Plymouth City Commission
Regular Meeting Agenda
Monday, October 19, 2026 7:00 p.m.
Plymouth City Hall & Online Zoom Webinar

City of Plymouth
201 S. Main St.
Plymouth, Michigan 48170-1637

www.plymouthmi.gov
Phone 734-453-1234
Fax 734-455-1892

Join Zoom Webinar: https://us02web.zoom.us/j/88966278291
Passcode: 429118 Webinar ID: 889 6627 8291

1. **CALL TO ORDER**
   a. Pledge of Allegiance
   b. Roll Call
   c. Presentation – Infinity Tech Robotics

2. **APPROVAL OF MINUTES**
   a. October 5, 2026 City Commission Regular Meeting Minutes

3. **APPROVAL OF THE AGENDA**

4. **ENACTMENT OF THE CONSENT AGENDA**
   Unless moved to be placed as a separate item on the agenda, items on the Consent Agenda will be approved by one motion as Agenda Item #4.

   a. Approval of September 2026 Bills
   b. Special Event – Santa's City of Plymouth Parade – 11/27/26
   c. Special Event – Plymouth Community Christmas Farmers Market – 11/28/26
   d. Special Event – Plymouth Goodfellows Paper Sale – 12/5/26

5. **CITIZEN COMMENTS**
   This section of the agenda allows up to 3 minutes for public comments to present information for items not on the current agenda. Upon arising to address the Commission, speakers should first identify themselves by clearly stating their name and address. Comments must be limited to the subject of the item.

6. **COMMISSION COMMENTS**

7. **OLD BUSINESS**

8. **NEW BUSINESS**
   a. Snow & Ice Control Policy 2026-27
   b. FloodWise Presentation

9. **REPORTS AND CORRESPONDENCE**
   a. Liaison Reports
   b. Appointments

10. **ADJOURNMENT**

Meetings of the City of Plymouth are open to all without regard to race, sex, color, age, national origin, religion, height, weight, marital status, disability, or any other trait protected under applicable law. Any individual planning to attend the meeting who has need of special assistance under the Americans with Disabilities Act (ADA) should submit a request to the ADA Coordinator at 734-453-1234 ext. 234 at least two working days in advance of the meeting so an attempt can be made to make reasonable accommodation. The request may also be submitted via mail at 201 S. Main St. Plymouth, MI 48170, or email to clerk@plymouthmi.gov.

City of Plymouth Strategic Plan 2022-2026

GOAL AREA ONE - SUSTAINABLE INFRASTRUCTURE
OBJECTIVES 1. Identify and establish sustainable financial model(s) for major capital projects, Old Village business district, 35th District Court, recreation department, and public safety 2. Incorporate eco-friendly, sustainable practices into city assets, services, and policies; including more environmentally friendly surfaces, reduced impervious surfaces, expanded recycling and composting services, prioritizing native and pollinator-friendly plants, encouraging rain gardens, and growing a mature tree canopy 3. Partner with or become members of additional environmentally aware organizations 4. Increase technology infrastructure into city assets, services, and policies 5. Continue sustainable infrastructure improvement for utilities, facilities, and fleet 6. Address changing vehicular habits, including paid parking system /parking deck replacement plan, electric vehicle (EV) charging stations, and one-way street options

GOAL AREA TWO – STAFF DEVELOPMENT, TRAINING, AND SUCCESSION
OBJECTIVES 1. Create a 5-year staffing projection 2. Review current recruitment strategies and identify additional resources 3. Identify/establish flex scheduling positions and procedures 4. Develop a plan for an internship program 5. Review potential department collaborations 6. Hire an additional recreation professional 7. Review current diversity, equity, and inclusion training opportunities 8. Seek out training opportunities for serving diverse communities

GOAL AREA THREE - COMMUNITY CONNECTIVITY
OBJECTIVES 1. Engage in partnerships with public, private and non-profit entities 2. Increase residential/business education programs for active citizen engagement 3. Robust diversity, equity, and inclusion programs 4. Actively participate with multi-governmental lobbies (Michigan Municipal League, Conference of Western Wayne, etc.)

GOAL AREA FOUR - ATTRACTIVE, LIVABLE COMMUNITY
OBJECTIVES 1. Create vibrant commercial districts by seeking appropriate mixed-use development, marketing transitional properties, and implementing Redevelopment Ready Communities (RRC) practices 2. Improve existing and pursue additional recreational and public green space opportunities and facilities for all ages 3. Develop multi-modal transportation plan which prioritizes pedestrian and biker safety 4. Improve link between Hines Park, Old Village, Downtown Plymouth, Plymouth Township, and other regional destinations 5. Maintain safe, well-lit neighborhoods with diverse housing stock that maximizes resident livability and satisfaction 6. Modernize and update zoning ordinance to reflect community vision 7. Implement Kellogg Park master plan

"The government in this community is small and accessible to all concerned."

-Plymouth Mayor Joe Bida
November 1977

City of Plymouth
City Commission Regular Meeting Minutes
Monday, October 5, 2026, 7:00 p.m.
Plymouth City Hall 201 S. Main Street

City of Plymouth
201 S. Main St.
Plymouth, Michigan 48170-1637

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Phone 734-453-1234
Fax 734-455-1892

1. CALL TO ORDER

a. Elliott called the meeting to order at 7:00 PM. leading the Pledge of Allegiance.

b. Present: Mayor Pro Tem Joe Elliott, Commissioners Latricia Horstman, Jennifer Kehoe, Alanna Maguire, Brock Minton, Karen Sisolak

Also Present: City Manager Chris Porman, City Attorney Robert Marzano, and various members of City Administration

Excused: Mayor Linda Filipczak

c. Elliott recognized Indigenous Peoples' Day with a proclamation.

2. APPROVAL OF MINUTES

a. September 21, 2026 City Commission Regular Meeting Minutes

Motion to approve the September 21, 2026 City Commission Regular Meeting Minutes made by Horstman, supported by Sisolak;

There was a voice vote
MOTION PASSED UNANIMOUSLY

3. APPROVAL OF THE AGENDA

Motion to approve the October 5, 2026, agenda made by Kehoe, supported by Maguire;

There was a voice vote
MOTION PASSED UNANIMOUSLY

4. ENACTMENT OF THE CONSENT AGENDA

Motion to approve the Consent Agenda for October 5, 2026, made by Minton, supported by Kehoe;

d. Special Event: Ladies Holiday Shopping Night, 11/12
e. Special Event: Main St. Tree Lighting & Salvation Army Red Kettle Kick Off, 11/13
f. Special Event: Walk of Trees, 11/20/26 - 1/4/2027

There was a voice vote
MOTION PASSED UNANIMOUSLY

5. CITIZEN COMMENTS

Ed Walton, 1565 Palmer, spoke about Coffee with Commissioners and concerns with HydroCorp.

6. COMMISSION COMMENTS

Sisolak spoke about Cybersecurity and October is Cybersecurity month.
Kehoe spoke about voting and AV Ballots. Also spoke about the availability of October calendar/ events.
Horstman spoke about Cider & Donuts with Commissioners on Oct 10 from 10-12 at Garden Club Park.
Elliott commented that the City will look into Waltons HydroCorp concerns; thanked all who attended Coffee with Commissioners; spoke about the recent community build at Lion's Club Park; reminded

residents about AV ballots, Election Day on Nov 3, and Early Voting begins Oct 24; recognized October employee anniversaries: Steve Anderson-Recreation Dir., 33 yrs; Maureen Brodie-City Clerk, 29 yrs; Jennifer Coykendall- MSD Admin. Asst., 26 yrs; David Edwards-PD Sergeant, 15 yrs; Tracy Boucher-Finance Dept. Coordinator, 4 yrs.

8. OLD BUSINESS – none

9. NEW BUSINESS

a. Energy Assessment Letter of Authorization

Motion to approve the following resolution made by Maguire, supported by Kehoe;

RESOLUTION 2026-95

WHEREAS The City of Plymouth's Five-Year Strategic Plan identifies sustainable infrastructure improvements for City utilities, facilities and fleet as a key objective; and

WHEREAS The aging HVAC system at City Hall requires significant improvements, and the City is exploring opportunities to improve energy efficiency and reduce long-term operating and maintenance costs; and

WHEREAS Daikin Applied Americas, Inc., through its preliminary work with ThermalNetics, has identified potential opportunities for energy savings and energy performance contracting; and

WHEREAS Daikin Applied Americas, Inc. has offered to conduct a Preliminary Energy Assessment of City-owned and operated facilities at no cost or obligation to the City.

NOW, THEREFORE, BE IT RESOLVED THAT the Plymouth City Commission authorizes the City Manager to execute the Letter of Authorization with Daikin Applied Americas, Inc. for a no-cost, no-obligation Preliminary Energy Assessment of City-owned and operated facilities, with no commitment to purchase equipment or proceed with future improvements.

There was a voice vote
MOTION PASSED UNANIMOUSLY

Information for this item can be found in 10/5/2026 agenda packet:
https://www.plymouthmi.gov/agenda_center

b. Updated Agreements for Behavioral Health Co-Response Services

Motion to approve the following resolution made by Minton, supported by Sisolak;

RESOLUTION 2026-96

WHEREAS The City of Plymouth recognizes the increasing need for coordinated responses to behavioral health crises involving mental health and substance use within the community; and

WHEREAS The City of Plymouth, the Charter Township of Northville, and the City of Northville have previously participated in a grant-funded co-response program pairing behavioral health clinicians with law enforcement personnel; and

WHEREAS The participating municipalities desire to continue and sustain these co-response services through a jointly funded intergovernmental agreement with a qualified behavioral health provider; and

WHEREAS The proposed updated Memorandum of Understanding establishes a cost-sharing arrangement, administrative structure, and oversight framework to ensure effective delivery of services across jurisdictions; and

WHEREAS Participation in this agreement promotes public safety, enhances access to appropriate care, and supports more efficient use of law enforcement and emergency response resources;

NOW, THEREFORE, BE IT RESOLVED that the City Commission of the City of Plymouth hereby approves the updated Memorandum of Understanding for Shared Behavioral Health Co-Response Services.

BE IT FURTHER RESOLVED that the City Commission of the City of Plymouth hereby approved the Vendor Agreement with Hegira Health, Inc.

BE IT STILL FURTHER RESOLVED, that the City Manager is authorized to execute the agreement(s) on behalf of the City.

There was a voice vote

MOTION PASSED UNANIMOUSLY *Information for this item can be found in 10/5/2026 agenda packet: https://www.plymouthmi.gov/agenda_center*

c. Second Amendment to Salem Landfill Letter of Intent

Motion to approve the following resolution made by Kehoe, supported by Horstman;

RESOLUTION 2026-97

WHEREAS The City of Plymouth is the owner of a former landfill located at 7511 Chubb Road, Northville, Michigan 48168, which ceased operation in 1971; and

WHEREAS The City Commission approved a 180-day non-binding Letter of Intent with RSB Holdings, LLC on August 4, 2025, to evaluate a potential purchase of the property for use as a mulch production and storage facility; and

WHEREAS The City approved a First Amendment to the Letter of Intent extending the initial 180-day term of the Letter of Intent by an additional 180-day term to expire in August 2026; and

WHEREAS RSB Holdings, LLC has worked with the Michigan Department of Environment, Great Lakes, and Energy (EGLE) to conduct required due diligence related to the proposed use of the property; and

WHEREAS The Department of Environment, Great Lakes, and Energy (EGLE), is requiring an additional at least 12-months of due diligence and testing; and

WHEREAS The Second Amendment to the Letter of Intent provides for an additional 18-month extension non-binding and non-exclusive due diligence period to expire January 20, 2028; and

WHEREAS The City of Plymouth Brownfield Attorney has reviewed and approved the Second Amendment to the Letter of Intent.

NOW, THEREFORE, BE RESOLVED, that the City of Plymouth City Commission approves the Second Amendment to the Letter of Intent and authorizes the mayor to execute the amendment on behalf of the city.

Porman confirmed for Ed Walton, 1465 Palmer that test results would be available for any future potential buyers if applicable.

There was a voice vote

MOTION PASSED UNANIMOUSLY *Information for this item can be found in 10/5/2026 agenda packet: https://www.plymouthmi.gov/agenda_center*

d. ADP Payroll Processing Services Agreement

Motion to approve the following resolution made by Kehoe, supported by Maguire;

RESOLUTION 2026-98

WHEREAS The City of Plymouth has evaluated its existing payroll processing operations and identified opportunities to improve administrative efficiency, internal controls and employee access to payroll information; and

WHEREAS The City Administration has reviewed available payroll processing alternatives, including BS&A, NeoGov and ADP, considering service capabilities, compliance responsibilities and associated costs; and

WHEREAS ADP offers comprehensive payroll processing, payroll tax administration, reporting and employee self-service capabilities at an annual cost not to exceed $15,675 in calendar year 2027, with subsequent pricing as outlined in the City Administration's recommendation; and

WHEREAS The City Administration recommends transitioning payroll processing services to ADP effective January 1, 2027.

NOW, THEREFORE, BE IT RESOLVED, that the City Commission of the City of Plymouth hereby authorizes the Finance Director to execute the necessary agreements with ADP for payroll processing services, consistent with the pricing presented, and authorizes City staff to undertake the necessary implementation activities to facilitate a January 1, 2027, conversion.

There was a voice vote
MOTION PASSED UNANIMOUSLY

Information for this item can be found in 10/5/2026 agenda packet:
https://www.plymouthmi.gov/agenda_center

e. Request to Vacate Alley

Motion to discuss the following resolution made by Minton, supported by Sisolak;

RESOLUTION 2026-99

WHEREAS The City of Plymouth has received a Special Issue Petition requesting the vacation of a 16-foot-wide public alley located between 860 Palmer Street and 950 S. Main Street, consisting of approximately 1,728 square feet; and

WHEREAS The petitioner has requested the vacation to facilitate a potential land division of the property at 860 Palmer Street, and the adjoining commercial property owner has indicated support for the request; and

WHEREAS Section 5.12 of the City of Plymouth Charter authorizes the City Commission to consider the vacation of public alleys through a process that includes a resolution declaring intent, public notice and a public hearing; and

WHEREAS the City Commission desires to provide an opportunity for public comment and further consideration of the proposed alley vacation, including the potential impacts on existing public utilities and municipal infrastructure;

NOW, THEREFORE, BE IT RESOLVED, that the City Commission of the City of Plymouth hereby declares its intent to consider vacating the 16-foot-wide public alley located between 860 Palmer Street and 950 S. Main Street, as legally described in the petition, and directs the City Clerk to schedule a public hearing for [DATE] at [TIME], at Plymouth City Hall, 201 S. Main Street, Plymouth, Michigan, no less than 30 days following adoption of this resolution, and to provide all required published, posted and mailed notices in accordance with Section 5.12 of the City Charter.

BE IT FURTHER RESOLVED, that this resolution constitutes only a declaration of intent to consider the proposed vacation and does not constitute approval of the vacation, relinquishment of any public right-of-way or abandonment of any existing public utility rights. Any final determination shall be made by the City Commission following the public hearing.

After City Commission discussion, resident Martha Walton 1465 Palmer was not in favor of the alley vacating, and Shelby Fulkerson on behalf of applicant provided some additional information.

There was a voice vote
MOTION FAILED UNANIMOUSLY

Information for this item can be found in 10/5/2026 agenda packet:
https://www.plymouthmi.gov/agenda_center

10. REPORTS AND CORRESPONDENCE

a. Liaison Reports

Horstman: Old Village annual Halloween Block Party is October 25 from 12-4.

Minton: HDC meeting is Wednesday Oct 7 at 7 PM.

Kehoe: DDA meeting is Monday Oct 12 at 6:30 PM; CIA Meets Tuesday (tomorrow) at 4:30 PM.

Elliott: Planning Commission meeting is Wednesday Oct 14 at 7 PM.

Filipczak: DDA-Friday Music in the Air had over 34,000 visitors throughout the summer.

b. Appointments - None

Elliott noted that John Townsend will be stepping down from the Board of Review after the December BOR meets and the current alternate member will be appointed at a later date to fill the remainder of that position.

There was a voice vote
MOTION PASSED UNANIMOUSLY

10. ADJOURNMENT

Motion to adjourn made by Sisolak, supported by Minton;

There was a voice vote
MOTION PASSED UNANIMOUSLY

The meeting was adjourned at 7:51 P.M.

LINDA FILIPCZAK
MAYOR

MAUREEN A. BRODIE, CMC, MiPMC
CITY CLERK

Special Event Application

City of Plymouth
201 S. Main
Plymouth, Michigan 48170-1637

www.plymouthmi.gov
Phone 734-453-1234
Fax 734-455-1892

Complete this application in accordance with the City of Plymouth Special Events Policy, and return it to the City Manager's Office at least 21 calendar days prior to the starting date of the event.

FEES WILL BE CHARGED FOR ALL SPECIAL EVENTS. SEE ATTACHMENT B.

Sponsoring Organization's Legal Name Plymouth Downtown Development Authority & City of Plymouth Recreation Dept.

Ph# 7344551453 Fax# _____ Email dda@plymouthmi.gov Website downtownplymouth.org

Address 831 Penniman City Plymouth State MI Zip 48170

Sponsoring Organization's Agent's Name Plymouth DDA & City of Plymouth Rec. **Title** _____

Ph# 7344551453 Fax# _____ Email splymale@plymouthmi.u Cell# 7345365268

Address 831 Penniman City Plymouth State MI Zip 48170

Event Name Santa's City of Plymouth Parade

Event Purpose Santa visiting children of the City of Plymouth at City of Plymouth parks. Holiday show at Kellogg Park

Event Date(s) November 27, 2026

Event Times 6-8 PM

Event Location City of Plymouth parks, final stop at Kellogg Park

What Kind Of Activities? Entertainment with Santa

What is the Highest Number of People You Expect in Attendance at Any One Time? 500

Coordinating With Another Event? YES ☐ NO ☑ **If Yes, Event Name:** _____

Event Details: (Provide a detailed description of all activities that will take place. Attach additional sheets if necessary.)

Santa will lead a parade through City of Plymouth on a fire truck and visit City parks with City staff and vehicles. Final stop will be at Kellogg Park, at approx. 7:30 PM. Holiday entertainment will be happening in Kellogg Park from 6:30 PM. After Santa arrives in Kellogg Park, the Christmas Tree will be lit.

RECEIVED OCT 13 2026

1. **TYPE OF EVENT:** Based on Policy 12.2, this event is: *(Weddings Ceremonies – Please Review Section 12.2 f.)*

City Operated ☑ Co-sponsored Event ☐ Other Non-Profit ☐ Other For-Profit ☐ Political or Ballot Issue ☐

2. **ANNUAL EVENT: Is this event expected to occur next year?** YES ☐ NO ☐

If Yes, you can reserve a date for next year with this application (see Policy 12.15). To reserve dates for next year, please provide the following information:

Normal Event Schedule (e.g., third weekend in July): the Friday after Thanksgiving

Next year's specific dates: November 26, 2027

****See section 12.13 for license & insurance requirements for vendors****

3. **FOOD VENDORS/ CONCESSIONS?** YES ☐ NO ☑ **OTHER VENDORS?** YES ☐ NO ☐

4. **DO YOU PLAN TO HAVE ALCOHOL SERVED AT THIS EVENT?** YES ☐ NO ☑

5. **WILL ALCOHOL BE SERVED ON PRIVATE PROPERTY AS PART OF THIS EVENT?** YES ☐ NO ☐

6. **WILL YOU NEED ELECTRICITY AND/OR WATER?** YES ☐ NO ☐

CITY SERVICES REQUIRED? If needed, please attach a letter indicating all requests for City Services. *(see Attachment B)*

N/A

7. **AN EVENT MAP IS** ☐ **IS NOT** ☑ attached. If your event will use streets and/or sidewalks (for a parade, run, etc.), or will use multiple locations, please attach a complete map showing the assembly and dispersal locations and the route plan. Also show any streets or parking lots that you are requesting to be blocked off.

8. **EVENT SIGNS:** Will this event include the use of signs? YES ☐ NO ☑
If Yes, refer to Policy 12.8 for requirements, and describe the size and location of your proposed signs. **Please complete a sign illustration / description sheet and include with the application.**

Signs or banners approved by the City of Plymouth for Special Events shall be designed and made in an artistic and workman like manner. THE CITY MANAGER MUST APPROVE ALL SIGNS. SIGNS CANNOT BE ERECTED UNTIL APPROVAL IS GIVEN.

Signs and/or Banners may be used during the event only. Please refer to Special Event Policy for information related to the installation of banners on Downtown Street Light Poles in advance of event. NO SIGNS ARE ALLOWED IN THE PARK IN ADVANCE OF THE EVENT.

9. **UNLIMITED PARKING:** Are you requesting the removal of time limits on parking (see Policy 12.5)?
YES ☐ NO ☑
If Yes, list the lots or locations where/why this is requested:

10. **CERTIFICATION AND SIGNATURE:** I understand and agree on behalf of the sponsoring organization that

a. a Certificate of Insurance must be provided which names the City of Plymouth as an additional named insured party on the policy. (See Policy 12.10 for insurance requirements)

b. Event sponsors and participants will be required to sign Indemnification Agreement forms (refer to Policy 12.12).

c. All food vendors must be approved by the Wayne County Health Department, and each food and/or other vendor must provide the City with a Certificate of Insurance which names the City of Plymouth as an additional named insured party on the policy. (See Policy 12.13)

d. The approval of this Special Event may include additional requirements and/or limitations, based on the City's review of this application, in accordance with the City's Special Event Policy. The event will be operated in conformance with the Written Confirmation of Approval. (see Policy 12.11 and 12.16)

e. The sponsoring organization will provide a security deposit for the estimated fees as may be required by the City, and will promptly pay any billing for City services which may be rendered, pursuant to Policy 12.3 and 12.4.

