

SWARTZ CREEK DDA

Agenda

**Downtown Development Authority, Thursday, May 11, 2023, 6:00 P.M.
City Hall 8083 Civic Drive, Swartz Creek Michigan 48473
Virtual (Zoom) Meeting Available for General Public**

1. CALL TO ORDER:

2. PLEDGE OF ALLEGIANCE:

3. ROLL CALL:

4. APPROVE AGENDA:

4A. Proposed or Amended Agenda, May 11, 2023

5. MOTION TO APPROVE MINUTES:

5A. Board Meeting, April 13, 2023

6. REPORTS & COMMUNICATIONS:

Page No:

6A. Resolutions

02

6B. April 13, 2023 Minutes

10

6C. May 11, 2023 Meeting Letter

13

6D. Budget Report

15

6E. TIF Scoring Guidelines and Scoring Sheet

16

6F. MACC Grant Agreement

17

6G. Miller Road Parking Study

21

7. MEETING OPENED TO THE PUBLIC:

7A. General Public Comments

8. BUSINESS:

8A. Updates (Area development, events, crowdfunding, & MDOT signs)

8B. MACC Grant Agreement

8C. TIF Incentive Guidelines Scoring

8D. Miller Road Parking

9. MEETING OPENED TO THE PUBLIC:

9A. General Public Comments

10. REMARKS BY MEMBERS:

11. ADJOURNMENT:

CITY OF SWARTZ CREEK
DOWNTOWN DEVELOPMENT AUTHORITY
RESOLUTIONS
THURSDAY, MAY 11, 2023

Resolution No. 230511-01

Agenda – May 11, 2022

Motion by Board Member: _____

I Move the Swartz Creek Downtown Development Authority approves the agenda for the May 11, 2023 Downtown Development Authority meeting.

Second by Board Member: _____

Voting For: _____

Voting Against: _____

Resolution No. 230511-02

Minutes – April 13, 2023

Motion by Board Member: _____

I Move the Swartz Creek Downtown Development Authority approves the Minutes for the April 13, 2023 Downtown Development Authority meeting.

Second by Board Member: _____

Voting For: _____

Voting Against: _____

Resolution No. 230511-03

**RESOLUTION TO APPROVE MACC GRANT AND
AUTHORIZE SIGNING**

Motion by Councilmember: _____

WHEREAS, the City of Swartz Creek DDA wishes to engage in development of a historic interpretive signage and illustration/image program in the community; and,

WHEREAS, the an award has been tentatively made by the MACC (Michigan Arts & Culture Council) to match half of such a program, up to \$5,000; and,

WHEREAS, the DDA finds this to be worthy and affordable endeavor.

NOW, THEREFORE BE IT RESOLVED the DDA amends the budget to provide for matching funds, plus a 10% project contingency (\$6,000), to fund the project.

BE IT FURTHER RESOLVED the DDA approves the Grant Agreement for Arts Services (#23CP7849) as included in the May 11, 2023 DDA packet and authorizes and directs Adam Zettel, City Manager, to sign this on behalf of the DDA.

BE IT FURTHER RESOLVED the DDA authorizes city staff to engage and complete the project, including the execution of all grant requirements, conditions, and reports as needed .

Second by Councilmember: _____

Voting For: _____

Voting Against: _____

Resolution No. 230511-04

RESOLUTION TO RECOMMEND THE INCLUSION OF ONSTREET PARKING ON MILLER ROAD

Motion by Councilmember: _____

WHEREAS, the City of Swartz Creek DDA desires to make the downtown area a place where walkers, bikers, diners, and event attendees are comfortable and safe interacting with the city streets; and,

WHEREAS, Miller Road is being resurfaced in 2023, providing an opportunity to restripe the street surface; and,

WHEREAS, the city’s engineer has studied the possibility of placing limited on street parking on Miller Road, with findings that it can be done safely, including a schematic of the proposed layout; and,

WHEREAS, the addition of parking on streets has been shown to slow traffic, create more separation between pedestrians and vehicles, reduce noise, and add value to adjacent retail uses.

NOW, THEREFORE BE IT RESOLVED the DDA amends the budget to provide for matching funds, plus a 10% project contingency (\$6,000), to fund the project.

BE IT FURTHER RESOLVED the DDA recommends the city council consider adding onstreet parking to Miller Road in accordance with the OHM engineering study, dated October 31, 2023.

Second by Councilmember: _____

Voting For: _____

Voting Against: _____

Resolution No. 230511-05

Adjourn

Motion by Board Commission Member: _____

I Move the Swartz Creek Downtown Development Authority adjourns the May 11, 2023 Downtown Development Authority meeting.

Second by Board Member: _____

Voting For: _____

Voting Against: _____

CITY OF SWARTZ CREEK
VIRTUAL DOWNTOWN DEVELOPMENT AUTHORITY MEETING ACCESS INSTRUCTIONS
THURSDAY, MAY 11, 2023, 6:00 P.M.

The regular virtual meeting of the City of Swartz Creek park board is scheduled for **May 11, 2023** starting at 6:00 p.m. and will be conducted virtually (online and/or by phone), due to health concerns surrounding Coronavirus/COVID-19 and rules promulgated by the Michigan Department of Health and Human Services.

To comply with the **Americans with Disabilities Act (ADA)**, any citizen requesting accommodation to attend this meeting, and/or to obtain the notice in alternate formats, please contact Connie Olger, 810-429-2766 48 hours prior to meeting,

Zoom Instructions for Participants

To join the conference by phone:

1. On your phone, dial the teleconferencing number provided below.
2. Enter the **Meeting ID** number (also provided below) when prompted using your touch-tone (DTMF) keypad.

Before a videoconference:

1. You will need a computer, tablet, or smartphone with speaker or headphones. You will have the opportunity to check your audio immediately upon joining a meeting.
2. Details, phone numbers, and links to videoconference or conference call is provide below. The details include a link to **“Join via computer”** as well as phone numbers for a conference call option. It will also include the 9-digit Meeting ID.

To join the videoconference:

1. At the start time of your meeting, enter the link to join via computer. You may be instructed to download the Zoom application.
2. You have an opportunity to test your audio at this point by clicking on “Test Computer Audio.” Once you are satisfied that your audio works, click on “Join audio by computer.”

You may also join a meeting without the link by going to join.zoom.us on any browser and entering the Meeting ID provided below.

If you are having trouble hearing the meeting, you can join via telephone while remaining on the video conference:

1. On your phone, dial the teleconferencing number provided below.
2. Enter the **Meeting ID number** (also provided below) when prompted using your touchtone (DMTF) keypad.
3. If you have already joined the meeting via computer, you will have the option to enter your participant ID to be associated with your computer.

Participant controls in the lower left corner of the Zoom screen:



Using the icons in the lower left corner of the Zoom screen you can:

- Mute/Unmute your microphone (far left)
- Turn on/off camera (“Start/Stop Video”)
- Invite other participants
- View participant list-opens a pop-out screen that includes a “Raise Hand” icon that you may use to raise a virtual hand during Call to the Public
- Change your screen name that is seen in the participant list and video window
- Share your screen

Somewhere (usually upper right corner on your computer screen) on your Zoom screen you will also see a choice to toggle between “speaker” and “gallery” view. “Speaker view” show the active speaker.

Connie Olger is inviting you to a scheduled Zoom meeting.

Topic: DDA- Downtown Development Authority Meeting
Time: May 11, 2023 06:00 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://us02web.zoom.us/j/83096401128>

Meeting ID: 830 9640 1128

One tap mobile

+13017158592,,83096401128# US (Washington DC)

+13126266799,,83096401128# US (Chicago)

Dial by your location

+1 301 715 8592 US (Washington DC)

+1 312 626 6799 US (Chicago)

+1 929 205 6099 US (New York)

+1 253 215 8782 US (Tacoma)

+1 346 248 7799 US (Houston)

+1 669 900 6833 US (San Jose)

Meeting ID: 830 9640 1128

Find your local number: <https://us02web.zoom.us/j/kz4Jb4etg>

If you have any further questions or concern, please contact 810-429-2766 or email colger@cityofswartzcreek.org.

A copy of this notice will be posted at City Hall, 8083 Civic Drive, Swartz Creek, Michigan.

**CITY OF SWARTZ CREEK
VIRTUAL (ELECTRONIC) MEETING RULES AND PROCEDURES**

In order to conduct an effective, open, accessible, and professional meeting, the following protocols shall apply. These protocols are derived from the standard practices of Swartz Creek public meetings, Roberts Rules of Order, and city board & commission procedures. These procedures are adopted to govern participation by staff, councilpersons and members of the public in all City meetings held electronically pursuant to PA 228 of 2020. Note that these protocols do not replace or eliminate established procedures or practices. Their purpose is to augment standing expectations so that practices can be adapted to a virtual meeting format.

