THE CITY OF CHARLOTTE MICHIGAN

Manager's Report
June 20th Council Meeting

Public Input Opportunity

The Tri-County Hazard Mitigation Plan is getting an update, and public participation plays an important role. All residents of Clinton, Eaton and Ingham counties are encouraged to review the plan and submit comments by Friday, June 24, 2022.

The plan can be accessed online here: https://drive.google.com/file/d/175DHWxisk9dcnEMvoRvJJrCiJujCXTRf/view and a copy is included with this report.

To submit comments, please go here: https://app.smartsheet.com/b/form/ee41a1a574a9484184cdec1498bab39d.

The document provides a comprehensive introduction to common hazards we face within our community, as well as a thorough overview of mitigation efforts against natural disasters, like hurricanes and fires. Hazard mitigation planning reduces the risk to people and property, and reduces the cost of recovering from a disaster. A hazard mitigation plan can help communities become more sustainable and disaster-resistant by focusing efforts on the hazards, disaster-prone areas and identifying appropriate mitigation actions.

Volunteer Opportunities

The City has several opportunities for citizens to participate in their local government. We are seeking volunteers to serve on the Ad Hoc Water Treatment Committee; Camp Frances Board; Board of Review; and Planning Commission. Interested persons can find more information here: https://www.charlottemi.org/volunteers-wanted/

Revenue and Expense Report

The monthly (May 2022) and year-to-date revenue and expense report is provided for Council's review. Please direct any questions to myself or Finance Director/Treasurer Smith.

Code Enforcement and Rental Inspection Update

The Code Enforcement Officer continues efforts to ensure properties are in good repair and we are now entering weed/lawn cutting season. From March to May, 65 complaints were logged, 9 have been corrected/closed, and the remainder are open with ongoing efforts to achieve compliance. The Code Officer is also working to establish a "Sponsor a Neighbor" program where a person can offer to help cut a neighbor's lawn, or can ask for assistance in lawn cutting to help

those individuals who are unable to maintain their grass. If you are able to help, or know someone who would benefit, reach out to Cheri at 517-543-8837 or ccummings@charlottemi.org for more information.

The Rental Inspector is actively working to ensure safe living conditions for tenants. The City will be sending out final notices to those property owners that have not registered and second notices to those owners that have not scheduled their initial inspection for certification. The Inspector is working with those property owners to address violations when found. The rental property in the 200 block of Oliver St has changed ownership. The home has been inspected and deemed inhabitable. The new owner has already begun work on the cleanup of the home. Since January, we have issued 167 Certificates of Compliance for rental properties and conducted 201 inspections.

Assistance Programs

For persons who may be facing financial difficulties with utilities, mortgage/rent, or other hardships, there are a number of assistance programs available. More information can be found on the city's website: https://www.charlottemi.org/assistance-programs-available/

RAVE Alerts

The City participates in RAVE Alerts which provides alert notifications to participants via voice, email, text, and posts to social media. There are several ways to register: Text CHARLOTTE to 67283; Download the Smart911 app; Register for a free and secure safety profile online at Smart911.com.

Comcast Infrastructure Update

As City Council may recall, the City was approached by Comcast to establish a franchise agreement to bring their cable/internet services to the city. The City has been in contact with the implementation team at Comcast to begin the planning of their investment of cable infrastructure in the City. The tentative plan is to begin installation of infrastructure in first quarter of 2023 and installation throughout the city will take place over ~5-6months timeframe. They did note that as they proceed, they will activate service as they go, so interested customers will be able to begin service during the rollout once they've installed lines in a particular area.

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Fund 101 - GENERAL FUND						
Revenues						
Dept 000.000						
101-000.000-411.000	CURRENT PROPERTY TAXES	3,100,000.00	3,236,733.40	0.00	(136,733.40)	104.41
101-000.000-411.100	YARD WASTE PROPERTY TAX	39,000.00	40,953.17	0.00	(1,953.17)	105.01
101-000.000-412.000	TRAILER PARK TAXES	3,500.00	4,932.00	459.00	(1,432.00)	140.91
101-000.000-413.000	TAXES - COLLECTION FEES	100,000.00	126,157.57	0.00	(26,157.57)	126.16
101-000.000-414.000	TAXES - INTEREST & PENALTIES	5,000.00	283.15	0.00	4,716.85	5.66
101-000.000-425.000	BUILDING PERMITS	0.00	20.00	0.00	(20.00)	100.00
101-000.000-428.000	ZONING PERMITS	1,500.00	0.00	0.00	1,500.00	0.00
101-000.000-429.000	OTHER PERMITS & FEES	0.00	895.00	155.00	(895.00)	100.00
101-000.000-432.000	LIQUOR LICENSE	10,000.00	11,041.80	0.00	(1,041.80)	110.42
101-000.000-433.000	STATE REV SHARING-SALES TAX	900,000.00	749,576.00	0.00	150,424.00	83.29
101-000.000-437.000	STATE GRANTS	20,000.00	0.00	0.00	20,000.00	0.00
101-000.000-441.000	LOCAL COMM STBLZTN SHARE TAX	150,000.00	328,941.85	137,415.42	(178,941.85)	219.29
101-000.000-443.000	CABLE FRANCHISE FEES	40,000.00	37,683.43	7,807.77	2,316.57	94.21
101-000.000-447.000	ACCIDENT, FOIA, COPIES	2,000.00	3,304.11	286.63	(1,304.11)	165.21
101-000.000-450.000	SCHOOL PARTICIPATION REIMB.	47,500.00	0.00	0.00	47,500.00	0.00
101-000.000-471.000	PARKING FINES	4,000.00	4,825.00	20.00	(825.00)	120.63
101-000.000-472.000	DISTRICT COURT FINES	5,000.00	6,333.07	664.95	(1,333.07)	126.66
101-000.000-501.000	INTEREST INCOME	0.00	2,197.30	0.00	(2,197.30)	100.00
101-000.000-528.000	FEDERAL GRANTS - OTHER	0.00	460,078.15	0.00	(460,078.15)	100.00
101-000.000-593.000	RENT EARNED-CITY PROPERTY	1,000.00	900.00	220.00	100.00	90.00
101-000.000-594.000	GAIN/LOSS ON SALE OF ASSETS	0.00	6,003.66	6,003.66	(6,003.66)	100.00
101-000.000-596.000	SUNDRY REVENUE	20,000.00	36,629.34	10.00	(16,629.34)	183.15
101-000.000-600.000	REIMBURSEMENTS	0.00	9,698.16	9,683.82	(9,698.16)	100.00
101-000.000-602.000	CONTRIBUTIONS FROM RETIREES	0.00	7,163.58	0.00	(7,163.58)	100.00
101-000.000-605.510	CONTRIBUTION FROM W & S FUND	350,000.00	320,826.00	29,166.00	29,174.00	91.66
101-000.000-628.000	RENTAL REGISTRATION FEE	50,000.00	62,900.00	7,950.00	(12,900.00)	125.80
101-000.000-689.000	CASH OVER/SHORT	0.00	(9.80)	0.00	9.80	100.00
Total Dept 000.000		4,848,500.00	5,458,065.94	199,842.25	(609,565.94)	112.57
TOTAL REVENUES		4,848,500.00	5,458,065.94	199,842.25	(609,565.94)	112.57
Expenditures						
Dept 000.000						
101-000.000-999.999	ADDED FOR CR RECEIPT - EXRMB	0.00	(2,849.11)	(223.19)	2,849.11	100.00
Total Dept 000.000		0.00	(2,849.11)	(223.19)	2,849.11	100.00
Dept 100.000 - MAYOR, CITY COUCIL & BOARDS						
101-100.000-708.000	COUNCIL COMPENSATION	16,500.00	11,422.60	1,045.00	5,077.40	69.23
101-100.000-721.000	FICA/MEDICARE - CITY SHARE	1,300.00	873.84	79.93	426.16	67.22
101-100.000-731.000	MATERIALS & SUPPLIES	100.00	52.00	0.00	48.00	52.00
101-100.000-735.000	DUES & SUBSCRIPTIONS	5,000.00	0.00	0.00	5,000.00	0.00
101-100.000-746.000	PROFESSIONAL SERVICES	0.00	336.00	0.00	(336.00)	100.00
101-100.000-748.000	CONFERENCES & TRAINING	1,000.00	825.00	0.00	175.00	82.50
101-100.000-751.000	MEETING EXPENSE	200.00	0.00	0.00	200.00	0.00
101-100.000-972.000	MISCELLANEOUS	0.00	2.58	0.00	(2.58)	100.00
Total Dept 100.000 - MAYOR, CITY COUCIL & BOARDS		24,100.00	13,512.02	1,124.93	10,587.98	56.07
Dept 150.000 - CITY MANAGER						

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Fund 101 - GENERAL FUND						
Expenditures						
101-150.000-703.000	ADMINSTRATIVE SALARIES	100,000.00	75,260.87	7,692.30	24,739.13	75.26
101-150.000-704.200	HOLIDAY COMPENSATION	0.00	4,120.90	0.00	(4,120.90)	100.00
101-150.000-710.000	COMPENSATED ABSENCES	0.00	7,980.78	0.00	(7,980.78)	100.00
101-150.000-721.000	FICA/MEDICARE - CITY SHARE	7,650.00	6,536.11	559.04	1,113.89	85.44
101-150.000-723.000	VISION CARE	370.00	612.97	30.65	(242.97)	165.67
101-150.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	540.00	643.96	58.68	(103.96)	119.25
101-150.000-725.604	DENTAL & HEALTH BENEFITS	17,100.00	16,835.16	1,349.86	264.84	98.45
101-150.000-728.000	RETIREMENT PLANS (CITY SHARE)	10,000.00	11,736.37	769.24	(1,736.37)	117.36
101-150.000-731.000	MATERIALS & SUPPLIES	200.00	0.00	0.00	200.00	0.00
101-150.000-732.000	POSTAGE	200.00	169.04	22.06	30.96	84.52
101-150.000-735.000	DUES & SUBSCRIPTIONS	1,200.00	145.00	0.00	1,055.00	12.08
101-150.000-737.000	PRINTING & PUBLISHING	200.00	447.06	0.00	(247.06)	223.53
101-150.000-744.000	TELEPHONE & INTERNET	7,900.00	6,921.42	592.05	978.58	87.61
101-150.000-746.000	PROFESSIONAL SERVICES	10,000.00	29,928.09	24.57	(19,928.09)	299.28
101-150.000-747.000	INSURANCE & BONDS	25.00	20.00	0.00	5.00	80.00
101-150.000-972.000	MISCELLANEOUS	200.00	0.00	0.00	200.00	0.00
Total Dept 150.000 - CITY MANAGER		155,585.00	161,357.73	11,098.45	(5,772.73)	103.71
Dept 200.000 - CITY CLERK						
101-200.000-703.000	ADMINSTRATIVE SALARIES	60,000.00	49,250.00	5,000.00	10,750.00	82.08
101-200.000-704.000	STAFF WAGES	45,324.00	37,941.02	3,794.70	7,382.98	83.71
101-200.000-704.100	STAFF - OVERTIME	1,500.00	1,834.65	743.23	(334.65)	122.31
101-200.000-704.200	HOLIDAY COMPENSATION	0.00	2,979.54	0.00	(2,979.54)	100.00
101-200.000-706.000	CITY LABOR - DPW	0.00	92.48	0.00	(92.48)	100.00
101-200.000-709.000	OTHER COMPENSATION	0.00	956.87	0.00	(956.87)	100.00
101-200.000-710.000	COMPENSATED ABSENCES	0.00	2,867.36	60.43	(2,867.36)	100.00
101-200.000-711.000	LONGEVITY	1,500.00	0.00	0.00	1,500.00	0.00
101-200.000-719.000	CLOTHING ALLOWANCE	0.00	324.98	0.00	(324.98)	100.00
101-200.000-721.000	FICA/MEDICARE - CITY SHARE	8,287.00	7,507.18	718.68	779.82	90.59
101-200.000-723.000	VISION CARE	740.00	594.24	39.49	145.76	80.30
101-200.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	991.00	622.12	55.55	368.88	62.78
101-200.000-725.603	RETIREMENT HEALTH BENEFITS	9,000.00	6,883.01	527.73	2,116.99	76.48
101-200.000-725.604	DENTAL & HEALTH BENEFITS	35,000.00	34,832.96	3,137.79	167.04	99.52
101-200.000-728.000	RETIREMENT PLANS (CITY SHARE)	10,075.00	18,327.27	1,891.41	(8,252.27)	181.91
101-200.000-730.000	SAFETY SUPPLIES	1,000.00	74.92	0.00	925.08	7.49
101-200.000-731.000	MATERIALS & SUPPLIES	6,000.00	6,091.67	(252.59)	(91.67)	101.53
101-200.000-732.000	POSTAGE	1,500.00	531.61	(1,115.32)	968.39	35.44
101-200.000-735.000	DUES & SUBSCRIPTIONS	500.00	694.00	0.00	(194.00)	138.80
101-200.000-737.000	PRINTING & PUBLISHING	6,000.00	3,785.61	(2,450.94)	2,214.39	63.09
101-200.000-741.000	MAINTENANCE - EQ/BLDG/GRNDS	500.00	0.00	0.00	500.00	0.00
101-200.000-744.000	TELEPHONE & INTERNET	27,500.00	22,591.03	2,053.73	4,908.97	82.15
101-200.000-746.000	PROFESSIONAL SERVICES	67,500.00	14,418.15	2,450.94	53,081.85	21.36
101-200.000-747.000	INSURANCE & BONDS	130.00	111.00	0.00	19.00	85.38
101-200.000-748.000	CONFERENCES & TRAINING	2,000.00	863.93	57.33	1,136.07	43.20
101-200.000-749.000	CONTRACTUAL SERVICES	11,000.00	1,121.00	0.00	9,879.00	10.19
101-200.000-750.000	OTHER COMPENSATION	10,000.00	5,112.00	2,610.00	4,888.00	51.12
101-200.000-753.000	SPECIAL PURPOSE EXPENSES	6,000.00	11,336.00	4,753.07	(5,336.00)	188.93
101-200.000-970.000	MILEAGE ALLOWANCE	500.00	0.00	0.00	500.00	0.00
101-200.000-972.000	MISCELLANEOUS	200.00	0.00	0.00	200.00	0.00
Total Dept 200.000 - CITY CLERK		312,747.00	231,744.60	24,075.23	81,002.40	74.10
Dept 210.000 - CITY ASSESSOR						

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Fund 101 - GENERAL FUND						
Expenditures						
101-210.000-704.000	STAFF WAGES	49,300.00	33,582.39	2,937.56	15,717.61	68.12
101-210.000-704.200	HOLIDAY COMPENSATION	0.00	1,838.42	0.00	(1,838.42)	100.00
101-210.000-709.000	OTHER COMPENSATION	500.00	525.00	0.00	(25.00)	105.00
101-210.000-710.000	COMPENSATED ABSENCES	0.00	7,601.02	852.84	(7,601.02)	100.00
101-210.000-711.000	LONGEVITY	1,500.00	1,500.00	0.00	0.00	100.00
101-210.000-721.000	FICA/MEDICARE - CITY SHARE	3,924.00	3,405.91	289.96	518.09	86.80
101-210.000-723.000	VISION CARE	210.00	436.61	17.09	(226.61)	207.91
101-210.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	500.00	309.71	25.63	190.29	61.94
101-210.000-725.604	DENTAL & HEALTH BENEFITS	15,000.00	14,933.51	1,349.87	66.49	99.56
101-210.000-728.000	RETIREMENT PLANS (CITY SHARE)	21,000.00	21,838.06	1,859.20	(838.06)	103.99
101-210.000-731.000	MATERIALS & SUPPLIES	890.00	349.99	0.00	540.01	39.32
101-210.000-732.000	POSTAGE	2,750.00	2,060.08	22.06	689.92	74.91
101-210.000-735.000	DUES & SUBSCRIPTIONS	500.00	267.25	0.00	232.75	53.45
101-210.000-737.000	PRINTING & PUBLISHING	2,600.00	1,152.32	0.00	1,447.68	44.32
101-210.000-744.000	TELEPHONE & INTERNET	7,900.00	6,489.78	589.98	1,410.22	82.15
101-210.000-746.000	PROFESSIONAL SERVICES	1,500.00	4,119.04	0.00	(2,619.04)	274.60
101-210.000-748.000	CONFERENCES & TRAINING	500.00	0.00	0.00	500.00	0.00
101-210.000-749.000	CONTRACTUAL SERVICES	50,000.00	33,872.00	0.00	16,128.00	67.74
101-210.000-864.000	CAPITAL OUTLAY - EQUIPMENT	250.00	0.00	0.00	250.00	0.00
101-210.000-972.000	MISCELLANEOUS	100.00	0.00	0.00	100.00	0.00
Total Dept 210.000 - CITY ASSESSOR		158,924.00	134,281.09	7,944.19	24,642.91	84.49
Dept 220.000 - FINANCE & TREASURY						
101-220.000-703.000	ADMINSTRATIVE SALARIES	75,000.00	58,950.06	6,000.00	16,049.94	78.60
101-220.000-704.000	STAFF WAGES	71,212.00	46,323.70	2,767.02	24,888.30	65.05
101-220.000-704.100	STAFF - OVERTIME	2,000.00	123.57	0.00	1,876.43	6.18
101-220.000-704.200	HOLIDAY COMPENSATION	0.00	3,750.18	0.00	(3,750.18)	100.00
101-220.000-709.000	OTHER COMPENSATION	0.00	1,159.63	0.00	(1,159.63)	100.00
101-220.000-710.000	COMPENSATED ABSENCES	0.00	24,238.88	3,876.12	(24,238.88)	100.00
101-220.000-711.000	LONGEVITY	1,750.00	1,500.00	0.00	250.00	85.71
101-220.000-715.000	HEALTH REIMBURSEMENT	0.00	2,500.00	250.00	(2,500.00)	100.00
101-220.000-719.000	CLOTHING ALLOWANCE	600.00	375.00	0.00	225.00	62.50
101-220.000-721.000	FICA/MEDICARE - CITY SHARE	11,518.00	10,309.12	944.21	1,208.88	89.50
101-220.000-723.000	VISION CARE	350.00	485.11	41.85	(135.11)	138.60
101-220.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	1,000.00	875.27	81.94	124.73	87.53
101-220.000-725.604	DENTAL & HEALTH BENEFITS	30,427.00	29,073.68	1,519.73	1,353.32	95.55
101-220.000-728.000	RETIREMENT PLANS (CITY SHARE)	25,607.00	26,032.20	2,395.44	(425.20)	101.66
101-220.000-728.001	RETIRMENT HEALTH SAVINGS	2,050.00	1,747.41	153.86	302.59	85.24
101-220.000-731.000	MATERIALS & SUPPLIES	3,200.00	1,102.93	0.00	2,097.07	34.47
101-220.000-732.000	POSTAGE	3,000.00	2,033.69	36.77	966.31	67.79
101-220.000-735.000	DUES & SUBSCRIPTIONS	900.00	0.00	0.00	900.00	0.00
101-220.000-737.000	PRINTING & PUBLISHING	2,000.00	2,208.06	0.00	(208.06)	110.40
101-220.000-744.000	TELEPHONE & INTERNET	16,000.00	13,143.90	1,194.90	2,856.10	82.15
101-220.000-746.000	PROFESSIONAL SERVICES	61,000.00	111,171.01	2,675.08	(50,171.01)	182.25
101-220.000-747.000	INSURANCE & BONDS	43,724.00	38,247.00	0.00	5,477.00	87.47
101-220.000-748.000	CONFERENCES & TRAINING	1,000.00	0.00	0.00	1,000.00	0.00
101-220.000-749.000	CONTRACTUAL SERVICES	0.00	848.02	0.00	(848.02)	100.00
101-220.000-749.003	ANNEXATION TAX SHARING	60,000.00	63,853.09	11,684.00	(3,853.09)	106.42
101-220.000-972.000	MISCELLANEOUS	1,000.00	14,385.57	0.00	(13,385.57)	1,438.56
101-220.000-972.999	SUNDRY - MISC CLEARING	0.00	203.88	0.00	(203.88)	100.00
Total Dept 220.000 - FINANCE & TREASURY		413,338.00	454,640.96	33,620.92	(41,302.96)	109.99

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Fund 101 - GENERAL FUND						
Expenditures						
Dept 221.000 - PAYROLL TO BE DISTRIBUTED						
101-221.000-723.000	VISION CARE	0.00	0.00	(212.68)	0.00	0.00
101-221.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	0.00	491.20	0.00	(491.20)	100.00
Total Dept 221.000 - PAYROLL TO BE DISTRIBUTED		0.00	491.20	(212.68)	(491.20)	100.00
Dept 230.000 - COMMUNITY DEVELOPMENT						
101-230.000-703.000	ADMINSTRATIVE SALARIES	70,304.00	52,387.76	5,408.00	17,916.24	74.52
101-230.000-704.000	STAFF WAGES	100,000.00	23,760.00	4,139.00	76,240.00	23.76
101-230.000-704.100	STAFF - OVERTIME	0.00	384.66	0.00	(384.66)	100.00
101-230.000-704.200	HOLIDAY COMPENSATION	0.00	3,387.53	0.00	(3,387.53)	100.00
101-230.000-706.000	CITY LABOR - DPW	5,125.00	4,629.89	155.12	495.11	90.34
101-230.000-710.000	COMPENSATED ABSENCES	0.00	8,749.46	0.00	(8,749.46)	100.00
101-230.000-711.000	LONGEVITY	1,500.00	1,500.00	0.00	0.00	100.00
101-230.000-721.000	FICA/MEDICARE - CITY SHARE	5,493.00	7,056.86	724.90	(1,563.86)	128.47
101-230.000-722.000	ICMA - CITY SHARE	0.00	34.36	0.00	(34.36)	100.00
101-230.000-723.000	VISION CARE	400.00	341.93	30.65	58.07	85.48
101-230.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	540.00	399.38	34.08	140.62	73.96
101-230.000-725.604	DENTAL & HEALTH BENEFITS	19,800.00	19,727.25	1,796.85	72.75	99.63
101-230.000-728.000	RETIREMENT PLANS (CITY SHARE)	29,971.00	35,571.03	2,694.76	(5,600.03)	118.68
101-230.000-728.001	RETIRMENT HEALTH SAVINGS	2,200.00	0.00	0.00	2,200.00	0.00
101-230.000-731.000	MATERIALS & SUPPLIES	750.00	1,264.74	115.00	(514.74)	168.63
101-230.000-732.000	POSTAGE	200.00	736.22	14.71	(536.22)	368.11
101-230.000-735.000	DUES & SUBSCRIPTIONS	400.00	410.00	0.00	(10.00)	102.50
101-230.000-737.000	PRINTING & PUBLISHING	250.00	2,409.63	0.00	(2,159.63)	963.85
101-230.000-744.000	TELEPHONE & INTERNET	12,000.00	10,871.58	898.60	1,128.42	90.60
101-230.000-746.000	PROFESSIONAL SERVICES	25,000.00	0.00	0.00	25,000.00	0.00
101-230.000-747.000	INSURANCE & BONDS	31.00	529.00	0.00	(498.00)	1,706.45
101-230.000-748.000	CONFERENCES & TRAINING	0.00	1,572.96	0.00	(1,572.96)	100.00
101-230.000-749.000	CONTRACTUAL SERVICES	0.00	1,915.00	0.00	(1,915.00)	100.00
101-230.000-753.000	SPECIAL PURPOSE EXPENSES	2,000.00	1,565.25	0.00	434.75	78.26
101-230.000-755.000	CONTRIBUTION TO OTHERS	36,000.00	3,000.00	0.00	33,000.00	8.33
101-230.000-850.000	RENTAL EXPENSE	2,466.00	2,260.50	205.50	205.50	91.67
101-230.000-851.000	MVP EQUIPMENT RENTAL	5,000.00	5,284.94	241.93	(284.94)	105.70
101-230.000-864.000	CAPITAL OUTLAY - EQUIPMENT	3,000.00	0.00	0.00	3,000.00	0.00
101-230.000-972.000	MISCELLANEOUS	250.00	0.00	0.00	250.00	0.00
Total Dept 230.000 - COMMUNITY DEVELOPMENT		322,680.00	189,749.93	16,459.10	132,930.07	58.80
Dept 300.000 - POLICE DEPARTMENT						
101-300.000-703.000	ADMINSTRATIVE SALARIES	83,250.00	58,579.25	6,022.72	24,670.75	70.37
101-300.000-704.000	STAFF WAGES	825,036.00	658,548.57	64,148.22	166,487.43	79.82
101-300.000-704.100	STAFF - OVERTIME	110,000.00	99,616.39	7,973.37	10,383.61	90.56
101-300.000-704.200	HOLIDAY COMPENSATION	0.00	38,863.65	0.00	(38,863.65)	100.00
101-300.000-706.000	CITY LABOR - DPW	0.00	346.39	0.00	(346.39)	100.00
101-300.000-709.000	OTHER COMPENSATION	0.00	18,220.82	0.00	(18,220.82)	100.00
101-300.000-710.000	COMPENSATED ABSENCES	0.00	117,489.73	12,266.75	(117,489.73)	100.00
101-300.000-711.000	LONGEVITY	13,200.00	15,489.06	723.29	(2,289.06)	117.34
101-300.000-712.000	SPECIAL COMPENSATION	3,000.00	1,000.00	1,000.00	2,000.00	33.33
101-300.000-715.000	HEALTH REIMBURSEMENT	6,000.00	7,178.57	500.00	(1,178.57)	119.64
101-300.000-719.000	CLOTHING ALLOWANCE	500.00	375.00	0.00	125.00	75.00
101-300.000-721.000	FICA/MEDICARE - CITY SHARE	15,094.00	17,506.48	1,567.37	(2,412.48)	115.98
101-300.000-722.000	ICMA - CITY SHARE	25,100.00	16,834.18	1,482.00	8,265.82	67.07
101-300.000-723.000	VISION CARE	5,000.00	4,867.46	360.14	132.54	97.35

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 101 - GENERAL FUND						
Expenditures						
101-300.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	29,000.00	6,001.09	477.25	22,998.91	20.69
101-300.000-725.603	RETIREMENT HEALTH BENEFITS	18,000.00	14,105.94	1,395.34	3,894.06	78.37
101-300.000-725.604	DENTAL & HEALTH BENEFITS	205,000.00	207,545.00	21,901.93	(2,545.00)	101.24
101-300.000-728.000	RETIREMENT PLANS (CITY SHARE)	440,000.00	427,793.72	38,730.58	12,206.28	97.23
101-300.000-730.000	SAFETY SUPPLIES	11,000.00	10,031.46	0.00	968.54	91.20
101-300.000-731.000	MATERIALS & SUPPLIES	12,500.00	10,368.47	661.94	2,131.53	82.95
101-300.000-732.000	POSTAGE	3,500.00	1,947.02	250.02	1,552.98	55.63
101-300.000-733.000	UNIFORM & CLEANING	15,000.00	12,702.35	1,155.42	2,297.65	84.68
101-300.000-734.000	GASOLINE & OIL	23,000.00	44,711.77	8,312.16	(21,711.77)	194.40
101-300.000-735.000	DUES & SUBSCRIPTIONS	1,500.00	1,005.00	0.00	495.00	67.00
101-300.000-737.000	PRINTING & PUBLISHING	1,000.00	2,940.96	0.00	(1,940.96)	294.10
101-300.000-740.000	VEHICLE MAINTENANCE	15,000.00	11,381.48	1,436.81	3,618.52	75.88
101-300.000-741.000	MAINTENANCE - EQ/BLDG/GRNDS	0.00	9.18	0.00	(9.18)	100.00
101-300.000-744.000	TELEPHONE & INTERNET	77,000.00	67,191.90	5,758.84	9,808.10	87.26
101-300.000-746.000	PROFESSIONAL SERVICES	60,000.00	39,121.62	109.50	20,878.38	65.20
101-300.000-747.000	INSURANCE & BONDS	26,065.00	22,697.00	0.00	3,368.00	87.08
101-300.000-748.000	CONFERENCES & TRAINING	1,500.00	1,507.40	0.00	(7.40)	100.49
101-300.000-749.000	CONTRACTUAL SERVICES	25,000.00	12,846.94	36.00	12,153.06	51.39
101-300.000-850.000	RENTAL EXPENSE	1,989.00	1,823.25	165.75	165.75	91.67
101-300.000-851.000	MVP EQUIPMENT RENTAL	100.00	71.40	0.00	28.60	71.40
101-300.000-863.000	CAP. OUTLAY - MOTOR VEHICLES	50,000.00	49,241.97	0.00	758.03	98.48
101-300.000-864.000	CAPITAL OUTLAY - EQUIPMENT	26,500.00	23,040.00	0.00	3,460.00	86.94
101-300.000-970.000	MILEAGE ALLOWANCE	500.00	644.12	0.00	(144.12)	128.82
101-300.000-972.000	MISCELLANEOUS	500.00	0.00	0.00	500.00	0.00
Total Dept 300.000 - POLICE DEPARTMENT		2,129,834.00	2,023,644.59	176,435.40	106,189.41	95.01
Dept 410.000 - PUBLIC WORKS ADMINISTRATION						
101-410.000-703.000	ADMINSTRATIVE SALARIES	44,539.00	28,043.42	2,414.91	16,495.58	62.96
101-410.000-704.000	STAFF WAGES	0.00	3,272.10	0.00	(3,272.10)	100.00
101-410.000-704.100	STAFF - OVERTIME	0.00	824.51	62.92	(824.51)	100.00
101-410.000-704.200	HOLIDAY COMPENSATION	0.00	1,057.16	0.00	(1,057.16)	100.00
101-410.000-706.000	CITY LABOR - DPW	17,084.00	6,713.15	812.82	10,370.85	39.29
101-410.000-709.000	OTHER COMPENSATION	0.00	19,390.30	0.00	(19,390.30)	100.00
101-410.000-710.000	COMPENSATED ABSENCES	0.00	18,153.46	1,120.39	(18,153.46)	100.00
101-410.000-711.000	LONGEVITY	600.00	2,341.74	0.00	(1,741.74)	390.29
101-410.000-712.000	SPECIAL COMPENSATION	1,000.00	661.45	64.41	338.55	66.15
101-410.000-715.000	HEALTH REIMBURSEMENT	1,654.00	289.17	28.05	1,364.83	17.48
101-410.000-718.000	AUTO ALLOWANCE	975.00	793.74	69.88	181.26	81.41
101-410.000-719.000	CLOTHING ALLOWANCE	0.00	1,209.58	0.00	(1,209.58)	100.00
101-410.000-721.000	FICA/MEDICARE - CITY SHARE	3,651.00	6,321.08	352.93	(2,670.08)	173.13
101-410.000-722.000	ICMA - CITY SHARE	0.00	571.91	43.05	(571.91)	100.00
101-410.000-723.000	VISION CARE	120.00	394.46	55.01	(274.46)	328.72
101-410.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	7,820.00	851.36	97.30	6,968.64	10.89
101-410.000-725.603	RETIREMENT HEALTH BENEFITS	17,000.00	13,223.14	1,218.69	3,776.86	77.78
101-410.000-725.604	DENTAL & HEALTH BENEFITS	430.00	1,015.19	625.77	(585.19)	236.09
101-410.000-728.000	RETIREMENT PLANS (CITY SHARE)	16,050.00	24,755.24	3,148.24	(8,705.24)	154.24
101-410.000-728.001	RETIRMENT HEALTH SAVINGS	1,700.00	0.00	0.00	1,700.00	0.00
101-410.000-730.000	SAFETY SUPPLIES	100.00	0.00	0.00	100.00	0.00
101-410.000-731.000	MATERIALS & SUPPLIES	2,000.00	558.56	0.00	1,441.44	27.93
101-410.000-732.000	POSTAGE	2,800.00	1,972.33	257.39	827.67	70.44
101-410.000-735.000	DUES & SUBSCRIPTIONS	400.00	1,049.80	0.00	(649.80)	262.45
101-410.000-737.000	PRINTING & PUBLISHING	1,000.00	587.91	0.00	412.09	58.79
101-410.000-744.000	TELEPHONE & INTERNET	30,500.00	27,538.89	2,284.34	2,961.11	90.29
101-410.000-746.000	PROFESSIONAL SERVICES	0.00	734.50	0.00	(734.50)	100.00

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 101 - GENERAL FUND						
Expenditures						
101-410.000-747.000	INSURANCE & BONDS	1,435.00	1,224.00	0.00	211.00	85.30
101-410.000-748.000	CONFERENCES & TRAINING	1,000.00	0.00	0.00	1,000.00	0.00
101-410.000-749.000	CONTRACTUAL SERVICES	7,800.00	7,306.57	235.52	493.43	93.67
101-410.000-868.000	EATON COUNTY DRAIN ASSESSMENT	9,200.00	14,569.68	0.00	(5,369.68)	158.37
101-410.000-972.000	MISCELLANEOUS	100.00	8.10	0.00	91.90	8.10
Total Dept 410.000 - PUBLIC WORKS ADMINISTRATION		168,958.00	185,432.50	12,891.62	(16,474.50)	109.75
Dept 422.000 - LEAF COLLECTION						
101-422.000-704.100	STAFF - OVERTIME	800.00	945.98	0.00	(145.98)	118.25
101-422.000-706.000	CITY LABOR - DPW	10,350.00	8,758.39	1,486.19	1,591.61	84.62
101-422.000-721.000	FICA/MEDICARE - CITY SHARE	620.00	740.78	113.44	(120.78)	119.48
101-422.000-722.000	ICMA - CITY SHARE	100.00	13.05	0.00	86.95	13.05
101-422.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,850.00	2,618.73	403.64	(768.73)	141.55
101-422.000-731.000	MATERIALS & SUPPLIES	200.00	0.00	0.00	200.00	0.00
101-422.000-749.000	CONTRACTUAL SERVICES	16,600.00	13,110.00	0.00	3,490.00	78.98
101-422.000-851.000	MVP EQUIPMENT RENTAL	10,000.00	12,890.28	3,114.72	(2,890.28)	128.90
Total Dept 422.000 - LEAF COLLECTION		40,520.00	39,077.21	5,117.99	1,442.79	96.44
Dept 424.000 - PARKING SERVICES						
101-424.000-704.100	STAFF - OVERTIME	200.00	0.00	0.00	200.00	0.00
101-424.000-706.000	CITY LABOR - DPW	2,800.00	787.24	0.00	2,012.76	28.12
101-424.000-721.000	FICA/MEDICARE - CITY SHARE	155.00	60.44	0.00	94.56	38.99
101-424.000-722.000	ICMA - CITY SHARE	25.00	7.42	0.00	17.58	29.68
101-424.000-728.000	RETIREMENT PLANS (CITY SHARE)	460.00	204.75	0.00	255.25	44.51
101-424.000-731.000	MATERIALS & SUPPLIES	1,600.00	170.90	0.00	1,429.10	10.68
101-424.000-745.000	UTILITIES	7,800.00	5,871.88	0.00	1,928.12	75.28
101-424.000-746.000	PROFESSIONAL SERVICES	500.00	7,937.63	0.00	(7,437.63)	1,587.53
101-424.000-749.000	CONTRACTUAL SERVICES	800.00	690.00	120.00	110.00	86.25
101-424.000-851.000	MVP EQUIPMENT RENTAL	1,200.00	1,484.06	0.00	(284.06)	123.67
101-424.000-862.000	CAP. OUTLAY-IMPROVEMENTS	8,000.00	36,461.42	0.00	(28,461.42)	455.77
101-424.000-862.001	UST REMOVAL	5,000.00	0.00	0.00	5,000.00	0.00
101-424.000-871.000	PRINCIPAL	50,000.00	0.00	0.00	50,000.00	0.00
Total Dept 424.000 - PARKING SERVICES		78,540.00	53,675.74	120.00	24,864.26	68.34
Dept 425.000 - PARKING SERVICES/WINTER MAINT.						
101-425.000-704.100	STAFF - OVERTIME	700.00	1,861.99	0.00	(1,161.99)	266.00
101-425.000-706.000	CITY LABOR - DPW	9,050.00	5,364.03	0.00	3,685.97	59.27
101-425.000-721.000	FICA/MEDICARE - CITY SHARE	540.00	553.34	0.00	(13.34)	102.47
101-425.000-722.000	ICMA - CITY SHARE	100.00	72.04	0.00	27.96	72.04
101-425.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,600.00	1,864.13	0.00	(264.13)	116.51
101-425.000-731.000	MATERIALS & SUPPLIES	8,000.00	4,413.59	0.00	3,586.41	55.17
101-425.000-851.000	MVP EQUIPMENT RENTAL	9,000.00	15,306.36	0.00	(6,306.36)	170.07
Total Dept 425.000 - PARKING SERVICES/WINTER MAINT.		28,990.00	29,435.48	0.00	(445.48)	101.54
Dept 452.000 - TREE WORK						
101-452.000-704.100	STAFF - OVERTIME	2,500.00	384.48	69.36	2,115.52	15.38
101-452.000-706.000	CITY LABOR - DPW	32,300.00	15,017.31	1,193.40	17,282.69	46.49
101-452.000-721.000	FICA/MEDICARE - CITY SHARE	2,000.00	1,175.62	96.08	824.38	58.78

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 101 - GENERAL FUND						
Expenditures						
101-452.000-722.000	ICMA - CITY SHARE	350.00	78.22	3.40	271.78	22.35
101-452.000-728.000	RETIREMENT PLANS (CITY SHARE)	5,750.00	4,082.41	338.41	1,667.59	71.00
101-452.000-731.000	MATERIALS & SUPPLIES	1,800.00	990.77	99.99	809.23	55.04
101-452.000-746.000	PROFESSIONAL SERVICES	150.00	0.00	0.00	150.00	0.00
101-452.000-749.000	CONTRACTUAL SERVICES	8,000.00	1,037.34	0.00	6,962.66	12.97
101-452.000-851.000	MVP EQUIPMENT RENTAL	38,000.00	39,875.82	3,494.89	(1,875.82)	104.94
Total Dept 452.000 - TREE WORK		90,850.00	62,641.97	5,295.53	28,208.03	68.95
Dept 663.000 - CITY PROPERTY MAINTENANCE						
101-663.000-706.000	CITY LABOR - DPW	0.00	224.07	0.00	(224.07)	100.00
101-663.000-721.000	FICA/MEDICARE - CITY SHARE	0.00	17.11	0.00	(17.11)	100.00
101-663.000-722.000	ICMA - CITY SHARE	0.00	1.86	0.00	(1.86)	100.00
101-663.000-728.000	RETIREMENT PLANS (CITY SHARE)	0.00	58.58	0.00	(58.58)	100.00
101-663.000-745.000	UTILITIES	85,000.00	53,207.75	0.00	31,792.25	62.60
101-663.000-749.000	CONTRACTUAL SERVICES	2,000.00	2,336.32	215.00	(336.32)	116.82
101-663.000-851.000	MVP EQUIPMENT RENTAL	0.00	27.04	0.00	(27.04)	100.00
Total Dept 663.000 - CITY PROPERTY MAINTENANCE		87,000.00	55,872.73	215.00	31,127.27	64.22
Dept 664.000 - CITY HALL BUILDING & GROUNDS						
101-664.000-706.000	CITY LABOR - DPW	1,300.00	1,855.30	0.00	(555.30)	142.72
101-664.000-721.000	FICA/MEDICARE - CITY SHARE	80.00	143.08	0.00	(63.08)	178.85
101-664.000-722.000	ICMA - CITY SHARE	15.00	26.29	0.00	(11.29)	175.27
101-664.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	0.00	0.23	0.00	(0.23)	100.00
101-664.000-728.000	RETIREMENT PLANS (CITY SHARE)	230.00	468.81	0.00	(238.81)	203.83
101-664.000-731.000	MATERIALS & SUPPLIES	6,500.00	4,846.38	38.00	1,653.62	74.56
101-664.000-744.000	TELEPHONE & INTERNET	7,900.00	6,489.78	589.98	1,410.22	82.15
101-664.000-745.000	UTILITIES	60,000.00	53,081.15	0.00	6,918.85	88.47
101-664.000-747.000	INSURANCE & BONDS	7,922.00	6,392.00	0.00	1,530.00	80.69
101-664.000-749.000	CONTRACTUAL SERVICES	53,000.00	28,855.26	1,524.72	24,144.74	54.44
101-664.000-851.000	MVP EQUIPMENT RENTAL	500.00	1,776.51	0.00	(1,276.51)	355.30
101-664.000-862.000	CAP. OUTLAY-IMPROVEMENTS	15,000.00	0.00	0.00	15,000.00	0.00
101-664.000-864.000	CAPITAL OUTLAY - EQUIPMENT	0.00	490.91	0.00	(490.91)	100.00
101-664.000-972.000	MISCELLANEOUS	500.00	185.00	0.00	315.00	37.00
Total Dept 664.000 - CITY HALL BUILDING & GROUNDS		152,947.00	104,610.70	2,152.70	48,336.30	68.40
Dept 825.000 - PARKS & RECREATION						
101-825.000-704.100	STAFF - OVERTIME	1,500.00	526.85	0.00	973.15	35.12
101-825.000-706.000	CITY LABOR - DPW	19,200.00	13,381.71	1,132.02	5,818.29	69.70
101-825.000-707.000	PART-TIME STAFF WAGES	6,000.00	0.00	0.00	6,000.00	0.00
101-825.000-721.000	FICA/MEDICARE - CITY SHARE	1,200.00	1,068.55	86.14	131.45	89.05
101-825.000-722.000	ICMA - CITY SHARE	200.00	137.44	0.00	62.56	68.72
101-825.000-728.000	RETIREMENT PLANS (CITY SHARE)	3,500.00	3,607.58	307.46	(107.58)	103.07
101-825.000-731.000	MATERIALS & SUPPLIES	2,000.00	3,897.57	34.40	(1,897.57)	194.88
101-825.000-745.000	UTILITIES	7,000.00	5,828.33	0.00	1,171.67	83.26
101-825.000-747.000	INSURANCE & BONDS	928.00	829.00	0.00	99.00	89.33
101-825.000-749.000	CONTRACTUAL SERVICES	26,000.00	10,004.97	1,819.53	15,995.03	38.48
101-825.000-753.000	SPECIAL PURPOSE EXPENSES	500.00	0.00	0.00	500.00	0.00
101-825.000-755.000	CONTRIBUTION TO OTHERS	15,000.00	15,343.35	15,343.35	(343.35)	102.29
101-825.000-851.000	MVP EQUIPMENT RENTAL	18,000.00	19,249.08	869.97	(1,249.08)	106.94

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 101 - GENERAL FUND						
Expenditures						
Total Dept 825.000 - PARKS & RECREATION		101,028.00	73,874.43	19,592.87	27,153.57	73.12
Dept 830.000 - AIRPORT						
101-830.000-728.000	RETIREMENT PLANS (CITY SHARE)	0.00	8.24	0.00	(8.24)	100.00
Total Dept 830.000 - AIRPORT		0.00	8.24	0.00	(8.24)	100.00
Dept 999.000 - GASB 34						
101-999.000-859.203	CONTRIB. TO LOCAL STREET FUND	15,000.00	13,750.00	1,250.00	1,250.00	91.67
101-999.000-859.206	CONTRIB TO FIRE	38,000.00	34,826.00	3,166.00	3,174.00	91.65
101-999.000-859.240	CONTRIB. TO POL. TRAINING FUN	3,000.00	2,750.00	250.00	250.00	91.67
Total Dept 999.000 - GASB 34		56,000.00	51,326.00	4,666.00	4,674.00	91.65
TOTAL EXPENDITURES		4,322,041.00	3,862,528.01	320,374.06	459,512.99	89.37
Fund 101 - GENERAL FUND:						
TOTAL REVENUES		4,848,500.00	5,458,065.94	199,842.25	(609,565.94)	112.57
TOTAL EXPENDITURES		4,322,041.00	3,862,528.01	320,374.06	459,512.99	89.37
NET OF REVENUES & EXPENDITURES		526,459.00	1,595,537.93	(120,531.81)	(1,069,078.93)	303.07

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 202 - MAJOR STREET FUND						
Revenues						
Dept 000.000						
202-000.000-418.000	COUNTY ROAD MILLAGE FUNDS	322,000.00	105,087.24	0.00	216,912.76	32.64
202-000.000-431.000	STATE AID	680,000.00	598,929.34	65,179.41	81,070.66	88.08
202-000.000-435.000	STATE REV SHARING-TRUNKLINES	15,000.00	16,424.56	0.00	(1,424.56)	109.50
202-000.000-436.000	METRO ACT	32,000.00	35,390.88	35,390.88	(3,390.88)	110.60
202-000.000-501.000	INTEREST INCOME	5,000.00	711.28	0.00	4,288.72	14.23
202-000.000-596.000	SUNDRY REVENUE	38,000.00	30,419.02	0.00	7,580.98	80.05
202-000.000-600.000	REIMBURSEMENTS	0.00	2,209.95	0.00	(2,209.95)	100.00
Total Dept 000.000		1,092,000.00	789,172.27	100,570.29	302,827.73	72.27
TOTAL REVENUES		1,092,000.00	789,172.27	100,570.29	302,827.73	72.27
Expenditures						
Dept 430.000 - STORM SEWERS						
202-430.000-704.100	STAFF - OVERTIME	120.00	0.00	0.00	120.00	0.00
202-430.000-706.000	CITY LABOR - DPW	1,550.00	2,859.94	171.12	(1,309.94)	184.51
202-430.000-721.000	FICA/MEDICARE - CITY SHARE	95.00	219.04	13.09	(124.04)	230.57
202-430.000-722.000	ICMA - CITY SHARE	15.00	9.27	0.00	5.73	61.80
202-430.000-728.000	RETIREMENT PLANS (CITY SHARE)	275.00	764.29	46.48	(489.29)	277.92
202-430.000-731.000	MATERIALS & SUPPLIES	300.00	1,359.41	167.00	(1,059.41)	453.14
202-430.000-851.000	MVP EQUIPMENT RENTAL	2,000.00	10,012.03	879.75	(8,012.03)	500.60
Total Dept 430.000 - STORM SEWERS		4,355.00	15,223.98	1,277.44	(10,868.98)	349.57
Dept 440.000 - SIDEWALK MAINTENANCE						
202-440.000-704.100	STAFF - OVERTIME	300.00	0.00	0.00	300.00	0.00
202-440.000-706.000	CITY LABOR - DPW	3,875.00	2,166.73	24.37	1,708.27	55.92
202-440.000-721.000	FICA/MEDICARE - CITY SHARE	230.00	166.93	1.91	63.07	72.58
202-440.000-722.000	ICMA - CITY SHARE	40.00	22.77	0.85	17.23	56.93
202-440.000-728.000	RETIREMENT PLANS (CITY SHARE)	690.00	560.15	5.49	129.85	81.18
202-440.000-731.000	MATERIALS & SUPPLIES	4,800.00	1,152.50	267.50	3,647.50	24.01
202-440.000-746.000	PROFESSIONAL SERVICES	55,600.00	35,957.50	0.00	19,642.50	64.67
202-440.000-749.000	CONTRACTUAL SERVICES	3,000.00	0.00	0.00	3,000.00	0.00
202-440.000-851.000	MVP EQUIPMENT RENTAL	2,500.00	2,436.35	11.90	63.65	97.45
Total Dept 440.000 - SIDEWALK MAINTENANCE		71,035.00	42,462.93	312.02	28,572.07	59.78
Dept 520.000 - STREET ADMINISTRATION						
202-520.000-703.000	ADMINSTRATIVE SALARIES	34,000.00	17,941.41	1,592.48	16,058.59	52.77
202-520.000-704.000	STAFF WAGES	0.00	1,660.68	0.00	(1,660.68)	100.00
202-520.000-704.100	STAFF - OVERTIME	1,085.00	661.77	53.48	423.23	60.99
202-520.000-704.200	HOLIDAY COMPENSATION	0.00	919.48	0.00	(919.48)	100.00
202-520.000-706.000	CITY LABOR - DPW	14,200.00	5,704.27	690.88	8,495.73	40.17
202-520.000-710.000	COMPENSATED ABSENCES	0.00	10,911.59	648.35	(10,911.59)	100.00
202-520.000-711.000	LONGEVITY	450.00	1,429.44	0.00	(979.44)	317.65
202-520.000-712.000	SPECIAL COMPENSATION	0.00	374.16	42.48	(374.16)	100.00
202-520.000-715.000	HEALTH REIMBURSEMENT	300.00	151.97	15.34	148.03	50.66
202-520.000-718.000	AUTO ALLOWANCE	585.00	396.61	34.92	188.39	67.80
202-520.000-719.000	CLOTHING ALLOWANCE	0.00	549.80	0.00	(549.80)	100.00
202-520.000-721.000	FICA/MEDICARE - CITY SHARE	3,625.00	3,126.71	238.02	498.29	86.25
202-520.000-722.000	ICMA - CITY SHARE	145.00	446.66	35.70	(301.66)	308.04