As the duly authorized agent of the sponsoring organization, I hereby apply for approval of this Special Event, affirm the above understandings, and agree that my sponsoring organization will comply with City's Special Event Policy, the terms of the Written Confirmation of Approval, and all other City requirements, ordinance and other laws which apply to this Special Event.

10/6/2026
Date

eSigned via GovOS.com
Alexandra Tomalak
Key: 10f509ec-b51d-423f-a1aa-2979e0161d0
Signature of Sponsoring Organization's Agent

RETURN THIS APPLICATION at least twenty (21) days prior to the first day of the event to: City

Manager's Office
City Hall
201 S. Main Street
Plymouth MI 48170

Phone: (734) 453-1234 ext. 203

11. INDEMNIFICATION AGREEMENT

INDEMNIFICATION AGREEMENT

The Plymouth Downtown *(organization name)* agree(s) to defend, indemnify, and hold harmless the City of Plymouth, Michigan, from any claim, demand, suit, loss, cost of expense, or any damage which may be asserted, claimed or recovered against or from the Santa's City of Plymouth Parade *(event name)* by reason of any damage to property, personal injury or bodily injury, including death, sustained by any person whomsoever and which damage, injury or death arises out of or is incident to or in any way connected with the performance of this contract, and regardless of which claim, demand, damage, loss, cost of expense is caused in whole or in part by the negligence of the City of Plymouth or by third parties, or by the agents, servants, employees or factors of any of them.

Signature eSigned via GovOS.com Alexandra Tomalak Key: 10f909ac-b51d-423f-a1ee-2979e81f03d6 Date 10/6/2026

Witness eSigned via GovOS.com Hannah Knight Key: 5f9b4922-3faa-4b84-8b0c-b27fa3086f43 Date

EVENT REVIEW FORM

EVENT NAME: SANTA PARADE TOTAL ESTIMATED FEE: _____

(Note: All fees are only initial estimates and can increase upon assessment of services after the close of the event).

MUNICIPAL SERVICES: (Approved) Denied (list reason for denial) Initial AG

- Post No Parking at Park locations throughout route
- Barricades at Kellogg Park

$250 Bathroom Cleaning Fee Per Day of Event? (YES) NO

Labor Costs: $ 600.00 Equipment Costs: $ 150.00 Materials Costs $ 100.00

POLICE: (Approved) Denied (list reason for denial) Initial gcc

2 - OFFICERS @ 2 HRS

Labor Costs $ 304 - Equipment Costs $ Materials Costs $

FIRE: (Approved) Denied (list reason for denial) Initial

Labor Costs $ 0 Equipment Costs $ Materials Costs $

HVA: Approved Denied (list reason for denial) Initial

DDA: (Approved) Denied (list reason for denial) Initial SBP

Labor Costs $ 0 Equipment Costs $ Materials Costs $

RISK MANAGEMENT: (Approved) Denied (list reason for denial) Initial

Class I – Low Hazard
Class II – Moderate Hazard
Class III – High Hazard
Class IV – Severe Hazard

Event Sponsors must provide current Certificate of Insurance naming City of Plymouth as 'Additional Insured' including in the Description Box/Area. Food vendor/service requirements per Special Event Policy, must also be met for any food.

SITE FEE APPLIED TO ALL EVENTS IS $100 PER DAY. TOTAL EVENT SITE FEE $ _____

APPROVED _____ NOT APPROVED _____ DATE _____

Special Event Application

City of Plymouth
201 S. Main
Plymouth, Michigan 48170-1637

www.plymouthmi.gov
Phone 734-453-1234
Fax 734-455-1892

Complete this application in accordance with the City of Plymouth Special Events Policy, and return it to the City Manager's Office at least 21 calendar days prior to the starting date of the event.

FEES WILL BE CHARGED FOR ALL SPECIAL EVENTS. SEE ATTACHMENT B.

Sponsoring Organization's Legal Name Plymouth Community Chamber of Commerce

Ph# 734-453-1540 Fax# _____ Email jenny@plymouthmich.or Website www.plymouthmich.org

Address 850 W. Ann Arbor Trail City Plymouth State MI Zip 48170

Sponsoring Organization's Agent's Name Jenny Wisniewski **Title** Event Manager

Ph# 734-453-1540 Fax# _____ Email jenny@plymouthmich.or Cell# 734-777-2752

Address 850 W. Ann Arbor Trail City Plymouth State MI Zip 48170

Event Name Plymouth Community Christmas Farmers Market (formerly Holiday Greens Market)

Event Purpose Selling Holiday items at the Farmers Market

Event Date(s) Saturday, November 28, 2026

Event Times 9 a.m. - 3 p.m.

Event Location Downtown Plymouth in The Gathering and outside The Gathering on Penniman Ave

What Kind Of Activities? Holiday Farmers Market

What is the Highest Number of People You Expect in Attendance at Any One Time? 75

Coordinating With Another Event? YES ☐ NO ☑ **If Yes, Event Name:** _____

Event Details: (Provide a detailed description of all activities that will take place. Attach additional sheets if necessary.)

This event provides an opportunity for Farmers Market vendors to sell holiday greens and other holiday items for the Christmas season. The people who come to the market are mainly local Plymouth residents and people from the surrounding communities.

RECEIVED OCT 05 2026

1. **TYPE OF EVENT:** Based on Policy 12.2, this event is: *(Weddings Ceremonies – Please Review Section 12.2 f.)*

City Operated ☐ Co-sponsored Event ☐ Other Non-Profit ☐ Other For-Profit ☐ Political or Ballot Issue ☐

2. **ANNUAL EVENT: Is this event expected to occur next year?** YES ☑ NO ☐

If Yes, you can reserve a date for next year with this application (see Policy 12.15). To reserve dates for next year, please provide the following information:

Normal Event Schedule (e.g., third weekend in July): _____

Next year's specific dates: _____

****See section 12.13 for license & insurance requirements for vendors****

3. **FOOD VENDORS/ CONCESSIONS?** YES ☐ NO ☑ **OTHER VENDORS?** YES ☑ NO ☐

4. **DO YOU PLAN TO HAVE ALCOHOL SERVED AT THIS EVENT?** YES ☐ NO ☑

5. **WILL ALCOHOL BE SERVED ON PRIVATE PROPERTY AS PART OF THIS EVENT?** YES ☐ NO ☑

6. **WILL YOU NEED ELECTRICITY AND/OR WATER?** YES ☑ NO ☐

CITY SERVICES REQUIRED? If needed, please attach a letter indicating all requests for City Services. *(see Attachment B)*

Close off Penniman Avenue between Jimmy Johns and Union

7. **AN EVENT MAP IS** ☐ **IS NOT** ☑ attached. If your event will use streets and/or sidewalks (for a parade, run, etc.), or will use multiple locations, please attach a complete map showing the assembly and dispersal locations and the route plan. Also show any streets or parking lots that you are requesting to be blocked off.

8. **EVENT SIGNS:** Will this event include the use of signs? YES ☐ NO ☑
If Yes, refer to Policy 12.8 for requirements, and describe the size and location of your proposed signs. **Please complete a sign illustration / description sheet and include with the application.**

Signs or banners approved by the City of Plymouth for Special Events shall be designed and made in an artistic and workman like manner. THE CITY MANAGER MUST APPROVE ALL SIGNS. SIGNS CANNOT BE ERECTED UNTIL APPROVAL IS GIVEN.

Signs and/or Banners may be used during the event only. Please refer to Special Event Policy for information related to the installation of banners on Downtown Street Light Poles in advance of event. NO SIGNS ARE ALLOWED IN THE PARK IN ADVANCE OF THE EVENT.

9. **UNLIMITED PARKING:** Are you requesting the removal of time limits on parking (see Policy 12.5)?
YES ☑ NO ☐
If Yes, list the lots or locations where/why this is requested:
The length of the event is over the 2-3 hour time limit in public parking areas

10. **CERTIFICATION AND SIGNATURE:** I understand and agree on behalf of the sponsoring organization that

a. a Certificate of Insurance must be provided which names the City of Plymouth as an additional named insured party on the policy. (See Policy 12.10 for insurance requirements)

b. Event sponsors and participants will be required to sign Indemnification Agreement forms (refer to Policy 12.12).

c. All food vendors must be approved by the Wayne County Health Department, and each food and/or other vendor must provide the City with a Certificate of Insurance which names the City of Plymouth as an additional named insured party on the policy. (See Policy 12.13)

d. The approval of this Special Event may include additional requirements and/or limitations, based on the City's review of this application, in accordance with the City's Special Event Policy. The event will be operated in conformance with the Written Confirmation of Approval. (see Policy 12.11 and 12.16)

e. The sponsoring organization will provide a security deposit for the estimated fees as may be required by the City, and will promptly pay any billing for City services which may be rendered, pursuant to Policy 12.3 and 12.4.

As the duly authorized agent of the sponsoring organization, I hereby apply for approval of this Special Event, affirm the above understandings, and agree that my sponsoring organization will comply with City's Special Event Policy, the terms of the Written Confirmation of Approval, and all other City requirements, ordinance and other laws which apply to this Special Event.

9/30/26

Date

eSigned via GovOS.com

Jennifer Wisniewski

Key: 10f500ec-092d-423f-a1ea-2070e0181d5

Signature of Sponsoring Organization's Agent

RETURN THIS APPLICATION at least twenty (21) days prior to the first day of the event to: City

Manager's Office
City Hall
201 S. Main Street
Plymouth MI 48170

Phone: (734) 453-1234 ext. 203

11. INDEMNIFICATION AGREEMENT

INDEMNIFICATION AGREEMENT

The Plymouth Community Chamber *(organization name)* agree(s) to defend, indemnify, and hold harmless the City of Plymouth, Michigan, from any claim, demand, suit, loss, cost of expense, or any damage which may be asserted, claimed or recovered against or from the Plymouth Community Christmas *(event name)* by reason of any damage to property, personal injury or bodily injury, including death, sustained by any person whomsoever and which damage, injury or death arises out of or is incident to or in any way connected with the performance of this contract, and regardless of which claim, demand, damage, loss, cost of expense is caused in whole or in part by the negligence of the City of Plymouth or by third parties, or by the agents, servants, employees or factors of any of them.

Signature eSigned via GovQS.com Jennifer Wisniewski Key: 10f09ec-b51d-423f-a1ea-2979e01161d6 Date 9/30/2026

Witness _____ Date _____

EVENT REVIEW FORM

EVENT NAME: CHRISTMAS FARMERS MARKET TOTAL ESTIMATED FEE: _____

(Note: All fees are only initial estimates and can increase upon assessment of services after the close of the event).

MUNICIPAL SERVICES: (Approved) Denied (list reason for denial) Initial AP

- Post No Parking in Event Area
- Close Street at Gathering

$250 Bathroom Cleaning Fee Per Day of Event? (YES) NO

Labor Costs: $ 150.00 Equipment Costs: $ 50.00 Materials Costs $ 25.00

POLICE: (Approved) Denied (list reason for denial) Initial JEC

NO SERVICES NEEDED

Labor Costs $ 0 Equipment Costs $ Materials Costs $

FIRE: (Approved) Denied (list reason for denial) Initial

NO SERVICES Required

Labor Costs $ 0 Equipment Costs $ Materials Costs $

HVA: Approved Denied (list reason for denial) Initial

DDA: (Approved) Denied (list reason for denial) Initial SRP

Labor Costs $ 0 Equipment Costs $ Materials Costs $

RISK MANAGEMENT: (Approved) Denied (list reason for denial) Initial

Class I – Low Hazard

Class II – Moderate Hazard

Class III – High Hazard

Class IV – Severe Hazard

Event Sponsors must provide current Certificate of Insurance naming City of Plymouth as 'Additional Insured' including in the Description Box/Area. Food vendor/service requirements per Special Event Policy, must also be met for any food.

SITE FEE APPLIED TO ALL EVENTS IS $100 PER DAY. TOTAL EVENT SITE FEE $ _____

APPROVED _____ NOT APPROVED _____ DATE _____

Special Event Application

City of Plymouth
201 S. Main
Plymouth, Michigan 48170-1637

www.plymouthmi.gov
Phone 734-453-1234
Fax 734-455-1892

Complete this application in accordance with the City of Plymouth Special Events Policy, and return it to the City Manager's Office at least 21 calendar days prior to the starting date of the event.

FEES WILL BE CHARGED FOR ALL SPECIAL EVENTS. SEE ATTACHMENT B.

Sponsoring Organization's Legal Name Plymouth Goodfellows

Ph# 734.673.1874 Fax# _____ Email plymouthgoodfellows@y Website plymouthgoodfellows.org

Address PO Box 700192 City Plymouth State MI Zip 48170

Sponsoring Organization's Agent's Name Julie Johnston **Title** Vice-President

Ph# 7346731874 Fax# _____ Email juliejohnston313@gmail. Cell# 734.673.1874

Address 9980 TENNYSON DR City Plymouth State MI Zip 48170

Event Name Plymouth Goodfellows Paper Sale

Event Purpose Spread awareness about our group and collect donations for our Christmas Campaign

Event Date(s) Saturday December 5, 2026

Event Times 8:00 am-2:00 pm

Event Location City Sidewalks

What Kind Of Activities? Accepting donations and spreading awareness about our organization

What is the Highest Number of People You Expect in Attendance at Any One Time? Number of People already on streets

Coordinating With Another Event? YES ☐ NO ☑ **If Yes, Event Name:** _____

Event Details: (Provide a detailed description of all activities that will take place. Attach additional sheets if necessary.)

Plymouth Goodfellows volunteers will be distributing our organization's newsletter and accepting donations from the community throughout the city of Plymouth. All volunteers are instructed to be courteous and friendly to community, whether or not donations are given. This event is a decades long tradition in the city of Plymouth.

RECEIVED OCT 13 2026

1. **TYPE OF EVENT:** Based on Policy 12.2, this event is: *(Weddings Ceremonies – Please Review Section 12.2 f.)*

City Operated ☐ Co-sponsored Event ☐ Other Non-Profit ☑ Other For-Profit ☐ Political or Ballot Issue ☐

2. **ANNUAL EVENT: Is this event expected to occur next year?** YES ☑ NO ☐

If Yes, you can reserve a date for next year with this application (see Policy 12.15). To reserve dates for next year, please provide the following information:

Normal Event Schedule (e.g., third weekend in July): 1st Saturday in December

Next year's specific dates: December 4, 2027

****See section 12.13 for license & insurance requirements for vendors****

3. **FOOD VENDORS/ CONCESSIONS?** YES ☐ NO ☑ **OTHER VENDORS?** YES ☐ NO ☑

4. **DO YOU PLAN TO HAVE ALCOHOL SERVED AT THIS EVENT?** YES ☐ NO ☑

5. **WILL ALCOHOL BE SERVED ON PRIVATE PROPERTY AS PART OF THIS EVENT?** YES ☐ NO ☑

6. **WILL YOU NEED ELECTRICITY AND/OR WATER?** YES ☐ NO ☑

CITY SERVICES REQUIRED? If needed, please attach a letter indicating all requests for City Services. *(see Attachment B)*

No services needed

7. **AN EVENT MAP** IS ☐ IS NOT ☑ attached. If your event will use streets and/or sidewalks (for a parade, run, etc.), or will use multiple locations, please attach a complete map showing the assembly and dispersal locations and the route plan. Also show any streets or parking lots that you are requesting to be blocked off.

8. **EVENT SIGNS:** Will this event include the use of signs? YES ☐ NO ☑
If Yes, refer to Policy 12.8 for requirements, and describe the size and location of your proposed signs. **Please complete a sign illustration / description sheet and include with the application.**

Signs or banners approved by the City of Plymouth for Special Events shall be designed and made in an artistic and workman like manner. THE CITY MANAGER MUST APPROVE ALL SIGNS. SIGNS CANNOT BE ERECTED UNTIL APPROVAL IS GIVEN.

Signs and/or Banners may be used during the event only. Please refer to Special Event Policy for information related to the installation of banners on Downtown Street Light Poles in advance of event. NO SIGNS ARE ALLOWED IN THE PARK IN ADVANCE OF THE EVENT.

9. **UNLIMITED PARKING:** Are you requesting the removal of time limits on parking (see Policy 12.5)?
YES ☐ NO ☑
If Yes, list the lots or locations where/why this is requested:

10. **CERTIFICATION AND SIGNATURE:** I understand and agree on behalf of the sponsoring organization that

a. a Certificate of Insurance must be provided which names the City of Plymouth as an additional named insured party on the policy. (See Policy 12.10 for insurance requirements)

b. Event sponsors and participants will be required to sign Indemnification Agreement forms (refer to Policy 12.12).

c. All food vendors must be approved by the Wayne County Health Department, and each food and/or other vendor must provide the City with a Certificate of Insurance which names the City of Plymouth as an additional named insured party on the policy. (See Policy 12.13)

d. The approval of this Special Event may include additional requirements and/or limitations, based on the City's review of this application, in accordance with the City's Special Event Policy. The event will be operated in conformance with the Written Confirmation of Approval. (see Policy 12.11 and 12.16)

e. The sponsoring organization will provide a security deposit for the estimated fees as may be required by the City, and will promptly pay any billing for City services which may be rendered, pursuant to Policy 12.3 and 12.4.

As the duly authorized agent of the sponsoring organization, I hereby apply for approval of this Special Event, affirm the above understandings, and agree that my sponsoring organization will comply with City's Special Event Policy, the terms of the Written Confirmation of Approval, and all other City requirements, ordinance and other laws which apply to this Special Event.

October 6, 2026

Date

eSigned via GovOS.com

Julie Johnston

Key: 10f509ec-b61d-423f-a1aa-2370b01081d0

Signature of Sponsoring Organization's Agent

RETURN THIS APPLICATION at least twenty (21) days prior to the first day of the event to: City

Manager's Office
City Hall
201 S. Main Street
Plymouth MI 48170

Phone: (734) 453-1234 ext. 203

11. INDEMNIFICATION AGREEMENT

INDEMNIFICATION AGREEMENT

The Plymouth Goodfellows *(organization name)* agree(s) to defend, indemnify, and hold harmless the City of Plymouth, Michigan, from any claim, demand, suit, loss, cost of expense, or any damage which may be asserted, claimed or recovered against or from the Paper Sale *(event name)* by reason of any damage to property, personal injury or bodily injury, including death, sustained by any person whomsoever and which damage, injury or death arises out of or is incident to or in any way connected with the performance of this contract, and regardless of which claim, demand, damage, loss, cost of expense is caused in whole or in part by the negligence of the City of Plymouth or by third parties, or by the agents, servants, employees or factors of any of them.

Signature eSigned via GovOS.com Julie Johnston Key: 10f569ec-b51d-423f-a1aa-2979e01f91d6

Date 10/6/2026

Witness

Date 10/7/2026

EVENT REVIEW FORM

EVENT NAME: Plymouth Goodfellows Paper Sale TOTAL ESTIMATED FEE: _____

(Note: All fees are only initial estimates and can increase upon assessment of services after the close of the event).

MUNICIPAL SERVICES: (Approved) Denied (list reason for denial) Initial AC

No Services Needed

$250 Bathroom Cleaning Fee Per Day of Event? YES NO

Labor Costs: $ Equipment Costs: $ Materials Costs $

POLICE: (Approved) Denied (list reason for denial) Initial JLC

No Services Needed

Labor Costs $ 0 Equipment Costs $ Materials Costs $

FIRE: (Approved) Denied (list reason for denial) Initial DA

0 NO SERVICE NEEDED DA

Labor Costs $ 0 Equipment Costs $ Materials Costs $

HVA: Approved Denied (list reason for denial) Initial

DDA: (Approved) Denied (list reason for denial) Initial SBP

Labor Costs $ 0 Equipment Costs $ Materials Costs $

RISK MANAGEMENT: (Approved) Denied (list reason for denial) (Initial) MB

Class I – Low Hazard	Event Sponsors must provide current Certificate of Insurance naming City
~~Class II – Moderate Hazard~~	of Plymouth as 'Additional Insured' including in the Description Box/Area.
Class III – High Hazard	Food vendor/service requirements per Special Event Policy, must also be
Class IV – Severe Hazard	met for any food.

SITE FEE APPLIED TO ALL EVENTS IS $100 PER DAY. TOTAL EVENT SITE FEE $ _____

APPROVED _____ NOT APPROVED _____ DATE _____

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 10/13/2026

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER

Gaslamp Insurance Services
DBA Event Helper Insurance Services
PO Box 1549
Grass Valley CA 95945

CONTACT NAME: Event Helper Customer Service
PHONE (A/C, No, Ext): (855) 493-8368 FAX (A/C, No):
E-MAIL ADDRESS: info@theeventhelper.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : Evanston Insurance Company	35378
INSURER B :	
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED

Plymouth Goodfellows
c/o Harry Stansell
9055 S Main St
Plymouth MI 48170

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	☑ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☑ OCCUR ☑ Host Liquor Liability ☐ Retail Liquor Liability GEN'L AGGREGATE LIMIT APPLIES PER: ☑ POLICY ☐ PRO-JECT ☐ LOC ☐ OTHER:	Y	N	3DS5477-M4026264	12/05/2026 12:01 AM	12/06/2026 12:01 AM	EACH OCCURRENCE	$ 1,000,000
							DAMAGE TO RENTED PREMISES (other than fire)	$ 1,000,000
							MED EXP (Any one person)	$ 5,000
							PERSONAL & ADV INJURY	$ 1,000,000
							GENERAL AGGREGATE	$ 2,000,000
							PRODUCTS - COMP/OP AGG	$ 2,000,000
							Deductible	$ 1,000
	AUTOMOBILE LIABILITY ☐ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY						COMBINED SINGLE LIMIT (Ea accident)	$
							BODILY INJURY (Per person)	$
							BODILY INJURY (Per accident)	$
							PROPERTY DAMAGE (Per accident)	$
								$
	☐ UMBRELLA LIAB ☐ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE ☐ DED ☐ RETENTION $						EACH OCCURRENCE	$
							AGGREGATE	$
								$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y/N ☐ If yes, describe under DESCRIPTION OF OPERATIONS below	N/A					☐ PER STATUTE ☐ OTH-ER	
							E.L. EACH ACCIDENT	$
							E.L. DISEASE - EA EMPLOYEE	$
							E.L. DISEASE - POLICY LIMIT	$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Certificate holder listed below is named as additional insured per attached MEGL 2217 01 19. Coverage Date(s): 12/05/2026 Attendance: 40, Event Type: Charity Sale.

