on March 13, 2023.

CITY OF FARMINGTON HILLS
LIQUOR LICENSE POLICY

WHEREAS, the City Council of the City of Farmington Hills has the authority to approve the issuance of new liquor licenses for consumption on the premises to certain parties; and

WHEREAS, the City Council of the City of Farmington Hills must endeavor to cause the greatest benefit to the community from the use of its approval powers in the matter of the issuance of such licenses;

NOW THEREFORE, BE IT RESOLVED, that the City Council shall consider the following guidelines in connection with the approval of ~~the remaining~~ liquor licenses for use in the City of Farmington Hills:

1. Compatibility of proposed use with the surrounding land uses with attention to the effect the proposed location would have on the economic development of the area.
2. Compatibility of proposed use with abutting roadways with attention to the traffic circulation and traffic impact on the surrounding area.
~~3. The proximity of the proposed use to similar existing operations and establishments already serving alcohol will be taken into consideration.~~
~~4.~~3. The proximity of the proposed use to office service and commercial enterprises so as to accommodate the tenants and their employees shall be taken into consideration.
~~5.~~4. Consideration shall be given to the proximity of the proposed use to residential, school and church districts with reference to the possible adverse effect such use may have on such districts.
~~6.~~5. Consideration shall be given as to the effect in general the issuance of the license would have on the health, welfare and safety of the general public.
~~7.~~6. Consideration will be given to the effect the proposed location would have in contributing to the economic stability or revitalization of areas within the City.

BE IT FURTHER RESOLVED, that the City Council shall consider the following guidelines in connection with the applicant for a license:

1. The applicant's general management experience and business reputation in connection with the operation of similar facilities.
2. The applicant's moral character with special consideration being given to any past criminal convictions for crimes involving moral turpitude, violence or alcoholic liquor violations by the applicant or those whom he intends to manage the proposed facility.
3. The existence of adequate financial resources for the establishment and operation of the proposed licensed business in proportion to the type and size of the proposed business.
4. If a corporation applies for the licenses, the word "applicant" used in this Resolution shall be considered to include the current corporate officers.

BE IT FURTHER RESOLVED, that prior to the hearing on all new applications for liquor licenses for consumption on the premises and transfers of location applications for such licenses, the applicant shall meet the following conditions within a stated period of time and submit to the City Council the following:

1. That a preliminary site plan showing the location of the proposed building, the architectural design, building elevations and other pertinent physical features of the proposed building to be constructed on the premises be submitted to the City Clerk to be conveyed to the City's Planning/Building and Fire Departments for recommendation.
2. That the floor plans, seating arrangements, the interior design and the type of furniture and fixtures to be used in the proposed restaurant facilities be submitted to the City Clerk to be conveyed to the City's Planning/Building and Fire Departments for recommendation.
3. If the building is already constructed, then in addition to the above, the applicant shall furnish any proposed renovation to both the interior and exterior of the premises or any proposed building alterations, to meet and comply with all existing City Codes and Ordinances; with these plans to be submitted to the City Clerk and conveyed to the City's Planning/Building and Fire Departments for recommendation.
4. That the applicant's experience, financial capability, history of experience as a licensee, proposed food service menus, if serving food, and other facts or proposals pertinent to the operation of the proposed facility be submitted to the City Clerk for conveyance to the Police Department for recommendation.
5. A statement as to when applicant intends to commence construction or renovation of the proposed building or facility and when applicant expects to complete such construction and place such license into full operation.
6. The applicant shall also furnish such other material, as it may deem pertinent to the consideration of the application by the Council.
7. ~~7.~~ 7. That the findings and recommendations of the Planning/Building, Fire and Police Departments are forwarded to the City Clerk and following which, all such findings and recommendations are placed on the City Council Agenda by the City Clerk and that approval of such licenses shall be contingent upon: (a) the application for and receipt of site plan approval, building permits, zoning changes and other necessary approvals by the City of Farmington Hills within six (6) months after the approval;~~.~~
8. ~~8.~~ ~~T~~ (b) that construction be started within six (6) months after the issuance of a license, unless specifically altered by the City Council, at which time the progress of the applicant in meeting all of the above stated conditions will be reported to the City Council;~~.~~
9. ~~9.~~ ~~T~~ (c) that no floor plan, building elevation, site plan, seating arrangement, kitchen layout or other pertinent facts, drawings or documents submitted to the City of Farmington Hills at the time of their approval may be changed, unless it is a reasonable improvement in design or service function of the facility, at such time the applicant seeks approval at any of the other administrative divisions of the City, nor upon final construction of buildings or alterations of them;~~.~~ and
10. ~~10.~~7. ~~T~~ (d) that the failure of any applicant to meet any of the above conditions may be reasons, but not necessarily the only reasons, for the City Council to deny the annual renewal of any of the licenses issued and further that a review of any

license which has not been activated by the licensee will be conducted by the City Council and if satisfactory performance pursuant to the above conditions is not found, then the City Council reserves the right to withdraw its approval and deny the license at the time of review or at the time of annual renewal.

BE IT FURTHER RESOLVED, that the aforesaid application and review provisions are to be considered as only guidelines for the applicant and this City Council, and nothing in this Resolution shall be construed to prevent this City Council from deleting or adding to such guidelines in its discretion, and no applicant shall be considered to have acquired any vested interest in the issuance of a license by complying with any of the guidelines until the approval for the issuance of the license is given by this City Council and the Michigan Liquor Control Commission issues the license to the applicant.

BE IT FURTHER RESOLVED, that all applications for a license shall be made to the City Council on forms which are to be obtained from the City Clerk's Office and upon completion of the information required on such forms to be filed with the City Clerk.

BE IF FURTHER RESOLVED, that any applicant who shall make any statement either orally or in writing to the City Council for the purpose of inducing this City Council to approve the issuance of a license, which statement is false or fraudulent, shall be deemed to have forfeited the right to such approval, and this City Council reserves the right to withdraw its approval or if a license has already been issued, to request the Michigan Liquor Control Commission to revoke such license or to request the Michigan Liquor Control Commission to deny the renewal of any license issued to such applicant. Any material deviation made by the applicant without the consent of this City Council in connection with the proposed construction or renovation of the building and the restaurant facilities shall be deemed to constitute such false and fraudulent statement.

~~BE IT FURTHER RESOLVED, that City Council shall conduct hearings on applications, if any are pending or available, three times each year, this being during the months of January, May and September at regularly scheduled Council meetings.~~

BE IT FURTHER RESOLVED, that nothing in this Resolution should be construed as a representation by this City Council that the issuance of ~~the remaining~~ licenses will be approved, and this City Council further reserves the right to withhold hearings on any applications until at some future time to be designated by this City Council.

Approved by Council this 12th day of December, 1994.
Amended by Council this ____ day of _____, 2023.

~~KATHRYN A. DORNAN~~PAMELA B. SMITH

CITY CLERK

OFFICE OF CITY CLERK

TO: Mayor and City Council

FROM: Pamela B. Smith, City Clerk

DATE: March 13, 2023

SUBJECT: Budget Study Session Dates

Staff is recommending that City Council establish the following budget study session meeting dates:

May 15, 2023 - 6:00pm – Community Room
May 16, 2023 - 6:00pm – Community Room

OFFICE OF CITY CLERK

TO: Mayor and City Council

FROM: Pamela B. Smith, City Clerk

DATE: March 13, 2023

SUBJECT: Special Joint Meeting Date

Staff is recommending that City Council establish April 20, 2023 at 6pm as a Special Joint Meeting with the Planning Commission to be held in the Council Chamber.

REPORT FROM THE CITY MANAGER TO CITY COUNCIL – March 13, 2022

SUBJECT: Authorization for Grant Application to the Michigan Department of Transportation Local Bridge Program for the Tuck Road Bridge Replacement.

ADMINISTRATIVE SUMMARY

- The City of Farmington Hills maintains jurisdiction of the Tuck Road Bridge over the Upper Rouge River. This bridge is located between Grand River Avenue and Eight Mile Road.

- This bridge was originally constructed around 1925 with modifications in the 1950s. A 2020 condition assessment performed by the City's as-needed structural engineering consultant indicates that the bridge is nearing the end of its useful life and needs replacement. The City's Capital Improvement Plan also identifies the project as a future need. The preliminary estimate for replacement of the Bridge including design and construction engineering is approximately $3 Million.

- Federal funds are potentially available to offset up to ninety-five percent (95%) of the direct construction costs for this bridge. Design and Construction Engineering costs are the sole responsibility of the City and as such, the cost breakdown is approximately $2,400,000 Federal funds/$600,000 local matching funds.

- The Michigan Department of Transportation (MDOT) has announced the solicitation of applications for candidate projects for the Local Bridge Program. The current round of funding is for fiscal year 2026.

- MDOT requires that the City Council submit a resolution of support with each grant application.

RECOMMENDATION

IT IS RESOLVED that the Farmington Hills City Council herby approve the attached resolution supporting the Michigan Department of Transportation Local Bridge Program Grant for the Tuck Road Bridge Replacement.

SUPPORT DOCUMENTATION

Tuck Road crosses over the Upper Branch of the Rouge River between Grand River and Eight Mile Roads. At this location, Tuck Road is a two-lane road asphalt road with a gravel shoulder and guardrail along the limits of the culvert. The culvert has a span of twenty-two (22) feet and meets the classification of a bridge by MDOT's guidelines. The structure was originally built in 1925 and modified in the 1950s. A recent condition assessment of the bridge indicates that it is nearing the end of its useful life and should be scheduled for replacement. The Tuck Road bridge is noted in City's Capital Improvement Plan.

Typically, MDOT has an annual grant program for local agency bridges. The Tuck Road bridge replacement meets the eligibility criteria for consideration of funding under this program. The current call for project proposals is due in April and requires a resolution of support from City Council. If funded, the grant would be available in fiscal year 2026.

Prepared by: Mark S. Saksewski, P.E. Senior Traffic Engineer
Reviewed by: Karen Mondora, P.E. Director, Public Services
Approval by: Gary M. Mekjian, P.E., City Manager

CITY OF FARMINGTON HILLS
RESOLUTION FOR MICHIGAN DEPARTMENT OF TRANSPORTATION LOCAL BRIDGE PROGRAM GRANT FOR TUCK ROAD BRIDGE REPLACEMENT

RESOLUTION NO. _____

At a session of the City Council of the City of Farmington Hills, Oakland County, State of Michigan, from the City Council Chambers on March 13, 2023, at 7:30 o'clock P.M, with those present and absent being:

PRESENT:
ABSENT:

The following resolution was offered by Councilmember _____ and supported by Councilmember _____:

WHEREAS, the City of Farmington Hills is preparing a Local Bridge Program Grant for replacement of the Tuck Road Bridge over the Rouge River,

WHEREAS, Michigan Department of Transportation, Local Bridge funds are available to offset up to 95 percent of the direct construction cost for local agencies bridges,

WHEREAS, the condition of the Tuck Road bridge warrants replacement,

NOW, THEREFORE, BE IT RESOLVED, that the Farmington Hills City Council is hereby in support of the Local Bridge application submittal by the City of Farmington Hills for the purpose of obtaining a Michigan Department of Transportation, Local Bridge Program grant for replacement of the Tuck Road Bridge over the Rouge River for the year 2026.

AYES:
NAYS:
ABSTENTIONS:

RESOLUTION DECLARED ADOPTED.

STATE OF MICHIGAN)
) SS.
COUNTY OF OAKLAND)

I, City Clerk of the City of Farmington Hills, hereby certify that the foregoing is a true and correct copy of a resolution of the City Council of the City of Farmington Hills, adopted at a regular meeting of said Council held on March 13, 2023, the original of which is on file in my office.

_____
Pamela B. Smith, City Clerk
City of Farmington Hills
Oakland County, Michigan

REPORT TO THE CITY COUNCIL FROM THE CITY CLERK – MARCH 13, 2023

SUBJECT: Consideration of adoption of Resolution recognizing **ANOTHER WAY PREGNANCY CENTER** as a non-profit organization for the purpose of obtaining a Charitable Gaming License through the State of Michigan

ADMINISTRATIVE HISTORY:

- The City has received a request from Jennifer Trevathan, Executive Director of Another way Pregnancy Center, operating at 31700 W. 12 Mile Road, Farmington Hills, requesting City Council to adopt a formal resolution recognizing the company as a non-profit organization operating in the community.

- Another Way Pregnancy Center provides pregnancy tests, limited obstetric ultrasounds, parenting education, support groups, bible studies, and material assistance for pregnant women and their families until their child turns two years old.

- The organization wishes to participate in certain fund-raising events that cannot be held without a Charitable Gaming License from the State of Michigan.

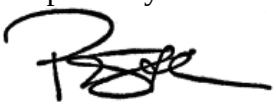
- To be eligible for such licenses the organization must be recognized as a non-profit organization by the public body in the community in which they are located.

- The organization has provided verification of their status as a tax-exempt organization as described in Section 501(c) (3) of the Internal Revenue Code and has been classified as a public charity. The Clerk's Office has verified their tax exempt status and that they are operating at the above address through the IRS online portal.

RECOMMENDATION:

IT IS RESOLVED, that City Council hereby approves the Local Governing Body Resolution for Gaming Licenses Issued by the Bureau of State Lottery, recognizing Another Way Pregnancy Center as a non-profit organization operating in the community for the purpose of obtaining a Charitable Gaming License.

Respectfully submitted,



Pamela B. Smith, City Clerk

MICHIGAN LOTTERY
Charitable Gaming Division
Box 30023, Lansing, MI 48909
OVERNIGHT DELIVERY:
101 E. Hillsdale, Lansing MI 48933
(517) 335-5780
www.michigan.gov/cg

LOCAL GOVERNING BODY RESOLUTION FOR CHARITABLE GAMING LICENSES

(Required by MCL.432.103(K)(ii))

At a _____ meeting of the _____
REGULAR OR SPECIAL — TOWNSHIP, CITY, OR VILLAGE COUNCIL/BOARD

called to order by _____ on _____
DATE

at _____ a.m./p.m. the following resolution was offered:
TIME

Moved by _____ and supported by _____

that the request from _____ of _____,
NAME OF ORGANIZATION — CITY

county of _____, asking that they be recognized as a
COUNTY NAME

nonprofit organization operating in the community for the purpose of obtaining charitable

gaming licenses, be considered for _____.
APPROVAL/DISAPPROVAL

APPROVAL		DISAPPROVAL	
Yeas:	_____	Yeas:	_____
Nays:	_____	Nays:	_____
Absent:	_____	Absent:	_____

I hereby certify that the foregoing is a true and complete copy of a resolution offered and adopted by the _____ at a _____
TOWNSHIP, CITY, OR VILLAGE COUNCIL/BOARD — REGULAR OR SPECIAL

meeting held on _____.
DATE

SIGNED: _____
TOWNSHIP, CITY, OR VILLAGE CLERK

_____
PRINTED NAME AND TITLE

_____
ADDRESS

COMPLETION: Required
PENALTY: Possible denial of application.

Another Way Pregnancy Center

31700 W. 12 Mile Road, Ste. 230 • Farmington Hills, MI 48334 • (248) 939-5900 • AWPCFriends.org

February 24, 2023

Farmington Hills City Council
City of Farmington Hills
31555 W. Eleven Mile
Farmington Hills, MI 48336-1165

Dear Farmington Hills City Council,

Another Way Pregnancy Center, Inc. (AWPC) is a 501c3 nonprofit organization operating at 12 Mile and Orchard Lake Road in Farmington Hills, Michigan. We are writing to be recognized by the council for the purpose of obtaining a charitable gaming license for our upcoming Laugh4Hope fundraising event.