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 202 - MAJOR STREET FUND						
Expenditures						
202-520.000-723.000	VISION CARE	90.00	209.19	33.21	(119.19)	232.43
202-520.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	885.00	526.41	30.13	358.59	59.48
202-520.000-725.604	DENTAL & HEALTH BENEFITS	5,860.00	6,938.15	1,631.47	(1,078.15)	118.40
202-520.000-728.000	RETIREMENT PLANS (CITY SHARE)	14,400.00	15,761.66	1,868.80	(1,361.66)	109.46
202-520.000-728.001	RETIRMENT HEALTH SAVINGS	1,175.00	0.00	0.00	1,175.00	0.00
202-520.000-748.000	CONFERENCES & TRAINING	200.00	75.00	0.00	125.00	37.50
Total Dept 520.000 - STREET ADMINISTRATION		77,000.00	67,784.96	6,915.26	9,215.04	88.03
Dept 522.000 - STREET REPAIR						
202-522.000-706.000	CITY LABOR - DPW	7,745.00	3,926.25	0.00	3,818.75	50.69
202-522.000-721.000	FICA/MEDICARE - CITY SHARE	460.00	300.89	0.00	159.11	65.41
202-522.000-722.000	ICMA - CITY SHARE	78.00	12.99	0.00	65.01	16.65
202-522.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,375.00	1,047.99	0.00	327.01	76.22
202-522.000-731.000	MATERIALS & SUPPLIES	0.00	5,302.78	0.00	(5,302.78)	100.00
202-522.000-851.000	MVP EQUIPMENT RENTAL	5,000.00	2,977.95	0.00	2,022.05	59.56
Total Dept 522.000 - STREET REPAIR		14,658.00	13,568.85	0.00	1,089.15	92.57
Dept 524.000 - STREET MAINTENANCE						
202-524.000-704.100	STAFF - OVERTIME	0.00	994.71	138.48	(994.71)	100.00
202-524.000-706.000	CITY LABOR - DPW	9,000.00	7,763.26	1,477.11	1,236.74	86.26
202-524.000-721.000	FICA/MEDICARE - CITY SHARE	540.00	668.61	123.04	(128.61)	123.82
202-524.000-722.000	ICMA - CITY SHARE	95.00	4.49	0.00	90.51	4.73
202-524.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,600.00	2,373.07	438.80	(773.07)	148.32
202-524.000-731.000	MATERIALS & SUPPLIES	8,000.00	11,419.63	2,866.73	(3,419.63)	142.75
202-524.000-746.000	PROFESSIONAL SERVICES	10,000.00	70,080.25	0.00	(60,080.25)	700.80
202-524.000-749.000	CONTRACTUAL SERVICES	2,600.00	5,710.00	391.00	(3,110.00)	219.62
202-524.000-851.000	MVP EQUIPMENT RENTAL	12,000.00	14,378.68	2,503.12	(2,378.68)	119.82
202-524.000-862.000	CAP. OUTLAY-IMPROVEMENTS	60,000.00	429,186.46	0.00	(369,186.46)	715.31
Total Dept 524.000 - STREET MAINTENANCE		103,835.00	542,579.16	7,938.28	(438,744.16)	522.54
Dept 526.000 - STREET SWEEPING						
202-526.000-704.100	STAFF - OVERTIME	500.00	73.11	0.00	426.89	14.62
202-526.000-706.000	CITY LABOR - DPW	6,450.00	3,380.59	482.24	3,069.41	52.41
202-526.000-721.000	FICA/MEDICARE - CITY SHARE	385.00	264.92	37.70	120.08	68.81
202-526.000-722.000	ICMA - CITY SHARE	65.00	47.34	15.12	17.66	72.83
202-526.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,150.00	872.88	111.71	277.12	75.90
202-526.000-749.000	CONTRACTUAL SERVICES	5,000.00	4,045.27	0.00	954.73	80.91
202-526.000-851.000	MVP EQUIPMENT RENTAL	15,000.00	13,452.67	1,963.20	1,547.33	89.68
202-526.000-853.000	HYDRANT RENTAL	8,400.00	7,700.00	700.00	700.00	91.67
Total Dept 526.000 - STREET SWEEPING		36,950.00	29,836.78	3,309.97	7,113.22	80.75
Dept 530.000 - WINTER STREET MAINTENANCE						
202-530.000-704.100	STAFF - OVERTIME	2,000.00	3,174.20	0.00	(1,174.20)	158.71
202-530.000-704.200	HOLIDAY COMPENSATION	500.00	69.36	0.00	430.64	13.87
202-530.000-706.000	CITY LABOR - DPW	6,450.00	3,464.98	0.00	2,985.02	53.72
202-530.000-721.000	FICA/MEDICARE - CITY SHARE	385.00	513.22	0.00	(128.22)	133.30
202-530.000-722.000	ICMA - CITY SHARE	65.00	17.52	0.00	47.48	26.95
202-530.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,150.00	1,797.66	0.00	(647.66)	156.32

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 202 - MAJOR STREET FUND						
Expenditures						
202-530.000-731.000	MATERIALS & SUPPLIES	13,000.00	15,712.90	0.00	(2,712.90)	120.87
202-530.000-851.000	MVP EQUIPMENT RENTAL	13,000.00	17,770.18	0.00	(4,770.18)	136.69
Total Dept 530.000 - WINTER STREET MAINTENANCE		36,550.00	42,520.02	0.00	(5,970.02)	116.33
Dept 540.000 - TRAFFIC SERVICES						
202-540.000-704.100	STAFF - OVERTIME	300.00	69.36	0.00	230.64	23.12
202-540.000-706.000	CITY LABOR - DPW	3,750.00	571.13	23.12	3,178.87	15.23
202-540.000-721.000	FICA/MEDICARE - CITY SHARE	225.00	49.44	1.75	175.56	21.97
202-540.000-722.000	ICMA - CITY SHARE	40.00	11.39	0.00	28.61	28.48
202-540.000-728.000	RETIREMENT PLANS (CITY SHARE)	665.00	159.22	6.28	505.78	23.94
202-540.000-731.000	MATERIALS & SUPPLIES	3,000.00	1,106.62	0.00	1,893.38	36.89
202-540.000-749.000	CONTRACTUAL SERVICES	9,500.00	7,912.00	7,912.00	1,588.00	83.28
202-540.000-851.000	MVP EQUIPMENT RENTAL	1,500.00	792.87	11.90	707.13	52.86
Total Dept 540.000 - TRAFFIC SERVICES		18,980.00	10,672.03	7,955.05	8,307.97	56.23
Dept 561.000 - TRUNKLINE MAINTENANCE						
202-561.000-704.100	STAFF - OVERTIME	100.00	790.50	147.39	(690.50)	790.50
202-561.000-706.000	CITY LABOR - DPW	1,050.00	892.75	141.22	157.25	85.02
202-561.000-721.000	FICA/MEDICARE - CITY SHARE	60.00	126.67	21.83	(66.67)	211.12
202-561.000-722.000	ICMA - CITY SHARE	10.00	1.70	1.70	8.30	17.00
202-561.000-728.000	RETIREMENT PLANS (CITY SHARE)	185.00	454.91	76.12	(269.91)	245.90
202-561.000-851.000	MVP EQUIPMENT RENTAL	4,200.00	6,021.40	1,006.14	(1,821.40)	143.37
202-561.000-853.000	HYDRANT RENTAL	3,000.00	2,750.00	250.00	250.00	91.67
Total Dept 561.000 - TRUNKLINE MAINTENANCE		8,605.00	11,037.93	1,644.40	(2,432.93)	128.27
Dept 562.000 - TRUNKLINE WINTER MAINTENANCE						
202-562.000-704.100	STAFF - OVERTIME	2,500.00	843.68	0.00	1,656.32	33.75
202-562.000-706.000	CITY LABOR - DPW	2,580.00	526.42	0.00	2,053.58	20.40
202-562.000-721.000	FICA/MEDICARE - CITY SHARE	155.00	104.36	0.00	50.64	67.33
202-562.000-722.000	ICMA - CITY SHARE	30.00	1.67	0.00	28.33	5.57
202-562.000-728.000	RETIREMENT PLANS (CITY SHARE)	460.00	369.86	0.00	90.14	80.40
202-562.000-851.000	MVP EQUIPMENT RENTAL	3,500.00	3,655.31	0.00	(155.31)	104.44
Total Dept 562.000 - TRUNKLINE WINTER MAINTENANCE		9,225.00	5,501.30	0.00	3,723.70	59.63
Dept 563.000 - TRUNKLINE TRAFFIC SERVICES						
202-563.000-706.000	CITY LABOR - DPW	130.00	0.00	0.00	130.00	0.00
202-563.000-721.000	FICA/MEDICARE - CITY SHARE	10.00	0.00	0.00	10.00	0.00
202-563.000-722.000	ICMA - CITY SHARE	5.00	0.00	0.00	5.00	0.00
202-563.000-728.000	RETIREMENT PLANS (CITY SHARE)	25.00	0.00	0.00	25.00	0.00
202-563.000-745.000	UTILITIES	4,000.00	3,829.54	0.00	170.46	95.74
Total Dept 563.000 - TRUNKLINE TRAFFIC SERVICES		4,170.00	3,829.54	0.00	340.46	91.84
Dept 564.000 - TRUNKLINE STORM SEWER						
202-564.000-706.000	CITY LABOR - DPW	130.00	0.00	0.00	130.00	0.00
202-564.000-721.000	FICA/MEDICARE - CITY SHARE	10.00	0.00	0.00	10.00	0.00
202-564.000-722.000	ICMA - CITY SHARE	5.00	0.00	0.00	5.00	0.00

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 202 - MAJOR STREET FUND						
Expenditures						
202-564.000-728.000	RETIREMENT PLANS (CITY SHARE)	25.00	0.00	0.00	25.00	0.00
202-564.000-851.000	MVP EQUIPMENT RENTAL	0.00	37.32	0.00	(37.32)	100.00
Total Dept 564.000 - TRUNKLINE STORM SEWER		170.00	37.32	0.00	132.68	21.95
Dept 999.000 - GASB 34						
202-999.000-859.203	CONTRIB. TO LOCAL STREET FUND	500,000.00	458,326.00	41,666.00	41,674.00	91.67
Total Dept 999.000 - GASB 34		500,000.00	458,326.00	41,666.00	41,674.00	91.67
TOTAL EXPENDITURES		885,533.00	1,243,380.80	71,018.42	(357,847.80)	140.41
Fund 202 - MAJOR STREET FUND:						
TOTAL REVENUES		1,092,000.00	789,172.27	100,570.29	302,827.73	72.27
TOTAL EXPENDITURES		885,533.00	1,243,380.80	71,018.42	(357,847.80)	140.41
NET OF REVENUES & EXPENDITURES		206,467.00	(454,208.53)	29,551.87	660,675.53	219.99

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 203 - LOCAL STREET FUND						
Revenues						
Dept 000.000						
203-000.000-415.000	SPECIAL ASSESSMENT REVENUE	5,400.00	3,783.34	0.00	1,616.66	70.06
203-000.000-431.000	STATE AID	546,400.00	230,049.87	25,006.07	316,350.13	42.10
203-000.000-501.000	INTEREST INCOME	4,500.00	377.16	0.00	4,122.84	8.38
203-000.000-502.000	ASSESSMENT/LIEN INTEREST	540.00	443.07	0.00	96.93	82.05
203-000.000-596.000	SUNDRY REVENUE	47,000.00	49,697.03	0.00	(2,697.03)	105.74
203-000.000-605.101	CONTRIBUTION FROM GENERAL FUN	15,000.00	13,750.00	1,250.00	1,250.00	91.67
203-000.000-605.202	CONTRIBUTION FROM MAJOR STREE	500,000.00	458,326.00	41,666.00	41,674.00	91.67
Total Dept 000.000		1,118,840.00	756,426.47	67,922.07	362,413.53	67.61
TOTAL REVENUES		1,118,840.00	756,426.47	67,922.07	362,413.53	67.61
Expenditures						
Dept 430.000 - STORM SEWERS						
203-430.000-704.100	STAFF - OVERTIME	600.00	0.00	0.00	600.00	0.00
203-430.000-706.000	CITY LABOR - DPW	7,745.00	2,162.17	466.52	5,582.83	27.92
203-430.000-721.000	FICA/MEDICARE - CITY SHARE	460.00	164.82	35.59	295.18	35.83
203-430.000-722.000	ICMA - CITY SHARE	80.00	0.84	0.00	79.16	1.05
203-430.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,375.00	586.09	126.71	788.91	42.62
203-430.000-731.000	MATERIALS & SUPPLIES	700.00	38.36	0.00	661.64	5.48
203-430.000-851.000	MVP EQUIPMENT RENTAL	15,000.00	6,794.78	1,443.30	8,205.22	45.30
Total Dept 430.000 - STORM SEWERS		25,960.00	9,747.06	2,072.12	16,212.94	37.55
Dept 440.000 - SIDEWALK MAINTENANCE						
203-440.000-704.100	STAFF - OVERTIME	600.00	69.36	0.00	530.64	11.56
203-440.000-706.000	CITY LABOR - DPW	7,745.00	2,923.55	177.65	4,821.45	37.75
203-440.000-721.000	FICA/MEDICARE - CITY SHARE	460.00	228.90	13.63	231.10	49.76
203-440.000-722.000	ICMA - CITY SHARE	80.00	18.18	0.85	61.82	22.73
203-440.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,375.00	791.36	47.12	583.64	57.55
203-440.000-731.000	MATERIALS & SUPPLIES	2,000.00	910.00	0.00	1,090.00	45.50
203-440.000-746.000	PROFESSIONAL SERVICES	83,400.00	53,936.25	0.00	29,463.75	64.67
203-440.000-851.000	MVP EQUIPMENT RENTAL	5,400.00	4,733.16	101.66	666.84	87.65
Total Dept 440.000 - SIDEWALK MAINTENANCE		101,060.00	63,610.76	340.91	37,449.24	62.94
Dept 520.000 - STREET ADMINISTRATION						
203-520.000-703.000	ADMINSTRATIVE SALARIES	26,850.00	17,941.41	1,592.49	8,908.59	66.82
203-520.000-704.000	STAFF WAGES	0.00	2,487.84	0.00	(2,487.84)	100.00
203-520.000-704.100	STAFF - OVERTIME	300.00	804.40	66.06	(504.40)	268.13
203-520.000-704.200	HOLIDAY COMPENSATION	0.00	1,009.21	0.00	(1,009.21)	100.00
203-520.000-706.000	CITY LABOR - DPW	3,875.00	7,101.64	853.43	(3,226.64)	183.27
203-520.000-710.000	COMPENSATED ABSENCES	0.00	14,113.25	766.97	(14,113.25)	100.00
203-520.000-711.000	LONGEVITY	300.00	1,796.02	0.00	(1,496.02)	598.67
203-520.000-712.000	SPECIAL COMPENSATION	500.00	541.66	55.20	(41.66)	108.33
203-520.000-715.000	HEALTH REIMBURSEMENT	500.00	222.80	20.83	277.20	44.56
203-520.000-718.000	AUTO ALLOWANCE	390.00	396.61	34.92	(6.61)	101.69
203-520.000-719.000	CLOTHING ALLOWANCE	0.00	785.18	0.00	(785.18)	100.00
203-520.000-721.000	FICA/MEDICARE - CITY SHARE	2,440.00	3,624.31	262.51	(1,184.31)	148.54
203-520.000-722.000	ICMA - CITY SHARE	40.00	569.13	44.28	(529.13)	1,422.83
203-520.000-723.000	VISION CARE	73.00	268.24	42.56	(195.24)	367.45

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 203 - LOCAL STREET FUND						
Expenditures						
203-520.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	535.00	203.98	40.93	331.02	38.13
203-520.000-725.604	DENTAL & HEALTH BENEFITS	5,065.00	6,464.05	1,877.31	(1,399.05)	127.62
203-520.000-728.000	RETIREMENT PLANS (CITY SHARE)	9,060.00	17,290.72	1,941.63	(8,230.72)	190.85
203-520.000-728.001	RETIRMENT HEALTH SAVINGS	895.00	0.00	0.00	895.00	0.00
Total Dept 520.000 - STREET ADMINISTRATION		50,823.00	75,620.45	7,599.12	(24,797.45)	148.79
Dept 522.000 - STREET REPAIR						
203-522.000-706.000	CITY LABOR - DPW	6,000.00	3,719.63	0.00	2,280.37	61.99
203-522.000-721.000	FICA/MEDICARE - CITY SHARE	600.00	283.58	0.00	316.42	47.26
203-522.000-722.000	ICMA - CITY SHARE	250.00	0.00	0.00	250.00	0.00
203-522.000-728.000	RETIREMENT PLANS (CITY SHARE)	800.00	1,010.26	0.00	(210.26)	126.28
203-522.000-731.000	MATERIALS & SUPPLIES	0.00	814.32	0.00	(814.32)	100.00
203-522.000-851.000	MVP EQUIPMENT RENTAL	5,000.00	2,303.17	0.00	2,696.83	46.06
Total Dept 522.000 - STREET REPAIR		12,650.00	8,130.96	0.00	4,519.04	64.28
Dept 524.000 - STREET MAINTENANCE						
203-524.000-704.100	STAFF - OVERTIME	1,300.00	1,198.56	207.24	101.44	92.20
203-524.000-706.000	CITY LABOR - DPW	16,780.00	10,699.43	1,580.45	6,080.57	63.76
203-524.000-721.000	FICA/MEDICARE - CITY SHARE	1,000.00	907.97	136.04	92.03	90.80
203-524.000-722.000	ICMA - CITY SHARE	107.00	23.32	0.00	83.68	21.79
203-524.000-728.000	RETIREMENT PLANS (CITY SHARE)	2,980.00	3,201.99	485.55	(221.99)	107.45
203-524.000-731.000	MATERIALS & SUPPLIES	13,000.00	11,419.67	2,866.72	1,580.33	87.84
203-524.000-746.000	PROFESSIONAL SERVICES	100,000.00	0.00	0.00	100,000.00	0.00
203-524.000-749.000	CONTRACTUAL SERVICES	0.00	76.00	57.00	(76.00)	100.00
203-524.000-851.000	MVP EQUIPMENT RENTAL	18,000.00	22,661.55	2,501.45	(4,661.55)	125.90
203-524.000-862.000	CAP. OUTLAY-IMPROVEMENTS	623,000.00	0.00	0.00	623,000.00	0.00
Total Dept 524.000 - STREET MAINTENANCE		776,167.00	50,188.49	7,834.45	725,978.51	6.47
Dept 526.000 - STREET SWEEPING						
203-526.000-704.100	STAFF - OVERTIME	1,200.00	359.22	0.00	840.78	29.94
203-526.000-706.000	CITY LABOR - DPW	15,500.00	6,778.76	608.70	8,721.24	43.73
203-526.000-721.000	FICA/MEDICARE - CITY SHARE	925.00	541.93	47.26	383.07	58.59
203-526.000-722.000	ICMA - CITY SHARE	160.00	50.05	15.12	109.95	31.28
203-526.000-728.000	RETIREMENT PLANS (CITY SHARE)	2,800.00	1,870.14	146.05	929.86	66.79
203-526.000-749.000	CONTRACTUAL SERVICES	5,000.00	4,045.27	0.00	954.73	80.91
203-526.000-851.000	MVP EQUIPMENT RENTAL	36,000.00	30,544.64	2,503.08	5,455.36	84.85
203-526.000-853.000	HYDRANT RENTAL	15,800.00	14,487.00	1,317.00	1,313.00	91.69
Total Dept 526.000 - STREET SWEEPING		77,385.00	58,677.01	4,637.21	18,707.99	75.82
Dept 529.000 - GRAVEL STREET MAINTENANCE						
203-529.000-704.100	STAFF - OVERTIME	350.00	0.00	0.00	350.00	0.00
203-529.000-706.000	CITY LABOR - DPW	4,520.00	3,851.39	115.60	668.61	85.21
203-529.000-721.000	FICA/MEDICARE - CITY SHARE	270.00	296.59	8.68	(26.59)	109.85
203-529.000-722.000	ICMA - CITY SHARE	50.00	53.66	0.00	(3.66)	107.32
203-529.000-728.000	RETIREMENT PLANS (CITY SHARE)	800.00	971.66	31.40	(171.66)	121.46
203-529.000-731.000	MATERIALS & SUPPLIES	6,000.00	2,016.50	0.00	3,983.50	33.61
203-529.000-749.000	CONTRACTUAL SERVICES	3,500.00	0.00	0.00	3,500.00	0.00
203-529.000-851.000	MVP EQUIPMENT RENTAL	6,500.00	11,591.35	327.85	(5,091.35)	178.33

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 203 - LOCAL STREET FUND						
Expenditures						
Total Dept 529.000 - GRAVEL STREET MAINTENANCE		21,990.00	18,781.15	483.53	3,208.85	85.41
Dept 530.000 - WINTER STREET MAINTENANCE						
203-530.000-704.100	STAFF - OVERTIME	600.00	4,345.88	0.00	(3,745.88)	724.31
203-530.000-704.200	HOLIDAY COMPENSATION	0.00	69.36	0.00	(69.36)	100.00
203-530.000-706.000	CITY LABOR - DPW	7,745.00	4,832.30	0.00	2,912.70	62.39
203-530.000-721.000	FICA/MEDICARE - CITY SHARE	460.00	706.71	0.00	(246.71)	153.63
203-530.000-722.000	ICMA - CITY SHARE	80.00	24.21	0.00	55.79	30.26
203-530.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,375.00	2,478.37	0.00	(1,103.37)	180.25
203-530.000-731.000	MATERIALS & SUPPLIES	13,000.00	15,713.03	0.00	(2,713.03)	120.87
203-530.000-851.000	MVP EQUIPMENT RENTAL	13,000.00	21,248.43	0.00	(8,248.43)	163.45
Total Dept 530.000 - WINTER STREET MAINTENANCE		36,260.00	49,418.29	0.00	(13,158.29)	136.29
Dept 540.000 - TRAFFIC SERVICES						
203-540.000-704.100	STAFF - OVERTIME	225.00	26.76	0.00	198.24	11.89
203-540.000-706.000	CITY LABOR - DPW	2,840.00	384.59	0.00	2,455.41	13.54
203-540.000-721.000	FICA/MEDICARE - CITY SHARE	170.00	31.55	0.00	138.45	18.56
203-540.000-722.000	ICMA - CITY SHARE	30.00	2.70	0.00	27.30	9.00
203-540.000-728.000	RETIREMENT PLANS (CITY SHARE)	500.00	108.31	0.00	391.69	21.66
203-540.000-731.000	MATERIALS & SUPPLIES	2,000.00	729.00	0.00	1,271.00	36.45
203-540.000-749.000	CONTRACTUAL SERVICES	8,000.00	7,484.00	6,213.00	516.00	93.55
203-540.000-851.000	MVP EQUIPMENT RENTAL	1,100.00	465.69	0.00	634.31	42.34
Total Dept 540.000 - TRAFFIC SERVICES		14,865.00	9,232.60	6,213.00	5,632.40	62.11
TOTAL EXPENDITURES		1,117,160.00	343,406.77	29,180.34	773,753.23	30.74
Fund 203 - LOCAL STREET FUND:						
TOTAL REVENUES		1,118,840.00	756,426.47	67,922.07	362,413.53	67.61
TOTAL EXPENDITURES		1,117,160.00	343,406.77	29,180.34	773,753.23	30.74
NET OF REVENUES & EXPENDITURES		1,680.00	413,019.70	38,741.73	(411,339.70)	4,584.51

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 206 - FIRE FUND						
Revenues						
Dept 000.000						
206-000.000-411.000	CURRENT PROPERTY TAXES	828,615.00	793,045.62	0.00	35,569.38	95.71
206-000.000-442.000	RURAL FIRE ASSOCIATION	424,285.00	397,340.32	0.00	26,944.68	93.65
206-000.000-475.000	FIRE - COST RECOVERY	0.00	7,840.00	0.00	(7,840.00)	100.00
206-000.000-501.000	INTEREST INCOME	0.00	33.91	0.00	(33.91)	100.00
206-000.000-528.000	FEDERAL GRANTS - OTHER	0.00	15,459.63	0.00	(15,459.63)	100.00
206-000.000-596.000	SUNDRY REVENUE	0.00	5.00	0.00	(5.00)	100.00
206-000.000-605.101	CONTRIBUTION FROM GENERAL FUND	38,000.00	34,826.00	3,166.00	3,174.00	91.65
206-000.000-630.000	HAZMAT REVENUE	0.00	322.61	0.00	(322.61)	100.00
Total Dept 000.000		1,290,900.00	1,248,873.09	3,166.00	42,026.91	96.74
TOTAL REVENUES		1,290,900.00	1,248,873.09	3,166.00	42,026.91	96.74
Expenditures						
Dept 350.000 - FIRE DEPARTMENT						
206-350.000-703.000	ADMINSTRATIVE SALARIES	75,000.00	44,711.60	5,769.24	30,288.40	59.62
206-350.000-704.000	STAFF WAGES	308,000.00	257,987.26	20,457.82	50,012.74	83.76
206-350.000-704.100	STAFF - OVERTIME	60,000.00	102,432.21	6,632.31	(42,432.21)	170.72
206-350.000-704.200	HOLIDAY COMPENSATION	0.00	20,463.61	0.00	(20,463.61)	100.00
206-350.000-706.000	CITY LABOR - DPW	0.00	48.18	0.00	(48.18)	100.00
206-350.000-707.000	PART-TIME STAFF WAGES	15,000.00	17,546.55	1,549.20	(2,546.55)	116.98
206-350.000-709.000	OTHER COMPENSATION	0.00	15,459.63	0.00	(15,459.63)	100.00
206-350.000-710.000	COMPENSATED ABSENCES	0.00	37,710.46	4,702.25	(37,710.46)	100.00
206-350.000-711.000	LONGEVITY	0.00	2,656.96	0.00	(2,656.96)	100.00
206-350.000-712.000	SPECIAL COMPENSATION	0.00	1,502.89	0.03	(1,502.89)	100.00
206-350.000-715.000	HEALTH REIMBURSEMENT	0.00	1,001.52	0.02	(1,001.52)	100.00
206-350.000-718.000	AUTO ALLOWANCE	0.00	1,499.94	0.00	(1,499.94)	100.00
206-350.000-719.000	CLOTHING ALLOWANCE	0.00	14.23	0.00	(14.23)	100.00
206-350.000-721.000	FICA/MEDICARE - CITY SHARE	6,749.00	11,377.47	1,022.02	(4,628.47)	168.58
206-350.000-722.000	ICMA - CITY SHARE	3,600.00	2,953.68	260.00	646.32	82.05
206-350.000-723.000	VISION CARE	2,000.00	2,083.29	168.02	(83.29)	104.16
206-350.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	21,000.00	2,561.86	156.98	18,438.14	12.20
206-350.000-725.603	RETIREMENT HEALTH BENEFITS	16,000.00	12,901.62	1,603.30	3,098.38	80.64
206-350.000-725.604	DENTAL & HEALTH BENEFITS	95,000.00	94,969.27	8,939.56	30.73	99.97
206-350.000-728.000	RETIREMENT PLANS (CITY SHARE)	225,000.00	240,100.78	17,914.65	(15,100.78)	106.71
206-350.000-728.001	RETIRMENT HEALTH SAVINGS	2,000.00	1,253.57	150.00	746.43	62.68
206-350.000-731.000	MATERIALS & SUPPLIES	5,500.00	2,284.41	546.77	3,215.59	41.53
206-350.000-732.000	POSTAGE	1,000.00	732.55	95.59	267.45	73.26
206-350.000-733.000	UNIFORM & CLEANING	19,000.00	11,894.33	602.60	7,105.67	62.60
206-350.000-734.000	GASOLINE & OIL	9,000.00	14,480.69	603.20	(5,480.69)	160.90
206-350.000-735.000	DUES & SUBSCRIPTIONS	2,500.00	90.00	0.00	2,410.00	3.60
206-350.000-737.000	PRINTING & PUBLISHING	500.00	722.08	0.00	(222.08)	144.42
206-350.000-738.000	OPERATING SUPPLIES	8,000.00	9,230.01	0.00	(1,230.01)	115.38
206-350.000-738.001	HAZ-MAT SUPPLIES	4,000.00	3,391.92	329.70	608.08	84.80
206-350.000-740.000	VEHICLE MAINTENANCE	20,000.00	20,528.60	546.09	(528.60)	102.64
206-350.000-741.000	MAINTENANCE - EQ/BLDG/GRNDS	5,000.00	7,322.77	471.73	(2,322.77)	146.46
206-350.000-744.000	TELEPHONE & INTERNET	89,000.00	74,530.51	6,614.01	14,469.49	83.74
206-350.000-745.000	UTILITIES	35,500.00	30,528.60	0.00	4,971.40	86.00
206-350.000-746.000	PROFESSIONAL SERVICES	10,000.00	14,883.91	702.30	(4,883.91)	148.84
206-350.000-747.000	INSURANCE & BONDS	11,129.00	9,507.00	0.00	1,622.00	85.43
206-350.000-748.000	CONFERENCES & TRAINING	2,000.00	4,729.69	0.00	(2,729.69)	236.48
206-350.000-749.000	CONTRACTUAL SERVICES	30,570.00	30,184.43	1,371.77	385.57	98.74
206-350.000-750.000	OTHER COMPENSATION	55,000.00	13,380.00	0.00	41,620.00	24.33

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 206 - FIRE FUND						
Expenditures						
206-350.000-756.000	AMBULANCE EXPENSE	35,522.00	35,547.00	0.00	(25.00)	100.07
206-350.000-851.000	MVP EQUIPMENT RENTAL	0.00	199.75	0.00	(199.75)	100.00
206-350.000-853.000	HYDRANT RENTAL	8,700.00	7,975.00	725.00	725.00	91.67
206-350.000-864.000	CAPITAL OUTLAY - EQUIPMENT	50,000.00	26,908.00	0.00	23,092.00	53.82
206-350.000-865.000	CAP. OUTLAY - COMPUTER EQUIP	21,400.00	449.00	0.00	20,951.00	2.10
206-350.000-871.000	PRINCIPAL	32,300.00	29,601.00	2,691.00	2,699.00	91.64
206-350.000-872.000	INTEREST EXPENSE	2,250.00	2,035.00	185.00	215.00	90.44
206-350.000-970.000	MILEAGE ALLOWANCE	1,000.00	813.09	130.46	186.91	81.31
206-350.000-972.000	MISCELLANEOUS	500.00	707.66	0.00	(207.66)	141.53
Total Dept 350.000 - FIRE DEPARTMENT		1,288,720.00	1,223,893.58	84,940.62	64,826.42	94.97
TOTAL EXPENDITURES		1,288,720.00	1,223,893.58	84,940.62	64,826.42	94.97
Fund 206 - FIRE FUND:						
TOTAL REVENUES		1,290,900.00	1,248,873.09	3,166.00	42,026.91	96.74
TOTAL EXPENDITURES		1,288,720.00	1,223,893.58	84,940.62	64,826.42	94.97
NET OF REVENUES & EXPENDITURES		2,180.00	24,979.51	(81,774.62)	(22,799.51)	1,145.85

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 230 - POLICE DRUG ENFORCEMENT						
Revenues						
Dept 000.000						
230-000.000-501.000	INTEREST INCOME	0.00	8.11	0.00	(8.11)	100.00
Total Dept 000.000		0.00	8.11	0.00	(8.11)	100.00
TOTAL REVENUES		0.00	8.11	0.00	(8.11)	100.00
Expenditures						
Dept 301.000 - DRUG ENFORCEMENT						
230-301.000-731.000	MATERIALS & SUPPLIES	1,500.00	0.00	0.00	1,500.00	0.00
Total Dept 301.000 - DRUG ENFORCEMENT		1,500.00	0.00	0.00	1,500.00	0.00
TOTAL EXPENDITURES		1,500.00	0.00	0.00	1,500.00	0.00
Fund 230 - POLICE DRUG ENFORCEMENT:						
TOTAL REVENUES		0.00	8.11	0.00	(8.11)	100.00
TOTAL EXPENDITURES		1,500.00	0.00	0.00	1,500.00	0.00
NET OF REVENUES & EXPENDITURES		(1,500.00)	8.11	0.00	(1,508.11)	0.54

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 240 - ACT 302 POLICE TRAINING						
Revenues						
Dept 000.000						
240-000.000-431.000	STATE AID	2,500.00	3,770.90	850.80	(1,270.90)	150.84
240-000.000-501.000	INTEREST INCOME	0.00	8.53	0.00	(8.53)	100.00
240-000.000-605.101	CONTRIBUTION FROM GENERAL FUN	3,000.00	2,750.00	250.00	250.00	91.67
Total Dept 000.000		5,500.00	6,529.43	1,100.80	(1,029.43)	118.72
TOTAL REVENUES		5,500.00	6,529.43	1,100.80	(1,029.43)	118.72
Expenditures						
Dept 302.000 - ACT 302 POLICE TRAINING						
240-302.000-748.000	CONFERENCES & TRAINING	2,500.00	179.00	0.00	2,321.00	7.16
240-302.000-748.302	302 TRAINING	3,000.00	2,702.24	0.00	297.76	90.07
Total Dept 302.000 - ACT 302 POLICE TRAINING		5,500.00	2,881.24	0.00	2,618.76	52.39
TOTAL EXPENDITURES		5,500.00	2,881.24	0.00	2,618.76	52.39
Fund 240 - ACT 302 POLICE TRAINING:						
TOTAL REVENUES		5,500.00	6,529.43	1,100.80	(1,029.43)	118.72
TOTAL EXPENDITURES		5,500.00	2,881.24	0.00	2,618.76	52.39
NET OF REVENUES & EXPENDITURES		0.00	3,648.19	1,100.80	(3,648.19)	100.00

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 243 - BROWNFIELD REDEVELOPMENT AUTHORITY FUND						
Revenues						
Dept 000.000						
243-000.000-411.200	TAX CAPTURE	60,000.00	97,459.40	0.00	(37,459.40)	162.43
243-000.000-501.000	INTEREST INCOME	0.00	74.84	0.00	(74.84)	100.00
Total Dept 000.000		60,000.00	97,534.24	0.00	(37,534.24)	162.56
TOTAL REVENUES		60,000.00	97,534.24	0.00	(37,534.24)	162.56
Expenditures						
Dept 000.000						
243-000.000-802.000	TAX EXPENDITURES	85,000.00	82,003.06	0.00	2,996.94	96.47
Total Dept 000.000		85,000.00	82,003.06	0.00	2,996.94	96.47
TOTAL EXPENDITURES		85,000.00	82,003.06	0.00	2,996.94	96.47
Fund 243 - BROWNFIELD REDEVELOPMENT AUTHORITY FUND:						
TOTAL REVENUES		60,000.00	97,534.24	0.00	(37,534.24)	162.56
TOTAL EXPENDITURES		85,000.00	82,003.06	0.00	2,996.94	96.47
NET OF REVENUES & EXPENDITURES		(25,000.00)	15,531.18	0.00	(40,531.18)	62.12

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 260 - DDA FUND						
Revenues						
Dept 000.000						
260-000.000-411.000	CURRENT PROPERTY TAXES	13,000.00	22,910.03	0.00	(9,910.03)	176.23
260-000.000-411.200	TAX CAPTURE	11,000.00	0.00	0.00	11,000.00	0.00
260-000.000-415.000	SPECIAL ASSESSMENT REVENUE	8,700.00	13,110.18	0.00	(4,410.18)	150.69
260-000.000-424.000	PARKING PERMITS	1,200.00	1,310.00	210.00	(110.00)	109.17
260-000.000-501.000	INTEREST INCOME	25.00	9.57	0.00	15.43	38.28
260-000.000-596.000	SUNDRY REVENUE	0.00	5,611.10	0.00	(5,611.10)	100.00
Total Dept 000.000		33,925.00	42,950.88	210.00	(9,025.88)	126.61
TOTAL REVENUES		33,925.00	42,950.88	210.00	(9,025.88)	126.61
Expenditures						
Dept 800.000 - ECONOMIC DEVELOPMENT						
260-800.000-704.100	STAFF - OVERTIME	225.00	0.00	0.00	225.00	0.00
260-800.000-706.000	CITY LABOR - DPW	2,225.00	2,454.80	470.40	(229.80)	110.33
260-800.000-721.000	FICA/MEDICARE - CITY SHARE	170.00	188.70	35.99	(18.70)	111.00
260-800.000-722.000	ICMA - CITY SHARE	30.00	21.82	0.00	8.18	72.73
260-800.000-728.000	RETIREMENT PLANS (CITY SHARE)	500.00	637.83	127.76	(137.83)	127.57
260-800.000-731.000	MATERIALS & SUPPLIES	1,000.00	539.86	202.40	460.14	53.99
260-800.000-737.000	PRINTING & PUBLISHING	0.00	115.75	0.00	(115.75)	100.00
260-800.000-746.000	PROFESSIONAL SERVICES	0.00	1,718.40	0.00	(1,718.40)	100.00
260-800.000-749.000	CONTRACTUAL SERVICES	20,700.00	17,410.83	286.13	3,289.17	84.11
260-800.000-753.000	SPECIAL PURPOSE EXPENSES	2,000.00	0.00	0.00	2,000.00	0.00
260-800.000-851.000	MVP EQUIPMENT RENTAL	0.00	802.95	149.04	(802.95)	100.00
260-800.000-862.000	CAP. OUTLAY-IMPROVEMENTS	4,000.00	0.00	0.00	4,000.00	0.00
Total Dept 800.000 - ECONOMIC DEVELOPMENT		30,850.00	23,890.94	1,271.72	6,959.06	77.44
TOTAL EXPENDITURES		30,850.00	23,890.94	1,271.72	6,959.06	77.44
Fund 260 - DDA FUND:						
TOTAL REVENUES		33,925.00	42,950.88	210.00	(9,025.88)	126.61
TOTAL EXPENDITURES		30,850.00	23,890.94	1,271.72	6,959.06	77.44
NET OF REVENUES & EXPENDITURES		3,075.00	19,059.94	(1,061.72)	(15,984.94)	619.84

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 261 - LDFA						
Revenues						
Dept 000.000						
261-000.000-501.000	INTEREST INCOME	0.00	758.11	0.00	(758.11)	100.00
261-000.000-607.000	LOAN REPAYMENT	3,000.00	2,035.00	185.00	965.00	67.83
Total Dept 000.000		3,000.00	2,793.11	185.00	206.89	93.10
TOTAL REVENUES		3,000.00	2,793.11	185.00	206.89	93.10
Expenditures						
Dept 800.000 - ECONOMIC DEVELOPMENT						
261-800.000-735.000	DUES & SUBSCRIPTIONS	350.00	0.00	0.00	350.00	0.00
261-800.000-746.000	PROFESSIONAL SERVICES	5,000.00	0.00	0.00	5,000.00	0.00
261-800.000-749.000	CONTRACTUAL SERVICES	1,000.00	0.00	0.00	1,000.00	0.00
Total Dept 800.000 - ECONOMIC DEVELOPMENT		6,350.00	0.00	0.00	6,350.00	0.00
TOTAL EXPENDITURES		6,350.00	0.00	0.00	6,350.00	0.00
Fund 261 - LDFA:						
TOTAL REVENUES		3,000.00	2,793.11	185.00	206.89	93.10
TOTAL EXPENDITURES		6,350.00	0.00	0.00	6,350.00	0.00
NET OF REVENUES & EXPENDITURES		(3,350.00)	2,793.11	185.00	(6,143.11)	83.38

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 270 - ECONOMIC DEVELOPMENT FUND						
Revenues						
Dept 000.000						
270-000.000-501.000	INTEREST INCOME	0.00	38.93	0.00	(38.93)	100.00
270-000.000-593.000	RENT EARNED-CITY PROPERTY	9,500.00	11,600.00	0.00	(2,100.00)	122.11
Total Dept 000.000		9,500.00	11,638.93	0.00	(2,138.93)	122.52
TOTAL REVENUES		9,500.00	11,638.93	0.00	(2,138.93)	122.52
Expenditures						
Dept 800.000 - ECONOMIC DEVELOPMENT						
270-800.000-706.000	CITY LABOR - DPW	0.00	46.24	0.00	(46.24)	100.00
270-800.000-721.000	FICA/MEDICARE - CITY SHARE	0.00	3.48	0.00	(3.48)	100.00
270-800.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	0.00	0.37	0.00	(0.37)	100.00
270-800.000-728.000	RETIREMENT PLANS (CITY SHARE)	0.00	12.56	0.00	(12.56)	100.00
270-800.000-731.000	MATERIALS & SUPPLIES	250.00	207.97	0.00	42.03	83.19
270-800.000-748.000	CONFERENCES & TRAINING	500.00	0.00	0.00	500.00	0.00
270-800.000-749.000	CONTRACTUAL SERVICES	3,000.00	2,140.00	320.00	860.00	71.33
Total Dept 800.000 - ECONOMIC DEVELOPMENT		3,750.00	2,410.62	320.00	1,339.38	64.28
TOTAL EXPENDITURES		3,750.00	2,410.62	320.00	1,339.38	64.28
Fund 270 - ECONOMIC DEVELOPMENT FUND:						
TOTAL REVENUES		9,500.00	11,638.93	0.00	(2,138.93)	122.52
TOTAL EXPENDITURES		3,750.00	2,410.62	320.00	1,339.38	64.28
NET OF REVENUES & EXPENDITURES		5,750.00	9,228.31	(320.00)	(3,478.31)	160.49

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 280 - AIRPORT FUND						
Revenues						
Dept 000.000						
280-000.000-439.004	FEDERAL GRANT - FAA	100,000.00	0.00	0.00	100,000.00	0.00
280-000.000-444.000	AIRPORT HANGER RENT	35,000.00	31,695.00	6,760.00	3,305.00	90.56
280-000.000-528.000	FEDERAL GRANTS - OTHER	0.00	30,000.00	0.00	(30,000.00)	100.00
280-000.000-592.000	FUEL SALES	30,000.00	35,225.36	0.00	(5,225.36)	117.42
280-000.000-593.000	RENT EARNED-CITY PROPERTY	10,400.00	0.00	0.00	10,400.00	0.00
280-000.000-596.000	SUNDRY REVENUE	41,000.00	0.00	0.00	41,000.00	0.00
Total Dept 000.000		216,400.00	96,920.36	6,760.00	119,479.64	44.79
TOTAL REVENUES		216,400.00	96,920.36	6,760.00	119,479.64	44.79
Expenditures						
Dept 830.000 - AIRPORT						
280-830.000-704.100	STAFF - OVERTIME	200.00	690.32	0.00	(490.32)	345.16
280-830.000-706.000	CITY LABOR - DPW	2,580.00	1,622.94	207.45	957.06	62.90
280-830.000-721.000	FICA/MEDICARE - CITY SHARE	155.00	176.68	15.87	(21.68)	113.99
280-830.000-722.000	ICMA - CITY SHARE	30.00	9.40	0.91	20.60	31.33
280-830.000-728.000	RETIREMENT PLANS (CITY SHARE)	460.00	615.67	55.21	(155.67)	133.84
280-830.000-731.000	MATERIALS & SUPPLIES	2,000.00	426.33	0.00	1,573.67	21.32
280-830.000-734.000	GASOLINE & OIL	30,000.00	61,864.33	23,826.33	(31,864.33)	206.21
280-830.000-741.000	MAINTENANCE - EQ/BLDG/GRNDS	30,000.00	1,664.09	76.98	28,335.91	5.55
280-830.000-743.000	TAXES	9,000.00	10,606.00	0.00	(1,606.00)	117.84
280-830.000-744.000	TELEPHONE & INTERNET	5,000.00	4,107.51	373.41	892.49	82.15
280-830.000-745.000	UTILITIES	15,000.00	12,019.23	0.00	2,980.77	80.13
280-830.000-746.000	PROFESSIONAL SERVICES	15,000.00	64,548.34	42,215.28	(49,548.34)	430.32
280-830.000-747.000	INSURANCE & BONDS	9,247.00	9,271.00	0.00	(24.00)	100.26
280-830.000-749.000	CONTRACTUAL SERVICES	16,000.00	22,651.31	3,119.45	(6,651.31)	141.57
280-830.000-851.000	MVP EQUIPMENT RENTAL	6,000.00	4,622.14	59.50	1,377.86	77.04
280-830.000-862.000	CAP. OUTLAY-IMPROVEMENTS	57,000.00	47,487.33	0.00	9,512.67	83.31
280-830.000-972.000	MISCELLANEOUS	0.00	1,824.18	0.00	(1,824.18)	100.00
Total Dept 830.000 - AIRPORT		197,672.00	244,206.80	69,950.39	(46,534.80)	123.54
TOTAL EXPENDITURES		197,672.00	244,206.80	69,950.39	(46,534.80)	123.54
Fund 280 - AIRPORT FUND:						
TOTAL REVENUES		216,400.00	96,920.36	6,760.00	119,479.64	44.79
TOTAL EXPENDITURES		197,672.00	244,206.80	69,950.39	(46,534.80)	123.54
NET OF REVENUES & EXPENDITURES		18,728.00	(147,286.44)	(63,190.39)	166,014.44	786.45