The following shall apply to virtual meetings of the city’s public bodies that are held in accordance with the Open Meetings Act.

1. Meetings of the City Council, Planning Commission, Zoning Board of Appeals, Downtown Development Authority, Park Board, or committees thereunder may meet electronically or permit electronic participation in such meetings insofar as (1) the Michigan Department of Health and Human Services restricts the number of persons who can gather indoors due to the COVID-19 pandemic; (2) persons have an illness, injury, disability or other health-related condition that poses a risk to the personal health or safety of members of the public or the public body if they were to participate in person; or (3) there is in place a statewide or local state of emergency or state of disaster declared pursuant to law or charter by the governor or other person authorized to declare a state of emergency or disaster.
2. All meetings held hereunder must provide for two-way communication so that members of the public body can hear and respond to members of the general public, and vice versa.
3. Members of the public body who participate remotely must announce at the outset of the meeting that he/she is in fact attending the meeting remotely and by further identifying the specific physical location (by county, township, village and state) where he/she is located. The meeting minutes must include this information.
4. Notice of any meeting held electronically must be posted at the City Offices at least 18 hours before the meeting begins and must clearly explain the following:
 - (a) why the public body is meeting electronically;
 - (b) how members of the public may participate in the meeting electronically, including the specific telephone number, internet address or similar log-in information needed to participate in the meeting;
 - (c) how members of the public may contact members of the public body to provide input or ask questions on any business that will come before the public body at the meeting;
 - (d) how persons with disabilities may participate in the meeting.
5. The notice identified above must also be posted on the City’s website homepage or on a separate webpage dedicated to public notices for non-regularly scheduled or electronic public meetings that is accessible through a prominent and conspicuous link on the website’s homepage that clearly describes the meeting’s purpose.

6. The City must also post on the City website an agenda of the meeting at least 2 hours before the meeting begins.
7. Members of the public may offer comment only when the Chair recognizes them and under rules established by the City.
8. Members of the public who participate in a meeting held electronically may be excluded from participation in a closed session that is convened and held in compliance with the Open Meetings Act.

MAINTAINING ORDER

Public body members and all individuals participating shall preserve order and shall do nothing to interrupt or delay the proceedings of public body.

All speakers shall identify themselves prior to each comment that follows another speaker, and they shall also indicate termination of their comment. For example, "Adam Zettel speaking. There were no new water main breaks to report last month. That is all."

Any participants found to disrupt a meeting shall be promptly removed by the city clerk or by order of the Mayor. Profanity in visual or auditory form is prohibited.

The public body members, participating staff, and recognized staff/consultants/presenters shall be the only participants not muted by default. All other members must request to speak by raising their digital hand on the meeting application or by dialing *9 on their phone.

MOTIONS & RESOLUTIONS

All Motions and Resolutions, whenever possible, shall be pre-written and in the positive, meaning yes is approved and no is defeated. All motions shall require support. A public body member whom reads/moves for a motion may oppose, argue against or vote no on the motion.

PUBLIC ADDRESS OF BOARD OR COMMISSION

The public shall be allowed to address a public body under the following conditions:

1. Each person who wishes to address the public body will be first recognized by the Mayor or Chair and requested to state his / her name and address. This applies to staff, petitioners, consultants, and similar participants.
2. Individuals shall seek to be recognized by raising their digital hand as appropriate on the digital application.
3. Petitioners are encouraged to appropriately identify their digital presence so they can be easily recognized during business. If you intend to call in only, please notify the clerk in advance of your phone number.
4. The city clerk shall unmute participants and the members of the public based upon the direction of the mayor or chair. Participants not recognized for this purpose shall be muted by default, including staff, petitioners, and consultants.
5. Individuals shall be allowed five (5) minutes to address the public body, unless special permission is otherwise requested and granted by the Mayor or Chair.
6. There shall be no questioning of speakers by the audience; however, the public body, upon recognition of the Mayor or Chair, may question the speaker.

7. No one shall be allowed to address the public body more than once unless special permission is requested, and granted by the Mayor or Chair.
8. One spokesperson for a group attending together will be allowed five (5) minutes to address the public body unless special permission has been requested, and granted by the Mayor or Chair.
9. Those addressing the public body shall refrain from being repetitive of information already presented.
10. All comments and / or questions shall be directed to and through the Mayor or Chair.
11. Public comments (those not on the agenda as speakers, petitioners, staff, and consultants) are reserved for the two "Public Comment" sections of the agenda and public hearings.

VOTING RECORD OF PUBLIC BODIES

All motions, ordinances, and resolutions shall be taken by "YES" and "NO" voice vote and the vote of each member entered upon the journal.

**CITY OF SWARTZ CREEK
SWARTZ CREEK, MICHIGAN
MINUTES OF THE DOWNTOWN DEVELOPMENT AUTHORITY MEETING
April 13, 2023**

The meeting was called to order at 6:00 p.m. by Board Member Ryan in the Swartz Creek Council Chambers with a virtual (Zoom) meeting available for the general public.

Board Members Present: Beedy (6:03 p.m.), Ryan, Krueger, Jesme, Barclay, Toms.

Board Members Absent: King, Jamison, Whittey.

Staff Present: Adam Zettel, Samantha Fountain.

Others Present: Nate Henry, John Pobocik, Lania Rocha (virtual).

APPROVAL OF MINUTES:

Resolution No. 230413-01

(Carried)

Motion by Board Member Krueger
Second by Board Member Barclay

I Move the Swartz Creek City Downtown Development Authority approves the minutes for the March 9, 2023, Downtown Development Authority meeting.

Unanimous affirmative voice vote: Motion declared carried.

APPROVAL OF AGENDA:

Resolution No. 230413-02

(Carried)

I Move the Swartz Creek City Downtown Development Authority approves the agenda for the April 13, 2023, Downtown Development Authority Meeting.

Motion by Board Member Krueger
Second by Board Member Barclay

Unanimous affirmative voice vote: Motion declared carried.

MEETING OPEN TO PUBLIC:

John Pobocik asked if anyone had been contacted about the Mary Crapo site and nobody had been contacted currently. Since it is school owned the DDA had not been involved.

Updates (Area Development, events, crowdfunding, & MDOT signs)

There was a discussion about the area development and events. Some updates include that the MDOT signs are moving forward very well, they are waiting on some pricing and feedback for the Public Spaces Community Spaces, a Costco on Hill Road, a Makers Market at night the second Tuesday of the month during May through at least September, and having some sort of market type vendors at movie night.

Fiscal Year 2024 Budget

(Carried)

Resolution No. 230413-03

Motion by Board Member Beedy
Second by Board Member Barclay

I Move the Swartz Creek Downtown Development Authority approve the proposed 2024 fiscal year budget for the Downtown Development Authority for distribution and review by the city council with the following amendments.

1. Increase Admin Services from \$2500 to \$5000
2. Increase Family Movie Night from \$3000 to \$7000
3. Increase Economic Development for MDOT signs to \$9000

YES: Krueger, Jesme, Barclay, Toms, Beedy, Ryan.
NO: None. Motion declared carried.

A discussion ensued.

MEETING OPEN TO PUBLIC:

John Pobocik commented that the time capsule will be opened next month at the school board meeting.

REMARKS BY BOARD MEMBERS:

Board member Krueger thinks that exciting days are ahead of us. There are a lot of big things in the works around us that could come to completion in the next couple of

years that could make Swartz Creek explode. He is starting to promote high income housing.

ADJOURNMENT:

Resolution No. 230413-04

(Carried)

Motion by Board Member Ryan
Second by Board Member Beedy

I Move the Swartz Creek Downtown Development Authority adjourns the April 13, 2023, Downtown Development Authority meeting at 6:52 p.m.

Unanimous affirmative voice vote: Motion declared carried.

Connie King



SWARTZ CREEK DDA
SWARTZ CREEK CITY OFFICES
8083 CIVIC DR.
SWARTZ CREEK, MI 48473

PHONE: 810-635-4464
FAX: 810-635-2887

Date: May 4, 2023

To: DDA Board Members
From: Adam Zettel
RE: May 11, 2023 DDA Meeting

Hello everyone,

There will be a meeting of the DDA at 6:00 p.m. on Thursday, May 11, 2023. All board members must now attend in person to participate. This will also be broadcast virtually via Zoom for the general public. Instructions and guidelines for the virtual meeting are in the packet.

We have quite a bit to go over. I expect updates on the MDOT signs, events, and the crowdfunding concept. Hopefully, we will have some pricing and a means to get some concepts drawn. We really want to get this going this summer. In related news, the community that was pursuing \$50,000 for a similar project did reach their goal! This is good progress.

