



CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan 49546-7140

NOTICE OF PUBLIC MEETING VIA VIDEO CONFERENCE

In accordance with Executive Order 2020-154, which declares that public bodies subject to the Open Meetings Act can use telephone and/or video conferencing technology to meet and conduct business during the ongoing COVID-19 pandemic, the Cascade Charter Township Board of Trustees will conduct a regular meeting on Wednesday, September 23, 2020 at 7pm utilizing the Zoom video conferencing platform, for the purpose of conducting official business while complying with the Governor's "Stay Safe, Stay Home" executive orders and the Michigan Department of Health and Human Services recommendations designed to help prevent the spread of COVID-19. For up-to-date information regarding the ongoing public health crisis, please visit:

<http://www.Michigan.gov/coronavirus> or <http://www.CDC.gov/coronavirus>

INSTRUCTIONS FOR ACCESS AND PARTICIPATION

Meeting ID: 851 9812 9712

Please click the link below to join the webinar:

<https://us02web.zoom.us/j/85198129712>

iPhone one-tap :

US: +19292056099,,85198129712#

or

+13126266799,,85198129712#

Telephone:

(for higher quality, dial a number based on your current location):

+1 312 626 6799

or +1 929 205 6099

or +1 346 248 7799

or +1 669 900 6833

or +1 253 215 8782

or +1 301 715 8592

International numbers available: <https://us02web.zoom.us/j/85198129712>

Members of the public with disabilities may utilize the Michigan Relay System (7-1-1) to participate in the meeting. If other aids or services are needed for individuals with disabilities please contact the Township Deputy Clerk, Padley Gallagher, at pgallagher@cascadetwp.com or 616-949-1500 at least 24 hours prior to the meeting

PUBLIC PARTICIPATION

Members of the public will be able to listen to and view all discussion by the Township Board and all official materials for this meeting prepared for the Township Board will be included in the meeting packet and available to the public on the Township website www.cascadetwp.com Individuals will be permitted to speak during public comment periods in accordance with the Township Remote Public Meeting Procedure Policy.

If you would like to contact the Cascade Township Board about any matter, on the agenda or otherwise, please do so via email at the addresses below a minimum of 8 hours prior to the meeting. If you wish comments to be read into the public record during the public comment period, you must indicate so and draft communication that can be read in the allotted 3-minute timeframe.

Supervisor Rob Beahan: rbeahan@cascadetwp.com

Clerk Sue Slater: sslater@cascadetwp.com

Treasurer Ken Peirce: kpeirce@cascadetwp.com

Trustee Jim Koessel: jkoessel@cascadetwp.com

Trustee Jack Lewis: jlewis@cascadetwp.com

Trustee Tom McDonald: tmcdonald@cascadetwp.com

Trustee John Shipley: jshipley@cascadetwp.com

Manager Ben Swayze: bswayze@cascadetwp.com

AGENDA
CASCADE CHARTER TOWNSHIP
REGULAR BOARD MEETING
Wednesday, September 23, 2020
7:00 P.M.

Expected Meeting Procedures

1. During public comments you may speak on any item not noted on the agenda for a public hearing.
2. Please limit comments to 3 minutes per person and the Board may or may not choose to respond.
3. Please limit your comments to a specific issue.
4. Please turn OFF cellular phones.

- Article 1. Call to Order, Roll Call**
- Article 2. Pledge of Allegiance to the Flag**
- Article 3. Approval of Agenda**
- Article 4. Presentations**
- Article 5. Public Comments-Anything on the Agenda not scheduled for a public hearing. (limit comments to 3 minutes)**
- Article 6. Approval of Consent Agenda**
- a. Receive and File Minutes
1. Township Board Meeting Minutes—September 9, 2020
 2. Zoning Board of Appeals Minutes—August 11, 2020
- Article 7. Financial Actions**
- Article 8. Unfinished Business**
- Article 9. New Business**
- 052-2020 Consider Approval for Annual Pathway Repairs.**
- 053-2020 Consider Approval of Telework Policy.**
- 054-2020 Consider Approval of Resolution to Approve the Levy 2020 Millage Rates. (roll call)**
- 055-2020 Consider Approval of Donated Aquarium for the Cascade Library**
- 056-2020 Consider Approval of Contract with Aquatic Consulting Services for Gypsy Moth Population Survey.**
- 057-2020 “Declaration of Intent to Make Public Improvements”; Hold First Public Hearing For Thornapple River Special Assessment District No. 1. (roll call)**

**MINUTES OF THE
CASCADE CHARTER TOWNSHIP
REGULAR BOARD MEETING**

Wednesday, September 9, 2020
7:00 P.M.

Article 1. Supervisor Beahan called the meeting to order.
Present: Supervisor Beahan, Clerk Slater, Treasurer Peirce, Trustees Koessel, McDonald, Lewis, and Shipley.
Absent: None
Also Present: Assistant Township Manager Fast and Downtown Development Authority Manager Korhorn.

Article 2. Supervisor Beahan led the Pledge of Allegiance.

Article 3. Approval of Agenda
Motion was made by Trustee Shipley and supported by Clerk Slater to approve the Agenda as presented. Motion carried unanimously.

Article 4. Presentations

Article 5. Public Comments-Anything on the Agenda not scheduled for a public hearing. (limit comments to 3 minutes)

Article 6. Approval of Consent Agenda

a. Receive and File Minutes

1. Township Board Meeting Minutes – August 26, 2020

b. Receive and File Reports

1. Inspectors Report – August 2020

2. AT&T Franchise Video Report

3. Treasurer's Report – February 2020

c. Receive and File Communications

1. Comcast

Motion was made by Trustee Shipley and supported by Trustee Lewis to approve the Consent Agenda as presented. Motion carried unanimously.

Article 7. Financial Actions

Article 8. Unfinished Business

048-2020 Consider Resolution of "Declaration of Intent to Make Public Improvements; Tentative Designation of the Special Assessment District; Notice of Public Hearing" For Thornapple River Special Assessment District No. 1.

Motion was made by Trustee Koessel and supported by Trustee Shipley to remove item 048-2020 from the table.

Motion was made for approval by Trustee McDonald and Supported by Trustee Koessel. Motion carried unanimously by roll call vote.

049-2020 Consider Resolution of "Declaration of Intent to Make Public Improvements; Tentative Designation of the Special Assessment District; Notice of Public Hearing" For Laraway Lake Special Assessment District No. 1.

Township Board Minutes

September 9, 2020

Page - 1

Motion was made by Trustee Koessel and supported by Trustee Shipley to remove item 049-2020 from the table.

Motion was made for approval by Trustee Koessel and Supported by Trustee Shipley. Motion carried unanimously by roll call vote.

**Article 9. New Business
050-2020**

Consider Appointments to Various Boards and Commissions.

Motion was made for approval by Clerk Slater and Supported by Trustee Lewis. Motion carried unanimously by roll call vote.

051-2020

Consider Approval of Brownfield Redevelopment Authority – Consulting Proposal.

Motion was made for approval by Trustee McDonald and Supported by Clerk Slater. Motion carried unanimously by roll call vote.

**Article 11. Public Comments – Any comments...whether it is on the Agenda or not.
(limit comments to 3 minutes)**

Article 12. Manager Comments

Article 13. Board Member Comments

Supervisor Beahan made the following comment:

- Asked that people remember the life of John Barfuss who was a huge part of lots of township programs.

Article 14. Adjournment

Motion was made by Treasurer Peirce and supported by Clerk Slater to adjourn. Motion carried unanimously.

Meeting adjourned at 7:31 p.m.

Respectfully submitted,

Padley Gallagher
Deputy Clerk

Approved by:

Susan B. Slater, Clerk

MINUTES
Cascade Charter Township Zoning Board of Appeals
Tuesday, August 11, 2020
5:30 P.M.
Virtual Zoom Meeting

ARTICLE 1. Chairman Milliken called the meeting to order at 5:33 P.M.
Members Present: Berra, McDonald, Mead, Milliken, Moxley
Members Absent: None
Others Present: Community Development Director, Steve Peterson and those listed on the sign in sheet.

ARTICLE 2. Chairman Milliken led the Pledge of Allegiance.

ARTICLE 3. Approve the Agenda.

Motion was made by Member Mead to approve the Agenda. Supported by Member McDonald. Motion carried 5 to 0.

ARTICLE 4. Approve the Minutes of the March 3, 2020 Meeting.

Motion was made by Member Mead to approve the Minutes of March 3, 2020. Supported by Member Berra. Motion carried 5 to 0.

ARTICLE 5. Acknowledge visitors and those wishing to speak to non-agenda items.

No visitors came forward.

**ARTICLE 6. Case #20-3593 Golden Valley
Public Hearing**

Property Address: 5800 Thornapple River Drive

Requested Action: The applicant is requesting approval to modify the existing layout of 8 lots in Phase 1 of the Golden Valley subdivision.

Director Peterson stated that Phase 1 of this subdivision has recently been approved, Phase 2 was approved by the Planning Commission last night. With the approval of Phase 2, the Health Department required some lot lines changes to accommodate their common septic system. This common, private septic area is between lots 9 and 10 on the site plan. In order to comply with Township lot area requirements, adjustments are being made to 8 different lots (5-12), ranging from a couple of hundred square feet to a couple of thousand square feet. Director Peterson states his opinion that this will not have an adverse effect on anything, it will just keep the project in compliance with lot size requirements.

Director Peterson recommends approval of these lot line changes.

Member Moxley asked if the original septic was sized for only the parcels in Phase 1, or if Phase 2 was included in the original septic size. Director Peterson replied that the original application was for the entire subdivision, however the Health Department would not give approval for the entire project and only approved Phase 1. One of the changes required by the Health Department for the approval of Phase 2 was to increase the size of the septic system.

Member Berra asked if there will be city water, Director Peterson replied that there will be a well system, with individual wells for each parcel.

Director Peterson states that this system will be privately maintained by the development.

Motion was made by Member Mead to open Public Hearing. Supported by Member Berra. Motion carried 5 to 0.

Mr. Don DeGroot came forward representing Dan Kamphuis (applicant) and stated that Director Peterson summarized the requirements for moving the lots lines well, and that he would be happy to answer any additional questions.

Member Berra asked if there would be a homeowners association to collect fees to maintain the system. Mr. DeGroot stated that there is already a master deed established for Phase 1, which includes documentation for maintenance of the drain filed. This will be expanded as Phase 2 is included, and then amended and rerecorded to address recent changes. Mr. DeGroot stated that Mr. Kamphuis will seed the maintenance fund to start off.

Member Moxley asked who will be maintain the septic system. Mr. DeGroot replied that it will be a private company from Howell, MI that has already been contracted.

Motion was made by Member Mead to close Public Hearing. Supported by Member Berra. Motion carried 5 to 0.

Motion was made by Member Mead to approve the changes of Case #20-3593 as recommended by Staff. Supported by Member McDonald. Motion carried 5 to 0.

ARTICLE 7. Any other business

ARTICLE 8. Adjournment

Motion was made by Member McDonald to adjourn. Supported by Member Berra. Motion carried 5 to 0.

Respectfully submitted,
Aaron Mead, Secretary

TOWNSHIP BOARD MEMORANDUM

To: Cascade Charter Township Board
From: Steve Peterson, Community Development Director
Subject: Consider approval for annual pathway repairs.
Meeting Date: September 23, 2020

After review of the pathways this year we are recommending the following repairs:

- Replace a stretch of the pathway on Spaulding Ave from Jennydale Dr to Weeping Willow
- Bridge approaches on Cascade Rd at Schoolhouse creek and Buttrick Ave at Silverthorn and 30th St.

The section of Spaulding was determined to be the most in need of repair by both the engineer as well as the BG crew (the crew travels the paths almost daily).

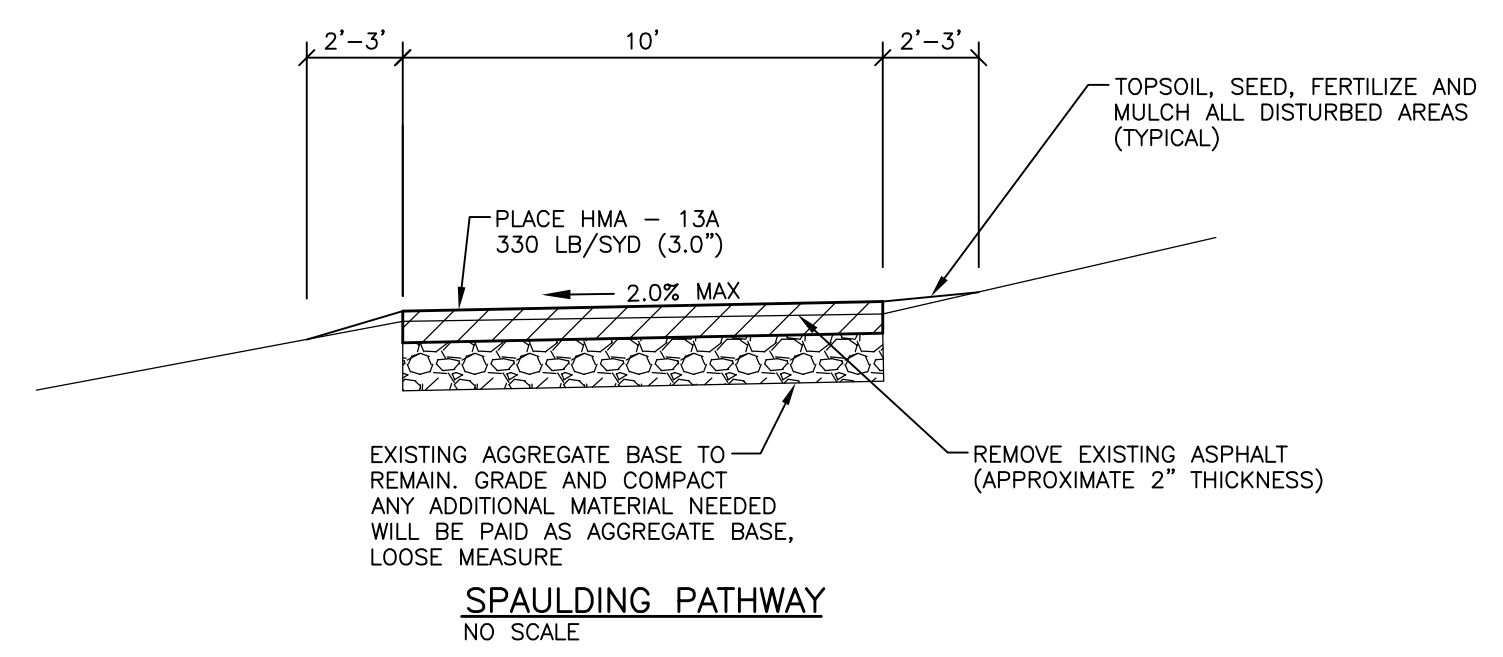
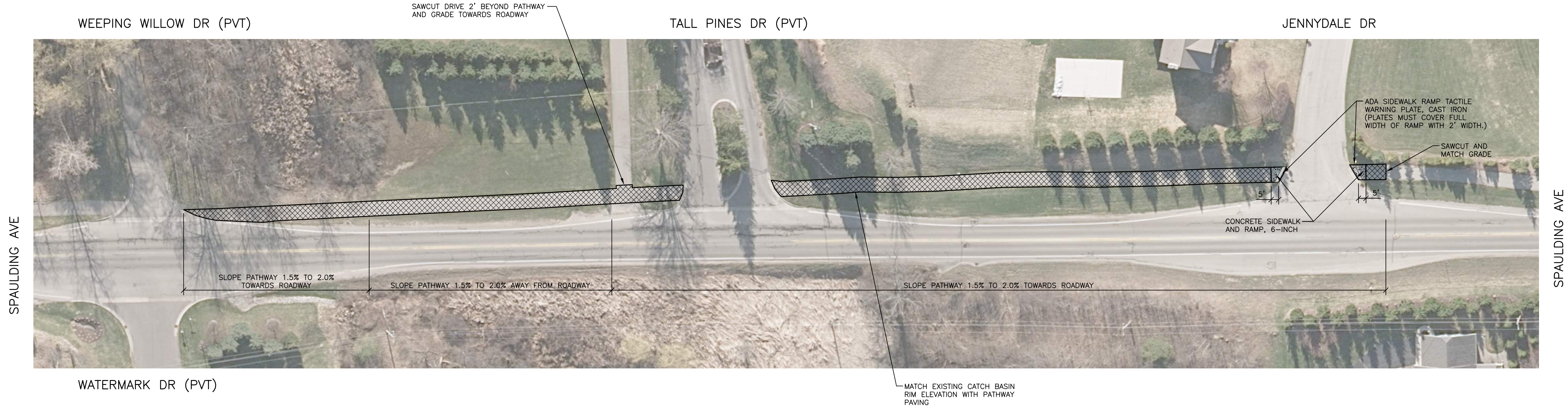
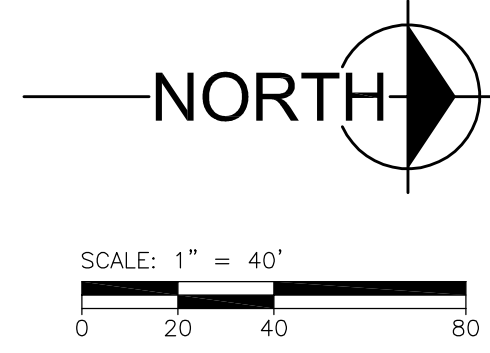
The bridges were rebuilt a few years ago but now we are experience some areas where the pathway has settled creating a large "bump" getting on and off some of the bridges. The engineer is recommending that we repair some of the approaches with concrete. See the attached plans

You put \$100,000 in the budget this year for the annual repairs. The Township engineer has put together the specs for this job and received the following four bids.

K&R:	\$86,906.25
Lawns of Distinction:	\$71,877.50
Katerberg Verhage	\$84,675.25
Fliers Brothers	\$83,279.50

After reviewing the bids, we are recommending Lawns of Distinction for the job. They have done several jobs for the Township over the years, most recently they repaired the path on Thornahills as part of the annual repairs in 2019. If approved, they will have until November 14 to finish the work.

Enclosure: Plans for improvements



REVISIONS

9/3/2020 BIDS AND CONSTRUCTION	
Drawn By	MLB
Designer	MLB
Reviewer	JNK
Manager	MLB

Hard copy is intended to be 22"x34" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

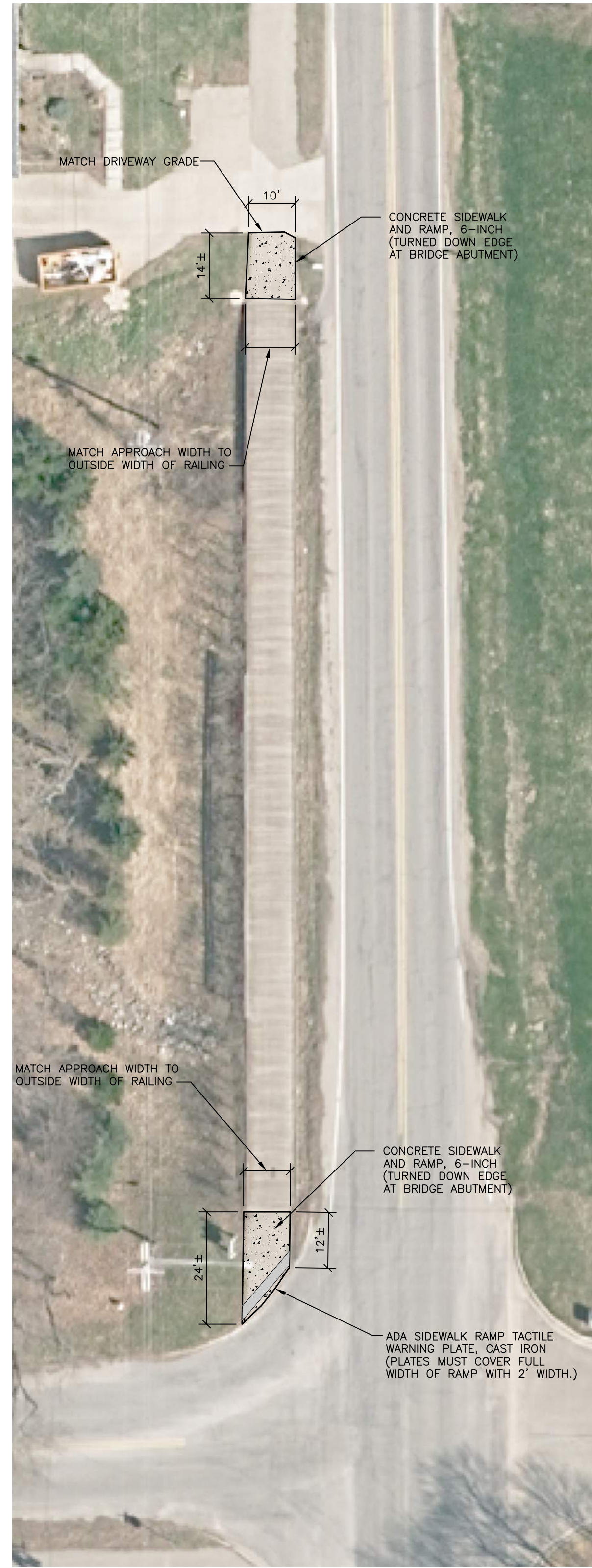
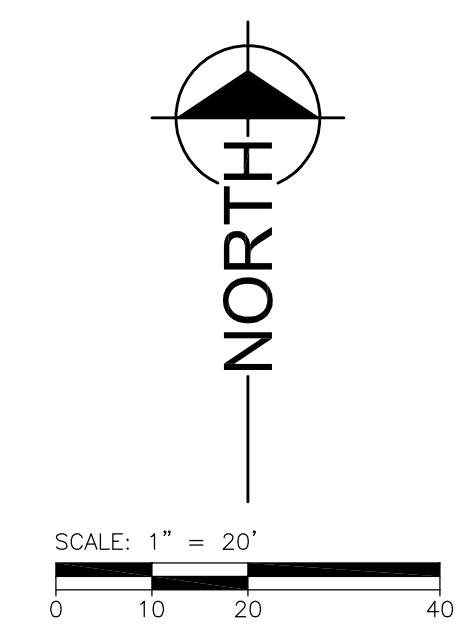
PROJECT NO.
200014

SHEET NO.