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 285 - CAMP FRANCES						
Revenues						
Dept 000.000						
285-000.000-501.000	INTEREST INCOME	0.00	13.84	0.00	(13.84)	100.00
285-000.000-593.000	RENT EARNED-CITY PROPERTY	0.00	3,070.00	(120.00)	(3,070.00)	100.00
285-000.000-603.000	CONTRIBUTIONS FROM OTHERS	0.00	300.00	0.00	(300.00)	100.00
Total Dept 000.000		0.00	3,383.84	(120.00)	(3,383.84)	100.00
TOTAL REVENUES		0.00	3,383.84	(120.00)	(3,383.84)	100.00
Expenditures						
Dept 825.000 - PARKS & RECREATION						
285-825.000-731.000	MATERIALS & SUPPLIES	0.00	491.44	0.00	(491.44)	100.00
285-825.000-745.000	UTILITIES	0.00	922.35	0.00	(922.35)	100.00
285-825.000-747.000	INSURANCE & BONDS	0.00	37.00	0.00	(37.00)	100.00
285-825.000-749.000	CONTRACTUAL SERVICES	0.00	662.73	0.00	(662.73)	100.00
Total Dept 825.000 - PARKS & RECREATION		0.00	2,113.52	0.00	(2,113.52)	100.00
TOTAL EXPENDITURES		0.00	2,113.52	0.00	(2,113.52)	100.00
Fund 285 - CAMP FRANCES:						
TOTAL REVENUES		0.00	3,383.84	(120.00)	(3,383.84)	100.00
TOTAL EXPENDITURES		0.00	2,113.52	0.00	(2,113.52)	100.00
NET OF REVENUES & EXPENDITURES		0.00	1,270.32	(120.00)	(1,270.32)	100.00

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 290 - FEDERAL & STATE GRANTS FUND						
Revenues						
Dept 000.000						
290-000.000-437.006	STATE GRANT - MSHDA	0.00	6,370.00	1,370.00	(6,370.00)	100.00
290-000.000-501.000	INTEREST INCOME	0.00	24.42	0.00	(24.42)	100.00
Total Dept 000.000		0.00	6,394.42	1,370.00	(6,394.42)	100.00
TOTAL REVENUES		0.00	6,394.42	1,370.00	(6,394.42)	100.00
Expenditures						
Dept 890.002 - CDBG						
290-890.002-746.000	PROFESSIONAL SERVICES	0.00	6,370.00	0.00	(6,370.00)	100.00
Total Dept 890.002 - CDBG		0.00	6,370.00	0.00	(6,370.00)	100.00
TOTAL EXPENDITURES		0.00	6,370.00	0.00	(6,370.00)	100.00
Fund 290 - FEDERAL & STATE GRANTS FUND:						
TOTAL REVENUES		0.00	6,394.42	1,370.00	(6,394.42)	100.00
TOTAL EXPENDITURES		0.00	6,370.00	0.00	(6,370.00)	100.00
NET OF REVENUES & EXPENDITURES		0.00	24.42	1,370.00	(24.42)	100.00

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 330 - 2008 FACILITY BLDG G.O. BOND						
Revenues						
Dept 000.000						
330-000.000-411.000	CURRENT PROPERTY TAXES	202,000.00	205,683.63	0.00	(3,683.63)	101.82
330-000.000-441.000	LOCAL COMM STBLZTN SHARE TAX	12,000.00	11,941.62	0.00	58.38	99.51
330-000.000-501.000	INTEREST INCOME	150.00	118.12	0.00	31.88	78.75
Total Dept 000.000		214,150.00	217,743.37	0.00	(3,593.37)	101.68
TOTAL REVENUES		214,150.00	217,743.37	0.00	(3,593.37)	101.68
Expenditures						
Dept 826.000 - DEBT SERVICE						
330-826.000-871.000	PRINCIPAL	145,000.00	145,000.00	0.00	0.00	100.00
330-826.000-872.000	INTEREST EXPENSE	28,350.00	52,350.00	0.00	(24,000.00)	184.66
330-826.000-873.000	PAYING AGENT FEES	500.00	0.00	0.00	500.00	0.00
Total Dept 826.000 - DEBT SERVICE		173,850.00	197,350.00	0.00	(23,500.00)	113.52
TOTAL EXPENDITURES		173,850.00	197,350.00	0.00	(23,500.00)	113.52
Fund 330 - 2008 FACILITY BLDG G.O. BOND:						
TOTAL REVENUES		214,150.00	217,743.37	0.00	(3,593.37)	101.68
TOTAL EXPENDITURES		173,850.00	197,350.00	0.00	(23,500.00)	113.52
NET OF REVENUES & EXPENDITURES		40,300.00	20,393.37	0.00	19,906.63	50.60

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 403 - REVOLVING FUND SPECIAL ACCOUNT						
Revenues						
Dept 000.000						
403-000.000-501.000	INTEREST INCOME	0.00	318.15	0.00	(318.15)	100.00
Total Dept 000.000		0.00	318.15	0.00	(318.15)	100.00
TOTAL REVENUES		0.00	318.15	0.00	(318.15)	100.00
Fund 403 - REVOLVING FUND SPECIAL ACCOUNT:						
TOTAL REVENUES		0.00	318.15	0.00	(318.15)	100.00
TOTAL EXPENDITURES		0.00	0.00	0.00	0.00	0.00
NET OF REVENUES & EXPENDITURES		0.00	318.15	0.00	(318.15)	100.00

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 500 - RECYCLING FUND						
Revenues						
Dept 000.000						
500-000.000-411.000	CURRENT PROPERTY TAXES	16,000.00	16,710.07	0.00	(710.07)	104.44
500-000.000-438.000	COUNTY/LOCAL GRANTS	28,000.00	29,107.53	7,002.82	(1,107.53)	103.96
500-000.000-501.000	INTEREST INCOME	20.00	39.70	0.00	(19.70)	198.50
500-000.000-528.000	FEDERAL GRANTS - OTHER	0.00	2,095.89	0.00	(2,095.89)	100.00
500-000.000-595.000	SALE OF RECYCLABLE MATERIAL	13,000.00	34,267.02	3,570.45	(21,267.02)	263.59
500-000.000-596.000	SUNDRY REVENUE	20,000.00	14,838.84	1,523.50	5,161.16	74.19
Total Dept 000.000		77,020.00	97,059.05	12,096.77	(20,039.05)	126.02
TOTAL REVENUES		77,020.00	97,059.05	12,096.77	(20,039.05)	126.02
Expenditures						
Dept 841.000 - HALL STREET RECYCLING CENTER						
500-841.000-704.000	STAFF WAGES	0.00	439.28	23.12	(439.28)	100.00
500-841.000-706.000	CITY LABOR - DPW	2,581.00	1,221.96	84.56	1,359.04	47.34
500-841.000-707.000	PART-TIME STAFF WAGES	36,000.00	33,610.38	3,328.15	2,389.62	93.36
500-841.000-709.000	OTHER COMPENSATION	0.00	2,095.89	0.00	(2,095.89)	100.00
500-841.000-721.000	FICA/MEDICARE - CITY SHARE	3,200.00	2,859.24	262.77	340.76	89.35
500-841.000-722.000	ICMA - CITY SHARE	30.00	21.07	0.00	8.93	70.23
500-841.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	1,500.00	60.52	0.00	1,439.48	4.03
500-841.000-728.000	RETIREMENT PLANS (CITY SHARE)	460.00	425.14	29.24	34.86	92.42
500-841.000-731.000	MATERIALS & SUPPLIES	2,500.00	2,140.74	0.00	359.26	85.63
500-841.000-745.000	UTILITIES	3,000.00	2,580.03	0.00	419.97	86.00
500-841.000-747.000	INSURANCE & BONDS	70.00	71.00	0.00	(1.00)	101.43
500-841.000-749.000	CONTRACTUAL SERVICES	4,100.00	3,719.67	479.32	380.33	90.72
500-841.000-851.000	MVP EQUIPMENT RENTAL	1,400.00	1,764.95	122.02	(364.95)	126.07
500-841.000-864.000	CAPITAL OUTLAY - EQUIPMENT	4,500.00	0.00	0.00	4,500.00	0.00
Total Dept 841.000 - HALL STREET RECYCLING CENTER		59,341.00	51,009.87	4,329.18	8,331.13	85.96
TOTAL EXPENDITURES		59,341.00	51,009.87	4,329.18	8,331.13	85.96
Fund 500 - RECYCLING FUND:						
TOTAL REVENUES		77,020.00	97,059.05	12,096.77	(20,039.05)	126.02
TOTAL EXPENDITURES		59,341.00	51,009.87	4,329.18	8,331.13	85.96
NET OF REVENUES & EXPENDITURES		17,679.00	46,049.18	7,767.59	(28,370.18)	260.47

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 510 - WATER & SEWER FUND						
Revenues						
Dept 000.000						
510-000.000-437.000	STATE GRANTS	300,000.00	96,456.46	0.00	203,543.54	32.15
510-000.000-437.661	STATE GRANT-WELLHEAD PROTECT	1,000.00	0.00	0.00	1,000.00	0.00
510-000.000-501.000	INTEREST INCOME	15,000.00	2,517.31	0.00	12,482.69	16.78
510-000.000-551.000	WATER-UTILITY BILLING	1,510,000.00	1,663,725.52	311,342.58	(153,725.52)	110.18
510-000.000-551.001	WATER BILLING - SPRINKLING	68,000.00	66,334.35	523.48	1,665.65	97.55
510-000.000-552.000	WATER SYSTEM EQUITY CHARGE	10,800.00	15,500.00	0.00	(4,700.00)	143.52
510-000.000-553.000	WATER - SALES TO CITY	79,000.00	72,325.00	6,575.00	6,675.00	91.55
510-000.000-554.000	WATER - MISCELLANEOUS CHARGES	3,500.00	970.52	640.00	2,529.48	27.73
510-000.000-555.000	WATER - METERS SOLD	5,000.00	10,055.25	289.00	(5,055.25)	201.11
510-000.000-556.000	WATER-PENALTIES AND FINES	15,000.00	1,773.00	1,773.00	13,227.00	11.82
510-000.000-557.000	WATER-SUNDRY	0.00	310.40	0.00	(310.40)	100.00
510-000.000-561.000	SEWER-UTILITY BILLING	2,630,000.00	2,808,743.62	426,342.31	(178,743.62)	106.80
510-000.000-562.000	SEWER SYSTEM EQUITY CHARGE	19,200.00	26,950.00	0.00	(7,750.00)	140.36
510-000.000-562.001	SEWER TAP FEES	0.00	1,750.00	0.00	(1,750.00)	100.00
510-000.000-563.000	SEWER-CLEANOUT & AUGERING	9,000.00	8,400.00	1,125.00	600.00	93.33
510-000.000-564.000	SEWER-PENALTIES & FINES	24,000.00	3,132.71	3,132.71	20,867.29	13.05
510-000.000-594.000	GAIN/LOSS ON SALE OF ASSETS	500.00	0.00	0.00	500.00	0.00
510-000.000-596.000	SUNDRY REVENUE	18,000.00	14,251.80	0.00	3,748.20	79.18
510-000.000-600.000	REIMBURSEMENTS	0.00	488.41	0.00	(488.41)	100.00
Total Dept 000.000		4,708,000.00	4,793,684.35	751,743.08	(85,684.35)	101.82
TOTAL REVENUES		4,708,000.00	4,793,684.35	751,743.08	(85,684.35)	101.82
Expenditures						
Dept 221.000 - PAYROLL TO BE DISTRIBUTED						
510-221.000-706.000	CITY LABOR - DPW	0.00	629.28	0.00	(629.28)	100.00
510-221.000-721.000	FICA/MEDICARE - CITY SHARE	0.00	48.14	0.00	(48.14)	100.00
510-221.000-728.000	RETIREMENT PLANS (CITY SHARE)	0.00	141.66	0.00	(141.66)	100.00
Total Dept 221.000 - PAYROLL TO BE DISTRIBUTED		0.00	819.08	0.00	(819.08)	100.00
Dept 610.000 - SEWER ADMINISTRATION						
510-610.000-703.000	ADMINSTRATIVE SALARIES	102,280.00	91,033.31	8,505.21	11,246.69	89.00
510-610.000-704.000	STAFF WAGES	0.00	5,209.35	0.00	(5,209.35)	100.00
510-610.000-704.100	STAFF - OVERTIME	0.00	941.11	53.51	(941.11)	100.00
510-610.000-704.200	HOLIDAY COMPENSATION	6,800.00	3,448.86	0.00	3,351.14	50.72
510-610.000-706.000	CITY LABOR - DPW	21,000.00	5,465.79	690.91	15,534.21	26.03
510-610.000-710.000	COMPENSATED ABSENCES	0.00	34,013.26	2,950.43	(34,013.26)	100.00
510-610.000-711.000	LONGEVITY	2,500.00	3,269.13	0.00	(769.13)	130.77
510-610.000-712.000	SPECIAL COMPENSATION	1,000.00	1,228.93	168.04	(228.93)	122.89
510-610.000-715.000	HEALTH REIMBURSEMENT	3,100.00	1,204.92	227.54	1,895.08	38.87
510-610.000-718.000	AUTO ALLOWANCE	975.00	529.25	46.60	445.75	54.28
510-610.000-719.000	CLOTHING ALLOWANCE	3,000.00	2,221.59	0.00	778.41	74.05
510-610.000-721.000	FICA/MEDICARE - CITY SHARE	10,800.00	11,277.25	965.71	(477.25)	104.42
510-610.000-722.000	ICMA - CITY SHARE	500.00	602.35	45.27	(102.35)	120.47
510-610.000-723.000	VISION CARE	2,500.00	2,258.88	283.98	241.12	90.36
510-610.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	8,000.00	923.90	201.43	7,076.10	11.55
510-610.000-725.604	DENTAL & HEALTH BENEFITS	125,000.00	122,136.56	8,939.56	2,863.44	97.71
510-610.000-728.000	RETIREMENT PLANS (CITY SHARE)	52,100.00	49,159.68	4,928.99	2,940.32	94.36
510-610.000-728.001	RETIRMENT HEALTH SAVINGS	3,000.00	0.00	0.00	3,000.00	0.00
510-610.000-731.000	MATERIALS & SUPPLIES	1,000.00	82.34	0.00	917.66	8.23
510-610.000-732.000	POSTAGE	3,900.00	2,779.66	286.68	1,120.34	71.27

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 510 - WATER & SEWER FUND						
Expenditures						
510-610.000-735.000	DUES & SUBSCRIPTIONS	1,600.00	1,293.60	0.00	306.40	80.85
510-610.000-737.000	PRINTING & PUBLISHING	2,700.00	2,421.16	576.16	278.84	89.67
510-610.000-744.000	TELEPHONE & INTERNET	43,000.00	35,324.08	3,211.28	7,675.92	82.15
510-610.000-746.000	PROFESSIONAL SERVICES	500.00	500.00	0.00	0.00	100.00
510-610.000-747.000	INSURANCE & BONDS	10,836.00	9,391.00	0.00	1,445.00	86.66
510-610.000-748.000	CONFERENCES & TRAINING	4,000.00	4,397.74	0.00	(397.74)	109.94
510-610.000-850.000	RENTAL EXPENSE	4,110.00	3,767.50	342.50	342.50	91.67
510-610.000-853.000	HYDRANT RENTAL	21,500.00	19,712.00	1,792.00	1,788.00	91.68
510-610.000-871.000	PRINCIPAL	470,000.00	470,000.00	0.00	0.00	100.00
510-610.000-872.000	INTEREST EXPENSE	14,625.00	43,350.00	0.00	(28,725.00)	296.41
510-610.000-971.000	DEPRECIATION EXPENSE	690,000.00	0.00	0.00	690,000.00	0.00
510-610.000-972.000	MISCELLANEOUS	100.00	0.00	0.00	100.00	0.00
Total Dept 610.000 - SEWER ADMINISTRATION		1,610,426.00	927,943.20	34,215.80	682,482.80	57.62
Dept 620.000 - SEWER "MISS DIG" OPERATIONS						
510-620.000-704.100	STAFF - OVERTIME	0.00	323.62	34.68	(323.62)	100.00
510-620.000-706.000	CITY LABOR - DPW	15,000.00	12,348.19	1,488.40	2,651.81	82.32
510-620.000-721.000	FICA/MEDICARE - CITY SHARE	1,200.00	962.77	115.92	237.23	80.23
510-620.000-722.000	ICMA - CITY SHARE	200.00	6.53	0.00	193.47	3.27
510-620.000-728.000	RETIREMENT PLANS (CITY SHARE)	3,500.00	3,433.14	413.66	66.86	98.09
510-620.000-731.000	MATERIALS & SUPPLIES	400.00	217.89	0.00	182.11	54.47
510-620.000-851.000	MVP EQUIPMENT RENTAL	10,000.00	9,724.93	1,038.30	275.07	97.25
Total Dept 620.000 - SEWER "MISS DIG" OPERATIONS		30,300.00	27,017.07	3,090.96	3,282.93	89.17
Dept 621.000 - SEWER MAINTENANCE MAINS						
510-621.000-704.100	STAFF - OVERTIME	1,600.00	480.65	0.00	1,119.35	30.04
510-621.000-704.200	HOLIDAY COMPENSATION	0.00	150.28	0.00	(150.28)	100.00
510-621.000-706.000	CITY LABOR - DPW	19,000.00	18,892.74	2,835.21	107.26	99.44
510-621.000-721.000	FICA/MEDICARE - CITY SHARE	1,600.00	1,495.57	218.10	104.43	93.47
510-621.000-722.000	ICMA - CITY SHARE	250.00	56.21	24.34	193.79	22.48
510-621.000-728.000	RETIREMENT PLANS (CITY SHARE)	4,700.00	5,229.25	739.14	(529.25)	111.26
510-621.000-731.000	MATERIALS & SUPPLIES	1,600.00	3,310.85	2,470.50	(1,710.85)	206.93
510-621.000-749.000	CONTRACTUAL SERVICES	0.00	2,334.50	1,492.70	(2,334.50)	100.00
510-621.000-851.000	MVP EQUIPMENT RENTAL	55,000.00	66,547.34	9,060.85	(11,547.34)	121.00
Total Dept 621.000 - SEWER MAINTENANCE MAINS		83,750.00	98,497.39	16,840.84	(14,747.39)	117.61
Dept 622.000 - SEWER MAINTENANCE SERVICES						
510-622.000-704.100	STAFF - OVERTIME	0.00	1,512.29	69.36	(1,512.29)	100.00
510-622.000-704.200	HOLIDAY COMPENSATION	0.00	69.36	0.00	(69.36)	100.00
510-622.000-706.000	CITY LABOR - DPW	20,000.00	9,852.67	445.03	10,147.33	49.26
510-622.000-721.000	FICA/MEDICARE - CITY SHARE	1,600.00	872.54	39.34	727.46	54.53
510-622.000-722.000	ICMA - CITY SHARE	300.00	42.65	2.55	257.35	14.22
510-622.000-728.000	RETIREMENT PLANS (CITY SHARE)	4,700.00	3,050.99	136.33	1,649.01	64.91
510-622.000-731.000	MATERIALS & SUPPLIES	3,500.00	3,058.09	0.00	441.91	87.37
510-622.000-749.000	CONTRACTUAL SERVICES	500.00	387.20	0.00	112.80	77.44
510-622.000-851.000	MVP EQUIPMENT RENTAL	14,000.00	18,158.19	1,140.37	(4,158.19)	129.70
Total Dept 622.000 - SEWER MAINTENANCE SERVICES		44,600.00	37,003.98	1,832.98	7,596.02	82.97

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 510 - WATER & SEWER FUND						
Expenditures						
Dept 623.000 - DAY LIFT STATION						
510-623.000-704.100	STAFF - OVERTIME	0.00	696.39	0.00	(696.39)	100.00
510-623.000-706.000	CITY LABOR - DPW	1,000.00	617.20	13.11	382.80	61.72
510-623.000-721.000	FICA/MEDICARE - CITY SHARE	100.00	100.60	1.02	(0.60)	100.60
510-623.000-722.000	ICMA - CITY SHARE	15.00	9.56	0.41	5.44	63.73
510-623.000-728.000	RETIREMENT PLANS (CITY SHARE)	200.00	310.01	2.95	(110.01)	155.01
510-623.000-731.000	MATERIALS & SUPPLIES	100.00	678.14	0.00	(578.14)	678.14
510-623.000-745.000	UTILITIES	1,900.00	1,855.64	0.00	44.36	97.67
510-623.000-749.000	CONTRACTUAL SERVICES	700.00	1,306.07	36.00	(606.07)	186.58
510-623.000-851.000	MVP EQUIPMENT RENTAL	1,000.00	526.11	8.64	473.89	52.61
Total Dept 623.000 - DAY LIFT STATION		5,015.00	6,099.72	62.13	(1,084.72)	121.63
Dept 624.000 - REYNOLDS LIFT STATION						
510-624.000-706.000	CITY LABOR - DPW	900.00	845.78	102.50	54.22	93.98
510-624.000-721.000	FICA/MEDICARE - CITY SHARE	70.00	64.96	7.88	5.04	92.80
510-624.000-722.000	ICMA - CITY SHARE	15.00	7.19	1.24	7.81	47.93
510-624.000-728.000	RETIREMENT PLANS (CITY SHARE)	225.00	208.28	26.02	16.72	92.57
510-624.000-731.000	MATERIALS & SUPPLIES	500.00	88.75	0.00	411.25	17.75
510-624.000-745.000	UTILITIES	3,400.00	2,347.44	0.00	1,052.56	69.04
510-624.000-749.000	CONTRACTUAL SERVICES	1,000.00	891.07	121.00	108.93	89.11
510-624.000-851.000	MVP EQUIPMENT RENTAL	450.00	782.11	201.86	(332.11)	173.80
Total Dept 624.000 - REYNOLDS LIFT STATION		6,560.00	5,235.58	460.50	1,324.42	79.81
Dept 625.000 - MEIJER LIFT STATION						
510-625.000-704.100	STAFF - OVERTIME	120.00	209.76	0.00	(89.76)	174.80
510-625.000-706.000	CITY LABOR - DPW	1,200.00	1,145.25	59.35	54.75	95.44
510-625.000-721.000	FICA/MEDICARE - CITY SHARE	100.00	104.30	4.56	(4.30)	104.30
510-625.000-722.000	ICMA - CITY SHARE	20.00	14.63	0.41	5.37	73.15
510-625.000-728.000	RETIREMENT PLANS (CITY SHARE)	200.00	326.60	15.51	(126.60)	163.30
510-625.000-731.000	MATERIALS & SUPPLIES	100.00	0.00	0.00	100.00	0.00
510-625.000-745.000	UTILITIES	1,000.00	871.37	0.00	128.63	87.14
510-625.000-749.000	CONTRACTUAL SERVICES	600.00	806.07	36.00	(206.07)	134.35
510-625.000-851.000	MVP EQUIPMENT RENTAL	500.00	833.54	32.44	(333.54)	166.71
Total Dept 625.000 - MEIJER LIFT STATION		3,840.00	4,311.52	148.27	(471.52)	112.28
Dept 626.000 - LANSING LIFT STATION						
510-626.000-704.100	STAFF - OVERTIME	275.00	0.00	0.00	275.00	0.00
510-626.000-706.000	CITY LABOR - DPW	2,800.00	1,937.39	149.38	862.61	69.19
510-626.000-721.000	FICA/MEDICARE - CITY SHARE	250.00	149.08	11.48	100.92	59.63
510-626.000-722.000	ICMA - CITY SHARE	50.00	20.69	1.63	29.31	41.38
510-626.000-728.000	RETIREMENT PLANS (CITY SHARE)	645.00	479.13	38.14	165.87	74.28
510-626.000-731.000	MATERIALS & SUPPLIES	6,500.00	3,071.52	0.00	3,428.48	47.25
510-626.000-745.000	UTILITIES	9,800.00	5,924.00	0.00	3,876.00	60.45
510-626.000-749.000	CONTRACTUAL SERVICES	8,500.00	2,171.07	56.00	6,328.93	25.54
510-626.000-851.000	MVP EQUIPMENT RENTAL	1,100.00	1,413.79	53.55	(313.79)	128.53
Total Dept 626.000 - LANSING LIFT STATION		29,920.00	15,166.67	310.18	14,753.33	50.69
Dept 627.000 - BEECH LIFT STATION						

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 510 - WATER & SEWER FUND						
Expenditures						
510-627.000-704.100	STAFF - OVERTIME	250.00	520.54	0.00	(270.54)	208.22
510-627.000-706.000	CITY LABOR - DPW	2,500.00	3,830.33	111.79	(1,330.33)	153.21
510-627.000-721.000	FICA/MEDICARE - CITY SHARE	200.00	334.65	8.65	(134.65)	167.33
510-627.000-722.000	ICMA - CITY SHARE	35.00	46.71	2.04	(11.71)	133.46
510-627.000-728.000	RETIREMENT PLANS (CITY SHARE)	575.00	1,087.93	27.32	(512.93)	189.21
510-627.000-731.000	MATERIALS & SUPPLIES	200.00	5,590.00	0.00	(5,390.00)	2,795.00
510-627.000-745.000	UTILITIES	3,300.00	2,586.85	0.00	713.15	78.39
510-627.000-749.000	CONTRACTUAL SERVICES	900.00	1,674.07	0.00	(774.07)	186.01
510-627.000-851.000	MVP EQUIPMENT RENTAL	800.00	5,619.30	64.29	(4,819.30)	702.41
Total Dept 627.000 - BEECH LIFT STATION		8,760.00	21,290.38	214.09	(12,530.38)	243.04
Dept 628.000 - TIRRELL LIFT STATION						
510-628.000-704.100	STAFF - OVERTIME	900.00	1,981.05	149.08	(1,081.05)	220.12
510-628.000-704.200	HOLIDAY COMPENSATION	0.00	131.90	0.00	(131.90)	100.00
510-628.000-706.000	CITY LABOR - DPW	8,500.00	10,219.90	525.41	(1,719.90)	120.23
510-628.000-721.000	FICA/MEDICARE - CITY SHARE	700.00	952.16	52.06	(252.16)	136.02
510-628.000-722.000	ICMA - CITY SHARE	120.00	200.82	11.10	(80.82)	167.35
510-628.000-728.000	RETIREMENT PLANS (CITY SHARE)	2,100.00	2,935.40	164.85	(835.40)	139.78
510-628.000-731.000	MATERIALS & SUPPLIES	4,500.00	1,054.36	0.00	3,445.64	23.43
510-628.000-745.000	UTILITIES	38,000.00	32,712.13	0.00	5,287.87	86.08
510-628.000-749.000	CONTRACTUAL SERVICES	12,000.00	24,235.00	0.00	(12,235.00)	201.96
510-628.000-851.000	MVP EQUIPMENT RENTAL	4,000.00	6,688.89	322.03	(2,688.89)	167.22
Total Dept 628.000 - TIRRELL LIFT STATION		70,820.00	81,111.61	1,224.53	(10,291.61)	114.53
Dept 629.000 - CHAD LIFT STATION						
510-629.000-704.100	STAFF - OVERTIME	200.00	231.97	0.00	(31.97)	115.99
510-629.000-706.000	CITY LABOR - DPW	1,000.00	744.67	122.07	255.33	74.47
510-629.000-721.000	FICA/MEDICARE - CITY SHARE	100.00	75.16	9.37	24.84	75.16
510-629.000-722.000	ICMA - CITY SHARE	20.00	11.86	1.24	8.14	59.30
510-629.000-728.000	RETIREMENT PLANS (CITY SHARE)	300.00	235.56	31.31	64.44	78.52
510-629.000-731.000	MATERIALS & SUPPLIES	100.00	88.75	0.00	11.25	88.75
510-629.000-745.000	UTILITIES	2,000.00	2,355.89	0.00	(355.89)	117.79
510-629.000-749.000	CONTRACTUAL SERVICES	1,400.00	3,074.24	36.00	(1,674.24)	219.59
510-629.000-851.000	MVP EQUIPMENT RENTAL	500.00	824.95	227.76	(324.95)	164.99
Total Dept 629.000 - CHAD LIFT STATION		5,620.00	7,643.05	427.75	(2,023.05)	136.00
Dept 630.000 - NORTHWAY LIFT STATION						
510-630.000-704.100	STAFF - OVERTIME	90.00	375.75	0.00	(285.75)	417.50
510-630.000-706.000	CITY LABOR - DPW	900.00	538.27	78.66	361.73	59.81
510-630.000-721.000	FICA/MEDICARE - CITY SHARE	70.00	70.26	6.13	(0.26)	100.37
510-630.000-722.000	ICMA - CITY SHARE	15.00	8.87	2.45	6.13	59.13
510-630.000-728.000	RETIREMENT PLANS (CITY SHARE)	210.00	220.71	17.71	(10.71)	105.10
510-630.000-731.000	MATERIALS & SUPPLIES	100.00	0.00	0.00	100.00	0.00
510-630.000-749.000	CONTRACTUAL SERVICES	350.00	599.05	0.00	(249.05)	171.16
510-630.000-851.000	MVP EQUIPMENT RENTAL	500.00	471.62	38.39	28.38	94.32
Total Dept 630.000 - NORTHWAY LIFT STATION		2,235.00	2,284.53	143.34	(49.53)	102.22
Dept 631.000 - W.W.T.P. OPERATIONS						

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 510 - WATER & SEWER FUND						
Expenditures						
510-631.000-704.100	STAFF - OVERTIME	19,750.00	9,846.41	752.76	9,903.59	49.86
510-631.000-704.200	HOLIDAY COMPENSATION	0.00	2,312.64	69.36	(2,312.64)	100.00
510-631.000-706.000	CITY LABOR - DPW	200,000.00	141,888.35	10,226.14	58,111.65	70.94
510-631.000-721.000	FICA/MEDICARE - CITY SHARE	15,360.00	11,804.08	847.36	3,555.92	76.85
510-631.000-722.000	ICMA - CITY SHARE	2,620.00	1,007.88	101.33	1,612.12	38.47
510-631.000-728.000	RETIREMENT PLANS (CITY SHARE)	45,825.00	37,022.85	2,687.04	8,802.15	80.79
510-631.000-731.000	MATERIALS & SUPPLIES	56,000.00	23,959.46	1,125.96	32,040.54	42.78
510-631.000-738.000	OPERATING SUPPLIES	52,000.00	54,129.10	1,541.57	(2,129.10)	104.09
510-631.000-739.000	LABORATORY SUPPLIES	25,000.00	18,776.02	0.00	6,223.98	75.10
510-631.000-744.000	TELEPHONE & INTERNET	0.00	977.84	0.00	(977.84)	100.00
510-631.000-745.000	UTILITIES	130,000.00	109,308.60	0.00	20,691.40	84.08
510-631.000-746.000	PROFESSIONAL SERVICES	80,000.00	32,301.97	3,100.31	47,698.03	40.38
510-631.000-748.000	CONFERENCES & TRAINING	4,000.00	5,716.18	0.00	(1,716.18)	142.90
510-631.000-749.000	CONTRACTUAL SERVICES	100,000.00	89,222.43	5,725.47	10,777.57	89.22
510-631.000-851.000	MVP EQUIPMENT RENTAL	12,000.00	5,849.23	183.87	6,150.77	48.74
510-631.000-970.000	MILEAGE ALLOWANCE	100.00	0.00	0.00	100.00	0.00
Total Dept 631.000 - W.W.T.P. OPERATIONS		742,655.00	544,123.04	26,361.17	198,531.96	73.27
Dept 632.000 - WWTP BLDG & YARD MAINTENANCE						
510-632.000-704.100	STAFF - OVERTIME	900.00	0.00	0.00	900.00	0.00
510-632.000-706.000	CITY LABOR - DPW	9,000.00	642.96	64.08	8,357.04	7.14
510-632.000-721.000	FICA/MEDICARE - CITY SHARE	700.00	49.25	4.89	650.75	7.04
510-632.000-722.000	ICMA - CITY SHARE	120.00	2.51	0.00	117.49	2.09
510-632.000-728.000	RETIREMENT PLANS (CITY SHARE)	2,100.00	169.51	17.41	1,930.49	8.07
510-632.000-731.000	MATERIALS & SUPPLIES	3,500.00	6,486.01	0.00	(2,986.01)	185.31
510-632.000-749.000	CONTRACTUAL SERVICES	6,000.00	5,261.98	761.89	738.02	87.70
510-632.000-851.000	MVP EQUIPMENT RENTAL	2,000.00	2,428.05	102.72	(428.05)	121.40
Total Dept 632.000 - WWTP BLDG & YARD MAINTENANCE		24,320.00	15,040.27	950.99	9,279.73	61.84
Dept 640.000 - WATER ADMINISTRATION						
510-640.000-703.000	ADMINSTRATIVE SALARIES	102,290.00	63,996.40	5,822.70	38,293.60	62.56
510-640.000-704.000	STAFF WAGES	0.00	13,368.04	0.00	(13,368.04)	100.00
510-640.000-704.100	STAFF - OVERTIME	1,975.00	1,119.08	69.21	855.92	56.66
510-640.000-704.200	HOLIDAY COMPENSATION	0.00	2,161.58	0.00	(2,161.58)	100.00
510-640.000-706.000	CITY LABOR - DPW	20,000.00	7,609.05	894.14	12,390.95	38.05
510-640.000-710.000	COMPENSATED ABSENCES	0.00	51,881.69	2,047.83	(51,881.69)	100.00
510-640.000-711.000	LONGEVITY	2,000.00	7,846.33	0.00	(5,846.33)	392.32
510-640.000-712.000	SPECIAL COMPENSATION	1,500.00	2,206.76	110.63	(706.76)	147.12
510-640.000-715.000	HEALTH REIMBURSEMENT	1,500.00	1,665.69	183.48	(165.69)	111.05
510-640.000-718.000	AUTO ALLOWANCE	975.00	529.10	46.60	445.90	54.27
510-640.000-719.000	CLOTHING ALLOWANCE	2,500.00	4,130.07	0.00	(1,630.07)	165.20
510-640.000-721.000	FICA/MEDICARE - CITY SHARE	9,500.00	11,931.42	704.09	(2,431.42)	125.59
510-640.000-722.000	ICMA - CITY SHARE	265.00	959.17	50.44	(694.17)	361.95
510-640.000-723.000	VISION CARE	500.00	1,918.60	189.19	(1,418.60)	383.72
510-640.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	7,500.00	1,135.75	114.93	6,364.25	15.14
510-640.000-725.604	DENTAL & HEALTH BENEFITS	65,000.00	66,067.72	7,205.29	(1,067.72)	101.64
510-640.000-728.000	RETIREMENT PLANS (CITY SHARE)	42,265.00	54,108.78	4,386.89	(11,843.78)	128.02
510-640.000-728.001	RETIRMENT HEALTH SAVINGS	3,050.00	0.00	0.00	3,050.00	0.00
510-640.000-731.000	MATERIALS & SUPPLIES	400.00	227.36	0.00	172.64	56.84
510-640.000-732.000	POSTAGE	3,800.00	2,410.32	286.67	1,389.68	63.43
510-640.000-735.000	DUES & SUBSCRIPTIONS	1,700.00	502.00	0.00	1,198.00	29.53
510-640.000-737.000	PRINTING & PUBLISHING	3,200.00	3,091.28	286.16	108.72	96.60

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 510 - WATER & SEWER FUND						
Expenditures						
510-640.000-746.000	PROFESSIONAL SERVICES	38,000.00	119,245.59	0.00	(81,245.59)	313.80
510-640.000-747.000	INSURANCE & BONDS	4,620.00	3,946.00	0.00	674.00	85.41
510-640.000-748.000	CONFERENCES & TRAINING	2,000.00	1,512.72	132.24	487.28	75.64
510-640.000-749.000	CONTRACTUAL SERVICES	18,000.00	16,854.82	1,217.70	1,145.18	93.64
510-640.000-850.000	RENTAL EXPENSE	5,345.00	4,899.62	445.42	445.38	91.67
510-640.000-853.000	HYDRANT RENTAL	21,500.00	19,701.00	1,791.00	1,799.00	91.63
510-640.000-972.000	MISCELLANEOUS	50.00	0.00	0.00	50.00	0.00
Total Dept 640.000 - WATER ADMINISTRATION		359,435.00	465,025.94	25,984.61	(105,590.94)	129.38
Dept 650.000 - WATER "MISS DIG" OPERATION						
510-650.000-704.100	STAFF - OVERTIME	1,780.00	347.99	34.68	1,432.01	19.55
510-650.000-706.000	CITY LABOR - DPW	18,000.00	12,247.29	1,049.12	5,752.71	68.04
510-650.000-721.000	FICA/MEDICARE - CITY SHARE	1,400.00	956.66	82.52	443.34	68.33
510-650.000-722.000	ICMA - CITY SHARE	250.00	3.41	0.00	246.59	1.36
510-650.000-728.000	RETIREMENT PLANS (CITY SHARE)	4,125.00	3,415.77	294.36	709.23	82.81
510-650.000-731.000	MATERIALS & SUPPLIES	700.00	102.09	0.00	597.91	14.58
510-650.000-851.000	MVP EQUIPMENT RENTAL	10,000.00	9,233.34	982.22	766.66	92.33
Total Dept 650.000 - WATER "MISS DIG" OPERATION		36,255.00	26,306.55	2,442.90	9,948.45	72.56
Dept 651.000 - WATER MAINTENANCE MAINS						
510-651.000-704.100	STAFF - OVERTIME	1,975.00	4,345.96	1,640.70	(2,370.96)	220.05
510-651.000-706.000	CITY LABOR - DPW	20,000.00	16,703.60	2,276.66	3,296.40	83.52
510-651.000-721.000	FICA/MEDICARE - CITY SHARE	1,540.00	1,616.16	300.06	(76.16)	104.95
510-651.000-722.000	ICMA - CITY SHARE	265.00	200.28	30.90	64.72	75.58
510-651.000-728.000	RETIREMENT PLANS (CITY SHARE)	4,585.00	5,394.16	1,005.75	(809.16)	117.65
510-651.000-731.000	MATERIALS & SUPPLIES	18,000.00	11,574.51	1,342.50	6,425.49	64.30
510-651.000-749.000	CONTRACTUAL SERVICES	7,000.00	25,263.25	9,311.90	(18,263.25)	360.90
510-651.000-851.000	MVP EQUIPMENT RENTAL	22,000.00	31,107.42	2,709.19	(9,107.42)	141.40
Total Dept 651.000 - WATER MAINTENANCE MAINS		75,365.00	96,205.34	18,617.66	(20,840.34)	127.65
Dept 652.000 - WATER MAINTENANCE SERVICES						
510-652.000-704.100	STAFF - OVERTIME	3,500.00	1,354.49	137.08	2,145.51	38.70
510-652.000-706.000	CITY LABOR - DPW	35,500.00	15,060.21	1,918.92	20,439.79	42.42
510-652.000-721.000	FICA/MEDICARE - CITY SHARE	2,730.00	1,255.00	157.90	1,475.00	45.97
510-652.000-722.000	ICMA - CITY SHARE	465.00	49.39	18.39	415.61	10.62
510-652.000-728.000	RETIREMENT PLANS (CITY SHARE)	8,135.00	4,391.44	533.88	3,743.56	53.98
510-652.000-731.000	MATERIALS & SUPPLIES	13,000.00	20,183.50	6,265.50	(7,183.50)	155.26
510-652.000-851.000	MVP EQUIPMENT RENTAL	30,000.00	38,886.27	1,995.61	(8,886.27)	129.62
Total Dept 652.000 - WATER MAINTENANCE SERVICES		93,330.00	81,180.30	11,027.28	12,149.70	86.98
Dept 653.000 - WATER METER MAINTENANCE						
510-653.000-704.100	STAFF - OVERTIME	0.00	39.39	0.00	(39.39)	100.00
510-653.000-706.000	CITY LABOR - DPW	4,800.00	1,859.68	23.12	2,940.32	38.74
510-653.000-721.000	FICA/MEDICARE - CITY SHARE	370.00	145.55	1.74	224.45	39.34
510-653.000-722.000	ICMA - CITY SHARE	65.00	18.26	0.00	46.74	28.09
510-653.000-728.000	RETIREMENT PLANS (CITY SHARE)	1,100.00	486.71	6.28	613.29	44.25
510-653.000-731.000	MATERIALS & SUPPLIES	50.00	6,875.45	0.00	(6,825.45)	3,750.90
510-653.000-749.000	CONTRACTUAL SERVICES	0.00	615.26	0.00	(615.26)	100.00

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Fund 510 - WATER & SEWER FUND						
Expenditures						
510-653.000-851.000	MVP EQUIPMENT RENTAL	1,000.00	1,539.91	18.66	(539.91)	153.99
Total Dept 653.000 - WATER METER MAINTENANCE		7,385.00	11,580.21	49.80	(4,195.21)	156.81
Dept 654.000 - WATER METER READING						
510-654.000-704.100	STAFF - OVERTIME	3,000.00	104.04	0.00	2,895.96	3.47
510-654.000-706.000	CITY LABOR - DPW	30,000.00	19,469.53	1,315.38	10,530.47	64.90
510-654.000-721.000	FICA/MEDICARE - CITY SHARE	2,300.00	1,504.00	100.54	796.00	65.39
510-654.000-722.000	ICMA - CITY SHARE	395.00	195.57	1.70	199.43	49.51
510-654.000-728.000	RETIREMENT PLANS (CITY SHARE)	6,875.00	5,014.20	354.98	1,860.80	72.93
510-654.000-851.000	MVP EQUIPMENT RENTAL	17,000.00	11,717.15	842.66	5,282.85	68.92
Total Dept 654.000 - WATER METER READING		59,570.00	38,004.49	2,615.26	21,565.51	63.80
Dept 661.000 - WATER PRODUCTION & OPERATION						
510-661.000-704.100	STAFF - OVERTIME	8,385.00	7,985.51	1,028.20	399.49	95.24
510-661.000-704.200	HOLIDAY COMPENSATION	0.00	707.05	106.48	(707.05)	100.00
510-661.000-706.000	CITY LABOR - DPW	85,000.00	41,589.35	3,938.38	43,410.65	48.93
510-661.000-721.000	FICA/MEDICARE - CITY SHARE	6,530.00	3,874.93	388.08	2,655.07	59.34
510-661.000-722.000	ICMA - CITY SHARE	1,115.00	530.12	0.00	584.88	47.54
510-661.000-728.000	RETIREMENT PLANS (CITY SHARE)	19,475.00	12,743.71	1,377.84	6,731.29	65.44
510-661.000-731.000	MATERIALS & SUPPLIES	1,500.00	878.48	0.00	621.52	58.57
510-661.000-738.000	OPERATING SUPPLIES	50,000.00	60,080.12	7,135.00	(10,080.12)	120.16
510-661.000-739.000	LABORATORY SUPPLIES	2,500.00	1,215.47	0.00	1,284.53	48.62
510-661.000-744.000	TELEPHONE & INTERNET	3,200.00	3,476.38	244.23	(276.38)	108.64
510-661.000-745.000	UTILITIES	78,000.00	57,093.55	0.00	20,906.45	73.20
510-661.000-746.000	PROFESSIONAL SERVICES	5,000.00	200.00	0.00	4,800.00	4.00
510-661.000-748.000	CONFERENCES & TRAINING	2,500.00	1,252.86	0.00	1,247.14	50.11
510-661.000-749.000	CONTRACTUAL SERVICES	45,000.00	19,454.62	1,727.25	25,545.38	43.23
510-661.000-851.000	MVP EQUIPMENT RENTAL	24,000.00	18,339.73	1,722.53	5,660.27	76.42
510-661.000-972.000	MISCELLANEOUS	0.00	27.38	0.00	(27.38)	100.00
Total Dept 661.000 - WATER PRODUCTION & OPERATION		332,205.00	229,449.26	17,667.99	102,755.74	69.07
Dept 662.000 - BUILDING & GROUNDS MAINTENANCE						
510-662.000-706.000	CITY LABOR - DPW	1,600.00	215.13	24.37	1,384.87	13.45
510-662.000-721.000	FICA/MEDICARE - CITY SHARE	80.00	16.68	1.91	63.32	20.85
510-662.000-722.000	ICMA - CITY SHARE	15.00	4.87	0.85	10.13	32.47
510-662.000-728.000	RETIREMENT PLANS (CITY SHARE)	230.00	51.93	5.49	178.07	22.58
510-662.000-731.000	MATERIALS & SUPPLIES	600.00	29.98	0.00	570.02	5.00
510-662.000-749.000	CONTRACTUAL SERVICES	500.00	368.00	64.00	132.00	73.60
510-662.000-851.000	MVP EQUIPMENT RENTAL	100.00	72.35	11.90	27.65	72.35
Total Dept 662.000 - BUILDING & GROUNDS MAINTENANCE		3,125.00	758.94	108.52	2,366.06	24.29
Dept 671.000 - SEWER NEW SERVICE						
510-671.000-704.100	STAFF - OVERTIME	0.00	6.69	0.00	(6.69)	100.00
510-671.000-706.000	CITY LABOR - DPW	0.00	74.00	0.00	(74.00)	100.00
510-671.000-721.000	FICA/MEDICARE - CITY SHARE	0.00	6.16	0.00	(6.16)	100.00
510-671.000-728.000	RETIREMENT PLANS (CITY SHARE)	0.00	21.91	0.00	(21.91)	100.00
510-671.000-851.000	MVP EQUIPMENT RENTAL	0.00	60.65	0.00	(60.65)	100.00