The Laugh4Hope is our family friendly comedy night in support of Another Way Pregnancy Center's free and confidential services. AWPC provides pregnancy tests, limited obstetric ultrasounds, parenting education, support groups, Bible studies, and material assistance for pregnant women and their families until their child turns two years old. All funds from the event go towards providing those services at no cost to the clients and towards the operation costs of the center. The charitable gaming license is for our raffle basket portion of the night in which guests can purchase raffle tickets and enter them to win different gift baskets donated by local businesses and individuals.

Our center has been part of the Farmington Hills community since March of 2012 and has been operating as a 501c3 since 1984. We look forward to continuing to support and empower families in the area and surrounding cities for many years to come.

Thank you for reviewing our request.

Sincerely,

Jennifer Trevathan

The AWPC Team & Jennifer Trevathan (Executive Director)

REPORT FROM THE CITY MANAGER TO CITY COUNCIL – March 13, 2023

SUBJECT: Award of Contract – DPW Garage Painting Project

ADMINISTRATIVE SUMMARY:

- The garage area of the DPW Facility was last painted 25 years ago in 1997. Cleaning, surface rust removal and repainting of the steel surfaces and block walls will protect the building from deterioration and add new life to the structure.
- A project to clean and paint the interior walls and ceiling of the garage was initially advertised and competitively bid back in early 2022. Unfortunately, the awarded contractor did not follow the specifications and damaged several items in the garage during the surface preparation phase. The contractor was removed from the job and an insurance claim was filed. Repairs have been completed and the City has been reimbursed for damages.
- Hubbell, Roth & Clark (HRC) was hired to prepare detailed specifications and a Request for Proposals (RFP) for a re-bid. Several factors would be used to determine the lowest qualified bid including past project experience, personnel, surface cleaning methods and quality control. These bid documents were publicly advertised and competeively bid on the Michigan Inter-governmental Trade Network (MITN) e-procurement system and opened on January 12, 2023.
- Four (4) bids were received with pricing ranging from $123,000 to $187,000. The City concurs with the attached HRC recommendation and RFP scoring for the two lowest bids.
- Due to some areas of more substantial corrosion, a 10% contingency has been included to cover any unknown conditions identified during the project.
- Funding for this project is provided in the Building Maintenance account.
- The recommended vendor, Northstar Painting of Birmingham, Michigan, has provided similar services for the City of Taylor and West Bloomfield Township. Northstar also included detailed information on how existing sensitive equipment would be covered and protected during the project. This contractor has over 20 years of experience applying new coatings in a commercial/industrial setting and does not utilize subcontractors.

RECOMMENDATION:

IT IS RESOLVED that the City Council of Farmington Hills authorize the City Manager to sign a contract with Northstar Painting (a minority owned company) in an amount not to exceed $151,509 which includes a 10% contingency for the cleaning, restoration and painting of the walls and ceiling of the DPW's garage area.

SUPPORT DOCUMENTATION:

The City's DPW facility was re-built and expanded in 1997. The garage area is continually exposed to diesel exhaust soot and corrosive salt dust which has darkened the interior of the building and caused some areas to have heavy surface rust. The rusted areas have been inspected by one of the City's as-needed consultants who recommended a cleaning and re-painting as a preventative maintenance measure.

Prepared:	Derrick Schueller, DPW Superintendent
Departmental Authorization:	Karen Mondora, P.E., Director, Department of Public Services Kelly Monico, Director, Department of Central Services
Approved:	Gary Mekjian, P.E., City Manager

HUBBELL, ROTH & CLARK, INC
CONSULTING ENGINEERS SINCE 1915

555 Hulet Drive
Bloomfield Hills, MI 48302-0360

248-454-6300

www.hrcengr.com

February 20, 2023

City of Farmington Hills – Division of Public Works
27245 Halsted Road
Farmington Hills, Michigan 48331

Attn: Mr. Derrick Schueller, Public Works Superintendent

Re: Recommendation for Award
Paint & Finish Maintenance Project – DPW Facility

HRC Job No. 20230617

Dear Mr. Schueller:

We have reviewed the bids that were received by the City's Department of Central Services on Thursday, January 12, 2023 and forwarded to our office on the same day for the Paint & Finish Maintenance Project – DPW Facility. There were four (4) bids received. R & G Painting is the lowest bid but they did not include a Unit price for localized removal of existing coatings (SF). Northstar Painting submitted a Unit price for localized removal of existing coatings (SF) for steel & block but excluded bag insulation ceiling. A summary of the bids is as follows:

R&G Painting LLC:	
Paint & Finish Maintenance Project	$123,000.00
Localized Removal of Existing Coatings (SF)	-0-
Northstar Painting:	
Paint & Finish Maintenance Project	$137,735.00
Localized Removal of Existing Coatings (SF)	-$2-
Industrial Painting Contractors Inc.:	
Paint & Finish Maintenance Project	$186,400.00
Localized Removal of Existing Coatings (SF)	-$84-
RNC Painting:	
Paint & Finish Maintenance Project	$187,177.00
Localized Removal of Existing Coatings (SF)	-$5-

During the design stage of the project we worked together to develop a bidder evaluation criteria scorecard. The scorecard awarded points based on the responses submitted by each bidder as part of their bid. In addition, HRC performed reference interviews, and HRC along with the Department of Public Works, performed multiple site visits of prior projects performed by both R&G and Northstar. Based on our findings a scorecard grade was given to each of the two lowest bidders. R&G was given a grade of 70 out of 100. Northstar was given a grade of 90 out of 100.

Based on the above, this office recommends award of the Contract to Northstar Painting of Birmingham, Michigan with a total bid of **$137,735.00**, subject to the submission of the necessary bonds and insurance, which comply with the contract specifications. We also recommend that an additional 10% construction contingency **($13,774)** be added to the bid amount.

Based on the above, HRC recommends the City approve the total project construction budget for the Paint & Finish Maintenance Project – DPW Facility of **151,509.00** (not-to-exceed maximum, including costs for contingencies).

Enclosed, please find a copy of the bidder score cards for your records. If you have any questions or require any additional information, please contact the undersigned.

Very truly yours,

HUBBELL, ROTH & CLARK, INC.

David E Sherman
Senior Project Analyst

Adrianna M. Melchior, AIA, LEED AP BD+C
Associate

DES/des
Attachment: Bidder Scorecards

pc: City of Farmington Hills; Jerry Brock
HRC; C. Hart, A. Melchior, C. Crist, File

Bidder Name:	Northstar Custom Painting			
Evaluation Criteria	**Maximum Points Allotted**	**Requirements**	**Notes**	**Points Awarded**
Section A- Personnel and Roles	10	List all personnel, identifying names for main point of contact/communication with the City, QC officer, crew lead, those parties responsible for cleaning, surface prep work, and application of the new coatings. Clearly indicate who will be main point of contact in the event of a language barrier or other communication challenge.	Lists 4 people for lead personnel, hours and phone #s; indicates self perform- no subs Does not commit to exactly who will be installing but once crew is assigned, that's who will start & finish the work Indicates main point of contact for meetings and communication (language barrier not addressed explicitly)	10
Section B- Past Project Experience and Reference Contact Information	30	Provide list of past projects, documenting at least ten years of company experience specializing in this type of work. Provide reference contact information (name, phone, email, project address) for at least 3 projects, preferably within a 50-mile radius of the City of Farmington Hills. Ref: Spec 09900	(6)- projects listed w/ descriptions, wide range of substrates Visited (1)- location which had limited applicability; bus spray bay. Website has pics of projects with steel prep & interior protection of ajacent areas. All references gave positive feedback/have hired Northstar repeatedly	25
Section C- Experience and Qualifications of Personnel	20	Provide descriptions of work experience for each of the persons listed in Section A. Submit letter(s) from the Manufacturer certifying that those individuals who will be applying the new coatings are Manufacturer Approved Installers. Manufacturer shall be Sherwin Williams or Owner approved equal. Ref: Specs 01300, 01400 & 09900	20+ yrs experience for any of the teams who will be applying new coatings. Previous SW rep. on staff. No Mfr cert letters but per Al, this is OK to waive- he has validated that Northstar has installed SW coatings and is considered acceptable by SW	20
Section D- Surface Preparation and Cleaning Method Statement	20	Submit a method statement clearly describing surface preparation and cleaning methods that will be used. Method statement shall include detailed description for methods of protection of existing systems at all stages of the project including, but not limited to, electrical, I&C, and HVAC. Include detailed description for methods to contain and dispose of byproducts of the surface preparation and cleaning including, but not limited to, water, spent abrasives, fines, dust and debris. Ref: Specs 01300, 02030 and 09900	Detailed info RE: how existing systems will be covered/protected (addresses elements beyond what was mentioned in proposal) Does not address containment and disposal Detailed info RE: surface prep and cleaning- not a copy/paste of 09900 spec	15
Section E- Quality Control Method Statement and Coating Adhesion Testing Proposal	20	Submit a method statement clearly describing means by which Bidder shall maintain quality through construction, including the monitoring of quality control over products, services, site conditions, and workmanship, to produce Work of specified quality. Provide name of key personnel who will be responsible for all aspects of QC (QC Officer). Ref: Spec 01400 Submit a proposal from the testing firm who will be subcontracting to the Bidder to perform ASTM D3359 Coating Adhesion Testing and a results report. Testing firm shall be one of three firms listed in Spec Section 01400 or Owner approved equal. Ref: Specs 02030, 01400 and Pricing Proposal	Method statement indicates use of both City and Northstar's SW Rep for frequent mtgs and drop-ins Indicates intention to take before, during and after photo documentation QC Officer name is provided Provides name and proposal for 3rd party Adhesion Testing	20
			Total score:	90

Bidder Name:	R&G Painting			
Evaluation Criteria	**Maximum Points Allotted**	**Requirements**	**Notes**	**Points Awarded**
Section A- Personnel and Roles	10	List all personnel, identifying names for main point of contact/communication with the City, QC officer, crew lead, those parties responsible for cleaning, surface prep work, and application of the new coatings. Clearly indicate who will be main point of contact in the event of a language barrier or other communication challenge.	Lists 3 people total & who will do what Subcontractor page is not struck out (per the instructions)- no subs?? Does not indicate who main point of contact in case of language barrier	5
Section B- Past Project Experience and Reference Contact Information	30	Provide list of past projects, documenting at least ten years of company experience specializing in this type of work. Provide reference contact information (name, phone, email, project address) for at least 3 projects, preferably within a 50-mile radius of the City of Farmington Hills. Ref: Spec 09900	Indicates over 100 projects of similar prep and paint; (3)- schools listed Visited (2)- location which had limited applicability; website offers no further background on relevent project/prep experience. Al Nita has experiance working with R&G and said he can attest to their ability to perform the work. All references gave positive feedback/have hired R&G repeatedly	25
Section C- Experience and Qualifications of Personnel	20	Provide descriptions of work experience for each of the persons listed in Section A. Submit letter(s) from the Manufacturer certifying that those individuals who will be applying the new coatings are Manufacturer Approved Installers. Manufacturer shall be Sherwin Williams or Owner approved equal. Ref: Specs 01300, 01400 & 09900	10 yrs experience for each of 2 who will be applying new coatings No Mfr cert letters but per Al, this is OK to waive- he has validated that R&G has installed SW coatings and is considered acceptable by SW	20
Section D- Surface Preparation and Cleaning Method Statement	20	Submit a method statement clearly describing surface preparation and cleaning methods that will be used. Method statement shall include detailed description for methods of protection of existing systems at all stages of the project including, but not limited to, electrical, I&C, and HVAC. Include detailed description for methods to contain and dispose of byproducts of the surface preparation and cleaning including, but not limited to, water, spent abrasives, fines, dust and debris. Ref: Specs 01300, 02030 and 09900	Very limited detail RE: how existing systems will be covered/protected Does not address containment and disposal Addresses cleaning methods to be used near electrical but no other areas	10
Section E- Quality Control Method Statement and Coating Adhesion Testing Proposal	20	Submit a method statement clearly describing means by which Bidder shall maintain quality through construction, including the monitoring of quality control over products, services, site conditions, and workmanship, to produce Work of specified quality. Provide name of key personnel who will be responsible for all aspects of QC (QC Officer). Ref: Spec 01400 Submit a proposal from the testing firm who will be subcontracting to the Bidder to perform ASTM D3359 Coating Adhesion Testing and a results report. Testing firm shall be one of three firms listed in Spec Section 01400 or Owner approved equal. Ref: Specs 02030, 01400 and Pricing Proposal	Method statement is a copy/paste from Spec 01400 RE: adhesion testing therefore does not indicate customized plan & does not cover QC items beyond adhesion testing QC Officer name is provided Does not provide name or proposal for 3rd party Adhesion Testing	10
			Total score:	**70**

REPORT FROM THE CITY MANAGER TO CITY COUNCIL – March 13, 2023

SUBJECT: Consideration of Award of Contract for the Normandy Hills Subdivision Road Reconstruction Project in Section 21

Administrative Summary

- In November 2018, voters approved the City Charter Amendment to Transition to a Local Road Millage. This millage replaced the City's local road special assessment process for funding local road reconstruction.

- The City currently rates the paved public roads utilizing the Pavement Surface Evaluation and Rating (PASER) system which is a widely accepted system used throughout the country. Michigan's Transportation Asset Management Council has adopted the PASER system for measuring statewide pavement conditions in Michigan.

- The City utilizes a PASER rating of 2.75 or less to qualify local roads and subdivisions for consideration of reconstruction. The paved roads within the project area have an average PASER rating below 2.75, making the project a high priority candidate. Its consideration was discussed with City Council in the fall of 2022 and it has moved forward.

- This project entails the reconstruction of the paved roads in the Normandy Hills subdivision, these include Brittany Drive, Thornbrook Drive, Chantilly Court and Thornbrook Court. It also includes the gravel conversion of Dumas Court (approximately 600 feet) and Versailles Court (approximately 900 feet). This is consistent with the City's Gravel Road Conversion Policy.

- Prior to this project, the City replaced the Brittany Drive culvert crossing at the Rouge River in 2020 and installed new public watermain in predominately the same area in 2022.

- The project was publicly bid and advertised on the Michigan Intergovernmental Trade Network (MITN) with bids opened on February 14, 2023.

- The lowest bidder is F.H. Paschen, S.N. Nielson & Associates, Detroit, MI in the amount of $4,578,636.00.

RECOMMENDATION

IT IS RESOLVED, the Normandy Hills Subdivision Road Rehabilitation Program be awarded to F.H. Paschen, S.N. Nielson & Associates, Detroit, MI in the amount of $4,578,636.00.

IT IS FURTHER RESOLVED, the City Manager and the City Clerk be authorized to execute the contract on behalf of the City.

Support Documentation

On February 14, 2023, five (5) bids were received for the above-referenced project. F.H. Paschen, S.N. Nielsen & Associates LLC opened their office in southeast Michigan in January of 2022, and they have only completed one project to date in Michigan which is the Road Commission for Oakland County (RCOC) Maloney Bridge Replacement project in Oxford Township. Their main parent organization is in Chicago, IL and they are an extremely large firm.