For the bulk of business, we have draft scoring criteria and a draft scoring sheet. As discussed in March, the idea is to have 20 criteria, totaling 100 points, that DDA members can use to rate prospective projects for TIF reimbursement. Each criterion will be rated with its own 1-5 scale. I have been working with CIB to get these together so we can review the criteria with the relevant scale. We can then apply the system to some existing or proposed projects to see how they rate. The thought is that any project that achieves 75 points or more would be eligible for gap financing.

Once a system is approved Justin with CIB will incorporate it into a complete application package that includes a goal, description, application, and the scoring. This will make our community ready to provide direct support to those larger and transformational projects that are desired!

In some other good news! We have an opportunity to pursue the interpretive signage in downtown with the award of a MACC grant! This is the Michigan Arts Council program that matches funds for community art and engagement. I am including the

agreement. I think this is a good way to use some micro funds to add some placemaking to downtown. Again, the idea is to add some large scale signs that are cut out to reflect images of the city's past, along with some interpretive narratives.

Lastly, the Miller Road project is out to bid as we speak. A decision will need to be made on parking by June, perhaps as late as July. While we have not solicited general public opinion, I have spoken to many downtown business owners in the immediate area. I think the same sense of optimism and purpose exists with them, along with the same fears of the unknown/reservations. I am curious if the DDA wishes to deliberate this and make a recommendation to council or if we should do a specific invite to the impacted properties. I have this on as an agenda item.

That is the news! Contact me directly with any questions, comments, or agenda items. Please see the city council packets for updates of other downtown and community projects! **Please let us know if you can attend or not.** We have struggled to get a quorum recently.

Sincerely,

A handwritten signature in blue ink that reads "Adam Zettel". The signature is fluid and cursive, with the first name "Adam" and last name "Zettel" clearly legible.

Adam Zettel, AICP
City Manager
azettel@cityofswartzcreek.org

REVENUE AND EXPENDITURE REPORT FOR CITY OF SWARTZ CREEK DDA
PERIOD ENDING 03/31/2023

GL NUMBER	DESCRIPTION	2022-23		AVAILABLE BALANCE	% BDGT USED
		AMENDED BUDGET	YTD BALANCE 03/31/2023		
Fund 248 - Downtown Development Fund					
Revenues					
Dept 000.000 - General					
248-000.000-402.000	Current Tax Revenue	100,000.00	108,888.65	(8,888.65)	108.89
248-000.000-664.000	Interest Income	4.00	9.53	(5.53)	238.25
Total Dept 000.000 - General		100,004.00	108,898.18	(8,894.18)	108.89
TOTAL REVENUES		100,004.00	108,898.18	(8,894.18)	108.89
Expenditures					
Dept 173.000 - DDA Administration					
248-173.000-745.000	Postage	4.00	2.85	1.15	71.25
248-173.000-801.000	Contractual Services	0.00	1,120.00	(1,120.00)	100.00
248-173.000-825.000	Admin Services	2,500.00	2,500.00	0.00	100.00
248-173.000-961.000	Miscellaneous	2,000.00	1,300.00	700.00	65.00
Total Dept 173.000 - DDA Administration		4,504.00	4,922.85	(418.85)	109.30
Dept 728.000 - Economic Development					
248-728.000-801.000	Contractual Services	23,125.00	0.00	23,125.00	0.00
248-728.000-961.000	Miscellaneous	282.58	282.58	0.00	100.00
Total Dept 728.000 - Economic Development		23,407.58	282.58	23,125.00	1.21
Dept 728.002 - Streetscape					
248-728.002-726.000	Supplies	3,628.21	3,628.21	0.00	100.00
248-728.002-801.000	Contractual Services	1,000.00	0.00	1,000.00	0.00
248-728.002-967.101	Contribution to General Fund	40,000.00	40,000.00	0.00	100.00
248-728.002-968.000	Depreciation Expense	1,000.00	0.00	1,000.00	0.00
Total Dept 728.002 - Streetscape		45,628.21	43,628.21	2,000.00	95.62
Dept 728.003 - Facade Program					
248-728.003-801.000	Contractual Services	12,500.00	9,475.00	3,025.00	75.80
Total Dept 728.003 - Facade Program		12,500.00	9,475.00	3,025.00	75.80
Dept 728.004 - Family Movie Night					
248-728.004-726.000	Supplies	3,000.00	0.00	3,000.00	0.00
248-728.004-801.000	Contractual Services	2,750.00	495.00	2,255.00	18.00
248-728.004-968.000	Depreciation Expense	1,210.00	0.00	1,210.00	0.00
Total Dept 728.004 - Family Movie Night		6,960.00	495.00	6,465.00	7.11
TOTAL EXPENDITURES		92,999.79	58,803.64	34,196.15	63.23
Fund 248 - Downtown Development Fund:					
TOTAL REVENUES		100,004.00	108,898.18	(8,894.18)	108.89
TOTAL EXPENDITURES		92,999.79	58,803.64	34,196.15	63.23
NET OF REVENUES & EXPENDITURES		7,004.21	50,094.54	(43,090.33)	715.21

City of Swartz Creek TIF Eligibility Score Sheet

AZ Edition: May 4, 2023

Criteria	Project Priorities	Comments	Total Sco
1	The proposed project is located within the DDA Development District, focused in the core area (1-5 pts).		
2	The proposed project will create new business or jobs within the Development District (1-5 pts).		
3	The project creates a sense of place and adds vibrancy to the community. The proposed project is transformational in the sense that it will generate new economic investment and change the fundamental form, feel and function of downtown and the proposed project is designed to integrate seamlessly into the existing community fabric, incorporates significant architectural features, aligns with the community vision and will become a destination within the community.		
4	The proposed project improves an existing building or a blighted space through major renovations, demolition, building expansion or new construction. Project costs associated with the improvements will exceed \$250,000 (1-5 pts)		
5	The proposed project enhances pedestrian connectivity (1-5 pts)		
6	The proposed project preserves or renovates a historically significant space, building or feature within the community (1-5 pts) – General building maintenance does not qualify as eligible expenses towards preserving or renovating a historically significant building or space within the downtown.		
7	The proposed project will add in-demand, missing middle housing formats and/or is mixed-use and adds a variety of new uses which would support a thriving commercial core of downtown and as identified in the Downtown Master Plan (1-5 pts)		
8	The proposed project will reduce the appearance of overhead wires in the downtown area by screening them with vegetation, reducing the number of outdated/redundant wires or relocation/burial when practical (1-5 pts).		
9			
10	The proposed project aligns with the approved Downtown PUD Plan and Downtown Design Guidelines (1-5 pts).		
11	The proposed project enhances public parking infrastructure or adds new private parking infrastructure to support the development as well as surrounding area (1-5 pts).		
12	The project will remediate or reuse (with proper planning and safety measures) an environmentally compromised site(s) and greatly improves the general health, safety and welfare of the community, its residents and businesses alike (1-5 pts).		
13	The proposed project enhances existing public spaces or provides new public spaces or adds significant placemaking elements which encourage public and pedestrian interactions (1-5 pts).		
14	The proposed project is financially feasible and has demonstrated it has secured financial commitments to support the project, but a financial gap remains (1-5 pts)		
15	Include investment in formally recognized RRC sites (required for abatements). Bonus Points (5)		
16	Provide for hospitality, cultural, outdoor dining or seating, entertainment, and recreational uses (1-5 pts).		
17	The new development will maximize the sites buildable footprint and build as close to the street frontage or right-of-way as allowable by city ordinance (little or no setbacks) (1-5 pts).		
18	Use as much frontage as possible along primary road to establish a street-wall feel (1-5 pts).		
19	The new development will provide multiple stories (1-5 pts).		
20	The project has pursued/requested/secured other public sources of funding or grants such as CRP from the MEDC or other similar types of funding (1-5 pts)		
	100 possible	Total	

GRANT AGREEMENT FOR ARTS SERVICES

Control Number: 23CP7849

The Michigan Arts & Culture Council, (the 'Council') and CITY OF SWARTZ CREEK, (the 'Grantee') enter this Grant Agreement for Arts Services ('Grant Agreement') on May 03, 2023 and mutually agree as follows:

1. Authority

This Grant Agreement is executed under authority of Sec. 11(6) of the History, Arts and Libraries Act, 2001 PA 63, MCL 399.711 and Sec. 1035 of 2015 PA 84.

2. Grant Agreement Period

The period of this Grant Agreement shall be from May 01, 2023 to September 30, 2023 ("Term"), unless prior termination is effectuated by the Council pursuant to Section 7.

3. Project(s) Funded

Beginning on May 01, 2023, Grantee shall:

To support the commissioning of a series of interpretative signs that will be placed throughout the city to identify landmarks, people, and stories from the community's history that bring the character of Swartz Creek to life, as more specifically set forth in the grant application or revised 'grantee information form', which is incorporated herein and made part of this Grant Agreement by reference.