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Fund 510 - WATER & SEWER FUND						
Expenditures						
Total Dept 671.000 - SEWER NEW SERVICE		0.00	169.41	0.00	(169.41)	100.00
Dept 674.000 - SEWER REPLACEMENT SERVICES						
510-674.000-706.000	CITY LABOR - DPW	0.00	629.96	17.84	(629.96)	100.00
510-674.000-721.000	FICA/MEDICARE - CITY SHARE	0.00	48.07	1.37	(48.07)	100.00
510-674.000-722.000	ICMA - CITY SHARE	0.00	3.85	0.00	(3.85)	100.00
510-674.000-728.000	RETIREMENT PLANS (CITY SHARE)	0.00	166.55	4.85	(166.55)	100.00
510-674.000-749.000	CONTRACTUAL SERVICES	0.00	15,464.59	0.00	(15,464.59)	100.00
510-674.000-851.000	MVP EQUIPMENT RENTAL	0.00	811.83	21.71	(811.83)	100.00
Total Dept 674.000 - SEWER REPLACEMENT SERVICES		0.00	17,124.85	45.77	(17,124.85)	100.00
Dept 675.000 - SEWER REPLACEMENT EQUIPMENT						
510-675.000-731.000	MATERIALS & SUPPLIES	15,000.00	8,135.24	0.00	6,864.76	54.23
Total Dept 675.000 - SEWER REPLACEMENT EQUIPMENT		15,000.00	8,135.24	0.00	6,864.76	54.23
Dept 677.000 - WATER NEW SERVICES						
510-677.000-706.000	CITY LABOR - DPW	200.00	89.20	0.00	110.80	44.60
510-677.000-721.000	FICA/MEDICARE - CITY SHARE	15.00	6.83	0.00	8.17	45.53
510-677.000-722.000	ICMA - CITY SHARE	5.00	0.00	0.00	5.00	0.00
510-677.000-728.000	RETIREMENT PLANS (CITY SHARE)	50.00	24.23	0.00	25.77	48.46
510-677.000-851.000	MVP EQUIPMENT RENTAL	0.00	93.30	0.00	(93.30)	100.00
Total Dept 677.000 - WATER NEW SERVICES		270.00	213.56	0.00	56.44	79.10
Dept 678.000 - WATER NEW EQUIPMENT						
510-678.000-731.000	MATERIALS & SUPPLIES	10,000.00	283.93	0.00	9,716.07	2.84
Total Dept 678.000 - WATER NEW EQUIPMENT		10,000.00	283.93	0.00	9,716.07	2.84
Dept 679.000 - WATER NEW METERS						
510-679.000-704.100	STAFF - OVERTIME	0.00	48.74	0.00	(48.74)	100.00
510-679.000-706.000	CITY LABOR - DPW	0.00	283.08	46.24	(283.08)	100.00
510-679.000-721.000	FICA/MEDICARE - CITY SHARE	0.00	25.20	3.48	(25.20)	100.00
510-679.000-722.000	ICMA - CITY SHARE	0.00	1.46	0.00	(1.46)	100.00
510-679.000-728.000	RETIREMENT PLANS (CITY SHARE)	0.00	87.87	12.56	(87.87)	100.00
510-679.000-731.000	MATERIALS & SUPPLIES	30,000.00	17,474.50	0.00	12,525.50	58.25
510-679.000-851.000	MVP EQUIPMENT RENTAL	0.00	177.27	37.32	(177.27)	100.00
Total Dept 679.000 - WATER NEW METERS		30,000.00	18,098.12	99.60	11,901.88	60.33
Dept 680.000 - WATER NEW HYDRANTS						
510-680.000-731.000	MATERIALS & SUPPLIES	2,000.00	0.00	0.00	2,000.00	0.00
Total Dept 680.000 - WATER NEW HYDRANTS		2,000.00	0.00	0.00	2,000.00	0.00
Dept 681.000 - WATER TOWER						
510-681.000-746.000	PROFESSIONAL SERVICES	10,500.00	10,270.00	0.00	230.00	97.81

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 510 - WATER & SEWER FUND						
Expenditures						
510-681.000-749.000	CONTRACTUAL SERVICES	600.00	2,303.00	88.00	(1,703.00)	383.83
Total Dept 681.000 - WATER TOWER		11,100.00	12,573.00	88.00	(1,473.00)	113.27
Dept 682.000 - WATER REPLACEMENT MAINS						
510-682.000-706.000	CITY LABOR - DPW	0.00	17.84	0.00	(17.84)	100.00
510-682.000-721.000	FICA/MEDICARE - CITY SHARE	0.00	1.36	0.00	(1.36)	100.00
510-682.000-728.000	RETIREMENT PLANS (CITY SHARE)	0.00	4.84	0.00	(4.84)	100.00
510-682.000-851.000	MVP EQUIPMENT RENTAL	0.00	18.14	0.00	(18.14)	100.00
Total Dept 682.000 - WATER REPLACEMENT MAINS		0.00	42.18	0.00	(42.18)	100.00
Dept 683.000 - WATER REPLACEMENT SERVICES						
510-683.000-704.100	STAFF - OVERTIME	2,960.00	104.98	69.36	2,855.02	3.55
510-683.000-706.000	CITY LABOR - DPW	30,000.00	1,840.19	164.06	28,159.81	6.13
510-683.000-721.000	FICA/MEDICARE - CITY SHARE	2,310.00	151.70	18.16	2,158.30	6.57
510-683.000-722.000	ICMA - CITY SHARE	400.00	53.85	5.47	346.15	13.46
510-683.000-728.000	RETIREMENT PLANS (CITY SHARE)	6,875.00	458.06	56.60	6,416.94	6.66
510-683.000-731.000	MATERIALS & SUPPLIES	8,000.00	26,409.60	7,910.69	(18,409.60)	330.12
510-683.000-749.000	CONTRACTUAL SERVICES	600,000.00	108,316.93	10,168.00	491,683.07	18.05
510-683.000-851.000	MVP EQUIPMENT RENTAL	10,000.00	5,720.06	368.42	4,279.94	57.20
Total Dept 683.000 - WATER REPLACEMENT SERVICES		660,545.00	143,055.37	18,760.76	517,489.63	21.66
Dept 684.000 - WATER REPLACEMENT EQUIPMENT						
510-684.000-731.000	MATERIALS & SUPPLIES	800.00	1,263.97	0.00	(463.97)	158.00
Total Dept 684.000 - WATER REPLACEMENT EQUIPMENT		800.00	1,263.97	0.00	(463.97)	158.00
Dept 685.000 - WATER REPLACEMENT HYDRANTS						
510-685.000-706.000	CITY LABOR - DPW	300.00	895.24	0.00	(595.24)	298.41
510-685.000-721.000	FICA/MEDICARE - CITY SHARE	15.00	68.67	0.00	(53.67)	457.80
510-685.000-722.000	ICMA - CITY SHARE	5.00	7.70	0.00	(2.70)	154.00
510-685.000-728.000	RETIREMENT PLANS (CITY SHARE)	50.00	234.08	0.00	(184.08)	468.16
510-685.000-731.000	MATERIALS & SUPPLIES	2,000.00	23,893.30	0.00	(21,893.30)	1,194.67
510-685.000-851.000	MVP EQUIPMENT RENTAL	250.00	2,998.73	0.00	(2,748.73)	1,199.49
Total Dept 685.000 - WATER REPLACEMENT HYDRANTS		2,620.00	28,097.72	0.00	(25,477.72)	1,072.43
Dept 686.000 - WELLHEAD PROTECTION						
510-686.000-731.000	MATERIALS & SUPPLIES	2,000.00	1,539.47	0.00	460.53	76.97
Total Dept 686.000 - WELLHEAD PROTECTION		2,000.00	1,539.47	0.00	460.53	76.97
Dept 910.000 - SEWER CAPITAL OUTLAY						
510-910.000-864.628	CAPITAL OUTLAY - TIRRELL LIFT	48,000.00	0.00	0.00	48,000.00	0.00
510-910.000-864.631	CAPITAL OUTLAY - WWTP	161,000.00	164,676.90	0.00	(3,676.90)	102.28
510-910.000-864.673	CAP OUTLAY - SEWER RPL MAINS	0.00	36,882.82	0.00	(36,882.82)	100.00

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 510 - WATER & SEWER FUND						
Expenditures						
Total Dept 910.000 - SEWER CAPITAL OUTLAY		209,000.00	201,559.72	0.00	7,440.28	96.44
Dept 940.000 - WATER CAPITAL OUTLAY						
510-940.000-864.661	CAPITAL OUTLAY - WATER P&O	60,000.00	0.00	0.00	60,000.00	0.00
510-940.000-864.681	CAPITAL OUTLAY - WATER TOWER	112,000.00	69,699.00	0.00	42,301.00	62.23
510-940.000-864.682	CAPITAL OUTLAY - WTR RPLC MAI	60,000.00	36,964.00	0.00	23,036.00	61.61
Total Dept 940.000 - WATER CAPITAL OUTLAY		232,000.00	106,663.00	0.00	125,337.00	45.98
Dept 999.000 - GASB 34						
510-999.000-859.101	CONTRIB. TO GENERAL FUND	375,000.00	320,826.00	29,166.00	54,174.00	85.55
Total Dept 999.000 - GASB 34		375,000.00	320,826.00	29,166.00	54,174.00	85.55
TOTAL EXPENDITURES		5,185,826.00	3,601,743.66	212,957.68	1,584,082.34	69.45
Fund 510 - WATER & SEWER FUND:						
TOTAL REVENUES		4,708,000.00	4,793,684.35	751,743.08	(85,684.35)	101.82
TOTAL EXPENDITURES		5,185,826.00	3,601,743.66	212,957.68	1,584,082.34	69.45
NET OF REVENUES & EXPENDITURES		(477,826.00)	1,191,940.69	538,785.40	(1,669,766.69)	249.45

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 601 - MOTOR VEHICLE POOL						
Revenues						
Dept 000.000						
601-000.000-501.000	INTEREST INCOME	3,000.00	52.03	0.00	2,947.97	1.73
601-000.000-594.000	GAIN/LOSS ON SALE OF ASSETS	10,000.00	0.00	0.00	10,000.00	0.00
601-000.000-596.000	SUNDRY REVENUE	800.00	1,623.87	0.00	(823.87)	202.98
601-000.000-600.000	REIMBURSEMENTS	13,910.00	13,316.98	1,159.17	593.02	95.74
601-000.000-601.000	BILLINGS TO DEPARTMENTS	464,100.00	516,425.84	42,490.71	(52,325.84)	111.27
Total Dept 000.000		491,810.00	531,418.72	43,649.88	(39,608.72)	108.05
TOTAL REVENUES		491,810.00	531,418.72	43,649.88	(39,608.72)	108.05
Expenditures						
Dept 710.000 - MVP ADMINISTRATION						
601-710.000-703.000	ADMINSTRATIVE SALARIES	6,515.00	2,613.21	256.70	3,901.79	40.11
601-710.000-704.100	STAFF - OVERTIME	0.00	106.98	9.46	(106.98)	100.00
601-710.000-704.200	HOLIDAY COMPENSATION	0.00	2,682.21	0.00	(2,682.21)	100.00
601-710.000-706.000	CITY LABOR - DPW	1,800.00	1,004.03	121.92	795.97	55.78
601-710.000-710.000	COMPENSATED ABSENCES	0.00	8,206.31	549.43	(8,206.31)	100.00
601-710.000-711.000	LONGEVITY	75.00	1,021.22	0.00	(946.22)	1,361.63
601-710.000-712.000	SPECIAL COMPENSATION	0.00	435.55	39.21	(435.55)	100.00
601-710.000-715.000	HEALTH REIMBURSEMENT	0.00	213.91	24.74	(213.91)	100.00
601-710.000-719.000	CLOTHING ALLOWANCE	500.00	740.31	0.00	(240.31)	148.06
601-710.000-721.000	FICA/MEDICARE - CITY SHARE	635.00	1,296.92	77.03	(661.92)	204.24
601-710.000-722.000	ICMA - CITY SHARE	20.00	154.77	8.72	(134.77)	773.85
601-710.000-723.000	VISION CARE	200.00	470.24	42.82	(270.24)	235.12
601-710.000-724.000	LIFE, WORK COMP, UNEMPLOYMENT	2,500.00	335.92	48.61	2,164.08	13.44
601-710.000-725.604	DENTAL & HEALTH BENEFITS	18,000.00	17,998.88	1,698.52	1.12	99.99
601-710.000-728.000	RETIREMENT PLANS (CITY SHARE)	2,000.00	4,891.37	314.34	(2,891.37)	244.57
601-710.000-728.001	RETIRMENT HEALTH SAVINGS	160.00	0.00	0.00	160.00	0.00
601-710.000-972.000	MISCELLANEOUS	200.00	0.00	0.00	200.00	0.00
Total Dept 710.000 - MVP ADMINISTRATION		32,605.00	42,171.83	3,191.50	(9,566.83)	129.34
Dept 712.000 - MVP EQUIPMENT MAINTENANCE						
601-712.000-704.100	STAFF - OVERTIME	4,150.00	215.38	16.99	3,934.62	5.19
601-712.000-706.000	CITY LABOR - DPW	53,465.00	35,941.17	3,701.69	17,523.83	67.22
601-712.000-711.000	LONGEVITY	648.00	0.00	0.00	648.00	0.00
601-712.000-721.000	FICA/MEDICARE - CITY SHARE	3,220.00	2,773.09	286.00	446.91	86.12
601-712.000-722.000	ICMA - CITY SHARE	550.00	144.88	28.74	405.12	26.34
601-712.000-728.000	RETIREMENT PLANS (CITY SHARE)	9,600.00	9,631.98	973.72	(31.98)	100.33
601-712.000-731.000	MATERIALS & SUPPLIES	65,000.00	66,203.84	3,928.52	(1,203.84)	101.85
601-712.000-734.000	GASOLINE & OIL	34,000.00	44,461.68	4,667.64	(10,461.68)	130.77
601-712.000-739.000	LABORATORY SUPPLIES	200.00	0.00	0.00	200.00	0.00
601-712.000-747.000	INSURANCE & BONDS	18,801.00	15,846.00	0.00	2,955.00	84.28
601-712.000-748.000	CONFERENCES & TRAINING	0.00	100.00	0.00	(100.00)	100.00
601-712.000-749.000	CONTRACTUAL SERVICES	18,500.00	14,861.79	3,782.11	3,638.21	80.33
601-712.000-863.000	CAP. OUTLAY - MOTOR VEHICLES	28,000.00	31,151.65	0.00	(3,151.65)	111.26
601-712.000-864.000	CAPITAL OUTLAY - EQUIPMENT	5,000.00	22,701.50	0.00	(17,701.50)	454.03
601-712.000-971.000	DEPRECIATION EXPENSE	135,000.00	0.00	0.00	135,000.00	0.00
Total Dept 712.000 - MVP EQUIPMENT MAINTENANCE		376,134.00	244,032.96	17,385.41	132,101.04	64.88

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 601 - MOTOR VEHICLE POOL						
Expenditures						
Dept 713.000 - DPW GARAGE BLDG & GROUNDS						
601-713.000-704.100	STAFF - OVERTIME	1,775.00	199.92	146.40	1,575.08	11.26
601-713.000-706.000	CITY LABOR - DPW	23,200.00	13,484.65	556.16	9,715.35	58.12
601-713.000-721.000	FICA/MEDICARE - CITY SHARE	1,380.00	1,039.04	53.69	340.96	75.29
601-713.000-722.000	ICMA - CITY SHARE	235.00	141.31	7.66	93.69	60.13
601-713.000-728.000	RETIREMENT PLANS (CITY SHARE)	4,120.00	3,482.51	180.62	637.49	84.53
601-713.000-731.000	MATERIALS & SUPPLIES	6,000.00	2,507.57	380.99	3,492.43	41.79
601-713.000-744.000	TELEPHONE & INTERNET	7,857.00	6,454.47	586.77	1,402.53	82.15
601-713.000-745.000	UTILITIES	31,000.00	29,716.10	0.00	1,283.90	95.86
601-713.000-746.000	PROFESSIONAL SERVICES	10,000.00	0.00	0.00	10,000.00	0.00
601-713.000-749.000	CONTRACTUAL SERVICES	13,000.00	7,512.61	929.45	5,487.39	57.79
601-713.000-851.000	MVP EQUIPMENT RENTAL	0.00	548.83	0.00	(548.83)	100.00
Total Dept 713.000 - DPW GARAGE BLDG & GROUNDS		98,567.00	65,087.01	2,841.74	33,479.99	66.03
TOTAL EXPENDITURES		507,306.00	351,291.80	23,418.65	156,014.20	69.25
Fund 601 - MOTOR VEHICLE POOL:						
TOTAL REVENUES		491,810.00	531,418.72	43,649.88	(39,608.72)	108.05
TOTAL EXPENDITURES		507,306.00	351,291.80	23,418.65	156,014.20	69.25
NET OF REVENUES & EXPENDITURES		(15,496.00)	180,126.92	20,231.23	(195,622.92)	1,162.41

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 666 - INFORMATION TECHNOLOGY POOL FUND						
Revenues						
Dept 000.000						
666-000.000-501.000	INTEREST INCOME	0.00	124.96	0.00	(124.96)	100.00
666-000.000-601.000	BILLINGS TO DEPARTMENTS	300,000.00	275,000.00	25,000.00	25,000.00	91.67
Total Dept 000.000		300,000.00	275,124.96	25,000.00	24,875.04	91.71
TOTAL REVENUES		300,000.00	275,124.96	25,000.00	24,875.04	91.71
Expenditures						
Dept 228.000 - INFORMATION TECHNOLOGY						
666-228.000-731.000	MATERIALS & SUPPLIES	30,000.00	3,249.93	61.48	26,750.07	10.83
666-228.000-744.000	TELEPHONE & INTERNET	16,000.00	30,996.98	600.06	(14,996.98)	193.73
666-228.000-746.000	PROFESSIONAL SERVICES	100,000.00	77,717.40	6,325.00	22,282.60	77.72
666-228.000-749.000	CONTRACTUAL SERVICES	82,500.00	68,886.40	7,706.61	13,613.60	83.50
666-228.000-865.000	CAP. OUTLAY - COMPUTER EQUIP	68,250.00	7,786.70	1,547.75	60,463.30	11.41
Total Dept 228.000 - INFORMATION TECHNOLOGY		296,750.00	188,637.41	16,240.90	108,112.59	63.57
TOTAL EXPENDITURES		296,750.00	188,637.41	16,240.90	108,112.59	63.57
Fund 666 - INFORMATION TECHNOLOGY POOL FUND:						
TOTAL REVENUES		300,000.00	275,124.96	25,000.00	24,875.04	91.71
TOTAL EXPENDITURES		296,750.00	188,637.41	16,240.90	108,112.59	63.57
NET OF REVENUES & EXPENDITURES		3,250.00	86,487.55	8,759.10	(83,237.55)	2,661.16

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 701 - TRUST & AGENCY FUND						
Revenues						
Dept 000.000						
701-000.000-501.000	INTEREST INCOME	0.00	1,194.96	0.00	(1,194.96)	100.00
Total Dept 000.000		0.00	1,194.96	0.00	(1,194.96)	100.00
TOTAL REVENUES		0.00	1,194.96	0.00	(1,194.96)	100.00
Fund 701 - TRUST & AGENCY FUND:						
TOTAL REVENUES		0.00	1,194.96	0.00	(1,194.96)	100.00
TOTAL EXPENDITURES		0.00	0.00	0.00	0.00	0.00
NET OF REVENUES & EXPENDITURES		0.00	1,194.96	0.00	(1,194.96)	100.00

GL NUMBER	DESCRIPTION	2021-22 AMENDED BUDGET	YTD BALANCE 05/31/2022 NORMAL (ABNORMAL)	ACTIVITY FOR MONTH 05/31/2022 INCREASE (DECREASE)	AVAILABLE BALANCE NORMAL (ABNORMAL)	% BDGT USED
Fund 800 - CHARLOTTE AREA REC CO-OP						
Revenues						
Dept 000.000						
800-000.000-603.000	CONTRIBUTIONS FROM OTHERS	0.00	30,714.39	30,714.39	(30,714.39)	100.00
Total Dept 000.000		0.00	30,714.39	30,714.39	(30,714.39)	100.00
TOTAL REVENUES		0.00	30,714.39	30,714.39	(30,714.39)	100.00
Expenditures						
Dept 825.000 - PARKS & RECREATION						
800-825.000-731.000	MATERIALS & SUPPLIES	0.00	4,743.15	0.00	(4,743.15)	100.00
800-825.000-747.000	INSURANCE & BONDS	0.00	2,503.00	0.00	(2,503.00)	100.00
800-825.000-749.000	CONTRACTUAL SERVICES	0.00	2,835.00	835.00	(2,835.00)	100.00
800-825.000-864.004	FACILITY DEVELOPMENT	0.00	3,365.36	0.00	(3,365.36)	100.00
Total Dept 825.000 - PARKS & RECREATION		0.00	13,446.51	835.00	(13,446.51)	100.00
TOTAL EXPENDITURES		0.00	13,446.51	835.00	(13,446.51)	100.00
Fund 800 - CHARLOTTE AREA REC CO-OP:						
TOTAL REVENUES		0.00	30,714.39	30,714.39	(30,714.39)	100.00
TOTAL EXPENDITURES		0.00	13,446.51	835.00	(13,446.51)	100.00
NET OF REVENUES & EXPENDITURES		0.00	17,267.88	29,879.39	(17,267.88)	100.00
TOTAL REVENUES - ALL FUNDS		14,469,545.00	14,467,949.04	1,244,210.53	1,595.96	99.99
TOTAL EXPENDITURES - ALL FUNDS		14,167,149.00	11,440,564.59	834,836.96	2,726,584.41	80.75
NET OF REVENUES & EXPENDITURES		302,396.00	3,027,384.45	409,373.57	(2,724,988.45)	1,001.13

TRI-COUNTY REGION
HAZARD MITIGATION PLAN

2022 UPDATE

TABLE OF CONTENTS

Introduction

The Tri-County Hazard Mitigation Plan is getting an update, and public participation plays an important role in the finalization of the plan. All residents of Clinton, Eaton, and Ingham counties are encouraged to review the plan and submit comments by **Friday, June 24, 2022**.

Please submit comments through the public comment survey tool linked HERE.

The document provides a comprehensive introduction to common hazards the Tri-County region and its counties face as well as a thorough overview of mitigation efforts against natural disasters, such as hurricanes and fires.

Importance of the Plan

Hazard mitigation planning reduces the risk to people and property and reduces the cost of recovering from a disaster. A hazard mitigation plan can help communities become more sustainable and disaster-resistant by focusing efforts on the hazards in disaster-prone areas and identifying appropriate mitigation actions. A hazard mitigation plan also makes communities eligible for federal assistance programs to assist with the implementation of hazard mitigation projects.

1 INTRODUCTION

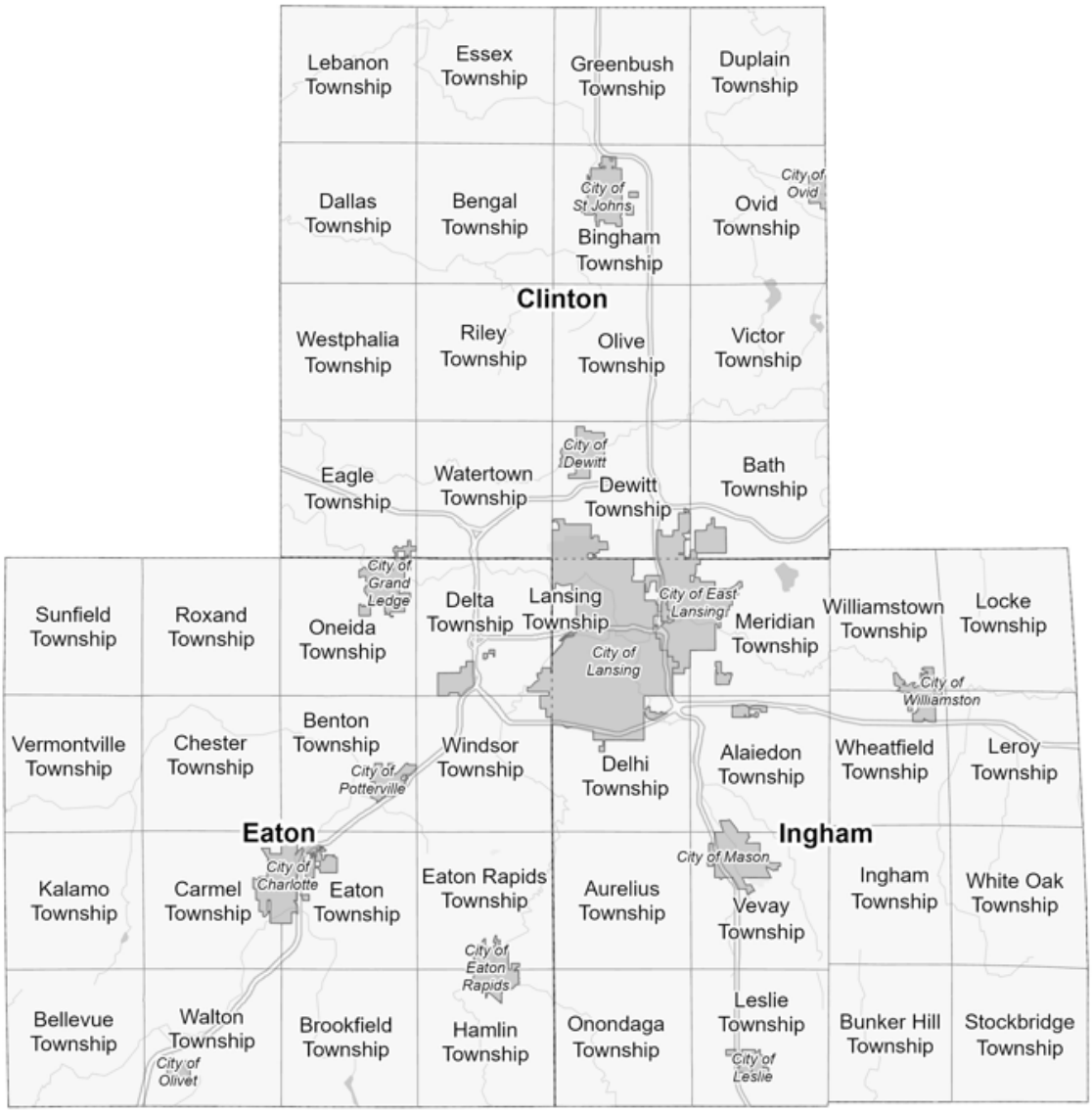
1.1 Introduction

Hazard mitigation is defined as any action taken before, during, or after a disaster to permanently eliminate or reduce the long-term risk to human life and property. Hazard mitigation is a key component of a comprehensive emergency management program, occurring before and after disaster events. When implemented in tandem with preparedness, response, and recovery efforts, this hazard mitigation plan will help participating jurisdictions reduce their risk of natural hazards while improving their resiliency. The goal of a mitigation plan is to identify policies and actions that can be implemented at the local level to reduce risk and future losses.

Figure 1: Emergency Management Cycle

The 2022 Tri-County Hazard Mitigation Plan provides a framework to enhance the general welfare and safety of residents across Ingham, Clinton, and Eaton counties in Michigan. This plan considers the impact of natural hazards across the region, reviews current levels of capability relevant to hazard mitigation, and identifies a comprehensive hazard mitigation strategy.

Figure 2: Tri-County Region



1.2 Planning Process

To accomplish the update of the Tri-County Hazard Mitigation Plan, the participating jurisdictions followed a planning process designed to engage communities and stakeholders, identify current levels of capability, assess hazards and risks, and develop a realistic and achievable hazard mitigation strategy that buys down risk and builds resiliency. This process is outlined in this section.

1.2.1 Defining the Planning Area and Resources

To begin the process, participating jurisdictions were identified for the hazard mitigation plan update. The following jurisdictions have met all requirements and are considered participants in this plan:

- Clinton County
- Victor Township
- Eaton County
- Delta Township
- Ingham County
- Delhi Township
- City of East Lansing
- Lock Township
- Meridian Township
- Victor Township
- Williamstown Township

For a jurisdiction to be considered a participant in the plan, the following requirements had to be met:

- At least one (1) planning team participant from a jurisdiction attended each meeting.
- The jurisdiction completed a capability assessment survey.
- The jurisdiction provided input on the hazard analysis and risk assessment.
- The jurisdiction provided at least one (1) hazard mitigation action, whether new or continuing.

1.2.2 Build the Planning Team

During the initial stages of the planning process, the planning team was anticipated to include the following participating jurisdictions:

- Clinton County
- Eaton County
- Ingham County
- Delta Township
- Delhi Township

Representatives from the five (5) participating jurisdictions made up the core regional steering team. This team met bi-weekly and helped guide the management aspects of the process from beginning to end.

A larger planning team was developed to implement the planning aspects of the process. Jurisdictions in Clinton, Eaton, and Ingham counties were invited to participate in the planning team, which met on a county by county basis. Table 1, Table 2, and Table 3 reflect those jurisdictions invited to participate as part of the planning process.

Table 1: Clinton County Communities

Clinton County		
Clinton County	Dallas Township	DeWitt Charter Township
Olive Township	Riley Township	Victor Township
Watertown Charter Township		

Table 2: Eaton County Communities

Eaton County		
Eaton County	Bellevue Township	Village of Bellevue
Brookfield Township	City of Charlotte	Chester Township
Delta Township	City of Dimondale	Eaton Township
Eaton Rapids Township	City of Eaton Rapids	City of Grand Ledge
Hamlin Township	Kalamo Township	Village of Mulliken
Nolan Township	City of Olivet	Oneida Township
Roxand Township	Sunfield Township	Village of Sunfield
Vermontville Township	Village of Vermontville	Watertown Township
Windsor Township		

Table 3: Ingham County Communities

Ingham County		
Ingham County	Alaeidon Township	Aurelius Township
Bunkerhill Township	Delhi Township	City of East Lansing
Ingham Township	Lansing Township	Leroy Township
City of Leslie	Locke Township	City of Mason
Meridian Township	Onondaga Township	Stockbridge Township
Vevay Township	White Oak Township	Williamston Township

Three (3) meetings were held for Eaton and Ingham counties.

- Meeting 1 – Process introduction and overview, purpose of mitigation planning, capabilities assessment
- Meeting 2 – Hazard Identification and Risk Assessment (HIRA) overview and discussion, development of planning goals
- Meeting 3 – HIRA finalization, review of potential hazard mitigation actions and strategy, discussion of plan implementation and maintenance

Due to scheduling conflicts, two (2) meetings were held for Clinton County.

- Meeting 1 – Process introduction and overview, purpose of mitigation planning, capabilities assessment, HIRA overview and discussion, development of planning goals

- Meeting 2 – HIRA finalization, review of potential hazard mitigation actions and strategy, discussion of plan implementation and maintenance

1.2.3 Create an Outreach Strategy

Outreach to and involvement of the public in the hazard mitigation planning process is a key component of the effectiveness of the final plan. Public outreach was accomplished both at the beginning and the end of the process. An electronic survey was released on January 18, 2022, utilizing the web-based Smartsheet survey tool. The plan was advertised by the counties and jurisdictions within.

Once the initial draft of the plan was completed, it was released for public review on June 13, 2022 through June 24, 2022, following all applicable county and community requirements for public input.

1.2.4 Review Community Capabilities

Jurisdictions were provided the opportunity to report on community capabilities; these capabilities were used as a baseline to identify areas upon which to build for the hazard mitigation strategy. Communities reported on capabilities in the following target areas:

- Plans
- Building codes, permitting, and inspections
- Land use planning and ordinances
- Administration
- Staff
- Technical capabilities
- Funding resources
- Programmatic and organizational capabilities

All cities, townships, and charter townships within the Tri-County region were given the opportunity to complete a capability assessment survey. In accordance with a requirement of the planning process, a community must submit a capability assessment to be considered a “participating jurisdiction.” The outcome of the capability assessment surveys can be found in Chapter 2 of this document.

1.2.5 Conduct a Risk Assessment

A risk assessment is a calculation of the threat, vulnerability, and consequence of natural hazards that impact the participating jurisdictions in the planning area. The risk assessment provides a baseline concept of the threat, vulnerabilities to and consequences from natural hazards in the Tri-County region.

The following hazards were identified and assessed during the plan update process:

- Dam failure
- Drought
- Extreme temperatures
- Flood
- Severe weather (including fog, hail and lightning)
- Severe wind
- Severe winter weather

- Tornado
- Wildfire

Following an initial evaluation of hazard risk, each county's planning team discussed the results during the second planning meeting and added comment and context to the final assessment. Further information on the risk assessment process can be found in Chapter 3 of this document.

1.2.6 Develop a Hazard Mitigation Strategy

Throughout the planning process, participants worked to identify and analyze potential hazard mitigation actions and projects to reduce risks identified during the process. To focus the development of the mitigation strategy, the planning committee for each county agreed on the following goals for the 2022 plan update.

Goal 1. Reduce the risk of hazards to life and property.

Goal 2. Protect critical infrastructure and essential facilities.

Goal 3. Build community and public resiliency.

Mitigation alternatives were presented to each county planning committee at the final planning meeting. The groups discussed potential mitigation actions that would support each goal and mitigate the risks presented by each hazard in the risk assessment. Jurisdictions then finalized specific hazard mitigation actions they would implement.

1.2.7 Keep the Plan Current

To ensure the plan remains a living document, the group discussed and confirmed plan maintenance procedures, which are located in Chapter 5. The plan maintenance process includes:

- Plan monitoring – tracking the implementation of the plan over time.
- Plan evaluation – assessing the effectiveness of the plan at achieving its stated purpose and goals.
- Plan updating – reviewing and revising the plan over its five (5)-year life cycle.
- Plan implementation in conjunction with other planning mechanisms.
- Continued public involvement.

1.2.8 Review and Adoption

Following the development of the complete plan draft, the plan was released for review and comment.

- Planning Committee Review Period (June 13, 2022 – June 24, 2022)
- Public Review Period (June 13, 2022 – June 24, 2022)

Once the plan receives the Federal Emergency Management Agency's (FEMA) "Approved Pending Adoption" designation, the Tri-County region and participating jurisdictions will be able to formally adopt the plan. The plan will remain in effect for five (5) years once approved. Adoptions are included as appendices to this document.

1.2.9 Build a Safe and Resilient Community

Once the plan is approved, participating jurisdictions will follow the processes outlined in Chapter 5 of this document to track and update the plan and begin the implementation of identified mitigation actions to build a more resilient community.

2 REGIONAL BACKGROUND AND CAPABILITIES ASSESSMENT

2.1 Regional Overview

2.1.1 Background

The Tri-County region is comprised of Clinton, Eaton, and Ingham counties with a land area of 1,697.71 square miles and an estimated population of more than 472,000. Michigan lies in the Midwest and Great Lakes regions of the United States. The latitude, altitude, and proximity to the Great Lakes influence the climate of Michigan to a large extent.

The Southern Lower Peninsula area in Michigan contains many medium-sized urban areas and most of the state's traditional farming and livestock grazing lands. This part of the state is extremely well-served by the Interstate Highway System, and many colleges and state universities are found throughout the area. Many features of historic and scenic interest draw tourists from other parts of the state and country. University sports venues, the Michigan International Speedway, minor league baseball, many different museums, zoos, professional theaters, historic sites, and well-known manufacturing facilities are numbered among the area's many cultural attractions. The Tri-County region topography is essentially flat with an average elevation between 800 to 1,000 feet above sea level. The region is comprised of both urban and rural areas that experience large seasonal changes in temperature, with warm, humid summers and cold winters.

Over the course of the year, the temperature can vary from 17°F to 82°F. The temperature is rarely below 0°F or above 90°F. The warmest season is between late May and mid-September with the coldest period occurring from late November through early March. Temperatures in Michigan have risen almost 3°F since the beginning of the 20th century. Warming has been concentrated in winter and spring, while summers have not warmed substantially, a feature characteristic of much of the Midwest. The winter warming trend is reflected in a below-average number of very cold nights since 1990.

There is a significant seasonal variation of cloud cover over the course of the year with the clearer part of the year occurring between late May and early November. The chance of precipitation varies throughout the year as either rain or snow. The wetter season is from late March to mid-October with the greatest number of wet days occurring in July, while the drier season lasts the remainder of the year with the fewest wet days occurring in February. Statewide annual precipitation has ranged from a low of 22.7 inches in 1930 to a high of 41.8 inches in 2019. The frequency and intensity of extreme precipitation are also projected to rise, potentially increasing the occurrence of floods. Springtime flooding could pose a threat to Michigan's important agricultural industry by delaying planting and threatening yield losses.

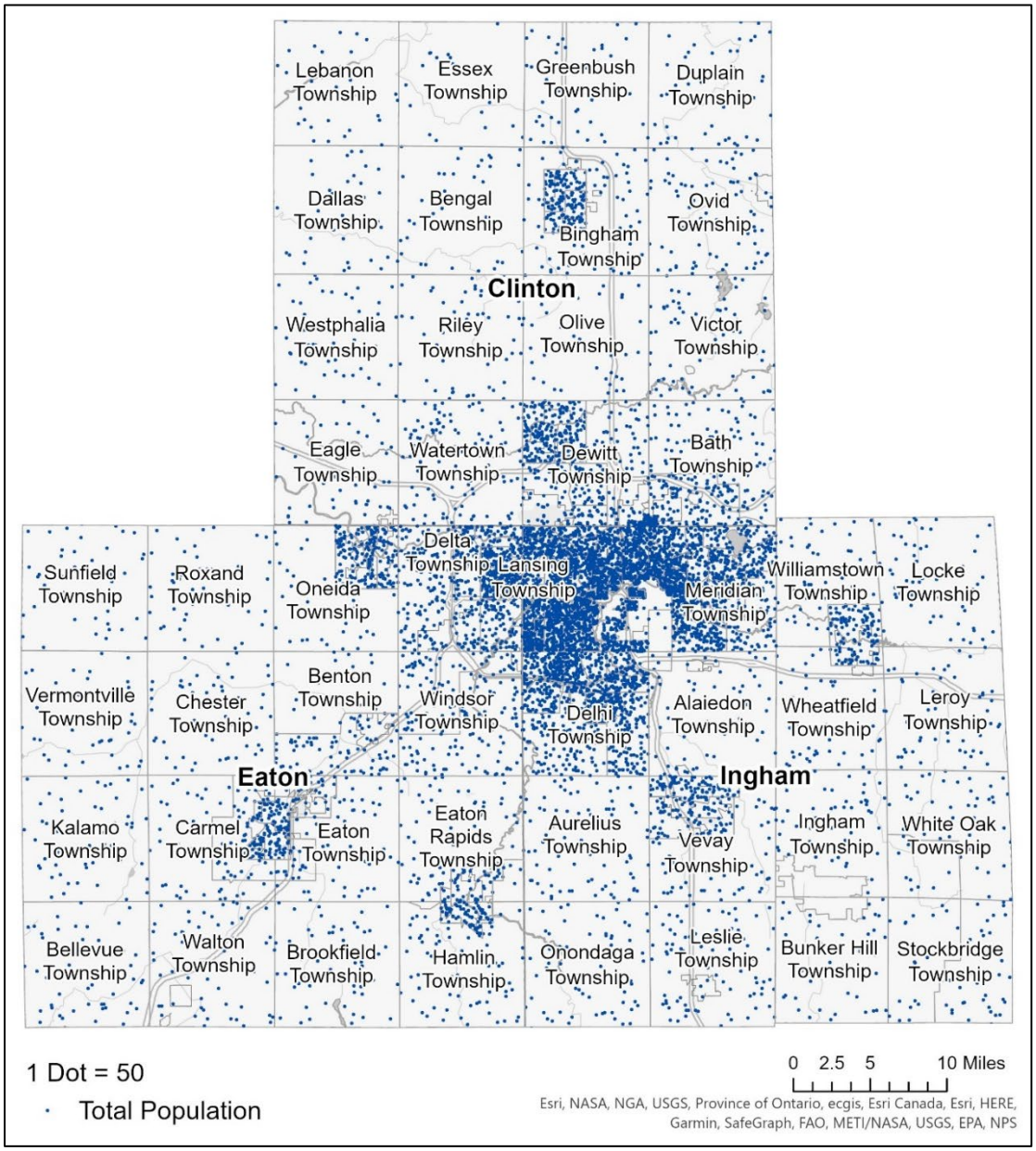
Community services and facilities play an important role in maintaining and improving the quality of life for residents and visitors to the Tri-County region. The location and level of services, such as public water, public wastewater, and fiber optic lines, determine the types and intensities of development within a community. There are select areas within the region that have a high population density; however, some

communities have relatively low population density, which can present challenges in providing services and mitigating hazard impacts.

2.1.2 Population and Demographics

The Tri-County region has an estimated population of over 472,000, according to the 2020 Census. The median age in the study area is 38.2 years compared to the average age in Michigan of 39.8 years. Each person in the Tri-County region is exposed to at least one (1) of the hazards identified in this plan. Understanding who is being affected by a disaster is important when preparing for future events. Social and economic characteristics may limit an individual's ability to understand their risk, respond to, and recover from disasters.

Figure 1. Tri-County Population Density



The 2020 Census counted every person living in the United States and the five (5) U.S. territories. It marked the 24th census in U.S. history and the first time that households were invited to respond to the census online. Additionally, the U.S. Census Bureau released new statistics from the 2016-2020 American Community Survey (ACS) 5-year estimates in spring 2022. These statistics enhance understanding of the social and economic characteristics of the U.S. population. The methodology improves the survey responses, making ACS the nation's leading source for large- and small-area socioeconomic and demographic statistics for every community in the United States. A summary of population and demographic findings by county has been compiled and sourced.

Table 1. Race and Hispanic Origin

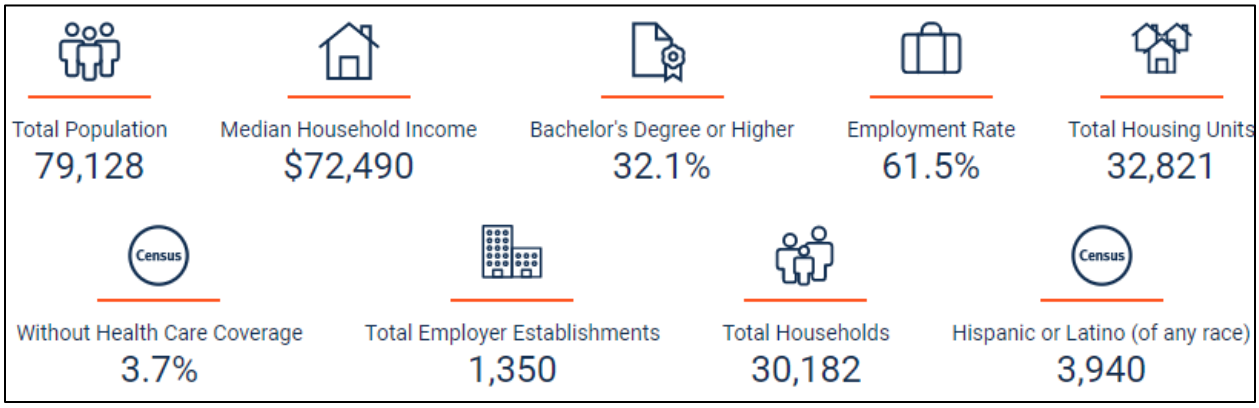
Category	Clinton County		Eaton County		Ingham County	
Population of one race	74,333	93.9%	101,806	93.3%	260,678	91.5%
White alone	69,204	87.5%	89,292	81.8%	198,552	69.7%
Black or African American alone	1,715	2.2%	7,688	7.0%	35,580	12.5%
American Indian and Alaska Native alone	313	0.4%	451	0.4%	1,535	0.5%
Asian alone	1,877	2.4%	2,478	2.3%	16,522	5.8%
Native Hawaiian and Other Pacific Islander alone	25	0.0%	18	0.0%	124	0.0%
Some other race alone	1,199	1.5%	1,879	1.7%	8,365	2.9%
Population of two or more races	4,795	6.1%	7,369	6.7%	24,222	8.5%
Population of two races	4,598	5.8%	6,914	6.3%	22,597	7.9%
Population of three races	182	0.2%	416	0.4%	1,506	0.5%
Population of four races	13	0.0%	32	0.0%	110	0.0%
Population of five races	2	0.0%	7	0.0%	8	0.0%
Total	79,128		109,175		284,900	

Source: U.S. Census

Clinton County Findings

The U.S. Census Bureau reported that Clinton County, MI had a population of more than 79,000 people with a median age of 41.1 and a median household income of $72,490, which was more than the median annual income of $67,521 (2020) across the entire United States. The County's population growth is expected to rise, according to estimates in Table 2 provided by the Michigan Department of Technology, Management, and Budget (DTMB) in 2019. Figure 2 statistics are attributed to the 2020 Decennial Census from the U.S. Census Bureau.

Figure 2. Clinton County Demographics



Source: U.S. Census

Table 2. Clinton County Population Projections

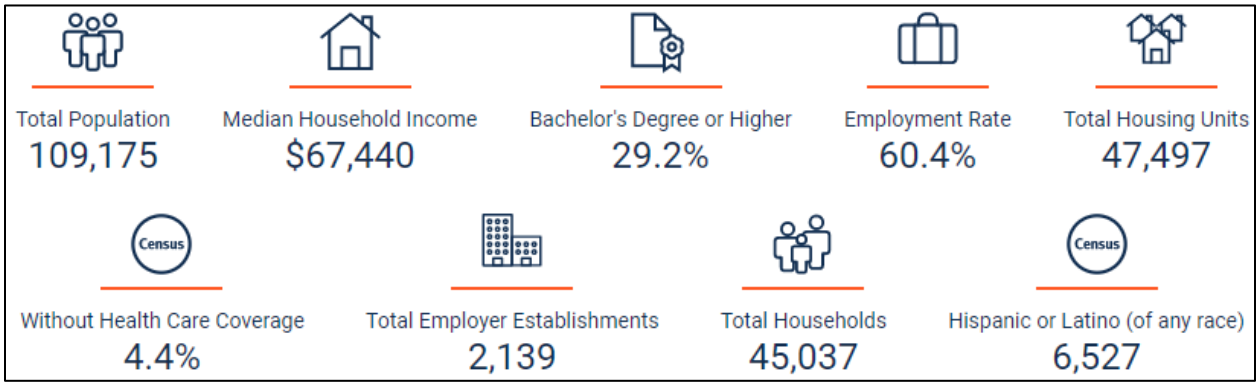
CLINTON COUNTY PROJECTION OF TOTAL POPULATION						
AGE	2020	2025	2030	2035	2040	2045
0-4	4,372	4,434	4,404	4,396	4,396	4,429
5-9	4,940	4,970	5,077	5,042	5,027	4,985
10-14	4,951	5,243	5,314	5,418	5,378	5,322
15-19	5,013	4,622	4,948	5,015	5,117	5,042
20-24	4,713	4,594	4,260	4,555	4,618	4,670
25-29	4,777	4,586	4,599	4,245	4,533	4,483
30-34	4,899	5,124	5,029	5,032	4,672	4,882
35-39	5,195	5,596	5,883	5,775	5,761	5,360
40-44	5,017	5,550	5,983	6,267	6,153	6,102
45-49	4,783	5,170	5,719	6,146	6,426	6,289
50-54	5,515	4,938	5,353	5,891	6,310	6,553
55-59	5,903	5,520	4,997	5,400	5,920	6,288
60-64	5,646	5,787	5,461	4,949	5,344	5,810
65-69	4,841	5,339	5,497	5,185	4,694	5,055
70-74	3,749	4,506	5,002	5,140	4,845	4,353
75-79	2,584	3,297	3,991	4,423	4,543	4,252
80-84	1,624	2,069	2,649	3,194	3,529	3,619
85+	1,524	1,736	2,092	2,598	3,135	3,542
Total	**80,045**	**83,080**	**86,258**	**88,673**	**90,401**	**91,036**

Source: U.S. Census

Eaton County Findings

The U.S. Census Bureau reported that Eaton County's population surpassed 109,000 people with a median age of 41.1 and a median household income of $67,440, which was less than the median annual income of $67,521 (2020) across the entire United States. The County's population growth is expected to rise, according to estimates in Table 3 provided by the Michigan DTMB from 2019. Figure 3 statistics are attributed to the 2020 Decennial Census from the U.S. Census Bureau.