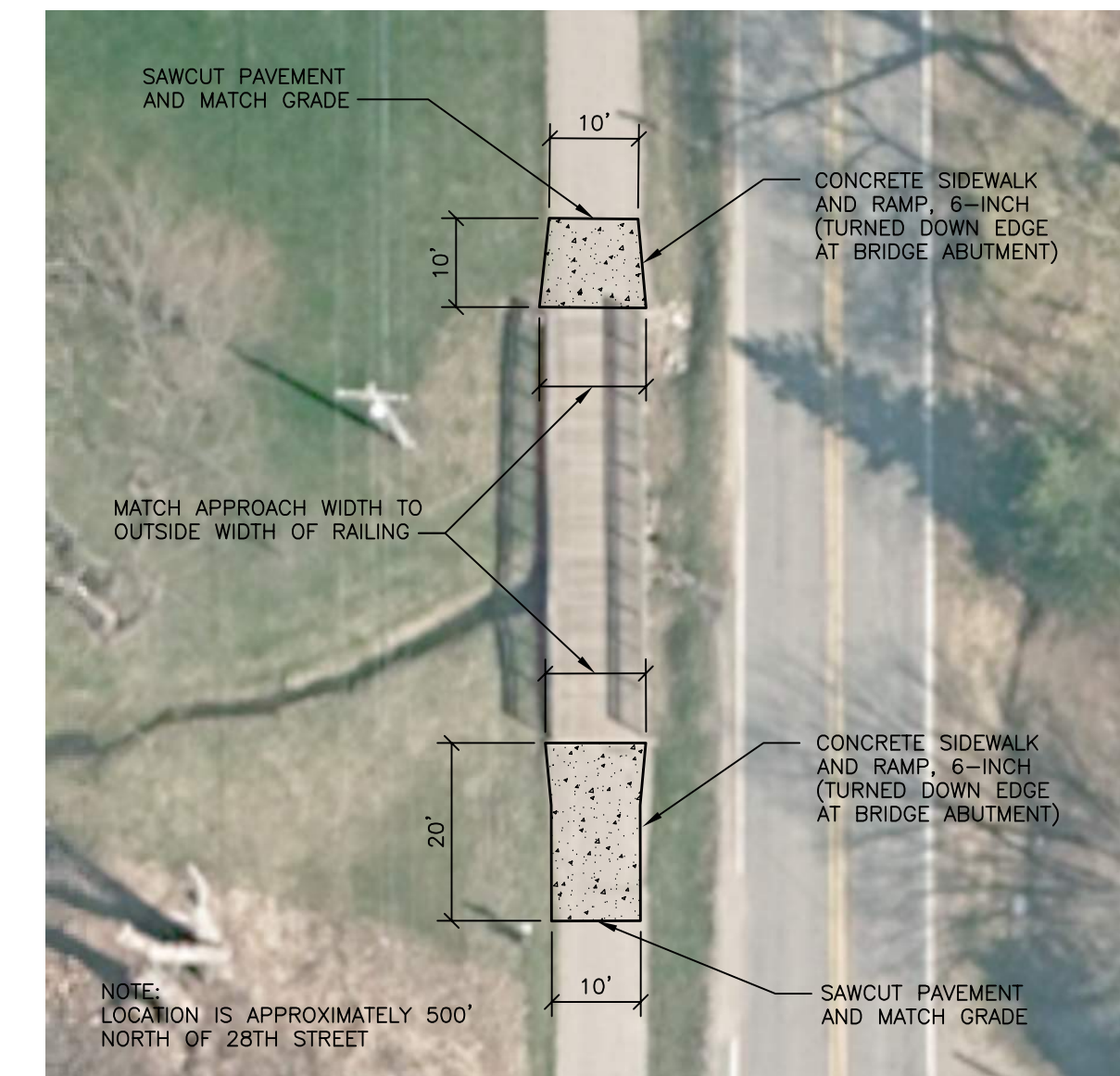
1



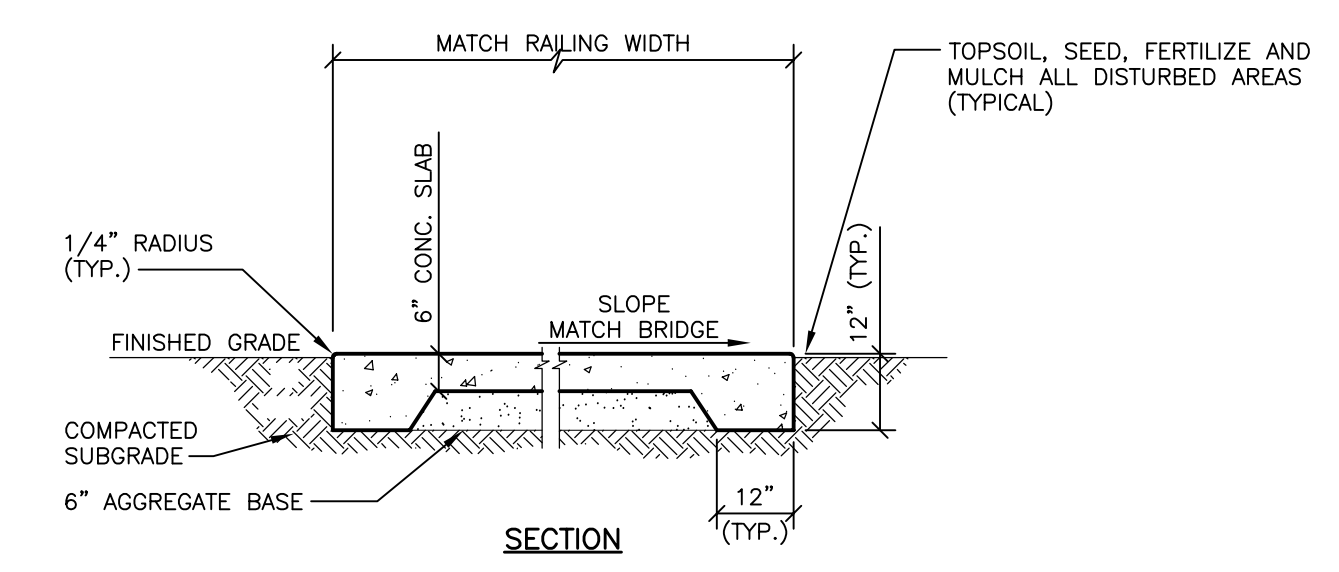
CASCADE ROAD
SCHOOLHOUSE CREEK BRIDGE



BUTTRICK AVENUE
BUTTRICK/30TH BRIDGE



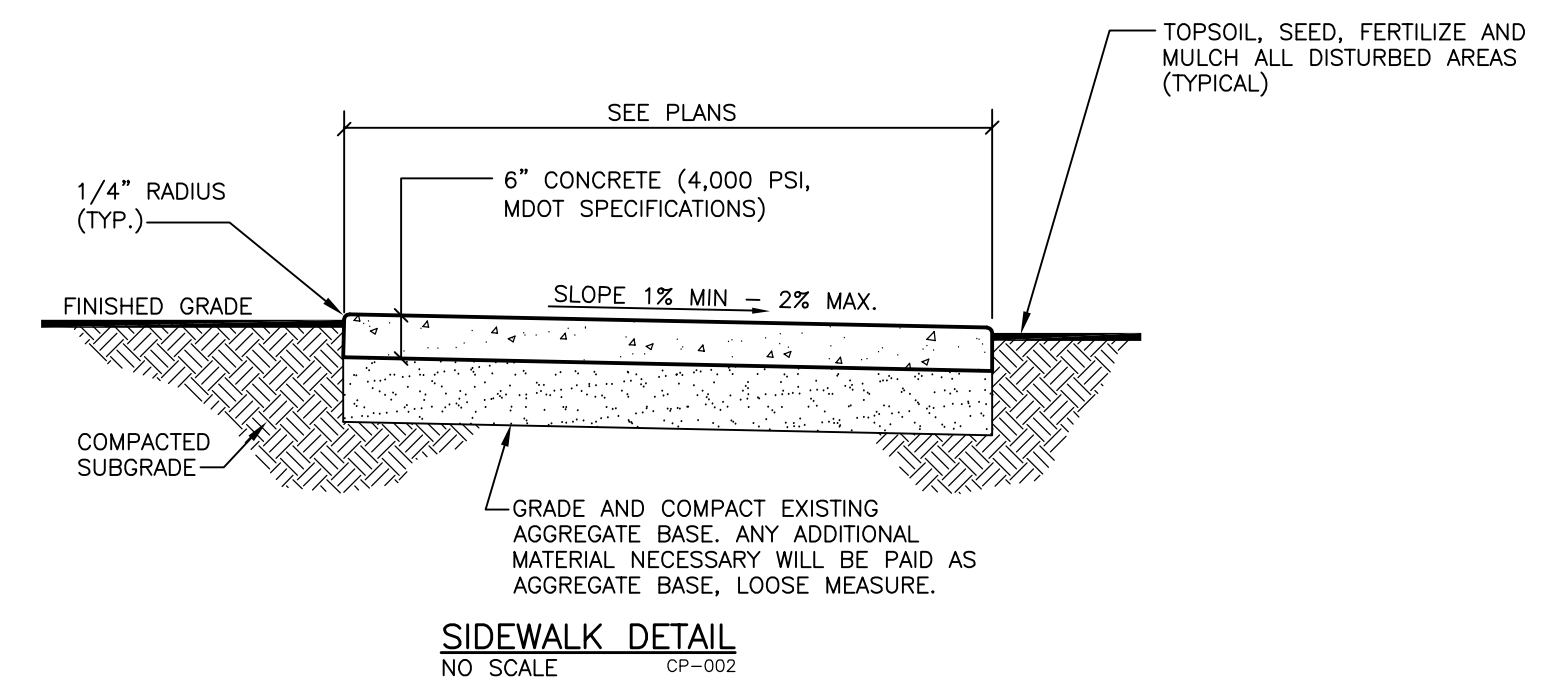
BUTTRICK AVENUE
DR
SILVERTHORNE BRIDGE



CONSTRUCT WALK WITH TURNED DOWN EDGE AT BRIDGE APPROACH TO PREVENT EROSION AND SETTLEMENT. TURNED DOWN EDGE FOR 5' CLOSEST TO THE BRIDGE.

PLACE 1/2" FIBER EXPANSION MATERIAL BETWEEN SIDEWALK AND BRIDGE ABUTMENT.

TURNED DOWN EDGE AT BRIDGE APPROACH
NO SCALE



REVISIONS

9/3/2020 BIDS AND CONSTRUCTION	
Drawn By	MLB
Designer	MLB
Reviewer	JNK
Manager	MLB

Hard copy is intended to be 22"x34" when plotted. Scale(s) indicated and graphic quality may not be accurate for any other size.

PROJECT NO.
200014

SHEET NO.

TOWNSHIP BOARD MEMORANDUM

To: Cascade Charter Township Board
From: Stephanie Fast, Assistant Township Manager
Subject: Consider Approval of Telework Policy
Meeting Date: September 23, 2020

The COVID-19 pandemic created a need for township staff to adapt how they provide public services to the community. This resulted in many employees working remotely from home to slow the spread of COVID-19 while ensuring minimal disruption to public services. It became evident that this practice had many advantages to the township, staff, and community.

Efficiency was the most notable outcome, as productivity increased perhaps due to a lack of distractions. Staff members that needed to collaborate began scheduling virtual meetings to exchange information, as opposed to stopping by another employee's office potentially pulling them off task.

Some of our staff live in other communities, and the lack of commute saved time and emotional energy that was better spent on assisting our residents. The remote work also seemed to promote better work-life balance which resulted in some very tangible health improvements for the staff. The township also experienced less absenteeism since employees with minor illnesses were able to work from home without the risk of spreading viruses around the office.

The township has had several long-term employees retire recently, with several more slated to do so soon. Offering potential new employees the flexibility to work remotely a few days a week will likely result in better candidates allowing Cascade to stay competitive and continue providing the community with civil servants of the highest caliber. This benefit is greatly valued by staff and costs the township very little.

If approved this policy would not be available to all employees, as not all staff duties can be accomplished remotely. It is also worth noting that some departments have seasons where there is a high demand for employees to assist residents at the counter, remote work may need to be reduced or discontinued during this time. An agreement would be signed by the employee that outlined the expectations, and this practice would be re-evaluated quarterly or bi-annually by the department heads to ensure it was still beneficial to the township and employee. This allows the township the opportunity to make necessary adjustments based on the community's needs as well. The policy has been reviewed by the Personnel Committee and received a positive recommendation.

CASCADE CHARTER TOWNSHIP



9.01.2020

Telework Policy and Agreement

A plan to outline a telework operations plan for Cascade Charter
Township

Cascade Charter Township

TELEWORK POLICY AND AGREEMENT

Objective

The purpose of this policy is to provide guidance to Cascade Charter Township employees who wish to use telecommuting as an alternative method of meeting the daily work load needs of Cascade Charter Township by allowing employees to work at home for all or part of their workweek. Employees are allowed to telecommute at the discretion of their supervisor and the suitability of their jobs. Telecommuting is not available for all positions. An employee must have the ability to perform necessary daily work remotely. Employees are required to complete a Telework Agreement prior to starting telework.

Employee Expectations

The employee will continue to provide excellent services while teleworking. The employee agrees to abide by the following conditions:

- The employee will sign a telework agreement.
- The employee will remain accessible and productive during the normal scheduled work hours.
- The employee will follow all Township time off procedures. If the employee is not available for any period of time during their work day, they will be required to utilize PTO. Notification and approval from their supervisor prior to the taking PTO.
- The employee will communicate regularly with their supervisor and/or co-workers and will provide a report of activities if required.
- The employee will report to the Township offices as necessary upon directive from his or her supervisor.
- The employee will comply with all Cascade Charter Township rules, policies, practices and instructions that would apply if the employee were working at the employer's work location.
- Employee will maintain satisfactory performance standards.
- Employee will maintain a safe and secure work environment at all times.
- Employees will report work related injuries to their manager and Human Resources as soon as possible.
- Nonexempt employees will record all hours worked in accordance with regular practices.
- Nonexempt employees will obtain supervisor approval prior to adjusting their normal work schedule including, flex scheduling or working overtime hours.

Equipment/Technology Requirements

Cascade Charter Township will provide eligible employees with the necessary technology to perform their jobs including the following equipment: Computer, VPN access and/ or other equipment that may be needed to fulfill employment functions.

The employee requirements are below:

- Employees are required to have a secured internet connection.
- The employee is financially responsible for their own internet.
- All employees are expected to utilize VPN to access the Township's network.
- Cascade Charter Township equipment will not be used by anyone other than the employee and only for business-related work. Employees are to follow Township policies related to work equipment and computer and e-mail usage.
- The employee will not make any unauthorized changes to security or administrative settings on Cascade Charter township equipment.
- The employee agrees to comply with Cascade Charter Township's policies and expectations regarding information security.
- The employee will be expected to ensure the protection of Township and customer information accessible from their home offices.

TELEWORK AGREEMENT



Employee Information

Name: _____

Job Title: _____ Department: _____

This telecommuting agreement will begin and end of the following dates:

Start date: _____ End date: _____

Telework location: _____

Employee Schedule: _____

The employee agrees to the following by signing this agreement:

1. The employee acknowledges receipt of Cascade Charter Township Teleworking Policy and agrees to comply with all of the terms and conditions contained therein.
2. The employee will comply with all Cascade Charter Township rules, policies, practices and instructions that would apply if the employee were working at the employer's work location.
3. The employee understands that all terms and conditions of employment with the company remain unchanged, except for those specifically addressed in this agreement.
4. The employee will communicate regularly with his or her supervisor and co-workers and will provide a report of activities if requested.
5. The employee understands that management retains the right to modify this agreement on a temporary or permanent basis for any reason at any time.
6. The employee understands that this agreement will require quarterly/ bi-annual progress evaluations for continuation by his or her supervisor.

Employee signature: _____

Date: _____

Manager signature: _____

Date: _____

Human Resources signature: _____

Date: _____

Memo

To: Cascade Township Board
From: Jennifer Genter, Manager of Assessment Services
CC:
Date: 9/15/2020
Re: Request to approve Resolution to Approve the Levy the 2020 Millage Rates

The Board approves this resolution each year announcing the millage rates that will be levied on the winter tax bill. This year the millages do have a reduction due to the Headlee millage rollback. I have included a copy of the 2020 Millage Reduction Fraction calculation worksheet, Form L-4034, for your review. We announced our intent to levy the millage by resolution back in December 2019. We are now by resolution stating we are going to levy the millage.

2020 Tax Rate Request (This form must be completed and submitted on or before September 30, 2020)

Carefully read the instructions on page 2.

MILLAGE REQUEST REPORT TO COUNTY BOARD OF COMMISSIONERS

This form is issued under authority of MCL Sections 211.24e, 211.34 and 211.34d. Filing is mandatory; Penalty applies.

County(ies) Where the Local Government Unit Levies Taxes Kent	2020 Taxable Value of ALL Properties in the Unit as of 5-26-2020 2020 TV (All) 1,722,243,855	2020 TV Minu Ren Zone 1,722,243,855
Local Government Unit Requesting Millage Levy Cascade Charter Township	For LOCAL School Districts: 2020 Taxable Value excluding Principal Residence, Qualified Agricultural, Qualified Forest, Industrial Personal and Commercial Personal Properties.	

This form must be completed for each unit of government for which a property tax is levied. Penalty for non-filing is provided under MCL Sec 211.119. The following tax rates have been authorized for levy on the 2020 tax roll.

(1) Source	(2) Purpose of Millage	(3) Date of Election	(4) Original Millage Authorized by Election Charter, etc.	(5) ** 2019 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(6) 2020 Current Year "Headlee" Millage Reduction Fraction	(7) 2020 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(8) Sec. 211.34 Truth in Assessing or Equalization Millage Rollback Fraction	(9) Maximum Allowable Millage Levy *	(10) Millage Requested to be Levied July 1	(11) Millage Requested to be Levied Dec. 1	(12) Expiration Date of Millage Authorized
Allocated	Operating	2/20/1978	1.1000	0.9674	0.9957	0.9632	1.0000	0.9632			unlimited
Extra Voted	Fire/Police	8/5/2008	0.4372	0.4353	0.9957	0.4334	1.0000	0.4334			12/31/27
Extra Voted	Fire	8/6/2013	0.5080	0.5080	0.9957	0.5036	1.0000	0.5036			12/31/33
Extra Voted	Library	8/6/2013	0.1500	0.1493	0.9957	0.1486	1.0000	0.1486			12/31/23
Extra Voted	Police	8/6/2013	0.2491	0.2480	0.9957	0.2469	1.0000	0.2469			12/31/33
Extra Voted	Park	11/4/2008	0.2300	0.2290	0.9957	0.2280	1.0000	0.2280			12/31/27
Extra Voted	Fire	8/3/2004	0.5800	0.5775	0.9957	0.5750	1.0000	0.5750			12/31/23
Extra Voted	Pathways	11/16/201	0.3500	0.3500	0.9957	0.3484	1.0000	0.3484			12/31/27

Prepared by Jennifer Genter	Telephone Number (616) 949-6176	Title of Preparer Manager of Assessment Services	Date 09/23/2020
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CERTIFICATION: As the representatives for the local government unit named above, we certify that these requested tax levy rates have been reduced, if necessary to comply with the state constitution (Article 9, Section 31), and that the requested levy rates have also been reduced, if necessary, to comply with MCL Sections 211.24e, 211.34 and, for LOCAL school districts which levy a Supplemental (Hold Harmless) Millage, 380.1211(3).

<input checked="" type="checkbox"/> Clerk	Signature	Print Name Susan Slater	Date 09/23/2020
<input type="checkbox"/> Secretary	Signature	Print Name Robert Beahan	Date 09/23/2020
<input checked="" type="checkbox"/> Chairperson	Signature	Print Name Robert Beahan	Date 09/23/2020
<input type="checkbox"/> President	Signature	Print Name Robert Beahan	Date 09/23/2020

* Under Truth in Taxation, MCL Section 211.24e, the governing body may decide to levy a rate which will not exceed the maximum authorized rate allowed in column 9. The requirements of MCL 211.24e must be met prior to levying an operating levy which is larger than the base tax rate but not larger than the rate in column 9.

**** IMPORTANT:** See instructions on page 2 regarding where to find the millage rate used in column (5).

Local School District Use Only. Complete if requesting millage to be levied. See STC Bulletin 2 of 2020 for instructions on completing this section.