Since they are just breaking into the metro Detroit market, a pre-award meeting was held on February 28th with representatives from the City, HRC, and F.H. Paschen, S.N. Nielsen & Associates LLC to discuss key items such as proposed schedule, plan of operations, and key personnel that would be involved with the project. The Vice President, Project Managers and Superintendent listed for the project have all had experience working in the road construction industry for many years in southeast Michigan. All employees, including field staff, that will be involved with the Normandy Hills Subdivision Paving Project, are all Michigan residents. The answers provided by F.H. Paschen, S.N. Nielsen & Associates LLC at the meeting indicates that they have the necessary experience and competency to execute the scope of work for the Normandy Hills Subdivision Paving Project. Our consultant, Hubbell Roth & Clark has verified their references with other communities and found them to be positive and supportive of awarding this project. It is our opinion they can adequately perform the work as outlined in the contract.

A mailing notice will be sent to all residents and property owners within the project area that will include an Open House meeting date and time, staff contact information, instructions for signing up for the project-specific Listserv, as well as "Frequently Asked Questions" for the project. The mailing will also provide a contact name and phone number for anyone requesting a one-on-one consultation to address any further questions they may have. This information will also be posted to the City's website.

To provide further outreach, a second mailing will be provided to all residents and property owners prior to construction beginning to identify the Construction Inspector assigned to the project, his or her contact information and to identify the prime contractor that was awarded the contract. Additional periodic mailings will occur for the duration of the construction.

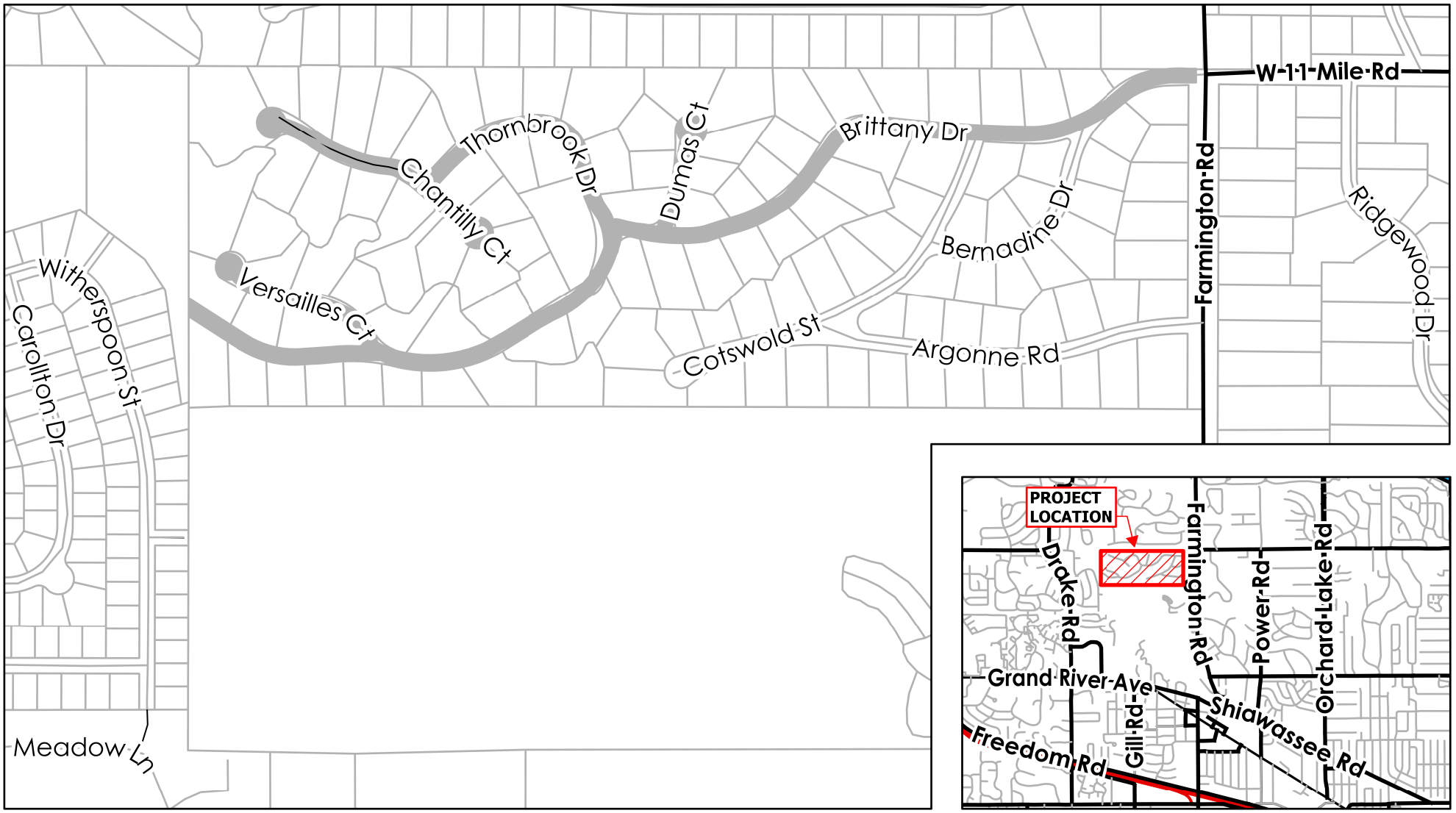
BID SUMMARY – CONCRETE

CONTRACTOR	PHASE III
Asphalt Specialists Pontiac, MI	$8,049,336.70
Springline Excavating LLC Farmington Hills, MI	$5,637,364.19
Fonson Company, Inc. Brighton, MI	$4,924,563.76
Anglin Civil, LLC Livonia, MI	$4,903,144.70
F.H. Paschen, S.N. Nielson & Associates Detroit, MI	**$4,578,636.00**

Table Description: Summary of bid results for the Normandy Hills Rehabilitation Program

Prepared by: Mirandi Alexander, Civil Engineer
Reviewed by: James Cubera, P.E., City Engineer
Karen Mondora, P.E., Director of Public Services
Kelly Monico, Director of Central Services
Approved by: Gary Mekjian, P.E., City Manager

City of Farmington Hills
Normandy Hills Subdivision Paving Project



Legend

Road Paving Area

Department of Public Services
2/14/2023 MLA

REPORT FROM THE CITY MANAGER TO CITY COUNCIL
March 13, 2023

SUBJECT: AWARD OF BID FOR UNIFORMS AND RELATED ACCESSORIES

ADMINISTRATIVE SUMMARY

Invitations to bid were advertised, available on the MITN e-procurement system and opened on Tuesday, January 31, 2023, for uniforms and related accessories, on behalf of the cities of Farmington Hills (Police & Fire) and Rochester Hills (Parks). Notification was sent to seventy-six (76) vendors with three (3) responding (including thirty-one (31) vendors that hold the classification of minority owned, woman owned, veteran owned, disabled, disadvantaged or service disabled). The total estimated annual purchase volume for both cities is approximately $135,000.

- The bid requires vendors to measure designated personnel on site, maintain individual sizing, stock and deliver uniforms, jackets, patches, leather goods, protective wear and other related equipment/accessories as required. The bid calls for fixed term pricing for seventy-six (76) of the most commonly purchased garments and accessories, as well as a contracted general discount off the manufacturer's list price for the thirteen (13) most used manufacturers.

- A committee made up of city staff and representatives from Rochester Hills evaluated responses, reviewed sample uniforms, checked references and is recommending a split award as follows:

  √ Allie Brothers for Police and Fire Department uniforms & related accessories as the recommended low *"qualified"* bid.

  √ NYE Uniform for Rochester Hills Parks uniforms-Recommended low bid with all items as specified. Huron Valley Guns did not meet specifications and Allie Brother did not bid/offer all the items requested. The City of Rochester Hills will award their portion as required by their policy.

  Both companies have been utilized in the past and are committed to customer service. Allie Brother is the current vendor for the Police Department, and they have been satisfied with their service.

- Funding of approximately $40,000 for the Fire Department & $88,000 for the Police Department is budgeted and available in the Police and Fire Operating Supplies accounts.

BID TABULATION BASED ON HISTORICAL PRODUCT PURCHASE ESTIMATES -ATTACHED RECOMMENDATION

In view of the above, it is recommended that City Council authorize the City Manager to sign a contract with Allie Brothers and issue budgeted purchase orders for Police & Fire Uniforms and Related Accessories for a two (2) year period in an estimated amount of $128,000. Pricing will remain firm for the initial two (2) year period with a fixed increase for each of four (4) one year periods to account for cost of living increases upon mutual agreement between the City and awarded vendor.

Prepared by: Michelle Aranowski, Senior Buyer
Reviewed by: Jon Unruh, Fire Chief
Reviewed by: Jeff King, Police Chief
Approved by: Gary Mekjian, City Manager

CITY OF FARMINGTON HILLS & ROCHESTER HILLS
BID TABULATION
ITB-FH-22-23-2373
POLICE, FIRE & PARKS DEPT. UNIFORMS

RECOMMEND FOR AWARD

ITEM	QTY	NYE Uniform Troy, MI UNIT	NYE Uniform Troy, MI EXT	Huron Valley Guns New Hudson, MI UNIT	Huron Valley Guns New Hudson, MI EXT	Allie Brothers Livonia, MI UNIT	Allie Brothers Livonia, MI EXT
POLICE DEPARTMENT-FARMINGTON HILLS							
POLICE & COMMAND OFFICER							
1. CLASS A PANTS - BLAUER CLASSACT #8650T IN DARK NAVY Tapered form fit-provided at no extra cost	50	$ 54.99	$ 2,749.50	$ 52.00	$ -	$ 51.99	$ 2,599.50
2. CLASS B PANTS - BLAUER FLEX R/S WITH CARGO POCKETS #8665 IN DARK NAVY Tapered form fit-provided at no extra cost	200	$ 84.99	$ 16,998.00	$ 75.00	$ 15,000.00	$ 73.99	$ 14,798.00
3. LONG SLEEVE SHIRTS CLASS A - BLAUER CLASSACT #8670 IN DARK NAVY Tapered form fit-provided at no extra cost	100	$ 69.99	$ 6,999.00	$ 63.00	$ 6,300.00	$ 58.99	$ 5,899.00
4. LONG SLEEVE SHIRTS CLASS B - BLAUER FLEX R/S SUPERSHIRT #LS 8671 IN DARK NAVY Tapered form fit-provided at no extra cost	200	$ 75.99	$ 15,198.00	$ 69.00	$ 13,800.00	$ 67.99	$ 13,598.00
5. SHORT SLEEVE SHIRTS CLASS B - BLAUER FLEX R/S SUPERSHIRT #8676 IN DARK NAVY Tapered form fit-provided at no extra cost	200	$ 69.99	$ 13,998.00	$ 65.00	$ 13,000.00	$ 62.99	$ 12,598.00
6. SHORT SLEEVE SHIRTS CLASS A - BLAUER CLASSACT #8675 IN DARK NAVY Tapered form fit-provided at no extra cost	200	$ 65.99	$ 13,198.00	$ 59.00	$ 11,800.00	$ 55.99	$ 11,198.00
7. JACKETS- BLAUER TACSHELL JACKET #9820 IN DARK NAVY AND INNER LINER SOFTSHELL FLEECE JACKET #4660 IN DARK NAVY Available in various sizes	8	$ 425.99	$ 3,407.92	$ 450.00	$ 3,600.00	$ 379.98	$ 3,039.84
8. UNIFORM CAPS –KEYSTONE UNIFORM CAP R-10 Various sizes – small, medium, large, extra-large. Navy/Ploy wool serge fabric, black ventilated mesh braid, black shiny visor, black, silver or gold front strap and silver or gold buttons	15	$ 79.99	$ 1,199.85	$ 53.00	$ 795.00	$ 62.99	$ 944.85
9. BLAUER DARK NAVY FLEECE LINED SKULL CAP #160 Available in regular and oversize, with embroidered badge on front	24	$ 34.99	$ 839.76	$ 35.00	$ 840.00	$ 29.99	$ 719.76
10. BASEBALL CAP- BLAUER #FLEX R/S STRETCH FITTED CAP #197 AND FLEX R/S AIRVENT ADJUSTABLE CAP #198 IN DARK NAVY Available in small, regular, and oversize. Must have metal badge attached to front of hat	24	$ 20.99	$ 503.76	N/A	N/A	$ 24.99	$ 599.76
11. TIES- UNIFORM CRAVATS IN DARK NAVY Clip on tie with various lengths available.	8	$ 5.99	$ 47.92	$ 8.00	$ 64.00	$ 7.50	$ 60.00
12. RAIN CAP COVER – WERNER WORKS- ORANGE/BLACK	8	$ 10.99	$ 87.92	$ 7.50	$ 60.00	$ 12.99	$ 103.92
13. LONG SLEEVE AND SHORT SLEEVE CLASS A ELBECO DUTY MAXX #580D IN WHITE Tapered form fit-provided at no extra cost.	8	$ 64.99	$ 519.92	$ 61.00	$ 488.00	$ 54.99	$ 439.92
COMMAND & PATROL LEATHER GOODS							
14. HOLSTER – SAFARILAND 6390 RDS ALS/SLS MID-RIDE LEVEL 3 FOR SIG SAUER P-320 XFULL PRO, WITH ROMEO 1PRO OPTIC AND SUREFIRE X-300 U.	10	$ 169.99	$ 1,699.90	$ 122.00	$ 1,220.00	$ 139.99	$ 1,399.90
15. HOLSTER – SAFARILAND 6377 RDS ALS GUARD FOR SIG SAUER -320 XFULL PRO, WITH ROMEO 1PRO OPTIC AND SUREFIRE X-300U.	10	$ 104.99	$ 1,049.90	$ 105.00	$ 1,050.00	$ 103.99	$ 1,039.90
16. TASER HOLSTER – 11501	10	$ 49.99	$ 499.90	$ 49.00	$ 490.00	$ 39.00	$ 390.00
17. SAM BROWN DUTY BELT- SAFARILAND #87V IN BASKETWEAVE. Silver or Gold buckles.	10	$ 79.99	$ 799.90	$ 67.00	$ 670.00	$ 71.99	$ 719.90
18. GARRISON BELT- SAFARILAND #51 IN BASKETWEAVE. Silver or gold buckles.	10	$ 39.99	$ 399.90	$ 33.00	$ 330.00	$ 39.99	$ 399.90
19. MAGAZINE CASE- SAFARILAND #77 DOULBE MAGAZINE POUCH W/ HIDDEN SNAP IN BASKETWEAVE To fit Sig Sauer P-320 Full	10	$ 44.99	$ 449.90	$ 33.00	$ 330.00	$ 39.99	$ 399.90
20. HANDCUFF CASE – SAFARILAND #90 HANDCUFF POUCH W/ HIDDEN SNAP IN BASKETWEAVE. To fit both hinge and chain cuffs.	10	$ 34.99	$ 349.90	$ 29.00	$ 290.00	$ 33.99	$ 339.90
21. BELT KEEPERS – SAFARILAND #65 IN BASKETWEAVE Black, basket weave, double snap closure	40	$ 16.99	$ 679.60	$ 15.00	$ 600.00	$ 2.25	$ 90.00
22. MK-2 CHEMICAL SPRAY HOLDER- SAFARILAND #38 W/ HIDDEN SNAP IN BASKETWEAVE.	10	$ 34.99	$ 349.90	$ 26.00	$ 260.00	$ 21.99	$ 219.90
23. NAME TAGS – REEVES #500 Size 9/16" x 2 7/16", silver or gold with name, rank and badge number	10	$ 15.99	$ 159.90	$ 14.00	$ 140.00	$ 16.99	$ 169.90
24. HANDCUFFS- PEERLESS HINGED AND CHAIN.	10	$ 29.99	$ 299.90	$ 40.00	$ 400.00	$ 36.99	$ 369.90
25. ASP HOLDER- ASP MODEL 263	10	$ 59.99	$ 599.90	$ 59.00	$ 590.00	$ 54.00	$ 540.00
26. GLOVE POUCH – SAFARILAND 7496-2	10	$ 23.99	$ 239.90	$ 20.00	$ 200.00	$ 18.50	$ 185.00
POLICE DISPATCH UNIFORMS							
27. ELBECO OR 5.11 PERFORMANCE TACTICAL POLO – LONG SLEEVED BLACK – WITH BADGE EMBROIDERED OVER LEFT CHEST	30	$ 49.99	$ 1,499.70	$ 55.00	$ 1,650.00	$ 46.99	$ 1,409.70