CERTIFICATE HOLDER

City of Plymouth
201 S Main St
Plymouth MI 48170

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Brent Nelson

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MARKEL®

EVANSTON INSURANCE COMPANY

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

ADDITIONAL INSURED – DESIGNATED PERSON OR ORGANIZATION

This endorsement modifies insurance provided under the following:
COMMERCIAL GENERAL LIABILITY COVERAGE FORM

SCHEDULE

Name Of Additional Insured Person(s) Or Organization(s):
City of Plymouth 201 S Main St Plymouth MI 48170

A. Section **II** – Who Is An Insured is amended to include as an additional insured the person(s) or organization(s) shown in the Schedule of this endorsement, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused, in whole or in part, by the acts or omissions of any insured listed under Paragraph **1.** or **2.** of Section **II** – Who Is An Insured:

1. In the performance of your ongoing operations; or
2. In connection with your premises owned by or rented to you.

However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

Includes copyrighted material of Insurance Services Office, Inc., with its permission.

B. With respect to the insurance afforded to these additional insureds, the following is added to Section **III** – Limits Of Insurance:

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations; whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

All other terms and conditions remain unchanged.

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Administrative Recommendation

City of Plymouth
201 S. Main
Plymouth, Michigan 48170-1637

www.plymouthmi.gov
Phone 734-453-1234
Fax 734-455-1892

To: Mayor & City Commission
From: Chris S. Porman, City Manager
CC: *S:\Manager\Porman Files\Memorandum - Snow and Ice Control Policy Adoption 2026 - 10-19-26.docx*
Date: October 16, 2026
RE: Snow & Ice Control Policy 2026 - 27

Background

Annually, the City Commission reviews and adopts the City's Snow and Ice Control Policy, which establishes the procedures and priorities for responding to winter weather conditions throughout the City of Plymouth. Originally adopted in December 1996, the policy has been reviewed and reaffirmed on an annual basis to provide clear operational standards for Municipal Services employees while addressing various legal responsibilities associated with snow and ice control.

Under the terms of the policy, the City will plow all residential streets when snowfall exceeds four (4) inches. The policy also provides Municipal Services Supervisory Staff with the discretion to begin plowing operations at lower snowfall amounts when conditions warrant. In addition, the policy establishes six priority routes for snow and ice control, beginning with major streets and emergency service facilities, followed by secondary streets, school routes, municipal parking lots, hills, and other targeted areas. These priorities may be adjusted based on weather conditions, public safety needs, and the operational requirements of various City facilities.

The policy also outlines the responsibilities of Municipal Services employees, the Police Department, and the Plymouth Community Dispatch Center in monitoring winter weather conditions and coordinating the City's response. This includes procedures for notifying after-hours crews, maintaining communication with emergency dispatch, and requesting additional manpower or equipment when necessary. The City has maintained a long-standing practice of responding aggressively to winter weather events, and this policy provides the framework necessary to continue those efforts.

Over the past several years, the Department of Municipal Services has expanded its use of salt brine as part of its snow and ice control operations. Historically, winter maintenance was largely a reactive process; however, the ability to manufacture and apply brine allows crews to take a more proactive approach. Applying brine in advance of a winter weather event helps prevent snow and ice from bonding to pavement surfaces, improves the effectiveness of road salt, and may reduce the amount of material necessary to maintain safe driving conditions. The Department will continue utilizing these methods as weather conditions allow.

The policy also addresses the Department's ability to provide emergency snow and ice control assistance to other governmental agencies when requested by Police, Fire, or emergency medical personnel. In addition, the City provides snow removal services to certain public agencies, including Huron Valley Ambulance and the Plymouth Housing Commission, through established service arrangements.

Another important component of the policy addresses the responsibilities of residential and commercial property owners regarding sidewalk snow and ice removal. Under the City's Code of Ordinances, property owners are required to clear sidewalks within 24 hours following the accumulation of snow or ice. When property owners fail to comply, the City may arrange for removal and bill the property owner for the associated costs. The policy establishes minimum charges of $200 for a first offense, $250 for a second offense, and $400 for a third or subsequent offense. Sidewalk snow removal continues to be one of the more frequent winter weather complaints received by Code Enforcement, Municipal Services, and the City Manager's Office.

Finally, the policy reinforces the prohibition against pushing or depositing snow from private property into public streets. These activities create additional hazards for motorists and interfere with the City's snow removal operations. The policy establishes a minimum charge of $250 when City crews are required to correct these violations.

Recommendation

The City Administration recommends that the City Commission adopt the attached Snow and Ice Control Policy for the 2026–27 winter season. While the policy is primarily operational in nature, it establishes important standards and responsibilities related to one of the City's essential public services. Annual adoption by the City Commission provides clear direction to City staff and reaffirms the City's commitment to protecting the public health, safety, and welfare during winter weather events.

A proposed resolution has been provided for the City Commission's consideration. Upon adoption, the updated policy will be made available on the City's website.

CITY OF PLYMOUTH
DEPARTMENT OF MUNICIPAL SERVICES
SNOW & ICE CONTROL POLICY
Revised: October 2026
ORIGINALLY ADOPTED BY THE CITY COMMISSION 12/2/96

The City of Plymouth has developed this policy in the interest of protecting the health, safety, and welfare of the residents, businesses, visitors, and employees of the City of Plymouth. This policy has been developed to address known hazards under normal and ideal conditions. It is not practical to attempt to cover every possibility that may arise. While this policy sets minimum standards, the policy does not preclude the use of common sense and additional measures to respond to snow and ice storms. Employees are encouraged to anticipate adverse conditions in any particular area of the City and make an appropriate response to those conditions. Employees are authorized to change the priority list as particular situations arise. *(An example of changing the priorities would be to keep the Cultural Center Parking Lot salted on a night when there are activities taking place in the Ice Arena. A second example would be to drop the school route priority on a weekend.)*

All or parts of this policy may be affected by at least; one or more of the following conditions, which will delay all or some of the services, provided:

* Equipment Breakdowns
* Vehicles disabled in deep snow or blocking roadways
* Weather so severe as to cause crews to be called in from streets; i.e. white out conditions.
* Equipment rendered inadequate by the depths of the snow or drifts.
* Crew Breaks and breaks required for safety, refueling, refilling of material spreaders and equipment repairs.
* Unforeseen emergencies

ADVERSE CONDITIONS TO BE MONITORED:

It shall be the duty of the Municipal Service Supervisors to monitor winter weather conditions and to advance plan for particular storm conditions. Winter storm monitoring shall include gathering data from the National Weather Service, Weather Channel, College or University Weather Information Centers, actual observations, internet links to Doppler radar, weather service radar, television or radio reports and other sources that may contain information vital to advance planning.

During regular hours, the Municipal Services Supervisors, in cooperation with the Police Department on duty staff, shall determine a need for snow and ice control measures. After

regular hours, the Police Department on duty staff shall have the responsibility of notifying the Plymouth Community Dispatch Center to make contact with the Municipal Services On-Call employee of a possible need for snow and ice control measures. The Police Department should be aware of the need to begin snow and ice control measures early in the storm period in order to obtain maximum effectiveness of road salt and other measures.

CREWS WORKING AFTER HOURS:

It shall continue to be the policy of the Department of Municipal Services to make radio contact with the Plymouth Community Dispatch Center when they sign on or off the air. The Municipal Services staff will call the Dispatch Center via radio using the call sign "City DMS." The Municipal Services staff will then inform the Dispatch Center that they are beginning snow & ice response. When signing off after the snow & ice response, the DMS staff will again contact the Dispatch Center to inform them that they are signing off from the detail. The Dispatcher must enter the time that the crews came on the air and when they leave into the daily log. This will allow for a legal documentation should that information be needed in the future.

Making radio contact with the Community Dispatch Center as the crews go on the air will also help add a measure of safety for the employees. The radio will provide employees with a direct contact to the Dispatch Center in the event of an equipment break down or in the event that the snow & ice control crew comes across some hazardous situation needing police, fire or medical response.

If Municipal Services crews are not able to contact the Dispatch Center via radio, they will attempt to make contact via the non-emergency phone number at 734-453-8600. If they are unsuccessful in their multiple attempts to make radio contact, they shall note this information on their daily job assignment log, including the approximate time that they attempted contact with dispatch. In addition to noting on daily job assignment log, Municipal Services Supervisory Staff will be notified the next business day of the unsuccessful radio contact with the Dispatch Center. The Municipal Services Department Supervisory Staff shall make the Police Chief and the City Manager aware of the lack of radio contact with dispatch.

After hours crews are also issued cell phones to allow them the ability to stay in contact with Municipal Services Supervisors, Police Department and/or the Community Dispatch Center as an additional safety measure.

SNOW & ICE CONTROL PRIORITY ROUTES:

If an employee is working in a single truck/equipment after hours and in the employee's opinion, additional equipment and manpower may be needed to address the snow and ice control measures, the employee shall make contact with the on-call staff via phone or by contacting the Plymouth Community Dispatch Center to ask them to call the Municipal Services On-Call staff to indicate a possible need for additional manpower and equipment. Community Dispatch will then be responsible for making the necessary notifications. The Municipal Services On-Call staff will then be responsible for calling in additional manpower as needed based on the review of the storm situation.

SALT/BRINE:

Over the last few years, DMS staff has integrated salt brine into the snow & ice control response. The ability to make/store salt brine was installed inside the DMS garage, as well as the purchase of a brine attachment and a pre-wet attachment for the Swaploader. In addition, two of the other front-line trucks used for snow & ice control were retro fitted to be able to apply brine for parking lots and other smaller areas.

Rock salt is simply crystals of sodium chloride, or table salt, just not as refined. Until rock salt has been formulated into brine, it will do nothing to stop snow from freezing to the roadway. Agencies that use rock salt in their winter maintenance activities are doing so to create brine on the road surface by having rock salt mix with snow, ice or freezing rain.

Salt brine is a solution of salt and water that has a freezing point lower than water alone. In turn, salt brine can reduce snow and ice adhering to road surfaces. As temperatures dip, either the amount of rock salt or the frequency of application must be increased. Anti-icing, which is spraying brine on roadways before the storm arrives, requires approximately one-third to one-fourth the material of deicing, making it the more cost-effective option. This is proactive approach in dealing with a snow and ice event by treating the road surface before the snow falls. By doing so, you are preventing the formation of ice on the road surface and providing additional time for crew(s) to respond with other measures.

SNOW PLOWING:

It shall continue to be the policy of the City of Plymouth to plow all residential streets in the City when more than four (4) inches of snow has fallen. In addition, the Municipal Services Supervisory Staff has the authority to plow all streets if conditions exist where it would seem reasonable to plow streets due to snow conditions or density.

The Department shall not remove snow from alleyways, unless there is an extreme and critical health and safety issue. Alleyways may have snow removed by private contractors if the adjoining property owners desire that service.

In accordance with the Plymouth City Code Section 70-111, the City Manager, as supervisor and director of the public parking system, shall be deemed to have the authority to order the restriction of on-street and municipal parking lot parking by declaring a "Snow Emergency." The declaration of a "Snow Emergency" shall authorize the City Manager to declare that all on street parking or municipal parking lot parking as being prohibited. This authority will allow crews to plow side streets without the hazards of parked cars on the streets. The Snow Emergency Advisory should be issued to area electronic media and distributed on the City's Email, Nixle and Fax Alert System, as well as added to the City's social media presence.

CONTRACTS AUTHORIZED:

The Department of Municipal Services is authorized to render snow and ice control services to other governmental units or public agencies as manpower and equipment allows and providing that the City Priorities can be maintained. Contracting of City services to other governmental units or public agencies (ie-HVA, TCM) must be for either fair compensation or in exchange for similar use of the other agency's equipment and manpower *(mutual aid).*

EMERGENCY HEALTH & SAFETY RESPONSE:

The Department of Municipal Services is authorized to render snow and ice control services on an emergency basis to other governmental agencies including, but not limited to police, fire and emergency medical response agencies. Services can be delivered when requested and only on a time available basis and should only be rendered to protect the public health, safety and welfare. This authorization is for emergency situations only. *(i.e. County salt crew has not responded to Sheldon Road and our Police and/or Fire Department has a call for service.)*

STORM UPDATES:

Whenever possible, the Department of Municipal Services shall provide, to various public agencies, information on the storm and road conditions in the City. This may be accomplished using the City Fax Update and/or E-Mail Programs and/or social media platforms. These programs are an informational fax or e-mail that is prepared and is computer faxed or e-mailed to agencies including; School Transportation Office, City Police, Community Dispatch Center, Community Fire Department, Chamber of Commerce, Tonquish Creek Manor and others who have requested this service.

TRAINING:

All Department of Municipal Services employees will annually be trained on the use of the salt and plow trucks and will be made aware of this policy. Employees operating snowplows and salt trucks should be tested annually with documentation in order demonstrate a working

knowledge of safe work practices and procedures for snow and ice control.

ADMINISTRATION:

This policy is to be administered by the City Manager and the Supervisory Staff of the Municipal Services Department.

WORST STORMS:

According to the National Weather Service some of the worst snowstorms that have hit the Metro Area have included the following:

- April 6, 1886 - more than 24 inches
- December 1 – 2, 1974 - 19.3 inches
- December 31, 2013 – January 2, 2014 – 11.1 inches
- January 4-5, 2014 – 10.6 inches
- February 1, 2015 – 16.7 inches

RESIDENTIAL OR COMMERCIAL SIDEWALK SNOW REMOVAL REQUIRED:

The Code of Ordinances for the City of Plymouth Sections 62-89 and 62-90 requires that "Every owner or occupant of any lot or parcel of land adjoining any street or public place in the city along or across which there shall be a sidewalk shall, **within 24 hours after** the same has fallen or formed, remove or cause to be removed any snow or ice which may have fallen or accumulated...and in case of neglect or refusal so to do the City Manager may forthwith cause the removal of same and the expense thereof shall be a lien upon such premises."

Failure by a property owner or occupant to clear the sidewalks shall cause the City or a City contractor to clear the sidewalks and bill for the removal. This policy hereby establishes the following fee schedule:

First offense = Minimum billing of $200.00

Second offense = Minimum billing of $250.00

Third offense & subsequent offenses = Minimum billing of $400.00

Actual billing will be based on the current hourly rates for manpower, equipment and material; however, in any case, the billing shall not be less than $200.00 for the first offense, $250.00 for the second offense and $400.00 for the third and any subsequent offenses. The determination of the number offenses will be tallied from the date of this policy and will end with the adoption of this policy for the next season. Failure to pay the billing will result in the bill being placed on the tax roll and as a lien against the property.

DUMPING OR PUSHING OF SNOW ONTO THE STREETS IS NOT ALLOWED:

Sections 62-39 and 62-40 of the City of Plymouth Code of Ordinances do not allow the pushing or dumping of snow from any privately owned premises into or onto any street. Most commonly, a private contractor may push snow from a parking lot into the street. These sections of the City of Plymouth Code of Ordinances forbid this type of action. If violations must be corrected by the City the minimum charge for this service shall be $250.00. Actual billing will be based on the current hourly rates for manpower, equipment and material; however, in any case, the billing shall not be less than $250.00. Further, violators may be subject to violations of various traffic laws and would be subject to ticketing as deemed appropriate by the Police Department.

RESOLUTION

The following Resolution was offered by Comm. _____ and seconded by Comm. _____.

WHEREAS, the City of Plymouth provides snow and ice control services to protect the public health, safety, and welfare of its residents, businesses, and visitors; and

WHEREAS, the City Commission has annually reviewed and adopted a Snow and Ice Control Policy since 1996 to establish operational standards and priorities for winter maintenance activities; and

WHEREAS, the Department of Municipal Services has reviewed and updated the policy for the 2026–27 winter season, including procedures for snow and ice control operations, emergency response, and property owner responsibilities; and

WHEREAS, the policy establishes minimum charges associated with the City's removal of snow and ice resulting from violations of the City Code of Ordinances.

NOW THEREFORE BE IT RESOLVED THAT, the City Commission of the City of Plymouth does hereby adopt the City of Plymouth Department of Municipal Services Snow & Ice Control Policy, as reviewed and revised October 2026.

BE IT FURTHER RESOLVED THAT, the City Commission hereby establishes the minimum billing amounts for City or contractor snow and ice removal services as outlined in the adopted policy, including sidewalk snow and ice removal violations under Sections 62-89 and 62-90 and the unlawful placement of snow onto public streets under Sections 62-39 and 62-40 of the City of Plymouth Code of Ordinances.

Administrative Information

City of Plymouth
201 S. Main
Plymouth, Michigan 48170-1637

www.plymouthmi.gov
Phone 734-4531234
Fax 734-455-892

To: Mayor and City Commission
Through: Chris S. Porman, City Manager
From: John Buzuvis, Economic Development Director
CC: S:\City\Floodwise
Date: October 13, 2026
RE: FloodWise Assessment Report and Presentation

Background

As you are aware, the administration began the FloodWise process in summer 2025. FloodWise is a collaboration between the Great Lakes Integrated Sciences and Assessments (GLISA) and the Michigan Department of Health and Human Services. GLISA is housed at the University of Michigan, and Tori Field, the project lead, works in conjunction with the university. Completion of the FloodWise Local process and presentation of the findings was identified as a one-year task under Goal Area One- Sustainable Infrastructure of the City Commission's Strategic Plan. Ms. Field's presentation will go into more detail on the process, but below is a summary of the process and conclusions from the assessment.

The goal of the FloodWise Communities Local Stormwater System Assessment program is to better understand local flooding concerns, assess the community's stormwater management challenges, and identify opportunities to prepare for future weather-related impacts. The FloodWise process brought together City staff, local knowledge, and data, and outside expertise to evaluate existing conditions and develop recommendations for future planning. The resulting assessment provides a foundation for continued discussion/collaboration on a broader scale, public education, and informed decision-making.

The assessment confirms that Plymouth faces ongoing and potentially increasing stormwater challenges. Historical weather data shows an increase in annual precipitation and heavy rainfall events, with projections indicating that these trends may continue. Flooding concerns are concentrated around Tonquish Creek and the downtown drainage system, as evidenced in the spring 2024 flood. Byron Creek in the southern part of town, and the Middle River Rouge on the north side of the city in Hines Park are also areas of specific concern. The concerns are compounded by aging infrastructure, development and increased runoff in the surrounding watershed, and the limitations of existing drainage systems during significant rainfall events.

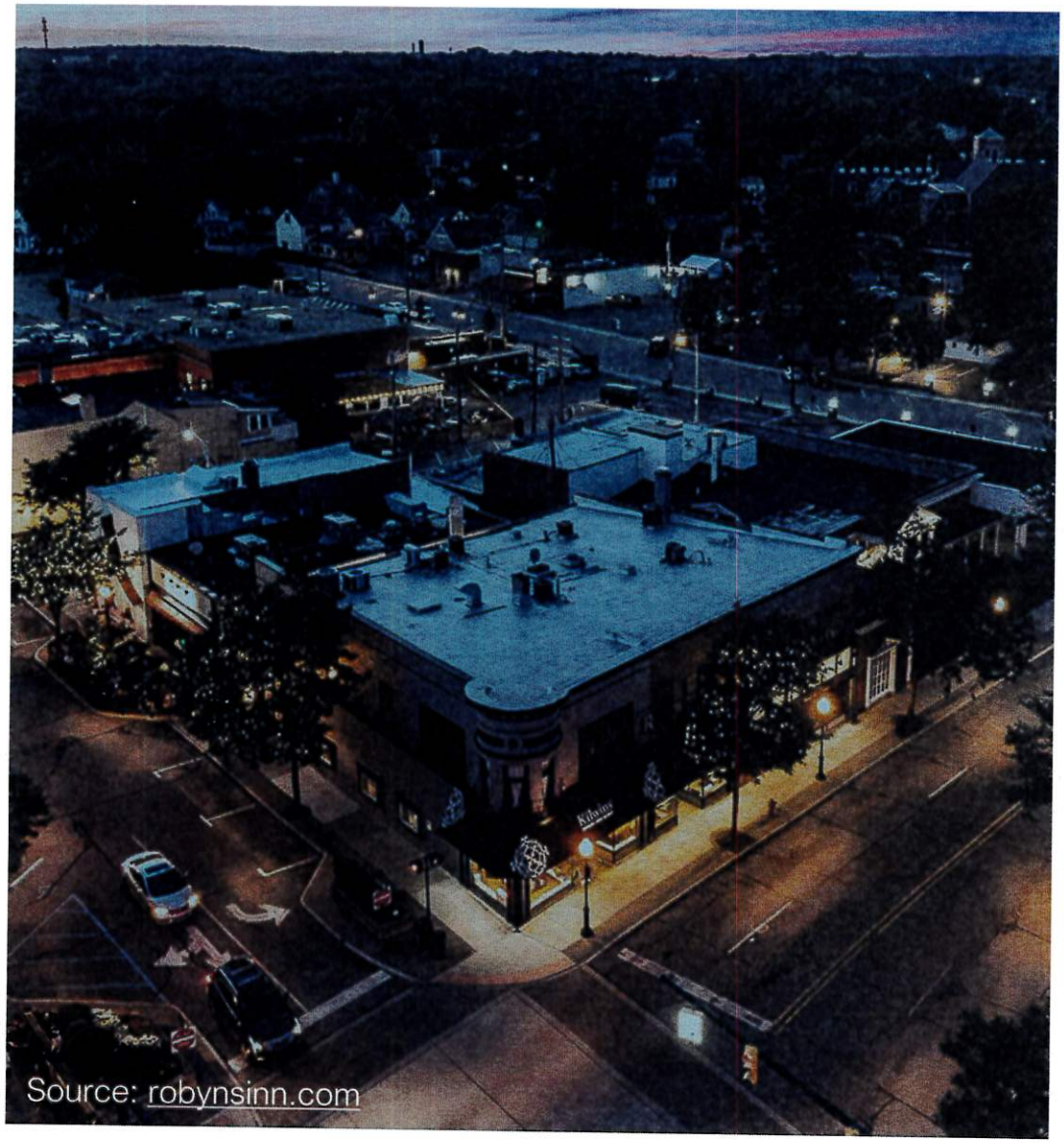
The assessment confirmed that many of the factors contributing to flooding extend beyond the City's direct ownership and authority. Significant portions of the drainage system are managed by Wayne County or the State of Michigan. Significant portions of this system cross private property and receive runoff from neighboring communities. Although Plymouth continues to maintain its own infrastructure, monitor conditions, and coordinate emergency responses, meaningful and lasting improvements will

require cooperation among multiple jurisdictions, including Wayne County and the State of Michigan, access to additional resources, and a shared understanding of the regional nature of the issue.