Grantee shall comply with all financial and other requirements as outlined in the 2023 MACC Grant Program Guidelines, which are incorporated herein and are made part of this Grant Agreement by reference.

Grantee understands and agrees that:

- a. Artistic excellence and artistic merit are criteria by which applications are judged, taking into consideration general standards of decency and respect for the diverse beliefs and values of the people of Michigan.
- b. Obscenity is without artistic merit, is not protected speech, and will not be funded by a grant awarded by the Council and supported with State appropriations.

Grantee understands that the Council shall withhold undistributed grant payments from Grantee if Grantee violates any of the requirements for funding listed in the preceding paragraph, and further, that if Grantee violates any of the requirements, Grantee may be disqualified from awards of future grants for a period of up to three (3) years.

4. Category Specification

The Grantee is eligible for this grant in the Community Partners category.

5. Terms and Conditions of Payment

The Council shall pay the Grantee an amount not to exceed \$5,000 on the following dates and in the following amounts, subject to the Grantee's compliance with this Grant Agreement. The Council, in its sole discretion, shall determine whether the Grantee has fulfilled all Grant Agreement terms and conditions. If the Council determines that the Grantee has failed to comply with any term or condition, the Grantee shall not be entitled to any payment listed below:

Amount:	Date:	Stipulation:
\$4,250	05/26/2023	Upon processing of signed agreement and copies of Governor and Legislative notifications
\$750	12/22/2023	Upon council approval of final report due on 10/30/2023

Additionally, the Council may demand full repayment of distributed grant proceeds in such event.

The Grantee shall meet the above listed conditions at least 30 days prior to the indicated payment date, so that the Council will have adequate time to process scheduled payments. Failure to comply with any deadlines will delay payment or may cause termination of this Grant Agreement pursuant to Section 7. In the event this Grant Agreement needs to be approved by the State Administrative Board or OFM, it shall be contingent upon such approval and no grant payments shall be made until this contingency is satisfied. Further, Grantee acknowledges that Council's performance of its payment obligation is dependent upon the continued receipt of government funding. In the event that the State Legislature or any State official, commission, authority, body, or employee, or the federal government (a) takes any legislative or administrative action, which fails to provide, terminates, or reduces the funding necessary for this Grant Agreement, or (b) takes any legislative or administrative action, which is unrelated to the source of funding for this Grant Agreement, but which affects the Council's ability to fund and administer this Grant Agreement, and other Council programs, then the Council may terminate this Grant Agreement by providing notice to the Grantee of termination.

The payment amounts set forth in this section shall, at a minimum, be matched on a dollar-for-dollar basis from local and/or private sources. The match may include the reasonable value of services, materials, and equipment as allowed under the Federal Internal Revenue Code for charitable contributions, subject also to the pre-approval of such a match by the Council.

No member of the State Legislature or any individual employed by the State may share in the awarded grant or any benefit that arises

from the grant.

The Council requires the payments under this Agreement be processed by electronic funds transfer (EFT). Grantee is required to register to receive payments by EFT at the State Integrated Governmental Management Applications (SIGMA) Vendor Self Service (VSS) website (www.michigan.gov/VSSLogin).

6. Redistribution Prohibition

The Grantee may not redistribute any grant awarded under this Grant Agreement or the matching funds which conferred eligibility for the grant to any other entity, unless specifically provided for in this Grant Agreement.

7. Termination of Grant Agreement

The Council may terminate this Grant Agreement for any reason by giving five (5) days written notice to the Grantee. Upon termination, the Council shall have no further obligation to make the payments described in Section 5.

8. Grantee's Liability

The Grantee will furnish and maintain during the term of this Grant Agreement public liability, property damage, and workers' compensation insurance insuring, as they may appear, the interests of the parties to this Grant Agreement. The Grantee is responsible for ensuring that all precautions are exercised at all times for the protection of all persons and property. The Grantee shall secure all necessary certificates and permits from municipal or other public authorities and comply with all national, state, and municipal laws, ordinances, and regulations as may be required in connection with the performance of this Grant Agreement.

9. Limitation of Liability

The State of Michigan, the Michigan Strategic Fund and the Council, and their organizational units, officers, agents, and employees shall not be liable to the Grantee, nor to any individuals or entity with whom the Grantee contracts, for any direct, indirect, incidental, consequential or other damages incurred as a result of activities, actions or inactions on the part of the Grantee for services rendered pursuant to this Grant Agreement resulting in litigation; from the Council's decision not to make payment to the Grantee pursuant to Section 5; or from termination of this Grant Agreement pursuant to Section 7.

Any liability resulting from activities, actions or inactions engaged in by the Grantee under this Grant Agreement shall be the sole responsibility of the Grantee. Any liability resulting from activities, actions or inactions engaged in by individuals or entities with whom the Grantee contracts shall be the sole responsibility of the subgrantee or as otherwise specified in a subgrant agreement between the Grantee and the subgrantee; however, under no circumstances shall the State, the Michigan Strategic Fund or the Council, and their organizational units, officers, agents and employees be liable for the activities of the Grantee or any subgrantee. Neither party will indemnify the other party in any litigation that may arise from the performance of this Grant Agreement or any subgrant agreement executed to fulfill this Grant Agreement. This section shall not be construed as a waiver of governmental immunity.

10. Third Party Beneficiary

This Grant Agreement is not intended to make any person or entity not a party to this Grant Agreement a third-party beneficiary of this Grant Agreement or to confer on a third party any rights or obligations enforceable in their favor.

11. Support Credit

The Grantee shall prominently display the Council's name and logo in printed materials associated with the grant and include support credit in each broadcast promotion as follows:

'This activity is supported in part by an award from the Michigan Arts & Culture Council and the NATIONAL ENDOWMENT FOR THE ARTS'

When no printed material is used, verbal acknowledgment shall be given prior to or at the beginning of each presentation. The Grantee shall transmit copies of printing, photographs, advertising and program materials prepared for this activity to the Council.

12. Accounting and Administrative Requirements

The Grantee shall maintain appropriate documents, journals, ledgers, and statements in accordance with generally accepted accounting practices, retain these records for a period of not less than five (5) years from the date of completion of the final report prepared pursuant to Section 15, and make these documents available for examination and audit by appropriate agents of the State and/or Federal Government. Grantee shall comply with the applicable administrative requirements for grants-in-aid and use cost accounting principles which comply with Federal requirements as set forth in 2 CFR Chapter I, Chapter II part 200 Uniform Administrative Requirements, Cost, Principals, and Audit Requirements for Federal Awards.

13. Equal Opportunity

Grantee certifies compliance with Executive Order 79-4, the Elliott-Larsen Civil Rights Act, 1976 PA 453, MCL 372.101 et seq., and all other pertinent federal, state and local fair employment practices and equal opportunity laws. The Grantee covenants not to discriminate against any employee or applicant for employment, to be employed when services under this Grant Agreement are undertaken, with respect to hire, tenure, terms, conditions, or privileges of employment, or any matter directly or indirectly related to employment, on the grounds of race, color, religion, national origin, age, sex or disability, or to exclude any person from participation in, deny any person the benefits of, or discriminate any person due to the above-listed grounds with respect to any program or activity funded in whole or part under this Grant Agreement. The Grantee agrees to include the aforementioned covenant in every contract or subgrant entered into by the Grantee to effectuate this Grant Agreement. Grantee certifies that the Grantee has an established policy to provide equal opportunity to participate in and benefit from all programs, activities and services and equal employment opportunities, and agrees to state in all promotional materials, advertisements, and recruiting materials its equal opportunity policies.

14. Fair Labor Standards

All professional performers and related or supporting professionals employed on projects or in productions which are financed in whole or in part under this Grant Agreement will be paid, without deduction or rebate on any account, not less than the minimum compensation determined by the Secretary of Labor to be the prevailing minimum compensation for persons employed in similar activities. Furthermore, no part of any project or production which is financed in whole or in part under this Grant Agreement will be implemented under working conditions which are unsanitary, hazardous or evidence of compliance. The Council may terminate this Grant Agreement if the name of the Grantee or any contractor, manufacturer or supplier of the Grantee appears in the register compiled by the Michigan Department of Licensing and Regulatory Affairs pursuant to the State Contracts with Certain Employers Prohibited Act, 1980 PA 278, MCL 423.321 et seq., or Grantee fails to comply with subpart C of 2 CFR 180, as adopted by the Arts Endowment in 2 CFR 32.3254.

15. Reports

The Grantee shall furnish the following report or reports to the Council:

- a. A final report covering the grant period, which is due within 30 days after the end of the grant period. The final report shall indicate at least the following:
 - i. Project revenues and expenditures, including grant matching fund amounts;
 - ii. Number of individuals attending or engaged during the grant period; and
 - iii. A narrative summary of the project and its outcome.