CITY OF FARMINGTON HILLS & ROCHESTER HILLS
BID TABULATION
ITB-FH-22-23-2373
POLICE, FIRE & PARKS DEPT. UNIFORMS

RECOMMEND FOR AWARD

ITEM	QTY	NYE Uniform Troy, MI UNIT	NYE Uniform Troy, MI EXT	Huron Valley Guns New Hudson, MI UNIT	Huron Valley Guns New Hudson, MI EXT	Allie Brothers Livonia, MI UNIT	Allie Brothers Livonia, MI EXT
28. ELBECO OR 5.11 PERFORMANCE TACTICAL POLO – SHORT SLEEVED BLACK – WITH BADGE EMBROIDERED OVER LEFT CHEST	30	$ 46.99	$ 1,409.70	$ 52.00	$ 1,560.00	$ 42.99	$ 1,289.70
29. CLASS B PANTS – 5.11 PDU CLASS B # 74326 IN BLACK OR BLAUER FLEX R/S 5 POCKET NON-CARGO IN BLACK.	30	$ 59.99	$ 1,799.70	$ 64.00	$ 1,920.00	$ 64.99	$ 1,949.70
30. CLASS A PANTS – 5.11 PDU CLASS a #74338 IN MIDNIGHT NAVY OR BLAUER FLEX R/S 5 POCKET NON-CARGO IN BLACK.	15	$ 56.99	$ 854.85	$ 55.00	$ 825.00	$ 62.99	$ 944.85
31. SHIRT ELBECO 213-3 & 2213-3 SPECIAL DUTY LONG SLEEVED IN GREY #581D-With sewn in military creases	15	$ 64.99	$ 974.85	$ 62.00	$ 930.00	$ 52.99	$ 794.85
32. TIE-UNIFROM CRAVATS IN BLACK	6	$ 5.99	$ 35.94	$ 8.00	$ 48.00	$ 7.50	$ 45.00
33. PANT BELT – SAFARILAND #51 IN BASKETWEAVE	15	$ 39.99	$ 599.85	$ 34.00	$ 510.00	$ 39.99	$ 599.85
34. NAME BAR-REEVES CHROME #500 (First Initial, Last Name) Dispatcher Coordinators: same as above Second line (Coordinator)	15	$ 15.99	$ 239.85	$ 14.00	$ 210.00	$ 16.99	$ 254.85
CADET/PSA UNIFORM							
35. CLASS B PANTS –BLAUER FLEX R/S #8665 IN DARK NAVY	20	$ 84.99	$ 1,699.80	$ 75.00	$ 1,500.00	$ 73.99	$ 1,479.80
36. ELBECO OR 5.11 PERFORMANCE TACTICAL POLO – LONG SLEEVED GRAY – WITH BADGE EMBROIDERED ON LEFT CHEST AND TITLE UNDERNEATH IT	10	$ 59.99	$ 599.90	N/A	N/A	$ 46.99	$ 469.90
37. ELBECO OR 5.11 PERFORMANCE TACTICAL POLO – SHORT SLEEVED GRAY – WITH BADGE EMBROIDERED OVER LEFT CHEST AND TITLE UNDERNEATH IT	10	$ 56.99	$ 569.90	$ 52.00	$ 520.00	$ 42.99	$ 429.90
38. PANT BELT – SAFARILAND #51 BASKETWEAVE	10	$ 39.99	$ 399.90	$ 34.00	$ 340.00	$ 39.99	$ 399.90
39. ELBECO OR 5.11 PERFORMANCE TACTICAL POLO SHORT SLEEVE NAVY WITH BADGE EMBROIDERED ON LEFT CHEST AND TITLE UNDERNEATH IT	20	$ 56.99	$ 1,139.80	$ 52.00	$ 1,040.00	$ 42.99	$ 859.80
40. CLASS B SHIRTS – BLAUER FLEX R/S SUPERSHIRT #8676 AND #8671 IN DARK NAVY (SAME AS OFFICERS WITH CADET PATCHES)	20	$ 69.99	$ 1,399.80	$ 69.00	$ 1,380.00	$ 62.99	$ 1,259.80
ADDITIONAL ITEMS							
41. SIDE OPEN BADGE CASE 2 ¾" X 4" BADGE SHAPE 085	3	$ 19.99	$ 59.97	$ 39.00	$ 117.00	$ 28.99	$ 86.97
42. PUNCTURE RESISTANT SEARCH GLOVES	15	$ 45.99	$ 689.85	$ 30.00	$ 450.00	$ 39.99	$ 599.85
43. I.D. HOLDER – PANDO LEATHER BADGE HOLDER	2	$ 19.99	$ 39.98	$ 25.00	$ 50.00	$ 23.99	$ 47.98
TOTAL ESTIMATE FARMINGTON HILLS POLICE			$ 97,339.29		$ 85,367.00		$ 85,785.05
B. FIRE DEPARTMENT –FARMINGTON HILLS FIREFIGHTER & COMMAND OFFICER							
1. TROUSER MEN - NAVY 55% Polyester, 45% Wool Flying Cross 34291	32	$ 94.99	$ 3,039.68	$ 90.00	$ 2,880.00	$ 69.99	$ 2,239.68
2. PANT WOMEN - NAVY 55% Polyester, 45% Wool - Flying Cross 35291	6	$ 94.99	$ 569.94	$ 90.00	$ 540.00	$ 69.99	$ 419.94
3. LONG SLEEVE SHIRT – COLOR: NAVY BLUE-Flying Cross 45W6625	24	$ 49.99	$ 1,199.76	$ 64.00	$ 1,536.00	$ 58.50	$ 1,404.00
4. SHORT SLEEVE SHIRT – COLOR: NAVY BLUE-Flying Cross 95R6625	24	$ 45.99	$ 1,103.76	$ 59.00	$ 1,416.00	$ 56.50	$ 1,356.00
5. COMMAND OFFICER LONG SLEEVE SHIRT- WHITE-Elbeco 310-3 (tex trop2)	8	$ 49.99	$ 399.92	$ 48.00	$ 384.00	$ 44.99	$ 359.92
6. UFX POLO – LONG SLEVE K5144	20	$ 44.99	$ 899.80	$ 44.00	$ 880.00	$ 44.99	$ 899.80
7. UFX POLO – SHORT SLEVE K5134	20	$ 39.99	$ 799.80	$ 39.00	$ 780.00	$ 39.99	$ 799.80
8. TIE - CLIP ON OR REG – NAVY-S.Broome COT-NV	12	$ 5.99	$ 71.88	$ 8.00	$ 96.00	$ 7.50	$ 90.00
9. BLAZER-DOUBLE BREASTED- NAVY-Flying Cross 34892	6	$ 269.99	$ 1,619.94	$ 199.00	$ 1,194.00	$ 259.99	$ 1,559.94
10. BELT – Unisex – (silver or gold buckle)-Boston 6582-bp-3	32	$ 34.99	$ 1,119.68	$ 29.00	$ 928.00	$ 34.99	$ 1,119.68
11. NAME BAR (Gold or Silver)- Reeves 500	15	$ 15.99	$ 239.85	$ 14.00	$ 210.00	$ 16.99	$ 254.85
12. WINTER COAT - Blauer 9845	10	$ 374.99	$ 3,749.90	$ 335.00	$ 3,350.00	$ 319.99	$ 3,199.90
13. EMS FLEECE COAT – NAVY- Blauer 4650X	10	$ 79.99	$ 799.90	$ 75.00	$ 750.00	$ 78.99	$ 789.90
14. EMT TROUSER – NAVY- Truspec 1120	40	$ 49.99	$ 1,999.60	$ 48.00	$ 1,920.00	$ 48.99	$ 1,959.60
15. FLEECE LINED ¼ ZIP- NAVY- 228DKNV	6	$ 129.99	$ 779.94	$ 119.00	$ 714.00	$ 119.99	$ 719.94
16. PDU TROUSER MEN- NAVY- Tactical 5.11 74338-750	40	$ 56.99	$ 2,279.60	$ 55.00	$ 2,200.00	$ 64.99	$ 2,599.60
17. PARAMEDIC PIN (Gold or Silver)- Premier P2462 1/4	12	$ 24.99	$ 299.88	$ 14.00	$ 168.00	$ 5.99	$ 71.88
18. EMT PIN (Silver)- ELC 4100 1/2	12	$ 7.99	$ 95.88	$ 12.00	$ 144.00	$ 5.99	$ 71.88
19. Department Patch Embroidered	12	$ 11.99	$ 143.88	$ 14.00	$ 168.00	$ 2.25	$ 27.00
20. Name Embroidered	12	$ 7.99	$ 95.88	$ 7.00	$ 84.00	$ 4.50	$ 54.00

*Line item 29. Huron Valley broke it out in to 2 parts. Both 15 items A at $55, and B at $64. I used the higher price item Please see their bid that *Line 30 for Huron Valley they do not offer the pants in Blauer Flex R/S 5 Pocket Non-Cargo in Black. Please see submitted bid

*Line item 40 Huron Valley broke up into two parts A & B. A is 10 at $65, and B is 10 at $69. Used higher priced item. Please see bid submitted.

CITY OF FARMINGTON HILLS & ROCHESTER HILLS
BID TABULATION
ITB-FH-22-23-2373
POLICE, FIRE & PARKS DEPT. UNIFORMS

RECOMMEND FOR AWARD

ITEM	QTY	NYE Uniform Troy, MI UNIT	NYE Uniform Troy, MI EXT	Huron Valley Guns New Hudson, MI UNIT	Huron Valley Guns New Hudson, MI EXT	Allie Brothers Livonia, MI UNIT	Allie Brothers Livonia, MI EXT
21. Thin Red Line Flag Emblem	12	$ 1.99	$ 23.88	$ 1.50	$ 18.00	$ 2.00	$ 24.00
22. Badges with color seal – M180-Rhodium-Pin	6	$ 74.99	$ 449.94	$ 66.00	$ 396.00	$ 64.50	$ 387.00
23. Collar Brass – C197R-Rhod-Cluch	6	$ 19.99	$ 119.94	$ 14.00	$ 84.00	$ 11.99	$ 71.94
TOTAL ESTIMATE FARMINGTON HILLS FIRE			$ 21,902.23		$ 20,840.00		$ 20,480.25
C. PARKS DEPARTMENT –ROCHESTER HILLS							
1. WOMEN'S WORK PANTS – RED KAP DURA-KAP INDUSTRIAL PANT -BROWN 8.0oz Twill, 65% Polyester/35% Combed Cotton, Two slack style front pockets, two set-in hip pockets.	10	$ 21.99	$ 219.90	$ 30.00	$ 300.00	$ 29.99	$ 299.90
2. MEN'S WORK PANTS – RED KAP DURA-KAP INDUSTRIAL PANT -BROWN 8.0oz Twill, 65% Polyester/35% Combed Cotton, Two slack style front pockets, two set-in hip pockets.	10	$ 21.99	$ 219.90	$ 30.00	$ 300.00	$ 27.99	$ 279.90
3. WOMEN'S CARGO PANTS - PERFECTION PU-1775-BROWN Hidden EGC "auto-adjust" waist, Breathable "stretch & support" waistband, Inside security pocket with zip closure, Functional flaps with secure Velcro closures, Reinforced at points of stress, Creaset permanent creases, One piece diamond gusset crotch construction Double hook and eye with "cut on" French fly	10	$ 54.99	$ 549.90	$ 30.00	$ 300.00	N/A	N/A
4. MEN'S CARGO PANTS - PERFECTION PU-1775-BROWN Hidden EGC "auto-adjust" waist, Breathable "stretch & support" waistband, Inside security pocket with zip closure, Functional flaps with secure Velcro closures, Reinforced at points of stress, creaset permanent creases, One piece diamond gusset crotch construction Double hook and eye with "cut on" French fly	10	$ 54.99	$ 549.90	$ 30.00	$ 300.00	N/A	N/A
5. UNIFORM SHIRTS – SOUTHEASTERN: CODE 3 –LONG SLEEVE -BROWN/TAN SHADE 65/35 Dacron/Cotton blend, Long sleeve, Left and right chest pockets with Velcro closure tabs, Seven button front, Functional shoulder epaulets, Box pleated breast pockets with scalloped three-point flaps, Log sleeve shirts will have button	25	$ 39.99	$ 999.75	$ 26.00	$ 650.00	$ 36.99	$ 924.75
6. UNIFORM SHIRTS – SOUTHEASTERN: CODE 3 –SHORT SLEEVE -BROWN/TAN SHADE 65/35 Dacron/Cotton blend, Short sleeve, Left and right chest pockets with Velcro closure tabs, Seven button front, Functional shoulder epaulets, Box pleated breast pockets with scalloped three-point flaps, Log sleeve shirts will have button	25	$ 34.99	$ 874.75	$ 24.00	$ 600.00	$ 34.99	$ 874.75
7. JACKET – TACT SQUAD CLASSIC DUTY JACKET 9001-BROWN 100% nylon shell, Water-resistant coated nylon shell, Removable quilted liner, Two pleated flap/patch front pocket with metal buttons, 10" zippered side vents, Badge tab with	5	$ 59.99	$ 299.95	$ 46.00	$ 230.00	$ 64.99	$ 324.95
8. MEN'S TACTICAL SHORTS 5.11 Tactical Men's Taclite Pro 11-Inch Shorts, Lightweight, Adjustable Waistband, Style 73308. Tactical, reinforced seams, cargoes pockets, 100% polyester	10	$ 44.99	$ 449.90	$ 46.00	$ 460.00	$ 49.99	$ 499.90
9.WOMEN'S TACTICAL SHORTS 5.11 Tactical Men's Taclite Pro 11-Inch Shorts, Lightweight, Adjustable Waistband, Style 73308. Tactical, reinforced seams, cargoes pockets, 100% polyester	10	$ 44.99	$ 449.90	$ 46.00	$ 460.00	$ 49.99	$ 499.90
10.PATCHES-VENDOR TO CREATE AND SUPPLY PATCHES FOR ROCHESTER HILLS PARKS DEPT. AND HOLD TO USE AS NEEDED.	As Needed	$ 2.99		$ 4.00		$ 2.50	
TOTAL ESTIMATE ROCHESTER HILLS PARKS			$ 4,613.85		$ 3,600.00		$ 2,704.25
GRAND TOTAL BID			$ 123,855.37		$ 109,807.00		$ 108,969.55
Contract pricing good for 3 years after - percentage (PER YEAR) of increase over the prices listed herein for the 3 year extension of the contract. Prices listed herein in will increase _____% each year beginning at the fourth year of award			5%		4%		5%
Additional discount assignment for non-contract items			0%				20%
Blauer					10%		
Bianchi			0%		10%		20%
Boston Leather			0%		10%		20%
Maglite			0%		10%		20%