The FloodWise assessment identifies four priority areas for continued action: strengthening regional collaboration, expanding public education and community engagement, utilizing technology to improve flood monitoring and response, and encouraging green infrastructure and resilient development. These recommendations are intended to guide future discussions and help the city, and its partners, evaluate practical, cost-effective opportunities to reduce flood risks over time. The assessment does not represent a final engineering solution or eliminate the risk of flooding; rather, it provides a documented starting point for establishing priorities, pursuing partnerships, and funding opportunities, and keeping residents, businesses and other stakeholders informed as the City moves forward.

In response to the draft report's findings, the city installed and is testing a remote real-time camera and water level monitor to assist in monitoring the grate before it enters the tube underground in downtown. Additionally, in August the FloodWise team coordinated a meeting with representatives from Wayne County and the Southeast Michigan Council of Governments (SEMCOG) to discuss the draft report and how these findings, and the findings of other communities in the region engaged in the process will be a great starting point for regional discussion on this matter. Wayne County is currently engaged in the FloodWise process and has taken a keen interest in the findings of local communities as they work to better understand the challenges.

There is no action required on this item but wanted to provide some additional background information related to staff efforts on this matter.



FloodWise Communities: Findings in Plymouth, MI

October 19, 2026

FLOOD WISE COMMUNITIES

GLISA
A NOAA RISA TEAM

MDHHS
Michigan Department of Health & Human Services

- **The FloodWise Team**
- **Background Motivation & Goals**
- **Findings:**
  - Plymouth SW Management Context
  - Natural Watercourse & County Drains
- **Next Steps**

FLOOD WISE COMMUNITIES

The FloodWise Team

FloodWise Facilitators



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City of Plymouth



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Chris Porman *(Reviewer)*
City Manager
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Paul Sincock *(Initiator & Contributor)*
City Manager *(former)*

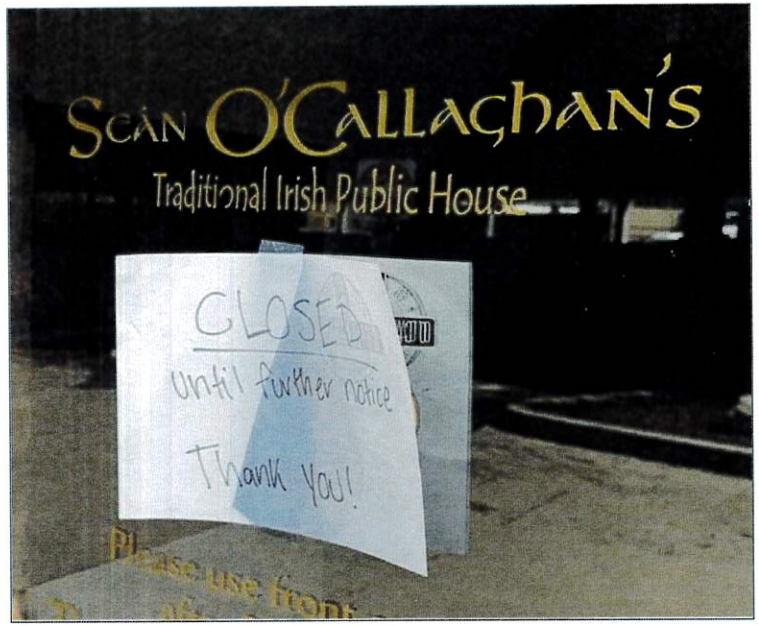
FLOOD WISE COMMUNITIES

Background
Motivation & Goals

FLOOD WISE COMMUNITIES

Plymouth's Motivation

- Growing concerns about flooding in the downtown area and impacts on surrounding businesses.
- Heavy rain events seem to be getting more intense and more frequent.
- External pressure to "fix" the flooding, but noting complexity as a hurdle.



wxyz.com | April 2025 floods caused some businesses to close in downtown Plymouth.

FLOOD WISE COMMUNITIES

Plymouth's Goals: Assessment & Planning



Gain knowledge and fresh insights from an outside team.



Document internal subject matter knowledge, experience and expertise.



Understand current and future conditions in the community.



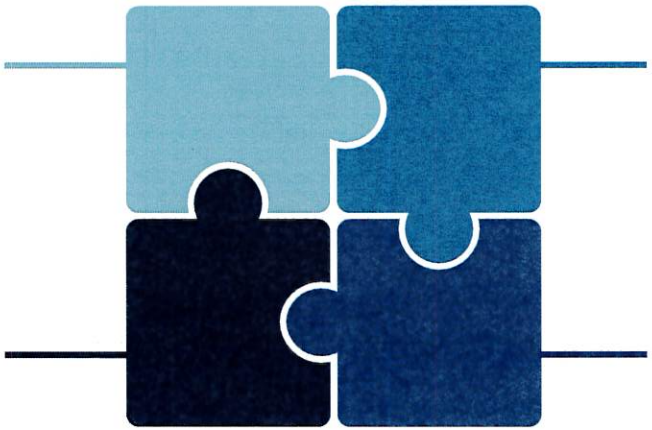
Identify flood prevention strategies and guidance on where to go next.

FLOOD WISE COMMUNITIES

Plymouth's Goals: Leveraging Outputs To...

Provide transparency and demonstrate proactive local government action.

Help the community understand local flooding and SW management.



Demonstrate importance and garner support for actions being taken.

Facilitate future conversations with stakeholders, neighboring communities, Wayne County, the State of Michigan and other regional partners.

FLOOD WISE COMMUNITIES

Findings: Plymouth SW Management Context

FLOOD WISE COMMUNITIES

Weather & Climate: Historic (1951-2020)

- Moderate increase in average annual precipitation **(+5.1 in | 14.5%)**
- Significant increase in average seasonal precip **(+1.6-2.5in | 17.6-43.8%)**
- Increase in days with 1" or more of rain **(+1.5 days)**

- Minimal increases in average annual temperatures **(+0.7°F)**
- Greatest (but minimal) increase in average winter temperatures **(+1.7°F)**
- Slight increase in days 90°F or higher **(+1.3 days)**

- Observed stronger winds + worsening impacts / damages

FLOOD WISE COMMUNITIES

Weather & Climate: Projected (2040-2059)

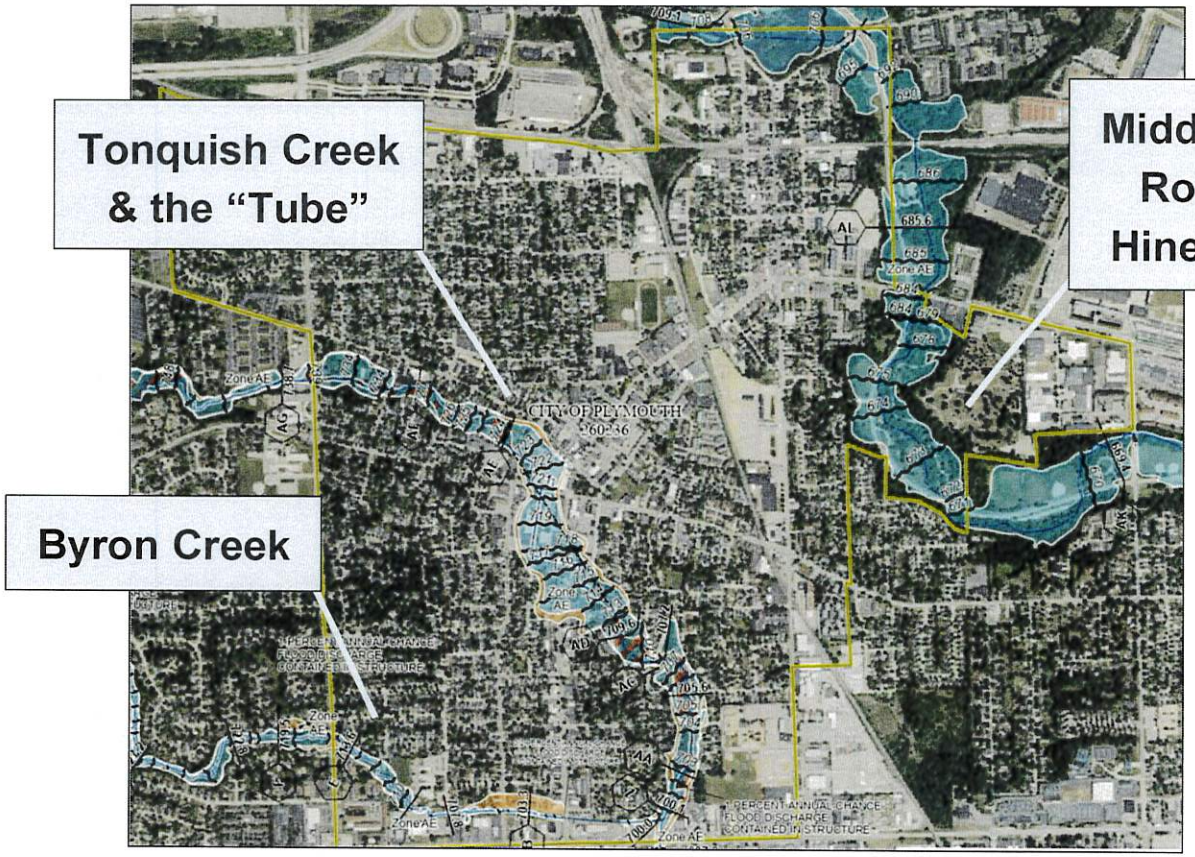
- Continued increase in average annual precipitation **(+0 to 4 in)**
- Seasonal variability with increases AND potential decreases during drought
- Additional increase in days with 1" or more of rain **(+0.7 to 2.4 days)**

- Notable increase in average annual temperatures **(+3 to 5°F)**
- Notable increase in temps across all seasons **(+2 to 6°F)**
- Significant increase in days 90°F or higher **(+13 to 29 days)**

- Concern for stronger storms associated with increasing temp and precip

FLOOD WISE COMMUNITIES

Key Flood Corridors



Flood Map for Plymouth, MI (access October 2025) *(data updated: 2012)*
FEMA National Flood Hazard Layer (NFHL) Viewer

FLOOD WISE COMMUNITIES

Capacity for Stormwater Management

Capacity is most limited by Plymouth's limited jurisdiction over infrastructure owned by private entities, neighboring communities and the county.

- Engineering & Infrastructure: **5**
- Data & Modelling: **3**
- Personnel: **5**
- Funding: **3**
- Administration: **5**



City of Plymouth's local capacity to fulfill SW management needs

FLOOD WISE COMMUNITIES

Findings: Natural Watercourse & County Drains in Plymouth

FLOOD WISE COMMUNITIES

Factors stressing the natural watercourse & county drains in Plymouth:

- Changing weather conditions & trends
- Aging infrastructure & complicated upgrades
- Local / regional development & land use changes

Factors constraining local management of the natural watercourse & county drains:

- Multi-jurisdictional stormwater management
- Watershed scale issues
- Private property access
- Opportunity to strengthen community engagement, awareness, and support for green infrastructure initiatives



patch.com | August 2023 flooding on Harvey Street between Ann Arbor Trail and Penniman Avenue

FLOOD WISE COMMUNITIES

Factors supporting local management of the natural watercourse & county drains:

- Broader regional support for green infrastructure
- Interdepartmental collaboration
- Support with maintenance & real-time response
- Municipal separate storm sewer system
- Public communication & education

Future opportunities to support the natural watercourse & county drains:

- Collaborative public education model
- Regional stormwater collaboration
- Enhanced flood monitoring & warning system
- Diverse pathways for infrastructure improvements



plymouthpollinators.org | Native plant island near Church St. and Adams St.

FLOOD WISE COMMUNITIES

Plymouth's Ability to Support the Natural Watercourse & County Drains

Plymouth currently supports:
(with limited capacity)

- Data & modelling: **6**
- Personnel & technical assistance: **6**
- Administrative support: **7**

Outside of Plymouth's jurisdiction:

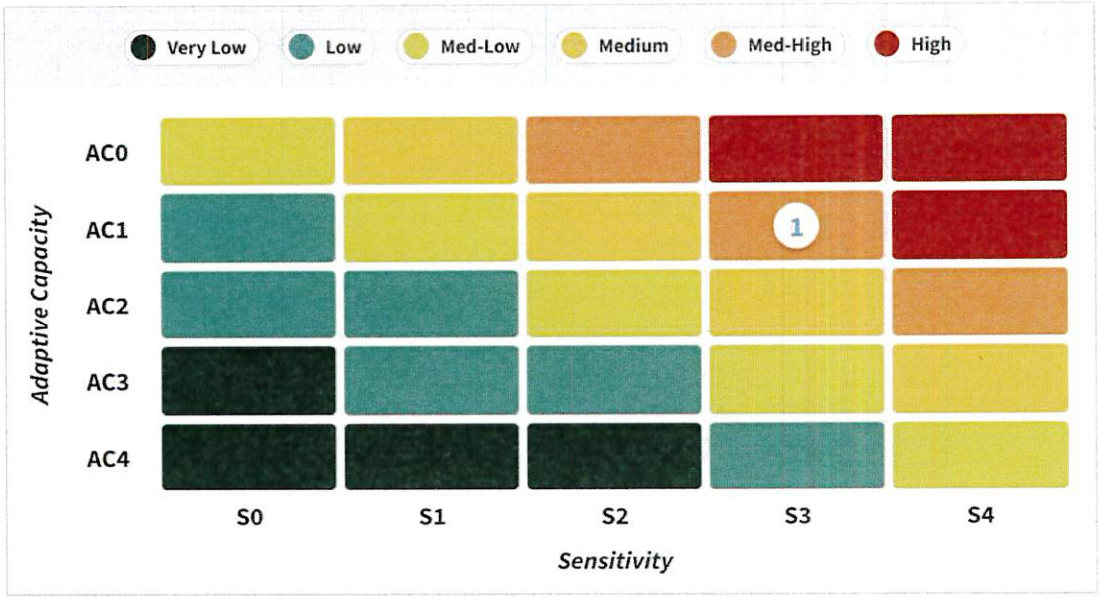
- Engineering & construction: **10**
- Funding: **10**



Plymouth's ability to fulfill needs for the natural watercourse and county drains.

FLOOD WISE COMMUNITIES

Vulnerability Ranking for Natural Watercourse & County Drains in Plymouth



FLOOD WISE COMMUNITIES

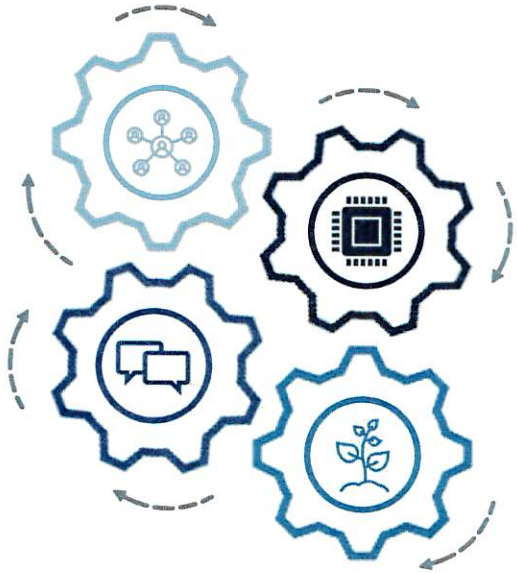
Next Steps

FLOOD WISE COMMUNITIES

Priority Next Steps

Strengthen regional collaboration

Expand public education & community engagement



Utilize technology to improve flood mitigation

Encourage green infrastructure and resilient development

FLOOD WISE COMMUNITIES

Actions from Great Lakes Communities

Community Outreach & Education
Expand public awareness and action on stormwater, flooding, and resilience

Community Risk
Focus investments in priority neighborhoods, create accessible emergency preparedness info

Daily Operations, Staffing, & Emergency Preparedness
Address workforce and staffing gaps, identify maintenance strategies

Funding & Budgeting
Apply for grants, integrate into annual budgets and CIPs, establish local funds

Governance & Regional Collaboration
Increase coordination, foster regional partnerships, get leadership commitment

Nature-Based Strategies
Establish standards, expand public green infrastructure, target urban forestry

Planning, Policy, & Regulation
Align across plans, establish review cycles, update development standards & ordinances

Technical Analysis
Conduct drainage & engineering studies, cost-benefit analyses, enhance GIS & digital asset management

FLOOD WISE COMMUNITIES


Thank you!
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GLISA
A NOAA RISA TEAM
FLOOD WISE COMMUNITIES

Local Stormwater System Assessment:

Risks & Impacts from Weather-related Hazards

Plymouth, Michigan

October 2026

FLOOD WISE COMMUNITIES

Acknowledgements

Creating this Local Stormwater System Assessment for Plymouth, MI would not have been possible without the effort and dedication of key staff and partners.

Staff Contributors

- Chris Porman- City Manager, City of Plymouth
- John Buzuvis – Economic Development Director, City of Plymouth
- Paul Sincock-City Manager *(former)*, City of Plymouth

Partners

This assessment was completed as part of a 2025 FloodWise Communities Cohort led by GLISA (Great Lakes Integrated Sciences & Assessments), in partnership with the Michigan Department of Health & Human Services - Environmental Health Bureau. This effort was made possible in part by funding from the Great Lakes Restoration Initiative.

GLISA
A NOAA RISA TEAM

MDHHS
Michigan Department of Health & Human Services

About FloodWise Communities

The FloodWise Communities program provides technical assistance to help municipalities assess how susceptible their stormwater system and broader community are to weather-related hazards. The program was designed to be accessible to small- and mid-sized municipalities; however the process can still be applied with larger, resourced communities. The program brings together various departments to formally document internal hazards-related knowledge and information, while leveraging data, guidance, and insights from a team of external facilitators.

Approaches Used:

- **Expert judgement -** Structured discussions with local experts to identify and assess hazard susceptibility.
- **Scorecards -** Using simple scales to score assets and functions based on exposure, sensitivity, and adaptive capacity.
- **Indicators -** Using simple indicators (e.g., % impervious area, age of infrastructure) to rate hazard susceptibility.

Approaches NOT Used:

- **Statistical analysis -** Using historical data to estimate probability and consequences of hazards (e.g., basic trend analysis, sophisticated statistical modeling).
- **Spatial analysis -** Overlaying spatial data on hazards and assets to quantify exposure. (e.g., visual mapping, geospatial analysis).
- **Modeling -** Simulating stormwater system response to various hazard scenarios.

These approaches provide common ground for ongoing and future efforts that may be more technical in nature, although past program participants have gone on to use their results in a variety of ways. To learn more about the various approaches referenced above, as well as the broader field of hazard susceptibility assessments for stormwater agencies, readers are encouraged to review this guide developed by the RAND Corporation.

Executive Summary

The long-term weather trends in Plymouth, MI are changing, and these changes pose immediate and future threats to residents, public health, the economy, and the community's overall vitality. To proactively plan and prepare for these changes and associated hazards, the City of Plymouth participated in the FloodWise Communities program facilitated by GLISA (Great Lakes Integrated Sciences & Assessments) — a National Oceanic and Atmospheric Administration (NOAA) Regional Integrated Sciences and Assessments (RISA) team — and the Michigan Department of Health & Human Services (MDHHS) from June 2025 – October 2026. The resulting outcomes include this report along with recommendations for next steps.

This assessment is an important foundation for proactive stormwater management and adaptation planning. The report outlines ongoing and projected changes in short and long-term weather conditions and impacts in Plymouth, MI including flooding, storms, and other natural hazards. It also includes insights into how these changes may impact the local stormwater system and infrastructure, as well as areas that may be most impacted by these hazards. Finally, this report provides initial suggestions of potential ways to prepare the local stormwater system, and those it serves, for future weather-related impacts. Key findings include the following.

Assessment of Local Weather Conditions

The assessment process leveraged local data to assess historical and projected weather conditions in Plymouth, MI. While Plymouth does not have control of short- and long-term weather conditions, understanding key patterns and trends can help inform ways to better prepare for, respond to, and manage associated impacts.