Total School District Operating Rates to be Levied (HH/Supp and NH Oper ONLY)	Rate
For Principal Residence, Qualified Ag, Qualified Forest and Industrial Personal	
For Commercial Personal	
For all Other	

2020 MILLAGE REDUCTION FRACTION CALCULATIONS WORKSHEET
 INCLUDING MILLAGE REDUCTION FRACTION CALCULATIONS NOT
 SPECIFICALLY ASSIGNED TO THE COUNTY EQUALIZATION DIRECTOR BY LAW

L-4034

All Taxable Values exclude Renaissance Zone Property

KENT COUNTY

TAXING JURISDICTION:

CASCADE TOWNSHIP

2019 Unit Total Taxable Value	(Prior TV)	1,638,985,314
2020 Unit Losses to 2019 Taxable Value (MCL 211.34d)	(Losses TV)	16,460,649
2020 Additions (MCL211.34d)	(Additions TV)	61,707,297
2020 Unit Total Final Taxable Value (based on S.E.V.) 2020	(Current TV)	1,722,243,855
2020 Unit Total Taxable Value based on Assessed Valuation	(AV based TV)	1,722,243,855
2020 Unit Total Taxable Value based on C.E.V.	(CEV based TV)	1,722,243,855
2020 Inflation Rate	CPI 2020	1.019

1. Section 211.34d, M.C.L., "Headlee" (for each unit of local government)

See STC Bulletins 3 of 1995 and 3 of 1997 regarding the calculation of additions and losses.

$$\left(\frac{2019 \text{ Total T.V.} - 2020 \text{ Losses}}{2020 \text{ Total T.V.} + 2020 \text{ Additions}} \right) \times \text{CPI} = \text{2020 Millage Reduction Fraction (Headlee)}$$

ACTUAL 0.9957

2a. Section 211.34, M.C.L., "Truth in Assessing" (for cities and townships if S.E.V. exceeds A.V. for 1998 only)

$$\frac{2020 \text{ Unit Total Taxable Value based on A.V. for all classes}}{2020 \text{ Unit Total Final Taxable Value (based on S.E.V.)} \text{ See STC Bulletin No. 10 of 1997}} = \text{2020 Rollback Fraction (Truth in Assessing)}$$

ACTUAL 1.0000

2b. Section 211.34, M.C.L., "Truth in County Equalization" (for villages, counties and authorities if S.E.V. exceeds C.E.V. for 2020 only)

$$\frac{2020 \text{ Unit Total Taxable Value based on C.E.V. for all classes}}{2020 \text{ Unit Total Final Taxable Value (based on S.E.V.)} \text{ See STC Bulletin No. 10 of 1997}} = \text{2020 Rollback Fraction (Truth in County Equalization)}$$

ACTUAL 1.0000

3. Section 211.24e, M.C.L., "Truth in Taxation" (for each taxing jurisdiction that levied more than 1 mill for operating purposes in 1998 only)

$$\left(\frac{2019 \text{ Unit Total T.V.} - 2020 \text{ Losses}}{2020 \text{ Unit Total T.V.} - 2020 \text{ Additions}} \right) = \text{2020 Base Tax Rate Fraction (Truth in Taxation)}$$

ACTUAL 0.9771

Use same amounts for additions and losses as were used for 211.34d ("Headlee") roll back.

NOTE: The truth in taxation BTRF is independent from the cumulative millage reductions provided by MCL sections 211.34d and 211.34. The Base Tax Rate equals the BTRF X 2020 Operating Rate levied.

CASCADE CHARTER TOWNSHIP
Kent County, Michigan
Resolution / 2020

RESOLUTION TO APPROVE THE LEVY OF THE 2020 MILLAGE RATES

WHERE AS, Cascade Charter Township has complied with Section 16 of the Uniform Budgeting and Accounting Act by stating in the Annual Budget Meeting that “The property tax millage rate proposed to be levied to support the proposed budget will be subject of this hearing”. Thus, the Township is not required to hold a separate Truth in Taxation hearing. Further, the Board has passed a “Resolution of Intent to Levy the 2020 Millage Rate”, Resolution #42-2019 on December 11, 2019.

WHERE AS, the Act requires that the proposed millage rate, as defined in the Act, be established by resolution of the Township Board.

NOW, THEREFORE, BE IT RESOLVED BY THE CASCADE CHARTER TOWNSHIP BOARD:

1. In order to provide sufficient revenue for the Township for operating purposes for the 2021 fiscal year, the Township shall levy total mills of 3.4471. This includes 0.9632 mills for operating purposes, 0.4334 mills for fire/police, 0.5036 mills for fire, 0.1486 mills for library, 0.2469 mills for police, 0.2280 mills for parks, 0.5750 mills for fire and 0.3484 mills for pathways.
2. All resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution are hereby rescinded.

The foregoing resolution was offered on September 23, 2020 by Board Member and supported by Board Member with the vote being as follows:

YEAS:

NAYS:

ABSENT:

Resolution declared adopted.

Susan Slater
Cascade Charter Township Clerk

CERTIFICATION

I hereby certify the foregoing to be a true copy of a Resolution adopted by the Cascade Charter Township Board at a Regular Board Meeting held on September 23, 2020.

Susan Slater
Cascade Charter Township Clerk

2020 Tax Rate Request (This form must be completed and submitted on or before September 30, 2020)

Carefully read the instructions on page 2.

MILLAGE REQUEST REPORT TO COUNTY BOARD OF COMMISSIONERS

This form is issued under authority of MCL Sections 211.24e, 211.34 and 211.34d. Filing is mandatory. Penalty applies.

County(ies) Where the Local Government Unit Levies Taxes Kent	2020 Taxable Value of ALL Properties in the Unit as of 5-26-2020 2020 TV (All) 1,722,243,855	2020 TV Minu Ren Zone 1,722,243,855
Local Government Unit Requesting Millage Levy Cascade Charter Township	For LOCAL School Districts: 2020 Taxable Value excluding Principal Residence, Qualified Agricultural, Qualified Forest, Industrial Personal and Commercial Personal Properties.	

This form must be completed for each unit of government for which a property tax is levied. Penalty for non-filing is provided under MCL Sec 211.119. The following tax rates have been authorized for levy on the 2020 tax roll.

(1) Source	(2) Purpose of Millage	(3) Date of Election	(4) Original Millage Authorized by Election, Charter, etc.	(5)** 2019 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(6) 2020 Current Year "Headlee" Millage Reduction Fraction	(7) 2020 Millage Rate Permanently Reduced by MCL 211.34d "Headlee"	(8) Sec. 211.34 Truth in Assessing or Equalization Millage Rollback Fraction	(9) Maximum Allowable Millage Levy *	(10) Millage Requested to be Levied July 1	(11) Millage Requested to be Levied Dec. 1	(12) Expiration Date of Millage Authorized
Allocated	Operating	2/20/1975	1.1000	0.9674	0.9957	0.9632	1.0000	0.9632			unlimited
Extra Voted	Fire/Police	8/5/2008	0.4372	0.4353	0.9957	0.4334	1.0000	0.4334			12/31/27
Extra Voted	Fire	8/6/2013	0.5080	0.5080	0.9957	0.5036	1.0000	0.5036			12/31/33
Extra Voted	Library	8/6/2013	0.1500	0.1493	0.9957	0.1486	1.0000	0.1486			12/31/23
Extra Voted	Police	8/6/2013	0.2491	0.2480	0.9957	0.2469	1.0000	0.2469			12/31/33
Extra Voted	Park	11/4/2008	0.2300	0.2290	0.9957	0.2280	1.0000	0.2280			12/31/27
Extra Voted	Fire	8/3/2004	0.5800	0.5775	0.9957	0.5750	1.0000	0.5750			12/31/23
Extra Voted	Pathways	11/16/201	0.3500	0.3500	0.9957	0.3484	1.0000	0.3484			12/31/27

Prepared by **Jennifer Genter** Telephone Number **(616) 949-6176** Title of Preparer **Manager of Assessment Services** Date **09/23/2020**

CERTIFICATION: As the representatives for the local government unit named above, we certify that these requested tax levy rates have been reduced, if necessary to comply with the state constitution (Article 9, Section 31), and that the requested levy rates have also been reduced, if necessary, to comply with MCL Sections 211.24e, 211.34 and, for LOCAL school districts which levy a Supplemental (Hold Harmless) Millage, 380.1211(3).

<input checked="" type="checkbox"/> Clerk	Signature	Print Name	Date
<input type="checkbox"/> Secretary		Susan Slater	09/23/2020
<input checked="" type="checkbox"/> Chairperson	Signature	Print Name	Date
<input type="checkbox"/> President		Robert Beahan	09/23/2020

* Under Truth in Taxation, MCL Section 211.24e, the governing body may decide to levy a rate which will not exceed the maximum authorized rate allowed in column 9. The requirements of MCL 211.24e must be met prior to levying an operating levy which is larger than the base tax rate but not larger than the rate in column 9.

** IMPORTANT: See instructions on page 2 regarding where to find the millage rate used in column (5).

Local School District Use Only. Complete if requesting millage to be levied. See STC Bulletin 2 of 2020 for instructions on completing this section.	
Total School District Operating Rates to be Levied (HH/Supp and NH Oper ONLY)	Rate
For Principal Residence, Qualified Ag, Qualified Forest and Industrial Personal	
For Commercial Personal	
For all Other	

Instructions For Completing Form 614 (L-4029) 2020 Tax Rate Request, Millage Request Report To County Board Of Commissioners

These instructions are provided under MCL Sections 211.24e (truth in taxation), 211.34 (truth in county equalization and truth in assessing), 211.34d (Headlee), and 211.36 and 211.37 (apportionment).

Column 1: Source. Enter the source of each millage. For example, allocated millage, separate millage limitations voted, charter, approved extra-voted millage, public act number, etc. Do not include taxes levied on the Industrial Facilities Tax Roll.

Column 2: Purpose of millage. Examples are: operating, debt service, special assessments, school enhancement millage, sinking fund millage, etc. A local school district must separately list operating millages by whether they are levied against ALL PROPERTIES in the school district or against the NON-HOME group of properties. (See State Tax Commission Bulletin 2 of 2020 for more explanation.) A local school district may use the following abbreviations when completing Column 2: "Operating ALL" and "Operating NON-HOME". "Operating ALL" is short for "Operating millage to be levied on ALL PROPERTIES in the local school district" such as Supplemental (Hold Harmless) Millages and Building and Site Sinking Fund Millages. "Operating NON-HOME" is short for "Operating millage to be levied on ALL PROPERTIES EXCLUDING PRINCIPAL RESIDENCE, QUALIFIED AGRICULTURAL, QUALIFIED FOREST AND INDUSTRIAL PERSONAL PROPERTIES in the local school district" such as the 18 mills in a district which does not levy a Supplemental (Hold Harmless) Millage.

Column 3: Date of Election. Enter the month and year of the election for each millage authorized by direct voter approval.

Column 4: Millage Authorized. List the allocated rate, charter aggregate rate, extra-voted authorized before 1979, each separate rate authorized by voters after 1978, debt service rate, etc. (This rate is the rate before any reductions.)

Column 5: 2019 Millage Rate Permanently Reduced by MCL 211.34d ("Headlee") Rollback. Starting with taxes levied in 1994, the "Headlee" rollback permanently reduces the maximum rate or rates authorized by law or charter. The 2019 permanently reduced rate can be found in column 7 of the 2019 Form L-4029. For operating millage approved by the voters after April 30, 2019, enter the millage approved by the voters. For debt service or special assessments not subject to a millage reduction fraction, enter "NA" signifying "not applicable."

Column 6: Current Year Millage Reduction Fraction. List the millage reduction fraction certified by the county treasurer for the current year as calculated on Form 2166 (L-4034), *2020 Millage Reduction Fraction Calculations Worksheet*. The millage reduction fraction shall be rounded to four (4) decimal places. The current year millage reduction fraction shall not exceed 1.0000 for 2020 and future years. This prevents any increase or "roll up" of millage rates. Use

1.0000 for new millage approved by the voters after April 30, 2020. For debt service or special assessments not subject to a millage reduction fraction, enter 1.0000.

Column 7: 2020 Millage Rate Permanently Reduced by MCL 211.34d ("Headlee") Rollback. The number in column 7 is found by multiplying column 5 by column 6 on this 2020 Form L-4029. This rate must be rounded DOWN to 4 decimal places. (See STC Bulletin No. 11 of 1999, Supplemented by Letter of 6/7/2000.) For debt service or special assessments not subject to a millage reduction fraction, enter "NA" signifying "not applicable."

Column 8: Section 211.34 Millage Rollback Fraction (Truth in Assessing or Truth in Equalization). List the millage rollback fraction for 2020 for each millage which is an operating rate. Round this millage rollback fraction to 4 decimal places. Use 1.0000 for school districts, for special assessments and for bonded debt retirement levies. For counties, villages and authorities, enter the Truth in Equalization Rollback Fraction calculated on STC Form L-4034 as TOTAL TAXABLE VALUE BASED ON CEV FOR ALL CLASSES/TOTAL TAXABLE VALUE BASED ON SEV FOR ALL CLASSES. Use 1.0000 for an authority located in more than one county. For further information, see State Tax Commission Bulletin 2 of 2020. For townships and cities, enter the Truth in Assessing Rollback Fraction calculated on STC Form L-4034 as TOTAL TAXABLE VALUE BASED ON ASSESSED VALUE FOR ALL CLASSES/TOTAL TAXABLE VALUE BASED ON SEV FOR ALL CLASSES. The Section 211.34 Millage Rollback Fraction shall not exceed 1.0000.

Column 9: Maximum Allowable Millage Levy. Multiply column 7 (2020 Millage Rate Permanently Reduced by MCL 211.34d) by column 8 (Section 211.34 millage rollback fraction). Round the rate DOWN to 4 decimal places. (See STC Bulletin No. 11 of 1999, Supplemented by Letter of 6/7/2000.) For debt service or special assessments not subject to a millage reduction fraction, enter millage from Column 4.

Column 10/Column 11: Millage Requested to be Levied. Enter the tax rate approved by the unit of local government provided that the rate does not exceed the maximum allowable millage levy (column 9). A millage rate that exceeds the base tax rate (Truth in Taxation) cannot be requested unless the requirements of MCL 211.24e have been met. For further information, see State Tax Commission Bulletin 2 of 2020. A LOCAL School District which levies a Supplemental (Hold Harmless) Millage shall not levy a Supplemental Millage in excess of that allowed by MCL 380.1211(3). Please see the memo to assessors dated October 26, 2004 regarding the change in the collection date of certain county taxes.

Column 12: Expiration Date of Millage. Enter the month and year on which the millage will expire.

CASCADE CHARTER TOWNSHIP
Kent County, Michigan
Resolution / 2020

RESOLUTION TO APPROVE THE LEVY OF THE 2020 MILLAGE RATES

WHERE AS, Cascade Charter Township has complied with Section 16 of the Uniform Budgeting and Accounting Act by stating in the Annual Budget Meeting that “The property tax millage rate proposed to be levied to support the proposed budget will be subject of this hearing”. Thus, the Township is not required to hold a separate Truth in Taxation hearing. Further, the Board has passed a “Resolution of Intent to Levy the 2020 Millage Rate”, Resolution #42-2019 on December 11, 2019.

WHERE AS, the Act requires that the proposed millage rate, as defined in the Act, be established by resolution of the Township Board.

NOW, THEREFORE, BE IT RESOLVED BY THE CASCADE CHARTER TOWNSHIP BOARD:

1. In order to provide sufficient revenue for the Township for operating purposes for the 2021 fiscal year, the Township shall levy total mills of 3.4471. This includes 0.9632 mills for operating purposes, 0.4334 mills for fire/police, 0.5036 mills for fire, 0.1486 mills for library, 0.2469 mills for police, 0.2280 mills for parks, 0.5750 mills for fire and 0.3484 mills for pathways.
2. All resolutions and parts of resolutions insofar as they conflict with the provisions of this resolution are hereby rescinded.

The foregoing resolution was offered on September 23, 2020 by Board Member and supported by Board Member with the vote being as follows:

YEAS:

NAYS:

ABSENT:

Resolution declared adopted.

Susan Slater
Cascade Charter Township Clerk

CERTIFICATION

I hereby certify the foregoing to be a true copy of a Resolution adopted by the Cascade Charter Township Board at a Regular Board Meeting held on September 23, 2020.

Susan Slater
Cascade Charter Township Clerk



CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan 49546-7140

Date: September 23, 2020
To: Supervisor Beahan and Township Board Members
From: Ben Swayze, Township Manager
Subject: Donated Aquarium for the Cascade Library

FACTS:

The Cascade Township branch of the Kent District Library (KDL) as well as the Friends of the Library (Friends) group have received a generous donation commitment from long-time Cascade resident Claude Robinson for the installation, start-up and maintenance of a large aquarium for the Cascade Library. Cascade Library Branch Manager Vanessa Walstra has been coordinating the project, and will be available at the meeting to answer any questions the Board may have about the project.

The aquarium will be built and installed by local vendor Aqua Blue and overseen by Progressive AE. Aqua Blue has a successful aquarium project at the East Grand Rapids branch of KDL. Once installed the aquarium will be maintained by Aqua Blue utilizing donated funds held by the Friends group. The tank will be 6 – 7 feet tall, approximately 54” in diameter and will hold 385 gallons of water.

Attached for your review are:

- Rendering of proposed aquarium
- Project estimates for proposed aquarium

ANALYSIS & CONCLUSIONS:

KDL Cascade Branch Manager Vanessa Walstra will join the Board meeting to provide details on the project and answer questions about the purpose of the aquarium and how it will benefit the Township and its residents.

It should be noted that, while the Township did fund minimal cost to develop a structural profile to ensure the building could adequately support the aquarium, no Township funds are being asked for the installation or maintenance of the aquarium. The Friends group is already in possession of the funds for installation and long-term maintenance. If approved and installed, the Township will insure the aquarium. Our liability insurance has indicated the premium increase for the aquarium will be negligible.

The Infrastructure Committee reviewed this project at their September Meeting and is recommending the Township Board approve the request.

FINANCIAL CONSIDERATIONS:

The Friends group already holds the funds for this project, donated by long-time Cascade resident Claude Robinson. Claude has donated money for several other Township projects, most

recently the inclusive playground at Cascade Park. The Township will insure the aquarium if approved and installed.

RECOMMENDED ACTION:

Approve KDL/ Friend of the Library to install the aquarium at the Cascade Library.

Design Rendering for Marian Robinson Aquarium





Aqua Blue Aquarium Solutions
3131 Broadway Avenue
Grandville, MI 49418
(616) 560-6992

Cascade District Library
2870 Jacksmith Avenue SE
Grand Rapids MI 49546

Cylinder Aquarium System

	Unit		Per Unit		Total
Acrylic Aquarium, Steel Stand, Sump System & Delivery	1	\$	25,220.00	\$	25,220.00
EcoTech Vectra L2 Pumps	2	\$	474.99	\$	949.98
Bio Bricks	2	\$	39.99	\$	79.98
Finnex 300W Heaters	2	\$	89.99	\$	179.98
Aqua Smart Auto Top Off Unit	1	\$	133.99	\$	133.99
Auto Top Off Tank with Glass Lids	1	\$	69.99	\$	69.99
3/4" Check Valves	2	\$	18.99	\$	37.98
Peace River Substrate - 20lb bags	16	\$	19.99	\$	319.84
Lace Rock - pounds	400	\$	2.99	\$	1,196.00
Spider Wood - XL Pieces	6	\$	59.99	\$	359.94
Spider Wood - M Pieces	4	\$	39.99	\$	159.96
Artificial Plants Program	1	\$	600.00	\$	600.00
Random Flow Generators & Loc Line Returns	4	\$	59.99	\$	239.96
Bubbler System	1	\$	121.99	\$	121.99
Finnex 48" Vivid Light Systems	2	\$	130.99	\$	261.98
Finnex 24" Vivid Light Systems	4	\$	68.99	\$	275.96
Automatic Feeders	2	\$	39.99	\$	79.98
Miscellaneous Plumbing	1	\$	300.00	\$	300.00
Installation	1	\$	950.00	\$	950.00
Grand Total				\$	31,537.51

Library Aquarium Project Estimates

Expense Item	Description	Vendor	Cost Notes
Fish Tank	Circular, acrylic (to reduce weight)	Aqua Blue	25,220.00; Height 36"; weight full 6,500 lbs; 54" wide
Accessories	run sump, lights, décor, gravel, plumbing parts,	Aqua Blue	\$5,500; Does not include finished façade around stand.
Installation	Initial set-up of the tank	Aqua Blue	\$950; Full day of work
Livestock	Freshwater fish	Aqua Blue	\$1,000; Freshwater, colorful fish
Finishing Work	Façade/cabinetry around the tank support	TBD	\$3,000; Cost is a general estimate
On-Demand Water Heater	Smart heater for during water change	Progressive	\$2,000; Requested by Aqua Blue
Architectural/Engineering	Fees for consultation and design	Progressive	\$3,000;
Construction	Concrete removal, replacement; water, sewer, electrical, carpet, etc.	Progressive	\$20,000;
Memorial Plaque	Cast bronze, 18" x 24"	Impact Signs	\$1,500; Lots of possible vendors & materials to choose
			\$62,170;

Notes:



CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan 49546-7140

Date: September 23, 2020
To: Supervisor Beahan and Township Board Members
From: Ben Swayze, Township Manager
Subject: Contract with Aquatic Consulting Services for Gypsy Moth Population Survey

FACTS:

The Township has received the proposed agreement from Aquatic Consulting Services LLC to conduct gypsy moth egg mass surveys to determine areas that require aerial spraying in 2020. The Township has worked with Aquatic Consulting Services for the past 23 years to assist in our Gypsy Moth aerial spraying program. If approved, the survey would be conducted this fall, and the results of the survey would be utilized to determine spray block configuration for efficient aerial treatment of the high priority areas in the spring of 2021.