CITY OF FARMINGTON HILLS & ROCHESTER HILLS
BID TABULATION
ITB-FH-22-23-2373
POLICE, FIRE & PARKS DEPT. UNIFORMS

RECOMMEND FOR AWARD

ITEM	QTY	NYE Uniform Troy, MI UNIT	NYE Uniform Troy, MI EXT	Huron Valley Guns New Hudson, MI UNIT	Huron Valley Guns New Hudson, MI EXT	Allie Brothers Livonia, MI UNIT	Allie Brothers Livonia, MI EXT
Safariland		0%		10%		20%	
Uncle Mike's		0%		10%		20%	
Elbeco		0%		10%		20%	
Fechheimer		0%		N/A		20%	
Red Cap		0%		N/A		20%	
Code 3		0%		10%		20%	
Perfection		0%		N/A		N/A	
Flying Cross		0%		N/A		20%	
Chestnut Hill		0%		N/A		20%	
Extension to MITN		Yes		Yes		No	

Bid Notification was sent to over 76 MITN vendors

REPORT FROM THE CITY MANAGER TO CITY COUNCIL—March 13, 2023

SUBJECT: Award of Bid - 2023 As-Needed Guardrail Repair Program

ADMINISTRATIVE SUMMARY:

- The As-Needed Guardrail Repair Program was publicly advertised and competitively bid on the Michigan Intergovernmental Trade Network (MITN) e-procurement system, and opened on March 8, 2023, after a one-week postponement to obtain additional bidding interest. This is a very specialized service, and a very limited number of bidders were anticipated. Notification was sent to several vendors (including eighty-three (83) vendors that hold classification of minority owned, woman owned, veteran owned, disabled, disadvantaged or service disabled).

- This contracted service will provide repair to the existing City-owned steel beam guardrail at various locations throughout the City's Major and Local Road system.

- The bid provides pricing for a one-year period with provisions for up to four one-year extensions through mutual consent between the City and the contractor.

- Funding for this program is provided in the Major and Local Road Maintenance accounts.

- The bid process provided unit prices for a wide variety of parts and services that may be required throughout the life of the contract (see attached bid tab). The quantities of the different parts bid were estimates for bid comparison and evaluation only. Service and parts will be as needed up to the annual budget.

- Only one bid was received even after the one-week postponement. However, the pricing is competitive, and in many instances, lower than previous years.

- The contractor recommended for award, RMD Holdings of Richmond, Michigan, has worked for both MDOT and the Road Commission for Oakland County in the past, and most recently the City of Farmington Hills, providing similar services and has proven to be professional and reliable.

RECOMMENDATION:

IT IS RESOLVED, that the City Council of Farmington Hills authorizes the City Manager to issue a purchase order to RDM Holdings (minority owned) in the amount not-to-exceed $50,000 per year with one or more administration approved extensions not-to-exceed a total of four (4) additional years, under the same terms and conditions, through mutual consent by the City of Farmington Hills and the vendor for as-needed guardrail repair program.

SUPPORT DOCUMENTATION:

The City is responsible for the maintenance and repair of several thousand feet of steel beam guardrail on our Major and Local streets. This guardrail is designed and placed along the road edge to shield errant vehicles from roadside obstacles. From time to time, these runs of guardrail are struck by vehicles

protecting occupants from serious injury. As a result, the damaged portions need to be repaired or replaced. This as-needed contract is modeled after both the MDOT and the Road Commission for Oakland County contracts and enables the Department of Public Services to quickly and efficiently repair damaged sections of guardrail.

Prepared by: Derrick Schueller, DPW Superintendent
Michelle Aranowski, Senior Buyer

Departmental Authorization: Karen Mondora, P.E., Director, Department of Public Services
Kelly Monico, Director, Department of Central Services

Approved by: Gary Mekjian, P.E., City Manager

City of Farmington Hills, MI				
itb-fh-22-23-2391				
As Needed Steel Beam Guardrail Repair Program				
Opened 03/08/2023				
			RMD Holding, LTD. DBA Nationwide Constuction Group Richmond, MI Bond: Yes	
ITEM	**UNIT**	**QTY**	**UNIT PRICE**	**TOTAL**
General Items				
Remove guardrail, post & end terminal	LFT	1,000	**$5.00**	**$5,000.00**
Guardrail Type B	LFT	500	**$25.00**	**$12,500.00**
Type B Steel Rail	LFT	500	**$5.00**	**$2,500.00**
Guradrail, Curved Type B	LFT	50	**$20.00**	**$1,000.00**
Guardrail, buffered end	EA	5	**$45.00**	**$225.00**
Guardrail, reflector	EA	50	**$10.00**	**$500.00**
Type B backing rail	LFT	200	**$10.00**	**$2,000.00**
Post, wood guard	EA	20	**$75.00**	**$1,500.00**
Wood Offset Block	EA	20	**$11.00**	**$220.00**
Intermediate line post, steel	EA	20	**$50.00**	**$1,000.00**
Routed Wood Block	EA	20	**$11.00**	**$220.00**
Approach terminal, Type 1B (Fleat or SRT)	EA	2	**$3,000.00**	**$6,000.00**
Approach terminal, Type 1B (Fleat or SRT) 1st panel	EA	3	**$250.00**	**$750.00**
Approach terminal, Type 1B (Fleat or SRT) 2nd panel	EA	3	**$250.00**	**$750.00**
Approach terminal, Type 1B (Fleat or SRT) 3rd panel	EA	2	**$250.00**	**$500.00**
Approach terminal, Type 2B (ET or SKT)	EA	2	**$3,250.00**	**$6,500.00**
Approach terminal, Type 2B (ET or SKT) 1st panel	EA	3	**$250.00**	**$750.00**
Approach terminal, Type 2B (ET or SKT) 2nd panel	EA	3	**$250.00**	**$750.00**
Approach terminal, Type 2B (ET or SKT) 3rd panel	EA	2	**$250.00**	**$500.00**
Approach terminal, Type 2B (ET or SKT) 4th panel	EA	2	**$250.00**	**$500.00**
Guardrail Departing Terminal, Type B	EA	4	**$450.00**	**$1,800.00**
Impact Head Assembly (ET)	EA	2	**$1.00**	**$2.00**
Impact Head Assembly (FLEAT)	EA	2	**$750.00**	**$1,500.00**
Impact Head Assembly (SKT)	EA	2	**$750.00**	**$1,500.00**
Steel Guardrail Post, 84 in	EA	10	**$100.00**	**$1,000.00**
Mobilization	LS	4	**$500.00**	**$2,000.00**
Maintaining Traffic – Major Road	LS	5	**$1,000.00**	**$5,000.00**
Maintaining Traffic- Local Road	LS	3	**$1,000.00**	**$3,000.00**
TOTAL				**$59,467.00**
PERCENT INCREASE PER YEAR, PRICES TO EXTEND FOR 4 ADDITIONAL YEARS.				**10%**
We sent notification 393 vendors. We received ZERO (0) "No-Bids."				

REPORT FROM THE CITY MANAGER TO CITY COUNCIL – March 13, 2023

SUBJECT: Consideration of Award of Contract for the Sidewalk Replacement Program

ADMINISTRATIVE SUMMARY:

- The Sidewalk Replacement Program was publicly advertised and competitively bid on the Michigan Intergovernmental Trade Network (MITN) system, with five (5) bids received on March 2, 2023.

- The purpose of the annual Sidewalk Replacement Program is to remove defects from the City's sidewalk network such as trip hazards, deteriorated concrete and trapped water/ice conditions.

- The bid in this year's program includes approximately 800 lineal feet of Major Road sidewalks and 1600 lineal feet of local road sidewalks. The local road work includes many support pay items such as retaining walls, installation of brick pavers, and handicap ramp work.

- Sidewalk repair locations on major roads are consistent with City Policy. Sidewalk repairs will not be assessed to the adjoining property owners. The majority of the major road sidewalk repairs are in the southeast quadrant of the City.

- The local road SAD Sidewalk Replacement Program locations vary but are predominantly in Section 26. The program ensures that public sidewalks are properly maintained to protect the health, safety and welfare of all pedestrians. Property owners have the option to complete the repairs. If the repairs are not completed, the City's contractor will make the repairs and the homeowner will be assessed in accordance with the City Code.

- Olson Cement Work, Inc. has prices that are low bid and competitive with market pricing. Their reference checks indicate that they have successfully completed similar projects for other municipalities and that they have proven to be professional and reliable. They have previously worked as a prime contractor for the City in 2008.

- The bid specifications included an escalation clause which gives the City the option to extend the contracted unit prices for four additional one-year periods, at a pre-determined percent increase. The recommended bidder, Olson Cement Work, Inc. offered a 3.5% escalator. Depending on the quality of the work performed, we will review the contractor's performance at the end of the construction season and the City staff administratively will consider this extension on an annual basis.

RECOMMENDATION:

IT IS RESOLVED, that the City Council of Farmington Hills authorize the City Manager and the City Clerk to sign the contract with Olson Cement Work, Inc in the amount of $202,150.00 ($160,650.00 Major Roads, $41,500.00 Local Roads) with possible unit price extension not to exceed the approved fiscal year's budget amount annually.

In addition, it is resolved that the City Council authorize the City Manager to extend said contract administratively for an additional four one-year periods under the same terms and conditions at a not-to-exceed 3.5%increase over the unit prices stated in their bid should it be in the best interest of the City.

SUPPORT DOCUMENTATION:

In accordance with City Code, the cost for major road sidewalk replacement is borne by the City without individual assessments to the abutting properties. The origin of this policy comes from the City requirement to have a sidewalk network along our major roads, while not requiring walks along our local roads.

Regarding the consideration of extending unit prices, Olson Cement Work, Inc. has indicated that they would extend their contract for the next four years with a 3.5% increase of unit prices. Should we proceed with an administrative extension, it does not preclude the City from bidding out the Sidewalk Replacement Program should the bidding climate be favorable.

BID SUMMARY

CONTRACTOR	TOTAL
Olson Cement Work, Inc. Taylor, MI	$202,150.00
K.D. Cement, LLC. Commerce Twp., MI	$219,562.50
Luigi Ferdinandi & Son Cement Co. Roseville, MI	$229,950.25
Great Lakes Contracting Solution, LLC. Waterford, MI	$304,380.00
Audia Concrete Construction, Inc. Milford, Michigan	$314,575.00

Table Description: Summary of bid results for the Sidewalk Replacement Program

Prepared by:	Michelle Aranowski, Senior Buyer
Reviewed by:	Timothy Waker, Chief Engineering Inspector
Reviewed by:	James Cubera, P.E., City Engineer
Departmental Authorization by:	Karen Mondora, P.E., Director of Public Services
	Kelly Monico, Director of Central Services
Approval by:	Gary Mekjian, P.E., City Manager

MINUTES
CITY OF FARMINGTON HILLS
FARMINGTON HILLS CITY COUNCIL
CITY HALL - COMMUNITY ROOM
FEBRUARY 27, 2023 – 6:00PM

The study session meeting of the Farmington Hills City Council was called to order by Mayor Barnett at 6:05pm

Council Members Present:	Barnett, Bridges, Bruce, Knol, Massey and Newlin
Council Members Absent:	Boleware
Others Present:	City Manager Mekjian, City Clerk Smith, Assistant City Manager Valentine, Directors Brown, Harvey and Winn and City Attorney Joppich

REVIEW OF LIQUOR LICENSE POLICY

City Clerk Smith explained that the policy was being brought to City Council for review as requested by Council, specifically as it relates to time frame within the policy that applications are reviewed, which currently states, "City Council shall conduct hearings on applications, if any are pending or available, three times each year, this being during the months of January, May and September at regularly scheduled Council meetings."

Mayor Pro-Tem Bruce stated that he requested review of the current policy as he was not sure why Council only reviews applications for new quota liquor licenses 3 times a year and that they should be reviewed as they are submitted to the city. He suggested the following changes to the policy:

- **Page 1, Item #3** – Removal of this item and following language: "The proximity of the proposed use to similar existing operations and establishments already serving alcohol will be taken into consideration. "

- **Page 2, Item #4** – Add language to indicate that food service menus shall be provided **if food is served** to address potential future changes to eliminate the need for a bona fide restaurant.

- **Page 3, second to last paragraph** - Eliminate the language that applications are reviewed only 3 times a year and allow them to be reviewed as submitted.

Considerable discussion was held on the need to review redevelopment liquor license requirements as well as the need to encourage redevelopment and improvements along the Grand River Corridor. It was suggested that Council consider establishing another redevelopment district, if necessary, once the master plan is complete.

Mayor Barnett suggested having discussion on redevelopment liquor license requirements at the study session meeting of March 13th and asked the City Attorney to review the following:

- Required investment to obtain a liquor license
- What constitutes an investment of real and person property and can road projects be included as part of that investment

- Current statutes and Liquor Control Commission Administrative Rules on redevelopment liquor licenses
- If the City could be an applicant for a license

It was also suggested that Economic Development Director Brockway compile a list of real and personal property investment in the current redevelopment district within the last 3 years.

City Council concurred with the proposed changes by Mayor Pro-Tem Bruce to the current liquor license policy and review of this policy and the liquor license ordinance once again following completion of the master plan.

Staff noted that the liquor license policy amendments discussed this evening would be brought back to City Council at their next regular meeting on March 13, 2023 for consideration.

UPDATE ON THE CITY'S 50TH ANNIVERSARY

Vickie Winn, Director of Communications and Community Engagement, reviewed plans for the City's 50th Anniversary celebration on July 6, 2023 and budget for the event.

Suggestions of City Council included:

- Changing to the date to early August as they felt many residents would be out of town that first week of July
- Reaching out to a seed company that was one of the first in businesses in township days and potential for having wildflower seeds as a give-a-way for the event
- Reach out to Children, Youth and Families to involve youth events
- Engage community businesses to help sponsor the event

Director Winn stated that she will take this feedback to the committee to see about the possibility of changing the date and incorporating some of the events or sponsorships.

ADJOURNMENT

The study session meeting adjourned at 7:20pm

Respectfully submitted,

Pamela B. Smith, City Clerk

MINUTES
CITY OF FARMINGTON HILLS
CITY COUNCIL MEETING
CITY HALL – COUNCIL CHAMBER
FEBRUARY 27, 2023 – 7:30 PM

The regular session meeting of the Farmington Hills City Council was called to order by Mayor Barnett at 7:34pm.

Council Members Present:	Barnett, Bridges, Bruce, Knol, Massey, and Newlin
Council Members Absent:	Boleware
Others Present:	City Manager Mekjian, City Clerk Smith, Assistant City Manager Valentine, Directors Brown, Mondora, Schnackel and Skrobola, Fire Chief Unruh, Police Chief King and City Attorney Joppich

PLEDGE OF ALLEGIANCE
State Senator Rosemary Bayer led the pledge of allegiance.