Plymouth has historically received 38.3 inches of precipitation per year and this number has increased by 5.1 inches between 1951 and 2020 and is projected to increase by up to 4 additional inches by mid-century (2040-2059). Plymouth has historically averaged around 9 days per year with over 1 inch of rainfall. This number has also increased by 1.5 days per year between the same period and is expected to increase by an additional 2.6 days by late-century (2080-2099). Temperatures, on the other hand, have remained relatively stable between 1951 and 2020, with a minimal increase of 0.7°F to the annual average of 50.1°F. However, future projections indicate warmer temperatures in Plymouth with average annual temperatures expected to rise by 3 to 5°F by mid-century and by 6 to 10°F by late-century. Seasonally, Plymouth is projected to experience the greatest warming in the summer and fall, with historical seasonal averages of 71.2°F and 52.5°F respectively. Both seasons are projected to increase by up to 6°F by mid-century and up to 12°F by late-century. Plymouth experiences an average of 9 days per year over 90°F, and this number is expected to increase by 13 to 19 additional days per year by mid-century, and 31 to 64 extra days per year by late-century.

As temperatures begin to increase, City staff are observing greater impacts from storms that bring heavier rains and straight-line/high wind events. These changing weather conditions pose significant and evolving challenges for local stormwater management, as detailed throughout this report.

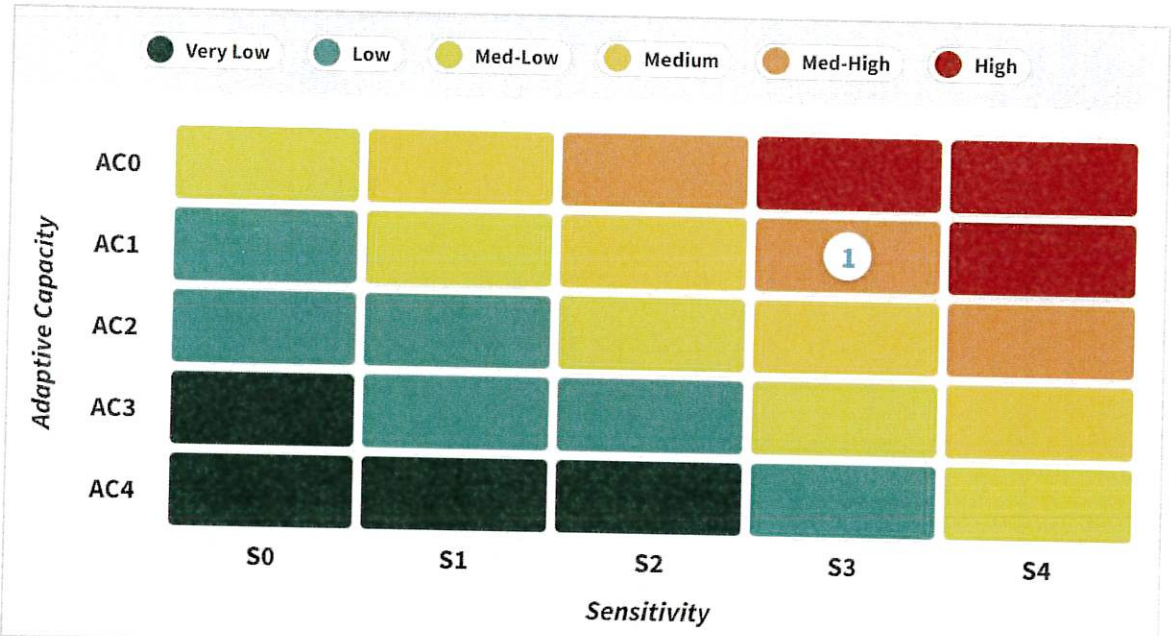
Assessment of Local Hazards & Impacts

Flooding hazards are concentrated into three distinct areas of the Plymouth community, including areas surrounding the Tonquish Creek, the South Branch Tonquish Creek (also known as Byron Creek, located near Smith School), and the Middle River Rouge. This has included recent flooding observed around the Tonquish Creek in and near downtown Plymouth. These three areas are designated as being within a special flood hazard area according to 2012 FEMA flood maps.

Plymouth is part of a larger regional watershed and system which has been impacted by development upstream, leading to greater runoff entering and straining the system before reaching Plymouth. City staff also expressed concern over the structural integrity of two high-traffic, county-owned bridges on Plymouth Road near Hines Drive that could be at risk of being compromised by a significant flood event. Additionally, Wilcox Lake and Phoenix Lake dams upstream of Plymouth were mentioned as potential hazards should they become stressed by heavy rain and runoff, although the structural integrity of the dams and risk of failure is unknown.

Assessment of Stormwater Infrastructure

Narrowing in from broader conditions and impacts, the City of Plymouth also assessed hazard susceptibility of stormwater infrastructure, with a specific focus on the **natural watercourse & county drains**. This included taking a closer look at how sensitive the infrastructure is to outside stressors (i.e., sensitivity) and how well the system can adjust to impacts, maintain core functions, and improve over time (i.e., adaptive capacity). Participating team members used assessment findings to assign a sensitivity and adaptive capacity score which indicated an overall hazard susceptibility of medium-high (see matrix below). This means the natural watercourse & county drains are likely to be moderately impacted by future hazards and conditions.



Component	Hazard Susceptibility	Sensitivity	Adaptive Capacity
Natural Watercourse & County Drains	Med-High	S3	AC1

Next Steps

Based on this analysis of short- and long-term weather conditions, community impacts, and anticipated interactions with the local stormwater system, the City has identified the following stormwater management actions to increase system adaptability and preparedness:

- Strengthen Regional Collaboration
- Expand Public Education and Community Engagement
- Utilize Technology to Improve Flood Mitigation
- Encourage Green Infrastructure and Resilient Development

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Assessment Process

The FloodWise Communities (FWC) program is designed to complete a thorough assessment of weather-related risks and impacts on a local stormwater system. The FWC program works with local governments to help them understand the degree to which their system is susceptible to and able to cope with adverse effects of weather-related hazards such as storms, floods, or extreme heat. Through this process, decision makers are better able to identify factors that may stress their stormwater system and the surrounding community, and prepare and prioritize actions to minimize or mitigate the impact of these stressors. This assessment analyzes and summarizes Plymouth's level of exposure, degree of sensitivity, and its ability to adapt (see Figure 1).

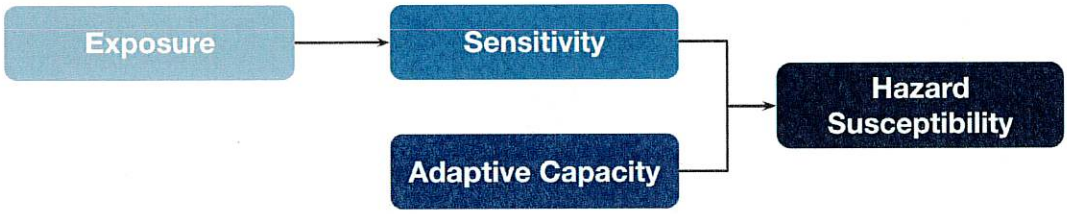


Figure 1. Diagram of key building blocks for the assessment.

Through the assessment process, hazard susceptibility was determined by assessing exposure, sensitivity, and adaptive capacity in relation to local stormwater infrastructure and community impacts:

1. **Exposure -** Assesses local capacity for stormwater management and overall community exposure to short- and long-term weather conditions using customized local data.
2. **Sensitivity -** Assesses current and future stressors that may impact stormwater infrastructure and the surrounding community.
3. **Adaptive Capacity -** Assesses the ability of the local infrastructure and community to cope with related impacts and take advantage of opportunities.

Together, findings from each of the key assessment areas allow communities to identify opportunities to strengthen the stormwater system, guide strategic investments, and improve long-term community adaptability and preparedness.

Local Weather Conditions

By evaluating local exposure to weather events and conditions (e.g., storms, floods, and other hazards), the City of Plymouth can better understand associated impacts on individuals, organizations, and systems. The exposure assessment identifies local weather conditions that are of most concern, risk from related hazards and impacts, and local capacity for stormwater management. This information serves as a foundation for more detailed assessments analyzing the sensitivity and adaptive capacity of key stormwater infrastructure components referenced later in the report.

To assess local weather conditions, the team at GLISA (NOAA's Great Lakes RISA team) compiled the best available data for Plymouth, MI, and the surrounding region. A customized Local Profile (see Appendix A) served as foundational data for understanding current and projected changes to

temperature and precipitation. To supplement this data, the City also leveraged regional information from GLISA's Great Lakes Regional Summary (see Appendix B), along with institutional knowledge, data, and resources used by the community. This information revealed several key weather conditions and concerns that have affected, or are projected to affect, the local area. Specifically, Plymouth is experiencing changes to short- and long-term weather conditions, including rising temperatures and increasing precipitation, both of which are projected to intensify. These combined challenges pose significant risks to the local infrastructure, environment, and community members. Data cited in this section is drawn from the Local Profile mentioned above.

Increasing Precipitation & Heavy Rain Events

Increasing precipitation and the frequency of heavy rain events are among Plymouth's most pressing challenges for infrastructure and stormwater management. Between 1951 and 2020, Plymouth experienced a substantial increase in precipitation, with total annual rainfall rising by 5.1 inches (15.4%) above the 1951-1980 average. Historically, Plymouth experienced an average of 6.1 days per year with more than 1 inch of rain. This number has also increased by 1.5 days between 1951 and 2020. Historically, the most significant precipitation changes have occurred in winter, which increased by 2.5 inches (43.8%) between 1951 and 2020. Future projections indicate this trend will continue, with potential increases of up to 4 inches by mid-century (2040-2059) and up to 6 inches by late-century (2080-2099) throughout the year. By late-century, Plymouth may experience up to 2.6 more days per year with over an inch of precipitation.

Increasing Temperatures & Extreme Heat

Another issue of concern in Plymouth is rising temperatures and an increased frequency of extreme heat events. Warming temperatures have not been a significant concern for Plymouth in the past; however, it is likely to present challenges in the future. Between 1991 and 2020, the annual average temperature in Plymouth increased minimally by 0.7°F compared to the 1951-1980 period. However, future projections indicate a clear warming trend with average annual temperatures expected to rise by 3 to 5°F by mid-century (2040-2059) and by 6 to 10°F by late-century (2080-2099). Seasonally, the most significant increases are projected for summer and fall, with up to 6°F of warming in both seasons by mid-century and up to 12°F by late-century. Currently, Plymouth averages 9 days per year with temperatures exceeding 90°F. By mid-century, Plymouth is projected to experience an additional 13 to 19 days per year with temperatures over 90°F, and 31 to 64 extra days per year by late-century. In Plymouth, increasing heat and potential for periods of drought in the summertime may cause the ground to harden. When these conditions are followed by severe storms and heavy rain fueled by warm, moist air, this can lead to increased runoff and stormwater management challenges. Warming winters may also lead to more precipitation falling as rain or ice, requiring different resources and solutions than traditionally snowy winters.

High Winds

Over the last several years city staff have observed stronger storms that have brought greater impacts from straight-line winds and high wind events. According to NOAA's National Centers for Environmental Information (NCEI), between 1996 and 2025, Wayne County, MI experienced 39 high wind events resulting in $53.4 million in reported property damage and 1 reported injury. Additionally, high winds can damage aging trees and cause debris to accumulate in streets, waterways, catch basins, and the grate at the entrance of the tube. This buildup of debris may block key drainage pathways across the city and contribute to localized flooding. Furthermore, much of Plymouth's electrical infrastructure is above ground, which increases risk to the electrical grid during high-wind events.

Local Hazards & Impacts

Natural- and weather-related hazards often have varying impacts across a single community. For example, one street may experience frequent flooding, whereas a neighboring street may never flood. This assessment aims to understand the distribution of hazards, who is most impacted by these hazards, and what other hazards exist that may exacerbate community risk. This information will allow local decision makers to understand overall risk and identify and prioritize potential solutions and actions to help mitigate risk and address the needs of affected areas, residents, and other business and property owners. To support this assessment, the City of Plymouth leveraged data from the Neighborhoods at Risk tool and supplemented this with local knowledge and data.

Location of Flooding Hazards

FEMA has designated several areas within Plymouth City limits as being within a special flood hazard area on FEMA Flood Maps (see Appendix C). These areas include the Tonquish Creek, which runs through the center of the city, the South Branch Tonquish Creek (Byron Creek) to the southwest, and the Middle River Rouge to the northeast (see Figure 2). Water flows from the northwest to southeast across the city.

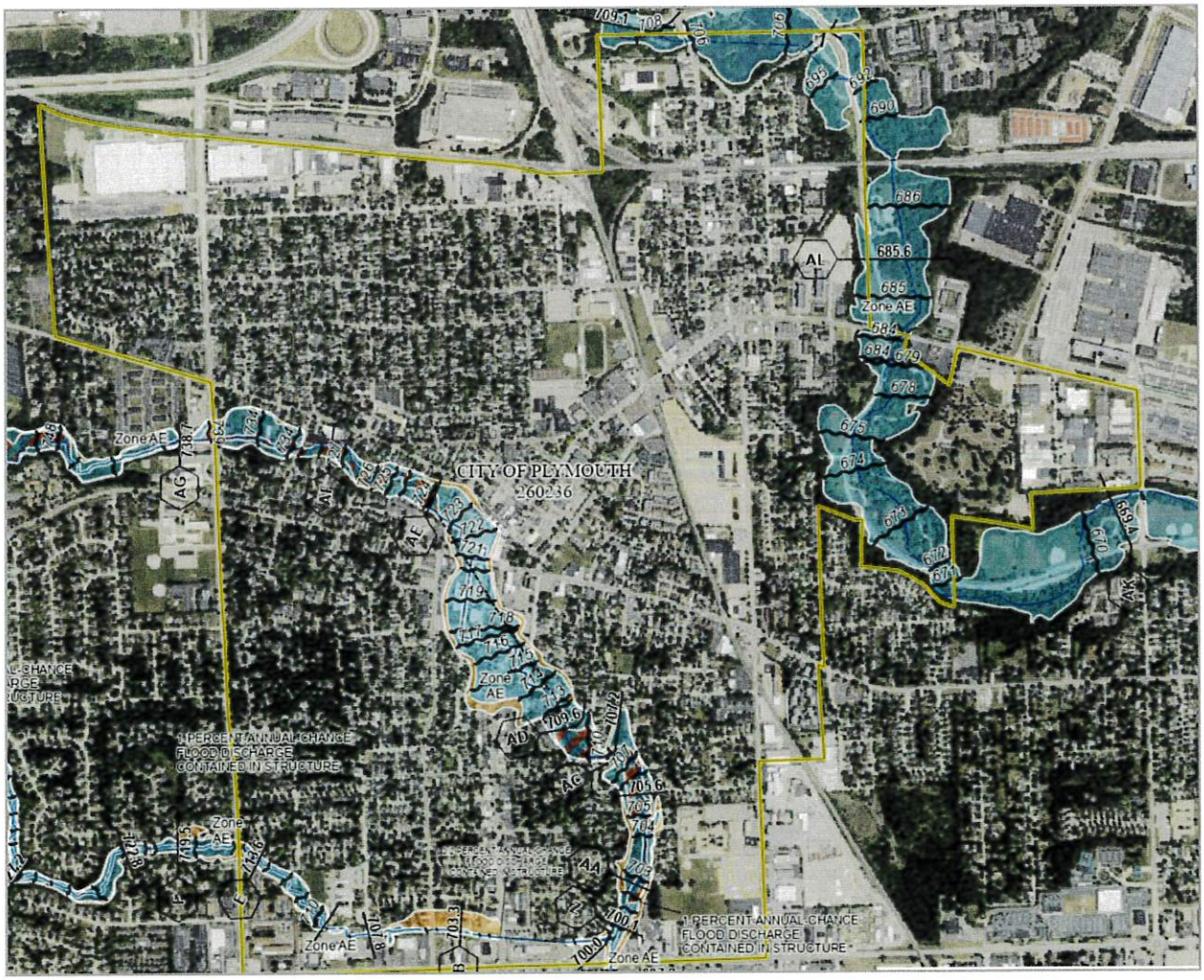


Figure 2. *FEMA Flood Map for Plymouth, MI (accessed October 2025 via the National Flood Hazard Layer Viewer).*

Tonquish Creek & The Tube

The Tonquish Creek is an area that has experienced flooding, primarily at the entry and exit points of the county drain system, also referred to as the "tube." The creek enters Plymouth from the west near Sheldon Road, runs through the center of the city, and exits to the south at Ann Arbor Road. Along this route, a portion of the creek runs through a tube beneath Plymouth's downtown corridor. In the areas where the creek is above ground, it runs along private and residential properties.



Figure 3. *Tube entrance and grate near Harvey St.*

Starting to the west, where the Tonquish Creek enters Plymouth city limits, there is an area encompassed by Sheldon Road, S. Harvey Street, Penniman Avenue, and W. Ann Arbor Trail that is prone to flooding, specifically during large precipitation events. The city pays specific attention to the entrance to the tube at/near Harvey St. to ensure that it does not become blocked by debris (see Figure 3). Overgrowth and debris from properties upstream can create a plug that impacts the flow of the entire system. With most of the creek west of the tube being located on private property, there are limitations to regular maintenance since these areas fall outside of the City's purview. Nuisance flooding in this area primarily impacts residential properties if the creek waters become high enough. One location where impacts are particularly concerning is the Plymouth Housing Commission/Tonquish Creek Manor, which serves as income-restricted housing for individuals over 65. Sidewalks and walking paths on the property are prone to flooding, and first-floor units are located within the FEMA floodplain.

The city completes regular and ongoing maintenance of this area. Additionally, the Department of Municipal Services staff and the police department monitor this area during heavy rain events to clear debris that can accumulate at the grate covering the tube entrance. When debris is removed, staff have observed the volume of water entering the tube seems to increase dramatically. In addition, the city has added a sensor and a camera to have 24 hour access to the current conditions at the grate entrance to the tube.

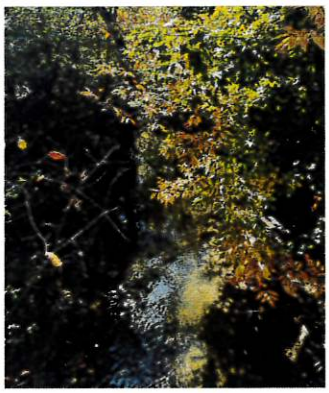


Figure 4. *Tonquish Creek at Willowbrook Condominiums.*

From here, the Tonquish Creek enters the County-owned tube and runs underneath Plymouth's downtown corridor. The tube, installed in the 1940s, runs under South Harvey Street, travels south under Forest Avenue, turns east onto Wing Street, and then heads south along Deer Street. When this section of the tube is stressed, there is potential for flooding to back up into downtown with little opportunity for infiltration in this developed area. Specifically, the area between South Harvey Street, West Ann Arbor Trail, and Fleet Street has flooded in the past, which impacted several small businesses downtown. During previous events, business owners experienced loss of product and hours of operation. The city is aware of three flooding events in this area dating back to approximately 1979 with two of these events happening more recently, particularly when a significant amount of precipitation falls in a short time frame. For example, during a heavy rain event in April 2025, the City received 2.39 inches of rain with much of it concentrated in a 1-hour timeframe.

Further downstream, the Tonquish Creek reemerges from the tube to the east of Deer Court and reconnects to the natural watercourse. Flooding has also been observed along the remaining

segment of the creek, which runs south across Plymouth city limits. Flooding impacts are particularly concerning for Willowbrook Condominiums located just north of the confluence of the Tonquish Creek and South Branch Tonquish Creek (Byron Creek), east of S. Main Street and south of Ann Arbor Road (see Figure 4). Willowbrook Condominiums has a single access road that crosses a bridge over the Tonquish Creek. If this bridge were to wash out, residents would be unable to enter or exit the complex as well as restricting access for emergency and critical services.

South Branch Tonquish Creek (Byron Creek)

Further South, the South Branch Tonquish Creek (Byron Creek) enters the city limits from the west, just north of Hartsough St. and Sheldon Road. The creek runs to the north behind Smith School and then east along Byron Street and exits the city limits at Ann Arbor Road between Savvy Sliders (560 W. Ann Arbor Rd.) and Auto Lab (530 W. Ann Arbor Rd.). A short stretch of the creek runs through a tube under the northeast corner of S Main Street and Ann Arbor Road. Creek flooding would primarily impact residential properties in this area. Specifically, carports at Crestwood Park Condominiums (1199 S Sheldon Rd.), a community for those 55 and older, are at risk of flooding. Additionally, rental units located on the corner of McKinley Street and Byron Street are at significant risk of flooding and are of increased concern for structural integrity in the future. This is primarily due to the way the creek was altered decades ago to unnaturally hug the 90-degree angles surrounding the property (see Figure 5), placing the creek just 15 to 20 feet from the units. The South Branch Tonquish Creek also borders the property of Smith Elementary School, although flooding is of less concern due to a large play yard that can buffer flooding from reaching the school. Other, long standing surrounding businesses and developments, such as the AT&T site for example, may contribute to increased runoff and pollution in this area as they were built decades ago and the extent of their stormwater detention and pretreatment systems, if any, is unknown.



Figure 5. *Sharp turn of Byron Creek near McKinley St. and Byron St.*

Middle River Rouge & Hines Drive

Hines Drive, located on the east side of Plymouth, is a well-managed designated floodplain under Wayne County's jurisdiction. It is common for Hines Drive to flood during rain events, and residents have come to expect associated road closures.

Additional Compounding Hazards

Upstream Development & Impacts

In recent decades, the communities upstream (to the west of the city) have seen significant development with the addition of new subdivisions, and large industrial and commercial developments, placing greater stress on the stormwater system. For the last ten plus years, when properties are being developed and/or redeveloped there have been efforts to install green infrastructure. Example projects include, stormwater detention and pretreatment at Scooters Coffee and bioswales at O'Rielly Auto Parts. While small, these installations still have an impact on reducing stress on the stormwater system.