The Township last sprayed for gypsy moths in spring of 2020. During the spring 2020 the Township sprayed approximately 736 acres. This was a significantly lower volume of spraying for the Township then in the recent past, as the gypsy moth population in Cascade Township has substantially controlled over the past two years by an aggressive spraying program. The follow up survey in the fall indicated that the 2020 spraying program was a success. Neal Swanson, biologist for Aqua Consulting services indicated,

Overall, things look very good. I did not see any areas of significant defoliation (we'd definitely be seeing noticeable defoliation by now) and several areas are near total suppression. I did document feeding cessation in several spray areas and evidence of caterpillar mortality. I also checked a few areas where we've had historical problems, but were not sprayed in 2020. I see very little feeding in those areas as well.

I'm quite happy with the results this year and cautiously optimistic going forward. We do need to continue to stay on top of this though as I'm seeing reports from several other areas in the state that gypsy moths are on the rise. We are also dealing with a population peak of fall cankerworms (native leaf-feeding caterpillars) that have been defoliating trees, causing high nuisance, and stressing trees making them more vulnerable to future gypsy moth infestation.

In order to receive a discounted spray rate, in 2017 the Township Board agreed to a 3-year contract with the aerial spray provider, with a minimum spray volume of 500 acres per year. 2020 was the final year of that contract, so if spraying is needed a new contract can be negotiated in 2021.

Attached for your review are:

- Letter from Aquatic Consulting Resources LLC detailing the gypsy moth survey program

- Proposed agreement with Aquatic Consulting Services LLC for Gypsy Moth Population Surveys
- Gypsy Moth information brochure published by the MSU Extension
- Cascade Township 2020 Aerial Spray Map

ANALYSIS & CONCLUSIONS:

The Township has participated in the gypsy moth spray program in conjunction with Aquatic Consulting Services LLC for 23 years. The Township has historically participated in the program because of the acknowledgement of the devastating effect the gypsy moth population could have on the canopy cover of the Township.

The partnership with Aquatic Consulting Resources has allowed us to efficiently allocate our financial resources to this program. The survey ensures that the aerial spray program effectively targets areas of infestation above the set thresholds, and on several occasions have saved us from unnecessarily spraying, as was the case most recently in 2013 and in 2010-11.

FINANCIAL CONSIDERATIONS:

The proposed contract with Aquatic Consulting Services LLC is \$8,800, which is included in the FY2020 budget. The cost of the survey work is a \$200 (2.3% increase) and the first increase since 2014.

RECOMMENDED ACTION:

Approve the agreement with Aquatic Consulting Services LLC for Gypsy Moth Population Surveys for Aerial Spraying 2021.



Aquatic Consulting Services

P.O. Box 530, Sanford, MI 48657
www.aquaticremedies.com

989-689-0223

September 4, 2020

Mr. Ben Swayze, Manager
Cascade Charter Township
2865 Thornhills, S.E.
Grand Rapids, MI 49546

Dear Mr. Swayze:

Thank you for considering the continuation of your gypsy moth suppression program. Aquatic Consulting Services has been actively doing this work for 34 years throughout Michigan, and for the past 23 years in Cascade Charter Township.

I know the gypsy moth populations may appear to be depressed, but I must caution you that populations are still quite elevated in the West Michigan area. The gypsy moth remains a problem in Michigan because it reaches such high numbers so quickly. Small, remnant populations can multiply quickly and become a nuisance at the least, and cause tree mortality at worst. This is referred to as a bimodal life history; with populations existing at either very low or very high numbers. Our job is to find the very short period of transition between these two extremes and intervene so the low populations do not become nuisance populations.

We accomplish this task by surveying the entire Township where suitable habitat exists, noting the gypsy moth populations, their health, degree of parasitism, egg viability, egg mass size, and other factors that influence the coming year's population. This information is analyzed with the threshold model developed in Michigan so we know when intervention is appropriate. By aerially spraying the selected areas, the population is kept in check using only a minimum of spray. It is likely that the majority of your residents will never know the devastation of a gypsy moth outbreak as long as we maintain a proactive attitude toward monitoring and control.

I have attached an Agreement for the 2021 insect season for your consideration. If you find it acceptable, please return a signed copy to me and we will schedule the work. Mid-October is the best time to start and we usually finish by the end of the year. I will send a final report to you once surveying is complete.

Sincerely,

Neal Swanson, Owner/Biologist

Enclosure



Aquatic Consulting Services

P.O. Box 530, Sanford, MI 48657
www.aquaticremedies.com

989-689-0223

AGREEMENT Gypsy Moth Population Surveys for Aerial Spraying 2021 Cascade Charter Township

Aquatic Consulting Services II LLC, PO Box 530, Sanford, MI 48657 agrees to provide certain work, analysis, and/or reports as described below:

1. Conduct gypsy moth egg mass surveys to determine areas that require aerial spraying in 2021 to prevent nuisance levels of gypsy moth larvae. The area to be surveyed includes the entire Township of Cascade except for the open area surrounding the airport, unless suitable tree cover is present to support a sustained gypsy moth population. The surveys will be completed during the autumn when conditions are favorable for this procedure and following approval and receipt of a final agreement.
2. Determine spray block configuration for efficient aerial treatment of the high priority areas and map the blocks using a computer-based mapping system.
3. Maintain the egg mass count data and spray block records to include the 2021 data so the gypsy moth population can be tracked over time.
4. Analyze the egg mass survey data according to the method known as the "Kroll Threshold Model" to determine the risk of nuisance levels of larvae in each potential spray block.
5. Recommend areas to be treated by aerial spraying of *B. thuringiensis* (B.t.) to alleviate nuisance levels of gypsy moth larvae and to deter population buildup.
6. Provide paper and electronic maps of the areas recommended for treatment to both the Township and to the Aerial Contractor.
7. Provide the digitized spray blocks on computer media to the pilot for the AgNav cockpit GPS guidance system. Objectors to the spray, if any, will be excluded from the spray block providing the objector information is received by Aquatic Consulting Services from the Township by April 30, 2020.
8. The egg mass survey field work will be accomplished by December 31, 2020. The analysis, the recommended spray blocks, and the accompanying maps will be completed by January 15, 2021.

As Client, Cascade Charter Township, 2865 Thornhills, S.E., Grand Rapids, MI 49546, agrees to compensate Aquatic Consulting Services for the above described services as follows:

A total of \$8,800.00 upon completion of the survey and receipt of proper invoice.

Also, the Township agrees to furnish any existing maps, either paper or in electronic format, that may be of use in assisting the described work.

Client: _____ Date: _____
Ben Swayze, Township Manager

Aquatic Consulting Services: _____ Date: _____
Neal Swanson, Owner

Terms:

Gypsy Moth in Michigan

Michigan State University Extension & Michigan State University Department of Entomology
& the Michigan Department of Agriculture

The following information was taken from the
Gypsy Moth in Michigan Homeowner's Guide

**MICHIGAN STATE
UNIVERSITY
EXTENSION**



WASHTENAW COUNTY

**Michigan State University
Extension**

705 N. Zeeb Road
P.O. Box 8645
Ann Arbor, Michigan
48107-8645

734/997-1MSU
Fax: 734/222-3990

msuextension@ewashtenaw.org
<http://extension.ewashtenaw.org>



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Gypsy Moth Management Starts At Home

You are the first line of defense for protecting your trees and shrubs from damage by gypsy moth, other insects, nematodes and diseases. Being knowledgeable about the life cycle of the gypsy moth will pay off in money saved, labor expended and peace of mind.

Depending upon where you live in Michigan, gypsy moth outbreaks may last from two to several years or may never occur. Why gypsy moth populations explode from time to time is not entirely clear. Outbreaks will eventually collapse, usually from natural causes.

Until a local gypsy moth population crashes, however, there are several techniques that homeowners can employ to keep damage and nuisance to an affordable minimum.

Monitoring

Hopefully, the mind set of dragging the sprayer out of the garage and spraying insecticide on trees and shrubs just because something might be out there lurking is no longer a part of the Michigan mentality. Years ago this was called "insurance spraying" when everybody was spraying chlorinated hydrocarbon insecticides (e.g., DDT) on everything that moved. We all know where that got us!

Take time to inspect your trees and shrubs periodically for the various life forms of gypsy moth. Especially look for the caterpillars when they begin to hatch, usually in early May.

Contrary to popular belief, population explosions in a locality do not happen suddenly! An area will undergo a gradual population buildup for a time before the population goes into a phase of rapid release. This gives vigilant homeowners, neighborhoods and communities time to assess local conditions and take appropriate action.

The gypsy moth is in the egg mass form for nearly nine months, plenty of time to find and destroy them before they hatch in the spring. While it may not be possible to find and destroy all of the egg masses in and around your backyard, this activity will complement management activity taken in the spring.

Management Non-Pesticide Techniques:

Water and Fertilize

We often take trees and shrubs for granted, figuring that they are indestructible and meant to last forever. Trees and shrubs have specific nutrient and water requirements. Take the time to determine what they need, and water and fertilize properly. There are bulletins available at all county extension offices and garden centers. Most insects and diseases select trees and shrubs that are being stressed. Keeping your trees and shrubs healthy will reduce the pests and diseases attracted to your foliage and lessen the damage done if they are attacked.

Sanitation

Keep your yard as clean as possible. Remove discarded items, dead branches (from the ground and out of the trees), stumps, etc., where the adult female moth is likely to lay egg masses. It is very important that homeowners be watchful when obtaining firewood from areas infested by the gypsy moth. A good rule of thumb is to never get more firewood in the summer or fall than you can burn by spring.

Each fall, check recreation vehicles (boats, trailers, campers, etc.) for gypsy moth egg masses. Vehicular movement is how gypsy moth came to Michigan.

Destroy Egg Masses

As mentioned, gypsy moth egg masses are around for nearly nine months before they hatch.

Homeowners can help reduce gypsy moth population on their property and in their neighborhood by seeking out and destroying egg masses each year.

When a gypsy moth caterpillar is about to pupate, it will look for a protected area such as a loose flap of bark, something flat nailed to a tree, woodpile of the underside of branches, etc. Once a suitable location is found, it weaves a loose net of silk around itself and

transforms into a pupa. This is the resting state where the caterpillar undergoes the miracle transformation from caterpillar to moth. This takes about two weeks.

Upon emergence, the female gypsy moth is creamy white and has a wingspan of about two inches. The male moth is smaller in size and camouflage brown with black mottling. Both have a distinguishing mark on their forewings: an inverted black V often referred to as a chevron marking.

The female generally deposits egg masses from early July to mid-August depending upon local weather conditions. The female cannot fly, so she will lay egg masses near where she was in the pupal (cocoon) stage.

The adult female lives about a week. Her only purpose in life is to breed as quickly as possible and lay her eggs. She cannot fly, so she emits a chemical odor to attract the nearest male for mating, the male flies off to mate several more times before dying. After mating, the female spends about a day depositing her egg mass, falls to the ground and dies. Neither the male or female moth feed.

Each egg mass can contain from 50-1,000 eggs. The eggs are intertwined in a matting of hair from the body of the female. The hair is a tan-buff color and helps insulate eggs.

The egg masses begin hatching the following May. Hatching coincides with the bud break of aspen and the flowering of serviceberry.

Homeowners are encouraged to search out and destroy egg masses. This is accomplished by scraping them from the surface to which they are attached into a coffee can or similar receptacle. They can be buried or burned. Remember that each egg mass destroyed probably eliminated 400-500 caterpillars. Destroying egg masses is not a cure all. Many times egg masses are overlooked or inaccessible. However, it is a very good and certainly very cheap way to significantly impact the gypsy moth population in your yard and neighborhood.

Continued on page 3

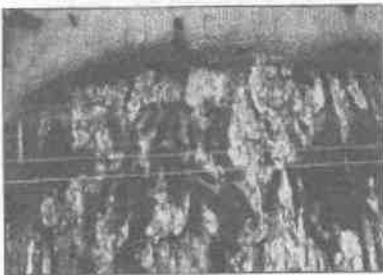
Barrier Bands

Sticky, or slippery bands can be placed around tree trunks to help curtail, though not necessarily prevent, the caterpillars movement into and out of the tree canopy.

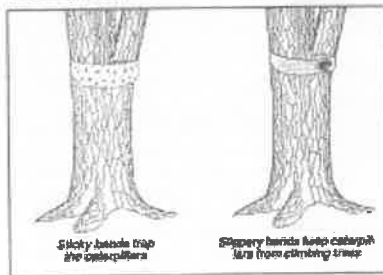
Sticky bands can be purchased or made using a nonporous material that can be wrapped around a tree trunk, then coated with a commercially made, vegetable-based sticky material. **Never put sticky material directly on the tree trunk.** This will permanently stain the bark and may harm the tree.

Sticky bands should not be put on the tree until the caterpillars are about an inch long. Smaller caterpillars usually stay in the tree canopy. Sticky bands eventually lose their effectiveness due to rain and other weather factors, the sticky material has to be reapplied periodically. Bands covered completely with caterpillars need to be cleaned or replaced.

Slippery bands are also intended to interrupt the daily migration of the caterpillar. They prevent the caterpillar from climbing up into the canopy.



Gypsy moth caterpillars use cloth bands to hide during daylight hours. Scrape the caterpillars into a bucket of soapy water



Hiding Bands

Cloth, or hiding bands, can be homemade from medium weight dark cloth about 12 to 18 inches wide and long enough to completely wrap

around the tree. Fasten each band at chest height around the tree with twine, cord or wire about midway from the bottom of the cloth. Then fold the top part of the cloth down over the bottom half.

Caterpillars descending the tree in the morning in search of a secluded daytime resting spot will hide under the flap of the band. Remove and destroy caterpillars each day by scraping them into a bucket of soapy water.

Pesticide Techniques

Biological Pesticide

Many pesticides are registered for use against gypsy moth in Michigan. A biological pesticide commonly used on gypsy moth is *Bacillus thuringiensis* var. *kurstaki*. B.t. is a common soil bacteria. It is commercially formulated and sold under various labels (e.g., Dipel, Foray, Thuricide and Bactur to name a few). B.t. can be applied from the ground or by aerial spraying.

B.t. formulations are quite safe to humans. There is no apparent human toxicity, although there have been rare cases of allergic reaction by humans to certain formulations of B.t. In fact, B.t. is only known to be toxic to the caterpillars of moths and butterflies. While there are many species of caterpillars affected by B.t., this pesticide is the most "selective" product available.

To be effective in minimizing defoliation, B.t. must be applied when caterpillars are less than one inch long. As caterpillars get larger, the efficacy of B.t. diminishes. B.t. has a reported residual activity (i.e. how long it remains potent) of about a week. It is broken down by sunlight. In instances where there are very high gypsy moth populations, two applications five days apart might be needed.

Most chemical pesticides are 95% - 99% effective. B.t.k. is probably is 80% - 85% efficient in field applications. This is a desirable attribute of B.t.k.. That may sound like a contradiction, but it isn't. Pesticides that are highly efficient will eventually work against the pest manager. Insects, through natural selection, will develop resistance to the pesticide. By

leaving 15% of the population intact, selection for resistance is slowed. B.t.k. has been used against gypsy moth for over twenty-five years and no resistance has been discovered. There is, quite naturally, a trade off. When B.t.k. is applied there are still some caterpillars crawling around. However, nuisance is reduced to a minimum, defoliation lowered below damaging levels.

Soap and Water

In addition to destroying egg masses, homeowners can use other non-pesticide methods to reduce defoliation of their yard trees.

Watch for the appearance of the small caterpillars in the spring. A garden hose has sufficient water pressure to knock them off the foliage. Spraying them with water under pressure kills many of them.

Garden centers carry various brands of "insecticidal soap." An insecticidal soap is not a soap with a synthetic insecticide but instead refers to the ability of the soap to kill certain insects. Spraying gypsy moth caterpillars with a hose with an attachment to dispense soap can be effective. Always follow label directions on the insecticidal soap container. Small and large caterpillars can be drowned when submerged into a bucket of soapy water.

Chemical Insecticides

A number of chemical pesticides are registered against gypsy moth in Michigan. Many are available at your local garden center or nursery. Some of the most common are formulations of acephate, carbaryl, and malathion.

If you choose to use chemical insecticides, apply them judiciously and wisely. Besides gypsy moth they can have a potential impact on a variety of beneficial insects, including valuable predators, parasites and honeybees.

Regardless of what insecticide you choose, read the label instructions and follow them exactly. If you have any potential personal health concerns regarding pesticides, discuss them with a physician or contact your local health department.

Trees and shrubs defoliated by gypsy moth

Although gypsy moth caterpillars feed primarily on deciduous tree species such as oak or aspen, this insect is known for its wide-ranging appetite. When populations of gypsy moth are very high, the caterpillars quickly devour the leaves of their preferred host tree species. Once their favored food source disappears, the hungry caterpillars do not hesitate to seek out new sources of food. When this occurs, almost any deciduous or conifer tree, shrub or other landscape plant may be at risk of suffering some amount of defoliation.

Consequently, it is difficult to state exactly how susceptible a tree or shrub species is to defoliation by gypsy moth caterpillars. Therefore, the following list is offered only as a guide to homeowners. This list does not guarantee that any species listed as minimally at risk will never be defoliated by the gypsy moth.

More importantly, homeowners need to recognize that gypsy moth caterpillars do have preferences for certain types of trees and thrive best on those species. Typically these favored food sources are usually the first ones attacked in a homeowner's yard, especially tall, large crowned trees. These are the trees most likely at risk to defoliation.

Generally speaking, when gypsy moth caterpillars move into less preferable food sources, the caterpillars do not thrive as well and often only cause minor damage.

However, regardless of this insect's food preferences, close inspection of yard trees and outdoor fixtures and prompt action by the homeowner to destroy egg masses and small caterpillars is crucial. This is the real key to minimizing the discomfort and, to some degree, the defoliation caused by large numbers of gypsy moth caterpillars.

If a homeowner is able to minimize the amount of defoliation from the gypsy moth, it will lessen the overall impact on tree health. When a hardwood tree is heavily defoliated, the needed energy to regrow a new set of leaves causes stress. This stress often weakens a tree which may lead

to additional tree health problems. Moreover, conifer species, such as spruce or pine, are at greater risk than hardwoods because conifers are not able to regrow needles lost to defoliation. Thus complete defoliation of conifers by gypsy moth is usually fatal.

Trees and Shrubs Most at Risk to Defoliation

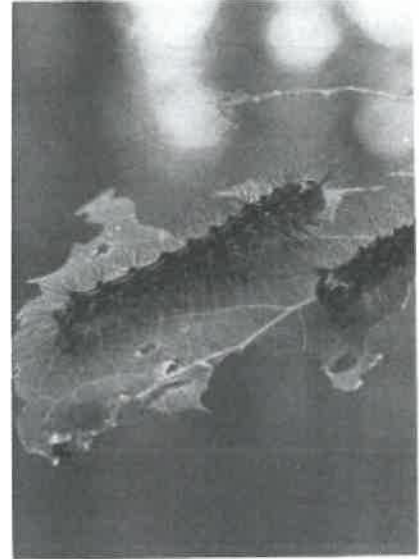
All Oak (*Quercus*).
All aspen and poplar (*Populus*).
Gray, paper (white), and river birch (*Betula*).
All willow (*Salix*).
All apple and crabapple (*Malus*).
All thornapple and hawthorne (*Craetagus*).
White pine (*Pinus*).
Blue spruce (*Picea*).
American beech (*Fagus*).
Basswood (*Tilia*).
Sweetgum (*Liquidambar*).
Juneberry or serviceberry (*Amelanchier*).
Witch hazel (*Hamamelis*).
Hazelnut (*Cornus*).
Mountain ash (*Sorbus*).

Trees and Shrubs Somewhat at Risk to Defoliation

Black walnut and butternut (*Juglans*).
All cherry and plum (*Prunus*).
Norway, red and sugar maple (*Acer*).
Hophornbeam or ironwood (*Ostrya*).
Alder (*Alnus*).
Elm (*Ulmus*).
Hickory (*Carya*).
Eastern redbud (*Cercis*).
Sassafras (*Sassafras*).
Paw paw (*Asimina*).
White and Norway spruce (*Picea*).
Balsam fir (*Abies*).
Eastern hemlock (*Tsuga*).
Red, jack, scotch and Austrian Pine (*Pinus*).

Trees and Shrubs at Minimal Risk to Defoliation

Ash (*Fraxinus*).
Tulip tree or yellow poplar (*Liriodendron*).
Sycamore and London plane tree (*Plantanus*).
Northern catalpa (*Catalpa*).
Honey locust (*Gleditsia*).
Black locust (*Robinia*).
Horsechestnut (*Aesculus*).
Dogwood (*Cornus*).



Gypsy moth caterpillars prefer to eat leaves of certain tree species, including poplar.

Eastern redcedar (*Juniperus*).
Juniper (*Juniperus*).
Yew (*Taxus*).
Lilac (*Syringa*).
Azalea (*Azalea*).
Rhododendron (*Rhododendron*).
Arborvitae (*Thuja*).
Viburnum (*Viburnum*).

Homeowners considering planting trees or shrubs in areas prone to high gypsy moth population build-ups should choose species that are at minimal risk to defoliation. Contact your local MSU Extension office for bulletins and information on tree selection, planting and care.



Be careful about quick fixes for your gypsy moth problem

Struggling with the effects of the gypsy moth can be frustrating enough without unscrupulous people trying to take advantage of the homeowner by offering quick fixes.

There are no quick fixes, declares Russell Kidd, MSU Extension district forestry agent in Roscommon County.