Figure 3. Eaton County Demographics



Source: U.S. Census

Table 3. Eaton County Population Projections

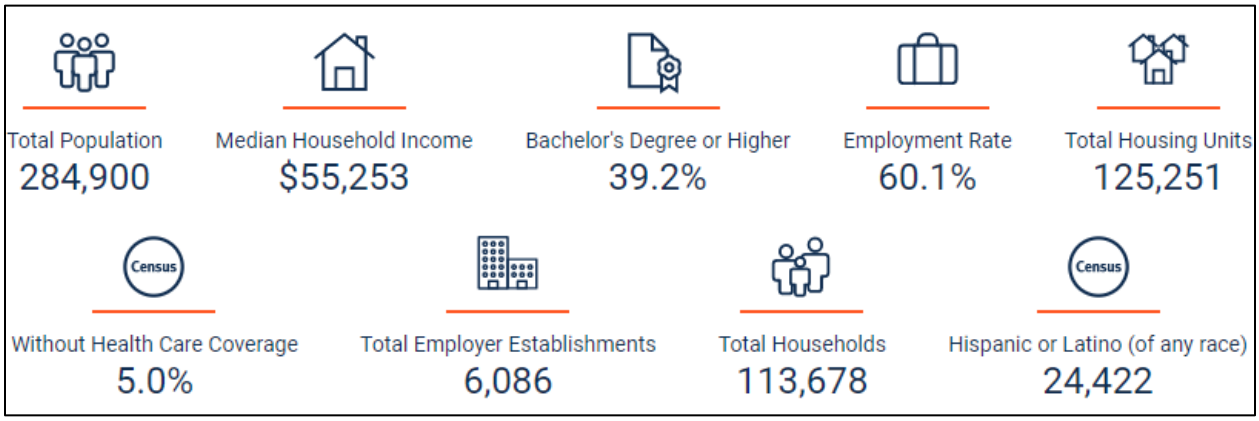
EATON COUNTY PROJECTION OF TOTAL POPULATION						
AGE	2020	2025	2030	2035	2040	2045
0-4	5,947	6,160	6,095	5,948	5,887	5,913
5-9	6,329	6,322	6,660	6,585	6,427	6,255
10-14	6,214	6,521	6,600	6,929	6,844	6,605
15-19	6,566	6,123	6,508	6,574	6,893	6,732
20-24	6,453	5,938	5,635	5,977	6,032	6,217
25-29	7,525	7,066	6,711	6,388	6,724	6,616
30-34	6,963	7,705	7,389	7,019	6,682	6,888
35-39	6,894	7,213	8,035	7,717	7,345	6,941
40-44	6,472	7,077	7,434	8,240	7,917	7,505
45-49	6,166	6,520	7,180	7,523	8,310	7,932
50-54	6,946	6,251	6,668	7,313	7,640	8,352
55-59	7,749	6,812	6,183	6,590	7,212	7,480
60-64	7,930	7,317	6,459	5,845	6,239	6,791
65-69	7,103	7,511	6,961	6,147	5,561	5,907
70-74	5,814	6,426	6,825	6,312	5,558	4,998
75-79	4,044	5,088	5,640	5,985	5,536	4,862
80-84	2,408	3,273	4,100	4,528	4,795	4,425
85+	2,238	2,452	3,100	3,888	4,493	4,910
Total	**109,760**	**111,773**	**114,184**	**115,507**	**116,096**	**115,329**

Source: U.S. Census

Ingham County Findings

The U.S. Census Bureau reported that Ingham County had a population of more than 284,000 people with a median age of 32.4 and a median household income of $55,253, which was less than the median annual income of $67,521 (2020) across the entire United States. The County's population growth is expected to rise according to estimates in Table 4 provided by the Michigan DTMB from 2019. Figure 4 statistics are attributed to the 2020 Decennial Census from the U.S. Census Bureau.

Figure 4. Ingham County Demographics



Source: U.S. Census

Table 4. Ingham County Population Projections

INGHAM COUNTY PROJECTION OF TOTAL POPULATION						
AGE	2020	2025	2030	2035	2040	2045
0-4	16,532	17,588	18,408	18,716	18,903	19,169
5-9	16,090	16,631	17,927	18,727	19,016	18,983
10-14	15,800	16,359	17,064	18,343	19,126	19,264
15-19	26,268	26,407	27,137	27,806	29,095	29,840
20-24	39,897	39,144	39,133	39,979	40,462	42,038
25-29	23,859	24,160	23,857	23,968	24,672	25,081
30-34	18,732	21,646	22,183	21,904	22,013	22,483
35-39	17,485	18,023	21,100	21,602	21,295	21,192
40-44	16,344	17,708	18,481	21,515	22,005	21,485
45-49	15,115	16,532	18,029	18,771	21,747	22,081
50-54	15,412	15,542	17,106	18,558	19,250	22,033
55-59	16,270	15,233	15,510	17,034	18,418	18,954
60-64	16,455	15,496	14,619	14,891	16,360	17,583
65-69	14,408	14,933	14,115	13,277	13,522	14,833
70-74	11,277	12,739	13,275	12,515	11,742	11,895
75-79	7,256	9,727	11,041	11,493	10,817	10,107
80-84	4,322	5,817	7,788	8,817	9,153	8,582
85+	4,537	4,703	5,734	7,427	8,810	9,583
Total	**296,059**	**308,389**	**322,507**	**335,341**	**346,405**	**355,185**

Source: U.S. Census

2.1.3 Economy

After a disaster, economic resiliency drives recovery. The Tri-County region has specific economic drivers that are important to understand when planning to reduce the impacts of hazards and disasters to the local economy.

According to the 2020 ACS 5-Year Estimates product, the three largest industry sectors in the region are Health Care and Social Assistance (13.1%), Manufacturing (12.8%), and Educational Services (12.4%). Together, these three industries comprise approximately 38.3 percent of all wage and salary employment for the study area. Other important sectors are Retail Trade (9.9%), Public Administration (8.8%), and Accommodation and Food Services (6.5%). The least prominent industries include Agriculture, Forestry, Fishing and Hunting, and Mining, Wholesale Trade, and Information.

Table 5. Employment by Industry

Industry	Clinton County		Eaton County		Ingham County		State of Michigan	
	Employees	% of Workforce	Employees	% of Workforce	Employees	% of Workforce	Employees	% of Workforce
Agriculture, forestry, fishing and hunting, and mining:	841	2.2%	526	1.0%	905	0.6%	52798	1.1%
Agriculture, forestry, fishing and hunting	825	2.1%	478	0.9%	866	0.6%	46902	1.0%
Mining, quarrying, and oil and gas extraction	16	0.0%	48	0.1%	39	0.0%	5896	0.1%
Construction	2457	6.3%	2763	5.1%	5345	3.7%	257038	5.5%
Manufacturing	4633	11.9%	9516	17.6%	13114	9.1%	865163	18.6%
Wholesale trade	1161	3.0%	910	1.7%	2890	2.0%	110651	2.4%
Retail trade	3588	9.2%	5691	10.5%	14478	10.0%	499752	10.7%
Transportation and warehousing, and utilities:	1383	3.5%	2735	5.1%	5889	4.1%	207259	4.4%
Transportation and warehousing	1121	2.9%	2079	3.8%	5085	3.5%	171194	3.7%
Utilities	262	0.7%	656	1.2%	804	0.6%	36065	0.8%
Information	412	1.1%	677	1.3%	1895	1.3%	62541	1.3%
Finance and insurance, and real estate and rental and leasing:	3373	8.6%	4009	7.4%	10598	7.3%	260053	5.6%
Finance and insurance	2591	6.6%	3287	6.1%	7736	5.4%	187456	4.0%
Real estate and rental and leasing	782	2.0%	722	1.3%	2862	2.0%	72597	1.6%
Professional, scientific, and management, and administrative and waste management services:	3250	8.3%	4273	7.9%	14777	10.2%	451320	9.7%

Industry	Clinton County		Eaton County		Ingham County		State of Michigan	
	Employees	% of Workforce	Employees	% of Workforce	Employees	% of Workforce	Employees	% of Workforce
Professional, scientific, and technical services	2015	5.2%	2264	4.2%	8887	6.1%	268821	5.8%
Management of companies and enterprises	0	0.0%	8	0.0%	63	0.0%	6267	0.1%
Administrative and support and waste management services	1235	3.2%	2001	3.7%	5827	4.0%	176232	3.8%
Educational services, and health care and social assistance:	10045	25.7%	11704	21.6%	42225	29.2%	1089747	23.4%
Educational services	4581	11.7%	4732	8.7%	24259	16.8%	395593	8.5%
Health care and social assistance	5464	14.0%	6972	12.9%	17966	12.4%	694154	14.9%
Arts, entertainment, and recreation, and accommodation and food services:	2581	6.6%	3215	5.9%	15585	10.8%	427660	9.2%
Arts, entertainment, and recreation	397	1.0%	347	0.6%	3339	2.3%	86268	1.9%
Accommodation and food services	2184	5.6%	2868	5.3%	12246	8.5%	341392	7.3%
Other services, except public administration	1773	4.5%	2613	4.8%	6748	4.7%	213577	4.6%
Public administration	3589	9.2%	5453	10.1%	10124	7.0%	160798	3.5%
Total Workforce	**39,086**		**54,085**		**144,573**		**4,658,357**	

Source: U.S. Census

The economy of Clinton County employs over 39,000 people. The largest industries in Clinton County are Health Care and Social Assistance, Educational Services, and Manufacturing, and the highest paying industries are Mining, Quarrying, Oil and Gas Extraction ($250,001), Utilities ($86,620), and Public Administration ($61,966). The most common job groups for people living in Clinton County are Office and Administrative Support Occupations, Management Occupations, and Sales and Related Occupations.

The economy of Eaton County employs more than 54,000 people. The largest industries in Eaton County are Manufacturing, Health Care and Social Assistance, and Retail Trade, and the highest paying industries are Utilities ($76,845), Public Administration ($62,415), and Finance and Insurance ($53,481). The most

common job groups for people living in Eaton County are Office and Administrative Support Occupations, Production Occupations, and Management Occupations.

The economy of Ingham County employs over 144,000 people. The largest industries in Ingham County are Educational Services, Health Care and Social Assistance, and Retail Trade, and the highest paying industries are Management of Companies and Enterprises ($104,440), Utilities ($61,462), and Public Administration ($61,392). The most common job groups for people living in Ingham County are Office and Administrative Support Occupations, Sales and Related, Education Instruction, and Library Occupations.

2.1.4 Infrastructure

Infrastructure is comprised of the basic facilities and services needed for a community. The region's public infrastructure, excluding transportation features, is limited to population centers where sewer and water services are provided by the local municipality. The most comprehensive systems (sewer/water) are in place to serve residents in urbanized areas in East Lansing and all charter townships, including St. Johns, Grand Ledge, DeWitt, Charlotte, Eaton Rapids, Leslie, Mason, and Williamston. This region still maintains a significant number of residents and businesses outside of public water and sewer service areas. There are rural individual structures and small residential and commercial developments throughout the region still only served by groundwater wells and individual or small shared septic systems.

Municipal level public works services of sewer and water exist at some level in incorporated cities region-wide. Municipalities with services include the larger communities of each county, such as the cities of Charlotte, Eaton Rapids, and Grand Ledge, and Delta Charter Township in Eaton County; the cities of East Lansing, Mason, and Williamston, and Meridian Township, Lansing Township, and Delhi Township in Ingham County; and the cities of St. Johns and DeWitt and Watertown Townships in Clinton County. A variety of communities in the urbanized core area of the region have water and/or sewer services provided through contracts and joint services agreements with the Lansing Board of Water and Light. Partial services of water or sewer are common in the study area's smaller villages and towns such as Sunfield, Olivet, and Vermontville in Eaton County; Webberville, Stockbridge, and Dansville in Ingham County; and Ovid, Fowlerville, and Bath in Clinton County.

2.1.5 Critical Facilities

A critical facility provides services and functions essential to a community, especially during and after a disaster. Typical critical facilities include hospitals, fire stations, police stations, storage of critical records, and similar facilities. These facilities should be given special consideration when formulating regulatory alternatives and floodplain management plans.

Public Safety and Health

FEMA defines critical facilities as facilities and infrastructure that are critical to the health and welfare of the population and that are especially important following hazards. Within this plan, public health and safety critical facilities include emergency medical services (EMS), fire and police departments, hospitals, and municipal buildings.

Ingham County has the greatest number of public safety and health facilities with 49, followed by Eaton County with 33, and Clinton County with 30 as summarized in Table 6. Since the region is vulnerable to a

wide variety of natural hazards, it is imperative that these critical facilities remain viable and available to support their communities in the event of an emergency or disaster.

Table 6. Public Health and Safety Facilities

Category	Clinton County	Eaton County	Ingham County
EMS	1	0	2
Fire Department	15	17	25
Police Department	8	8	12
Hospital	1	2	4
Municipal Office	6	6	6
TOTAL	30	33	49

Source: U.S. Census

Figure 5. Clinton County Critical Facilities

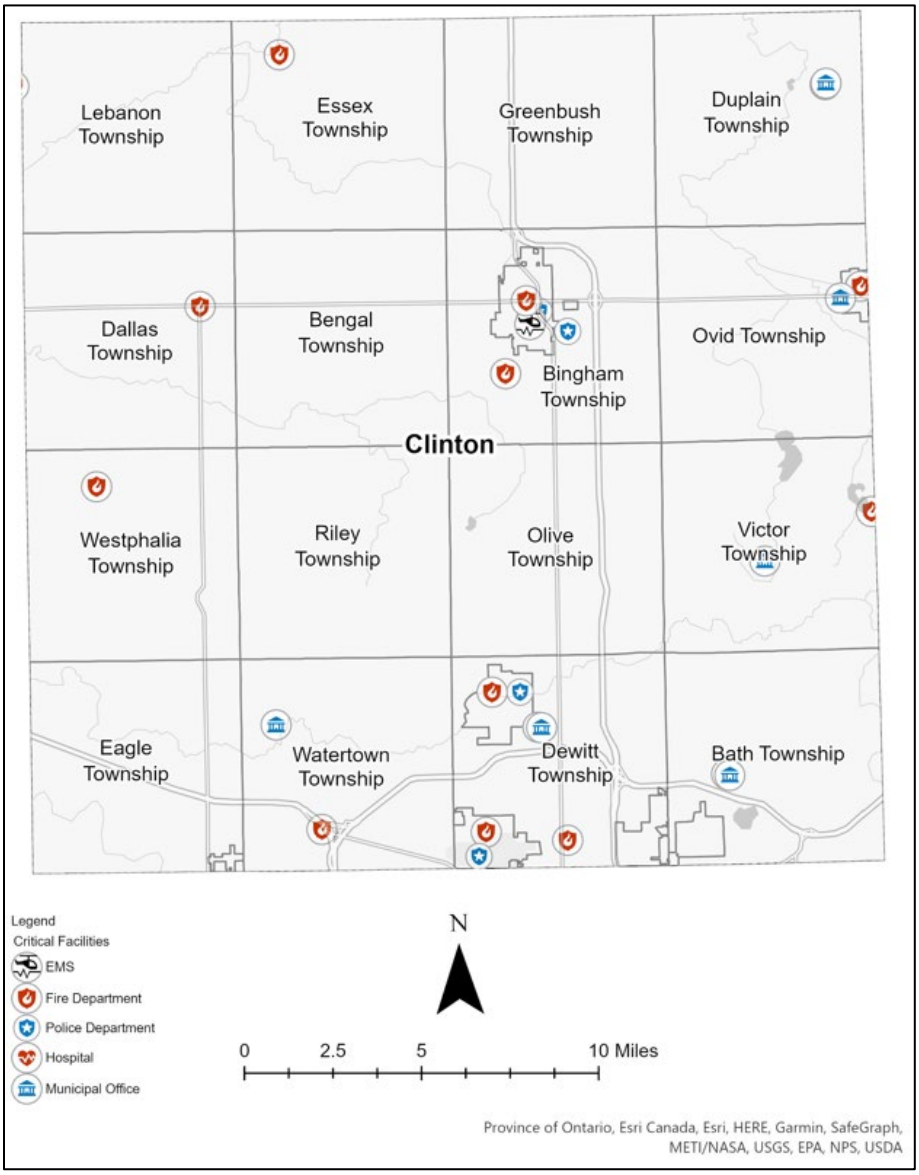


Figure 6. Eaton County Critical Facilities

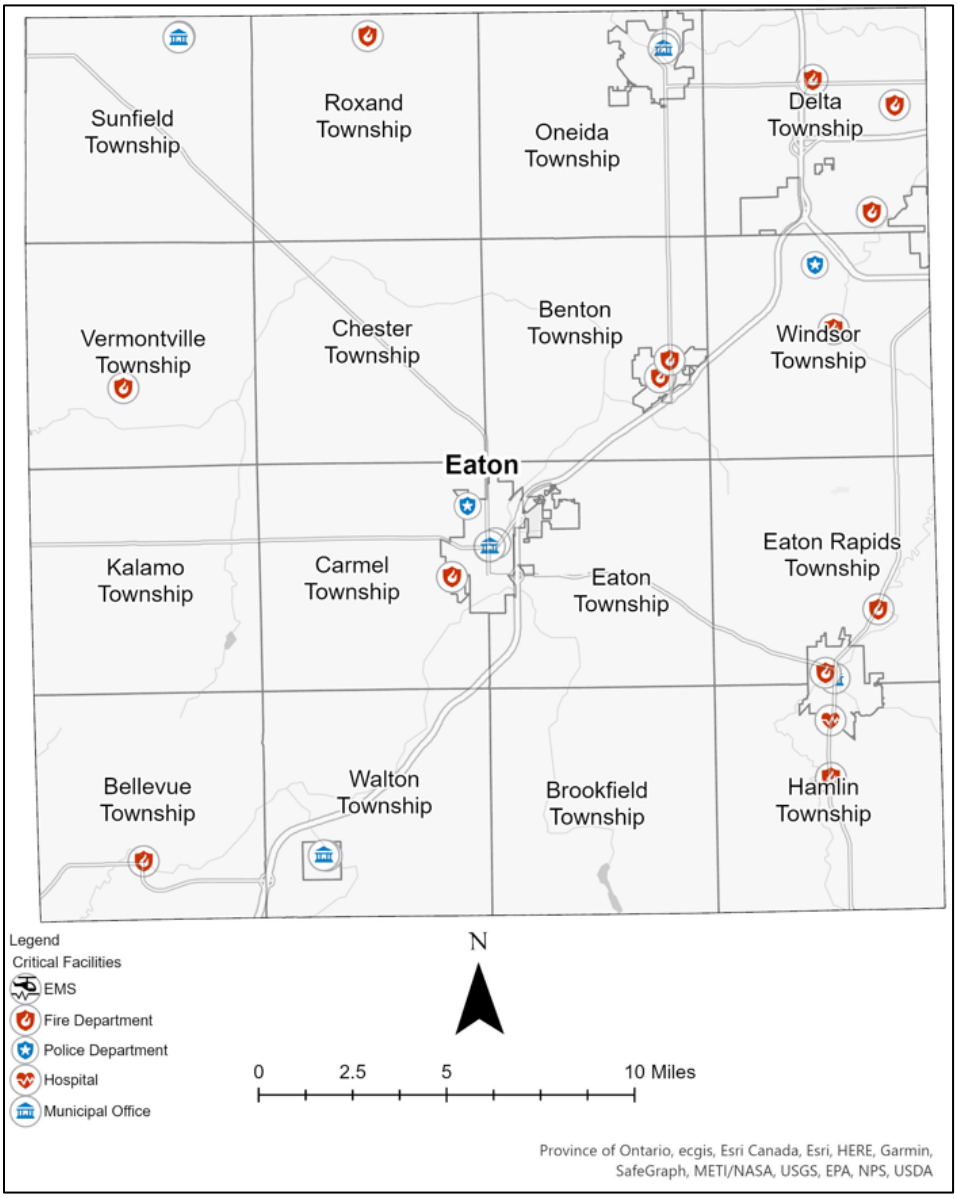
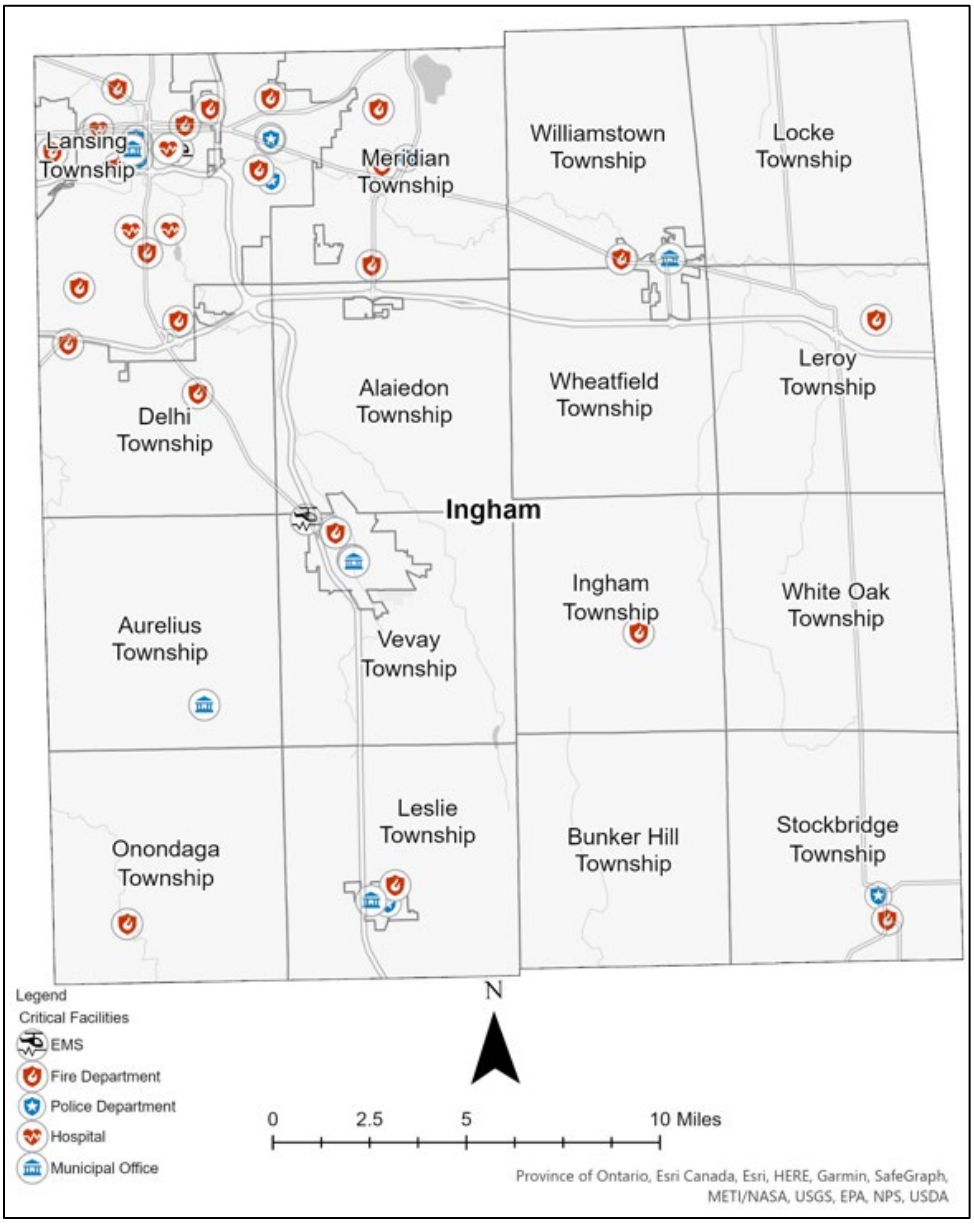


Figure 7. Ingham County Critical Facilities



Utilities

Consumers Energy Company, the Lansing Board of Water and Light, and Detroit Edison provide electrical power and natural gas to residents and businesses in this region. The City of Eaton Rapids also has an electric generating utility. Natural gas is the most common form of heating fuel type for households, and

the communities in the urbanized central area of our region are mostly served by traditional gas utility lines. Bottled, tank or LP gas provides a large portion of the heat fuel to homes and businesses in the region's more rural areas. Some older areas still rely on oil fuel. There has been a growing trend to use wood-burning furnaces located outside the home. Fuel cost increases over the past few years caused a spike in the number of fuel-efficient burners that use corn or wood pellets.

2.1.6 Cultural and Historic Resources

Historic resources and structures provide an irreplaceable link to the cultural history of the region. Historic properties may also be valuable economic assets that attract business and tourism. Historic structures may be more vulnerable to certain hazards since they have fewer safety measures installed. According to the National Register of Historic Places, there are 65 properties and 11 districts that have received designation as a National Historic Landmark.

Table 7. National Register of Historic Places

Category	Clinton County	Eaton County	Ingham County
Building/Structure	5	14	46
District	1	3	7
TOTAL	6	17	53

Source: National Register of Historic Places

2.1.7 Natural Environment

Environmental assets and natural resources are important to the identity and quality of life of the Tri-County region and support the economy through agriculture, tourism and recreation, and a variety of other ecosystem services, such as clean air and water. The natural environment also provides protective functions that reduce hazard impacts and increase resiliency. For instance, wetlands and riparian areas help absorb floodwaters; soils and landscaping contribute to stormwater management, and vegetation provides erosion control and reduces runoff. Conservation of environmental assets may present opportunities to meet mitigation and other community objectives, such as protecting sensitive habitats, developing parks and trails, or contributing to the economy.

Within Clinton County, significant water features include Lake Ovid, Park Lake, Round Lake, Looking Glass River, Maple River, and Muskrat Lake. Flood-prone areas include the Maple River area along the northern border of the county and the Lake Ovid area on the eastern edge of the county. The Looking Glass River, which runs along the southern tier of the county, is also an area of flood concern.

Eaton County is part of three separate watersheds. The Upper Grand River watershed covers approximately 34% (or 128,000 acres) of the county. The Thornapple River watershed is a sub-watershed of the Lower Grand River watershed and covers approximately 44% (or 163,000 acres) of the county. The Battle Creek watershed, a sub-watershed of the Kalamazoo River watershed, covers approximately 21% (or 79,000 acres) of the county.

In Ingham County, both the Grand River and Red Cedar River have the potential to significantly impact the residents and visitors. The Grand River flows to the north along the west side of the county. The Red Cedar River flows westward along the northern portion of the county. Both meet in Lansing and flow out toward the northwest corner. Ingham County is within the Grand River drainage basin.

2.1.8 Development Patterns

There is potential for additional development across the region. However, growth should only occur when municipal or county services have the capacity to absorb the growth and there is a fiscal ability and community agreement to the expanded infrastructure required for growth. Additionally, the area's vulnerability to natural hazards is not expected to change dramatically over the next five (5) years due to increased development as many portions of the county are built out. Enforcement and strengthening of current building codes will ensure that development will be stronger and more resilient than some of the older structures across the three (3) counties. Table 8: Housing Growth represents the change in housing units between the decennial censuses.

Table 8. Housing Growth

Category	Housing Units (2010)	Housing Units (2020)	% Change
Clinton County	30,695	32,821	6.9%
Eaton County	47,050	47,497	1.0%
Ingham County	121,281	125,251	3.3%

Source: U.S. Census

In addition to each county's planning capabilities, the Tri-County Regional Planning Commission is designated as the area's Metropolitan Planning Organization (MPO) responsible for coordinating federally funded transportation projects. The Commission is also certified by the U.S. Department of Commerce as the Economic Development Districts (EDD) to facilitate federally funded economic development programs and initiatives. The Commission is focused on developing a sustainable future for the region's economic, natural resources, infrastructure, and transportation system.

2.2 Capabilities Assessment

This capability assessment examines the existing studies, plans, programs, and policies that have incorporated hazard mitigation and other proactive measures into processes at the local and county levels. The purpose of the capability assessment is to highlight successes, identify shortcomings, and lay the groundwork for possible improvement. The adopting jurisdictions recognize that the inclusion of mitigation initiatives not only benefits the community by reducing human suffering, damages, and the costs of recovery but also helps build and maintain sustainability and economic health across the region.

In order to understand what capabilities are in place in each of the participating jurisdictions, a capabilities assessment was conducted with each jurisdiction. The assessment focused on those capabilities that can be used in tandem with the Plan update to build resilience within and across each participating jurisdiction. The capabilities assessment focused on the following key areas:

- Planning and Regulatory
- Administrative and Technical
- Financial
- Education and Outreach

2.2.1 Planning and Regulatory Capabilities

Planning and regulatory capabilities are based on the implementation of ordinances, policies, local laws, and plans and programs that relate to guiding and managing growth and development. Table 9 provides a summary of the relevant plans, ordinances, and programs already in place across the Tri-County region based on capability assessment responses.

Jurisdiction	Capital Improvements Plan	Comprehensive/Master Plan	Community Wildfire Protection Plan	Continuity of Operations Plan	Continuity of Government Plan	Economic Development Plan	Local Emergency Operations Plan	Stormwater Management Plan	Transportation Plan	Acquisition of Land for Open Space and Public Recreation	Flood Insurance Rate Maps	Floodplain Ordinance	Natural Hazard Specific Ordinance	Subdivision Ordinance	Zoning Ordinance
Clinton County	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Victor Township	✓	✓													
Eaton County	✓	✓		✓	✓		✓	✓	✓						✓
Ingham County	✓						✓		✓						
Delhi Township	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
East Lansing (city)	✓	✓				✓	✓	✓	✓		✓	✓	✓	✓	✓
Locke Township		✓									✓	✓			✓
Meridian Township	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	✓
Williamstown Township		✓									✓	✓		✓	✓

Table 9. Planning and Regulatory Capabilities Summary

Source: Capability Assessment Survey Responses

2.2.2 Administrative and Technical Capabilities

Administrative and technical capabilities refer to the jurisdiction's staff and their skills and tools that can be used for mitigation planning and to implement specific mitigation actions. It also refers to the ability to access and coordinate these resources effectively. Table 10 provides a summary of the types of personnel employed by the jurisdiction, the resources available to implement mitigation actions, and the level of knowledge and/or technical expertise.

Table 10. Administrative and Technical Capabilities Summary

Jurisdiction	Planning Commission	Mitigation Planning Committee	Maintenance Programs to Reduce Risk	Mutual Aid Agreements	Chief Building Official	Floodplain Administrator	Emergency Manager	Community Planner	Civil Engineer	GIS Coordinator	Building Code	Building Code Effectiveness Grading Schedule (BCEGS)	Fire Department ISO Rating	Site Plan Review Requirement	Warning Systems/Services	Hazard Data and Information	Grant Writing	HAZUS Analysis
Clinton County	✓		✓	✓	✓		✓	✓	✓		✓	✓	✓	✓	✓	✓	✓	✓
Victor Township	✓			✓									✓					
Eaton County	✓	✓		✓	✓		✓	✓	✓	✓	✓			✓	✓	✓	✓	
Ingham County	✓	✓	✓		✓		✓	✓			✓				✓	✓	✓	
Delhi Township	✓		✓	✓	✓	✓	✓	✓		✓	✓		✓	✓	✓	✓	✓	
East Lansing (city)	✓		✓	✓	✓	✓		✓	✓	✓	✓		✓	✓	✓	✓	✓	
Locke Township	✓				✓						✓		✓	✓				
Meridian Township	✓			✓	✓		✓	✓	✓	✓	✓		✓	✓	✓		✓	

Williamstown Township	✓				✓			✓			✓			✓	✓			

Source: Capability Assessment Survey Responses

2.2.3 Financial Capabilities

Financial capabilities are the resources that a jurisdiction has access to or is eligible to use to fund mitigation actions. Table 11 provides a summary of what funding sources a community may have access to. It is understood that some governments have access to recurring sources of revenue beyond property, sales, and incomes taxes, such a stormwater utility or development impact fees.

Table 11. Financial Capabilities Summary

Jurisdiction	Capital Improvements Project Funding	Authority to Levy Taxes for Specific Purposes	Fees for Water, Sewer, Gas, or Electric Services	Impact Fees for New Development	Storm Water Utility Fee	Incur Debt through Private Entities	Incur Debt through General Obligation Bonds	Incur Debt through Special Tax Bonds	Community Development Block Grant	Other Federal Funding Programs	State Funding Programs
Clinton County	✓	✓		✓			✓		✓	✓	✓
Victor Township	✓										
Eaton County	✓	✓				✓	✓	✓	✓	✓	✓
Ingham County	✓	✓							✓	✓	✓
Delhi Township	✓	✓	✓						✓	✓	
East Lansing (city)	✓	✓	✓		✓		✓	✓	✓		✓
Locke Township											
Meridian Township	✓	✓	✓				✓	✓	✓	✓	✓

Williamstown Township	✓										

Source: Capability Assessment Survey Responses

2.2.4 Education and Outreach Capabilities

This type of capability refers to education and outreach programs and methods already in place that could be used to aid a jurisdiction in implementing mitigation activities and communicating hazard-related information. Table 12 provides a summary of what types of activities or communications are available to improve a jurisdiction's awareness of hazards and risks.

Table 12. Education and Outreach Capabilities Summary

Jurisdiction	Local Citizen Groups or Non-Profit Organizations	Ongoing Public Education or Information Program	School Programs related to Natural Disasters or Safety	StormReady Certification	Firewise Communities Certification	Public/Private Partnership initiatives addressing disaster-related issues
0Clinton County		✓				
Victor Township						
Eaton County	✓	✓	✓			✓
Ingham County	✓	✓				
Delhi Township		✓	✓			
East Lansing (city)	✓	✓				
Locke Township						

Meridian Township	✓	✓	✓			
Williamstown Township						

Source: Capability Assessment Survey Responses

3. HAZARD IDENTIFICATION AND RISK ASSESSMENT

3.1. Introduction

"When you can remove risk, do it. When you can't, reduce it." ~ Unknown

> *44 CFR Requirement §201.6(c)(2): [The plan shall include] A risk assessment that provides the factual basis for activities proposed in the strategy to reduce losses from identified hazards. Local risk assessments must provide sufficient information to enable the jurisdiction to identify and prioritize appropriate mitigation actions to reduce losses from identified hazards.*

The Federal Emergency Management Agency (FEMA) defines risk as a combination of hazard, vulnerability, and exposure. "It is the impact that a hazard would have on people, services, facilities, and structures in a community and refers to the likelihood of a hazard event resulting in an adverse condition that causes injury or damage."

Assessing risk is the first step in the hazard mitigation planning process. It is impossible to identify and prioritize the appropriate mitigation actions to reduce losses from hazards without first knowing what those hazards are and how vulnerable a community is to them.

The risk assessment process helps identify and communicate a community's hazards and vulnerabilities. It guides the development of mitigation goals and implementation of actions and policies that reduce impacts of disasters on people and property. It provides decision-makers with a better understanding of their potential risk to natural hazards and offers a framework for developing strategies to prepare for and reduce risk from future hazard events.

The 2022 Hazard Identification and Risk Assessment (HIRA) for the Tri-County Hazard Mitigation Plan update builds on the methodology described in the 2013 FEMA Local Mitigation Planning Handbook. The Handbook recommends a four-step process for conducting a risk assessment:

1) Describe Hazards
2) Identify Community Assets
3) Analyze Risks
4) Summarize Vulnerability

Data collected through this process has been incorporated into the following sections of this chapter:

- Major Incidents Since Last Update
- Hazard Summary
- Hazard Profiles

3.2. Major Incidents Since Last Update

The previous version of the Tri-County Hazard Mitigation Plan was approved in 2015. Table 1 summarizes major incidents that have occurred in the region since the approval of the previous plan, according to the National Centers for Environmental Information (NCEI) and other hazard sources used during this assessment. Each hazard section contains a further extrapolation of the region's experiences with each hazard.

Table 1. Major Incidents in the Tri-County Region 2015–2021

Major Incidents 2015–2021					
Incident Type	Number of Incidents	Property Damage	Crop Damage	Injuries	Fatalities
Dam Failure	0	$0	$0	0	0
Drought	0	$0	$0	0	0
Extreme Temperatures	1	$0	$0	0	0
Flood	2	$125,000	$0	0	0
Severe Weather	9	$187,000	$0	0	0
Severe Wind	31	$39.474M	$0	0	0
Severe Winter Weather	15	$350,000	$0	0	0
Tornado	1	$200,000	$0	0	0
Wildfire	0	$0	$0	0	0
Total	59	$40.336M	$0	0	0

Source: NCEI

3.3. Federal Disaster Declarations

There are two (2) types of disaster declarations provided for in the Stafford Act – emergency declarations and major disaster declarations. Both declaration types authorize the president of the United States to provide supplemental federal disaster assistance; however, the event related to the disaster declaration and type and amount of assistance may differ.

An emergency declaration can be declared for any occasion or instance when the president determines federal assistance is needed. Emergency declarations supplement state and local efforts in providing emergency services, such as the protection of lives, property, public health and safety, or to lessen or avert the threat of a catastrophe in any part of the United States.

A major disaster declaration can be declared for any natural event, or regardless of cause, that the president believes has caused damage of such severity that it is beyond the combined capabilities of state and local governments to respond. A major disaster declaration provides a wide range of federal

assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work.

Between 1965 and 2021, the counties in the Tri-County region have received 10 separate disaster declarations and six (6) emergency declarations. The causes for these declarations included tornadoes, severe summer storms, severe winter storms and freezing, flooding, and power outages. Additionally, all three (3) counties received a declaration for the national activities to support evacuation from Hurricane Katrina in 2005 and the national response to COVID-19 in 2020.

Table 2. Federal Disaster Declarations in the Tri-County Region 1965–2021

Federal Disaster Declarations 1965–2021				
Declaration Number	Declaration Type	Year	Declaration Title	Designated Area
DR-190-MI	DR	1965	Tornadoes and Severe Storms	Clinton (County)
DR-190-MI	DR	1965	Tornadoes and Severe Storms	Eaton (County)
DR-330-MI	DR	1972	Severe Storms and Freezing	Clinton (County)
DR-330-MI	DR	1972	Severe Storms and Freezing	Eaton (County)
DR-330-MI	DR	1972	Severe Storms and Freezing	Ingham (County)
DR-465-MI	DR	1975	Severe Storms, High Winds, and Flooding	Eaton (County)
DR-465-MI	DR	1975	Severe Storms, High Winds, and Flooding	Ingham (County)
DR-486-MI	DR	1975	Severe Storms, High Winds, and Flooding	Ingham (County)
DR-495-MI	DR	1976	Severe Storms, Tornadoes, Icing, and Flooding	Clinton (County)
EM-3030-MI	EM	1977	Snowstorms	Eaton (County)
EM-3057-MI	EM	1978	Blizzards and Snowstorms	Clinton (County)
EM-3057-MI	EM	1978	Blizzards and Snowstorms	Eaton (County)
EM-3057-MI	EM	1978	Blizzards and Snowstorms	Ingham (County)
DR-774-MI	DR	1986	Severe Storms and Flooding	Clinton (County)
DR-1226-MI	DR	1998	Severe Storms	Clinton (County)
EM-3160-MI	EM	2001	Snow	Clinton (County)
EM-3160-MI	EM	2001	Snow	Eaton (County)
EM-3160-MI	EM	2001	Snow	Ingham (County)
EM-3189-MI	EM	2003	Power Outage	Eaton (County)
EM-3189-MI	EM	2003	Power Outage	Ingham (County)
DR-1527-MI	DR	2004	Severe Storms, Tornadoes, and Flooding	Eaton (County)
DR-1527-MI	DR	2004	Severe Storms, Tornadoes, and Flooding	Ingham (County)
EM-3225-MI	EM	2005	Hurricane Katrina Evacuation	Clinton (County)
EM-3225-MI	EM	2005	Hurricane Katrina Evacuation	Eaton (County)
EM-3225-MI	EM	2005	Hurricane Katrina Evacuation	Ingham (County)
DR-1777-MI	DR	2008	Severe Storms, Tornadoes, and Flooding	Eaton (County)
DR-1777-MI	DR	2008	Severe Storms, Tornadoes, and Flooding	Ingham (County)

Federal Disaster Declarations 1965–2021				
Declaration Number	Declaration Type	Year	Declaration Title	Designated Area
EM-3455-MI	EM	2020	COVID-19	Clinton (County)
DR-4494-MI	DR	2020	COVID-19 Pandemic	Clinton (County)
EM-3455-MI	EM	2020	COVID-19	Eaton (County)
DR-4494-MI	DR	2020	COVID-19 Pandemic	Eaton (County)
EM-3455-MI	EM	2020	COVID-19	Ingham (County)
DR-4494-MI	DR	2020	COVID-19 Pandemic	Ingham (County)

Source: FEMA

3.4. Hazard Summary

To identify the list of hazards for the 2022 HIRA update, the planning team began by reviewing the hazards that garnered some level of analysis in the development of the 2015 plan. These hazards were:

- Drought
- Extreme cold
- Extreme heat
- Flooding
- Fog
- Hail
- Ice/Sleet storms
- Lightning
- Severe winds
- Snowstorms
- Tornadoes
- Wildfire

Based on a review of these hazards, the team updated the list to reflect conditions in 2022. The following changes were made to the hazards list for this iteration of the plan update:

- Extreme heat and extreme cold were combined into the Extreme Temperatures chapter.
- Fog, hail, and lightning were combined into the Severe Weather chapter.
- Ice/sleet storms and snowstorms were combined into the Winter Weather chapter.
- Dam failure was added to the hazard list due to high-hazard dams in the area.

Upon further assessment, the planning team reviewed the level of wildfire risk across the region. While areas of risk exist (exemplified by the prevalence of Wildland-Urban Interface in specific areas), wildfire is not considered a major hazard, though mitigation of fire danger may still occur.

The 2022 HIRA assesses the following hazards:

- Dam failure
- Drought
- Extreme temperatures

- Flood
- Severe weather
- Severe wind
- Tornado
- Wildfire
- Winter weather

3.5. Assessment Methodology

Once the list of hazards for the 2022 plan update was set, the planning committee participated in an assessment of each hazard. Each hazard was assessed for the following criteria:

- Hazard Profile – provides general background information on each hazard
- Area of Impact – identifies locations within the planning area where hazards can occur
- Extent – identifies the maximum levels of impact a hazard could have
- Previous Occurrences – lists previous occurrences of hazards in the planning area
- Probability – extrapolates future probability of a hazard incident occurring

Following the hazard profiles, the planning committee assessed each hazard for specific vulnerabilities. These vulnerabilities included:

- Impacts to people
- Impacts to infrastructure
- Impacts to the economy
- Impacts to the environment

Hazards were ranked on three metrics to determine an overall significance – Probability of Occurrence, Severity of Impact, and Extent. Finally, the planning committee assessed the overall significance of each hazard, based on the findings of each assessment.

3.5.1. Probability of Occurrence Score

Table 3. Probability of Occurrence

Probability Indicator	Probability of Future Events	Numerical Hazard Score
Highly Likely	An event probable in the next year	4
Likely	An event probable in the next 2–3 years	3
Possible	An event possible in the next 4–5 years	2
Unlikely	An event is unlikely in the next 10 years	1

3.5.2. Severity of Impact Score

Table 4. Severity of Impact

Severity Indicator	Deaths/Injuries	Shutdown of Facilities	Percentage of Property Destroyed	Numerical Hazard Score
Catastrophic	High number of deaths and/or injuries	Complete shutdown for 30 days or more	More than 50% damaged or destroyed	4
Critical	Multiple deaths and/or injuries	Complete shutdown for a week to 30 days	25% to 50% of property damaged or destroyed	3
Limited	Minor injuries only	Complete shutdown of facilities for one day to one week	10% to 25% of property damaged or destroyed	2
Minor	Few, if any, injuries	Shutdown of facilities only temporary	Less than 10% of property damaged or destroyed	1

3.5.3. Extent Score

Table 5. Extent

Extent Indicator	Spatial Extent	Numerical Hazard Score
Large	Expected to affect more than 50% of people and/or property	4
Moderate	Expected to affect 25–50% of people and/or property	3
Limited	Expected to affect 10–25% of people and/or property	2
Minimal	Expected to affect less than 10% of people and/or property	1

3.5.4. Public Perception Score

Table 6. Public Perception

Extent Indicator	Public Survey Result	Numerical Hazard Score
High	Most survey respondents marked high level of concern	3
Moderate	Most survey respondents marked moderate level of concern	2
Low	Most survey respondents marked low level of concern	1

3.5.5. Hazard Rankings

Following the specific scoring for probability, severity and extent, hazards were given a total ranking based on each individual score.

1–6 Low

7–13 Medium

14–19 High

Table 7 notes the scoring for each hazard assessed in this plan.

Table 7. Tri-County Hazard Rankings

Tri-County Hazard Rankings - Clinton					
Hazard	Probability	Severity of Impact	Extent	Public	Total Ranking
Dam Failure	Unlikely	Critical	Limited	Low	Low
Drought	Possible	Minor	High	Low	Medium
Extreme Temperatures	Unlikely	Minor	High	Low	Low
Flood	Likely	Minor	Limited	Medium	Medium
Severe Weather	Highly Likely	Limited	High	Medium	High
Severe Wind	Highly Likely	Limited	Moderate	Medium	High
Tornado	Highly Likely	Limited	Limited	Medium	Medium
Wildfire	Unlikely	Limited	Minimal	Low	Low
Severe Winter Weather	Highly Likely	Limited	Moderate	Medium	High

Tri-County Hazard Rankings - Eaton					
Hazard	Probability	Severity of Impact	Extent	Public	Total Ranking
Dam Failure	Unlikely	Critical	Limited	Low	Low
Drought	Possible	Minor	High	Low	Medium
Extreme Temperatures	Unlikely	Minor	High	Low	Low
Flood	Likely	Minor	Limited	Medium	Medium
Severe Weather	Highly Likely	Limited	High	Medium	High
Severe Wind	Highly Likely	Limited	Moderate	Medium	High
Tornado	Highly Likely	Limited	Limited	Medium	Medium
Wildfire	Unlikely	Limited	Minimal	Low	Low
Severe Winter Weather	Highly Likely	Limited	Moderate	Medium	High

Tri-County Hazard Rankings - Ingham					
Hazard	Probability	Severity of Impact	Extent	Public	Total Ranking
Dam Failure	Unlikely	Critical	Limited	Low	Low
Drought	Possible	Minor	High	Low	Medium
Extreme Temperatures	Unlikely	Minor	High	Low	Low
Flood	Possible	Minor	Limited	Medium	Medium
Severe Weather	Highly Likely	Limited	High	Medium	High
Severe Wind	Highly Likely	Limited	Moderate	Medium	High
Tornado	Highly Likely	Limited	Limited	Medium	Medium
Wildfire	Unlikely	Limited	Minimal	Low	Low
Severe Winter Weather	Highly Likely	Limited	Moderate	Medium	High

3.6. Geographic Information Systems (GIS) Analysis Methodology

Leveraging Geographic Information Systems (GIS) in hazard mitigation planning allows readers and decision makers to visualize hazard risks within the study area. Risk mapping and analysis through GIS can benefit decision-making throughout the emergency management lifecycle.