Watershed Scale Issues

Local flooding and stormwater management in Plymouth is directly tied to the surrounding watershed, where neighboring communities face similar challenges. However, stormwater management is still hyper-localized due to political, financial, and social structures that are in place. Because of this factor, when back-ups occur upstream or downstream of Plymouth, it can become difficult to resolve excess runoff and flooding that stems from outside City limits. Additionally, identifying stormwater solutions at a regional scale has proven to be challenging in Southeast Michigan due to the large amount of impervious surface coverage and the numerous agencies and partners connected across the watershed. The City is interested in regional collaboration, but is constrained by the capacity to participate and recognizes fundamental challenges to seeking collective funding across several communities.

Sites with Runoff Potential

A large impervious area at 1330 Ann Arbor Road, a decades old AT&T facility, drains directly into South Branch Tonquish Creek (Byron Creek) near Byron Street. Because this area was built prior to certain stormwater mitigation requirements, there is little infrastructure to slow runoff into the creek. Pollutants from the parking lot and surrounding area can therefore quickly enter the stream through sheet runoff during heavy rain events.

Another site with concern for increased runoff and pollution is the Plymouth Super Center, which includes a convenience store, an oil change facility, and a car wash built around 2006. Although wastewater from the carwash flows through the sanitary system, the remainder of the site has no known flow control or pretreatment, but it is served by stormwater detention system(s). Due to the proximity to Tonquish Creek, runoff could contribute additional pollutants to the creek during heavy rain events.

Wilcox Lake & Phoenix Lake Dams

The Wilcox Lake Dam (see Figure 6), located just northeast of the city on the corner of Wilcox Road and Hines Drive, poses a flooding risk if compromised. Overflow would likely affect Hines Drive, which routinely floods as part of its design, causing less concern. However, the failure of the Phoenix Lake Dam, located upstream and to the northwest of the Wilcox Dam along Northville Rd, could have more severe downstream effects. A failure here would also likely drain onto Hines Drive, but being further upstream, the flow would likely mobilize pollutants and cause considerable damage along the way.



Figure 6. *Wilcox Lake Dam near Hines Drive.*

Industrial Sites

The Buckeye Pipeline runs through the eastern portion of Plymouth near Riverside Cemetery and Don Massey Field, carrying petroleum products including oil, natural gas, and gasoline. The pipeline crosses both Hines Drive and the Middle River Creek, creating a potential for a compounding hazard should the line be compromised during heavy rain or flooding events. Contamination could quickly spread, polluting nearby waterways and areas along Hines Drive.

Additionally, a CSX railroad switchyard is located in the northeast corner of the city, with multiple rail lines running north-south and east-west. Virtually every CSX train in southeast Michigan runs through the City of Plymouth, with seven active crossings and many trains carrying a variety of hazardous materials. Flooding is not uncommon under the train overpass on Sheldon Rd. which is a critical route to and from the city for emergency and fire personnel. This issue stems primarily from pump failures under Wayne County's jurisdiction.

Plymouth Road Bridges

Two older, county-owned bridges on Plymouth Road near Hines Drive appear to be in poor structural condition and may be easily compromised in an extreme flood event or if upstream dams were to break. This section of Plymouth Road is a critical route and would require a detour around the City to access the Northeast corner of the community, which comprises a mix of industrial property and a mix of single and multi-family housing types.

Local Capacity Assessment

Understanding local capacity is critical to establishing baselines for stormwater management and evaluating risk and exposure. **Capacity** refers to the ability of an actor, organization, or system to perform core functions, manage affairs, and improve itself over time. Plymouth assessed local capacities critical to stormwater management, including engineering and infrastructure, data and modeling, personnel, funding, and administration (see Figure 7). Each aspect was scored on a scale of one (limited capacity) to ten (full capacity), where a higher capacity indicates an ability to successfully perform core functions, while a lower capacity indicates a limited ability to do so.



Figure 7. *Ranking of the City of Plymouth's local capacity to fulfill stormwater management needs.*

Engineering & Infrastructure | Score: 5

The City of Plymouth contracts with Wade-Trim for engineering services and has a longstanding commitment to improving publicly owned infrastructure on an annual basis. The City's "road program," which began in 1995, includes inspections for stormwater and sanitary pipes in tandem with every road project completed. While the City does well in managing infrastructure within its jurisdiction, there is not enough space or land available to feasibly expand or increase capacity for stormwater storage and management. With this in mind, many of the solutions for Plymouth will likely need to occur on private property or through infrastructure owned by other jurisdictions. Until these solutions can happen, City-owned infrastructure will continue to be stressed.

Data & Modelling | Score: 3

The City of Plymouth actively works with new developments to track necessary data. However, most data needs are for sites outside of the City's jurisdiction, where there is limited authority to complete modelling or mapping. In 2018 the city adopted Wayne County's stormwater standards and, as such, new developments are required to abide by these standards.

Personnel | Score: 5

The City of Plymouth has a moderate capacity when it comes to personnel. The contracted city engineering consultants work seamlessly with the Department of Municipal Services team to address and plan for the city's infrastructure needs. The Municipal Services staff team plays an important role in making sure the creeks are running, and that City-owned catch-basins are cleared; however, this is a small team compared to the amount of work that needs to be done. If a heavy rain event were to happen during a time of exceptionally low staff capacity (e.g., hiring gaps, holidays, etc.), the City would need to pull staff from other areas to manage these events, creating gaps elsewhere. Even if Plymouth were to hire more Municipal Services staff, there would still be limits to where staff can perform maintenance due to private property constraints. Specifically, the Tonquish Creek and the South Branch Tonquish Creek (Byron Creek) mostly run through private property where maintenance would support the system, but the City staff cannot always access these areas.

Funding | Score: 3

While the City has successfully secured state and federal grants in the past, funding continues to be a challenge. Current funding levels are not sufficient to cover the significant infrastructure work that could make a meaningful impact to improve the situation. Additionally, finding funding to cover a yet to be determined multi-jurisdictional project is a significant challenge, if such funding opportunities exist. Additionally, it is not advisable for the city to pursue grants for projects to help mitigate flooding issues that may take place in other jurisdictions.

Administration | Score: 5

The City has ample capacity when it comes to monitoring potential hazards on a 24-hours a day seven days a week basis through the Municipal Services and Police teams. The City's significant online and social media presence allow for the quick and accurate dissemination of issuing and/or passing along weather and hazard advisories. The administrative and front line team have a solid understanding of local regulations. From a practical standpoint, a significant portion of the City's stormwater infrastructure is located on, traverses, or receives drainage from private property, or is owned and maintained by Wayne County. As a result, many of the underlying causes of localized flooding originate outside the City's direct ownership or regulatory authority. While the City can continue to implement local stormwater improvements and maintenance activities, achieving

meaningful and lasting reductions in flood risk will require coordinated regional action. Establishing or participating in a regional consortium of neighboring communities, county agencies, and other stakeholders would provide an effective framework for collaboratively addressing shared watershed challenges, coordinating investments, pursuing grant funding, and implementing comprehensive flood mitigation strategies across jurisdictional boundaries. Coordination by Wayne County and the Southeast Michigan Council of Governments (SEMCOG) as well as the State of Michigan would help smaller communities like Plymouth, and others, navigate these complex, inter-jurisdictional stormwater management issues and identify solutions. This is a regional issue and deserves regional attention.

Stormwater Infrastructure Assessment

Using a holistic stormwater system framework, Plymouth assessed the sensitivity and adaptive capacity of critical stormwater infrastructure and chose to focus on one component: **the natural watercourse and county drains.** Based on these assessments, each component was assigned a corresponding score for both sensitivity and adaptive capacity (Table 1). Combining sensitivity and adaptive capacity scores allows us to rank the component on a scale of low to high hazard susceptibility.

Sensitivity		Adaptive Capacity	
S0	The component will not be affected by projected weather conditions.	**AC0**	The component is not able to adjust to projected weather conditions.
S1	The component will be minimally affected by projected weather conditions.	**AC1**	The component is minimally able to adjust to projected weather conditions.
S2	The component will be somewhat affected by projected weather conditions.	**AC2**	The component is minimally able to adjust to projected weather conditions.
S3	The component will be affected by projected weather conditions.	**AC3**	The component is mostly able to adjust to projected weather conditions.
S4	The component will be greatly affected by projected weather conditions.	**AC4**	The component can adjust to projected weather conditions.

Table 1. *Sensitivity and adaptive capacity assessment score options.*

Sensitivity is the degree to which a system or component can be negatively affected (directly or indirectly) by current and future weather conditions. A high likelihood for negative impacts correlates with high sensitivity (S4), while a low likelihood for negative impacts correlates with low sensitivity (S0). Assessing sensitivity can help identify which components are likely to place greater demands or stress on the broader stormwater system under changing conditions. The sensitivity assessment explored the following areas:

- Current and future system **stressors**
- **Local impacts** tied to component performance *(see Location of Weather-Related Hazards)*

Adaptive capacity is the ability of a system or component to adjust to impacts, maintain core functions, and take advantage of opportunities to improve over time. A component with high adaptive capacity (AC4) should be able to adjust to changing weather conditions and maintain function. A component with low adaptive capacity (AC0) may not be able to function under changing

weather conditions without proactive steps to address needs and constraints. The adaptive capacity assessment explored the following areas:

- **Assets** and resources currently available to aid component performance
- **Constraints** stressing or limiting the component performance
- **Needs** or resources that would aid the component performance and the ability to fulfill needs
- **Opportunities** to improve stormwater system adaptability and reduce community impacts

Component: Natural Watercourse & County Drains

The primary drainage system running through the City of Plymouth is made up of a combination of the Natural Watercourse, owned by the State of Michigan, and County Drains. The following assessments consider impacts related to this broader connected system as a whole.

Sensitivity | Score: S3 - The component will be affected by projected weather conditions.

Current Stressors

Weather & Hydrologic Stressors

Rain patterns have become more variable in recent years, with events ranging from brief, light showers to extreme downpours over a short period, particularly over the summer months. Heavy storms and precipitation events can damage trees, carry debris downstream, and cause backups at protective grates within the system. Heavy rains also contribute to creek bank erosion, altering flow paths and making management more challenging. Seasonal extremes, including frozen ground in the winter and hard, dry ground in the summer, prevent rainfall from infiltrating the soil, increase runoff, and stress the stormwater system.

Land Use Changes & Development

Over the past 15-20 years, development has reduced green space and farmland, or previously undeveloped land in the Plymouth community and the surrounding area, specifically west (upstream) and south (downstream) of the city. This has led to an increase in impermeable surfaces, increasing runoff from roofs, paving, and industrial parks. Additionally, local stormwater infrastructure was designed for the development that existed decades ago and struggles at times, given changing weather patterns, to support the current level of development and population in the area. Furthermore, the city is limited in its ability to require older developments, that were already in place many years ago, to comply with current standards. For example, there are several churches in the area with large parking lots constructed before stormwater management requirements were implemented. With few exceptions, the city cannot require compliance with current standards until major construction and/or site redevelopment occurs.

Future Stressors

Weather & Hydrologic Stressors

Looking ahead, weather-related stressors already impacting Plymouth are projected to intensify. Increasing precipitation, coupled with aging infrastructure, raises concerns about the City's ability to manage and respond to heavier rain and greater runoff than it has previously handled. Changes in the freeze-thaw cycles and soil conditions will continue to interact with increased precipitation, further

stressing undersized and aging infrastructure. Although total rainfall is expected to increase, summer precipitation may decrease, potentially leading to a pattern of extended drought followed by heavy rain, which could further increase runoff. These challenges are further exacerbated by the multi-jurisdictional nature of stormwater management in Southeast Michigan, as detailed throughout this report.

Aging Infrastructure & Complicated Upgrades

Existing infrastructure may not be able to withstand the increasing pressures from changing weather conditions. The County Drain was built for historic conditions, not for future extremes. The tube running underneath downtown Plymouth was installed in 1949 and will eventually need to be replaced, despite regular inspections by the city and as needed maintenance by the County. Upon recent annual inspection a minor crack was reported in the tube and repaired by Wayne County. Updating and replacing segments of the tube will ultimately pose significant challenges due to the downtown location and permanent infrastructure which has been built above the tube. While the City has made some progress on updating and repairing City-owned infrastructure connecting to the tube, the full functionality of these upgrades may be limited until the entire system has been replaced. For example, when new assets are linked to older ones, the capacity of the new infrastructure is limited by the older, lower-capacity infrastructure it is connected to. Additionally, as weather conditions continue to change, there is uncertainty about what new needs may arise related to aging infrastructure.

New Development

New development inside and outside of the community will continue to add stressors on the drains and natural waterways through increased runoff. One example of this is a technology corridor that is now under development outside the city. While these types of developments provide jobs, tax base and other benefits to the community, many of these developments convert green space to impervious surface and, while required to meet current stormwater detention and pre-treatment standards, they still add stress to the entire regional stormwater system. Even if these developments incorporate stormwater detention, it is not clear if these plans will consider the expected increase in precipitation in the future.

Adaptive Capacity | Score: AC1 - The component is minimally able to adjust to projected weather conditions.

Assets

Regional Support for Green Infrastructure

In the City's most recent Strategic Plan, implementing green infrastructure is listed as a priority for redevelopment and City facilities. Additionally, Wayne County is becoming increasingly open to bioswales and other green infrastructure techniques for managing runoff on-site. Developers are also becoming more likely to implement sustainable stormwater management into new projects. As development increases, the city is seeing more on-site stormwater detention, which supports the larger system. Furthermore, the City receives stormwater licensing through the state, and city employees are well-versed in the various state, county, and local regulations and requirements for landscaping, and requirements for both impervious and pervious surfaces.

Some private businesses have proactively installed stormwater infrastructure on their property to help mitigate flooding and redirect stormwater. For example, The Plymouth Arts & Recreation Complex (PARC), Elks Club, and the Parkview Professional Building have all taken steps to mitigate stormwater in a proactive manner.

Interdepartmental Collaboration

The Municipal Services, Police, and the Fire Departments collaborate effectively when it comes to managing hazards in the community. There has also been proven and ongoing cooperation when it comes to specifically addressing stormwater concerns. These relationships allow the City to monitor and alert Municipal Services of stormwater back-ups and blockages outside of business hours. The City takes pride in ensuring that departments are not siloed from each other and fosters a culture of support and collaboration that is strongly valued.

Support with Maintenance & Real-Time Response

While capacity is limited, the City is still able to support Wayne County with infrastructure maintenance and inspections, as well as real-time response during flood events. The City conducts limited inspections of the tube and county drain and reports significant issues back to the County. When debris begins to collect, the City is able to leverage contractors and coordinate among various departments to remove debris from grates protecting the tube. The Police Department plays an active role outside of business hours in assessing the situation, determining the level of support and equipment needed, and making necessary calls to Municipal Services if needed.

Access to GIS Data

The City has built a robust GIS database for various infrastructure types. This provides information on the stormwater system throughout the entire community. The City is able to use this data to locate underground infrastructure (i.e., storm system, water main, sanitary sewer) where paving projects are being planned and allows the City to maximize the number of infrastructure updates that can be made under one project.

Municipal Separate Storm Sewer System

The City operates a Municipal Separate Storm Sewer System (MS4) which means that the stormwater and sanitary sewer systems are separate and as such stormwater is not contaminated with raw sewage as it would be in a combined system. This factor gives the City more options when it comes to using streets and other overflow areas for intentional and temporary overflow to manage excess runoff.

Public Communication & Education

The City has a well-established communication system to keep residents, visitors, and property owners well informed and prepared. The City distributes weather advisories from the National Weather Service, as well as those from the County. The City also leverages stormwater education resources from the Southeast Michigan Council of Governments (SEMCOG) for public education. Additionally, the City conducts campaigns to educate residents on how to proactively keep catch basins clear of debris ahead of heavy rain or snow/melt events and prevent blockages in the system.

Constraints

Multi-Jurisdictional Stormwater Management

The Natural Watercourse and County Drains are the primary drainage systems running through Plymouth; however much of this infrastructure is not owned by the City. Similar to other communities in Southeast Michigan, the primary entities overseeing this infrastructure include Wayne County and the State of Michigan. This multi-jurisdictional oversight adds complexity and confusion around who is responsible for funding and implementing maintenance and repairs across the stormwater system. Additionally, communication across these entities is challenging. While the City does routinely support maintenance of this infrastructure, there are limitations to the City's authority to take action,

make decisions, and allocate funds to support stormwater management. For these reasons it is challenging, at best, for the City to proactively address weaknesses within the stormwater system and respond in real-time to stormwater and flooding events within the Plymouth community. Additionally, residents will contact the City in hopes of resolving stormwater or flooding issues, however when the City redirects residents to the County or State, this can cause friction between the community and City staff when immediate action or resolution cannot be made.

Watershed Scale Issues

Local flooding and stormwater management in Plymouth is directly tied to the surrounding watershed, where neighboring communities face similar challenges. However, stormwater management is still hyper-localized due to political, financial, and social structures that are in place. Because of this factor, when back-ups occur upstream or downstream of Plymouth, it can become difficult to resolve excess runoff and flooding that stems from outside City limits. Additionally, identifying stormwater solutions at a regional scale has proven to be challenging in Southeast Michigan due to the large amount of impervious surface coverage and the numerous agencies and partners connected across the watershed. The City is interested in regional collaboration, but is constrained by the capacity to participate and recognizes fundamental challenges to seeking collective funding across several communities.

Private Property Access

Much of the stormwater system in Plymouth, particularly the natural watercourse, runs through private property. Additionally, there is a known problem with overgrowth, debris, and litter obstructing flow and causing localized flooding through the natural watercourse. These two factors severely limit the City's ability to perform maintenance, including maintaining drainage and bank health through activities such as creek bank stabilization, debris removal, and overgrowth prevention. In some instances, unclear easements can add another barrier for the city to access and maintain the natural watercourse. Related to private property, some developments are not required to add or maintain stormwater retention, which gives the City less influence to enforce certain measures. Additionally, efforts to impose additional ordinances for private property owners may meet resistance from residents concerned about their property rights and would be difficult to enforce.

Resident Support for Green Infrastructure

Public perception of green infrastructure can strongly influence whether or not these types of projects get implemented locally. Specifically, some residents do not like the appearance of green infrastructure that may seem aesthetically "unkempt" and view such projects as encouraging nuisance pests like rodents and insects. It is also unclear how many residents would be willing to bear the labor and costs of installing green infrastructure on their own property for the benefit of their neighbors. Additionally, when it comes to businesses implementing green infrastructure on site, there has been some pushback related to reduced space for parking or other site features.

Needs

The needs assessment provides an estimate of how easy or hard it will be for the City to fulfill needs in each of the following areas for the natural watercourse and county drains. Each category was scored on a scale of one (easy to fulfill needs) to ten (hard to fulfill needs). Lower numbers indicate aspects where it will be relatively easy to fulfill needs, while higher numbers indicate aspects where it will be relatively harder to fulfill needs. Figure 8 shows the City's rankings across the five aspects, followed by additional areas of need identified by the City.

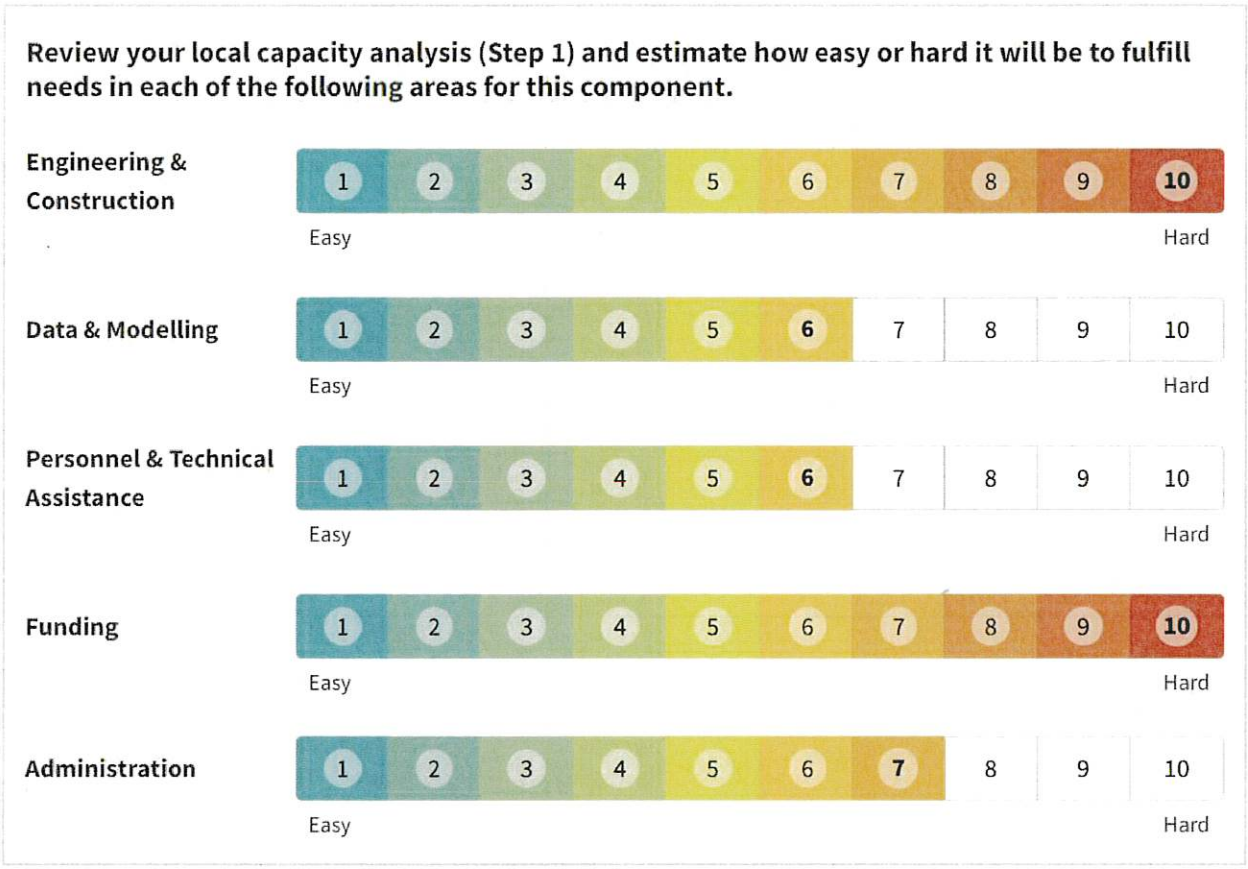


Figure 8. *Local capacity to fulfill needs pertaining to the natural watercourse and county drains.*

Engineering & Construction | Score: 10

The City is limited by a lack of authority to make decisions regarding the natural watercourse and county drains. While the City could examine the infrastructure and offer solutions, the City does not have the ability to fund or implement solutions. Additionally, if the County were to repair and update the county drain under downtown Plymouth, there would be significant limitations due to the development above this segment of infrastructure. Given the high level of development in Plymouth, the City is also limited in space to implement solutions throughout the watershed that may offset stress on the natural watercourse and county drains.