Failure to submit the above-described reports in a timely manner may void Grantee's claim to funds or cause repayment of funds already distributed under this Grant Agreement.

16. Reviews and Evaluations

In order to provide members of the Council, appropriate Council evaluators and staff an opportunity to appraise the nature and caliber of activities supported by Council funds, Grantee agrees to admit those individuals to activities without charge and to cooperate with in-depth reviews and evaluations as may be required.

During the Term, and for five (5) years after the Term, Grantee shall maintain reasonable records including evidence that the project was actually performed and the identity of all individuals paid for the project, and shall allow access to those records by the Council or its authorized representative at any time during this period.

17. Other Certifications

The Grantee certifies, by signature to this Grant Agreement, that neither he/she/it nor any principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in the grant by any federal department or agency. If the Grantee is unable to certify to any portion of this statement, the Grantee shall attach to this Grant Agreement an explanation of the reason.

18. Governance

This Grant Agreement is governed by the laws of the State of Michigan and supersedes all prior agreements, documents and representations related to this Grant Agreement between the Council and the Grantee, whether expressed, implied, oral or otherwise. This Grant Agreement constitutes the entire agreement between the parties and may not be amended, except by written instrument executed by both parties prior to the termination date set forth in Section 2. No party to this Grant Agreement may assign this Grant Agreement or any of his/her/its rights, interest or obligations hereunder without prior consent of the other party. The Grantee agrees to inform the Council in writing immediately of any proposed changes of dates, budget or services indicated in this Grant Agreement, as well as changes of address or personnel affecting this Grant Agreement. Changes in dates, budget or services are subject to the Council's approval. If any provision of this Grant Agreement is deemed void or unenforceable, the remainder of the Grant Agreement shall remain valid.

19. Compliance with Laws

The Grantee shall otherwise be in compliance at all times with all applicable federal laws, regulations, rules and orders including, but not limited to Title VI of the Civil Rights Act of 1964, 42 USC 2000d et seq.; Executive Order 13166; Title IX of the Education Amendments of 1972, 20 USC 1681 et seq.; Section 504 of the Rehabilitation Act of 1973, 29 USC 701 et seq.; the Age Discrimination Act of 1975, 42 USC 6101 et seq.; the National Environmental Policy Act (NEPA) of 1969, 42 USC 4321 et seq.; the National Historic Preservation Act (NHPA) of 1966, 16 USC 470 et seq.; the Drug Free Workplace Act of 1988, 41 USC 701 et seq.; Lobbying restrictions, 18 USC 1913, 2 CFR 200.450, and 31 USC 1352; Davis-Bacon and Related Acts; the Native American Graves Protection and Repatriation Act of 1990, 25 USC 3001 et seq.; the U.S. Constitution Education Program, P.L. 108-447, Division J, Sec. 111(b); and the prohibition on funding to ACORN, P.L. 111-88, Sec. 427.

20. Counterparts

This Grant Agreement may be executed in one or more counterparts and transmitted by facsimile, email, pdf or other electronic means, each of which shall constitute an original, and all of which together shall constitute one and the same instrument.

21. Survivability

The terms and conditions of sections 6, 8, 9, 10, 11, 12, 15, 16, 18 shall survive termination of this Grant Agreement.

MICHIGAN STRATEGIC FUND
MICHIGAN ARTS & CULTURE COUNCIL

CITY OF SWARTZ CREEK



Alison Watson
Director

Adam Zettel
City Manager

May 03, 2023

Date

In Process

memorandum

Date: October 31, 2022

To: Adam Zettel, AICP

cc: Steven Loveland, PE, PTOE; Rob Merinsky, PE; Andy Harris, PE

From: Stephan Maxe, PE

Re: Parking and Traffic Study on Miller Road from Hayes Street to Morrish Road

Background

The City of Swartz Creek desires to create a downtown atmosphere along Miller Road by providing parking, slowing traffic, and maintaining pedestrian and bicycle facilities. Miller Road currently exists as a 3-lane cross section between bike lanes in the study area, with one lane in each direction and a continuous center left turn lane. The city is looking for concepts that will add on-street parking to this area while maintaining satisfactory left turn operations and bicycle facilities (either on Miller Road or via an alternative route). This memo details the operations at the Miller and Morrish intersection, explores alternatives and presents a recommended design concept.

Traffic Information

Traffic data was obtained from a previous study “Miller Road and Morrish Road Traffic Study” prepared by OHM Advisors in December 2015. The Synchro traffic model prepared for this study was used to analyze the operations of Miller Road and Morrish Road if the eastbound left turn lane was removed and an option for a shortened left turn lane.

Proposed Lane Configuration

The existing cross section consists of three 12-foot vehicular lanes and two 4-foot bike lanes with curb and gutter. In order to add parking, the vehicular lanes would be reduced to 11 feet and the center lane would be removed. Parking lanes are required to be 7 feet to 9 feet in width and bike lanes adjacent to parking are required to be 5 feet. The bike lane is dashed across the driveways to indicate that it is not a parking lane while still delineating the bike lane. With the parking lanes adjacent to the curb the 1.5 foot gutter would be included in the parking lane width which provides approximately 7.5' parking lanes on both sides of Miller Road. This alternative will preserve the existing pedestrian crossing and refuge island just west of Hayes Street, while removing the existing island between Holland Street and Hayes Street. A pedestrian crossing is proposed at the west side of Holland Street to replace the removed island and crossing.

Intersection Alternatives

Two different intersection alternatives for the west leg of the Miller Road and Morrish Road intersection were reviewed.



Two Lane

This concept would have a single eastbound lane and a single westbound lane on the west leg of the intersection. The eastbound approach would have a single shared lane for left turn, right turn and thru movements.

Shortened Left Turn Lane

This concept would have a shared eastbound thru/right turn lane, an eastbound left turn lane and a single westbound lane on the west leg of the intersection. The left turn lane would be limited to the 50' of storage, 75' lane opening and an 85' taper back to the 2-lane cross section for the rest of the downtown study area to Hayes Street.

Operational Analysis

The study intersection was analyzed according to the methodologies published in the Highway Capacity Manual, 2010 edition. For this project, Synchro Version 11 software was used to conduct the analysis for traditional intersections. Rodel software was used to conduct the analysis of the roundabout alternatives. Software printouts for the evaluations of intersections have been included in Appendix B. These software packages compute delay values based on factors such as number and type of lanes, intersection controls such as STOP signs or traffic signals, traffic volumes, pedestrian volumes, signal timing characteristics, roadway grade, speed limit, etc. This analysis determines the average delay experienced by vehicles. This value is an average across the entire peak hour, vehicles arriving during the busiest portion of the peak hour or arriving in a clustered group of vehicles instead of in a random pattern could experience longer delays. On the other hand, vehicles arriving during a lighter portion of the peak hour could experience a shorter delay. The average delay is used to determine the corresponding level of service (LOS) values for each intersection movement as well as the intersection as a whole.

The LOS of an intersection is based on factors such as number and types of lanes, intersection controls such as STOP signs or traffic signals, traffic volumes, pedestrian volumes, etc. LOS is expressed as a letter grade, in a range from A through F. In this context, 'A' represents the best conditions, with very little or no average delay to vehicles. LOS 'F' is the worst of conditions, equated with very large average delays and few gaps of acceptable length. The following tables identify level of service criteria for signalized intersections.

Table 1: Level of Service Criteria For Signalized Intersections

Level of Service	Average Delay/Vehicle (seconds)	Description
A	Less than or equal to 10	Most vehicles do not stop at all. Most arrive during the green phase. Little or no delay.
B	> 10 to 20	More vehicles stop than for LOS A. Still good progression thru lights. Short traffic delays.
C	> 20 to 35	Significant numbers of vehicles stop, although many pass thru without stopping.
D	> 35 to 55	Many vehicles stop. Individual signal cycle failures are noticeable. Progression is intermittent.
E	> 55 to 80	Considered to be the limit of acceptable delay. Individual cycle failures are frequent and progression is poor.
F	>80	Extreme and unacceptable traffic delays.

SOURCE: Transportation Research Board, Highway Capacity Manual 2010.

An intersection LOS 'D' is considered by many traffic safety professionals to be the minimum acceptable condition in an urban/suburban area. For rural areas, most highway agencies consider LOS 'C' the minimum. Given the location of the study intersections, within an urbanized boundary, LOS 'D' was utilized as the study goal.



The intersection was evaluated for the two concepts during each of the peak hour periods. Table 2 shows the intersection LOS and delays during the AM Peak hour. Table 3 shows the intersection LOS and delays during the PM Peak hour.