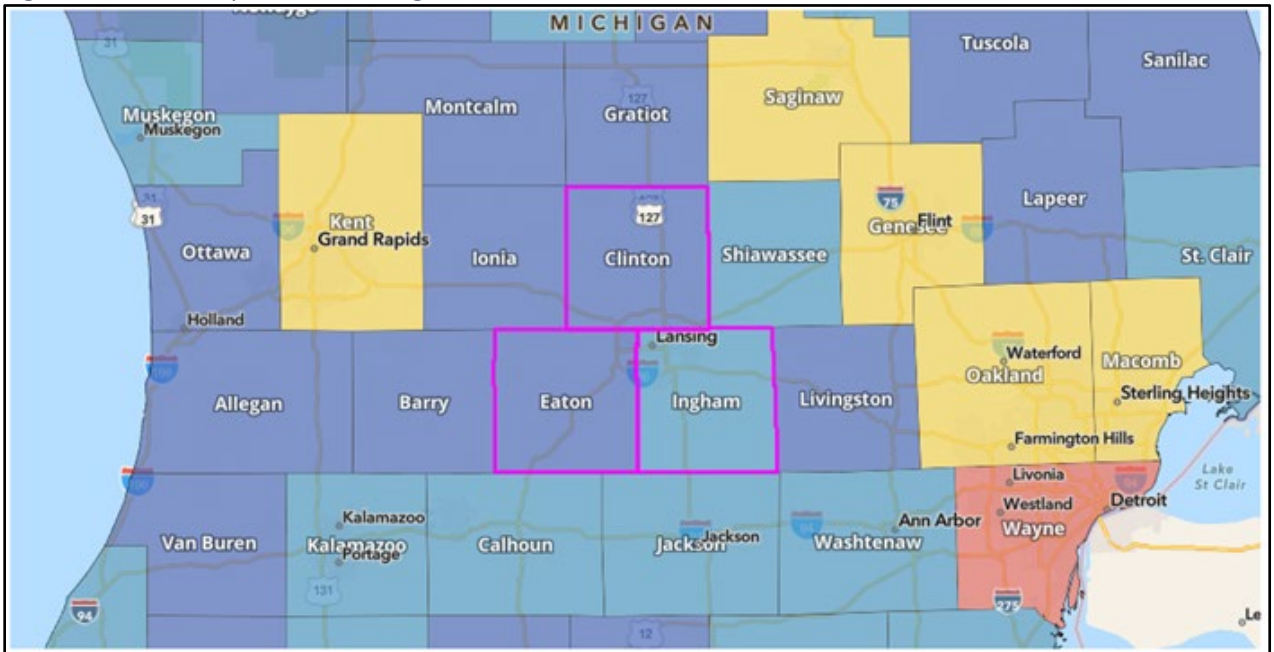
Advances in the geospatial field have resulted in numerous open-source datasets being made available to general users. Due to the limited availability of locally supplied data, there was a heavy reliance on federal and state resources. A variety of data sources were integrated into sections of this plan including, but not limited to, the National Flood Hazard Layer, Wildland-Urban Interface Changes from University of Wisconsin-Madison, and critical infrastructure from Homeland Infrastructure Foundation-Level Data (HIFLD) Platform. The project team assembled multiple datasets and conducted analyses that have been integrated into the hazard profiles throughout this plan.

3.7. Risk Overview of the Tri-County Region

During the preliminary analysis phase of the 2022 update, the recently restructured National Risk Index (NRI) was assessed. The NRI is a dataset and application that can help identify natural hazards most likely to impact a community. FEMA collaborated with partners in academia, government, and private industry to produce the most current NRI. The NRI intends to provide a community with a composite Risk Index score and hazard type Risk Index scores based on three (3) components: expected annual loss, social vulnerability, and community resilience. These calculations were determined using average past conditions but cannot predict future outcomes for communities in Clinton, Eaton, and Ingham counties. This data is intended for planning purposes only and provides decision-makers with information that is relative to their region for developing risk mitigation or reduction strategies.

The system was used to provide a composite Risk Index score that measures their relative risk based on 18 natural hazards included in the index. The Risk Index scores for communities in Clinton and Eaton counties are classified as Very Low while those in Ingham County received a Relatively Low rating compared to the rest of the United States as shown in Figure 1.

Figure 1: Tri-County NRI Risk Ratings

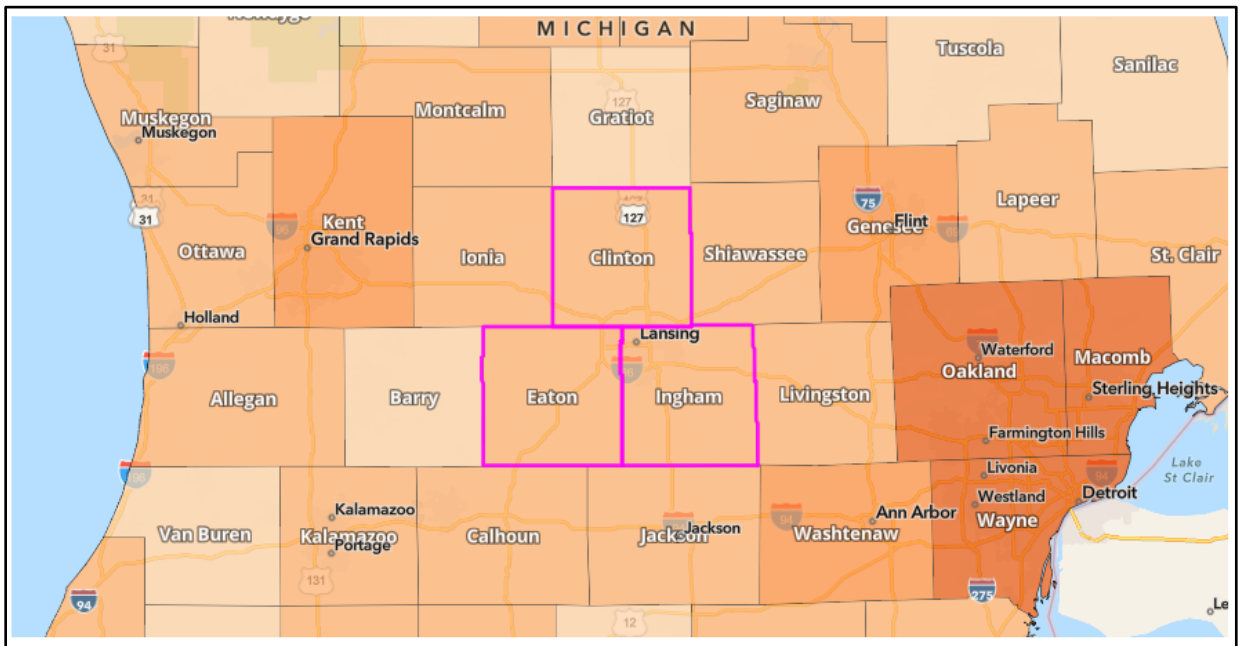


Rank	Community	State	Rating	Score		
1	**Ingham County**	MI	Relatively Low	12.17	0	100
2	**Eaton County**	MI	Very Low	7.51	0	100
3	**Clinton County**	MI	Very Low	7.45	0	100

Source: National Risk Index

Based on the likelihood of natural hazards affecting the region, the expected annual losses for communities in Clinton, Eaton, and Ingham counties are Relatively Low compared to the rest of the country. The assessment calculates a county's building value, population, population equivalence, and agricultural value to return an expected annual loss value as shown in Figure 2.

Figure 2: Tri-County Expected Annual Loss Index



Expected Annual Loss Legend

Very High | Relatively High | Relatively Moderate | Relatively Low | Very Low

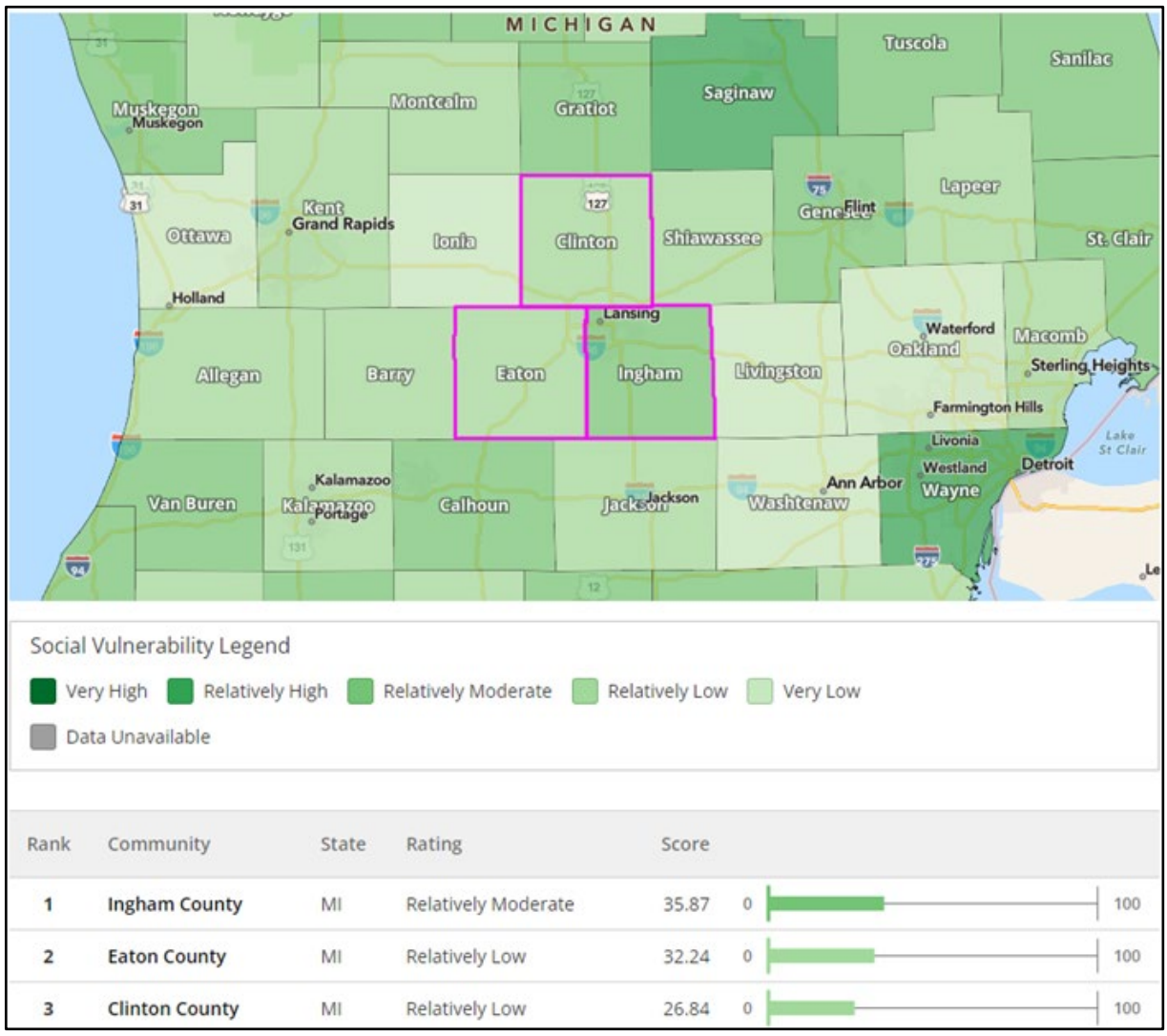
No Expected Annual Losses | Not Applicable | Insufficient Data

Rank	Community	State	Rating	Score		
1	**Ingham County**	MI	Relatively Low	16.57	0	100
2	**Clinton County**	MI	Relatively Low	13.74	0	100
3	**Eaton County**	MI	Relatively Low	11.58	0	100

Source: National Risk Index

Additionally, communities are also provided with a Social Vulnerability score that measures how susceptible social groups are to adverse impacts of natural hazards including disproportionate death, injury, loss, or disruption of livelihood. The Social Vulnerability scores for Clinton and Eaton counties are Relatively Low while Ingham County is Relatively Moderate compared to the rest of the United States as shown in Figure 3.

Figure 3: Tri-County Social Vulnerability Index

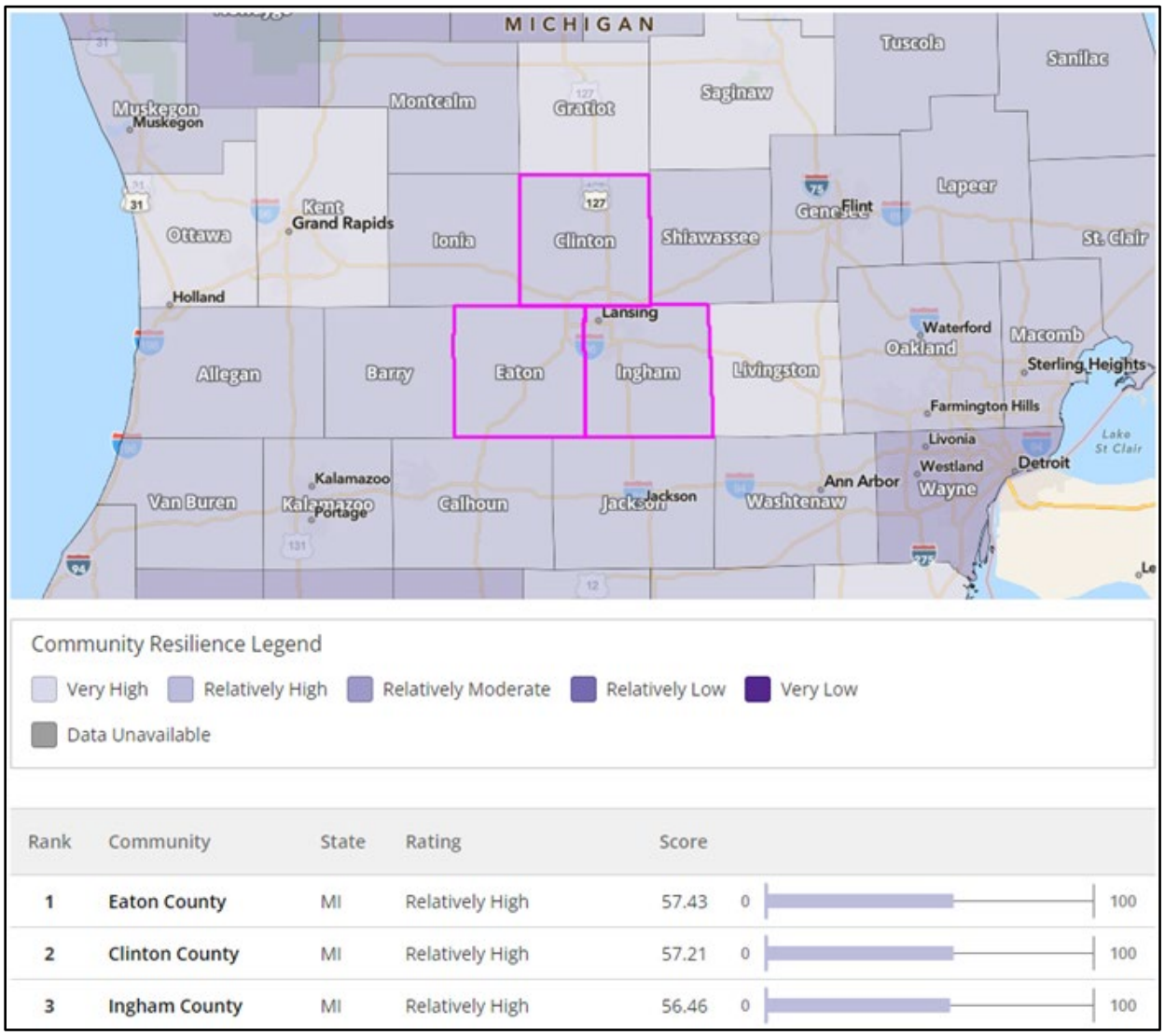


Rank	Community	State	Rating	Score		
1	**Ingham County**	MI	Relatively Moderate	35.87	0	100
2	**Eaton County**	MI	Relatively Low	32.24	0	100
3	**Clinton County**	MI	Relatively Low	26.84	0	100

Source: National Risk Index

A community's resilience is a measure of the sustained ability of a community to use available resources to prepare for, respond to, withstand, and recover from natural hazards. Compared to the rest of the United States, communities in Clinton, Eaton, and Ingham counties have a Relatively High level of resiliency as shown in Figure 4.

Figure 4: Tri-County Community Resilience Index



Rank	Community	State	Rating	Score		
1	**Eaton County**	MI	Relatively High	57.43	0	100
2	**Clinton County**	MI	Relatively High	57.21	0	100
3	**Ingham County**	MI	Relatively High	56.46	0	100

Source: National Risk Index

In summary, the NRI classifies the Tri-County region as Low Risk, which is driven by lower loss due to natural hazards, lower social vulnerability, and higher community resilience as displayed in Table 8.

Table 8. NRI Summary

County	Risk Index	Expected Annual Loss	Social Vulnerability	Community Resilience
Clinton	Very Low	Relatively Low	Relatively Low	Relatively High
Eaton	Very Low	Relatively Low	Relatively Low	Relatively High
Ingham	Relatively Low	Relatively Low	Relatively Moderate	Relatively High

The most prominent hazards to the region according to the NRI are cold wave, strong winds, and tornado. Each of these hazards have been incorporated into this update and classified as Extreme Temperature, Severe Wind, and Tornado, respectively.

It is understood that a combination of factors contributes to a category's classification, and if even a community experiences a large-scale event prior to the next update to this plan, its risk may remain low overall if there is a resilient population and relatively low overall frequency of hazards. It is recommended that this data source be reviewed during a future update cycle.

3.8. Dam Failure

3.8.1. Hazard Profile

Dams are structures built across a river or stream to hold back water in artificial lakes called reservoirs. Reservoirs can be used to store water for farming, industry, or household use; they can also be used for recreational activities such as fishing or boating. People have used dams for many centuries to help prevent flooding.

In the United States, a common practice among federal and state dam safety officials is to classify dams according to the potential impact a dam failure or breach would have on upstream or downstream areas or locations remote from the dam. Three classification levels are used: Low, Significant, and High.

Table 9. Dam Hazard Potential Classification System

Dam Hazard Potential Classification System			
Hazard Potential Classification	Summary	Potential Loss of Life	Economic, Environmental, Lifeline Losses
Low	Dams assigned the low hazard potential classification are those where failure or mis-operation results in no probable loss of human life and low economic and/or environmental losses. Losses are principally limited to the owner's property.	None expected	Low; generally limited to owner
Significant	Dams assigned the Significant Hazard potential classification are those dams where failure or mis-operation results in no probable loss of human life but can cause economic loss, environmental damage, disruption of lifeline facilities, or can impact other concerns. Significant Hazard potential classification dams are often located in predominantly rural or agricultural areas but could be located in areas with population and significant infrastructure.	None expected	Yes

High	Dams assigned the High Hazard potential classification are those where failure or mis-operation will probably cause loss of human life.	Probable; one or more expected	Yes (but not necessary for this classification)

Source: FEMA Federal Guidelines for Dam Safety, 2004

Any owner of a dam with a hazard potential classification of High is required to develop an emergency action plan (EAP). An EAP is a formal document that identifies potential emergency conditions at a dam and specifies pre-planned actions to be followed to minimize potential property damage and loss of life. Every EAP must be tailored to site-specific conditions but generally contains six basic elements:

- Notification flowchart
- Emergency detection, evaluation, and classification
- Roles and responsibilities
- Preparedness activities
- Inundation maps
- Appendices

3.8.2. Area of Impact

According to data in the National Inventory of Dams (NID), there are 21 dams located within the Tri-County region. Of these, four are rated High, three are rated Significant, and 14 are rated Low. All dams rated High and Significant have approved EAPs. Table 10 provides a summary of dams and their classifications across the Tri-County region.

Table 10. Dams and Classifications in the Tri-County Region

County	Total Dams	High	Significant	Low
Clinton	5	0	2	3
Eaton	11	3	0	8
Ingham	5	1	1	3
Total	**21**	**4**	**3**	**14**

Source: National Inventory of Dams

The NID includes a record of all dams in a respective county as well as their names, locations, classification, ownership, and other pertinent identifying and historical information. Table 11, Table 12, and Table 13 show selected NID information for the dams in Clinton, Eaton and Ingham counties. Figure 5, Figure 6, and Figure 7 show where these maps are located in the county.

Table 11. Dams In Clinton County

Dam Name	City	Distance to Nearest City (Miles)	River or Stream Name	Primary Purpose	Primary Dam Type	Hazard Potential Classification	EAP Prepared	EAP Last Revision Date
Lake Geneva Dam	Wacousta	6	Tributary-Looking Glass River	Recreation	Earth	Significant	Yes	12/15/16
Sleepy Hollow Dam	Shepardsville	5	Little Maple River	Flood Risk Reduction	Earth	Significant	Yes	12/31/08
Elsie Dam	Bannister	6	Maple River	Recreation	Concrete	Low	N/A	N/A
Lake Victoria Dam	Ovid	6	Alder Creek	Recreation	Earth	Low	N/A	N/A
Thunder Hole Dam	Matherton	6	Tributary to Maple River	Recreation	Earth	Low	N/A	N/A

Source: National Inventory of Dams

Figure 5. Clinton County Dams

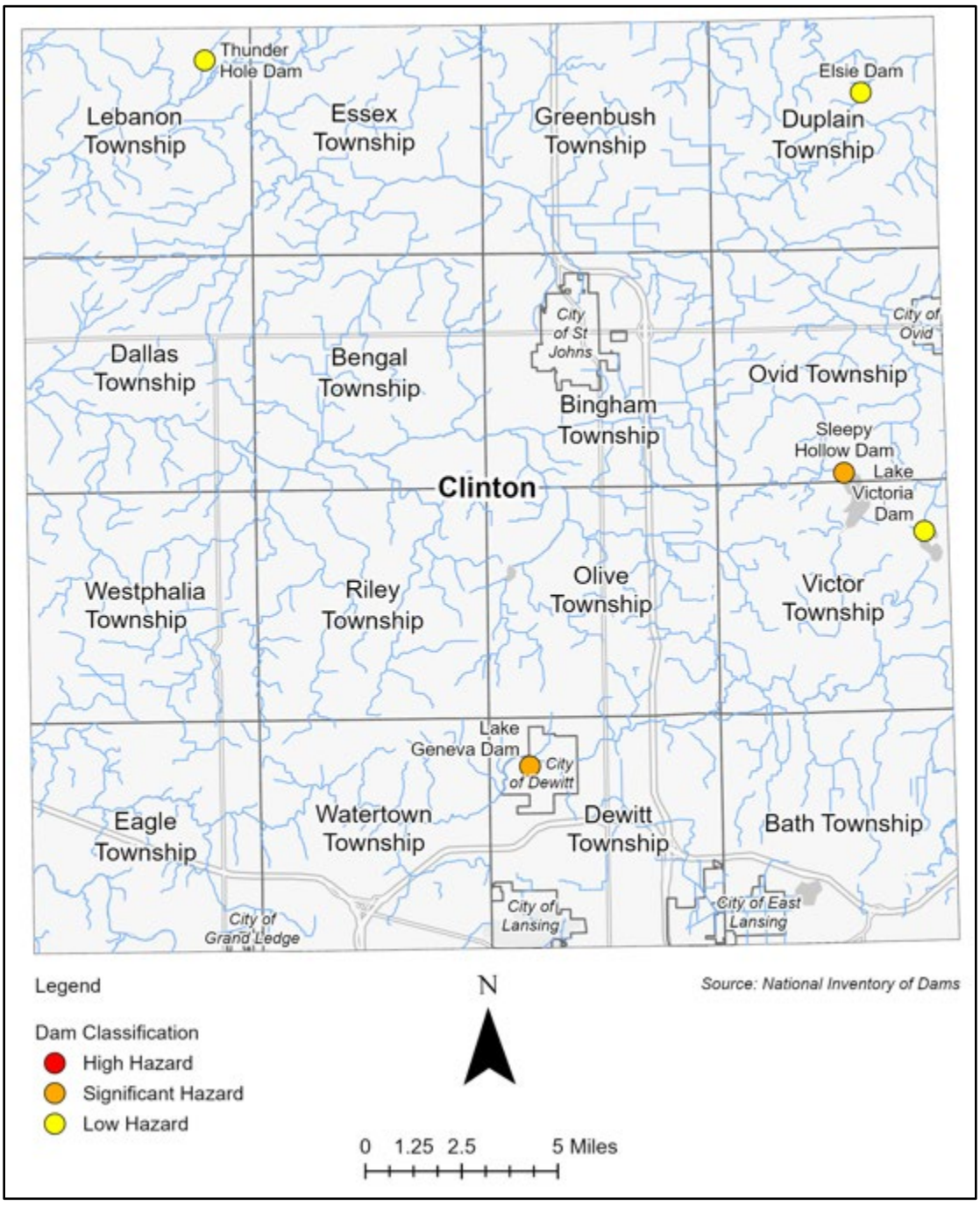


Table 12. Dams In Eaton County

Dam Name	City/ Township	Distance to Nearest City (Miles)	River or Stream Name	Primary Dam Type	Hazard Potential Classification	EAP Prepared	EAP Last Revision Date
Myers-Henderson Detention Pond	Grand Ledge	2	Miller Creek	Earth	High	No	
Carrier Creek Structure A	Delta Township		Carrier Creek	Earth	High	Yes	3/4/11
Carrier Creek Structure B	Delta Township		Carrier Creek	Earth	High	Yes	3/4/11
Mix	Eaton Rapids	0	Grand River	Gravity	Low	Not Required	12/30/19
Bellevue Mill Dam	Bellevue	0	Battle Creek	Earth	Low	Not Required	12/31/15
Smithville	Eaton Rapids	2	Grand River	Gravity	Low	Not Required	12/30/19
Cheney Lake Dam	Bellevue		Tributary-Battle Creek River	Earth	Low	Not Required	N/A
Carrier Creek Structure F			Carrier Creek	Earth	Low	Not Required	N/A
Grand Ledge Dam	Portland	23	Grand River	Gravity	Low	Not Required	N/A
Dills Dam	Vermont	17	Tributary to Thornapple River	Earth	Low	Not Required	N/A
Giesler Dam	Bellevue		Tributary to Battle Creek	Earth	Low	Not Required	N/A

Source: National Inventory of Dams

Figure 6. Eaton County Dams

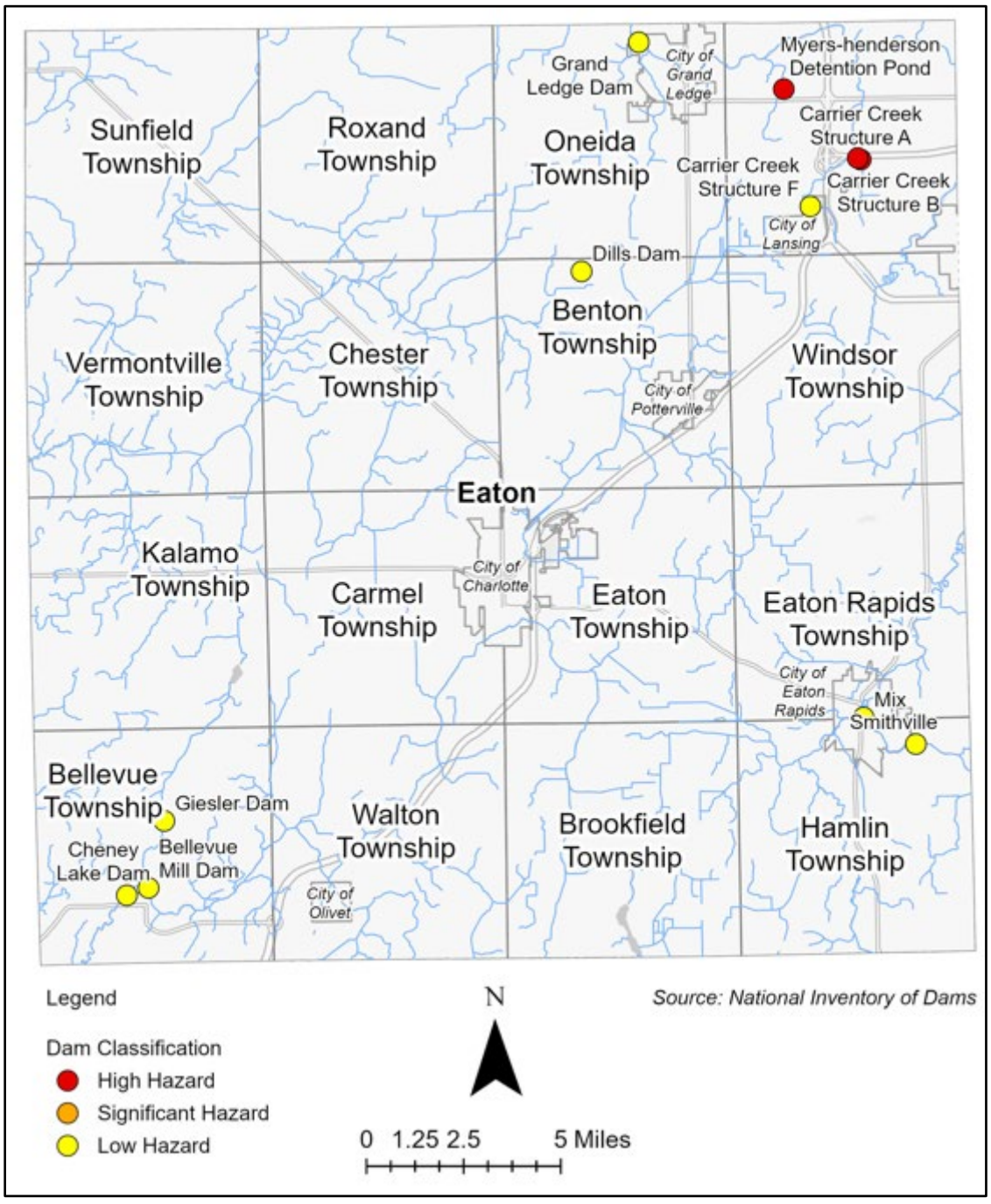
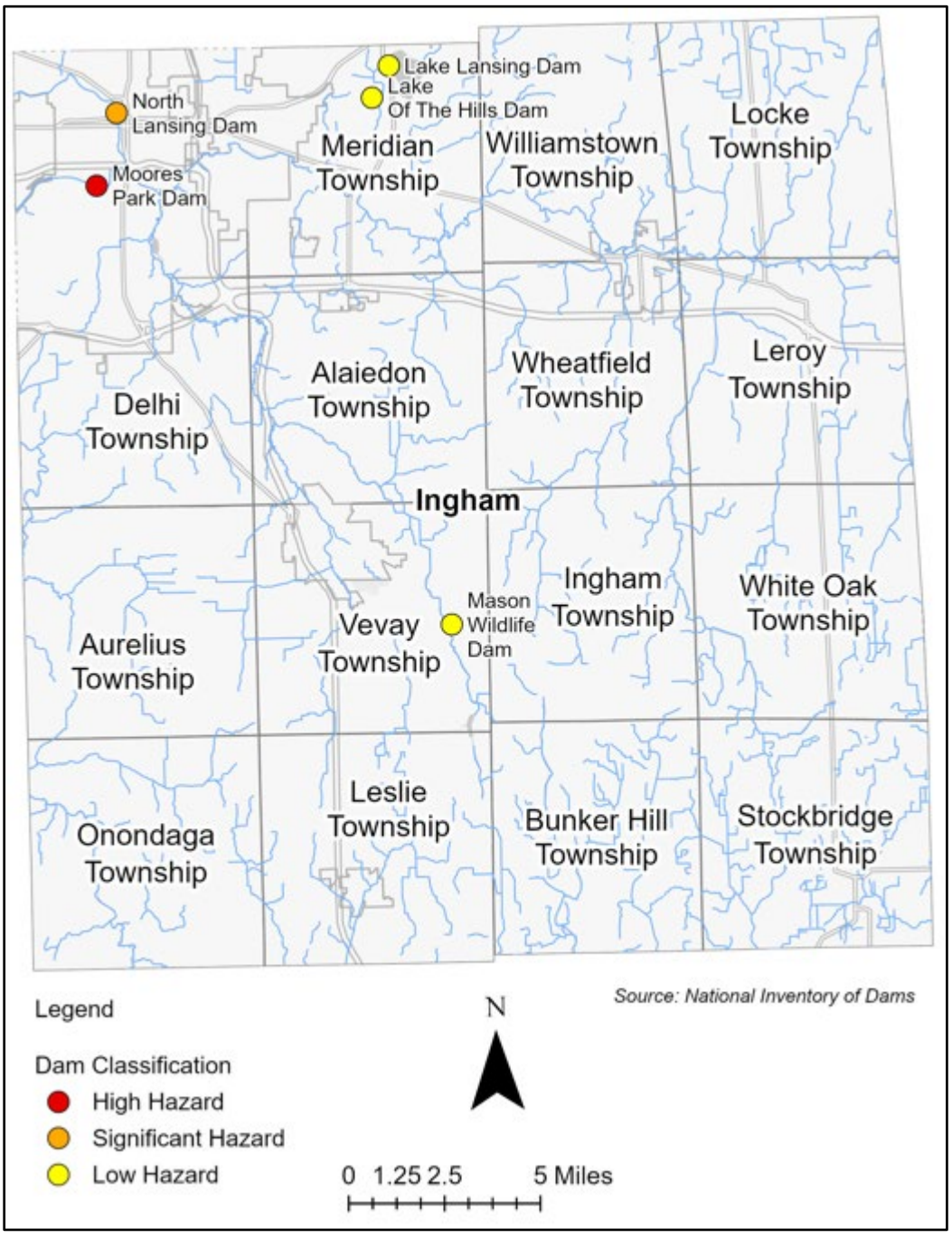


Table 13. Dams In Ingham County

Dam Name	City	Distance to Nearest City (Miles)	River or Stream Name	Primary Dam Type	Hazard Potential Classification	EAP Prepared	EAP Last Revision
Moores Park Dam	Lansing	0	Grand River	Gravity	High	Yes	12/9/19
North Lansing Dam	Lansing	0	Grand River	Gravity	Significant	Yes	12/19/2019
Mason Wildlife Dam	Lansing	18	Mud Creek	Earth	Low	Not Required	
Lake of The Hills Dam	Haslett	1	Lake Lansing Outlet	Earth	Low	Not Required	
Lake Lansing Dam	Haslett	0	Pine Lake Outlet	Gravity	Low	Not Required	
North Lansing Dam	Lansing	0	Grand River	Gravity	Significant	Yes	12/19/2019

Source: National Inventory of Dams

Figure 7. Ingham County Dams



3.8.3. Extent

Depending on the location and population density around a dammed area, a dam failure may cause loss of life in addition to economic impact from damage caused by a dam failure. The magnitude of flooding would be dependent on a dam's classification, type of failure, and location. The area downstream of a

failed dam that would be filled with water is called the inundation area. High Hazard and Significant-Hazard dams are required to complete Dam EAPs; these EAPs include the specific inundation areas and analyses for each dam.

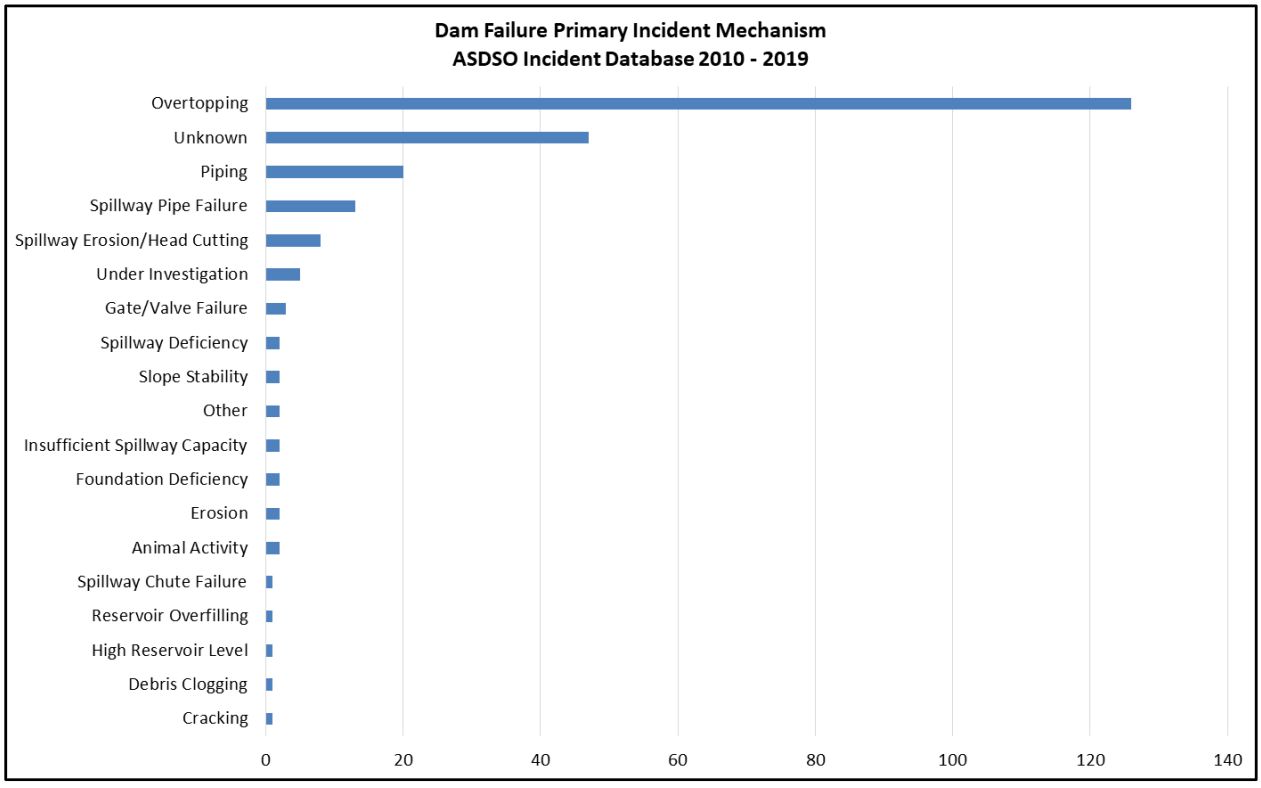
3.8.4. Previous Occurrence

According to www.damsafety.org, hundreds of dam failures have occurred throughout U.S. history. The failures have caused immense property and environmental damages as well as injuries and fatalities. As dams across the nation age and populations grow, the potential for deadly dam failures grows along with it. Dam failures are most likely to happen for at least one of the following reasons:

- Overtopping caused by water spilling over the top of a dam
- Foundation defects, including settlement and slope instability
- Cracking caused by movements like the natural settling of a dam
- Inadequate maintenance and upkeep
- Piping, or when seepage through a dam is not properly filtered and soil particles continue to progress and form sinkholes in a dam

According to records kept by the Association of State Dam Safety Officials (SDSO), between 2010 and 2019, overtopping was by far the largest cause of dam failure.

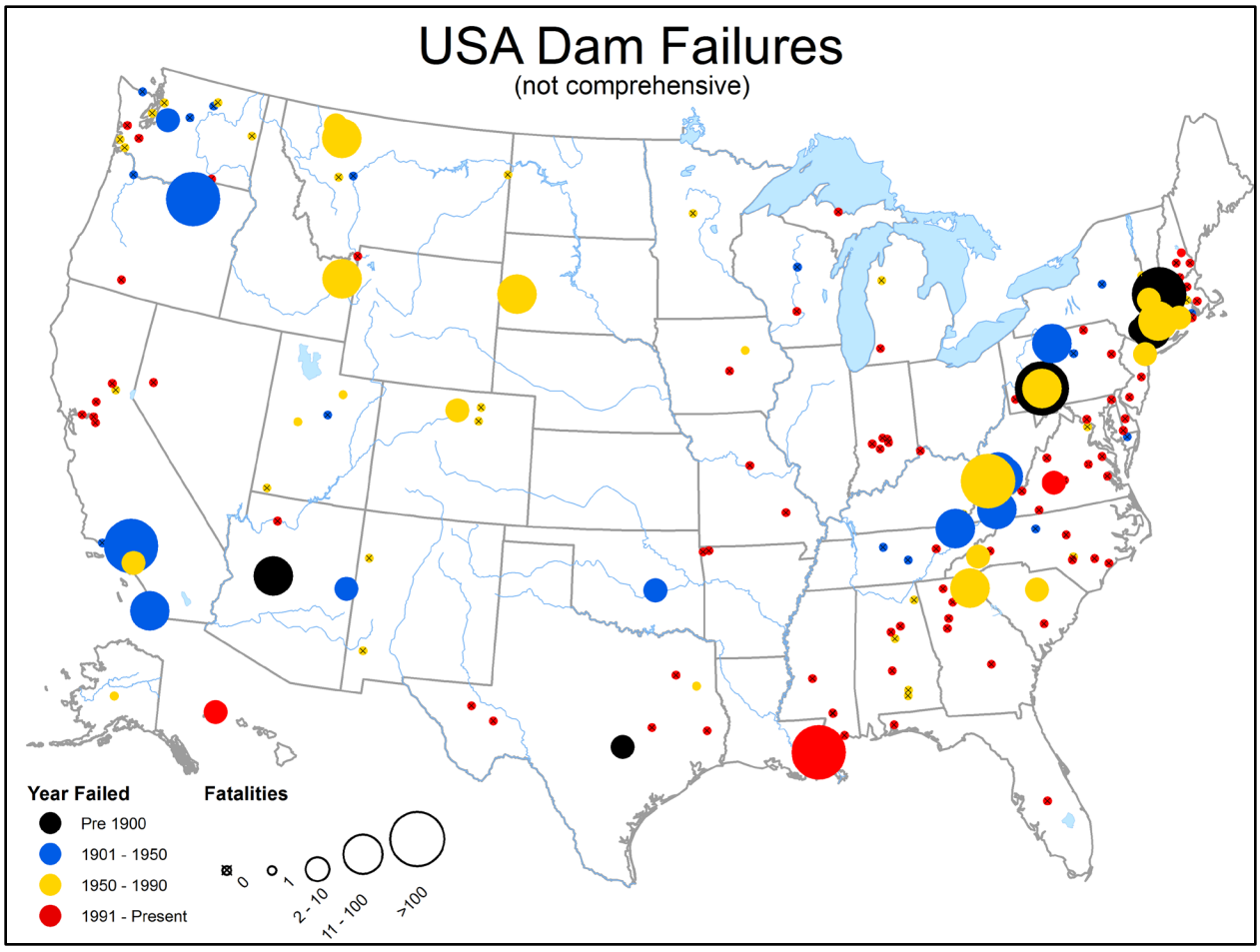
Figure 8. Dam Failure Primary Incident Causes in the United States, 2010–2019



Source: www.damsafety.org

While not comprehensive, the website damsafety.org provides a historical perspective on dam failures throughout the United States. Figure 9 shows a map of the United States with historical dam failures noted. While none of these dam failures have occurred in the Tri-County region, the State of Michigan is represented with three separate incidents.

Figure 9. Dam Failures in the United States



Source: www.damsafety.org

According to the 2015 Tri-County Hazard Mitigation Plan, the Michigan Department of Environment, Great Lakes, and Energy (EGLE) has tracked approximately 278 dam failures in the state.

The most recent dam failure recorded in Michigan was the failure of the Edenville Dam at the Confluence of the Tittabawassee River and the Tobacco River, impacting Gladwin and Midland counties. The dam was part of a four-dam system and was used for hydroelectric power and flood control. In May 2020, an extended rain event produced as much as eight inches of rain in 24 hours, causing the dam to breach and the Sanford Dam downstream to overflow. While no injuries or fatalities were reported, over 10,000 residents in Midland County were evacuated due to major flooding. Severe damages were recorded in the village of Sanford and the city of Midland, estimated at approximately $250 million.

3.8.5. Probability

Clinton, Eaton, and Ingham counties do not have any records of major dam failures across the region. While major dam failures do occur nationally and in the State of Michigan, the probability of a specific dam failing in any given year is very low.

3.8.6. Vulnerability Assessment

3.8.6.1. Impacts to People

Downstream impacts to people from a failure of a dam are similar to flooding. These impacts could include injuries and fatalities due to rising water. Depending on the depth of water in the inundation area, evacuations may be required.

Vulnerable populations across the Tri-County region include residents living in known high-risk areas downstream from dams. Certain populations may be especially vulnerable, including:

- The elderly and very young
- Persons with access and functional needs
- Residents of long-term care facilities
- Those living in mobile homes
- People and patients in hospitals
- Low-income housing areas

These populations may be more vulnerable to flooding due to limitations in mobility and accessibility, income, challenges in receiving and understanding warnings, or unfamiliarity with surroundings.

3.8.6.2. Impacts to Infrastructure

The rising waters from the failure of a dam would cause varying impacts, depending on the size of the dam, the dam's hazard rating, and the defined inundation area. Structures, transportation and other critical infrastructure, utilities, and other built-up areas could see damage from rising waters. The level of damage would depend on the location of the dam that failed and the amount of infrastructure in the inundation area, as well as the length of time required to rebuild.

3.8.6.3. Impacts to the Economy

Long term economic impacts occur when rising waters disrupt the supply chain; impacts to transportation routes, utilities, croplands, and other keystone economic sectors can cause prolonged disruptions and economic effects. Organizations without any continuity planning can be especially vulnerable to prolonged disruption.

3.8.6.4. Impacts to the Environment

Floodwaters from a dam breach can have a negative impact on wildlife, causing drowning, disease proliferation, and habitat disruption. Unpredictable floods can also cause harm to aquatic life, displacing fish and destroying aquatic habitat.

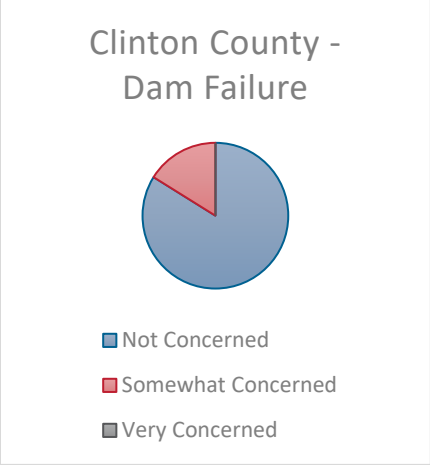
Waters from a dam failure can also alter the landscape, mainly through erosion. As water picks up and carries sediment downstream, that sediment can become suspended in the water and reduce water

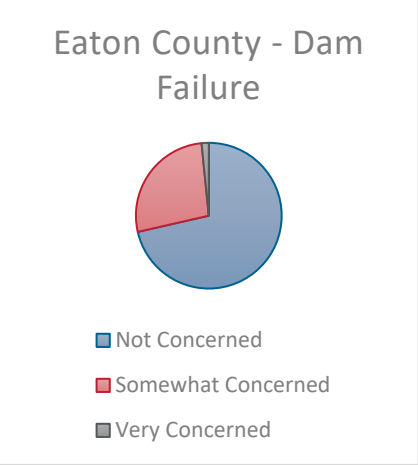
quality. Suspended sediment eventually settles out of the water in a process called sedimentation, which can clog riverbeds and streams, smother aquatic organisms and destroy habitats. Erosion and sedimentation have a more negative impact on ecosystems that are already degraded or heavily modified.