Data & Modelling | Score: 6

The City has access to existing data, such as modeling for 100- or 500-year storms. However, there is a need for more information regarding future weather conditions in Plymouth. The City knows that precipitation is increasing, however more information on the frequency and intensity of these events would help inform solutions across the community that may reduce stress on the natural watercourse and county drains. Improved data and modeling would also support maintenance and monitoring supported by the City.

Personnel | Score: 6

The City frequently and easily provides personnel to clear certain grates surrounding the natural watercourse and the county drain. Any additional assistance provided by the City to support the State and County in managing this infrastructure would be a challenge.

Funding | Score: 10

The City has ongoing funding needs and is not in a position to spend local dollars on State- and County-owned infrastructure. The City may be interested in contributing to a hypothetical regional or state revolving fund dedicated to stormwater projects, however this is not something the City could organize or administer. Separately, the City is limited in staff resources and funding to hire staff who could provide technical assistance to residents who want to implement stormwater management on their property.

Administration | Score: 7

The City is currently able to commit time to support stormwater permitting and maintenance that may support the natural watercourse and county drains. However, the City's administrative capacity is limited, and these same staff may be easily pulled to respond to other local issues, such as transportation and resident complaints.

Opportunities

While the City does not have jurisdiction over the natural watercourse and county drains, there are a number of opportunities that the City may wish to pursue to reduce stress on this infrastructure and associated flooding.

Collaborative Public Education Model

Throughout the assessment process, public education was frequently mentioned as a useful tool to alleviate stress on the natural watercourse and county drains. The City is in a position to more easily reach Plymouth residents and disseminate information compared to the State and County, but there are not always the resources, materials, capacity or expertise to initiate public education activities. To overcome this barrier, the City could consider partnering with other state and regional partners and agencies to fill internal gaps. Certain groups, like the Southeast Michigan Council of Governments (SEMCOG) and the Friends of the Rouge, may already have existing educational materials that could be used locally in Plymouth, such as SEMCOG's One Water program. Collaboration with the State of Michigan and Wayne County could also expand access to a library of available resources and offer opportunities to refine state and regional information to a local context. Long-term collaboration around public education could also result in a more unified set of materials that can be used across the region. The City may wish to leverage existing fact sheets and web pages to populate a publicly accessible web page with flooding resources for the Plymouth community. Educational topics of interest identified by the City include the following:

- General education on stormwater systems and watersheds, including local flood risk and impacts.
- Specific information on how stormwater is managed locally and the various roles and actors involved in operating and maintaining the local system, including who residents can contact for support.
- Resources and guidance on the role residents can play in supporting the stormwater system and steps they can personally take to help prevent flooding, for example, by keeping debris and trash out of waterways and away from storm drains.
- Education on the benefits of green stormwater infrastructure as a means of building public support and acceptance for these types of projects. If additional support for technical assistance were feasible, extending this education further to provide direct support to residents
- Information regarding weather alerts and flood warning systems (both proactive and real-time).

Regional Stormwater Collaboration

While impacts are seen locally, flooding is a regional issue requiring regional cooperation and collaboration. Added collaboration, where feasible, could help Plymouth and the region accomplish a number of goals supporting the natural watercourse and county drains, including advocating for funding; filling data and modeling gaps; coordinating real-time response and long-term solutions; expanding political awareness; and aligning messaging, resources, and best practices across agencies and partners. Regional collaboration also has the potential to create shared momentum toward more proactive and preventative emergency management strategies rather than focusing all efforts on real-time emergency response. Partners who may collaborate on stormwater solutions in Plymouth, MI, include actors at various levels of government and regional watershed groups. These include the State of Michigan, Wayne County, Friends of the Rouge, SEMCOG, and other local municipalities in the watershed. Additionally, the Conference of Western Wayne (CWW) is a bipartisan consortium of 18 communities that works collectively to discuss mutual issues, share information, and generally improve the quality of life for residents. Stronger partnerships with higher level agencies could allow the City to receive more support from those who can reinforce messaging going out to Plymouth residents.

Enhanced Flood Monitoring & Warning System

The City is interested in finding ways to fund and incorporate new technology into local stormwater management practices, with a particular interest in technologies for flood monitoring and early warning systems. Currently, the City relies heavily on the local weather alerts and news agencies to determine active flood alerts, and the County plays a major role in getting this messaging out to residents. Moving forward, and if funding allowed, the City would be interested in leveraging technology to improve this alert system and to play a more active role in communicating flood hazards to Plymouth residents. One idea mentioned by City staff included deploying technology, such as live-stream cameras, into the field as a way for the City to view current stream levels, make decisions, and provide emergency alerts more quickly from a remote location. It's possible that there could be public interest in having access to this type of live stream content as well. One real-world example of this is a group called Hyfi who is deploying similar technology across Southeast Michigan with the goal of using advanced tools and wireless monitors to help manage stormwater assets, close roads promptly, and alert residents.

Pathways for Infrastructure Improvements

When it comes to new projects and infrastructure improvements, the City could consider increasing stormwater storage and detention upstream of the natural watercourse and county drain, and improving the conditions and capacity of infrastructure flowing into the system. One way the City could maximize the impact of future projects is to update old infrastructure that is already connected to new assets, creating a more connected system of high-capacity, high-functioning infrastructure feeding into the natural watercourse and county drain. Another option could include exploring eminent domain to develop an upstream stormwater detention area with recreation and parking to provide co-benefits for the community. In addition to being an unpopular option amongst the community, the high cost, long time-frame, political elements, and arduous process for acquiring property make this a much less desirable option for the City.

Given the findings of this report, the city will need to be creative in seeking, securing, and advocating for funding to support projects that alleviate stress on the natural watercourse and county drains. One tangible option could include further exploring grant opportunities coming from the Michigan Department of Environment, Great Lakes, and Energy (EGLE), knowing that other neighboring communities have successfully secured such grants for green stormwater infrastructure projects.

Another less tangible, long-term option could include establishing a local stormwater utility and/or advocating for a regional or state revolving fund dedicated to stormwater projects.

Outside of funding, regulations could be another way for the City to produce more active projects addressing stormwater. New developments in Plymouth are required to take measures to manage stormwater on-site and reduce runoff, which has provided an opportunity and momentum for additional stormwater storage throughout the community. In tandem with current regulations, the City could consider developing an incentive program to encourage existing properties to install similar measures, which could be particularly impactful for areas with large surface runoff, such as large parking lots.

Assessment Results

When combined, sensitivity and adaptive capacity scores produce a hazard susceptibility ranking – ranging from low to high – for each component. The matrix below summarizes the relative susceptibility to hazards of the assessed component, **the natural watercourse and county drains**, based on these scores (Figure 9). The corresponding table details the individual scores and rankings for each component (Table 2).

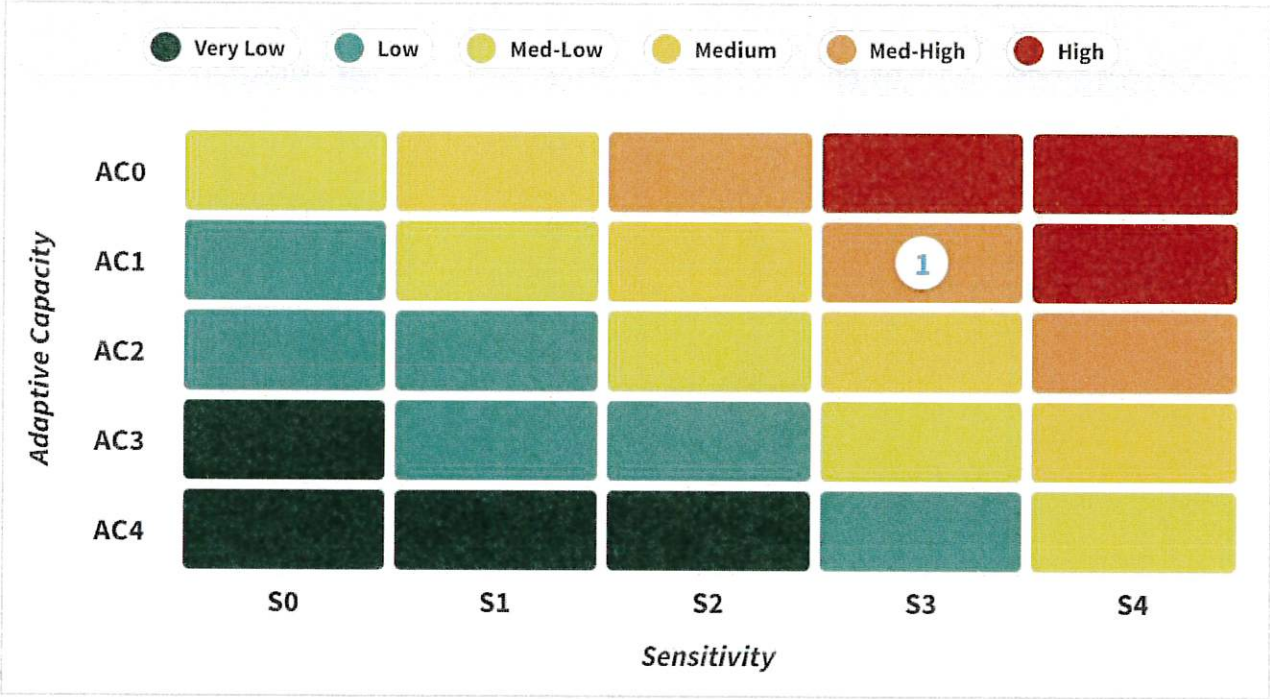


Figure 9. *Matrix showing the susceptibility ranking for the natural watercourse and county drains.*

Component	Hazard Susceptibility	Sensitivity	Adaptive Capacity
Natural Watercourse and County Drains	Med-High	S3	AC1

Table 2. *Table showing sensitivity and adaptive capacity rankings for the natural watercourse and county drains.*

Next Steps

This plan represents an important step in planning for future weather-related impacts to infrastructure, services and residents in Plymouth, MI. Successful preparation for projected changes to extreme weather and natural hazards will depend on identifying and implementing holistic strategies to address weaknesses and establishing an iterative process to monitor and evaluate progress. Based on the results of this analysis, the City of Plymouth is committed to working with local, regional, and state leaders, practitioners, stakeholders, and residents to enhance stormwater system adaptability and preparedness in Plymouth.

Below are recommended next steps to leverage key findings and opportunities outlined throughout this report and continue taking action toward a stronger stormwater system and community.

- **Strengthen Regional Collaboration**
- **Expand Public Education and Community Engagement**
- **Utilize Technology to Improve Flood Mitigation**
- **Encourage Green Infrastructure and Resilient Development**

Tools & Resources

- FloodWise Communities Tool
- FloodWise Communities Webpage
- Plymouth, MI Local Profile
- Great Lakes Regional Summary
- Neighborhoods at Risk Tool
- RAND Corporation's Guide for Assessments for Stormwater Agencies
- National Centers for Environmental Information (NCEI) Storm Events Database

Appendix A - Plymouth, MI Local Data Profile

Local Climate Profile: Plymouth, MI

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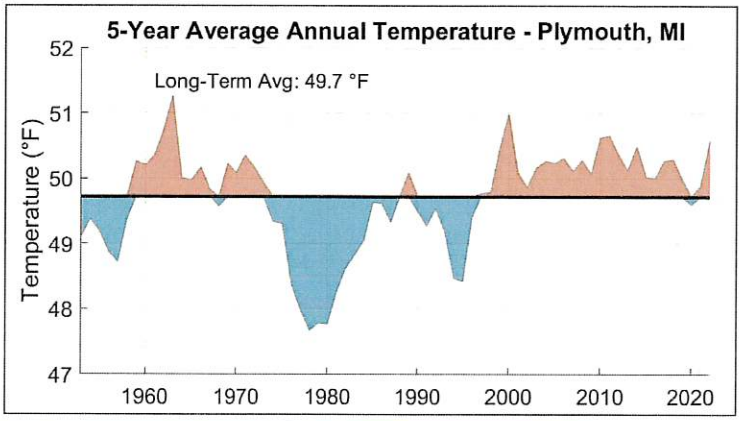
This profile summarizes the historic and projected changes to local weather and climate. This information can help us understand what changes have already been observed as well as what changes are anticipated in the future. While temperature has remained roughly the same, precipitation has increased between 1951–2020, with trends indicating wetter conditions than in the past. In the future, average temperatures are projected to increase, with some seasonal variation. Future projections suggest more precipitation on average, but not necessarily during all seasons.

Historic averages in this summary are calculated from 1991–2020. Historic changes are calculated as the difference between the 1991–2020 average and the 1951–1980 average. Future trends refer to average projected changes for mid-century (2040–2059) and late-century (2080–2099) compared to the 1980–1999 average.

	Historic (1951–2020)	Future (2040–2059)
Temperature	**+0.7°F** Increase in average annual temperature **+1.3 days** Increase in days/year over 90°F	**+3 to 5°F** Increase in average annual temperature **+13 to 29 days** Increase in days/year over 90°F
Precipitation	**+5.1 in.** Increase in total annual precipitation **+1.5 days** Increase in days/year with over 1" rain	**+0 to 4 in.** Increase in total annual precipitation **+0.7 to 2.4 days** Increase in days/year with over 1" rain

Temperature

The table (below) shows historic and future trends in average annual and seasonal temperature. The graph (on the right) displays the 5-year moving average of annual temperature from 1951–2024. The moving average value displayed for each year on the graph is the average of the 5 years surrounding that midpoint (e.g., 1990 displays the average for 1988–1992).

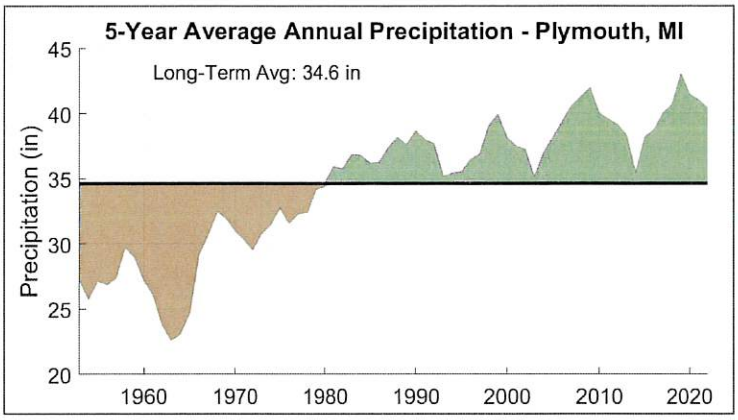


Historic and Future Temperature – Plymouth, MI

Variable	Historic Average	Historic Change	Future Change (Mid-Century)	Future Change (End-Century)
Annual	50.1°F	0.7°F	3 to 5°F	6 to 10°F
Winter	27.7°F	1.7°F	2 to 4°F	5 to 9°F
Spring	48.6°F	0.7°F	2 to 5°F	5 to 11°F
Summer	71.2°F	0.2°F	4 to 6°F	8 to 12°F
Fall	52.5°F	0°F	3 to 6°F	7 to 12°F
Average Low	40.7°F	0.5°F	3 to 5°F	7 to 10°F
Average High	59.5°F	0.8°F	3 to 5°F	6 to 10°F
Days/Year >=90°F	9.2 days	1.3 days	13 to 29 days	31 to 64 days

Precipitation

The table (below) shows historic and future trends in total annual and seasonal precipitation. The graph (on the right) displays the 5-year moving average of annual precipitation from 1951–2024. The moving average value displayed for each year on the graph is the average of the 5 years surrounding that midpoint (e.g., 1990 displays the average for 1988–1992).



Historic and Future Precipitation – Plymouth, MI

Variable	Historic Average	Historic Change	Future Change (Mid-Century)	Future Change (End-Century)
Annual	38.3 in.	5.1 in. (15.4%)	0 to 4 in.	1 to 6 in.
Winter	8.2 in.	2.5 in. (43.8%)	0 to 2 in.	–1 to 2 in.
Spring	10.1 in.	1.8 in. (21.6%)	–1 to 2 in.	0 to 3 in.
Summer	10.9 in.	1.6 in. (17.6%)	–1 to 3 in.	–1 to 1 in.
Fall	9 in.	2.1 in. (30.1%)	0 to 1 in.	1 to 2 in.
Days/Year >=1"	6.1 days	1.5 days	0.7 to 2.4 days	1.6 to 2.6 days

Data Sources

Historical Observations: National Oceanic and Atmospheric Administration National Centers for Environmental Information Global Historical Climatology Network daily (GHCNd) Station Observations from Ann Arbor, MI. https://www.ncei.noaa.gov/products/land-based-station/global-historical-climatology-network-daily

Future Projections: Nelson Institute Center for Climatic Research at the University of Wisconsin-Madison. Regional Climate Model version 4 (RegCM4). Dynamical Downscaling for the Midwest and Great Lakes Basin for the Southeast Lower Michigan Climate Division. https://ccr.nelson.wisc.edu/dynamical-downscaling/index.php

Additional Resources

- Summary of Climate Change in the Great Lakes Region
- Great Lakes Climatologies (local and subregional information)
- Tools and Resources for City Adaptation
- Climate Hazard and Mitigation Planning (CHaMP) Tool

This summary was produced by GLISA, the Great Lakes NOAA CAP team, and can be cited as:
GLISA. Local Climate Profile: Plymouth, MI, May 2025, glisa.umich.edu.

Learn more: glisa.umich.edu
Contact us: glisa-info@umich.edu

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Summary of Climate Change in the Great Lakes Region

The climate system in the Great Lakes region is dynamic and will continue to change rapidly due to climate change. Changing atmospheric conditions and warming temperatures are fueling extreme weather, increased precipitation, and frequent downpours. Additionally, heat, drought, and other climate changes are increasingly impacting the region.

Climate change also poses evolving challenges, priorities, and risks that will affect all sectors. Importantl , climate and weather conditions will not change to a new set of static conditions. This means long-term planning efforts should egularly assess climate changes and be as flexible and adapta le as possible. Understanding past and future climate changes is a first step towa d this goal.

This document summarizes historic trends and future projections across the Great Lakes region. Some parts of the region may have diffe ent rates of change than the regional average, therefore local data should be used where available.