He advises homeowners to be wary of products or services that promise or imply they can end gypsy moth problems in the backyard or woodlot.

Be careful of salespeople who want to spray your trees with chemicals that are "guaranteed" to control the gypsy moth. In some cases, these may be worthless or even dangerous.

Homeowners should ask what chemical is to be used, its hazard, what its effect will be and what precautions will be taken to minimize spray drift to nearby objects.

Homeowners should also ask to see proof that the company and the individual are certified and licensed to

apply such a material. Michigan law requires that commercial pesticide spraying companies be certified and licensed by the Michigan Department of Agriculture.

Remember that chemical sprays are effective only during the caterpillar stage of the gypsy moth. Spraying trees before the eggs hatch or after the caterpillars have pupated or emerged as adults moths is worthless. (See the gypsy moth life cycle chart).

Be wary of unrealistic claims about products or techniques to rid your property of the gypsy moth by themselves.

Some products, such as sticky bands, are indeed useful, but they will not control the gypsy moth completely, especially when used alone. Only a combination of control treatments, used diligently by the homeowner, will achieve satisfactory control of the gypsy moth.

Other products may not do what their names imply. Take, for instance, the gypsy moth trap. The

purpose of the trap is to attract and capture the adult gypsy moth.

Traps are used to monitor gypsy moth populations. They will not control or eliminate next year's gypsy moth problem in your yard because one adult male moth can mate with many female moths and one or two traps will not capture enough males to interfere with mating or cause the population to decline significantly next year.

Be very careful about timber buyers who offer to buy standing trees that have been defoliated. Unscrupulous timber buyers may use gypsy moth infestations in an area as a scare tactic to persuade people to sell valuable timber at low prices before the tree die.

Timber owners should always consult with professional foresters before they decide to sell any standing timber.

Your county MSU Extension office can provide the names of professional foresters in your area.



Be careful with pesticides!



Use proper recycling procedures for disposing of pesticide containers.

This publication contains pesticide recommendations based on research and pesticide regulations. However, changes in pesticide regulations occur constantly. Some pesticides mentioned may no longer be available, and some may no longer be legal. If you have questions about the legality and/or registration status for using pesticides, contact your MSU Extension county office.

To protect yourself and others and the environment, always read the label before applying any pesticide. For information about pesticide labels see Extension Bulletin E-2182 *Reading a Pesticide Product Label*.

For more information about pesticide safety, see Extension Bulletin E-2215, *Using Pesticides Safely: A Guide for the Applicator*; Extension Bulletin E-1546 *Take Cover! Protect Yourself from Exposure. (Pesticides)*.

For more information about safe disposal of pesticide containers see Extension Bulletin AM-95 *Rinsing and Recycling Pesticide containers*.

Dozens of other Extension bulletins on safe application of pesticides are also available.

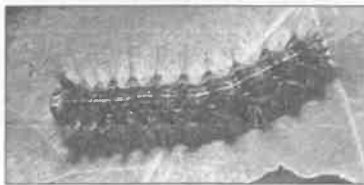
Gypsy Moth Life Cycle

1) Small Larvae. This stage lasts for 7-10 days after eggs hatch in early May (or sooner in warmer weather). Larvae are less than 1.2 inch long and usually black. They linger around the egg cluster for several days if the weather is cool or rainy, then climb trees or other objects, trailing silken threads as they move. When the larvae reach the top of the tree, they do not feed but drop on silken threads and are dispersed by the wind.

2) Large Larvae. Feeding at night for 4 to 6 weeks, large larvae generally rest during the day unless populations are very large, then they wander constantly. They grow until they are about 2 inches long.



1. Small Larvae—May



2. Large Larva—June



3. Pupae—July



4. Adults—August



5. Egg masses—August

3) Pupae. During this stationary stage the larvae are changing into moths. This generally occurs from the end of July until early August. After about 10 days in the dark colored pupal cases, the adult moths emerge, leaving the pupal cases behind.

4) Adults. The female moth is creamy white and does not fly but emits a chemical called a pheromone to attract a male moth. The male is brownish and flies in a zigzag pattern looking for the female. A single male can mate with many females. Both sexes have chevron markings (V or notch-shaped marking) on each forewing.

5) Egg masses. The buff-colored egg masses contain between 50 and 1,500 eggs. The female deposits the eggs on any convenient surface. The masses are usually covered with hairs from the female's abdomen. The egg masses are quite cold resistant and can survive temperatures as low as -20 degrees F. Egg masses hatch during May.



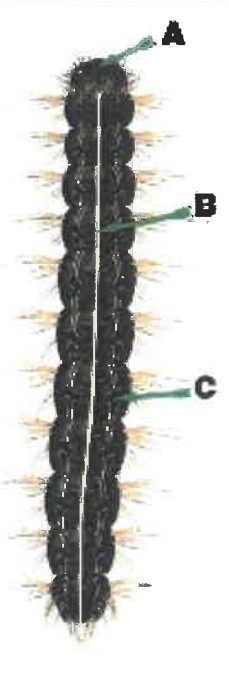
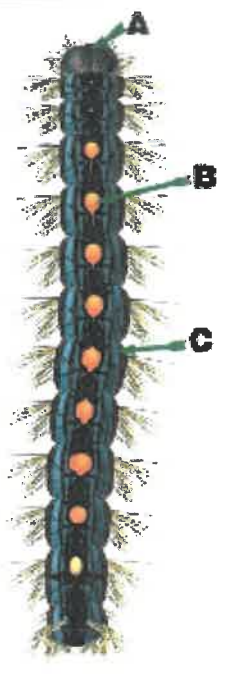
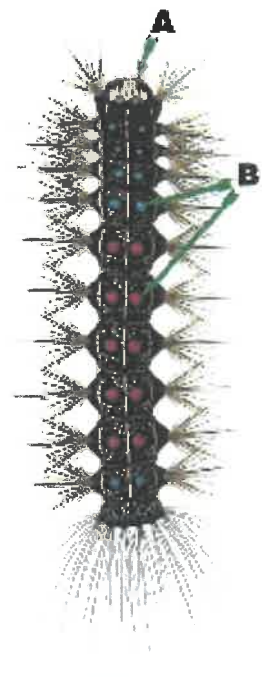
Comparison of the Eastern Tent Caterpillar, Forest Tent Caterpillar and Gypsy Moth

Michigan State University Extension

These three insects are often found feeding on the leaves of hardwood trees early in the summer. They can be easily confused with one another. The illustrations and information here will help you to identify which caterpillar is feed-

ing on your trees. Contact your local MSU Extension office or regional Dept. of Natural Resources office for more information on the biology and management of these insects.



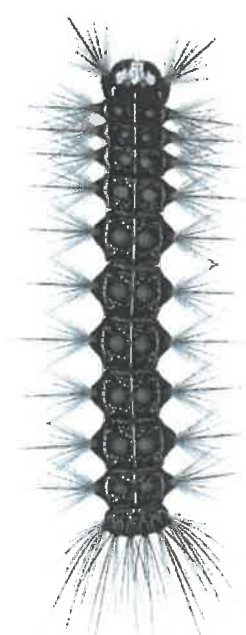



Illustrated by Peter Gernigley

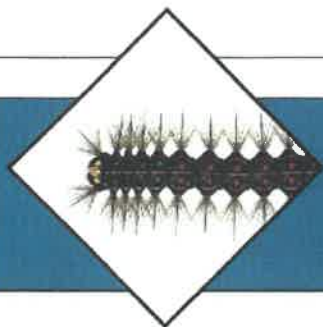
			
	<p>Eastern Tent Caterpillar <i>(Malacosoma americanum)</i></p>	<p>Forest Tent Caterpillar <i>(Malacosoma disstria)</i></p>	<p>Gypsy Moth Caterpillar <i>(Lymantria dispar)</i></p>
Markings	<p>A) Dark head; B) prominent white or yellow stripe down the center of the body; C) small blue spots to the side.</p>	<p>A) Blue head; B) prominent central row of white or yellow markings in keyhole or footprint shape; C) bluish on sides of body.</p>	<p>A) Yellow head with black markings; B) prominent blue and red spots.</p>
Tents	<p>Prominent silk tent: in branch junction.</p>	<p>They do not spin silk tents; resting sites on leaves may have small silk layer.</p>	<p>No silk tents.</p>

(Dover)



Comparison of the Eastern Tent Caterpillar, Forest Tent Caterpillar and Gypsy Moth

	 Eastern Tent Caterpillar <i>(Malacosoma americanum)</i>	 Forest Tent Caterpillar <i>(Malacosoma disstria)</i>	 Gypsy Moth Caterpillar <i>(Lymantria dispar)</i>
Egg Mass	Dark, spindle-shaped mass wrapped around twigs; rough varnished texture. 	Similar to eastern tent caterpillar. 	Tan color; covered with fine hairs; 1 to 3 inches long; usually on tree bark. 
Preferred Host Trees	Black cherry, apple, crabapple.	Aspen, sugar maple, oaks, birch, black gum.	Oaks, aspen, birch, willow and more than 250 other species.
Populations	Native insect; silk tent is unattractive, but feeding rarely harms trees; common pest of ornamental trees in urban settings.	Native insect; outbreaks occur at roughly 10-year intervals and usually last 2 to 4 years; most common in forests, especially where aspen is abundant.	Exotic pest; severe defoliation during outbreaks can occur for 2 to 3 years in urban and forested areas, especially where oaks are abundant.



Entomophaga maimaiga - A Natural Enemy of Gypsy Moth

Michigan State University Extension

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The gypsy moth (*Lymantria dispar* L.) is an exotic pest of urban and forest trees. Gypsy moth caterpillars feed on the leaves of oaks, aspens, and many other hardwood and conifer trees. During gypsy moth outbreaks, trees may be completely stripped of leaves. Although gypsy moth caterpillars rarely kill trees by themselves, trees weakened by heavy defoliation may become more susceptible to drought, disease or other insect pests. In addition, the large hairy caterpillars annoy people living or recreating in outbreak areas.

Managing gypsy moth requires the integration of a variety of control tactics. Biological control, the use of natural enemies to control a pest, can be an important part of an integrated pest management program for gypsy moth. One biocontrol agent that has recently shown much promise is a fungal pathogen, *Entomophaga maimaiga*.

Origin of *Entomophaga maimaiga*

Entomophaga maimaiga is a common disease in gypsy moth populations in its native country of Japan. The fungus was first released into the United States near Boston in 1910 as part of a program to introduce natural enemies of gypsy moth. Scientists could find no evidence that the fungus had become established and the project was abandoned a few years later. However, the fungus appeared unexpectedly in several northeastern states in 1989 and caused high mortality in many gypsy moth populations. Although scientists have several theories, the strange reappearance of the fungus is still a mystery.

Entomophaga maimaiga was first brought into Michigan in 1991 by scientists at Michigan State University and the USDA Forest Service. It was released in three sites in northern lower Michigan and monitored closely.

Additional introductions have since occurred and the fungus also is spreading naturally. *Entomophaga maimaiga* has now been found throughout most of Lower Michigan.

Life history of *Entomophaga maimaiga*

Entomophaga maimaiga passes the winter as a tough, thick-walled "resting spore" in the soil and on tree bark. In May and June, resting spores germinate and produce sticky spores at the end of a stalk that grows just above the soil surface. Gypsy moth caterpillars come into contact with these spores in the spring as they search for suitable leaves to feed on. The fungus digests its way through the exoskeleton of the caterpillar and grows inside the body of the caterpillar. Infected caterpillars may die within one week.

When young caterpillars are affected early in the summer, the fungus will produce a second type of spore called conidia. These microscopic spores are spread by the wind and can infect other caterpillars. The cycle of conidia production and infection may occur four to nine times during the summer. When the fungus develops in large caterpillars, it produces the overwintering resting spores.

Weather plays an important role in determining how effective *Entomophaga maimaiga* will be. Like most fungi, its spores need moisture and high humidity to germinate. Frequent rainfall during May and June contributes to the start and spread of *Entomophaga maimaiga* through a gypsy moth population. Temperatures of 50 to 80 degrees F enhance fungal growth.



Entomophaga maimaiga – A Natural Enemy of Gypsy Moth



Figure 1. Gypsy moth larva killed by NPV hanging in an inverted "V" position.



Figure 2. Dead larva covered with conidia of *Entomophaga maimaiga*.



Figure 3. Larvae killed by *Entomophaga maimaiga* often remain attached to trees.

Distinguishing *Entomophaga maimaiga* from NPV

Another disease is common in outbreak populations of gypsy moth. NPV (nuclearpolyhedrosis virus) is a virus disease that often causes gypsy moth outbreak populations to collapse. One important difference between the two diseases is that NPV is seldom prevalent until gypsy moth populations reach very high levels. In contrast, *Entomophaga maimaiga* may be found even when gypsy moth populations are low.

Caterpillars killed by NPV often remain attached to the stem or branches of trees. The bodies of the dead caterpillars are soft, filled with a brown liquid and disintegrate rapidly. Usually they hang limply in an upside-down "V" position (Fig. 1).

Caterpillars killed by *Entomophaga maimaiga* will also remain attached to tree stems or branches. However, the bodies tend to be stiff and straight, and the legs extend stiffly from the body. Some of the dead caterpillars may have tiny white conidia attached to the hairs on the body (Fig. 2). The cadavers may remain on the stem well into autumn (Fig. 3).

The future of *Entomophaga maimaiga*

Entomophaga maimaiga may become an important biological control of gypsy moth in both low and high populations. Infections may be more common in years with rainy spring weather than in years with dry spring weather. Scientists have found that the fungus is established in a number of areas in Michigan. Laboratory and field studies have shown that *Entomophaga maimaiga* is host specific and poses little risk to other insect populations. It will not affect other animals or humans. Introductions and evaluation will continue. Although there is not likely to be any "silver bullet" for gypsy moth, *Entomophaga maimaiga* should improve our ability to manage this pest in Michigan.

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File 27.35 (Pests and Management)

Gypsy Moth Populations Growing

Robert Bricault, MSU Horticulture Educator

One of the hardest lessons I learned over the years is that information taught in the past may not be remembered tomorrow. Gypsy Moth management was the central focus of my career from 1985 through 1999. I worked in landscaping in Midland and Isabella Counties when Gypsy Moths caused the first defoliation in Michigan in 1985. During the 1990's the insect moved into Southeast Michigan where it continued it's destructive pattern of ravenous eating, stripping thousands of trees of their leaves.



By 1994, Extension worked with the Michigan Department of Agriculture mapping out areas with large Gypsy Moth egg mass counts for aerial spraying with the bacteria, Bt (*Bacillus thuringiensis*). Bt did not kill the caterpillars quickly, but made them sick by changing the pH in their stomachs. Eventually they stopped eating and starved to death.

Bt helped to reduce the population not eliminate it, giving parasites, predators and pathogens a chance to develop. A pathogen called NPV, nucleopolyhedrosis virus, began killing large number of caterpillars leaving them hanging in an upside down V on tree trunks. Unfortunately, NPV only worked well when populations of the insect were very high. A real break came when a soil borne fungus, *Entomophaga maimaiga* started to kill off large numbers of caterpillars in midsummer leaving them hanging straight down on tree trunks. The fungus was effective even in sites with low numbers of Gypsy Moths present. The fungus spreads during periods of consistent rainfall in late spring and early summer. Gypsy Moth populations have been at very low numbers for the past eight years in Washtenaw County mostly due to the *Entomophaga* fungus.

The drought of 2007 reduced the development of the fungus allowing more caterpillars to survive, change into moths and lay eggs. The increasing population of caterpillars led to localized defoliation of trees. The worst damage was on Blue Spruces. Fortunately, we did experience good rainfall in June 2008, allowing the *Entomophaga* fungus to spread and kill many caterpillars. Enough Gypsy Moth did survive in 2008 to produce larger numbers of egg masses than we have seen in over six years. This may cause some localized defoliation of trees again this coming summer, increasing the need to educate residents on managing this pest.

Gypsy moth eggs hatch in mid spring usually about the time serviceberry is in bloom. People often confuse Gypsy Moth with other caterpillars that make tents or webs in trees. Gypsy Moth can hang from silk like strands from a branch but do not make webbed tents. They can spread by wind while hanging from this thread. At this early stage they are susceptible to Bt. Bt works well on young caterpillars, but is ineffective once they get beyond an inch long. Trees can be banded with burlap to trap caterpillars that seek shelter under the burlap during the day. Unfortunately, in blue spruces it is

hard to manage them through banding. Once in the moth stage Gypsy Moth does not feed. The brown male moths can be seen flying around searching for the white female moths that do not fly. The female leaves behind buff colored egg masses that are easy to see.



Fall and winter are great times to go hunting for the buff colored egg masses in trees. If you have spruces check under the branches for the egg masses. If you find egg masses on structures, outdoor furniture or trees, knock them off into soapy water. This sanitation practice greatly reduces the number of caterpillars the following year. Some of their favorite trees include oak, birch, apple, willow, hawthorn, white pine, blue spruce, serviceberry and poplars, but they will eat leaves from maples and other trees that are not their



most preferred species. If large populations are found damaging trees it may become necessary to treat the trees with an insecticide. The greatest risk is to evergreens like blue spruces and white pines that do not come back from defoliation as well as deciduous trees will. If using a pesticide make sure it is labeled for control of Gypsy Moth.

We are often asked why the county is not still part of the state's suppression program. The need for the program in Washtenaw and across Michigan declined as Gypsy Moth levels dropped very low across the state. The State's Suppression program actually ended in 2006 and also the availability of federal dollars to assist communities in aerial spray programs. The suppression program did what it was supposed to do, reducing the insects population long enough for other forces that help control Gypsy Moth to develop in our ecosystem.

Through careful monitoring, sanitation practices, banding as well as localized pesticide treatment, you can help to keep Gypsy Moth in check while allowing natural pathogens, predators and parasites to gain back a balance of control. Our hope is that nature will continue to keep Gypsy Moth populations at low levels in most years and eliminate the need for large scale spray programs. If you find large local Gypsy Moth infestations please share this information with the Horticulture staff at the MSU Extension office: 734 997-1678 or contact the Master Gardener Hotline from mid April through October at 734 997-1819.

**Gypsy moth and gardening questions phone:
Washtenaw County, MSU Extension
Master Gardening Hotline at: 734 997-1819**

**Master Gardener Volunteers are available:
mid April through October
Monday through Thursday
9:00 a.m. – 12:00 noon
1:00 p.m. – 4:00 p.m.**

At other times phone the MSU Extension office at 734 997-1678



Gypsy moth caterpillar feeding on oak leaf.
Photo by Clifford Sadof, Purdue University.

Btk: One management option for gypsy moth

Authors: Deborah G. McCullough, Ph.D., Professor, Dept. of Entomology and Dept. of Forestry, Michigan State University

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Update MSU Extension bulletin E-2421 - May 16, 2019

Gypsy moth (*Lymantria dispar* L.), an invasive pest native to Europe, was introduced into Massachusetts in 1869 by a well-meaning, but clearly misguided, amateur naturalist. Despite many efforts to contain this pest, gypsy moth populations have continued to expand. People can accidentally move gypsy moth egg masses or other life stages into new areas, which greatly increases the rate of spread. Populations of gypsy moth are now found across much of the eastern United States and Canada.

Gypsy moth was first discovered in central Lower Michigan in the 1950s, and the first outbreaks occurred in this area in the mid-1980's. By the late 1990's, much of Lower Michigan and areas in the Upper Peninsula had experienced a major gypsy moth outbreak. Today, gypsy moth is present in all Michigan counties. During most years, gypsy moth populations are low and few people even notice them. Occasionally, however, the density of a local gypsy moth population builds to outbreak levels.

Gypsy moth outbreaks typically last two to four years, then collapse, usually because the caterpillars die from viral and fungal diseases. Parasitoids, predators, starvation and unfavorable weather may also help reduce gypsy moth numbers. Once an outbreak collapses, the population will remain low for some time, often several years.

A gypsy moth outbreak can be unpleasant for people who live, work or enjoy outdoor recreation in affected areas. Large hairy caterpillars can be abundant in forests, campgrounds and parks, and in residential areas. The caterpillars often wander in search of cool, shady areas, often resting on the sides of houses and trees during the day. Frass (insect feces) produced by the caterpillars feeding on leaves in the tree canopies can rain down on driveways, sidewalks and picnic tables. Oaks and other favorite host trees can be heavily defoliated, usually between late June and mid-July.

Gypsy moth completes one generation each year. Tiny gypsy moth caterpillars hatch from eggs sometime between late April and mid to late May. Newly hatched caterpillars disperse by hanging from a silk strand and waiting to be carried in the wind. The caterpillars feed for six to eight weeks on the leaves of trees in forested, rural, suburban and urban areas. By the time caterpillars finish feeding, they may be 2 to 3 inches long.

Oak trees are usually their favorite hosts, but gypsy moth caterpillars can feed on many other hardwood trees including aspen, basswood (linden), willow, birch and crabapple. When populations are high, caterpillars sometimes feed on spruce, pines or other conifer trees. In fact, gypsy moth caterpillars can feed on at least 300 different species of trees and woody shrubs.

Hardwood trees (those that lose their leaves in fall) can tolerate two or three years of severe or even complete defoliation if they are reasonably healthy. Often, severely defoliated hardwood trees produce a second set of leaves in midsummer, which allows the trees to build up energy for the next year. Producing the second set of leaves, however, can stress the trees, slowing growth and sometimes making the trees more vulnerable to other pests.

Unfortunately, conifers (evergreens) such as spruce, fir and pine trees cannot produce a second set of buds during the summer. If caterpillars consume all or nearly all the needles on conifer trees, the trees will die.