APPROVAL OF REGULAR SESSION MEETING AGENDA

MOTION by Massey, support by Bridges, to approve the agenda as published.

MOTION CARRIED 6-0.

INTRODUCTION OF LATOYA HARVEY, DIRECTOR OF DIVERSITY, EQUITY, INCLUSION AND EMPLOYEE DEVELOPMENT
Latoya Harvey introduced herself and stated that she is looking forward to working with the city on their Diversity, Equity and Inclusion efforts.

City Council welcomed Latoya Harvey to the staff.

HISTORIC DISTRICT COMMISSION 2022 ANNUAL REPORT PRESENTATION
Marlene Tulas, Chair of the Historic District Commission, recognized the members of the Historic District (HDC) and stated that the HDC is charged with preserving historic districts within the city that reflect the elements of the architectural, cultural, economical, political or social history of the community. Chair Tulas also recognized Council Liaison Valerie Knol and Staff Liaisons Chris Canty and Erik Perdonik. The Commission has worked diligently to further the goals and Chair Tulas provided the annual report that emphasized the 2022 and 2023 activities and goals. She also stated that the Commission could use additional budget funds in order to carry out its activities, particularly the preservation plan for the cemetery that includes monument cleaning, resetting and repair.

Councilmember Knol, Council Liaison for the Commission, thanked the Commission for their hard work and commented that all members are considerably knowledgeable in the history of the community and architecture. She agreed that the Commission needs additional funding to carry out some of their projects and that this should be considered during budget discussions as the city has an obligation to keep the cemetery's in good condition. She suggested discussing the condition and future of the Spicer House at a future study session.

In response to Council, Chair Tulas reviewed the process for designating a structure as historical.

REPORT ON INDEPENDENT LEGAL REVIEW FOR POLICE DEPARTMENT TRAINING

Michelle Crockett, Attorney from Miller Canfield, explained that she was hired by the city to conduct an independent legal review of the situational awareness targets utilized by the police department. She provided a brief recap of the incident that took place in June, 2022 involving the police departments alleged utilization of training targets that only depicted black men during a tour of the police department gun range by a cub scout troop and concerns of racial bias within the police department.

Attorney Crockett highlighted the following:

- Police Department Accreditation and training and findings from that process
- Police Department compliance with MCOLES – Michigan Commission on Law Enforcement Standards including the use of the same targets as used by the police department during its trainings
- Through her review it was discovered that there was a total of 15 targets used that day of the cub scout tour that included both white and black targets. Some targets were left hanging following the training and were not removed although officers are provided the directive to do so.

Attorney Crockett discussed deliberate indifference as it applies to police training, noting that when and if it can be shown that there has been a violation of an individual's civil right and evidence of a municipalities failure to properly train officers, this may result in a legally viable claim. She added that firearms training that does not include real world conditions, therefore being devoid of situational training, may also result in a finding of deliberate indifference.

Attorney Crockett reiterated that the use of the situational targets in question are not illegal and in light of the deliberate indifference standard, the use of these types of situational targets may actually help insulate the city from potential liability. The police department training provided and use of situational training targets more specifically is a best practice and designed to equip officers with the tools necessary to properly identify dangerous situations when out in the field; however, there are opportunities for the police department to improve its training practices, particularly as it pertains to how and for what purpose situational targets are utilized such as identifying and eliminating implicit bias.

Attorney Crockett reviewed the following recommendations with Council:

- Processes and procedures should be established to consistently track the presence of bias
- The community perception of bias withing the police department should be addressed on a continual basis through community engagement opportunities
- Establish a policy that ensures the removal of all targets at the conclusion of every internal firearms training
- Develop and or participate in department-wide racial sensitivity training
- Remain vigilant with recommendation and track the city's progress

Council thanked Attorney Crockett for her review and recommendations.

CORRESPONDENCE

Council acknowledged correspondence received regarding power outages from the ice storm and expressed concern with DTE not addressing infrastructure needs such as upgrading transformers on a regular basis. It was noted that if residents are still without power to contact the City Manager's Office.

CONSENT AGENDA

MOTION by Massey, support by Newlin, to approve the consent agenda items #6 through #17, as read.

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

MOTION by Knol, support by Bridges, to approve the consent agenda items #18 and #19, as read.

Roll Call Vote:
Yeas: BRIDGES, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: BARNETT AND BRUCE

MOTION CARRIED 4-0-1-2.

PUBLIC QUESTIONS AND COMMENTS

Senator Rosemary Bayer introduced herself to Council, staff and residents and provided an update on legislation passed by the Senate to date and the issues that they will be addressing in the near future. She also offered to assist residents with power outage needs by reaching out to DTE and encouraged residents to sign up for Senate news updates via email and to attend future coffee hour sessions.

Mayor Pro-Tem Bruce expressed concern with the auto no-fault reform and closing of state hospital facilities creating a hospital bed shortage and lack of children's psychiatric and other mental health facilities. He suggested restarting the state's mental health system and building state funded psychiatric hospitals. He asked about Senator Bayer's position on these two issues.

Senator Bayer responded that she is on the Senate Insurance Committee and the committee will definitely be working on the auto no-fault reform. She stated that the issue of mental health was the reason she ran for office the first time as this has touched her life many times and has seen so many instances of mental health issues and there were not facilities available in the state. She stated that there is funding and plans for a new psychiatric hospital in Southeast Michigan and legislators are helping hospitals around the state to expand psychiatric beds and building a program for schools and students to obtain qualified employees to build on not only infrastructure but investing in people that will be qualified to fill those positions. Senator Bayer added that there is also a new crisis center with short-term beds in Oakland County.

Senator Bayer mentioned that residents could also contact her office if they are having issues with power outages and she would be happy to also reach out to DTE on behalf of the residents.

Mayor Barnett stated that Council would like to invite legislators in for a study session meeting at a future date and that she would extend that invite in the near future.

Jon Aldred, resident, commented that as a follow up to the legal review on the Police Department training and incident that occurred, he has heard from the attorney this evening that there is no legal liability with regard to the trainings and in fact, the trainings were appropriate and a benefit to the city. He mentioned

that the reporting on the alleged incident was so public at the time and he would suggest more publicity on the findings as suggested by the attorney and private company that reviewed the training.

Resident Pam Gerald commented on an allegation of discrimination against the city and she is concerned that the allegations against the city that involve the use of the same lawyer may be more for political gain than legitimate claims.

COUNCIL MEMBERS COMMENTS AND ANNOUNCEMENTS

Council made the following comments:

- The State of the Cities address is March 8, 2023 at 8am at The HAWK Community Center.
- Welcomed new President, Ernie McClellan, to the Farmington Community Library Board

CITY MANAGER UPDATE

City Manager Mekjian provided the following update:

- Requested residents to hold onto any debris from the latest ice storm until spring clean-up begins the week of April 3rd and that questions on how to prepare the branches and yard waste could be found on the city's website. If trees are down on private property, the resident needs to contact a private service company and it is suggested that they request a quote for also hauling the debris away as that is not typically included in the service

NEW BUSINESS

CONSIDERATION OF APPROVAL OF THE INTRODUCTION OF AN ORDINANCE TO AMEND THE FARMINGTON HILLS CODE OF ORDINANCES CHAPTER 33, "WATER AND SEWERS," TO ADD DIVISION 2, "STORMWATER ENGINEERING DESIGN STANDARDS" TO ARTICLE IX, "STORMWATER MANAGEMENT," TO ADOPT AND ENACT ENGINEERING DESIGN STANDARDS DEVELOPED BY THE OAKLAND COUNTY WATER RESOURCE COMMISSIONERS OFFICE. CMR 2-23-22

Karen Mondora, Director of Public Services, reported that as a requirement of the Federal Clean Water Act, the city operates its stormwater management system under a permit from the State of Michigan and United States EPA. This permit requires the city to do what it can to mitigate potential sources of pollution to rivers, lakes and streams. One permit requirement is to provide for a regulatory mechanism to address stormwater runoff from private and public developments; therefore, recent changes to the State rules requires the city to make updates to the city's stormwater engineering design standards. To ensure consistently for these rules, several counties joined together to update these standards and negotiate terms with the state over the past several years. In late 2021 the County Water Resource Commission finalized their standards and since that time the city has been working with the city attorney's office and Sate of Michigan to draft an acceptable ordinance to adopt the county standards. Director Mondora stated that these rules will apply to any development with a construction equal to or larger than one acre but would not apply to single-family homes that are not part of a new subdivision. Adoption of this ordinance would satisfy state requirements and ensure compliance with the Clean Water Act.

MOTION by Bridges, support by Knol, that the City Council of Farmington Hills hereby approves the INTRODUCTION of an ordinance to amend the Farmington Hills Code of Ordinances Chapter 33, "Water and Sewers," to add Division 2, "Stormwater Engineering Design Standards" to Article IX, "Stormwater Management," to adopt and enact Engineering Design Standards developed by the Oakland County Water Resource Commissioners Office.

Roll Call Vote:

Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE

Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

CONSENT AGENDA

RECOMMENDED APPROVAL OF THE AMERICAN RESCUE PLAN ACT (ARPA) INTERLOCAL AGREEMENT WITH OAKLAND COUNTY. CMR 2-23-23

MOTION by Massey, support by Newlin, that the City Council of Farmington Hills hereby approves the American Rescue Plan Act (ARPA) Interlocal Agreement between the City of Farmington Hills and Oakland County.

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

RECOMMENDED APPROVAL OF AGREEMENT WITH MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) FOR THE PAVEMENT REHABILITATION PROJECT ON 14 MILE ROAD BETWEEN DRAKE ROAD AND FARMINGTON ROAD. CMR 2-23-24

MOTION by Massey, support by Newlin, that the City Council of Farmington Hills hereby authorizes the City Manager and City Clerk to enter into Agreement #22-5592 on behalf of the City with the Michigan Department of Transportation for the pavement rehabilitation of 14 Mile Road between Drake Road and Farmington Road.

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

RECOMMENDED APPROVAL OF AGREEMENT WITH MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) FOR THE FARMINGTON ROAD CONSTRUCTION PROJECT FROM 12 MILE ROAD TO 13 MILE ROAD. CMR 2-23-25

MOTION by Massey, support by Newlin, that the City Council of Farmington Hills hereby authorizes the City Manager and City Clerk to enter into Agreement #22-5591 on behalf of the City with the Michigan Department of Transportation for the pavement rehabilitation of Farmington Road between 12 Mile Road and 13 Mile Road.

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

RECOMMENDED ADOPTION OF A RESOLUTION ESTABLISHING THE SALVADOR STREET (WHITLOCK TO HUGO) WATER MAIN PAYBACK DISTRICT AND FINAL PAYBACK COSTS. CMR 2-23-26

CITY OF FARMINGTON HILLS
OAKLAND COUNTY, MICHIGAN

RESOLUTION R-38-23

AMENDED AND RESTATED RESOLUTION
FOR THE SALVADOR STREET (WHITLOCK TO HUGO) WATER MAIN PAYBACK DISTRICT

At a regular meeting of the City Council of the City of Farmington Hills, County of Oakland, State of Michigan, held in the City Council Chambers on February 27, 2023 at 7:30 p.m., with those present and absent being:

PRESENT: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY AND NEWLIN
ABSENT: BOLEWARE

the following preamble and resolution were offered by Councilperson Massey and supported by Councilperson Newlin:

WHEREAS, Article VII of Chapter 33 of the City Code (referred to in this Resolution as the "Payback Ordinances") authorizes the City to construct and establish charges for benefitted properties to contribute to the cost of water main construction; and

WHEREAS, the City of Farmington Hills has completed the extension of a water main that provides public water services to and for the benefit of the properties listed in this resolution below (such extension being referred to in this resolution as the "Water Main Extension"), and Council has been advised of the costs incurred for said Water Main Extension; and

WHEREAS, pursuant to the Payback Ordinances, City Council desires to approve the costs of construction, identify the benefited properties as being within a payback district, specify the proportionate share of the cost of construction attributable to each of the benefited properties in the payback district, declare that such benefited properties shall pay such proportionate share, address the timing for such payment, and establish a limited installment payment option for the benefitted property owners within the payback district; and

NOW, THEREFORE, BE IT RESOLVED that the costs for the Water Main Extension are approved and it is determined that the following properties benefit from the completed Water Main Extension, which properties are referred to in this resolution as the "Benefitted Properties" and are within what shall be known as the "Salvador Street (Whitlock to Hugo) Water Main Payback District"

22-23-34-327-018 32406 SALVADOR 1 Unit/$24,379.96
T1N, R9E, SEC 34 WOODLAND ACRES SUB E 83 FT OF LOTS 50 & 51
10-20-94 FR 015 & 016

22-23-34-405-005 32340 SALVADOR 1 Unit/$24,379.96
T1N, R9E, SEC 34 KRAVE'S GRAND RIVER HEIGHTS LOT 11

22-23-34-451-016 32341 SALVADOR 1 Unit/$24,379.96
T1N, R9E, SEC 34 KRAVE'S GRAND RIVER HEIGHTS LOT 10
ALSO ½ OF VAC POWER RD ADJ TO SAME 5-11-89 FR 014 10-11-91 CORR

BE IT FURTHER RESOLVED that, pursuant to the Payback Ordinances, the amount listed next to each of the above-described Benefitted Properties (referred to in this resolution as the "Payback Amount") is hereby determined to be the proportionate share of the costs for the Water Main Extension attributable to each of the Benefited Properties and such Benefitted Properties shall pay the Payback Amount to the City pursuant to Section 33-201 of the City Code, as presently written or as said Code Section may be amended from time to time in the future or as such Code Section may be rewritten in another section of the Code in the future.

BE IT FURTHER RESOLVED that, pursuant to the Payback Ordinances, each of the above-described Benefitted Properties are not entitled and shall not be permitted to connect to the City's public water main until such time as the Payback Amount established for such property has been paid to the City or as directed by the City.

BE IT FURTHER RESOLVED, that any of the Benefitted Properties that are subdivided or split into more units than identified above, then the Payback Amount listed above for such property shall be paid in accordance with the requirements of City Code Section 33-201(b), as presently written or as said Code Section may be amended from time to time in the future or as such Code Section may be rewritten in another section of the Code in the future; and

BE IT FURTHER RESOLVED, that if a benefitted property connects to the Water Main Extension within five (5) years of the date of adoption of this resolution and that property is not being subdivided or split, then such property shall have the option to pay its Payback Amount in installments that coincide with the quarterly water service billings (or other water service billing interval that may be established by the City) over a period of up to ten (10) years after the date of such connection with per annum interest to be charged at the rate of 10-year Treasury Bonds plus one (1%) percent, but such installment payment option is subject to and contingent on the benefited property owner executing an installment pay back agreement prepared by the City Attorney and recording of such agreement with the Oakland County Register of Deeds against the benefited property.

BE IT FURTHER RESOLVED, that if a property does not connect to the Water Main Extension within five (5) calendar years of the adoption of this resolution, that property must pay its Payback Amount in one lump sum at the time of connection thereafter.

AYES: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY AND NEWLIN
NAYS: NONE

ABSTENTION: NONE
ABSENT: BOLEWARE

RESOLUTION DECLARED ADOPTED ON FEBRUARY 27, 2023.