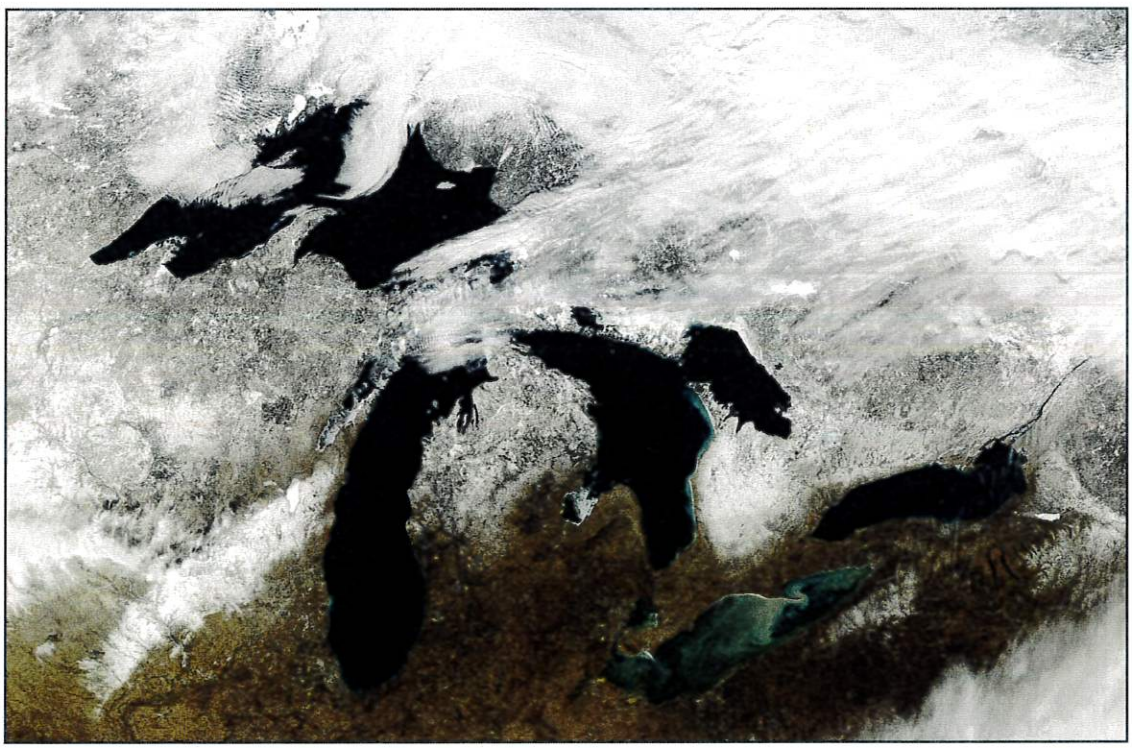


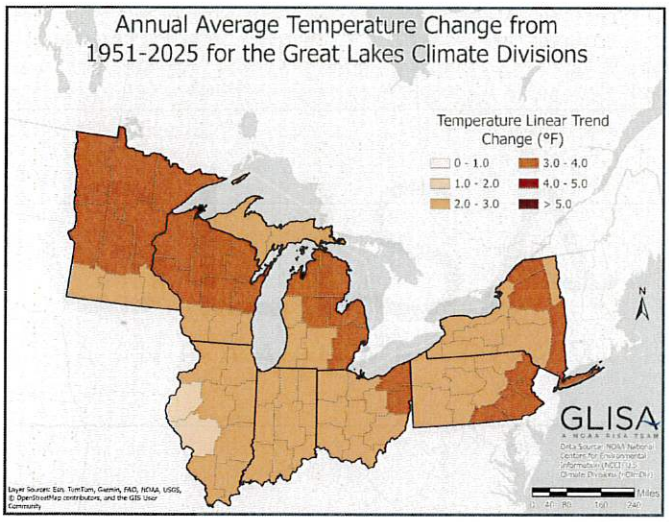
Photo: *Satellite image of the Great Lakes.*

Historic *trends and values listed in this summary refer to average trends across the U.S. Great Lakes region from 1951 to 2023.* ***Future*** *trends and values refer to average projected changes for mid-century (2040–2059) and late-century (2080–2099) compared to the late 20th century (1980–1999). Future trends capture changes across the entire U.S. and Canadian Great Lakes region, which includes the U.S. Great Lakes states and the province of Ontario in Canada. Maps of projected regional changes are available on the GLISA website.*

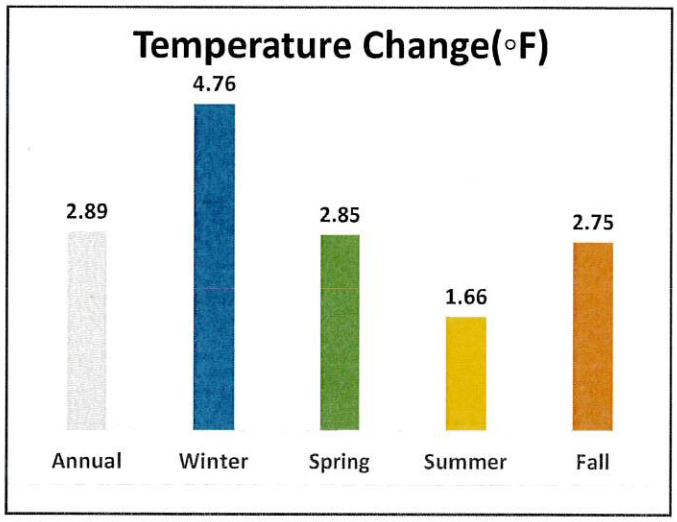
Temperature Trends

Past

- Between 1951 and 2025, average annual air temperatures increased by 2.9°F (1.6°C).
- Between 1951 and 2025, most seasonal warming has been observed during the winter with over 4°F increase.
- Warming has also been observed in overnight low temperatures.



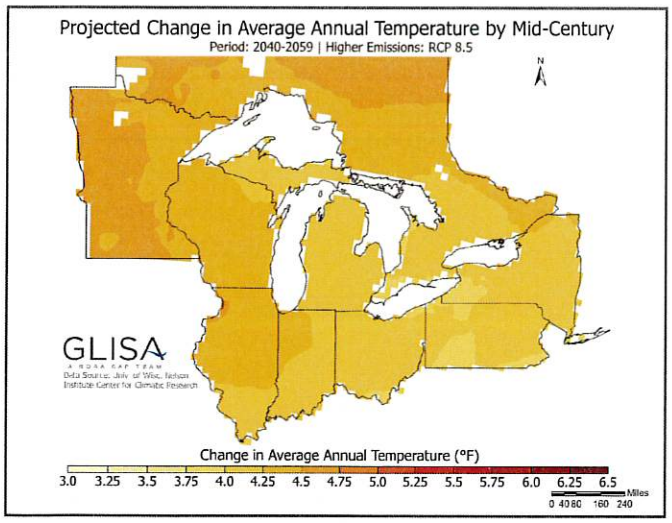
Observed annual temperature changes for climate divisions in the Great Lakes Region. Darker colors correspond to greater increases.



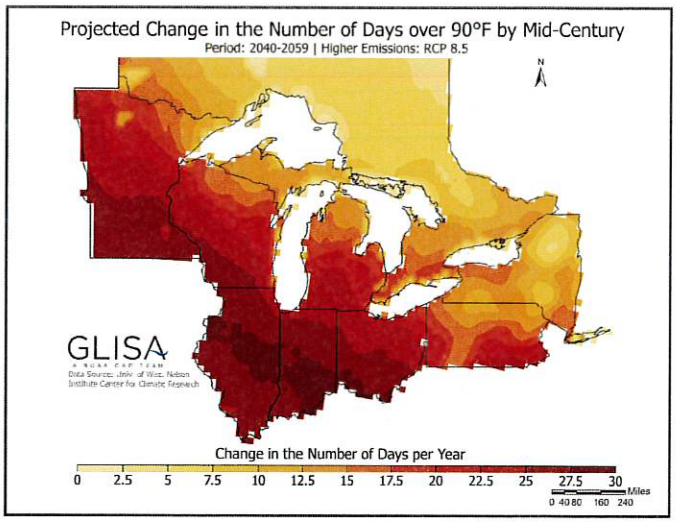
Changes in annual and seasonal temperature for the Great Lakes Region from 1951–2025. Seasons are warming at different rates.

Future

- Temperatures will continue to warm at a pace near or faster than the current rate.
- Average air temperature is projected to rise by 3°F to 6°F (1.7 to 3.3°C) by mid-century, and by 6°F to 11°F (3.3°C to 6.1°C) by late-century.
- By late-century, the number of extreme heat days will increase, with projections indicating 9 to 37 more days over 90°(32°C) by mid-century and 27 to 66 more days by end-century in an average year.
- Northern parts of the region will likely experience the greatest temperature increases.



Projected annual temperature changes for the Great Lakes Region. Darker colors correspond to greater increases.

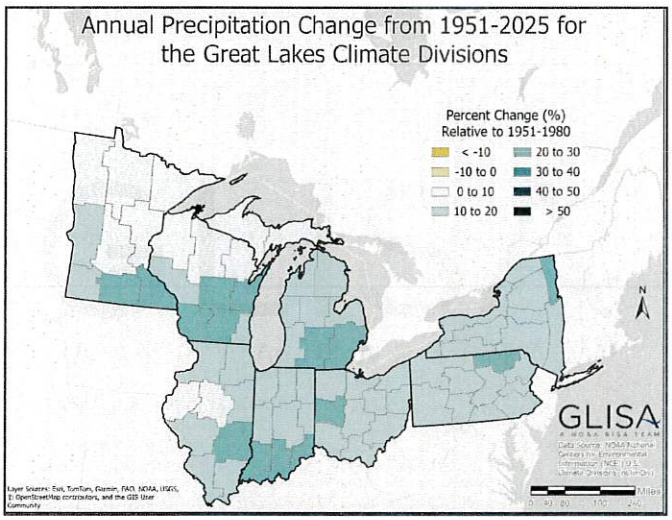


Projected change in the number of days per year over 90°F for the Great Lakes Region. Darker colors correspond to greater increases.

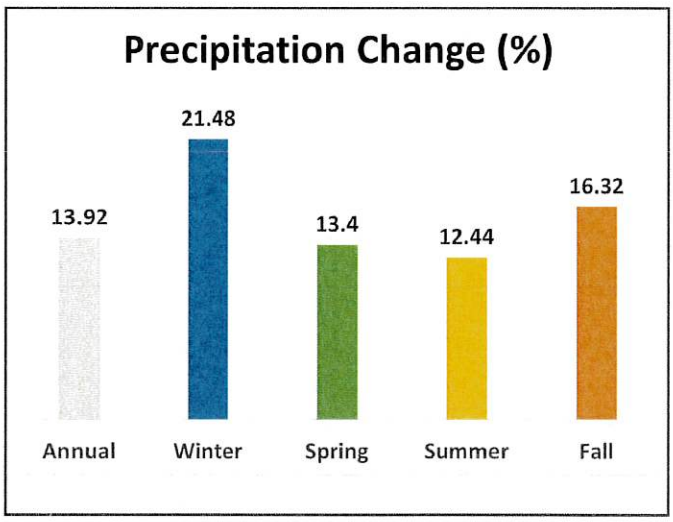
Precipitation Trends

Past

- Between 1951 and 2025, total annual precipitation has increased by an average of 14%, with significant variatio across the region.
- Between 1951 and 2025, the greatest precipitation increases have been observed in winter and fall.
- The amount of rain falling in extreme events (heaviest 1% of storms) has increased by 34% and these events have generally become more frequent between the periods of 1951–1980 and 1991–2020.
- Due to warmer winter temperatures, winter precipitation is increasingly falling as rain or sleet, rather than snow.
- Snowfall has decreased, except in lake-effect zones, whe e warmer lakes and declining ice cover contribute to increased lake-effect snowfall



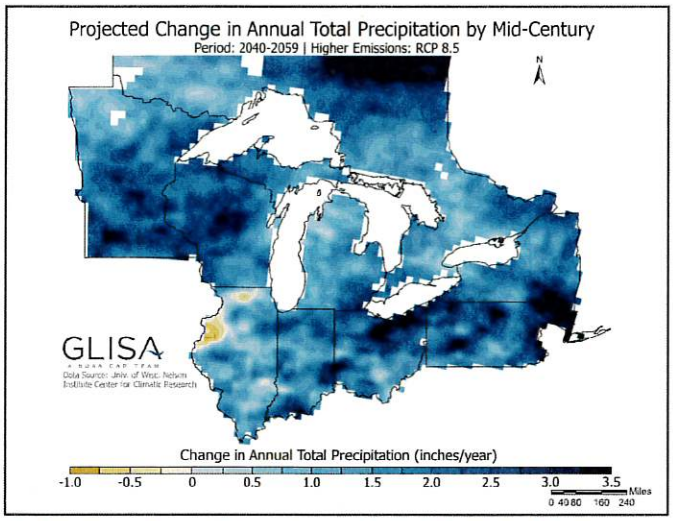
Observed annual precipitation changes for climate divisions in the Great Lakes Region. Darker colors correspond to greater increases.



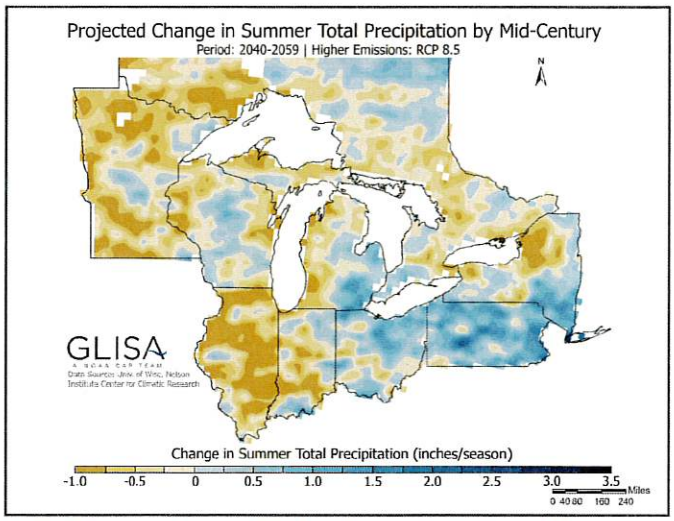
Changes in annual and seasonal precipitation for the Great Lakes Region from 1951–2025. Seasons are changing at different rates.

Future

- Total annual rainfall is projected to change by –0.3 to 4.2 inches (–6.4 to 107.7 mm) by mid-century, and increase by 1 to 6 inches (25.4 to 152.4 mm) by late-century.
- Despite overall increases in annual rainfall, summer drought and the number of consecutive dry days will likely increase, interspersed with periods of increased rainfall.
- Warmer winters will continue to cause more winter precipitation to fall as rain rather than snow, leading to declines in overall snowfall in the future, even in lake-effect zones that have observed inc eased snowfall in the recent past.



Projected annual precipitation changes for the Great Lakes Region. Most of the region is projected to experience increases (blue).



Projected summertime precipitation changes for the Great Lakes Region. Large swaths of the region are projected to decrease (brown).



Extreme Weather

- With warmer conditions, the atmosphere can hold more water vapor. This increase in moisture, combined with rising temperatures, contributes to storm formation.
- This climate phenomenon has led to more frequent and intense storms and will likely continue to produce more intense storms into the future.



Lake Levels

- Great Lakes water level fluctuations a e mainly driven by the competing balance of precipitation, evaporation, and runoff. Climate change is amplifying these fac ors and causing lake levels to fluctuat more rapidly and to greater extremes.
- For example, after a period of low lake levels during the 1990s to the mid-2010s, the lakes rose at an unprecedented rate between 2014 to 2020. This contributed to record high lake levels across the basin, widespread flooding, and seve e shoreline erosion in some areas. Since this period, lake levels have fallen back to near-average as of 2024.
- Modeling to project future lake levels is continually being updated and improved. Currently, recent studies and modeling efforts indicate that lake levels will con inue to see increasing fluctuations an variability into the future.



Ice Cover & Lake Temperature

- In recent decades, less annual average ice cover has been observed on the Great Lakes, compared to decades prior to the 1990s. However, with strong year-to-year variability, years with high ice coverage are still possible.
- Due to lake ice melting earlier in the season, the surface of the lakes are open to absorb heat from the sun earlier and longer. This has contributed to increases in summer lake surface temperatures, with Lake Superior increasing the most by 4.5°F (2.5°C) between 1979 and 2006.

Future Climate Hazards in the Great Lakes Region

The table below summarizes extreme climate hazards in the Great Lakes region and how they are expected to change in the future. The number and direction of arrows indicate the projected trends for mid-century (2040-2059) and late-century (2080-2099) compared to the late 20th century (1980-1999). For example, a single arrow indicates a moderate change, and two arrows indicate a substantial change.

Climate Hazards in the Great Lakes Region

Risk	By Mid Century	By End of Century	Summary
Flood Hazards	▲▲	▲▲	Stronger and more extreme precipitation events will be more likely to overwhelm stormwater infrastructure.
Dam Failures	▲	▲▲	Stronger and more extreme precipitation events coupled with aging dam infrastructure will increase the probability of dam failure.
Convective Weather (Severe Winds, Lightning, Tornadoes, Hail)	▲	▲	Warmer temperatures and additional moisture increase the potential for severe weather (e.g., tornadoes and hail) and allow for a longer severe weather season.
Severe Winter Weather (Ice/Sleet Storms, Snow Storms)	▲	▲	Warmer, shorter winters will reduce winter-related impacts, though lake-effect snow will continue increasing in the near future. Due to natural variability, cold air outbreaks are still possible and can lead to ice, sleet, freezing rain, and wet snow.
Extreme Heat	▲	▲▲	The number of extremely hot days (over 95°F and 100°F) will likely increase. Overnight lows have warmed faster than daytime highs, which may lessen opportunities for relief during heat waves. Increased heatwaves and humid conditions elevate the risk of heat-related deaths and illnesses.
Extreme Cold	▼	▼▼	The number of extremely cold days (i.e., days below 10°F) have decreased in the region and are projected to decrease even more in the future. However, cold air outbreaks are still possible due to natural varibility.
Drought	▲	▲▲	Summer drought and the number of consecutive dry days will likely increase, interspersed with periods of increased rainfall.
Wildfi es	▲	▲	Increased summer drought and the number of consecutive dry days will increase the risk of wildfi es, particularly in the northern portions of the region.

The arrows in this table reflect a qualitative assessment made by the GLISA team based on analysis in the Fourth National Climate Assessment. These trends represent an average across the Great Lakes region, and will vary by location due to the localized nature of extremes.



Data Sources

Historical Observations: National Oceanic and Atmospheric Administration National Centers for Environmental Information Global Historical Climatology Network daily (GHCNd) Station Observations. https://www.ncei.noaa.gov/products/land-based-station/global-historical-climatology-network-daily

Future Projections: Nelson Institute Center for Climatic Research at the University of Wisconsin-Madison. Regional Climate Model version 4 (RegCM4). Dynamical Downscaling for the Midwest and Great Lakes Basin. https://ccr.nelson.wisc.edu/dynamical-downscaling/index.php

Additional Resources

- Climate Change in the Great Lakes Region 2-page fact sheet
- Great Lakes Climatologies (local and subregional information)
- Great Lakes Regional Climate Change Projection Maps
- Tools and Resources for City Adaptation
- Climate Hazard and Mitigation Planning (CHaMP) Tool
- Annual Great Lakes Climate Summary

How to Cite This Resource

GLISA. Summary of Climate Change in the Great Lakes Region, October 2024, glisa.umich.edu.

About GLISA

This summary was produced by GLISA. GLISA is the Great Lakes CAP team and is part of NOAA's Climate Adaptation Partnerships (CAP) network, formerly known as RISA. GLISA was established in 2010 and is a collaboration between the University of Michigan, Michigan State University, The College of Menominee Nation, and the University of Wisconsin. GLISA works at the boundary between climate science and decision-makers, striving to enhance Great Lakes communities' capacity to understand, plan for, and respond to climate impacts now and in the future.

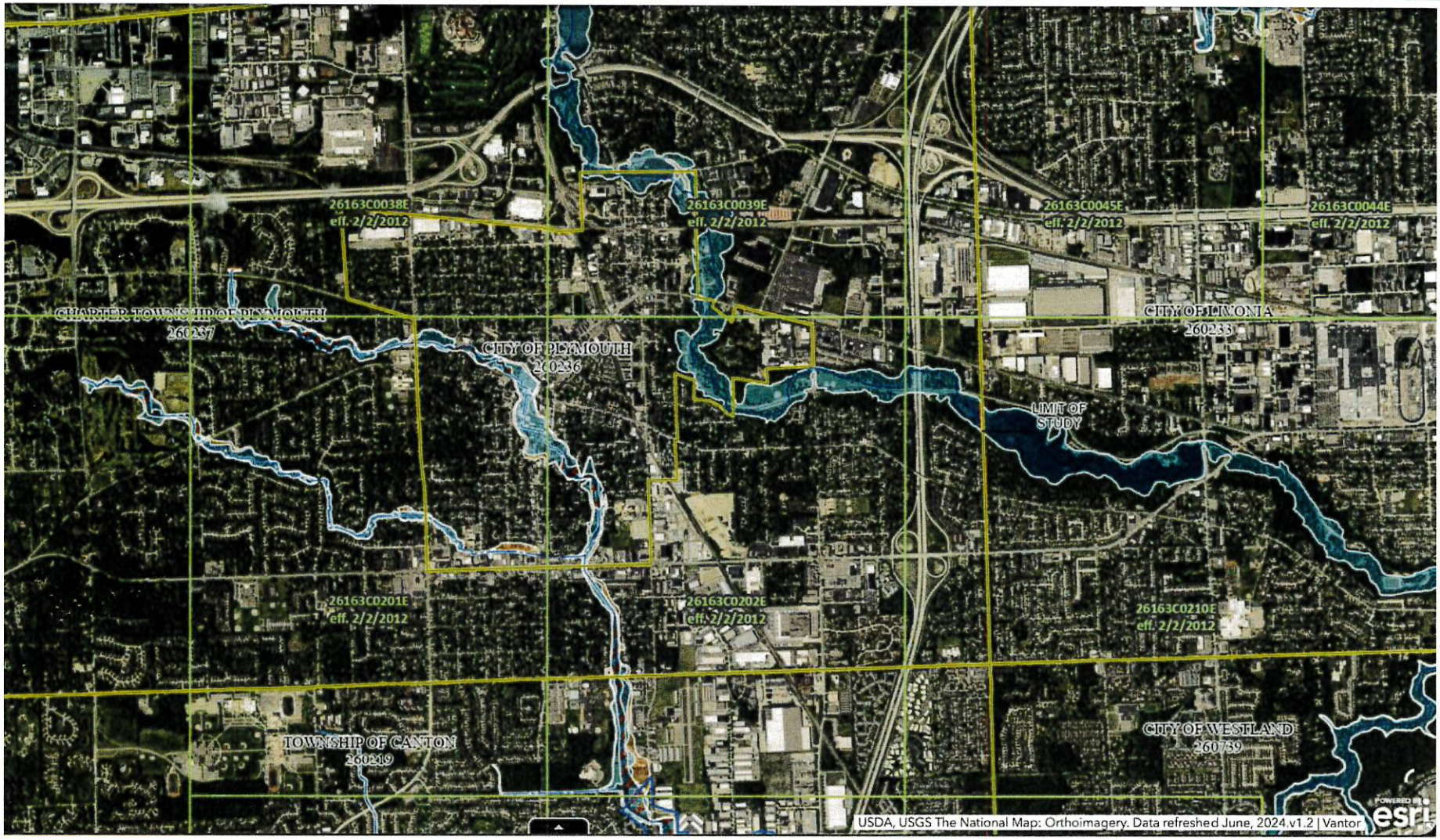
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Published April 2026

Appendix C - Plymouth, MI FEMA Flood Map



Appendix C - *FEMA Flood Map for Plymouth, MI and surrounding area (accessed October 2026 via the National Flood Hazard Layer Viewer).*