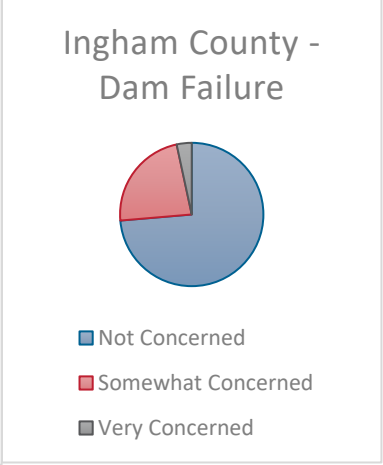
Additionally, waters can be contaminated with pollutants such as agricultural pesticides, industrial chemicals, debris, and sewage. Finally, flooding can increase the chance of spreading waterborne diseases. Receding waters can create stagnant pools of water, which provide a perfect breeding ground for mosquitoes.

3.8.7. Public Input

Participants in the public survey were asked to assess and identify their level of concern of a dam failure occurring in their community. Across the Tri-County region, the vast majority of respondents noted that they were not concerned about this hazard.







3.8.8. Hazard Significance Summary

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Unlikely	Critical	Limited	Low	Low
Eaton	Unlikely	Critical	Limited	Low	Low
Ingham	Unlikely	Critical	Limited	Low	Low

3.9. Drought

3.9.1. Hazard Profile

A drought is a period of unusually persistent dry weather that persists long enough to cause deficiencies in the water supply, (surface or underground). The National Oceanic and Atmospheric Administration (NOAA) defines drought as "a deficiency of precipitation over an extended period of time (usually a season or more), resulting in a water shortage."

Droughts come on slowly but can build to create severe effects on agriculture, transportation, public health, ecosystems, and water quality. In addition, high temperatures, wind, and low humidity can increase drought and subsequently the risk and intensity of other hazards, such as wildfires. Drought can be categorized as meteorological, hydrological, agricultural, socioeconomic, or ecological and detailed in Table 14.

Table 14. Types of Drought

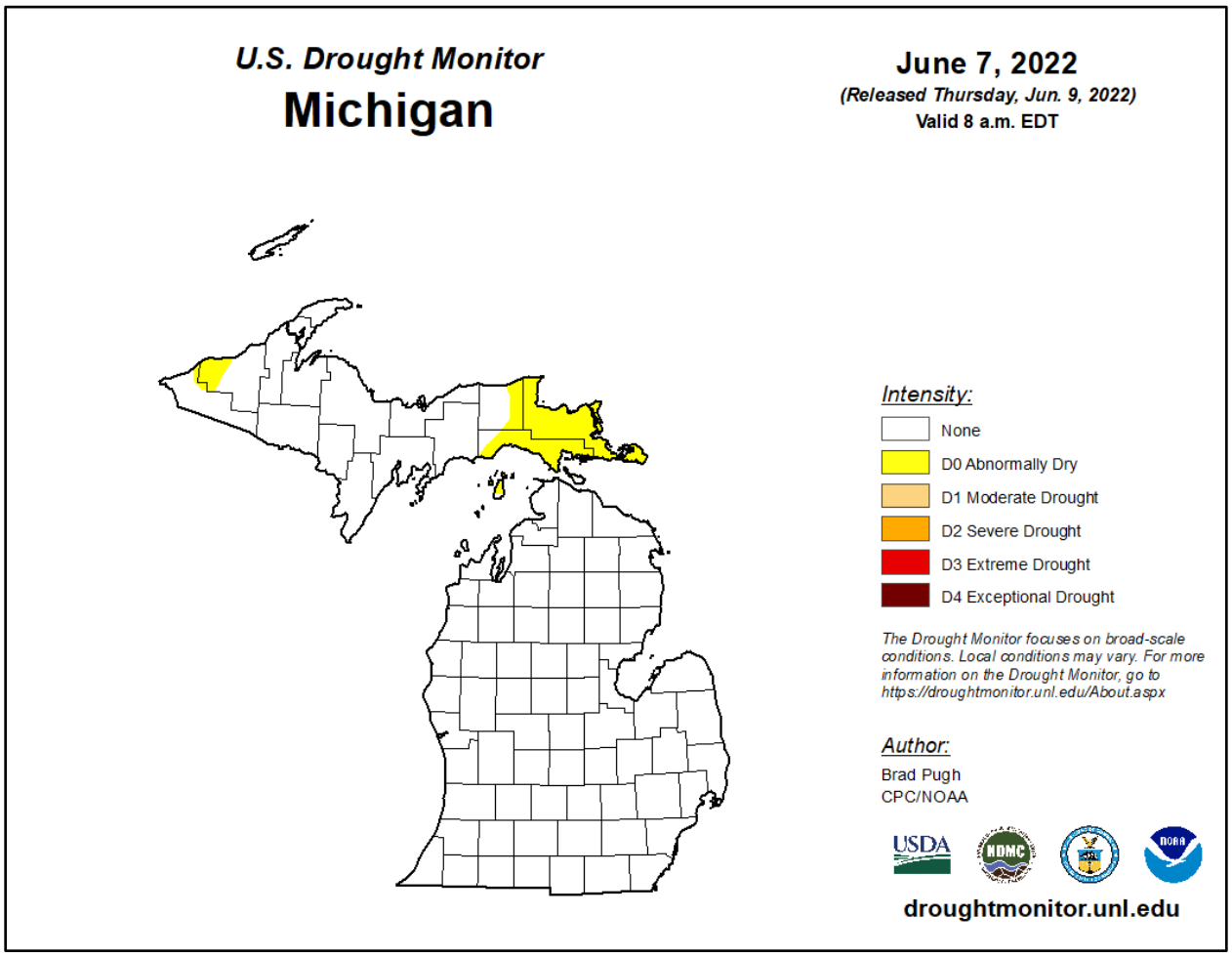
Category	Description
Meteorological Drought	Dry weather patterns dominate an area.
Hydrological Drought	Low water supply becomes evident in the water system.
Agricultural Drought	Crops become affected by drought.
Socioeconomic Drought	Supply and demand of various commodities is affected by drought.
Ecological Drought	Natural ecosystems are affected by drought.

Source: www.drought.gov

3.9.2. Area of Impact

Any land mass can be vulnerable to drought, including the State of Michigan and the Tri-County region. Drought impacts tend to be regional and not necessarily confined to a specific locality; however, the extent of drought may vary throughout the region. Figure 10 shows current drought conditions as of June 7, 2022. The Tri-County region is not experiencing any impacts from drought as of the date of this map.

Figure 10. Drought Conditions – US Drought Monitor



Source: U.S. Drought Monitor

3.9.3. Extent

Droughts are categorized from D1 to D4. In addition, the category D0 indicates an area is going into or coming out of a drought. The Tri-County area is susceptible to droughts ranging from D0–D4. The region has a history of D3 and D4 droughts; however, they are not as common as D0–D2 conditions. Table 15 shows the different categories of drought.

Table 15. Drought Classification

Category	Description	Possible Impacts
D0	Abnormally Dry	Going Into Drought: • Short-term dryness slowing planting, growth of crops or pastures Coming Out of Drought: • Some lingering water deficits • Pastures or crops not fully recovered
D1	Moderate Drought	• Some damage to crops, pastures • Streams, reservoirs, or wells low, some water shortages developing or imminent • Voluntary water-use restrictions requested
D2	Severe Drought	• Crop or pasture losses likely • Water shortages common • Water restrictions imposed
D3	Extreme Drought	• Major crop/pasture losses • Widespread water shortages or restrictions
D4	Exceptional Drought	• Exceptional and widespread crop/pasture losses • Shortages of water in reservoirs, streams, and wells creating water emergencies

Source: U.S. Drought Monitor

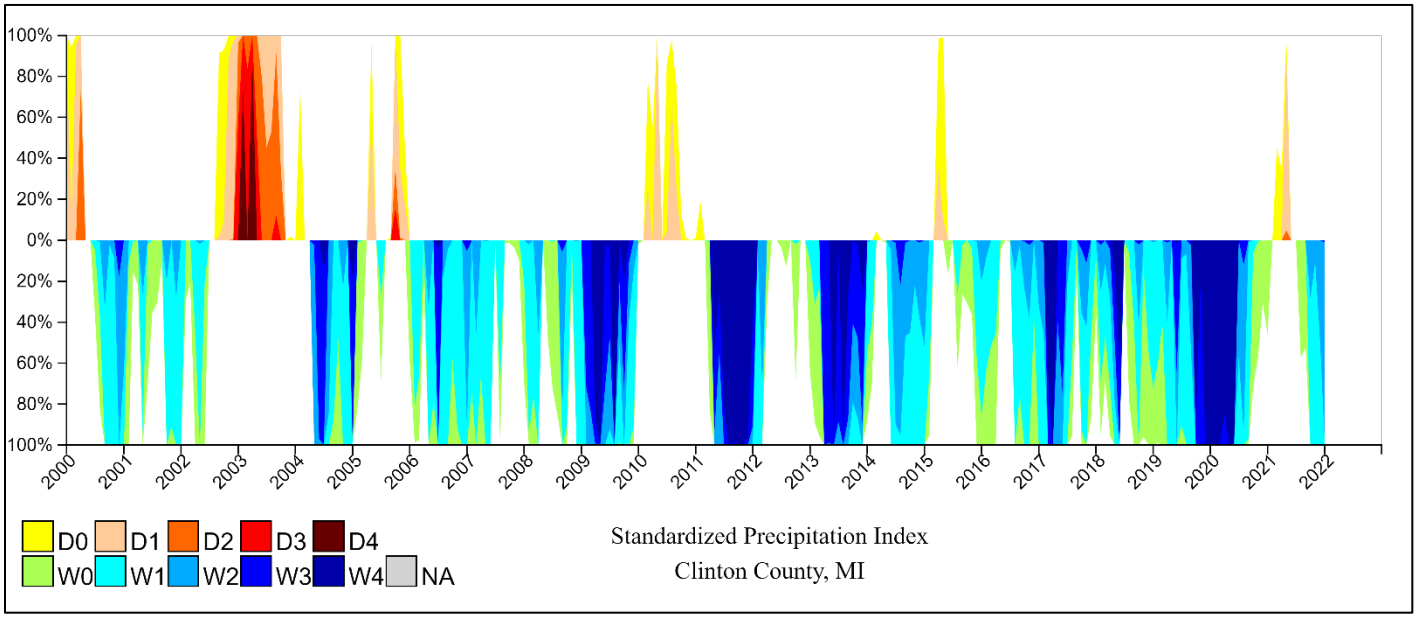
3.9.4. Previous Occurrence

The State of Michigan and the Tri-County region have experienced drought periods throughout recorded history. Perhaps the most significant drought was in the 1930s. The drought, caused by lack of rain and land misuse, spanned a period from 1929–1937, the worst of these conditions occurring between 1929 and 1931. Farmland was greatly impacted, turning into dirt and sand, forcing farmers to relocate.

In more recent years, the region experienced extreme drought (D3) and exceptional dry (D4) conditions in 2003 and 2005, with severe drought (D2) conditions in 2003, 2012, and 2021, as represented in

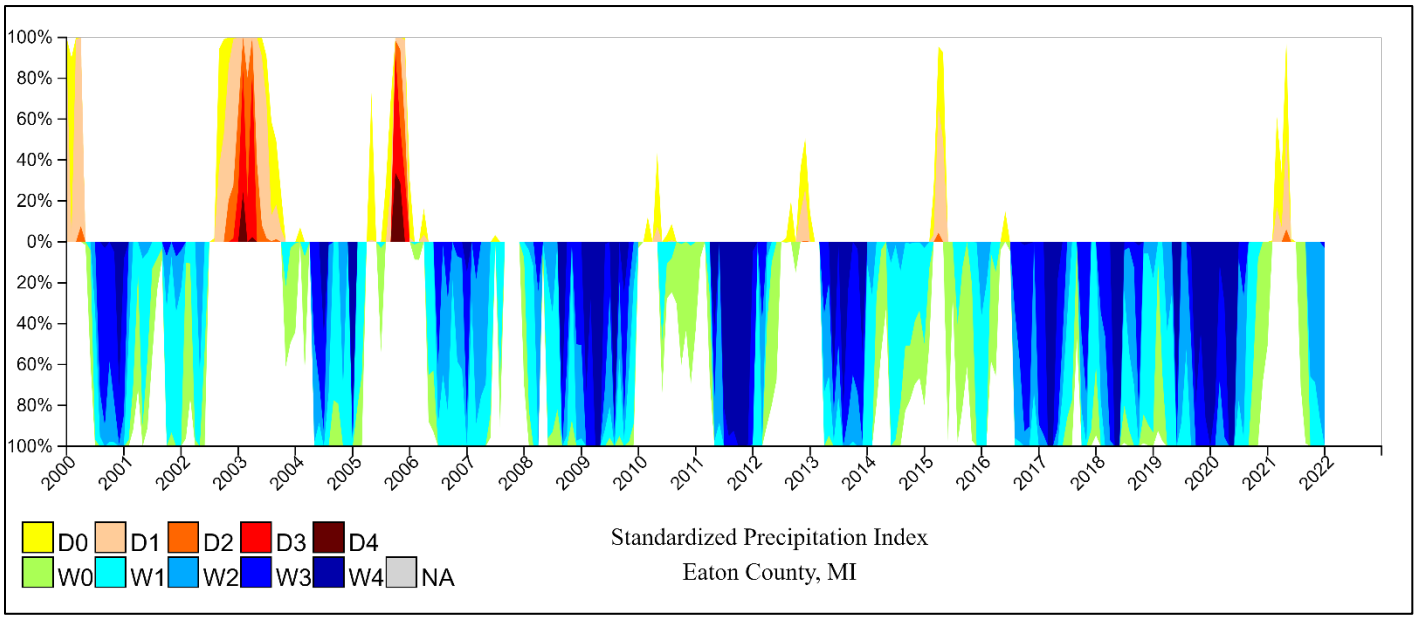
Figure 11, Figure 12, and Figure 13. As the figures show, the Tri-County region spent less time in drought than it did in times of precipitation.

Figure 11. Historical Drought – Clinton County 2000–2022



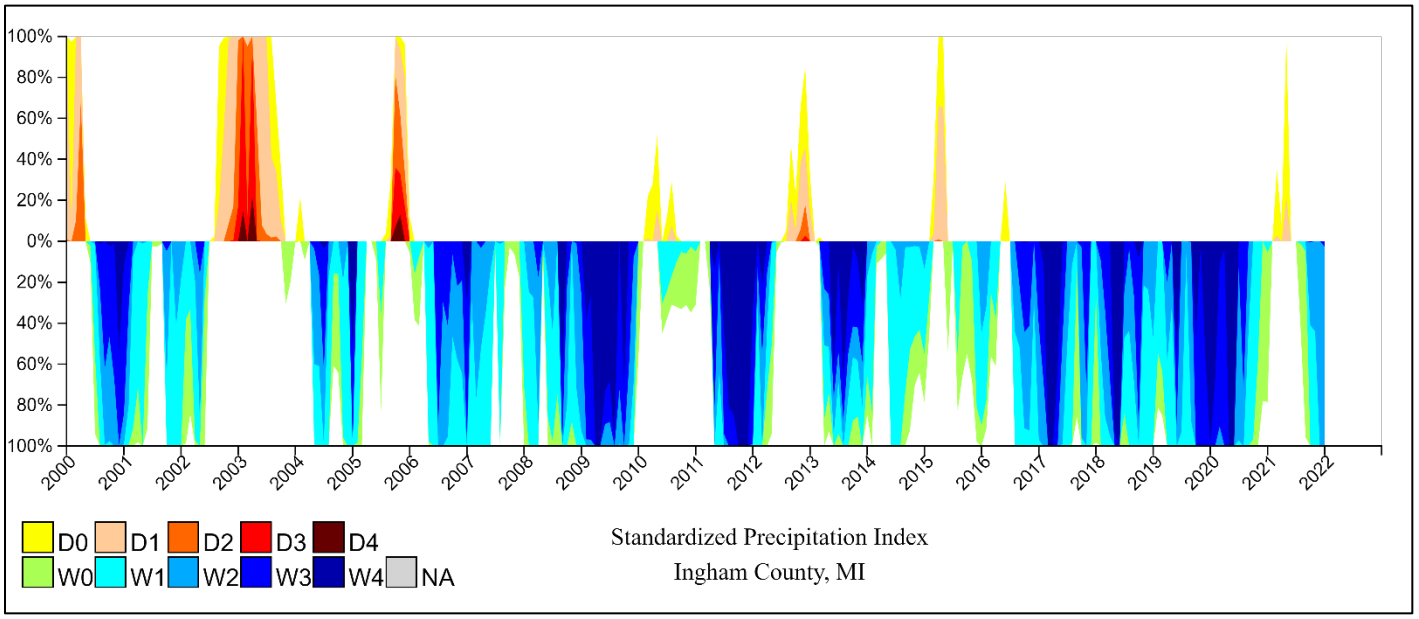
Source: drought.gov

Figure 12. Historical Drought Eaton County 2020–2022



Source: drought.gov

Figure 13. Historical Drought Ingham County 2020–2022



Source: drought.gov

3.9.5. Probability

The probability of a drought incident was calculated based on existing historical data since 2000. Frequency was determined by dividing the number of events observed by the number of years and multiplying by 100. The formula for calculating the probability of future drought occurrences is incidents/time = probability.

Drought data used for this study is available for the dates between 2000 and 2022. During this time, the U.S. Drought Monitor reported seven periods of D2–D4 drought in the Tri-County region. Based on the formula noted above, there is a 31.8% probability of drought in any given year.

3.9.6. Vulnerability Assessment

Impacts from drought tend to be slow moving, building over time as drought continues or increases. Impacts are often felt first by farmers and ranchers, dependent on moisture for crops and agriculture. For other individuals, drought may not be apparent immediately; however, drought will impact all residents of the Tri-County region if it remains persistent.

The Drought Impact Reporter aggregates drought impacts down to the county level from a variety of sources. Table 16 shows the impacts across the Tri-County region. Summarized, these impacts included damage to crops including corn, apples, and dry beans as well as issues with irrigation and the implementation of burn bans due to dry conditions.

Table 16. Drought Impacts 01-01-2012 through 02-21-2022

Impact Type	Clinton County	Eaton County	Ingham County
Agriculture	12	16	20
Fire	4	3	4
Plants and Wildlife	10	9	15
Relief, Response, and Restrictions	4	3	4
Society and Public Health		1	1
Tourism and Recreation			1
Water Supply and Quality	1	1	2

Source: Drought Impact Reporter

3.9.6.1. Impacts to People

The most immediate impact of drought on people is water restrictions. Restrictions may be voluntary during a moderate drought but can become widespread mandatory restrictions as drought conditions worsen. In severe cases, a water emergency may occur if the community cannot be supported by the available water supply. In addition, burn bans are typically imposed during a drought. While this may not have an impact to life safety, it can impact recreation due to the inability to have campfires.

Other impacts to people tend to be indirect or secondary impacts, including damage to homes, businesses, and/or infrastructure from increased wildfires, and increased food costs due to crop damage and loss.

3.9.6.2. Impacts to Infrastructure

Drought conditions can impact water supply. Drought impacts to infrastructure primarily impact transportation. Drought can cause damage and buckling to roadways, railways, and airport runways. Sinkholes due to reduced moisture in the ground can damage or destroy infrastructure built above the impacted area.

3.9.6.3. Impacts to the Economy

Our economy is based on the sale of goods and services. A reduction in either places strain on the economy. Drought impacts this primarily due to the loss of crops it causes. Severe and extreme drought can destroy most or all crops in an impacted area, reducing the availability of local produce and grains. Supplemental goods can be transported from other regions or countries, increasing the cost and availability of commodities.

The Tri-County region includes large farming communities reliant on the production and sale of crops as income. Crops that are damaged or destroyed due to drought cause significant financial strain on farmers, precipitating a direct impact on the community due to lack of disposable income, loan defaults, and an increased need for government and social programs.

3.9.6.4. Impacts to the Environment

Perhaps the greatest impact from drought is to the environment. Environmental impacts are far reaching with secondary effects on people, infrastructure, and the economy. From a high-level perspective, environmental impacts include:

- Reduced water levels in waterways, lakes, and reservoirs
- Poor water quality
- Land erosion and poor soil quality
- Loss of wildlife habitat and drinking supply
- Wildlife migration and/or death
- Loss of wetlands
- Loss of plant life
- Increased wildfires

3.9.7. Public Input

Drought was omitted from the public survey, so participants in the planning process were asked to assess and identify their level of concern of a drought occurring in their community. Across the Tri-County region, the vast majority of respondents noted that they were not very concerned about this hazard.

3.9.8. Hazard Significance Summary

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Possible	Minor	High	Low	Medium
Eaton	Possible	Minor	High	Low	Medium
Ingham	Possible	Minor	High	Low	Medium

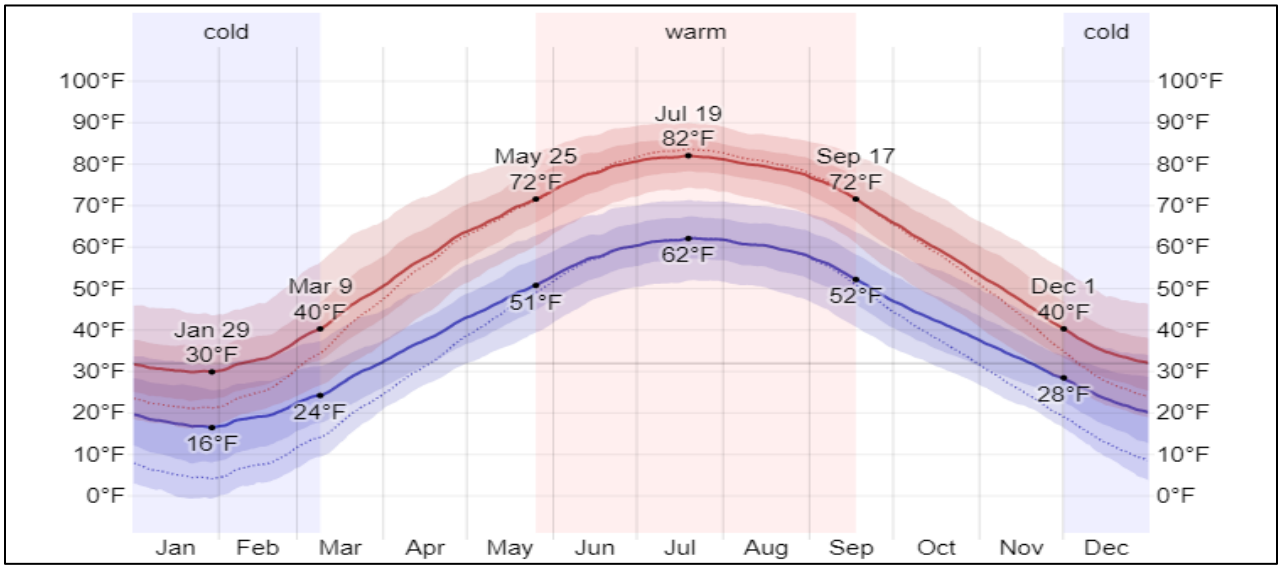
3.10. Extreme Temperatures

3.10.1. Hazard Profile

Extreme temperatures in Michigan can include both extreme heat and cold. Extreme temperatures are typically identified by unusually high or low temperatures over a period of time, typically two days or longer. Extreme temperatures have the greatest effects on the very young, elderly, and other vulnerable populations.

The NWS classifies an extreme heat or cold event based on numerous factors, including the departure from normal temperatures. In Lansing, MI, the average high/low temperatures in January are 30°F and 16°F, respectively; in July they are 82°F and 62°F, shown in Figure 14.

Figure 14. Average Annual Temperatures – Lansing, MI



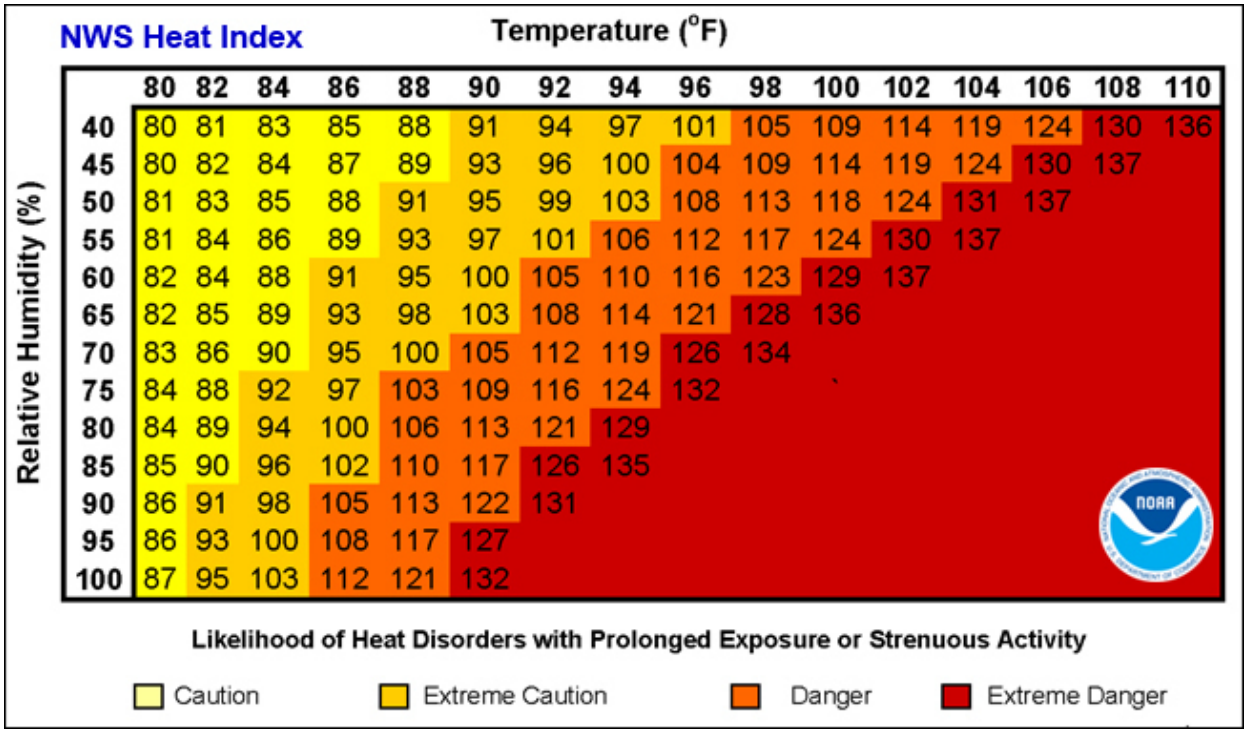
Source: weatherspark.com

3.10.1.1. Extreme Heat

Extreme heat Is not categorized by one factor, such as temperature, but as a combination of impacts that increase the threat of heat. Extreme heat is based more on potential or actual impact than weather conditions alone. The amount of sunlight, humidity levels, and wind conditions can increase or decrease the effects of high temperatures increasing or decreasing the threat.

Other environmental factors can influence the impact of heat as well. High nighttime temperatures reduce the ability for homes and other buildings to cool overnight, increasing the risk during the daytime hours. The duration of the heat event will also create cumulative effects.

Figure 15. National Weather Service Heat Index



Source: National Weather Service

The National Weather Service (NWS) issues alerts for three categories of extreme heat. Alerts are issued based on the impact of the heat rather than a specific temperature. Alerts thresholds vary based on geographic location as well. Table 17 shows general parameters for different NWS heat-related alerts.

Table 17. National Weather Service Heat-Related Alerts

Alert	Explanation
Excessive Heat Outlook	Excessive Heat Outlooks are issued when the potential exists for an excessive heat event in the next 3–7 days. An Outlook provides information to those who need considerable lead-time to prepare for an event.
Heat Advisory	A Heat Advisory is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for an Advisory is when the maximum heat index temperature is expected to be 100°F or higher for at least 48 hours, and nighttime temperatures are not expected to drop below 75°F, though these criteria vary across the country.
Excessive Heat Watch	Heat Watches are issued when conditions are favorable for an excessive heat event in the next 24–72 hours. A Watch is used when the risk of a heat wave has increased, but its occurrence and timing are still uncertain.

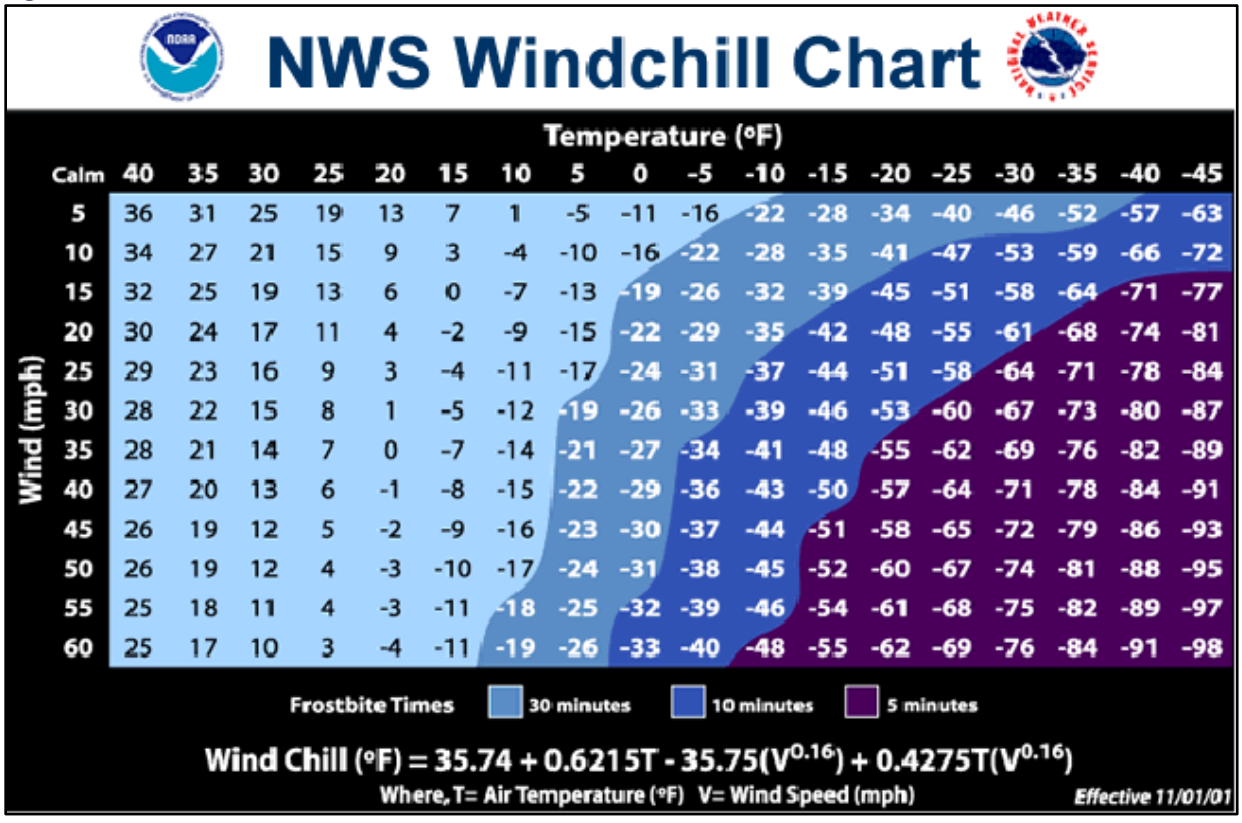
Excessive Heat Warning	An Excessive Heat Warning is issued within 12 hours of the onset of extremely dangerous heat conditions. The general rule of thumb for a Warning is when the maximum heat index temperature is expected to be 105°F or higher for at least 48 hours, and nighttime air temperatures are not expected to drop below 75°F, though these criteria vary across the country.

Source: National Weather Service

3.10.1.2. Extreme Cold

Similar to extreme heat, extreme cold is classified based on multiple factors as opposed to temperature alone. Humidity and sunshine have effects on the cold; however, the greatest influence is wind. Cold is often measured by windchill temperatures as opposed to the base temperature. Windchill temperatures can often be 10–20 degrees lower than the ambient temperature as reflected in Figure 16.

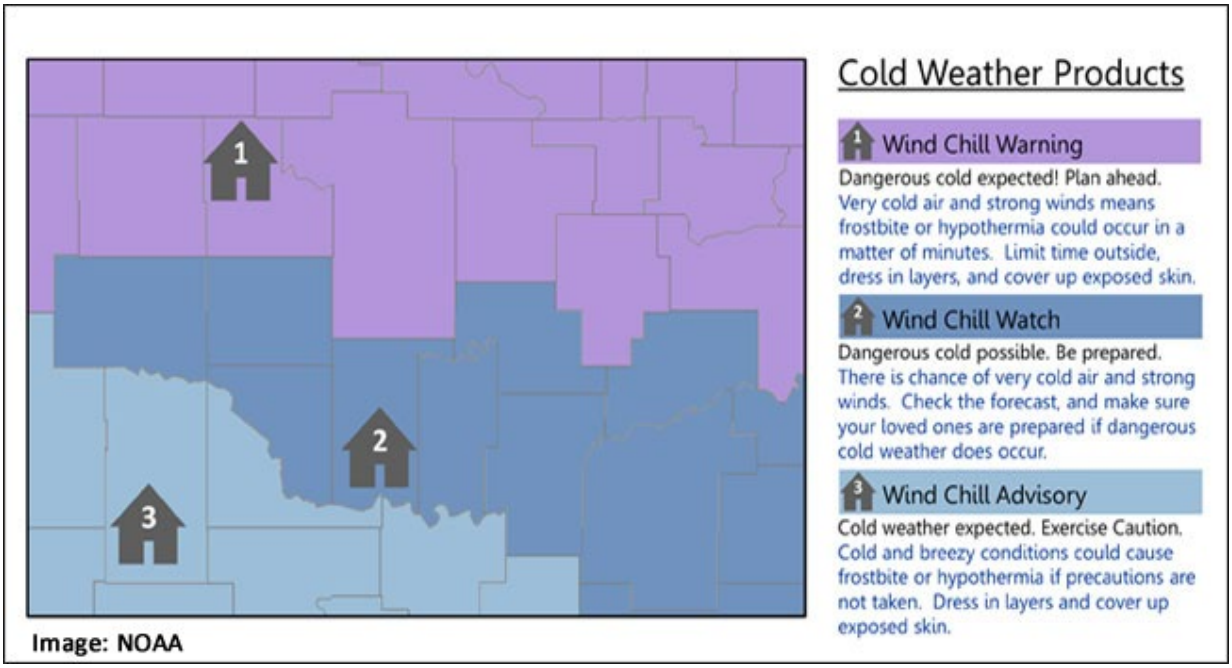
Figure 16. National Weather Service Windchill Chart



Source: National Weather Service

National Weather Service alerts are often issued based on windchill temperatures. The NWS may also issue alerts based on freezing temperatures; however, these are typically more focused on impacts from freezing temperatures to plants, pets, and households. Figure 17 shows NWS weather alerts for cold weather incidents.

Figure 17. National Weather Service Cold Weather Alerts



Source: National Weather Service

One of the most significant causes of extreme cold is the Polar Vortex. The Polar Vortex is a low-pressure area with very cold air in the North Pole. There is also a similar vortex in the South Pole. At times, the vortex will expand, sending cold air south along the jet stream. When this occurs, areas of the northern United States, including Michigan, can receive exceptionally cold air far below normal or average winter temperatures.

3.10.2. Area of Impact

Any and all areas of Michigan can experience extreme temperatures, including the Tri-County region. Extreme temperature impacts tend to be regional and not necessarily confined to a specific locality.

3.10.3. Extent

Due to the somewhat ambiguous nature of extreme temperature events, it is challenging to measure the extent of extreme heat or cold. However, the record high temperature in the Tri-County region was recorded at 106°F in 1936, with a record low of -29°F in 1981.

3.10.4. Previous Occurrence

The Tri-County region has experienced numerous extreme heat and cold events; however, a search of the NCEI database did not show a sustained history of extreme heat or cold events. Some of the more exceptional events have been captured below.

July 1936 Extreme Heat. Temperatures above 100°F for up to seven days resulted in death and foodborne illness due to melted iceboxes.

August 2001 Extreme Heat. Temperatures above 100°F and high humidity for seven days. Heat indices of 105–110°F in some areas.

June 2018 Extreme Heat. High temperatures reached the lower to middle 90s with heat indices at or above 105°F.

January 29–31, 2019 Extreme Cold. Artic cold brought in by a Polar Vortex entered lower Michigan for three days with extreme cold and over a foot of snow. Ambient temperatures ranged from -5°F to -20°F while windchills throughout lower Michigan fell to -20°F to -40°F.

Table 18. Record Temperatures Across the Tri-County Region

County	Date of Record High	Record High	Number of days > 90 F	Probability of Occurrence
Ingham	7/6/1988	100°F	9.1	2.5%
Eaton	7/14/1936	106°F	7.5	2.1%
Clinton	7/13/1936	102°F	11.3	3.1%
County	**Date of Record Cold**	**Record Cold**	**Number of days <0 F**	**Probability of Occurrence**
Ingham	1/4/1981	-29°F	13.1	3.6%
Eaton	2/10/1912	-31°F	13.5	3.7%
Clinton	2/2/1895	-42°F	9.4	2.6%

Source: 2019 Michigan Hazard Mitigation Plan

3.10.5. Probability

Extreme temperatures can occur at any time anywhere in Michigan, including the Tri-County region. Climate change is likely to play a role in the increased occurrence in extreme temperatures.

Table 19. Climate Change Indicators for the Midwest

Indicators	
Historic Air Temperature	Average Increase
1900–2010	1.5 degrees
1950–2010	3.0 degrees
1980–2010	4.5 degrees
Future Air Temperature*	Average Increase
Mid Century (2046 –2065) relative to 1979–2000	4.9 degrees
End Century (2018–2100) relative to 1979–2000	8.5 degrees
Future Precipitation*	Average Increase
Spring–Mid Century (2041–2062) relative to 1979–2000	9%
Summer–Mid Century (2041–2062) relative to 1979–2000	-8%
*assuming continued global emissions growth	

Source: Pryor et al., 2014

According to NCEI data, between 1970 and 2021, the Tri-County region recorded one extreme temperatures incident – the June 30, 2018, excessive heat event. While this plan reflects more instances than that, the probability of an extreme temperatures incident that impacts the region is low, although this may largely be attributed to the populations' adaptation to the climate that they reside in. In discussions during the planning process, the planning team noted that while instances of heat and especially extreme cold do happen, the people, communities and counties are mostly adept at minimizing the impacts of extreme temperatures.

3.10.6. Vulnerability Assessment

3.10.6.1. Impacts to People

Impacts of extreme temperatures to people include physical harm and death. In extreme heat, individuals may suffer from heat exhaustion or heat stroke which may result in hospitalization or death. In addition, excessive heat can worsen chronic conditions such as respiratory and cardiovascular diseases. The impact is particularly harder on those without air conditioning in their homes and the young, elderly, and other vulnerable populations.

The greatest risks of extreme cold are frostbite and hypothermia. Additionally, extreme cold temperatures can place strain on the heart and lungs. Other minor impacts include redness in the face, runny nose, and sore throat. Cold weather can also weaken the immune system, making individuals more susceptible to illness. People experiencing homelessness are the most vulnerable to extreme cold.

During the planning meetings, participants noted that each county has systems in place to provide heating and cooling shelters for the people in the region.

3.10.6.2. Impacts to Infrastructure

Infrastructure in the United States and Michigan is aging and becoming fragile. Materials expand or contract when subjected to changes in temperatures. Most materials expand when they are heated and contract when they are cooled. Severe problems develop in infrastructure when temperatures cannot be dissipated. Rapid expansion and contraction can lead to stressing and eventually cracking, especially in concrete. Highways, bridges, and railways are prone to buckling under extreme heat. Power systems may fail or operate in a reduced capacity. Rolling blackouts are used in some parts of the United States to reduce the strain on electric systems. Aircraft performance may be impacted by extreme heat as well. At times, flights may need to be grounded, as high temperatures thin the atmosphere preventing aircraft from takeoff.

Extreme cold impacts infrastructure as well, typically due to a rupture of water pipes and gas lines. Freezing may cause electric and wastewater systems to fail as well.

3.10.6.3. Impacts to the Economy

Extreme temperatures, both cold and heat, cause damage to crops, reducing growth and yield. A lower number of crops means there are fewer crops to sell. This reduces the income of farmers and increases the cost of grains and produce. In addition, the use of electric and natural gas increases during extreme temperature events, subsequently increasing costs to consumers.

3.10.6.4. Impacts to the Environment

Extreme temperatures can have great impact to the environment, particularly extreme heat. Extreme heat can increase the frequency and intensity of wildfires and contribute to or worsen drought conditions. High temperatures can also increase pollution, as stagnant air tends to trap pollutants. For the most part, swings in temperature are part of the natural environmental cycle and are absorbed by the environment over the long run.

3.10.7. Public Input

Extreme temperatures was omitted from the public survey, so participants in the planning process were asked to assess and identify their level of concern of extreme temperatures occurring in their community. Across the Tri-County region, the vast majority of respondents noted that they were not very concerned about this hazard; the region is located in an area that experiences cold weather, and residents know how to take care of themselves and each other during one of these incidents.

3.10.8. Hazard Significance Summary

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Unlikely	Minor	High	Low	Low
Eaton	Unlikely	Minor	High	Low	Low
Ingham	Unlikely	Minor	High	Low	Low

3.11. Flood

3.11.1. Hazard Profile

Floods are considered the most common hazard in the United States. Most flood events in the U.S. involve inundation of floodplains associated with rivers and streams or shoreline inundation along lakes and coastlines. This type of flooding, referred to as “riverine” flooding, typically results from large-scale weather systems generating prolonged rainfall or from locally intense storms. Riverine flooding is characterized by a gradual and predictable rise in a river or stream due to persistent precipitation.

A flood is a natural event for rivers and streams. Excess water from snowmelt, rainfall, or storm surge accumulates and flows over the stream or riverbank into the adjacent floodplain – low-lying lands adjacent to rivers, lakes and oceans that are subject to recurring inundation. Heavy rains that fall in a short period of time during intense thunderstorms can lead to high-velocity flows that overflow the normal river channel, causing extensive damage to nearby residences and businesses. These events are called “flash floods.” Most coastal flood events are characterized by slowly rising and falling floodwaters. Floods can be exacerbated by changing development patterns. In rapidly urbanizing areas, the increased amount of pavement and other impervious surfaces can exacerbate the potential or intensity of flooding events.

Most riverine flooding occurs in early spring and is the result of excessive rainfall and/or the combination of rainfall and snowmelt. Ice jams also cause flooding in winter and early spring. Severe thunderstorms may cause flooding during the summer or fall, although these are usually localized and have more impact

on watercourses with smaller drainage areas. Oftentimes, flooding may not necessarily be directly attributable to a river, stream, or lake overflowing its banks. Rather, it may simply be the combination of excessive rainfall and/or snowmelt, saturated ground, and inadequate drainage. With no place to go, the water will find the lowest elevations – areas that are often not in a designated floodplain. That type of flooding is becoming increasingly prevalent in Michigan, as development outstrips the ability of the drainage infrastructure to properly carry and disburse the water flow.

Flooding also occurs due to combined storm and sanitary sewers that cannot handle the tremendous flow of water that often accompanies storm events. Typically, the result is water backing into basements, which damages mechanical systems and can create serious public health and safety concerns.

3.11.2. Area of Impact

Where data is available, flood zones are mappable. Figure 18, Figure 19, and Figure 20 show the Special Flood Hazard Areas with a 1-percent annual chance of flooding in Clinton, Eaton, and Ingham counties.