Though gypsy moth is here to stay, there are several options to help control this pest during outbreaks. One option involves spraying Bt to protect tree foliage and reduce the annoyance caused by gypsy moth caterpillars. Bt refers to a microorganism called *Bacillus thuringiensis*. Bt is widely used to control gypsy moth and certain other caterpillar pests

because of its effectiveness, ease of use and its low toxicity to other animals, including other insects. This publication is designed to answer some frequently asked questions (FAQs) about Bt.

What is Bt?

Bt is the abbreviation for *Bacillus thuringiensis*, a native bacterium commonly found in soil and on plants. Thousands of Bt varieties exist in nature, each with its own unique characteristics. Most Bt varieties are insect pathogens that cause disease in specific groups of insects, and several are registered with the U.S. Environmental Protection Agency (EPA) as microbial insecticides. Though Bt products can be highly effective in controlling specific insects, they have little impact on other animals. Therefore, sprays made with Bt pose much less risk of affecting non-target organisms than conventional chemical insecticide sprays.

The Bt products used to control gypsy moth during outbreaks are made from a strain known as *Bacillus thuringiensis* var. *kurstaki* HD-1, or more simply, as Btk. Btk has been used for gypsy moth control in the northeastern U.S. since 1961 and in Michigan since 1985.

The Btk formulation used for gypsy moth spray programs in Michigan is certified by the Organic Materials Review Institute (OMRI), a national nonprofit organization that approves products for organic growers, as regulated by the USDA National Organic Program. Btk is commonly used by organic gardeners and farmers, as well as some conventional farmers, to control caterpillar pests of fruits and vegetables.

How does Btk control the gypsy moth?

When Btk grows, it produces spores and non-living protein crystals. When gypsy moth caterpillars eat leaves that have been sprayed with Btk, the protein crystals dissolve in their digestive system and become toxic. This can occur only in caterpillars because of the many unique conditions present in their digestive system. For example, caterpillars have an alkaline digestive system, while humans and many other animals have acidic digestive systems.

Soon after caterpillars feed on leaves sprayed with Btk, they stop feeding. If the caterpillars consume enough Btk, they die after a few days from a combination of starvation, damage to their digestive system and bacterial growth within their bodies.



There are a few unusual but important things to remember about the way Btk works:

- Btk must be eaten by caterpillars to be effective. Therefore, the leaves of trees or shrubs must be well coated with Btk.
- Young gypsy moth caterpillars are usually more sensitive to Btk than older, larger caterpillars. This is one reason why Btk should be applied soon after gypsy moth caterpillar eggs hatch. Timing of Btk applications depends on spring weather conditions and varies by location (see MSU's [Enviroweather's gypsy moth treatment guidelines](#)). Older, larger caterpillars may become ill, but can often survive a Btk application.

What are the ingredients in a Btk product?

Commercially available Btk products are composed of two major components: the active ingredients and the inert ingredients. The active ingredients in products used to control gypsy moth are Bt *kurstaki* HD-1 spores and protein crystals. Bt *kurstaki* HD-1 is a naturally occurring bacterium in the environment.

Inert (non-active) formulation ingredients are added to the Btk spores and crystals. These ingredients make it easier to mix, spray and store the product. These ingredients are food-grade additives that appear on the U.S. Food and Drug Administration's "[Generally Recognized As Safe](#)" list.

How does Btk differ from conventional chemical insecticides?

In contrast to Btk, conventional chemical insecticides are man-made or synthetic chemicals that usually affect the nervous systems of insects and other animals. These products can kill insects on contact or when eaten. This means conventional insecticides are capable of killing most non-target insects, including beneficial parasitoids and predators, and pose greater health hazards to humans and other animals.

How long does Btk last?

Most of the Btk sprayed on tree foliage is destroyed by sunlight and microbial activity within a few days. To help reduce gypsy moth populations and defoliation during an outbreak, tree foliage must be sprayed each year, ideally soon after gypsy moth eggs hatch.

Does Btk harm other insects?

Btk is much more selective than conventional

chemical insecticides, but it can affect other kinds of foliage-feeding caterpillars if they are also feeding on treated leaves. This is a good reason to use Btk only when gypsy moth populations are high. Some caterpillar species are more sensitive to Btk than gypsy moth, while others are less sensitive. Scientists have studied non-target species of caterpillars following Btk sprays for gypsy moth suppression. They found that populations of native caterpillar species tend to recover by re-colonizing areas relatively quickly.

Btk has little or no effect on the large majority of insects, including bees, lacewings, ladybird beetles and other beneficial species. This is a significant benefit of using Btk rather than conventional chemical insecticide products, which are toxic to many kinds of insects.

How safe is Btk for humans?

After 50 years of testing and widespread use, Btk has demonstrated minimal hazards to people and other mammals, birds, fish, beneficial insects and other non-target organisms. To ensure the continued safety of Btk for the public, the EPA administers an extensive system of regulatory safeguards. These include requirements for mammalian and environmental toxicology testing of the Btk active ingredients and formulated products. Quality control procedures are also in place to ensure the safety of each batch of Btk products.

As part of its regulatory function, a reassessment of Btk safety conducted by the EPA confirmed earlier findings, including: "...the lack of any reports of significant human health hazards of the various *Bacillus thuringiensis* strains..." (EPA document #EPA 738-R-98-004, available at: <https://archive.epa.gov/pesticides/reregistration/web/pdf/0247.pdf>).

Major studies were conducted in New Zealand when populated areas were repeatedly sprayed with Btk to eradicate another introduced pest, the white-spotted tussock moth¹. A key citation in a report on the New Zealand study stated: "...The data support the belief that they [*Bt kurstaki* products] can be safely used in environments in which human exposure is likely to occur." However, if you are concerned about your exposure to Btk, remaining indoors during the spray application is a good, common-sense strategy.

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Will Btk get rid of ALL my gypsy moth caterpillars?

It's important to realize that a Btk spray will not kill every gypsy moth caterpillar on your property. When Btk is applied properly, however, it can help protect your trees from serious defoliation and reduce the annoyance caused by high numbers of gypsy moth caterpillars during an outbreak.

Is it possible to buy Btk to spray caterpillars in my own garden?

Yes, several commercially available Btk products can be used to control caterpillars on shade trees, fruit trees or plants in the garden. Both liquid formulations and wettable powders are available from local garden stores. Be sure to follow the directions on the label.

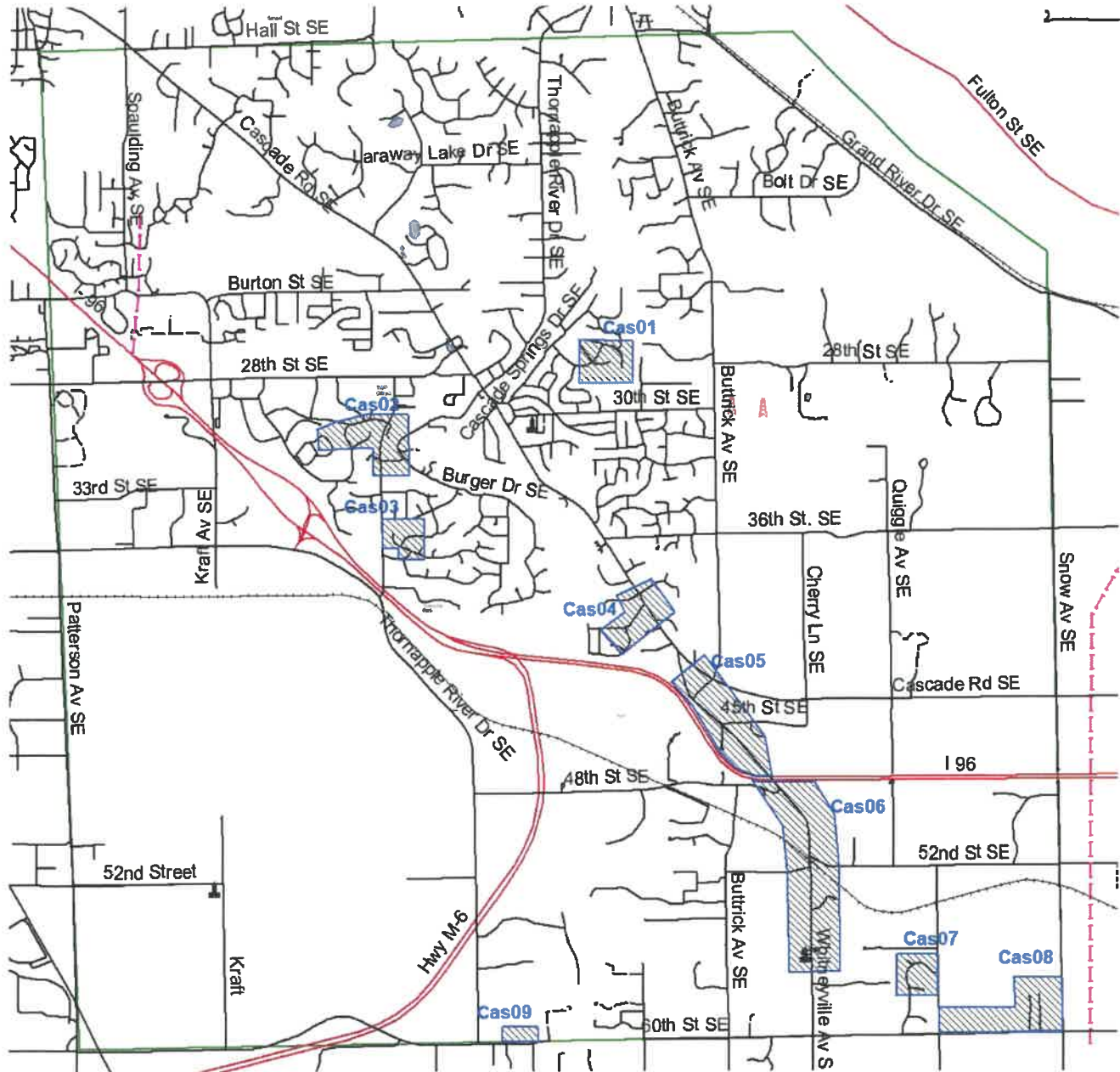
Where can I get more information on Bt?

More detailed information on the use of Btk to control gypsy moth caterpillars during an outbreak is available from:

- The U.S. Forest Service's "[Bacillus thuringiensis for managing gypsy moth: A review.](#)"
- The Entomological Society of America's "[Is Bt safe for humans to eat?](#)"

¹1998 Report to the Ministry of Forestry prepared by Jenner Consultants Ltd., Parnell Auckland, New Zealand, to address issues raised in 1995 by Diane Wharton, Society Targeting Overuse of Pesticides, North Vancouver.

Cascade Township Gypsy Moth Survey Report Map for 2020 Season



**Shaded areas are recommended for
aerial B.t. spray in Spring 2020**



— Township Border

2019 Aquatic Consulting Services



CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan 49546-7140

Date: September 23rd, 2020
To: Supervisor Beahan and Township Board Members
From: Ben Swayze, Township Manager
Subject: Hold First Public Hearing For Thornapple River Special Assessment District No.1

FACTS:

The Township has received a petition, circulated by members of the Cascade Thornapple River Association (CTRA), to make certain improvements to the Thornapple River including weed control and removal, debris removal and safety enhancements, and silt control and removal, and for the cost of the improvements to be special assessed against each parcel of land within the district. The request is for the cost to be equally assessed against all parcels that front the Thornapple River between the dam and 60th Street, including those parcels that from Township owned property on the river.

They have requested that the special assessment district be implemented for 15 years. The total parcel count for the special assessment district is 305, and the requested work to be done is approximately \$91,500 meaning each parcel will be assessed \$300 per year during the duration of the special assessment district.

The Special Assessment District is being established pursuant to Public Act 188 of the Public Acts of Michigan of 1954, as amended (the "Act" or "Act 188"). It should be noted while the petition has been received by the CTRA, this process is being moved forward on the initiative of the Township Board and, legally, the Township Board is not compelled to carry through the Special Assessment District if it determines it is not in the best interest of the public.

At the September 9, 2020 Township Board Meeting, the Board authorized the public hearing. Notices were sent, in accordance with statute regulations, to all occupants and owners that would be subject to the Special Assessment. The required newspaper notices were published in the Grand Rapids Press, however the GRP was unable to publish them in accordance with the timeline established in the statute. Therefore, staff is not asking for approval of Resolution #2 at this time, and will hold a second public hearing at the October 14th meeting before the resolution should be considered.

Attached for your review are:

- Notice of Public Hearing for Thornapple River Drive Special Assessment District #1
- Step Sheet to Create a Special Assessment District Pursuant to Public Act 199 of 1954 for Thornapple River - Aquatic Weed Treatment and Improvements
- Resolution of "Declaration of Intent to Make Public Improvements; Tentative Designation of the Special Assessment District; Notice of Public Hearing" For Thornapple River Special Assessment District No. 1

ANALYSIS & CONCLUSIONS:

The Township have enlisted the help of attorney Clifford Bloom of Bloom Slugget to assist in the establishment of the Thornapple River Special Assessment District. Mr. Bloom has a specialty in this work and him and his firm have helped to establish similar improvement districts across Michigan. The cost of Mr. Bloom’s services, as well as all other direct costs related to the establishment of the district (i.e. printing, mailing, publication) will be charged to the SAD if it is established. If the SAD is not established, the Township is responsible for those costs.

During the Public Hearing, Manager Swayze will review the scope of the project for the Board and those in attendance. The Cascade Thornapple River Association, who led the petition effort, will provide a 5-7 minute presentation as well.

If the SAD is established, it is recommended that the Township Board approve and ad-hoc committee, consisting of Township staff, officials, and residents included in the SAD, to provide direction on the expenditure of SAD dollars (...though final appropriation will be at the sole discretion of the Township Board.)

FINANCIAL CONSIDERATIONS:

It is anticipated that the establishment of the Special Assessment District will be between \$5,000 and \$10,000, primarily consisting of legal fees and printing/publication costs. If the SAD is established, these fees can be recovered through the SAD. If it is not established, the Township is responsible for these fees. The Township staff is not recommending that staff time costs or administrative overhead be recovered through the SAD.

If established, the SAD will produce \$91,500 per year. These funds are kept in a separate fund and can only be utilized for the purposed outlined in the SAD plan documents.

RECOMMENDED ACTION:

Hold First Public Hearing For Thornapple River Special Assessment District No.1

CASCADE CHARTER TOWNSHIP
Kent County, Michigan

NOTICE OF PUBLIC HEARING
THORNAPPLE RIVER SPECIAL ASSESSMENT DISTRICT NO. 1

NOTICE IS HEREBY GIVEN that the Township Board of Cascade Charter Township, Kent County, Michigan, on its own initiative, intends to proceed pursuant to Act 188 of the Public Acts of Michigan of 1954, as amended, to make certain public improvements consisting of the control and partial eradication of aquatic plants and weeds within the Covered Portion of the Thornapple River by means of chemical treatment, biological agents, and/or mechanical harvesting and also river management (including, but not limited to, river studies, dredging, removal of river blockages, sedimentation control and similar undertakings) (collectively, the “Public Improvements”). The Township Board has tentatively determined that some or all of the costs of the Public Improvements shall be specially assessed against each of the following described lots and parcels of land (all of which have frontage on the Covered Portion of the Thornapple River), which are benefitted by the Public Improvements and which together comprise the proposed Thornapple River Special Assessment District No. 1, and which parcels and lots are as follows:

<u>Street Address</u>	<u>Permanent Parcel</u>	<u>Street Address.</u>	<u>Permanent Parcel</u>
7211 48th Street SE	#411928200024	6555 Burger Dr SE	#411916326001
7510 48th Street SE	#411927301023	6575 Burger Dr SE	#411916326004
7581 48th Street SE	#411927100007	6577 Burger Dr SE	#411916326003
7661 48th Street SE	#411927260012	6579 Burger Dr SE	#411916326002
7201 60th Street SE	#411933400034	6625 Burger Dr SE	#411916326019
7250 60th Street SE	#411934351004	6677 Burger Dr SE	#411916326008
7233 60th Street SE	#411933400037	6681 Burger Dr SE	#411916326009
7259 60th Street SE	#411933400038	6701 Burger Dr SE	#411916326010
7275 60th Street SE	#411933400039	6717 Burger Dr SE	#411916326011
5600 Alaska Ave SE	#411934176002	6727 Burger Dr SE	#411916326012
5711 Alaska Ave SE	#411934328003	6755 Burger Dr SE	#411916326013
7474 Alaska Ridge SE	#411934326012	6775 Burger Dr SE	#411916326018
7486 Alaska Ridge SE	#411934326016	6811 Burger Dr SE	#411916403004
7490 Alaska Ridge SE	#411934326018	6825 Burger Dr SE	#411916403003
7500 Alaska Ridge SE	#411934326019	6881 Burger Dr SE	#411916404010
7509 Alaska Ridge SE	#411934328001	6891 Burger Dr SE	#411916404011
7540 Alaska Ridge SE	#411934327001	6921 Burger Dr SE	#411916404002
7160 Aqua Fria Ct SE	#411922151006	6931 Burger Dr SE	#411916404003
7165 Aqua Fria Ct SE	#411921228012	6937 Burger Dr SE	#411916404004
7176 Aqua Fria Ct SE	#411921228015	6943 Burger Dr SE	#411916404005
7177 Aqua Fria Ct SE	#411921228013	6953 Burger Dr SE	#411916404006
7178 Aqua Fria Ct SE	#411921228014	6965 Burger Dr SE	#411916404007
4304 Burger Dr SE	#411922376001	6985 Burger Dr SE	#411916404008
7503 48th St. SE	#411927100015	6995 Burger Dr SE	#411916404009

Street Address	Permanent Parcel	Street Address.	Permanent Parcel
5175 Buttrick Ave SE	#411934176001,	3434 Goodwood Dr. SE	#411916477006
5395 Buttrick Ave SE	#411934130007	3444 Goodwood Dr. SE	#411916477007
5407 Buttrick Ave SE	#411934130005	3452 Goodwood Dr. SE	#411916477008
7100 Cascade Rd. SE	#411916426023	3462 Goodwood Dr. SE	#411916477009
7110 Cascade Rd. SE	#411916426024	3468 Goodwood Dr. SE	#411916477010
7120 Cascade Rd. SE	#411916426025	2988 Thornapple River	#411916203018
7124 Cascade Rd. SE	#411916426005	3474 Goodwood Dr. SE	#411916477011
7130 Cascade Rd. SE	#411916426006	3480 Goodwood Dr. SE	#411916477012
7138 Cascade Rd. SE	#411916426007	3486 Goodwood Dr. SE	#411916477013
7146 Cascade Rd. SE	#411916426008	3494 Goodwood Dr. SE	#411916477014
7160 Cascade Rd. SE	#411916426026	3500 Goodwood Dr. SE	#411916477015
7168 Cascade Rd. SE	#411916426027	3506 Goodwood Dr. SE	#411916477016
7174 Cascade Rd. SE	#411916426021	3516 Goodwood Dr. SE	#411916477017
7180 Cascade Rd. SE	#411916426013	3528 Goodwood Dr. SE	#411916477018
7186 Cascade Rd. SE	#411916426014	3544 Goodwood Dr. SE	#411916477024
7222 Cascade Rd. SE	#411915351031	3556 Goodwood Dr. SE	#411916477025
7196 Cascade Rd. SE	#411915351030	3584 Goodwood Dr. SE	#411916477022
7238 Cascade Rd. SE	#411915351027	3824 Goodwood Dr. SE	#411922151011
7278 Cascade Rd. SE	#411915351005	3840 Goodwood Dr. SE	#411922151009
7288 Cascade Rd. SE	#411915351024	3888 Goodwood Dr. SE	#411921279013
7300 Cascade Rd. SE	#411915351025	7415 Kenrob Dr. SE	#411922176022
7314 Cascade Rd. SE	#411915351009	7421 Kenrob Dr. SE	#411922176021
7340 Cascade Rd. SE	#411915351032	7425 Kenrob Dr. SE	#411922176012
7350 Cascade Rd. SE	#411915351023	7443 Kenrob Dr. SE	#411922176025
7358 Cascade Rd. SE	#411915351036	7447 Kenrob Dr. SE	#411922176024
7370 Cascade Rd. SE	#411915351037	7461 Kenrob Dr. SE	#411922176031
7372 Cascade Rd. SE	#411915351028	7485 Kenrob Dr. SE	#411922176027
7378 Cascade Rd. SE	#411915351033	7459 Kenrob Dr. SE	#411922176030
7430 Cascade Rd. SE	#411915351038	7201 Kilmer Dr. SE	#411934101002
7474 Cascade Rd. SE	#411922126001	7219 Kilmer Dr. SE	#411934101003
7476 Cascade Rd. SE	#411922126002	7223 Kilmer Dr. SE	#411934101004
7478 Cascade Rd. SE	#411922126003	7227 Kilmer Dr. SE	#411934152002
7484 Cascade Rd. SE	#411922126010	7231 Kilmer Dr. SE	#411934152003
7486 Cascade Rd. SE	#411922126011	7243 Kilmer Dr. SE	#411934152004
5200 Dayenu Dr. SE	#411927301029,	7249 Kilmer Dr. SE	#411934152005
5234 Dayenu Dr. SE	#411934101008	7255 Kilmer Dr. SE	#411934152006
5260 Dayenu Dr. SE	#441934101009	7261 Kilmer Dr. SE	#411934152007
5292 Dayenu Dr. SE	#411933200059	7271 Kilmer Dr. SE	#411934152008
3402 Goodwood Dr. SE	#411916477001	7281 Kilmer Dr. SE	#411934152009
3406 Goodwood Dr. SE	#411916477002	7291 Kilmer Dr. SE	#411934152010
3412 Goodwood Dr. SE	#411916477003	7303 Kilmer Dr. SE	#411934152011
3420 Goodwood Dr. SE	#411916477004	7310 Kilmer Dr. SE	#411934152012
3426 Goodwood Dr. SE	#411916477005	7319 Kilmer Dr. SE	#411934152014