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

RECOMMENDED ADOPTION OF A RESOLUTION ESTABLISHING THE SALVADOR STREET (WHITLOCK TO HUGO) SANITARY SEWER PAYBACK DISTRICT AND FINAL PAYBACK COSTS. CMR 2-23-27

CITY OF FARMINGTON HILLS
OAKLAND COUNTY, MICHIGAN

RESOLUTION R-39-23

AMENDED AND RESTATED RESOLUTION
FOR THE SALVADOR STREET (WHITLOCK TO HUGO) SANITARY SEWER PAYBACK DISTRICT

At a regular meeting of the City Council of the City of Farmington Hills, County of Oakland, State of Michigan, held in the City Council Chambers on February 27, 2023 at 7:30 p.m., with those present and absent being:

PRESENT: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY AND NEWLIN
ABSENT: BOLEWARE

the following preamble and resolution were offered by Councilperson Massey and supported by Councilperson Newlin:

WHEREAS, Article VII of Chapter 33 of the City Code (referred to in this Resolution as the "Payback Ordinances") authorizes the City to construct and establish charges for benefitted properties to contribute to the cost of sanitary sewer construction; and

WHEREAS, the City of Farmington Hills has completed the extension of a sanitary sewer that provides public sewer services to and for the benefit of the properties listed in this resolution below (such extension being referred to in this resolution as the "Sanitary Sewer Extension"), and Council has been advised of the costs incurred for said Sanitary Sewer Extension; and

WHEREAS, pursuant to the Payback Ordinances, City Council desires to approve the costs of construction, identify the benefited properties as being within a payback district, specify the proportionate share of the cost of construction attributable to each of the benefited properties in the payback district, declare that such benefited properties shall pay such proportionate share, address the timing for such payment, and establish a limited installment payment option for the benefitted property owners within the payback district; and

NOW, THEREFORE, BE IT RESOLVED that the costs for the Sanitary Sewer Extension are approved and it is determined that the following properties benefit from the completed Sanitary Sewer Extension, which properties are referred to in this resolution as the "Benefitted Properties" and are within what shall be known as the "Salvador Street (Whitlock to Hugo) Payback District":

22-23-34-327-018 32406 SALVADOR 1 Unit/$27,993.56
T1N, R9E, SEC 34 WOODLAND ACRES SUB E 83 FT OF LOTS 50 & 51
10-20-94 FR 015 & 016

22-23-34-405-005 32340 SALVADOR 1 Unit/$27,993.56
T1N, R9E, SEC 34 KRAVE'S GRAND RIVER HEIGHTS LOT 11

22-23-34-451-016 32341 SALVADOR 1 Unit/$27,993.56
T1N, R9E, SEC 34 KRAVE'S GRAND RIVER HEIGHTS LOT 10
ALSO ½ OF VAC POWER RD ADJ TO SAME 5-11-89 FR 014 10-11-91 CORR

BE IT FURTHER RESOLVED that, pursuant to the Payback Ordinances, the amount listed next to each of the above-described Benefitted Properties (referred to in this resolution as the "Payback Amount") is hereby determined to be the proportionate share of the costs for the Sanitary Sewer Extension attributable to each of the Benefited Properties and such Benefitted Properties shall pay the Payback Amount to the City pursuant to Section 33-201 of the City Code, as presently written or as said Code Section may be amended from time to time in the future or as such Code Section may be rewritten in another section of the Code in the future.

BE IT FURTHER RESOLVED that, pursuant to the Payback Ordinances, each of the above-described Benefitted Properties are not entitled and shall not be permitted to connect to the City's public sanitary sewer until such time as the Payback Amount established for such property has been paid to the City or as directed by the City.

BE IT FURTHER RESOLVED, that any of the Benefitted Properties that are subdivided or split into more units than identified above, then the Payback Amount listed above for such property shall be paid in accordance with the requirements of City Code Section 33-201(b), as presently written or as said Code Section may be amended from time to time in the future or as such Code Section may be rewritten in another section of the Code in the future; and

BE IT FURTHER RESOLVED, that if a benefitted property connects to the Sanitary Sewer Extension within five (5) years of the date of adoption of this resolution and that property is not being subdivided or split, then such property shall have the option to pay its Payback Amount in installments that coincide with the quarterly sanitary sewer service billings (or other sanitary sewer service billing interval that may be established by the City) over a period of up to ten (10) years after the date of such connection with per annum interest to be charged at the rate of 10-year Treasury Bonds plus one (1%) percent, but such installment payment option is subject to and contingent on the benefited property owner executing an installment pay back agreement prepared by the City Attorney and recording of such agreement with the Oakland County Register of Deeds against the benefited property.

BE IT FURTHER RESOLVED, that if a property does not connect to the Sanitary Sewer Extension within five (5) calendar years of the adoption of this resolution, that property must pay its Payback Amount in one lump sum at the time of connection thereafter.

AYES: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY AND NEWLIN
NAYS: NONE
ABSTENTION: NONE
ABSENT: BOLEWARE

RESOLUTION DECLARED ADOPTED ON FEBRUARY 27, 2023.

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

RECOMMENDED ADOPTION OF A RESOLUTION ESTABLISHING THE NORMANDY HILLS WATER MAIN PAYBACK DISTRICT AND FINAL PAYBACK COSTS. CMR 2-23-28

CITY OF FARMINGTON HILLS
OAKLAND COUNTY, MICHIGAN

RESOLUTION R-40-23

AMENDED AND RESTATED RESOLUTION
FOR THE NORMANDY HILLS WATER MAIN PAYBACK DISTRICT

At a regular meeting of the City Council of the City of Farmington Hills, County of Oakland, State of Michigan, held in the City Council Chambers on February 27, 2023 at 7:30 p.m., with those present and absent being:

PRESENT: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY AND NEWLIN
ABSENT: BOLEWARE

the following preamble and resolution were offered by Councilperson Massey and supported by Councilperson Newlin:

WHEREAS, Article VII of Chapter 33 of the City Code (referred to in this Resolution as the "Payback Ordinances") authorizes the City to construct and establish charges for benefitted properties to contribute to the cost of water main construction; and

WHEREAS, the City of Farmington Hills has completed the extension of a water main that provides public water services to and for the benefit of the properties listed in this resolution below (such extension being referred to in this resolution as the "Water Main Extension"), and Council has been advised of the costs incurred for said Water Main Extension; and

WHEREAS, pursuant to the Payback Ordinances, City Council desires to approve the costs of construction, identify the benefited properties as being within a payback district, specify the proportionate share of the cost of construction attributable to each of the benefited properties in the payback district,

declare that such benefited properties shall pay such proportionate share, address the timing for such payment, and establish a limited installment payment option for the benefitted property owners within the payback district; and

NOW, THEREFORE, BE IT RESOLVED that the costs for the Water Main Extension are approved and it is determined that the following properties benefit from the completed Water Main Extension, which properties are referred to in this resolution as the "Benefitted Properties" and are within what shall be known as the "Normandy Hills Water Main Payback District":

22-23-21-127-011 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 100	34385 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-127-005 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 92	34601 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-203-007 T1N, R9E, SEC 21 NORMANDY HILLS LOT 60	34023 BRITTANY DR	1 Unit/$25,419.41
22-23-21-203-005 T1N, R9E, SEC 21 NORMANDY HILLS LOT 62	34113 BRITTANY DR	1 Unit/$25,419.41
22-23-21-203-003 T1N, R9E, SEC 21 NORMANDY HILLS LOT 64	34215 BRITTANY DR	1 Unit/$25,419.41
22-23-21-128-009 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 116 ALSO NLY 1/2 OF VAC WLY 6 FT OF BRITTANY DR	34690 BRITTANY DR	1 Unit/$25,419.41
22-23-21-128-011 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 118	34630 BRITTANY DR	1 Unit/$25,419.41
22-23-21-202-001 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 102	34281 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-127-014 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 THAT PART OF LOT 96 & 97 LYING SWLY OF LINE DESC AS BEG AT PT ON N LINE OF LOT 96 DIST SWLY 20 FT FROM NE LOT COR & RUNNING SELY TO PT ON S LINE OF LOT 97 DIST NELY 20 FT FROM SW LOT COR	34300 BRITTANY DR	1 Unit/$25,419.41
22-23-21-129-006 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 119	34381 BRITTANY DR	1 Unit/$25,419.41
22-23-21-126-006 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 82	34620 THORNBROOK DR	1 Unit/$25,419.41

22-23-21-201-014	33964 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 75		
22-23-21-203-010	33835 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 57		
22-23-21-227-008	33531 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 9		
22-23-21-127-006	VACANT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 93		
22-23-21-129-001	34685 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 124 ALSO SLY 1/2 OF VAC WLY 6 FT OF BRITTANY DRIVE ADJ TO SAME		
22-23-21-201-021	33540 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 51		
22-23-21-201-013	34008 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 74		
22-23-21-201-020	33618 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 52		
22-23-21-201-015	33934 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 76		
22-23-21-128-010	34660 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 117		
22-23-21-129-005	34601 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 120		
22-23-21-129-007	34355 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 108		
22-23-21-126-004	34660 THORNBROOK DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 84		
22-23-21-126-005	34634 THORNBROOK DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 83		

22-23-21-128-002	34690 VERSAILLES CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 115		
22-23-21-201-012	34038 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 73		
22-23-21-126-002	34720 THORNBROOK DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 86		
22-23-21-203-021	33801 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 45		
22-23-21-127-002	34695 THORNBROOK DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 89		
22-23-21-128-003	34670 VERSAILLES CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 114		
22-23-21-128-006	34610 VERSAILLES CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 111		
22-23-21-203-002	34241 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 105		
22-23-21-227-009	33431 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 8		
22-23-21-203-001	VACANT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 106		
22-23-21-126-009	34690 THORNBROOK DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 85 ALSO OF 'WINDWOOD POINTE SUB' SLY 5.00 FT OF LOT 1 5/11/88 FR 003 & 2316378015		
22-23-21-201-003	VACANT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 77		
22-23-21-127-013	34441 CHANTILLY CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 98		
22-23-21-127-008	34461 CHANTILLY CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 95		

22-23-21-126-008 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 80	34340 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-127-003 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 90	34665 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-128-005 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 112	34630 VERSAILLES CT	1 Unit/$25,419.41
22-23-21-129-008 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 PART OF LOT 107 BEG AT SW LOT COR, TH N 89-50-00 E 185 FT ALG LOT LINE,TH N 00-10-00 W TO N LOT LINE, TH NWLY ALG LOT LINE TO SE LINE OF BRITTANY DR, TH SWLY ALG SD SE LINE TO NW LOT COR, TH SELY 183.15 FT ALG LOT LINE TO BEG	34341 BRITTANY DR	1 Unit/$25,419.41
22-23-21-201-002 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 78	34284 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-203-006 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 61	34053 BRITTANY DR	1 Unit/$25,419.41
22-23-21-203-004 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 63	34135 BRITTANY DR	1 Unit/$25,419.41
22-23-21-129-004 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 121	34625 BRITTANY DR	1 Unit/$25,419.41
22-23-21-127-010 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 101	34355 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-201-019 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 53	33642 BRITTANY DR	1 Unit/$25,419.41
22-23-21-201-017 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 55	33820 BRITTANY DR	1 Unit/$25,419.41
22-23-21-127-004 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 91	VACANT	1 Unit/$25,419.41
22-23-21-202-006 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOTS 103 & 104 8-31-12 FR 002 & 003	34225 THORNBROOK DR	2 Units/$50,838.82

22-23-21-128-007 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 110	34390 BRITTANY DR	1 Unit/$25,419.41
22-23-21-226-002 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 50	33570 BERNADINE DR	1 Unit/$25,419.41
22-23-21-226-001 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 46	33641 BRITTANY DR	1 Unit/$25,419.41
22-23-21-202-005 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 THAT PART OF LOTS 96 & 97 LYING NELY OF LINE DESC AS BEG AT PT ON N LINE OF LOT 96 DIST SWLY 20 FT FROM NE LOT COR & RUNNING SELY TO PT ON S LINE OF LOT 97 DIST NELY 20 FT FROM SW LOT COR	34270 BRITTANY DR	1 Unit/$25,419.41
22-23-21-126-011 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOTS 87 & 88 ALSO OUTLOT B 5-7-18 FR 010 & 128-001	34750 THORNBROOK DR	2 Units/$50,838.82
22-23-21-128-004 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 113	34650 VERSAILLES CT	1 Unit/$25,419.41
22-23-21-128-008 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 109	34350 BRITTANY DR	1 Unit/$25,419.41
22-23-21-201-001 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 79	34316 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-126-007 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 81	34368 THORNBROOK DR	1 Unit/$25,419.41
22-23-21-203-008 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 59	33983 BRITTANY DR	1 Unit/$25,419.41
22-23-21-127-007 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 94	34477 CHANTILLY CT	1 Unit/$25,419.41
22-23-21-129-002 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 123	34665 BRITTANY DR	1 Unit/$25,419.41
22-23-21-201-011 T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 72	34084 BRITTANY DR	1 Unit/$25,419.41

22-23-21-203-009	33951 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 58		
22-23-21-201-018	33730 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 54		
22-23-21-201-016	33910 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 56		
22-23-21-127-012	34443 CHANTILLY CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 99		
22-23-21-201-004	VACANT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 65		
22-23-21-129-003	34645 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 122		
22-23-21-201-007	25893 DUMAS CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 68		
22-23-21-201-008	25894 DUMAS CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 69		
22-23-21-201-005	25849 DUMAS CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 66		
22-23-21-201-010	25850 DUMAS CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 71		
22-23-21-201-009	25880 DUMAS CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 70		
22-23-21-201-006	25879 DUMAS CT	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 LOT 67		
22-23-21-129-009	34325 BRITTANY DR	1 Unit/$25,419.41
T1N, R9E, SEC 21 NORMANDY HILLS NO 1 PART OF LOT 107 BEG AT PT DIST N 89-50-00 E 185 FT FROM SW LOT COR, TH N 00-10-00 W TO N LOT LINE, TH ELY, NLY & SLY ALG LOT LINE TO SE LOT COR, TH S 89-50-00 W TO BEG		

BE IT FURTHER RESOLVED that, pursuant to the Payback Ordinances, the amount listed next to each of the above-described Benefitted Properties (referred to in this resolution as the "Payback Amount") is hereby determined to be the proportionate share of the costs for the Water Main Extension attributable to each of the Benefited Properties and such Benefitted Properties shall pay the Payback Amount to the City pursuant to Section 33-201 of the City Code, as presently written or as said Code Section may be amended from time to time in the future or as such Code Section may be rewritten in another section of the Code in the future.

BE IT FURTHER RESOLVED that, pursuant to the Payback Ordinances, each of the above-described Benefitted Properties are not entitled and shall not be permitted to connect to the City's public water main until such time as the Payback Amount established for such property has been paid to the City or as directed by the City.