Table 2: AM Peak Delay and Level of Service

	LOS (Avg Delay in sec./veh)				
	NB	SB	EB	WB	Intersection
2-Lane	C (27.4)	C (27.1)	B (11.9)	A (6.7)	B (17.2)
Short Left-Turn Lane	B (19.8)	C (20.0)	B (12.8)	B (10.4)	B (15.3)

Table 3: PM Peak Delay and Level of Service

	LOS (Avg Delay in sec./veh)				
	NB	SB	EB	WB	Intersection
2-Lane	C (23.8)	C (34.3)	B (17.7)	B (11.1)	C (20.7)
Short Left-Turn Lane	B (17.7)	C (21.5)	B (17.3)	B (16.8)	B (18.2)

Under both configurations the intersection operates and LOS C or better but the delays are higher in the 2-lane configuration. The results of the capacity analysis are attached as Appendix A.

The intersection operations were simulated using Simtraffic during the busier PM peak to determine the EB queue length. The results are below in Table 4.

Table 4: EB Miller Queue Lengths

	Average EB Queue Length in ft.
2-Lane	309
Short Left-Turn Lane	137

The queue length on Miller Road is more than doubled if the left turn lane is removed. A 309 foot queue would extend to the intersection of Holland Drive. The results of the Simtraffic analysis are attached as Appendix B.

Concept Discussion and Conclusion

While the 2-lane intersection configuration operates with an adequate LOS it does not operate nearly as well as providing a shortened left turn lane. In addition, without the left turn lane the lanes would not line up with the east leg of the intersection which could lead to crashes due to the lane shift and visibility issues with left turning vehicles. OHM is recommending a shortened left turn lane with 50 feet of storage be maintained.

This recommended alternative would have a lane shift just west of Hayes Street going from a 3-lane cross section to a 2-lane cross section with parking provided. The bike lanes would remain on Miller Road positioned between the travel lanes and on street parking lanes. There would be another shift just west of Morrish Road



to return to the 3-lane configuration and the bike lanes would shift back to adjacent to the curb. This would provide 16 on-street parking spaces along Miller Road in the Swartz Creek downtown area. While the existing pedestrian crossing between Hayes Street and Holland Street would need to be removed, a new crossing at Holland Street is proposed. A drawing of the proposed plan is attached as Appendix C.

APPENDIX A

Synchro Analysis

HCM 2010 Signalized Intersection Summary

1: Morrish & Miller

09/30/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	271	18	40	172	17	30	153	77	33	114	114
Future Volume (veh/h)	246	271	18	40	172	17	30	153	77	33	114	114
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	246	271	18	40	172	17	30	153	77	33	114	114
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.60	0.60	0.60	0.69	0.69	0.69	0.60	0.60	0.60
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	444	462	29	692	972	96	258	293	148	261	214	214
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	621	777	49	1065	1636	162	1144	1167	587	1142	852	852
Grp Volume(v), veh/h	535	0	0	40	0	189	30	0	230	33	0	228
Grp Sat Flow(s),veh/h/ln	1447	0	0	1065	0	1798	1144	0	1754	1142	0	1704
Q Serve(g_s), s	13.9	0.0	0.0	0.0	0.0	3.3	1.6	0.0	7.9	1.8	0.0	8.1
Cycle Q Clear(g_c), s	17.2	0.0	0.0	1.3	0.0	3.3	9.7	0.0	7.9	9.7	0.0	8.1
Prop In Lane	0.46		0.03	1.00		0.09	1.00		0.33	1.00		0.50
Lane Grp Cap(c), veh/h	935	0	0	692	0	1068	258	0	441	261	0	429
V/C Ratio(X)	0.57	0.00	0.00	0.06	0.00	0.18	0.12	0.00	0.52	0.13	0.00	0.53
Avail Cap(c_a), veh/h	935	0	0	692	0	1068	258	0	441	261	0	429
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.4	0.0	0.0	6.0	0.0	6.4	26.8	0.0	22.6	26.8	0.0	22.6
Incr Delay (d2), s/veh	2.6	0.0	0.0	0.2	0.0	0.4	0.9	0.0	4.4	1.0	0.0	4.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.4	0.0	0.0	0.4	0.0	1.7	0.6	0.0	4.4	0.6	0.0	4.4
LnGrp Delay(d),s/veh	11.9	0.0	0.0	6.2	0.0	6.8	27.8	0.0	27.0	27.8	0.0	27.4
LnGrp LOS	B			A		A	C		C	C		C
Approach Vol, veh/h		535			229			260			261	
Approach Delay, s/veh		11.9			6.7			27.1			27.4	
Approach LOS		B			A			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		47.0		23.0		47.0				
Change Period (Y+Rc), s		5.4		5.4		5.4		5.4				
Max Green Setting (Gmax), s		17.6		41.6		17.6		41.6				
Max Q Clear Time (g_c+I1), s		11.7		19.2		11.7		5.3				
Green Ext Time (p_c), s		0.7		3.9		0.7		1.3				
Intersection Summary												
HCM 2010 Ctrl Delay				17.2								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
1: Morrish & Miller

09/30/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	377	47	52	323	70	45	113	83	94	106	118
Future Volume (veh/h)	153	377	47	52	323	70	45	113	83	94	106	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	153	377	47	52	323	70	45	113	83	94	106	118
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.91	0.91	0.91	0.75	0.75	0.75	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	256	603	70	579	890	193	262	250	184	288	204	227
Arrive On Green	0.59	0.59	0.59	0.59	0.59	0.59	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	321	1014	118	969	1497	324	1148	995	731	1188	810	902
Grp Volume(v), veh/h	577	0	0	52	0	393	45	0	196	94	0	224
Grp Sat Flow(s),veh/h/ln	1453	0	0	969	0	1821	1148	0	1725	1188	0	1711
Q Serve(g_s), s	11.8	0.0	0.0	0.0	0.0	7.8	2.5	0.0	6.7	5.1	0.0	7.9
Cycle Q Clear(g_c), s	19.6	0.0	0.0	2.6	0.0	7.8	10.4	0.0	6.7	11.8	0.0	7.9
Prop In Lane	0.27		0.08	1.00		0.18	1.00		0.42	1.00		0.53
Lane Grp Cap(c), veh/h	929	0	0	579	0	1082	262	0	434	288	0	430
V/C Ratio(X)	0.62	0.00	0.00	0.09	0.00	0.36	0.17	0.00	0.45	0.33	0.00	0.52
Avail Cap(c_a), veh/h	929	0	0	579	0	1082	262	0	434	288	0	430
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	9.7	0.0	0.0	6.3	0.0	7.3	27.0	0.0	22.1	27.1	0.0	22.6
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.3	0.0	0.9	1.4	0.0	3.4	3.0	0.0	4.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	0.0	0.0	0.5	0.0	4.2	0.9	0.0	3.6	1.9	0.0	4.3
LnGrp Delay(d),s/veh	12.8	0.0	0.0	6.6	0.0	8.3	28.4	0.0	25.5	30.1	0.0	27.1
LnGrp LOS	B			A		A	C		C	C		C
Approach Vol, veh/h		577			445			241			318	
Approach Delay, s/veh		12.8			8.1			26.1			28.0	
Approach LOS		B			A			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		23.0		47.0		23.0		47.0				
Change Period (Y+Rc), s		5.4		5.4		5.4		5.4				
Max Green Setting (Gmax), s		17.6		41.6		17.6		41.6				
Max Q Clear Time (g_c+I1), s		12.4		21.6		13.8		9.8				
Green Ext Time (p_c), s		0.6		4.3		0.6		3.0				
Intersection Summary												
HCM 2010 Ctrl Delay				16.6								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary
 1: Morrish & Miller