Street Address	Permanent Parcel	Street Address	Permanent Parcel
7335 Kilmer Dr. SE	#411934302002	4135 Maracaibo Shores	#411922301009
7349 Kilmer Dr. SE	#411934302014	7156 Placita Ct SE	#411921228021
7357 Kilmer Dr. SE	#411934302005	7157 Placita Ct SE	#411921228029
7365 Kilmer Dr. SE	#411934302006	7166 Placita Ct SE	#411921228022
7373 Kilmer Dr. SE	#441934302007	7169 Placita Ct SE	#411921228028
7379 Kilmer Dr. SE	#411934302008	7635 Sandy Hollow Dr	#411927451009
7385 Kilmer Dr. SE	#411934302009	7657 Sandy Hollow Dr	#411927451006
7389 Kilmer Dr. SE	#411934302010	7675 Sandy Hollow Dr	#411927451003
7393 Kilmer Dr. SE	#411934302015	7733 Sandy Hollow Dr	#411927451004
7394 Kilmer Dr. SE	#411934301009	4812 Sequoia Dr SE	#411927402001
7395 Kilmer Dr. SE	#411934302016	4816 Sequoia Dr. SE	#411927402002
7397 Kilmer Dr. SE	#411934302013	4826 Sequoia Dr SE	#411927402003
7300 Kirkwood Trail SE	#411934201044	4844 Sequoia Dr SE	#411927402004
7400 Kirkwood Trail SE	#411934201043	4854 Sequoia Dr SE	#411927402005
4505 Little Harbor Dr. SE	#411927230015	4864 Sequoia Dr SE	#411927402006
4535 Little Harbor Dr. SE	#411927230012	4872 Sequoia Dr SE	#411927402007
4545 Little Harbor Dr. SE	#411927230011	4884 Sequoia Dr SE	#411927402008
4555 Little Harbor Dr. SE	#411927230006	4896 Sequoia Dr SE	#411927402009
4567 Little Harbor Dr. SE	#411927260001	4910 Sequoia Dr SE	#411927402010
4581 Little Harbor Dr. SE	#411927260002	4920 Sequoia Dr SE	#411927402011
4593 Little Harbor Dr. SE	#411927260003	4930 Sequoia Dr SE	#411927402012
4607 Little Harbor Dr. SE	#411927260004	4942 Sequoia Dr SE	#411927402018
4623 Little Harbor Dr. SE	#411927260005	4952 Sequoia Dr SE	#411927402019
4637 Little Harbor Dr. SE	#411927260006	4960 Sequoia Dr SE	#411927402014
4651 Little Harbor Dr. SE	#411927260007	4968 Sequoia Dr SE	#411927402015
4667 Little Harbor Dr. SE	#411927260008	4976 Sequoia Dr SE	#411927402016
4689 Little Harbor Dr. SE	#411927260009	4984 Sequoia Dr SE	#411927402017
4707 Little Harbor Dr. SE	#411927260010	4994 Sequoia Dr SE	#411927376015
4717 Little Harbor Dr. SE	#411927260014	5006 Sequoia Dr SE	#411927376007
4755 Little Harbor Dr. SE	#411927260015	5016 Sequoia Dr SE	#411927376006
6600 Mahesh Dr SE	#411916176015	5020 Sequoia Dr SE	#411927376005
6590 Mahesh Dr SE	#411916176016	5030 Sequoia Dr SE	#411927376016
6860 Maplecrest SE	#411921400010	5050 Sequoia Dr SE	#411927376004
6862 Maplecrest SE	#411921400009	5060 Sequoia Dr SE	#411927376003
6864 Maplecrest SE	#411921400008	5070 Sequoia Dr SE	#411927376002
7016 Maplecrest SE	#411921282001,	5080 Sequoia Dr SE	#411927376001
4015 Maracaibo Shores	#411922301001	5090 Sequoia Dr SE	#411927376014
4031 Maracaibo Shores	#411922301003	5110 Sequoia Dr SE	#411927376013
4045 Maracaibo Shores	#411922301004	5110 Sequoia Dr SE	#411927376010
4061 Maracaibo Shores	#411922301005	5140 Sequoia Dr SE	#411927376011
4089 Maracaibo Shores	#411922301006	4135 Maracaibo Shores	#411922301009
4105 Maracaibo Shores	#411922301007	7156 Placita Ct SE	#411921228021
4121 Maracaibo Shores	#411922301008	7157 Placita Ct SE	#411921228029

<u>Street Address</u>	<u>Permanent Parcel</u>	<u>Street Address.</u>	<u>Permanent Parcel</u>
5909 Tannon Ct SE	#411934378013	3150 Thornapple River	#411916176012
5915 Tannon Ct SE	#411934378014	3180 Thornapple River	#411916180002
5945 Tannon Ct SE	#411934378011	3049 Thorncrest SE	#411916251006
5923 Tannon Ct. SE	#411934378012	3059 Thorncrest SE	#411916251007
5969 Tannon Ct. SE	#411934378010	3081 Thorncrest SE	#411916251008
5985 Tannon Ct. SE	#411934378009	3083 Thorncrest SE	#411916251009
7700 Thornapple Bayou	#411927427037	3095 Thorncrest SE	#411916251010
7704 Thornapple Bayou	#411927427039	3115 Thorncrest SE	#411916251016
7706 Thornapple Bayou	#411927427040	3143 Thorncrest SE	#411916251013
7710 Thornapple Bayou	#411927427004	3157 Thorncrest SE	#411916251019
7712 Thornapple Bayou	#411927427005	3169 Thorncrest SE	#411916251021
7714 Thornapple Bayou	#411927427006	3177 Thorncrest SE	#411916251018
7718 Thornapple Bayou	#411927427007	3187 Thorncrest SE	#411916401013
7720 Thornapple Bayou	#411927427008	3193 Thorncrest SE	#411916401012
7730 Thornapple Bayou	#411927427009	3206 Thorncrest SE	#411916401002
7732 Thornapple Bayou	#411927427044	3216 Thorncrest SE	#411916401003
7734 Thornapple Bayou	#411927427030	3230 Thorncrest SE	#411916401004
7744 Thornapple Bayou	#411927427031	3238 Thorncrest SE	#411916401014
7750 Thornapple Bayou	#411927427011	3250 Thorncrest SE	#411926401015
7778 Thornapple Bayou	#411927427042	3262 Thorncrest SE	#411916401007
7780 Thornapple Bayou	#411927427024	3272 Thorncrest SE	#411916401008
7782 Thornapple Bayou	#411927427023	3284 Thorncrest SE	#411916401009
7784 Thornapple Bayou	#411927427034	3298 Thorncrest SE	#411916426001
7786 Thornapple Bayou	#411927427021	3294 Thorncrest SE	#411916401010
7788 Thornapple Bayou	#411927427020	3300 Thorncrest SE	#411916426022
7790 Thornapple Bayou	#411927427019	5777 Alaska Ave. SE	#411934376006
7792 Thornapple Bayou	#411927427041	7400 Trillium Wood SE	#411934376008
7796 Thornapple Bayou	#411927427014	7320 Whispering Ridge	#411922126030
7798 Thornapple Bayou	#411927427015	7334 Whispering Ridge	#411922126031
7800 Thornapple Bayou	#411627427016	7350 Whispering Ridge	#411922126032
7802 Thornapple Bayou	#411927427017,	7370 Whispering Ridge	#411922126033
2984 Thornapple River	#411916176010	7382 Whispering Ridge	#411922126034
2986 Thornapple River	#411916176009	7400 Whispering Ridge	#411922126035
2990 Thornapple River	#411916203030	7428 Whispering Ridge	#411922126036
2992 Thornapple River	#411916203029	7444 Whispering Ridge	#411922126037
3000 Thornapple River	#411916176020	4445 Whitneyville Ave	#411927230001

Map-area within the special assessment district (shaded):



FIRST PUBLIC HEARING

TAKE NOTICE that the Township Board of Cascade Charter Township will hold a public hearing on September 23, 2020, at 7:00 p.m. at the Kent District Library-Cascade Township Branch at 2870 Jacksmith Avenue SE, Grand Rapids, Michigan 49546, or via remote conferencing software ZOOM in accordance with State of Michigan Governor's Executive Order No. 2020-129 or any subsequent Executive Order, to hear and consider any objections to the proposed Public Improvements, the proposed Special Assessment District, the proposed special assessment, and all other matters relating to the Public Improvements.

TAKE FURTHER NOTICE that a description of the Public Improvements and estimates of cost for the Public Improvements are on file with the Township Clerk for public examination.

PROPERTY SHALL NOT BE ADDED TO THE PROPOSED SPECIAL ASSESSMENT DISTRICT AND THE ORIGINAL ESTIMATE OF COSTS SHALL NOT BE INCREASED BY 10% OR MORE PER YEAR WITHOUT FURTHER NOTICE AND PUBLIC HEARING.

Periodic redeterminations of the costs of the Public Improvements may be necessary, without a change in the Special Assessment District, and in that event, such redeterminations may be made by the Township Board without further notice to record owners or parties in interest in the lands in the Special Assessment District, in accordance with the provisions of said Act 188 (unless the amounts assessed increase by 10% or more from the prior year, in which case notice and public hearing will occur).

TAKE FURTHER NOTICE that a property owner or person in interest must either appear and object at the public hearing or submit a letter of appearance and objection to the Township prior to the public hearing in order to preserve the person's right to appeal the special assessment

to the Michigan Tax Tribunal. A record owner of land may appeal a special assessment by filing a written appeal with the Michigan Tax Tribunal within 30 days after written confirmation of the special assessment roll.

Should the Township Board determine at the above-mentioned hearing to approve the proposed special assessment district, then thereafter, a second hearing will be held to confirm the tax roll for the special assessment district.

This notice was authorized by the Township Board of Cascade Charter Township.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Susan Slater
Township Clerk
Cascade Charter Township
2865 Thornhills Avenue SE
Grand Rapids, Michigan 49546
Phone: (616) 949-1508

**CASCADE CHARTER TOWNSHIP
KENT COUNTY, MICHIGAN**

RESOLUTION NO. _____

THORNAPPLE RIVER SPECIAL ASSESSMENT DISTRICT NO. 1

**DECLARATION OF INTENT TO MAKE PUBLIC
IMPROVEMENTS; TENTATIVE DESIGNATION
OF THE SPECIAL ASSESSMENT DISTRICT;
NOTICE OF PUBLIC HEARING**

Minutes of a _____ meeting of the Township Board of Cascade Charter Township, Kent County, Michigan, held via remote conferencing software ZOOM in accordance with State of Michigan Governor’s Executive Order No. 2020-129 on September 9, 2020, at 7:00 p.m., local time.

PRESENT: Members _____

ABSENT: Members _____

The following resolution was offered for adoption by Member _____ and supported by Member _____:

WHEREAS, Public Act 188 of the Public Acts of Michigan of 1954, as amended (the “Act” or “Act 188”) provides for the making of certain improvements by townships and provides the means to finance the improvements; and

WHEREAS, in the case of public improvements involving the improvement to or maintenance of a lake or other body of water, Section 3 of the Act provides that the Township Board may proceed, on its own initiative, to carry out the public improvements unless sufficient written objections are filed with the Township Board at or before the first public hearing on the special assessment district; and

WHEREAS, the Township intends to proceed to undertake certain public improvements (i.e. the control and eradication of certain aquatic weeds and river management) as described in Exhibit A attached hereto (the “Public Improvements”) with regard to the portion of the Thornapple River located between the Cascade Dam upstream to 60th Street downstream (“Covered Portion”) within Cascade Charter Township; and

WHEREAS, the nature of the Public Improvements is such that a periodic redetermination of costs may be necessary without a change in the special assessment district boundaries and, if at any time during the term of the special assessment district an actual incremental cost equals or exceeds the estimate or the prior year's costs by 10% or more, notice shall be given and a hearing afforded to the property owners and interested parties of record in the special assessment district; and

WHEREAS, there exists a need for the Public Improvements in the Township; and

WHEREAS, Act 188 provides the means to finance the Public Improvements in this matter.

NOW, THEREFORE, BE IT HEREBY RESOLVED:

1. That the Township Board intends to proceed on its own initiative, and to make the Public Improvements as described in Exhibit A.

2. That the Township Board has authorized the preparation of plans showing the Public Improvements, their location, and an estimate of the costs thereof.

3. That the plans and the estimate of costs have been filed with the Township Clerk.

4. That the Township Board anticipates assessing the costs of the Public Improvements on a yearly basis beginning in 2020 based upon the estimates on file with the Township and the resolutions adopted by the Township Board pursuant to this process. Each year thereafter on or before September 30, the Township Board shall, to the extent possible, ascertain the project costs for the coming year. The Township Board shall establish the amount to be assessed based on unexpended funds, cash on hand, and the estimated project costs for that year and assesses that amount. The costs for administration and legal expenses for setting up this special assessment district shall be assessed in 2020.

5. That the Township Board hereby tentatively designates a special assessment district known as the Thornapple River Special Assessment District No. 1, consisting of certain parcels of property described as set forth in the Notice of Public Hearing attached hereto as Exhibit B, which descriptions are incorporated herein by reference for the special assessment district, and against which parcels all or a portion of the cost of said Public Improvements shall be assessed.

6. That the Township Board shall hold a public hearing on September 23, 2020, at 7:00 p.m. at the Kent District Library-Cascade Township Branch at 2870 Jacksmith Avenue SE, Grand Rapids, Michigan 49546, or via remote conferencing software ZOOM in accordance with State of Michigan Governor's Executive Order No. 2020-129 or any subsequent Executive Order, to hear and consider objections to the proposed Public Improvements, the special assessment district tentatively designated herein, and all other matters relating to said proposed Public Improvements.

7. That the Township Clerk shall cause to be published a Notice of the Public Hearing in the Grand Rapids Press, a newspaper of general circulation within the Township, at least two

(2) times prior to the public hearing, with the first publication at least ten (10) days prior to the public hearing. Proofs of publication of such notice shall be filed with the Township Board.

8. That the Township Clerk, at least ten (10) days prior to the date of the public hearing, shall also send a Notice of the Public Hearing by first class mail addressed to each record owner, or party in interest, of each parcel of property to be assessed, at the address shown for each such owner or party in interest upon the last Township tax assessment records and roll for ad valorem tax purposes, as supplemented by any subsequent changes in the names or addresses of the owners or parties listed therein, except in the case of railroad companies, who shall be mailed a Notice of the Public Hearing by registered mail within five (5) days after the first publication of the notice described in Paragraph 7 above. If a record owner's name does not appear on the Township tax assessment records, then the notice required by this paragraph shall be given to the record owner at the address shown by the records of the Kent County Register of Deeds.

9. That the form of the Notice of the Public Hearing to be mailed and published, as required herein, shall be substantially as set forth in Exhibit B hereto.

10. That all actions heretofore taken by Township officials, employees, and agents with respect to the Public Improvements and proceedings under Act 188 are hereby ratified and confirmed.

11. That all resolutions or parts of resolutions in conflict herewith shall be and the same are hereby rescinded.

YEAS: Members _____

NAYS: Members _____

ABSENT: Members _____

RESOLUTION DECLARED ADOPTED.

Susan Slater
Township Clerk

STATE OF MICHIGAN)
) ss.
COUNTY OF _____)

I, Susan Slater, Cascade Charter Township Clerk, hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Cascade Charter Township Board at a _____ meeting held on _____, 2020, and that public notice of said meeting was given pursuant to Act No. 267, Public Acts of Michigan, 1976, as amended, including, in the case of a special or rescheduled meeting, notice by publication or posting at least eighteen (18) hours prior to the time set for the meeting.

IN WITNESS WHEREOF, I have affixed my official signature this ____ day of _____, 2020.

Susan Slater
Township Clerk

EXHIBIT A

Description of the Public Improvements; Cost Estimates

Control and partial eradication of aquatic plants and weeds within the Covered Portion of the Thornapple River by means of chemical and/or biological means and/or weed harvesting and also river management (including, but not limited to, river studies, removal of blockages, dredging, sedimentation control and similar undertakings).

Projected/Estimated Total Cost for the Public Improvements for the Entire Duration of the Special Assessment (15 years)-	\$ <u>1,372,500</u> total
Projected/Estimated Total Cost per Year of the Public Improvements -	\$ <u>300</u>
Projected/Estimated Cost per Assessed Parcel per Year -	\$ <u>91,500</u>

[All costs and assessments are subject to changes and increases as provided by Act 188]

Map-area within the special assessment district (shaded):

[Insert map of the Covered Portion of the Thornapple River involved]



FIRST PUBLIC HEARING

TAKE NOTICE that the Township Board of Cascade Charter Township will hold a public hearing on _____, 2020 at 7:00 p.m. in the Kent District Library-Cascade Township Branch at 2870 Jacksmith Avenue SE Grand Rapids, Michigan 49546, to hear and consider any objections to the proposed Public Improvements, the proposed Special Assessment District, the proposed special assessment, and all other matters relating to the Public Improvements.

TAKE FURTHER NOTICE that a description of the Public Improvements and estimates of cost for the Public Improvements are on file with the Township Clerk for public examination.

PROPERTY SHALL NOT BE ADDED TO THE PROPOSED SPECIAL ASSESSMENT DISTRICT AND THE ORIGINAL ESTIMATE OF COSTS SHALL NOT BE INCREASED BY 10% OR MORE PER YEAR WITHOUT FURTHER NOTICE AND PUBLIC HEARING.

Periodic redeterminations of the costs of the Public Improvements may be necessary, without a change in the Special Assessment District, and in that event, such redeterminations may be made by the Township Board without further notice to record owners or parties in interest in the lands in the Special Assessment District, in accordance with the provisions of said Act 188 (unless the amounts assessed increase by 10% or more from the prior year, in which case notice and public hearing will occur).

TAKE FURTHER NOTICE that a property owner or person in interest must either appear and object at the public hearing or submit a letter of appearance and objection to the Township prior to the public hearing in order to preserve the person's right to appeal the special assessment to the Michigan Tax Tribunal. A record owner of land may appeal a special assessment by filing a written appeal with the Michigan Tax Tribunal within 30 days after written confirmation of the special assessment roll.

Should the Township Board determine at the above-mentioned hearing to approve the proposed special assessment district, then thereafter, a second hearing will be held to confirm the tax roll for the special assessment district.

This notice was authorized by the Township Board of Cascade Charter Township.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Susan Slater
Township Clerk
Cascade Charter Township
2865 Thornhills Avenue SE
Grand Rapids, Michigan 49546
Phone: (616) 949-1508

Dated: _____, 2020

Susan Slater, Township Clerk

CASCADE CHARTER TOWNSHIP

STEP SHEET TO CREATE A SPECIAL ASSESSMENT DISTRICT PURSUANT TO
PUBLIC ACT 188 OF 1954
(THORNAPPLE RIVER - AQUATIC WEED TREATMENT AND MAINTENANCE)

This step sheet sets forth in outline form the procedure for establishing a Special Assessment District pursuant to Michigan Public Act 188 of 1954, for an authorized project or activity (“Public Improvements”).

<u>Dates</u>	<u>Description</u>
Prior to July 3, 2020 (Completed)	Step 1. <u>Filing of Plans</u> – The Township receives plans and estimates for the Public Improvements and the plans and estimates are filed with the Township Clerk.
Regular Township Board Mtg September 9, 2020	Step 2. <u>Resolution No. 1</u> – The Township Board adopts a resolution tentatively declaring its intent to make the Public Improvements, tentatively designating the special assessment district and setting a public hearing to hear any objections to the improvement, the costs, the plans, and the district.
	Step 3. <u>Notice of the First Public Hearing</u> – Notice of the public hearing must be given and must, among other things, include the date, time and place of the hearing, a brief description of the special assessment district, and a statement that the plans and estimates are on file with the Township Clerk for public examination. The notice must be given as follows:
<u>First Publication:</u> September 20, 2020 <u>Second Publication:</u> September 22, 2020	(a) The notice must be given by publication <u>twice</u> in a newspaper of general circulation designated by the Township, the first of which shall not be less than 10 days before the date set for the hearing.
<u>Mailing:</u> September 12, 2020	(b) The notice must also be given by first-class mail to all property owners of record according to Township tax rolls in the special assessment district not less than 10 days before the hearing.
Regular Township Board Mtg September 23, 2020 October 14, 2020	Step 4. <u>First Public Hearing</u> – At the hearing, the Township Board must hear any objections to the proposed improvements, the Township’s determination to proceed, and the proposed special assessment district.