BE IT FURTHER RESOLVED, that any of the Benefitted Properties that are subdivided or split into more units than identified above, then the Payback Amount listed above for such property shall be paid in accordance with the requirements of City Code Section 33-201(b), as presently written or as said Code Section may be amended from time to time in the future or as such Code Section may be rewritten in another section of the Code in the future; and

BE IT FURTHER RESOLVED, that if a benefitted property connects to the Water Main Extension within five (5) years of the date of adoption of this resolution and that property is not being subdivided or split, then such property shall have the option to pay its Payback Amount in installments that coincide with the quarterly water service billings (or other water service billing interval that may be established by the City) over a period of up to ten (10) years after the date of such connection with per annum interest to be charged at the rate of 10-year Treasury Bonds plus one (1%) percent, but such installment payment option is subject to and contingent on the benefited property owner executing an installment pay back agreement prepared by the City Attorney and recording of such agreement with the Oakland County Register of Deeds against the benefited property.

BE IT FURTHER RESOLVED, that if a property does not connect to the Water Main Extension within five (5) calendar years of the adoption of this resolution, that property must pay its Payback Amount in one lump sum at the time of connection thereafter.

AYES: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY AND NEWLIN
NAYS: NONE
ABSTENTION: NONE
ABSENT: BOLEWARE

RESOLUTION DECLARED ADOPTED ON FEBRUARY 27, 2023.

RECOMMENDED ADOPTION OF A RESOLUTION ESTABLISHING THE QUAKER VALLEY FARMS ADDITION WATER MAIN PAYBACK DISTRICT AND FINAL PAYBACK COSTS. CMR 2-23-29

CITY OF FARMINGTON HILLS
OAKLAND COUNTY, MICHIGAN

RESOLUTION R-41-23

AMENDED AND RESTATED RESOLUTION

FOR THE QUAKER VALLEY FARMS ADDITION WATER MAIN PAYBACK DISTRICT

At a regular meeting of the City Council of the City of Farmington Hills, County of Oakland, State of Michigan, held in the City Council Chambers on February 27, 2023 at 7:30 p.m., with those present and absent being:

PRESENT: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY AND NEWLIN
ABSENT: BOLEWARE

the following preamble and resolution were offered by Councilperson Massey and supported by Councilperson Newlin:

WHEREAS, Article VII of Chapter 33 of the City Code (referred to in this Resolution as the "Payback Ordinances") authorizes the City to construct and establish charges for benefitted properties to contribute to the cost of water main construction; and

WHEREAS, the City of Farmington Hills has completed the extension of a water main that provides public water services to and for the benefit of the properties listed in this resolution below (such extension being referred to in this resolution as the "Water Main Extension"), and Council has been advised of the costs incurred for said Water Main Extension; and

WHEREAS, pursuant to the Payback Ordinances, City Council desires to approve the costs of construction, identify the benefited properties as being within a payback district, specify the proportionate share of the cost of construction attributable to each of the benefited properties in the payback district, declare that such benefited properties shall pay such proportionate share, address the timing for such payment, and establish a limited installment payment option for the benefitted property owners within the payback district; and

NOW, THEREFORE, BE IT RESOLVED that the costs for the Water Main Extension are approved and it is determined that the following properties benefit from the completed Water Main Extension, which properties are referred to in this resolution as the "Benefitted Properties" and are within what shall be known as the "Quaker Valley Farms Addition Water Main Payback District":

22-23-16-403-009 33875 QUAKER VALLEY RD 4
Units/$125,161.28
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS
LOTS 37, 38 & 39, ALSO LOT 1 OF QUAKER VALLEY FARMS ADD

22-23-16-403-001 34043 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 2

22-23-16-376-005 34055 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 3

22-23-16-376-001 34083 QUAKER VALLEY RD 1
Unit/$31,290.32

T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 4

22-23-16-376-002 34111 QUAKER VALLEY LN 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 5

22-23-16-376-003 34135 QUAKER VALLEY LN 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 6

22-23-16-376-004 34143 QUAKER VALLEY LN 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 7

22-23-16-326-014 34151 QUAKER VALLEY LN 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 8

22-23-16-326-013 QUAKER VALLEY LN 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 9

22-23-16-326-015 34173 QUAKER VALLEY RD 2
Units/$62,580.64
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOTS 10 & 11 8-31-90 FR 011 & 012

22-23-16-326-010 34245 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 12

22-23-16-326-009 34311 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 13

22-23-16-326-008 34333 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 14

22-23-16-326-007 34585 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 15

22-23-16-326-006 34595 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 16

22-23-16-326-005 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 21

22-23-16-401-014 34518 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOTS 22 & 23 5-31-01 FR 001 & 002

22-23-16-401-003 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 24

22-23-16-401-004 34468 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 25

22-23-16-401-005 34448 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 26

22-23-16-401-006 34424 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 27

22-23-16-401-007 34412 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 28

22-23-16-401-008 34400 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 29

22-23-16-328-007 34388 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 30

22-23-16-328-006 34370 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 31

22-23-16-328-008 34100 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOTS 32 & 33 8-20-14 FR 003 & 005

22-23-16-328-004 34200 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 34

22-23-16-328-001 34300 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 35

22-23-16-328-002 34330 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 36

22-23-16-327-004 34361 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 38

22-23-16-327-005 34411 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 39

22-23-16-327-003 34501 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 40

22-23-16-327-002 34539 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 QUAKER VALLEY FARMS ADD LOT 41

22-23-16-401-013 34085 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS PART OF LOT 49 DESC AS 6 BEG AT PT DIST N 80-07-26 W 68.01 FT FROM SE COR OF LOT 49 TH N 80-07-26 W 158.04 FT TO TRAV LINE, TH S 89-06-54 E 98.27 FT, TH S 66-35-46 E 60.45 FT, TH S 61-16-10 E 2.52 FT TO BEG, ALSO LOT 50 EXC BEG AT NE COR OF LOT 50 TH ALG CURVE TO RIGHT, RAD 55.15 FT, CHORD BEARS S 47-01-02 W 33.17 FT, DIST OF 33.69 FT, TH N 51-16-10 W 54.79 FT, TH S 80-07-26 E 68.01 FT TO BEG, ALSO ALL OF LOT 51 CORR 12-1-20

22-23-16-401-012 34105 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 49 EXC BEG AT PT DIST N 80-07-26 W 68.01 FT FROM SE COR OF LOT 49 TH N 80-07-26 W 158.04 FT TO TRAV LINE, TH S 89-06-54 E 98.27 FT, TH S 66-35-46 E 60.45 FT, TH S 51-16-10 E 2.52 FT TO BEG, ALSO PART OF LOT 50 DESC AS BEG AT NE COR OF LOT 50, TH ALG CURVE TO RIGHT, RAD 55.15 FT, CHORD BEARS S 47-01-02 W 33.17 FT, DIST OF 33.69 FT, TH N 51-16-10 W 54.79 FT, TH S 80-07-26 E 68.01 FT TO BEG CORR 12-1-20

22-23-16-401-011 34135 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 48

22-23-16-401-010 34155 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 47

22-23-16-401-009 34185 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 46

22-23-16-402-001 34180 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 45

22-23-16-402-002 34150 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 44

22-23-16-402-003 34130 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 43

22-23-16-402-004 34100 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 42

22-23-16-402-005 34080 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 41

22-23-16-402-006 34080 HUNTERS ROW 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 40

22-23-16-402-007 33870 QUAKER VALLEY RD 1
Unit/$31,290.32
T1N, R9E, SEC 16 SUPERVISOR'S PLAT OF QUAKER VALLEY FARMS LOT 32

BE IT FURTHER RESOLVED that, pursuant to the Payback Ordinances, the amount listed next to each of the above-described Benefitted Properties (referred to in this resolution as the "Payback Amount") is hereby determined to be the proportionate share of the costs for the Water Main Extension attributable to each of the Benefited Properties and such Benefitted Properties shall pay the Payback Amount to the City pursuant to Section 33-201 of the City Code, as presently written or as said Code Section may be amended from time to time in the future or as such Code Section may be rewritten in another section of the Code in the future.

BE IT FURTHER RESOLVED that, pursuant to the Payback Ordinances, each of the above-described Benefitted Properties are not entitled and shall not be permitted to connect to the City's public water main until such time as the Payback Amount established for such property has been paid to the City or as directed by the City.

BE IT FURTHER RESOLVED, that any of the Benefitted Properties that are subdivided or split into more units than identified above, then the Payback Amount listed above for such property shall be paid in accordance with the requirements of City Code Section 33-201(b), as presently written or as said Code Section may be amended from time to time in the future or as such Code Section may be rewritten in another section of the Code in the future; and

BE IT FURTHER RESOLVED, that if a benefitted property connects to the Water Main Extension within five (5) years of the date of adoption of this resolution and that property is not being subdivided or split, then such property shall have the option to pay its Payback Amount in installments that coincide with the quarterly water service billings (or other water service billing interval that may be established by the City) over a period of up to ten (10) years after the date of such connection with per annum interest to be charged at the rate of 10-year Treasury Bonds plus one (1%) percent, but such installment payment option is subject to and contingent on the benefited property owner executing an installment payback agreement prepared by the City Attorney and recording of such agreement with the Oakland County Register of Deeds against the benefited property.

BE IT FURTHER RESOLVED, that if a property does not connect to the Water Main Extension within five (5) calendar years of the adoption of this resolution, that property must pay its Payback Amount in one lump sum at the time of connection thereafter.

AYES: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY AND NEWLIN
NAYS: NONE
ABSTENTION: NONE
ABSENT: BOLEWARE

RESOLUTION DECLARED ADOPTED ON FEBRUARY 27, 2023.

STATE OF MICHIGAN)
) ss.
COUNTY OF OAKLAND)

RECOMMENDED APPROVAL OF AWARD OF CONTRACT FOR THE HERITAGE HILLS AND WEDGWOOD COMMONS SUBDIVISION ROAD RECONSTRUCTION PROGRAM PHASE III TO FONSON COMPANY INC. IN THE AMOUNT OF $3,762,982.56. CMR 2-23-30

MOTION by Massey, support by Newlin, that the City Council of Farmington Hills hereby approves the award of Heritage Hills and Wedgwood Commons Subdivision Road Rehabilitation Program Phase III to Fonson Company, Incorporated in the amount of $3,762,982.56, and

IT IS FURTHER RESOLVED, that the City Council authorizes the City Manager and the City Clerk to execute the contract on behalf of the City.

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

RECOMMENDED APPROVAL OF AWARD OF BID FOR UTILITY CART WITH PLOW TO CARLETON EQUIPMENT CO, INC. IN THE AMOUNT OF $28,741.21. CMR 2-23-31

MOTION by Massey, support by Newlin, that the City Council of Farmington Hills hereby authorizes the City Manager to issue a purchase order for a 2023 Kubota RTV-X1100CWL-H with Boss 6'6"V-Blade to Carleton Equipment Co, Inc. in the amount of $28,741.21.

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

RECOMMENDED APPROVAL OF AWARD OF PURCHASE OF TURNOUT BOOTS TO MACQUEEN EMERGENCY, LLC IN THE TOTAL AMOUNT OF $76,680, WITH POSSIBLE EXTENSIONS. CMR 2-23-32

MOTION by Massey, support by Newlin, that the City Council of Farmington Hills hereby authorizes the City Manager to approve an initial purchase order for turnout boots to Macqueen Emergency, LLC. for 135 pairs of boots at $568 per pair, in a total amount of $76,680 and also authorize one or more administration-approved extension not to exceed a total of four (4) additional one-year extensions under the same terms and conditions upon mutual consent by the City and vendor.

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

RECOMMENDED APPROVAL OF AWARD OF CONTRACT FOR THE FARMINGTON FREEWAY INDUSTRIAL PARK PHASE 2 – RESEARCH DRIVE AND FREEWAY PARK DRIVE RECONSTRUCTION PROJECT TO HARD ROCK CONCRETE, INC. IN THE AMOUNT OF $3,977,338.61. CMR 2-23-33

MOTION by Massey, support by Newlin, that the City Council of Farmington Hills hereby approves the award of the Farmington Freeway Industrial Park Phase 2 – Research Drive & Freeway Park Drive Reconstruction Project to the lowest competent bidder, Hard Rock Concrete, Inc. in the amount of $3,977,338.61, and

IT IS FURTHER RESOLVED, that the City Council authorizes the City Manager and the City Clerk to execute the contract on behalf of the City.

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

RECOMMENDED APPROVAL OF AWARD OF AGREEMENT FOR REPAIR AND RESTORATION OF THE STONE WALL AT LONGACRE/HERITAGE PARK TO NATIONAL RESTORATION, INC. IN THE AMOUNT OF $132,970.61. CMR 2-23-34

MOTION by Massey, support by Newlin, that the City Council of Farmington Hills hereby authorizes the City Manager to approve the required contracts and purchase orders to National Restoration, Inc., for the repair and restoration of the Heritage Park entrance sign stonework in the amount of $132,970.61 ($110,970.61 plus a contingency of $22,000).

Roll Call Vote:
Yeas: BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: NONE

MOTION CARRIED 6-0.

RECOMMENDED APPROVAL OF CITY COUNCIL STUDY SESSION MEETING MINUTES OF FEBRUARY 13, 2023.

MOTION by Knol, support by Bridges, that the City Council of Farmington Hills hereby approves the study session meeting minutes of February 13, 2023.

Roll Call Vote:
Yeas: BRIDGES, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: BARNETT AND BRUCE

MOTION CARRIED 4-0-1-2.

RECOMMENDED APPROVAL OF CITY COUNCIL REGULAR SESSION MEETING MINUTES OF FEBRUARY 13, 2023.

MOTION by Knol, support by Bridges, that the City Council of Farmington Hills hereby approves the regular session meeting minutes of February 13, 2023.

Roll Call Vote:
Yeas: BRIDGES, KNOL, MASSEY, AND NEWLIN
Nays: NONE
Absent: BOLEWARE
Abstentions: BARNETT AND BRUCE

MOTION CARRIED 4-0-1-2.

ADDITIONS TO AGENDA

There were no additions to the agenda.

CLOSED SESSION

CONSIDERATION OF APPROVAL TO ENTER INTO A CLOSED SESSION REGARDING PENDING LITIGATION UNDER SECTION 8(E) OF THE OPEN MEETINGS ACT (*GREENFIELD V CITY OF FARMINGTON HILLS*) (NOTE: COUNCIL WILL RETURN TO

OPEN SESSION IMMEDIATELY FOLLOWING THE CLOSED SESSION TO TAKE ACTION IF NEEDED AND TO CLOSE THE MEETING)

Mayor Barnett announced that City Council will return to open session immediately following the closed session to take action if needed, and to close the regular meeting.

MOTION by Bruce, support by Massey, that the City Council of Farmington Hills hereby approves entering into a closed session, pursuant to Subsections 8(e) and 8(h) of the Michigan Open Meetings Act, for purposes of discussing and consulting with the City's attorney regarding a privileged attorney-client legal correspondence and the pending court case of *Greenfield v Farmington Hills*, Oakland Circuit Court Case No. 2018-169707-CZ and Michigan Court of Appeals Case No. 357579, because an open meeting discussion of such matters would have a detrimental financial effect on the litigating position of the City in that case.

Roll Call Vote:

Yeas:	BARNETT, BRIDGES, BRUCE, KNOL, MASSEY, AND NEWLIN
Nays:	NONE
Absent:	BOLEWARE
Abstentions:	NONE

MOTION CARRIED 6-0.

Council entered back into regular session immediately following the closed session at 9:43pm.

ADJOURNMENT

MOTION by Bruce, support by Massey, to adjourn the regular session City Council meeting at 9:43pm.

MOTION CARRIED 6-0.

Respectfully submitted,

Pamela B. Smith, City Clerk