09/30/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	359	17	55	430	72	40	159	48	57	149	240
Future Volume (veh/h)	138	359	17	55	430	72	40	159	48	57	149	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1881	1900	1881	1881	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	138	359	17	55	430	72	40	159	48	57	149	240
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	214	528	23	506	866	145	184	404	122	338	189	305
Arrive On Green	0.55	0.55	0.55	0.55	0.55	0.55	0.29	0.29	0.29	0.29	0.29	0.29
Sat Flow, veh/h	270	957	42	1012	1571	263	991	1371	414	1166	643	1036
Grp Volume(v), veh/h	514	0	0	55	0	502	40	0	207	57	0	389
Grp Sat Flow(s),veh/h/ln	1269	0	0	1012	0	1834	991	0	1786	1166	0	1680
Q Serve(g_s), s	12.9	0.0	0.0	0.0	0.0	11.8	2.7	0.0	6.5	2.9	0.0	14.9
Cycle Q Clear(g_c), s	24.7	0.0	0.0	3.3	0.0	11.8	17.6	0.0	6.5	9.4	0.0	14.9
Prop In Lane	0.27		0.03	1.00		0.14	1.00		0.23	1.00		0.62
Lane Grp Cap(c), veh/h	765	0	0	506	0	1011	184	0	525	338	0	494
V/C Ratio(X)	0.67	0.00	0.00	0.11	0.00	0.50	0.22	0.00	0.39	0.17	0.00	0.79
Avail Cap(c_a), veh/h	765	0	0	506	0	1011	184	0	525	338	0	494
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	12.9	0.0	0.0	7.8	0.0	9.7	30.8	0.0	19.7	23.4	0.0	22.7
Incr Delay (d2), s/veh	4.8	0.0	0.0	0.4	0.0	1.8	2.7	0.0	2.2	1.1	0.0	13.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.9	0.0	0.0	0.6	0.0	6.3	0.9	0.0	3.5	1.0	0.0	8.6
LnGrp Delay(d),s/veh	17.7	0.0	0.0	8.2	0.0	11.4	33.5	0.0	21.9	24.5	0.0	35.7
LnGrp LOS	B			A		B	C		C	C		D
Approach Vol, veh/h		514			557			247			446	
Approach Delay, s/veh		17.7			11.1			23.8			34.3	
Approach LOS		B			B			C			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		26.0		44.0		26.0		44.0				
Change Period (Y+Rc), s		5.4		5.4		5.4		5.4				
Max Green Setting (Gmax), s		20.6		38.6		20.6		38.6				
Max Q Clear Time (g_c+I1), s		19.6		26.7		16.9		13.8				
Green Ext Time (p_c), s		0.1		3.0		1.0		3.7				
Intersection Summary												
HCM 2010 Ctrl Delay				20.7								
HCM 2010 LOS				C								

HCM 2010 Signalized Intersection Summary
1: Morrish & Miller

09/30/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	246	271	18	40	172	17	30	153	77	33	114	114
Future Volume (veh/h)	246	271	18	40	172	17	30	153	77	33	114	114
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1827	1827	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	246	271	18	40	172	17	30	153	77	33	114	114
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.77	0.77	0.77	0.60	0.60	0.60	0.69	0.69	0.69	0.60	0.60	0.60
Percent Heavy Veh, %	2	2	2	4	4	4	2	2	2	2	2	2
Cap, veh/h	638	878	58	546	832	82	372	394	198	374	288	288
Arrive On Green	0.51	0.51	0.51	0.51	0.51	0.51	0.34	0.34	0.34	0.34	0.34	0.34
Sat Flow, veh/h	1186	1727	115	1063	1636	162	1145	1167	588	1143	853	853
Grp Volume(v), veh/h	246	0	289	40	0	189	30	0	230	33	0	228
Grp Sat Flow(s),veh/h/ln	1186	0	1842	1063	0	1797	1145	0	1755	1143	0	1706
Q Serve(g_s), s	10.1	0.0	6.4	1.6	0.0	4.0	1.4	0.0	7.0	1.6	0.0	7.2
Cycle Q Clear(g_c), s	14.1	0.0	6.4	8.0	0.0	4.0	8.6	0.0	7.0	8.6	0.0	7.2
Prop In Lane	1.00		0.06	1.00		0.09	1.00		0.33	1.00		0.50
Lane Grp Cap(c), veh/h	638	0	937	546	0	914	372	0	592	374	0	575
V/C Ratio(X)	0.39	0.00	0.31	0.07	0.00	0.21	0.08	0.00	0.39	0.09	0.00	0.40
Avail Cap(c_a), veh/h	638	0	937	546	0	914	372	0	592	374	0	575
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	13.3	0.0	10.0	12.4	0.0	9.4	21.0	0.0	17.7	21.0	0.0	17.8
Incr Delay (d2), s/veh	1.8	0.0	0.9	0.3	0.0	0.5	0.4	0.0	1.9	0.5	0.0	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	3.4	0.5	0.0	2.1	0.5	0.0	3.7	0.5	0.0	3.7
LnGrp Delay(d),s/veh	15.1	0.0	10.9	12.6	0.0	10.0	21.5	0.0	19.6	21.4	0.0	19.8
LnGrp LOS	B		B	B		A	C		B	C		B
Approach Vol, veh/h		535			229			260			261	
Approach Delay, s/veh		12.8			10.4			19.8			20.0	
Approach LOS		B			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		29.0		41.0		29.0		41.0				
Change Period (Y+Rc), s		5.4		5.4		5.4		5.4				
Max Green Setting (Gmax), s		23.6		35.6		23.6		35.6				
Max Q Clear Time (g_c+I1), s		10.6		16.1		10.6		10.0				
Green Ext Time (p_c), s		1.1		2.6		1.2		1.2				
Intersection Summary												
HCM 2010 Ctrl Delay			15.3									
HCM 2010 LOS			B									

HCM 2010 Signalized Intersection Summary

1: Morrish & Miller

09/30/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	153	377	47	52	323	70	45	113	83	94	106	118
Future Volume (veh/h)	153	377	47	52	323	70	45	113	83	94	106	118
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		0.99	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1881	1881	1900	1863	1863	1900	1881	1881	1900
Adj Flow Rate, veh/h	153	377	47	52	323	70	45	113	83	94	106	118
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.78	0.78	0.78	0.91	0.91	0.91	0.75	0.75	0.75	0.81	0.81	0.81
Percent Heavy Veh, %	2	2	2	1	1	1	2	2	2	1	1	1
Cap, veh/h	453	802	100	433	740	160	395	350	257	422	285	317
Arrive On Green	0.49	0.49	0.49	0.49	0.49	0.49	0.35	0.35	0.35	0.35	0.35	0.35
Sat Flow, veh/h	985	1623	202	967	1497	324	1149	996	732	1190	811	903
Grp Volume(v), veh/h	153	0	424	52	0	393	45	0	196	94	0	224
Grp Sat Flow(s),veh/h/ln	985	0	1825	967	0	1821	1149	0	1727	1190	0	1714
Q Serve(g_s), s	8.3	0.0	10.7	2.6	0.0	9.7	2.1	0.0	5.8	4.4	0.0	6.8
Cycle Q Clear(g_c), s	18.0	0.0	10.7	13.3	0.0	9.7	9.0	0.0	5.8	10.2	0.0	6.8
Prop In Lane	1.00		0.11	1.00		0.18	1.00		0.42	1.00		0.53
Lane Grp Cap(c), veh/h	453	0	902	433	0	900	395	0	607	422	0	602
V/C Ratio(X)	0.34	0.00	0.47	0.12	0.00	0.44	0.11	0.00	0.32	0.22	0.00	0.37
Avail Cap(c_a), veh/h	453	0	902	433	0	900	395	0	607	422	0	602
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	17.2	0.0	11.7	16.1	0.0	11.4	20.3	0.0	16.6	20.3	0.0	16.9
Incr Delay (d2), s/veh	2.0	0.0	1.8	0.6	0.0	1.5	0.6	0.0	1.4	1.2	0.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.5	0.0	5.7	0.8	0.0	5.2	0.7	0.0	3.0	1.6	0.0	3.5
LnGrp Delay(d),s/veh	19.3	0.0	13.4	16.6	0.0	13.0	20.9	0.0	18.0	21.6	0.0	18.7
LnGrp LOS	B		B	B		B	C		B	C		B
Approach Vol, veh/h		577			445			241			318	
Approach Delay, s/veh		15.0			13.4			18.5			19.5	
Approach LOS		B			B			B			B	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		30.0		40.0		30.0		40.0				
Change Period (Y+Rc), s		5.4		5.4		5.4		5.4				
Max Green Setting (Gmax), s		24.6		34.6		24.6		34.6				
Max Q Clear Time (g_c+I1), s		11.0		20.0		12.2		15.3				
Green Ext Time (p_c), s		1.0		3.0		1.3		2.6				
Intersection Summary												
HCM 2010 Ctrl Delay				16.0								
HCM 2010 LOS				B								