<p>Regular Township Board Mtg October 14, 2020</p>	<p>Step 5. <u>Resolution No. 2</u> – After the public hearing is held (and at the same meeting if the Township Board desires), if the Township Board decides to proceed, it adopts a resolution determining to make the improvements, approving the plans and costs estimates, and the district. The resolution also directs the Township Supervisor to make the special assessment roll.</p>
<p>Regular Township Board Mtg October 14, 2020</p>	<p>Step 6. <u>Resolution No. 3</u> – When the special assessment roll is reported, the roll is filed with the Township Clerk and the Township Board adopts a resolution setting a public hearing on the roll.</p>
	<p>Step 7. <u>Notice of the Second Public Hearing</u> – Notice of the second public hearing must be given and must, among other things, include the date, time and place of the hearing, and the property owners’ right of appeal to the Michigan Tax Tribunal. The notice must be given as follows:</p>
<p><u>First Publication:</u> October 18, 2020</p> <p><u>Second Publication:</u> October 20, 2020</p>	<p>(a) The notice must be given by publication <u>twice</u> in a newspaper of general circulation designated by the Township, the first of which shall not be less than 10 days before the date set for the hearing.</p>
<p><u>Mailing:</u> October 18, 2020</p>	<p>(b) The notice must also be mailed to all property owners of record according to Township tax rolls in the special assessment district not less than 10 days before the hearing.</p>
<p>Regular Township Board Mtg October 28, 2020</p>	<p>Step 8. <u>Second Public Hearing</u> – At the hearing, the Township Board reviews the roll, and hears any objections to it.</p>
<p>Regular Township Board Mtg October 28, 2020</p>	<p>Step 9. <u>Resolution No. 4</u> – After the public hearing is held (and at the same meeting if the Township Board desires), the Township Board adopts a resolution confirming the roll as reported by the Township Assessor or as corrected by the Township Board, or refers it back to the Township Assessor.</p>
<p>October 29, 2020</p>	<p>Step 10. <u>Roll Endorsed</u> – After the Township Board confirms the roll, the Township Clerk endorses it.</p>

<p>November 29, 2020</p>	<p>Step 11. <u>Assessment Appeals</u> – Property owners who have protested the roll at the public hearing may appeal the roll to the Michigan Tax Tribunal within 30 days of the confirmation of the roll. After that time period has passed, the Tax Tribunal generally does not have jurisdiction to hear appeals.</p>
<p><u>Mailing:</u> November 30, 2020</p>	<p>Step 12. <u>Final Notice/Letter to Property Owners</u> – Send out the final notice/letter to property owners within 7 days.</p>



CASCADE CHARTER TOWNSHIP

2865 Thornhills SE Grand Rapids, Michigan 49546-7140

Date: September 23th, 2020
To: Supervisor Beahan and Township Board Members
From: Ben Swayze, Township Manager
Subject: Consider Resolution of “Declaration of Intent to Make Public Improvements;
Hold First Public Hearing For Laraway Lake Special Assessment District No. 1

FACTS:

The Township has received a petition, circulated by property owners on Laraway Lake, to make certain improvements to Laraway Lake, including weed control and removal and for the cost of the improvements to be special assessed against parcels of land within the district. The request is for the cost to be equally assessed against all parcels that front Layaway Lake, with the exception of vacant parcels owned by duplicate homeowners.

They have requested that the special assessment district be implemented for 10 years. The total parcel count for the special assessment district is 23, and the requested work to be done is approximately \$11,575 meaning each parcel will be assessed \$504 per year during the duration of the special assessment district.

The Special Assessment District is being establish pursuant to Public Act 188 of the Public Acts of Michigan of 1954, as amended (the “Act” or “Act 188”). It should be noted while the petition has been received by the Laraway Lake property owners, this process is being moved forward on the initiative of the Township Board and, legally, the Township Board is not compelled to carry through the Special Assessment District if it determines it is not in the best interest of the public.

At the September 9, 2020 Township Board Meeting, the Board authorized the public hearing. Notices were sent, in accordance with statute regulations, to all occupants and owners that would be subject to the Special Assessment. The required newspaper notices were published in the Grand Rapids Press, however the GRP was unable to publish them in accordance with the timeline established in the statute. Therefore, staff is not asking for approval of Resolution #2 at this time, and will hold a second public hearing at the October 14th meeting before the resolution should be considered.

Attached for your review are:

- Notice of Public Hearing for LAraway Lake Special Assessment District #1
- Step Sheet to Create a Special Assessment District Pursuant to Public Act 199 of 1954 for Laraway Lake - Aquatic Weed Treatment and Improvements
- Resolution of “Declaration of Intent to Make Public Improvements; Tentative Designation of the Special Assessment District; Notice of Public Hearing” For Laraway Lake Special Assessment District No. 1
- Estimated Costs for Laraway Lake Improvements

ANALYSIS & CONCLUSIONS:

The Township have enlisted the help of attorney Clifford Bloom of Bloom Slugget to assist in the establishment of the Laraway Lake Special Assessment District. Mr. Bloom has a specialty in this work and him and his firm have helped to establish similar improvement districts across Michigan. The cost of Mr. Bloom's services, as well as all other direct costs related to the establishment of the district (i.e. printing, mailing, publication) will be charged to the SAD if it is established. If the SAD is not established, the Township is responsible for those costs.

If the SAD is established, it is recommended that the Township Board approve and ad-hoc committee, consisting of Township staff, officials, and residents included in the SAD, to provide direction on the expenditure of SAD dollars (...though final appropriation will be at the sole discretion of the Township Board.)

FINANCIAL CONSIDERATIONS:

It is anticipated that the establishment of the Special Assessment District will be between \$2,500 and \$5,000, primarily consisting of legal fees and printing/publication costs. If the SAD is established, these fees can be recovered through the SAD. If it is not established, the Township is responsible for these fees. The Township staff is not recommending that staff time costs or administrative overhead be recovered through the SAD.

If established, the SAD will produce \$11,575 per year. These funds are kept in a separate fund and can only be utilized for the purposed outlined in the SAD plan documents.

RECOMMENDED ACTION:

Hold First Public Hearing For Laraway Lake Special Assessment District No. 1



CASCADE CHARTER TOWNSHIP
Kent County, Michigan

NOTICE OF PUBLIC HEARING
LARAWAY LAKE SPECIAL ASSESSMENT DISTRICT NO. 1

NOTICE IS HEREBY GIVEN that the Township Board of Cascade Charter Township, Kent County, Michigan, on its own initiative, intends to proceed pursuant to Act 188 of the Public Acts of Michigan of 1954, as amended, to make certain public improvements consisting of the control and partial eradication of aquatic plants and weeds within Laraway Lake by means of chemical treatment, biological agents, and/or mechanical harvesting (the “Public Improvements”). The Township Board has tentatively determined that some or all of the costs of the Public Improvements shall be specially assessed against each of the following described lots and parcels of land (all of which have lake frontage on Laraway Lake), which are benefitted by the Public Improvements and which together comprise the proposed Laraway Lake Special Assessment District No. 1, and which parcels and lots are as follows:

<u>Permanent Parcel No.</u>	<u>Street Address</u>	<u>Permanent Parcel No.</u>	<u>Street Address</u>
41-19-05-480-014	1830 Beard Dr. SE	41-19-04-351-005	1943 Laraway Lake Dr. SE
41-19-05-480-013	1860 Beard Dr SE	41-19-04-351-004	1931 Laraway Lake Dr. SE
41-19-05-480-012	1874 Beard Dr. SE	41-19-04-351-003	1915 Laraway Lake Dr. SE
41-19-05-480-010	1930 Boxthorn Ct. SE	41-19-04-351-015	1891 Laraway Lake Dr. SE
41-19-05-480-009	1944 Boxthorn Ct. SE	41-19-04-351-001	1865 Laraway Lake Dr. SE
41-19-04-351-016	2025 Laraway Lake Dr. SE	41-19-04-301-033	1861 Laraway Lake Dr. SE
41-19-04-351-011	2019 Laraway Lake Dr. SE	41-19-04-301-032	1859 Laraway Lake Dr. SE
41-19-04-351-013	1995 Laraway Lake Dr. SE	41-19-04-301-014	1855 Laraway Lake Dr. SE
41-19-04-351-009	1981 Laraway Lake Dr. SE	41-19-04-301-031	6500 Donnegal Ln. SE
41-19-04-351-008	1975 Laraway Lake Dr. SE	41-19-04-301-030	6484 Donnegal Ln. SE
41-19-04-351-007	1969 Laraway Lake Dr. SE	41-19-04-301-024	6400 Donnegal Ln. SE
41-19-04-351-006	1955 Laraway Lake Dr. SE		

Map-area within the special assessment district (shaded):



FIRST PUBLIC HEARING

TAKE NOTICE that the Township Board of Cascade Charter Township will hold a public hearing on September 23, 2020, at 7:00 p.m. at the Kent District Library-Cascade Township Branch at 2870 Jacksmith Avenue SE, Grand Rapids, Michigan 49546, or via remote conferencing software ZOOM in accordance with State of Michigan Governor's Executive Order No. 2020-129 or any subsequent Executive Order, to hear and consider any objections to the proposed Public Improvements, the proposed Special Assessment District, the proposed special assessment, and all other matters relating to the Public Improvements.

TAKE FURTHER NOTICE that a description of the Public Improvements and estimates of cost for the Public Improvements are on file with the Township Clerk for public examination.

PROPERTY SHALL NOT BE ADDED TO THE PROPOSED SPECIAL ASSESSMENT DISTRICT AND THE ORIGINAL ESTIMATE OF COSTS SHALL NOT BE INCREASED BY 10% OR MORE PER YEAR WITHOUT FURTHER NOTICE AND PUBLIC HEARING.

Periodic redeterminations of the costs of the Public Improvements may be necessary, without a change in the Special Assessment District, and in that event, such redeterminations may be made by the Township Board without further notice to record owners or parties in interest in the lands in the Special Assessment District, in accordance with the provisions of said Act 188 (unless the amounts assessed increase by 10% or more from the prior year, in which case notice and public hearing will occur).

TAKE FURTHER NOTICE that a property owner or person in interest must either appear and object at the public hearing or submit a letter of appearance and objection to the Township prior to the public hearing in order to preserve the person's right to appeal the special assessment to the Michigan Tax Tribunal. A record owner of land may appeal a special assessment by filing

a written appeal with the Michigan Tax Tribunal within 30 days after written confirmation of the special assessment roll.

Should the Township Board determine at the above-mentioned hearing to approve the proposed special assessment district, then thereafter, a second hearing will be held to confirm the tax roll for the special assessment district.

This notice was authorized by the Township Board of Cascade Charter Township.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Susan Slater
Township Clerk
Cascade Charter Township
2865 Thornhills Avenue SE
Grand Rapids, Michigan 49546
Phone: (616) 949-1508

**CASCADE CHARTER TOWNSHIP
KENT COUNTY, MICHIGAN**

RESOLUTION NO. _____

LARAWAY LAKE SPECIAL ASSESSMENT DISTRICT NO. 1

**DECLARATION OF INTENT TO MAKE PUBLIC
IMPROVEMENTS; TENTATIVE DESIGNATION
OF THE SPECIAL ASSESSMENT DISTRICT;
NOTICE OF PUBLIC HEARING**

Minutes of a _____ meeting of the Township Board of Cascade Charter Township, Kent County, Michigan, held via remote conferencing software ZOOM in accordance with State of Michigan Governor’s Executive Order No. 2020-129 on September 9, 2020, at 7:00p.m., local time.

PRESENT: Members _____

ABSENT: Members _____

The following resolution was offered for adoption by Member _____ and supported by Member _____:

WHEREAS, Public Act 188 of the Public Acts of Michigan of 1954, as amended (the “Act” or “Act 188”) provides for the making of certain improvements by townships and provides the means to finance the improvements; and

WHEREAS, in the case of public improvements involving the improvement to or maintenance of a lake or other body of water, Section 3 of the Act provides that the Township Board may proceed, on its own initiative, to carry out the public improvements unless sufficient written objections are filed with the Township Board at or before the first public hearing on the special assessment district; and

WHEREAS, the Township intends to proceed to undertake certain public improvements (i.e. the control and eradication of certain aquatic weeds) as described in Exhibit A attached hereto (the “Public Improvements”) with regard to Laraway Lake located within Cascade Charter Township; and

WHEREAS, the nature of the Public Improvements is such that a periodic redetermination of costs may be necessary without a change in the special assessment district boundaries and, if at any time during the term of the special assessment district an actual incremental costs equals or exceeds the estimate or the prior year's costs by 10% or more, notice shall be given and a hearing afforded to the property owners and interested parties of record in the special assessment district; and

WHEREAS, there exists a need for the Public Improvements in the Township; and

WHEREAS, Act 188 provides the means to finance the Public Improvements in this matter.

NOW, THEREFORE, BE IT HEREBY RESOLVED:

1. That the Township Board intends to proceed on its own initiative, and to make the Public Improvements as described in Exhibit A.

2. That the Township Board has authorized the preparation of plans showing the Public Improvements, their location, and an estimate of the costs thereof.

3. That the plans and the estimate of costs have been filed with the Township Clerk.

4. That the Township Board anticipates assessing the costs of the Public Improvements on a yearly basis beginning in 2020 based upon the estimates on file with the Township and the resolutions adopted by the Township Board pursuant to this process. Each year thereafter on or before September 30, the Township Board shall, to the extent possible, ascertain the project costs for the coming year. The Township Board shall establish the amount to be assessed based on unexpended funds, cash on hand, and the estimated project costs for that year and assesses that amount. The costs for administration and legal expenses for setting up this special assessment district shall be assessed in 2020.

5. That the Township Board hereby tentatively designates a special assessment district known as the Laraway Lake Special Assessment District No. 1, consisting of certain parcels of property described as set forth in the Notice of Public Hearing attached hereto as Exhibit B, which descriptions are incorporated herein by reference for the special assessment district, and against which parcels all or a portion of the cost of said Public Improvements shall be assessed.

6. That the Township Board shall hold a public hearing on September 23, 2020, at 7:00 p.m. at the Kent District Library-Cascade Township Branch at 2870 Jacksmith Avenue SE, Grand Rapids, Michigan 49546, or via remote conferencing software ZOOM in accordance with State of Michigan Governor's Executive Order No. 2020-129 or any subsequent Executive Order, to hear and consider objections to the proposed Public Improvements, the special assessment district tentatively designated herein, and all other matters relating to said proposed Public Improvements.

7. That the Township Clerk shall cause to be published a Notice of the Public Hearing in the Grand Rapids Press, a newspaper of general circulation within the Township, at least two

STATE OF MICHIGAN)
) ss.
COUNTY OF _____)

I, Susan Slater, Cascade Charter Township Clerk, hereby certify that the foregoing is a true and complete copy of a resolution adopted by the Cascade Charter Township Board at a _____ meeting held on _____, 2020, and that public notice of said meeting was given pursuant to Act No. 267, Public Acts of Michigan, 1976, as amended, including, in the case of a special or rescheduled meeting, notice by publication or posting at least eighteen (18) hours prior to the time set for the meeting.

IN WITNESS WHEREOF, I have affixed my official signature this ____ day of _____, 2020.

Susan Slater
Township Clerk

EXHIBIT A

Description of the Public Improvements; Cost Estimates

Control and partial eradication of aquatic plants and weeds within Laraway Lake by means of chemical and/or biological means and/or weed harvesting.

Projected/Estimated Total Cost for the Public Improvements
for the Entire Duration of the Special Assessment - \$ 115,750 total

Projected/Estimated Total Cost per Year of the Public
Improvements - \$ 11,575

Projected/Estimated Cost per Assessed Parcel per Year - \$ 504

[All costs and assessments are subject to changes and increases as provided by Act 188]

Map-area within the special assessment district (shaded):

[Insert map of Laraway Lake]



FIRST PUBLIC HEARING

TAKE NOTICE that the Township Board of Cascade Charter Township will hold a public hearing on _____, 2020 at 7:00 p.m. in the Kent District Library-Cascade Township Branch at 2870 Jacksmith Avenue SE Grand Rapids, Michigan 49546, to hear and consider any objections to the proposed Public Improvements, the proposed Special Assessment District, the proposed special assessment, and all other matters relating to the Public Improvements.

TAKE FURTHER NOTICE that a description of the Public Improvements and estimates of cost for the Public Improvements are on file with the Township Clerk for public examination.

PROPERTY SHALL NOT BE ADDED TO THE PROPOSED SPECIAL ASSESSMENT DISTRICT AND THE ORIGINAL ESTIMATE OF COSTS SHALL NOT BE INCREASED BY 10% OR MORE PER YEAR WITHOUT FURTHER NOTICE AND PUBLIC HEARING.

Periodic redeterminations of the costs of the Public Improvements may be necessary, without a change in the Special Assessment District, and in that event, such redeterminations may be made by the Township Board without further notice to record owners or parties in interest in the lands in the Special Assessment District, in accordance with the provisions of said Act 188 (unless the amounts assessed increase by 10% or more from the prior year, in which case notice and public hearing will occur).

TAKE FURTHER NOTICE that a property owner or person in interest must either appear and object at the public hearing or submit a letter of appearance and objection to the Township prior to the public hearing in order to preserve the person's right to appeal the special assessment to the Michigan Tax Tribunal. A record owner of land may appeal a special assessment by filing a written appeal with the Michigan Tax Tribunal within 30 days after written confirmation of the special assessment roll.

Should the Township Board determine at the above-mentioned hearing to approve the proposed special assessment district, then thereafter, a second hearing will be held to confirm the tax roll for the special assessment district.

This notice was authorized by the Township Board of Cascade Charter Township.

FOR FURTHER INFORMATION, PLEASE CONTACT:

Susan Slater
Township Clerk
Cascade Charter Township
2865 Thornhills Avenue SE
Grand Rapids, Michigan 49546
Phone: (616) 949-1508

Dated: _____, 2020

Susan Slater, Township Clerk

CASCADE CHARTER TOWNSHIP

STEP SHEET TO CREATE A SPECIAL ASSESSMENT DISTRICT PURSUANT TO
PUBLIC ACT 188 OF 1954
(LARAWAY LAKE - AQUATIC WEED TREATMENT)

This step sheet sets forth in outline form the procedure for establishing a Special Assessment District pursuant to Michigan Public Act 188 of 1954, for an authorized project or activity (“Public Improvements”).

<u>Dates</u>	<u>Description</u>
DONE	Step 1. <u>Filing of Plans</u> – The Township receives plans and estimates for the Public Improvements and the plans and estimates are filed with the Township Clerk.
Regular Board Meeting 9/9/2020	Step 2. <u>Resolution No. 1</u> – The Township Board adopts a resolution tentatively declaring its intent to make the Public Improvements, tentatively designating the special assessment district and setting a public hearing to hear any objections to the improvement, the costs, the plans, and the district.
	Step 3. <u>Notice of the First Public Hearing</u> – Notice of the public hearing must be given and must, among other things, include the date, time and place of the hearing, a brief description of the special assessment district, and a statement that the plans and estimates are on file with the Township Clerk for public examination. The notice must be given as follows:
<u>First Publication:</u> 9/13/2020 <u>Second Publication:</u> 9/15/2020	(a) The notice must be given by publication <u>twice</u> in a newspaper of general circulation designated by the Township, the first of which shall not be less than 10 days before the date set for the hearing.
<u>Mailing:</u> 9/13/2020	(b) The notice must also be given by first-class mail to all property owners of record according to Township tax rolls in the special assessment district not less than 10 days before the hearing.
Regular Board Meeting 9/23/2020 10/14/2020	Step 4. <u>First Public Hearing</u> – At the hearing, the Township Board must hear any objections to the proposed improvements, the Township’s determination to proceed, and the proposed special assessment district.

<p align="center">Regular Board Meeting 10/14/2020</p>	<p>Step 5. <u>Resolution No. 2</u> – After the public hearing is held (and at the same meeting if the Township Board desires), if the Township Board decides to proceed, it adopts a resolution determining to make the improvements, approving the plans and costs estimates, and the district. The resolution also directs the Township Supervisor to make the special assessment roll.</p>
<p align="center">Regular Board Meeting 10/14/2020</p>	<p>Step 6. <u>Resolution No. 3</u> – When the special assessment roll is reported, the roll is filed with the Township Clerk and the Township Board adopts a resolution setting a public hearing on the roll.</p>
	<p>Step 7. <u>Notice of the Second Public Hearing</u> – Notice of the second public hearing must be given and must, among other things, include the date, time and place of the hearing, and the property owners’ right of appeal to the Michigan Tax Tribunal. The notice must be given as follows:</p>
<p><u>First Publication:</u> 10/18/2020 <u>Second Publication:</u> 10/20/2020</p>	<p>(a) The notice must be given by publication <u>twice</u> in a newspaper of general circulation designated by the Township, the first of which shall not be less than 10 days before the date set for the hearing.</p>
<p><u>Mailing:</u> 10/15/2020</p>	<p>(b) The notice must also be mailed to all property owners of record according to Township tax rolls in the special assessment district not less than 10 days before the hearing.</p>
<p align="center">Regular Board Meeting 10/28/2020</p>	<p>Step 8. <u>Second Public Hearing</u> – At the hearing, the Township Board reviews the roll, and hears any objections to it.</p>
<p align="center">Regular Board Meeting 10/28/2020</p>	<p>Step 9. <u>Resolution No. 4</u> – After the public hearing is held (and at the same meeting if the Township Board desires), the Township Board adopts a resolution confirming the roll as reported by the Township Assessor or as corrected by the Township Board, or refers it back to the Township Assessor.</p>
<p align="center">10/29/2020</p>	<p>Step 10. <u>Roll Endorsed</u> – After the Township Board confirms the roll, the Township Clerk endorses it.</p>

<p style="text-align: center;">11/29/20</p>	<p>Step 11. <u>Assessment Appeals</u> – Property owners who have protested the roll at the public hearing may appeal the roll to the Michigan Tax Tribunal within 30 days of the confirmation of the roll. After that time period has passed, the Tax Tribunal generally does not have jurisdiction to hear appeals.</p>
<p><u>Mailing:</u> 11/30/20</p>	<p>Step 12. <u>Final Notice/Letter to Property Owners</u> – Send out the final notice/letter to property owners within 7 days.</p>