HCM 2010 Signalized Intersection Summary

1: Morrish & Miller

09/30/2022

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	359	17	55	430	72	40	159	48	57	149	240
Future Volume (veh/h)	138	359	17	55	430	72	40	159	48	57	149	240
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		0.99	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1881	1881	1900	1881	1881	1900	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	138	359	17	55	430	72	40	159	48	57	149	240
Adj No. of Lanes	1	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.89	0.89	0.89	0.94	0.94	0.94	0.86	0.86	0.86	0.91	0.91	0.91
Percent Heavy Veh, %	1	1	1	1	1	1	2	2	2	2	2	2
Cap, veh/h	341	830	39	438	732	123	294	521	157	451	245	394
Arrive On Green	0.47	0.47	0.47	0.47	0.47	0.47	0.38	0.38	0.38	0.38	0.38	0.38
Sat Flow, veh/h	901	1782	84	1012	1571	263	991	1372	414	1167	643	1036
Grp Volume(v), veh/h	138	0	376	55	0	502	40	0	207	57	0	389
Grp Sat Flow(s),veh/h/ln	901	0	1866	1012	0	1834	991	0	1786	1167	0	1680
Q Serve(g_s), s	9.3	0.0	9.4	2.7	0.0	14.1	2.4	0.0	5.7	2.5	0.0	13.1
Cycle Q Clear(g_c), s	23.4	0.0	9.4	12.1	0.0	14.1	15.5	0.0	5.7	8.2	0.0	13.1
Prop In Lane	1.00		0.05	1.00		0.14	1.00		0.23	1.00		0.62
Lane Grp Cap(c), veh/h	341	0	869	438	0	854	294	0	679	451	0	638
V/C Ratio(X)	0.40	0.00	0.43	0.13	0.00	0.59	0.14	0.00	0.30	0.13	0.00	0.61
Avail Cap(c_a), veh/h	341	0	869	438	0	854	294	0	679	451	0	638
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	22.4	0.0	12.5	16.6	0.0	13.8	23.7	0.0	15.2	18.1	0.0	17.5
Incr Delay (d2), s/veh	3.6	0.0	1.6	0.6	0.0	3.0	1.0	0.0	1.2	0.6	0.0	4.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.6	0.0	5.2	0.8	0.0	7.8	0.7	0.0	3.0	0.9	0.0	6.8
LnGrp Delay(d),s/veh	25.9	0.0	14.1	17.2	0.0	16.7	24.7	0.0	16.4	18.7	0.0	21.9
LnGrp LOS	C		B	B		B	C		B	B		C
Approach Vol, veh/h		514			557			247			446	
Approach Delay, s/veh		17.3			16.8			17.7			21.5	
Approach LOS		B			B			B			C	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		32.0		38.0		32.0		38.0				
Change Period (Y+Rc), s		5.4		5.4		5.4		5.4				
Max Green Setting (Gmax), s		26.6		32.6		26.6		32.6				
Max Q Clear Time (g_c+I1), s		17.5		25.4		15.1		16.1				
Green Ext Time (p_c), s		0.9		1.8		2.1		3.3				
Intersection Summary												
HCM 2010 Ctrl Delay			18.2									
HCM 2010 LOS			B									

APPENDIX B

Simtraffic Queuing Results

Intersection: 1: Morrish & Miller

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	TR	L	TR	L	TR
Maximum Queue (ft)	513	50	92	118	224	94	312
Average Queue (ft)	214	17	39	35	87	28	112
95th Queue (ft)	453	45	82	83	171	65	242
Link Distance (ft)	615		596		218		434
Upstream Blk Time (%)					0		
Queuing Penalty (veh)					0		
Storage Bay Dist (ft)		500		500		500	
Storage Blk Time (%)					0		
Queuing Penalty (veh)					0		

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Morrish & Miller

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	TR	L	TR	L	TR
Maximum Queue (ft)	593	70	186	182	161	314	176
Average Queue (ft)	206	26	87	40	91	84	79
95th Queue (ft)	436	61	155	104	154	202	148
Link Distance (ft)	615		596		218		434
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)		500		500		500	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 0

Intersection: 1: Morrish & Miller

Movement	EB	WB	WB	NB	NB	SB	SB
Directions Served	LTR	L	TR	L	TR	L	TR
Maximum Queue (ft)	630	112	223	115	164	93	336
Average Queue (ft)	309	34	119	28	84	42	148
95th Queue (ft)	588	80	182	79	135	78	257
Link Distance (ft)	615		596		218		434
Upstream Blk Time (%)	1						
Queuing Penalty (veh)	0						
Storage Bay Dist (ft)		500		500		500	
Storage Blk Time (%)							
Queuing Penalty (veh)							

Network Summary

Network wide Queuing Penalty: 0

Queuing and Blocking Report

09/30/2022

Intersection: 1: Morrish & Miller

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	120	303	50	163	88	201	91	201
Average Queue (ft)	80	131	23	44	27	65	27	82
95th Queue (ft)	137	250	52	103	67	138	66	142
Link Distance (ft)		615		596		218		434
Upstream Blk Time (%)						0		
Queuing Penalty (veh)						0		
Storage Bay Dist (ft)	50		500		500		500	
Storage Blk Time (%)	24	21				0		
Queuing Penalty (veh)	77	52				0		

Network Summary

Network wide Queuing Penalty: 129

Intersection: 1: Morrish & Miller

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	120	309	91	202	72	117	138	176
Average Queue (ft)	60	133	31	109	24	71	57	66
95th Queue (ft)	114	240	66	173	60	119	99	120
Link Distance (ft)		615		596		218		434
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50		500		500		500	
Storage Blk Time (%)	18	24						
Queuing Penalty (veh)	78	38						

Network Summary

Network wide Queuing Penalty: 115

Intersection: 1: Morrish & Miller

Movement	EB	EB	WB	WB	NB	NB	SB	SB
Directions Served	L	TR	L	TR	L	TR	L	TR
Maximum Queue (ft)	120	270	112	195	131	133	72	293
Average Queue (ft)	75	137	32	138	28	69	41	131
95th Queue (ft)	128	252	73	195	79	116	71	218
Link Distance (ft)		615		596		218		434
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	50		500		500		500	
Storage Blk Time (%)	36	22						
Queuing Penalty (veh)	139	31						

Network Summary

Network wide Queuing Penalty: 170

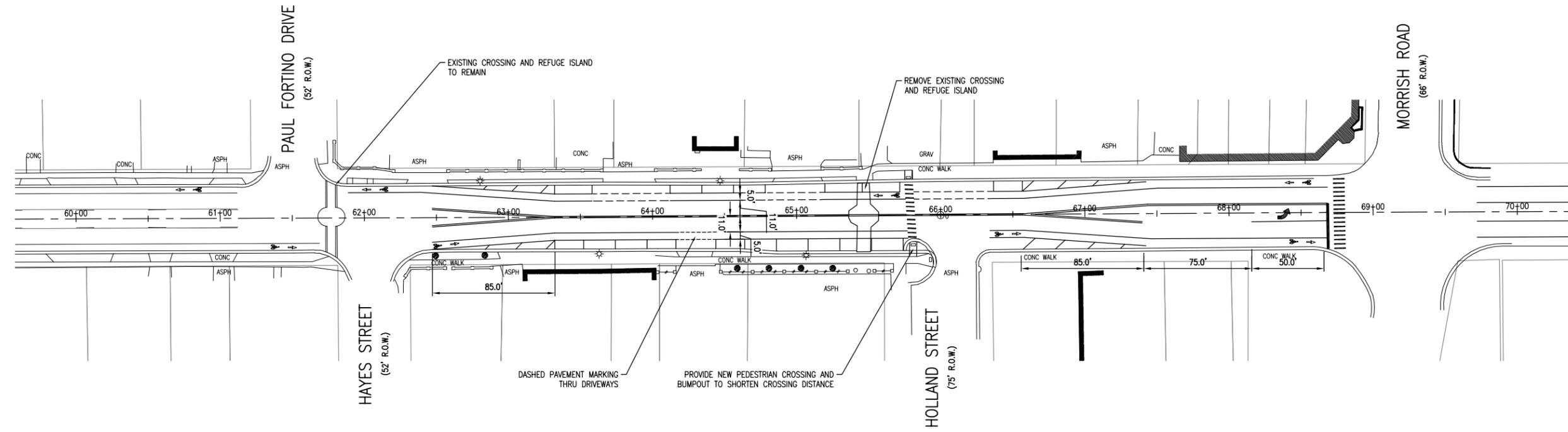
APPENDIX C

Proposed On-Street Parking Concept

MILLER ROAD (110' R.O.W)



OHM
ARCHITECTS ENGINEERS PLANNERS
G3101 W Bristol Rd
Flint, MI 48507
P (810) 396-4015
OHM-ADVISORS.COM



DRAWING PATH: P:\4000_4100\4023220030_Miller_Rd_Traf_Study\Drawings\CKM\PLUS2\0030\PKGS.dwg Nov 02, 2022 - 8:25am



DATE	PROJ NUMBER	ENG	PROJ LEAD	CADD	COUNTY	CITY/TOWNSHIP	SCALE	HORIZ DATUM	VERT DATUM
12/1/2021	4002-P1-000	MC	JMS	JMS	GENESEE	SWARTZ CREEK	H: 1"=40' V: 1"=4'	NAVD83	NAVD83
CITY OF SWARTZ CREEK MILLER ROAD ON-STREET PARKING CONCEPT PAVEMENT MARKINGS AND SIGNAGE SHEET									
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