Figure 18. Flood Zones in Clinton County

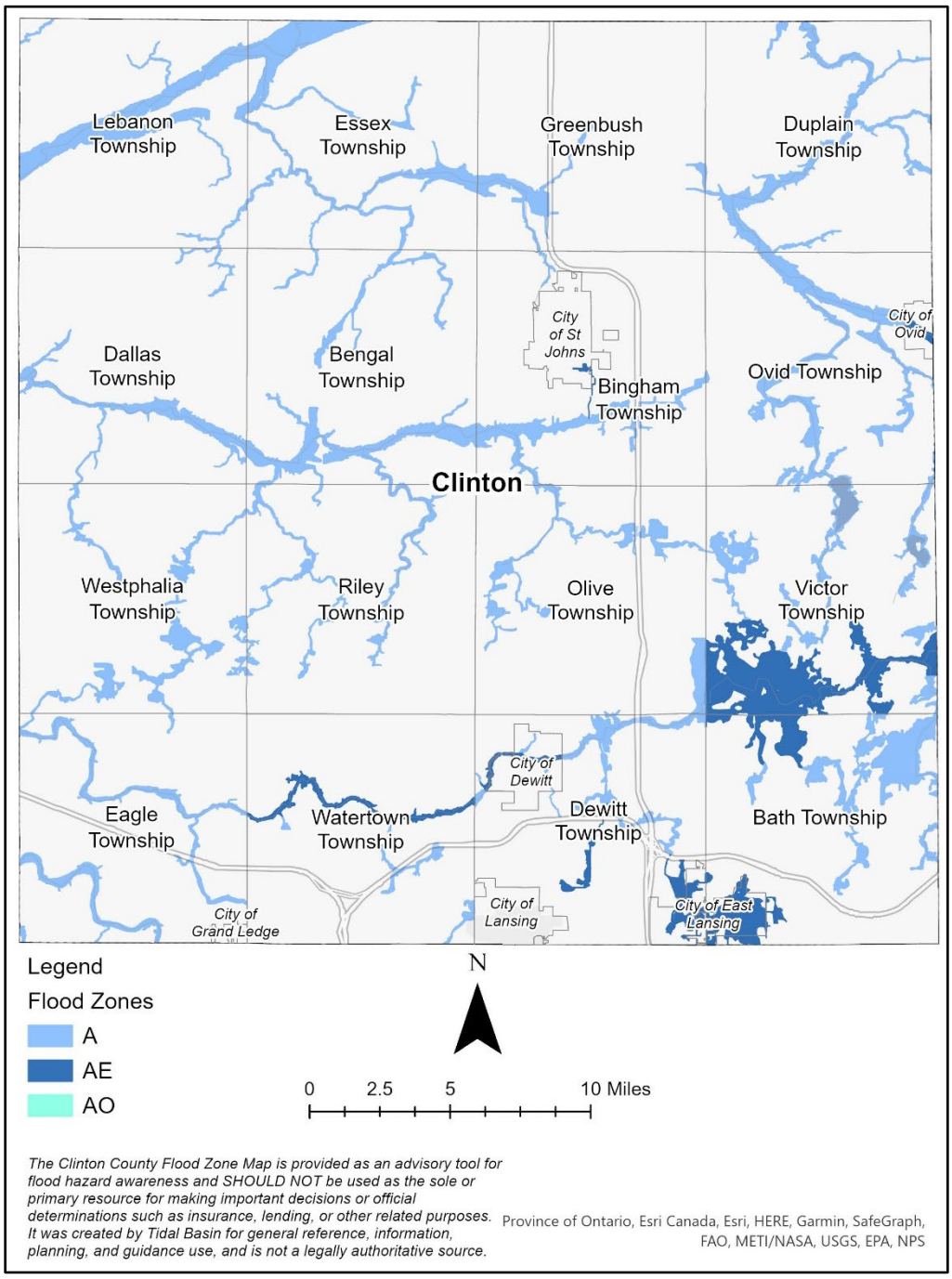


Figure 19. Flood Zones in Eaton County

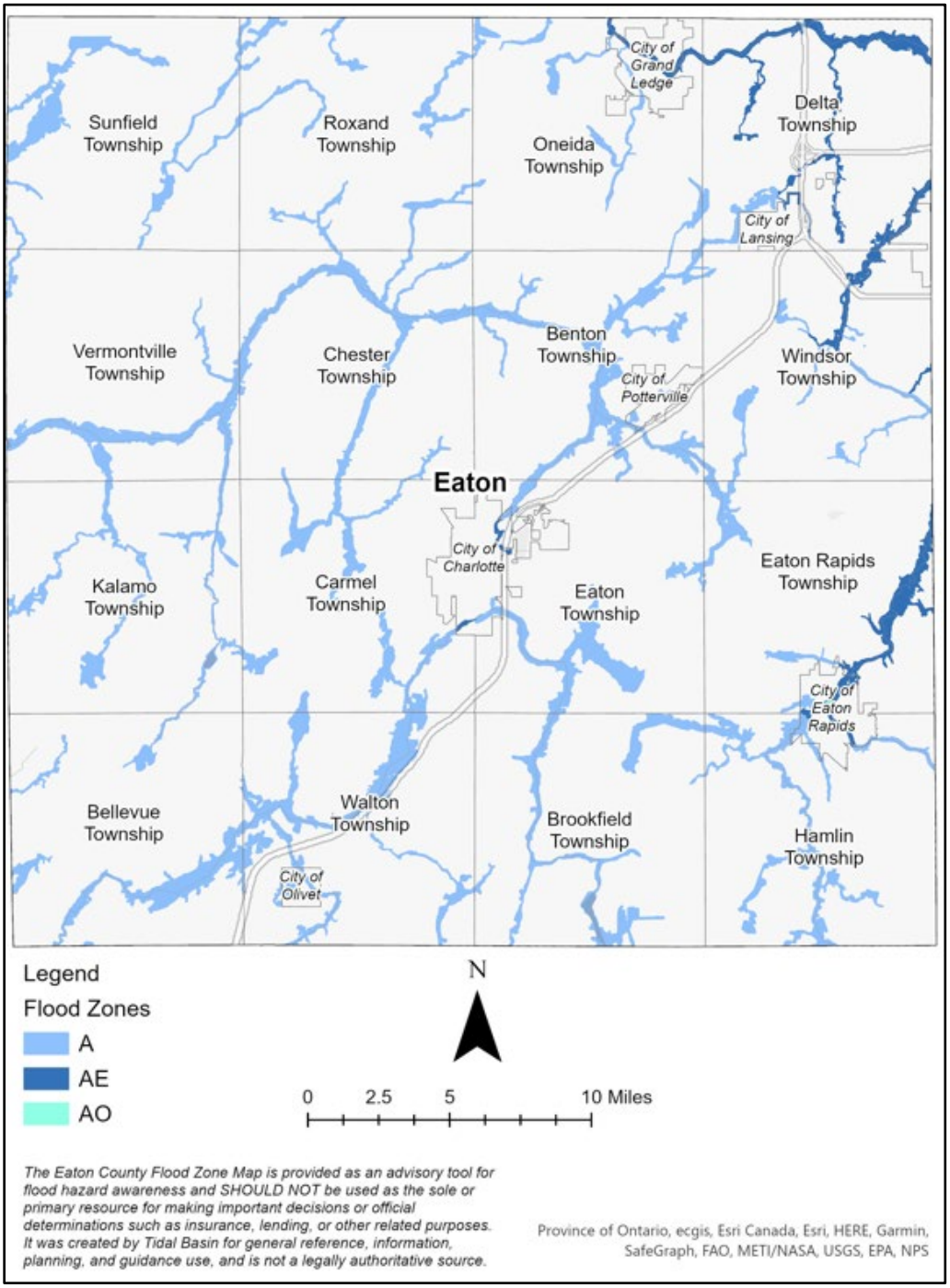
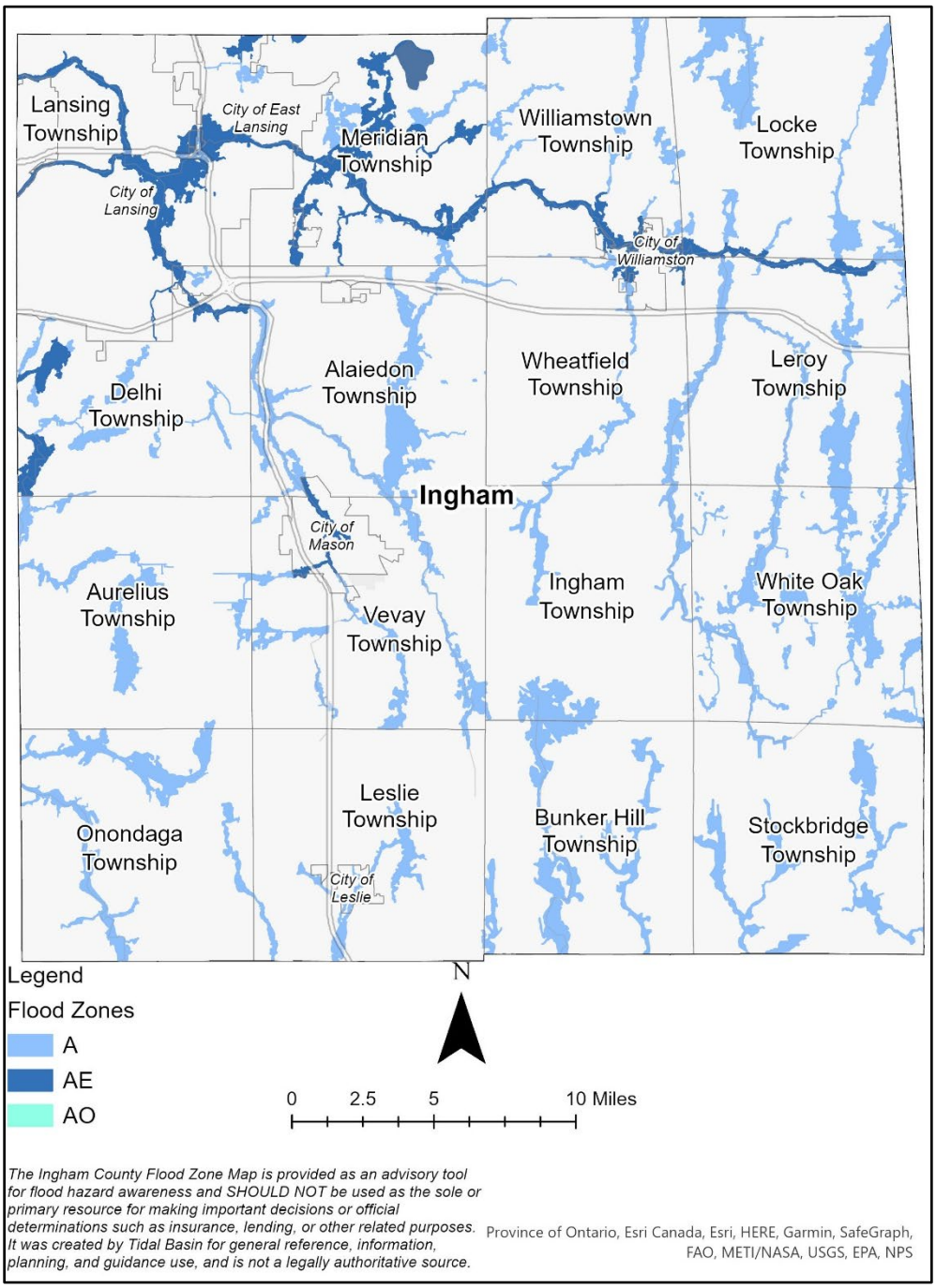


Figure 20. Flood Zones in Ingham County



3.11.2.1. National Flood Insurance Program

Each county has communities that are mapped for participation in the National Flood Insurance Program (NFIP).

Table 20. Clinton County NFIP Communities

Community Name	County	Curr. Eff. Map Date	Reg-Emer Date	Participating Community
Bath, Charter Township of	Clinton	05/03/11	07/15/11	Yes
Bengal, Township of	Clinton	05/03/11(M)	08/25/11	Yes
Bingham, Township of	Clinton	05/03/11	09/18/13	Yes
Dallas, Township of	Clinton	05/03/11(M)	05/03/11	Yes
Dewitt, Charter Township of	Clinton	05/03/11	06/18/80	Yes
Dewitt, City of	Clinton	05/03/11	12/18/1979	Yes
Elsie, Village of	Clinton	05/03/11(M)	07/16/87	Yes
Essex, Township of	Clinton	05/03/11(M)	06/30/11	Yes
Lebanon, Township of	Clinton	05/03/11(M)	06/27/11	Yes
Maple Rapids, Village of	Clinton	05/03/11(M)	09/01/86	Yes
Olive, Township of	Clinton	05/03/11(M)	11/28/2012	Yes
Ovid, Township of	Clinton	05/03/11(M)	09/15/11	Yes
St. Johns, City of	Clinton	05/03/11	03/16/88	Yes
Victor, Township of	Clinton	05/03/11	02/02/89	Yes
Watertown, Charter Township of	Clinton	05/03/11	05/17/82	Yes
Westphalia, Township of	Clinton	05/03/11(M)	11/10/2011	Yes
Grand Ledge, City of	Clinton/Eaton	05/03/11	01/02/81	Yes
East Lansing, City of	Clinton/Ingham	08/16/11	08/01/80	Yes

Table 21. Eaton County NFIP Communities

Community Name	County	Curr. Eff. Map Date	Reg-Emer Date	Participating Community
Bellevue, Township of	Eaton	11/26/10(M)	02/22/11	Yes
Bellevue, Village of	Eaton	11/26/10(M)	07/03/86	Yes
Brookfield, Township of	Eaton	11/26/10(M)	04/12/12	Yes
Carmel, Township of	Eaton	11/26/10(M)	01/31/79	Yes
Charlotte, City of	Eaton	11/26/2010	07/02/81	Yes
Delta, Charter Township of	Eaton	11/26/2010	03/02/81	Yes
Dimondale, Village of	Eaton	11/26/2010	09/30/80	Yes
Eaton Rapids, City of	Eaton	11/26/2010	10/15/1982	Yes

Eaton Rapids, Township of	Eaton	11/26/2010	12/15/1983	Yes
Hamlin, Township of	Eaton	11/26/2010	03/15/11	Yes
Kalamo, Township of	Eaton	11/26/10(M)	03/14/11	Yes
Olivet, City of	Eaton	11/26/10(M)	11/9/1979	Yes
Oneida, Charter Township of	Eaton	11/26/2010	07/16/81	Yes
Potterville, City of	Eaton	11/26/10(M)	09/28/79	Yes
Roxand, Township of	Eaton	11/26/10(M)	04/12/11	Yes
Sunfield, Township of	Eaton	11/26/10(M)	11/9/2011	Yes
Vermontville, Township of	Eaton	11/26/10(M)	02/08/12	Yes
Walton, Township of	Eaton	11/26/10(M)	11/10/2011	Yes
Windsor, Charter Township of	Eaton	11/26/2010	01/02/81	Yes

Table 22. Ingham County NFIP Communities

Community Name	County	Curr Eff Map Date	Reg-Emer Date	Participating Community
Alaiedon, Township Of	Ingham	08/16/11(M)	09/28/79	Yes
Aurelius, Township Of	Ingham	08/16/11(M)	08/16/11	Yes
Bunker Hill, Township Of	Ingham	08/16/11(M)	02/12/13	Yes
Delhi, Charter Township Of	Ingham	08/16/11	07/16/81	Yes
Ingham, Township Of	Ingham	08/16/11(M)	09/26/16	Yes
Lansing, Charter Township Of	Ingham	08/16/11	02/04/81	Yes
Leroy, Township Of	Ingham	08/16/11	08/16/11	Yes
Leslie, City Of	Ingham	08/16/11(M)	08/10/79	Yes
Leslie, Township Of	Ingham	08/16/11(M)	09/15/11	Yes
Locke, Township Of	Ingham	08/16/11	08/10/79	Yes
Mason, City Of	Ingham	08/16/11	10/15/1982	Yes
Meridian, Charter Township Of	Ingham	08/16/11	02/02/77	Yes
Onondaga, Township Of	Ingham	08/16/11(M)	08/22/12	Yes
Stockbridge, Township Of	Ingham	08/16/11(M)	08/16/11	Yes
Stockbridge, Village Of	Ingham	08/16/11(M)	09/04/86	Yes
Vevay, Township Of	Ingham	08/16/11	09/29/11	Yes
Webberville, Village Of	Ingham	08/16/11(M)	08/10/79	Yes
White Oak, Township Of	Ingham	08/16/11(M)	07/16/90	Yes
Williamston, City Of	Ingham	08/16/11	04/01/82	Yes
Williamstown, Township Of	Ingham	08/16/11	04/15/82	Yes

3.11.3. Extent

Magnitude and severity can be described or evaluated in terms of a combination of the different levels of impact that a community sustains from a hazard event. Specific examples of negative impacts from flooding in the Tri-County region span a comprehensive range and are summarized as follows:

- Floods cause damage to private property that often creates financial hardship for individuals and families.
- Floods cause damage to public infrastructure, resulting in increased public expenditures and demand for tax dollars.
- Floods cause loss of personal income for agricultural producers that experience flood damages.
- Floods cause emotional distress on individuals and families.
- Floods can cause injury and death.

Floods present a risk to life and property, including buildings, their contents, and their use. Floods can affect crops and livestock. Floods can also affect lifeline utilities (e.g., water, sewerage, power), transportation, jobs, tourism, the environment, and the local and regional economies. The impact of a flood event can vary based on geographic location to waterways, soil content and ground cover, and construction. The extent of the damage of flooding ranges from very narrow to widespread based on the type of flooding and other circumstances, such as previous rainfall, rate of precipitation accumulation, current conditions in the infrastructure and landscapes, the time of year, and emergency response preparedness.

The magnitude and severity of the flood hazard is usually determined by the extent of impact it has on the overall geographic area and by identifying the most catastrophic event in the previous flood history (as an example of the losses that could be incurred during such an event). Sometimes this “example” of a catastrophic event is referred to as the “event of record.” The flood of record is almost always correlated to a peak discharge at a gage, because it usually also comes with the worst impacts in terms of property damage, loss of life, etc. The most damaging event across the region is used to set the “event of record” in terms of injuries/deaths and/or property/agricultural damages.

According to NCEI, the flood of record occurred in April 2013. The storm caused $5 million in property damages in Ingham and Clinton counties and $3 million in property damages in Eaton County. No recorded flooding events included injuries or fatalities. The flood of May 2004 caused $200,000 in crop damages in each of the three counties.

3.11.4. Previous Occurrence

The NCEI records flooding event statistics starting in 1997 and includes six distinct river flooding incidents between January 1, 1970, and December 31, 2021, across the Tri-County region. These incidents caused a combined $16 million in property damage and $600,000 in crop damage. This equates to an average of $1.24 million in property damage and $200,000 in crop damage (only three incidents recorded impacts to crops). Table 23 provides a summary of these incidents.

Table 23: Flooding Incidents in the Tri-County Region (1997–2021)

Location	Number of Flooding Incidents	Number of Deaths	Number of Injuries	Property Damage	Crop Damage
Clinton	5	0	0	$1,207,000	$200,000
Eaton	4	0	0	$4,110,000	$200,000
Ingham	4	0	0	$6,035,000	$200,000
Totals	**13**	**0**	**0**	**$16,180,000**	**$600,000**

Source: National Climatic Data Center Storm Events Database

All three (3) counties experienced a regional flood event caused by locally heavy rainfall on February 24, 2001, which caused an average of $10,000 in property damage in each of the counties, no crop damage, and no loss of life or injuries. Several area rivers crested slightly above flood stage, but otherwise the storm had very little impact.

Additionally, the Tri-County region was impacted by flooding beginning May 21, 2004. This event caused a record $1 million in property damages and $200,000 in crop damages in each of the three counties. Numerous thunderstorms and periods of heavy rainfall developed repeatedly across southern lower Michigan. The prolonged precipitation in mid-May 2004 resulted in elevated river levels and significant ground saturation. Reports indicated multiple washed-out roads in Eaton County. There was no recorded loss of life or injuries due to this event.

Record flooding occurred during the month of April 2013. Across Michigan, hundreds of homes were flooded, over 300 roads were closed, and preliminary damage estimates were in excess of $32 million. Heavy rainfall caused significant flooding in rivers and streams across the Tri-County region. NCEI records $5 million in property damages in Clinton and Ingham counties and $3 million in property damages in Eaton County. No damages to crops were recorded and no recorded loss of life or injuries due to this event.

3.11.5. Probability

While it may not rise to the level of major disaster, some level of flooding is an annual occurrence across the Tri-County region. Across the region, the NCEI records six separate flooding incidents occurring between 1997 (the first year a recorded incident occurred) and 2021. This correlates to an incident occurring roughly every four years or a 25% chance of a major flooding incident occurring in any given year.

3.11.6. Vulnerability Assessment

3.11.6.1. Impacts to People

Vulnerable populations across the Tri-County region include residents living in known flood-prone areas or near areas vulnerable to flash floods. Certain populations may be especially vulnerable, including:

- The elderly and very young.
- Persons with access and functional needs.
- Residents of long-term care facilities.

- Those living in mobile homes.
- People and patients in hospitals.
- Low-income housing areas.

These populations may be more vulnerable to flooding due to limitations in mobility and accessibility, income, challenges in receiving and understanding warnings, or unfamiliarity with surroundings.

A review of NCEI incident data showed no recorded deaths or injuries due to flooding.

3.11.6.2. Impacts to Infrastructure

Infrastructure located within a 1-percent annual chance floodplain is most at risk of being impacted by a flood event; this infrastructure can include buildings, utilities, transportation routes, and other critical assets located within the region.

The FEMA NRI estimates annual loss by hazard on a county-by-county basis, including estimates for riverine flooding. Table 24 shows the expected annual loss due to riverine flooding in Clinton, Eaton, and Ingham counties, extrapolated from historical loss data, exposure data, and annualized frequency.

Table 24. Expected Annual Loss due to Riverine Flooding

Location	Total Loss	Building Value	Population Equivalence	Population	Agriculture Value
Clinton	$234,290	$128,176	$96,894	0.01	$9,219
Eaton	$249,857	$122,183	$111,859	0.01	$15,815
Ingham	$629,962	$223,081	$397,848	0.05	$9,032
Regional Totals	**$1,114,109**	**$473,440**	**$606,601**	**0.07**	**$34,066**

Source: FEMA National Risk Index

The NRI also estimates exposure values by hazard on a county-by-county basis; exposure values illustrate the potential value of infrastructure located in a flood risk zone. Table 25 shows exposure values for Clinton, Eaton, and Ingham counties for a riverine flood.

Table 25. Exposure Values

Location	Total	Building Value	Population Equivalence	Population	Agriculture Value
Clinton	$25,796,553,749	$343,177,741	$25,442,519,206	3,347.70	$10,856,803
Eaton	$27,146,084,629	$441,278,685	$26,701,849,735	3,513.40	$2,956,210
Ingham	$98,092,292,318	$3,114,394,255	$94,970,104,594	12,496.07	$7,793,469
Regional Totals	**$151,034,930,696**	**$3,898,850,681**	**$147,114,473,535**	**19,357**	**$21,606,482**

Source: FEMA National Risk Index

3.11.6.3. Impacts to the Economy

Long term economic impacts occur when rising waters disrupt the supply chain. Impacts to transportation routes, utilities, cropland, and other keystone economic sectors can cause prolonged disruptions and economic effects. Historically, flooding across the Tri-County region has not resulted in these types of long-term impacts.

3.11.6.4. Impacts to the Environment

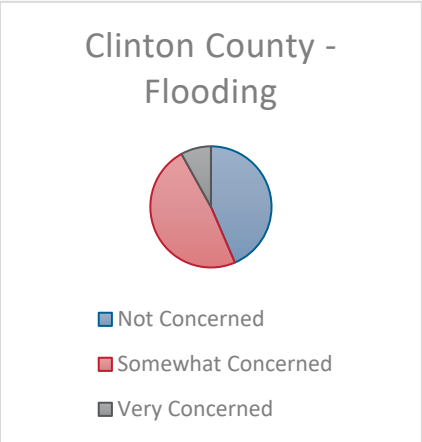
Floods can have a negative impact on wildlife, causing drowning, disease proliferation, and habitat disruption. Unpredictable floods can also cause harm to aquatic life, displacing fish and destroying aquatic habitat.

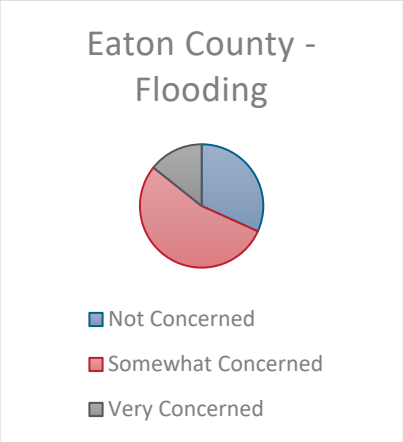
Floods can also alter the landscape, mainly through erosion. As floodwaters carry sediment, it can become suspended in the water and reduce water quality. Suspended sediment eventually settles out of the water in a process called sedimentation, which can clog riverbeds and streams, smother aquatic organisms and destroy habitats. Erosion and sedimentation have a more negative impact on ecosystems that are already degraded or heavily modified.

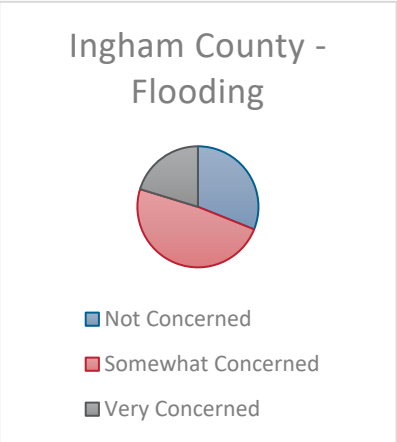
Floodwaters can be contaminated with pollutants such as agricultural pesticides, industrial chemicals, debris, and sewage. Finally, flooding can increase the chance of spreading waterborne diseases. Receding floodwaters can create stagnant pools of water, which provide a perfect breeding ground for mosquitoes.

3.11.7. Public Input

Participants in the public survey were asked to assess and identify their level of concern of a flooding incident occurring in their community. Across the Tri-County region, the vast majority of respondents noted that they were only somewhat concerned about this hazard.







3.11.8. Hazard Significance Summary

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Likely	Minor	Limited	Medium	Medium
Eaton	Likely	Minor	Limited	Medium	Medium
Ingham	Possible	Minor	Limited	Medium	Medium

3.12. Severe Weather

3.12.1. Hazard Profile

Broadly defined, severe weather is any dangerous meteorological phenomenon with the potential to cause damage, serious social disruption, or loss of human life. For the purposes of this Hazard Mitigation Plan, the Severe Weather chapter will focus on three specific hazards: fog, hail, and lightning.

3.12.1.1. Fog

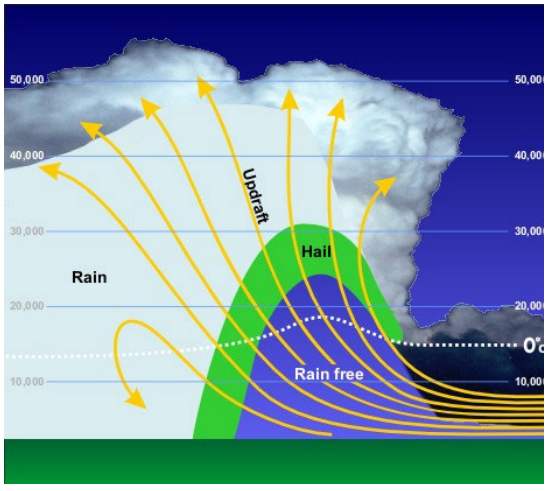
National Geographic calls fog "a cloud that touches the ground." That is perhaps the simplest and best definition of this weather hazard. Fog is a visible aerosol consisting of tiny water droplets or ice crystals suspended in the air at or near the earth's surface. Fog appears when water vapor condenses, at which point its molecules combine to make tiny liquid water drops that hang in the air.

Because of the restrictions in visibility it brings, fog can be a hazard on the road, on the water, and in the air. Fog is a factor in numerous travel accidents every year and can impact takeoff and landing procedures and requirements for pilots, causing weather-related aviation delays.

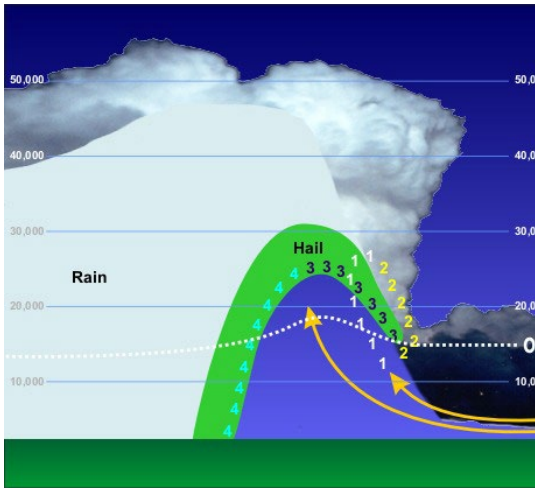
3.12.1.2. Hail

Hail is a form of precipitation consisting of solid ice that forms inside thunderstorm updrafts. Hail can damage aircraft, homes, and cars and can be deadly to livestock and people. A hailstorm is an outgrowth of a severe thunderstorm in which balls called hailstones fall with rain. Hail is formed within thunderstorms when raindrops are carried upward by updrafts into extremely cold areas of the atmosphere and freeze. The hailstones grow by colliding with raindrops that freeze onto the hailstone's surface. The hail falls when it becomes heavy enough to overcome the strength of the thunderstorm updraft and is pulled toward the earth by gravity.

Figure 21. Hail Development



Strong updrafts create a rain-free "vault" underneath the leading edge of a supercell.



Same cross-section as before but showing an idealized path of hail within the cloud.

If the winds near the surface are strong enough, hail can fall at an angle or even nearly sideways. Wind-driven hail can tear up siding and roofs on houses, break windows and blow into houses, break windows on cars, and cause severe injury and/or death to people and animals.

The largest hailstone recovered in the U.S. fell in Vivian, South Dakota, on June 23, 2010, with a diameter of 8 inches and a circumference of 18.62 inches. It weighed 1 lb. 15 oz.

Hailstorms can cause damage to property, crops, and the environment and kill and injure livestock. Hail causes approximately $1 billion in property and crop damages every year in the U.S. One of the costliest hailstorms in the country hit Denver, Colorado, in July 1990 and caused $625 million in damages. A 2016 study by the Highway Loss Data Institute found that insurance companies paid $5.37 billion in total hail claims to automotive policy holders. The most common hail damage takes place on roofs of buildings, homes, and landscaping. Hail has been known to cause injury to humans, sometimes lethal injury. In 2000, a man in Fort Worth, Texas, was killed when he was struck by a softball-sized hailstone.

Hailstorms that produce a lot of small-sized hail can be dangerous to traffic, because all those tiny hailstones can completely cover the roadways. If the hail accumulates and becomes deep enough, it can prevent car tires from touching the road at all, making driving conditions similar to that of ice storms.

Hail size is often estimated by comparing it to a known object. Most hailstorms are made up of a mix of different sizes, and only the very largest hailstones pose a serious risk to people caught in the open. When reporting hail, estimates comparing the hailstone to a known object with a definite size are good, but measurements using a ruler, calipers, or a tape measure are best.

3.12.1.3. Lightning

Lightning ranks as one of the top weather killers in the U.S., but the National Weather Service calls lightning one of the most underrated severe weather hazards. Lightning strikes in America kill about 75–100 people and injure hundreds each year. Lightning strikes can ignite building fires and wildland fires and damage electrical systems and equipment.

Lightning is a rapid discharge of electrical energy in the atmosphere. The resulting thunderclap is the result of a shock wave created by the rapid heating and cooling of the air in the lightning channel.

Lightning can occur between a cloud and the ground (cloud-to-ground lightning), between two clouds (intercloud lightning), or within the same cloud (intracloud lightning). Lightning can strike 10 miles out from the rain column.

Thunder, high winds, darkening skies, rainfall, and brilliant flashes of light are warning signs for lightning strikes.

3.12.2. Area of Impact

Fog banks can cover large areas of a county or community at once. The risk of this hazard is uniform throughout the Tri-County region.

Hail and lightning are both associated with the size of a thunderstorm footprint. The typical thunderstorm is 15 miles in diameter and lasts an average of 30 minutes. Both hail and lighting can occur randomly within a given storm and are typically localized impacts of a much larger storm system.

3.12.3. Extent

Fog comes in several forms. Only those that are a hazard in Michigan are listed here:

- Super fog forms when a mixture of smoke and moisture released from damp smoldering organic material such as brush, leaves, and trees mixes with cooler, nearly saturated air. Visibility is lowered to less than 10 feet. Super fog meanders through low terrain areas, such as creek beds or drainage ditches. Super fog can be very dangerous when present over highways and has been the cause of several large, multi-vehicle pileups.
- Freezing fog can freeze instantly on exposed surfaces when surface temperatures are at or below freezing. Freezing fog can cause black ice to form on roadways and hard surfaces, such as parking lots, sidewalks, and driveways. Because it is difficult to see, black ice is particularly dangerous to drivers and pedestrians.
- Radiation fog is a very common type of fog throughout the U.S. It is most prevalent during the fall and winter. It forms overnight as the air near the ground cools and stabilizes. When this cooling causes the air to reach saturation, fog will form. Radiation fog is usually patchy, tends to stay in one place, and goes away the next day under the sun's rays.

Hailstorms can happen all year long, with typically short durations. Severe storms that include larger stones may last more than 20 minutes, but hail that falls for more than 15 minutes is unusual. For small hailstones, according to the NOAA National Severe Storms Laboratory, the expected speed is between 9 and 25 mph, but it is possible for very large hailstones (diameters exceeding 4 inches) to fall at over 100 mph. There were 4,611 major hailstorms in 2020, according to NOAA's Severe Storms database.

As indicated in the combined NOAA/TORRO Hailstorm Intensity Scale in Table 26, hail is considered "destructive" at golf ball size (1.6 inches in diameter). The Tri-County region has experienced hail up to 2.75 inches in diameter, though it could experience hail that is larger if storm conditions were right.

A severe thunderstorm that produces hail one inch or larger in diameter is issued with little to no advance warning.

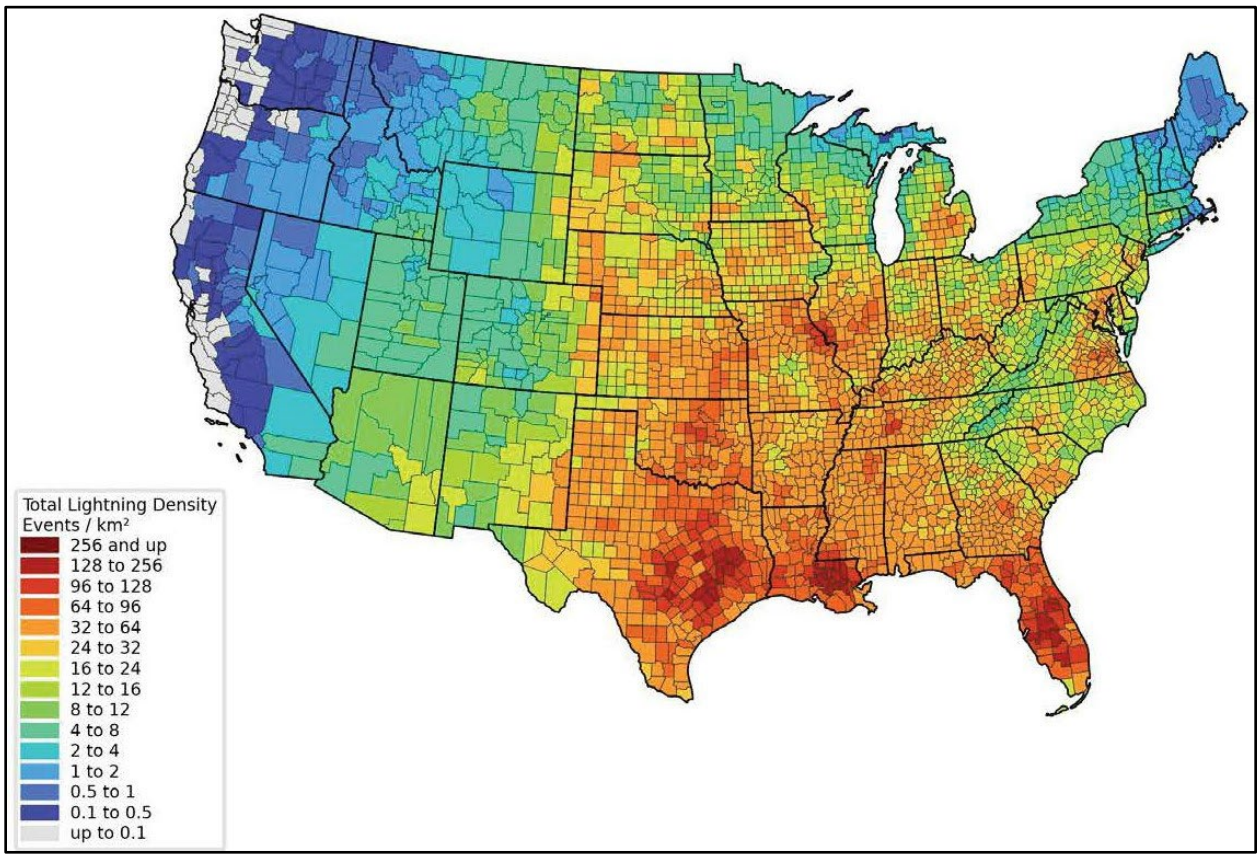
Table 26. Combined NOAA/TORRO Hailstorm Intensity

Size Code	Intensity Category	Diameter (inches)	Size Description	Typical Damage Impacts
HO	Hard Hail	Up to 0.33	Pea	No damage
H1	Potentially damaging	0.33–0.60	Marble or mothball	Slight damage to plants, crops
H2	Potentially damaging	0.60–0.80	Dime or grape	Significant damage to fruit, crops, vegetation
H3	Severe	0.80–1.20	Nickel to quarter	Severe damage to fruit and crops, damage to glass and plastic structures, paint and wood scored
H4	Severe	1.2–1.6	Half dollar to ping pong ball	Widespread glass damage, vehicle bodywork damage
H5	Destructive	1.6–2.0	Silver dollar to golf ball	Wholesale destruction of glass, damage to tiled roofs, significant risk of injuries
H6	Destructive	2.0–2.4	Lime or egg	Aircraft bodywork dented; brick walls pitted
H7	Very Destructive	2.4–3.0	Tennis ball	Severe roof damage, risk of serious injuries
H8	Very Destructive	3.0–3.5	Baseball to orange	Severe damage to aircraft bodywork
H9	Super Hailstorms	3.5–4.0	Grapefruit	Extensive structural damage, risk of severe or even fatal injuries to persons caught in the open
H10	Super Hailstorms	4+	Softball and up	Extensive structural damage, risk of severe or even fatal injuries to persons caught in the open

Source: NOAA; TORRO

The Vaisala Flash Density Map indicates that the Tri-County region may experience between 3-12 lightning flashes per square mile per year or between 5,142 to 20,588 lightning flashes within the Tri-County region each year (3–12 flashes x 1714 sq. mi/yr).

Figure 22. Lightning Flash Density



Source: Vaisala 2021 Annual Lightning Report, total lightning density 2015-2020 per county

3.12.4. Previous Occurrences

Since 1970, the Tri-County region has been included in four presidential disaster declarations that included severe storms. Some of the damages that resulted in the declarations were from tornadoes and flooding that accompanied the severe weather.

Within the Tri-County region between January 1, 1970, and October 31, 2021, the NCEI Storm Events Database includes reports of one dense fog event in the Tri-County region and no reported lightning events. The NCEI reported a total of 166 hail events with hailstones ranging from 0.75 to 2.75 inches in diameter. Of the reported events, there was $1,182,000 in total property damages, $685,000 in crop damages, no injuries, and no fatalities.

When discussing fog, the planning committee noted an incident in 2005, where fog on Interstate 96 caused a 200-car crash with two fatalities.

Most recently, on June 12, 2021, a cold front brought isolated late afternoon and evening severe storms that produced large hail, heavy rain, and frequent lightning as well as isolated reports of damaging wind

gusts. The most severe weather occurred in Ovid in south central Michigan where baseball size hail was reported in addition to several downed trees and power lines.

Table 27. Severe Weather Summary for the Tri-County Region (1970-2020)

Hazard Type	Total Events	Events with Damage	Number of Deaths	Number of Injuries	Property Damage	Crop Damage
Dense Fog	1	0	0	0	0	0
Hail	166	76	0	0	$1,182M	$685,000
Lightning	0	0	0	0	0	0
Total	167	76	0	0	$1,182M	$685,000

Source: NOAA National Centers for Environmental Information Storm Events Database

3.12.5. Probability

The NCEI reported no damaging lightning or fog events between 1970 through October 31, 2021. Within the same time frame, the NCEI reported a total of 51 damaging hail events. This translates to an annual average of one damaging severe weather event per year. Based on this history, damaging hail, lightening, and fog will occur in the Tri-County region once a year, making the probability for damaging events "Highly Likely" in any given year.

3.12.6. Vulnerability Assessment

While fog can be a hazard to drivers, mariners, and aviators, and lightning can be a hazard to structures, crops, and lives, the Tri-County region does not show a history of damage from either. That is not to say the area is not vulnerable to these hazards; fog and lightning both occur in the area, and it is only a matter of time before damages will result. The real risk, however, is to hail, which has shown over time to be a consistent hazard to the area. According to the 2019 Michigan Hazard Mitigation Plan, hail ranks 7th out of 20 listed hazards for which data was available over a 20-year span. Average annual statewide property losses and crop damages for that period come in at $18.2 million. Total hail losses for the Tri-County region over a 50-year span come in at $1,867,000.

With less than 10% of property severely damaged, shutdown of facilities and services for less than 24 hours, and no injuries or fatalities reported, the impacts on the Tri-County region are negligible.

3.12.6.1. Impacts to People

All people in the Tri-County region are exposed and at risk for experiencing severe weather including fog, lightning, and hail. Lightning strikes can cause injury or death, and dense fog can cause travel accidents resulting in death or injury. Although not as common as damage to structures, crops, and vehicles, hail can cause severe injuries and fatalities. People occupied in outdoor work or play may not have access to shelter and are at risk to both hail and lightning. Lightning strikes are more likely in areas with large bodies of water or wide, open spaces in natural habitats or parks and golf courses, or in areas with trees. Campgrounds may be at higher risk to lightning strikes as they typically provide large bodies of water and natural habitats as well as recreational park space.

The elderly or disabled may have a greater, indirect vulnerability to lightning than other subgroups of the population. As a group, they tend to rely heavily on electricity without disruptions. Long-term care

facilities and other special needs housing may be vulnerable if power outages are sustained. Rural residents reliant on electricity for heating, cooling, and water supplies are also vulnerable to power outages.

Destructive hailstorms can have a more devastating impact on low-income populations who are less likely to have the economic resources to fully recover. The Tri-County region should consider applying for federal hazard mitigation grant funds to help residential properties put mitigation measures in place to protect them from hail damage to a home's roof or siding.

3.12.6.2. Impacts to Infrastructure

Disruptions to critical infrastructure are not likely. Emergency medical services, fire, and police would be at risk to the secondary effects of a hailstorm and would face risk of damage to response vehicles out in the open. Lightning can cause fires to buildings. Hail can damage roofs, siding, and windows. Fog can cause traffic jams and a rise in traffic accidents in areas of very low visibility.

3.12.6.3. Impacts to the Economy

The economic impact of severe weather is generally short-term. Lightning can cause fires (structural fires and wildfires), power outages, and death of unprotected livestock. Hail can destroy structures, vehicles, and crops.

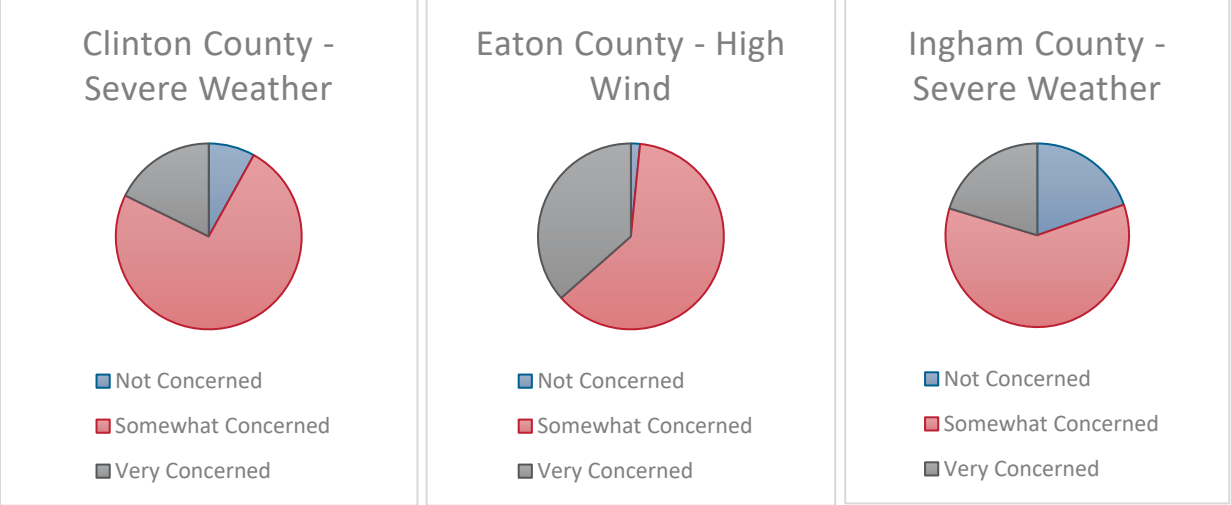
Most losses to businesses are covered by insurance. Nationally, a total of 2,632,050 hail loss claims were identified with a date of loss from January 1, 2018 through December 31, 2020. According to the March 2021 National Insurance Crime Bureau Hail Report, the State of Michigan accounted for up to 56,250 of those claims.

3.12.6.4. Impacts to the Environment

Natural resources may be vulnerable to indirect impacts of lightning, such as wildfires caused by lightning strikes. Hailstones can significantly damage vegetation. Large hailstones can damage trees, destroying limbs and branches. There are 226 trees per acre in Michigan, a total tree population of 14 billion. A hailstorm, or wildfires caused by lightning, could significantly damage the tree population in the Tri-County region.

3.12.7. Public Input

Participants in the public survey were asked to assess and identify their level of concern of a severe weather incident occurring in their community. Across the Tri-County region, most respondents noted that they were only somewhat concerned about this hazard.



3.12.8. Hazard Significance Summary

The Tri-County region experiences severe weather in the form of fog, lightning, and hail on an annual basis. Both global and regional climate patterns determine the potential severity of these hazards from year to year. The entire Tri-County region is equally at risk for dense fog and thunderstorms that produce lightning and hail. Based on historical information, the primary effect of severe weather in the Tri-County region has not resulted in death, injury, or significant damage to people or property. Hail damage to property is expected in the more highly populated areas, and much of the damage to property and agriculture is covered by insurance.

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Highly Likely	Limited	High	Medium	High
Eaton	Highly Likely	Limited	High	Medium	High
Ingham	Highly Likely	Limited	High	Medium	High

3.13. Severe Wind

3.13.1. Hazard Profile

Damaging winds are often called “straight-line” winds to differentiate the damage they cause from tornado damage. Most severe winds that cause ground-level damage are a result of outflow generated by a thunderstorm downdraft. Damaging winds are classified as those exceeding 50-60 mph.

Damage from severe thunderstorm winds accounts for half of all severe reports in the lower 48 states and is more common than damage from tornadoes. Wind speeds can reach up to 100 mph and can produce a damage path that extends for hundreds of miles.

Types of severe wind include the following:

Straight-line wind. Any thunderstorm wind that is not associated with rotation and is used mainly to differentiate from tornadic winds.

Downburst. The general term used to broadly describe macro and microbursts. Downburst is the general term for all localized severe wind events that are caused by a strong downdraft within a thunderstorm, while microburst simply refers to an especially small downburst that is less than 4 km across.

Macroburst. An outward burst of strong winds at or near the surface with horizontal dimensions larger than 4 km (2.5 mi) and occurs when a strong downdraft reaches the surface. To visualize this process, imagine the way water domes out of a faucet and hits the bottom of a sink. The column of water is the downdraft, and the outward spray at the bottom of the sink is the macroburst. Macroburst winds may begin over a smaller area and then spread out over a wider area, sometimes producing damage like that of a tornado. Although usually associated with thunderstorms, macrobursts can occur with showers too weak to produce thunder.

Microburst. A small, concentrated downburst that produces an outward burst of strong winds at or near the surface. Microbursts are small — less than 4 km across — and short-lived, lasting only 5–20 minutes, with maximum windspeeds that sometimes exceed 100 mph. There are two kinds of microbursts: wet and dry (heavy precipitation or non-precipitation).

Gust front. The leading edge of rain-cooled air that clashes with warmer thunderstorm inflow, characterized by a wind shift, temperature drop, and gusty winds out ahead of a thunderstorm.

Derecho. A widespread, long-lived windstorm that is associated with a band of rapidly moving showers or thunderstorms. A typical derecho consists of numerous microbursts, downbursts, and downburst clusters. The swath of wind damage extends more than 240 miles and includes wind gusts of at least 58 mph along most of its length.

The NWS issues High Wind Watches, High Wind Warnings, and Wind Advisories to the Public.

- A High Wind Watch is issued when there is the potential for the development of high wind speeds that may pose a hazard or are life-threatening.
- A High Wind Warning is issued when one-minute surface winds of 36 kts (40 mph) or greater lasting for one hour or longer, or winds gusting to 50 kts (58 mph) or greater, regardless of duration, are either expected or observed over land.
- A High Wind Advisory is issued when sustained high wind speeds of 20–39 mph and/or gusts to 57 mph may pose a hazard

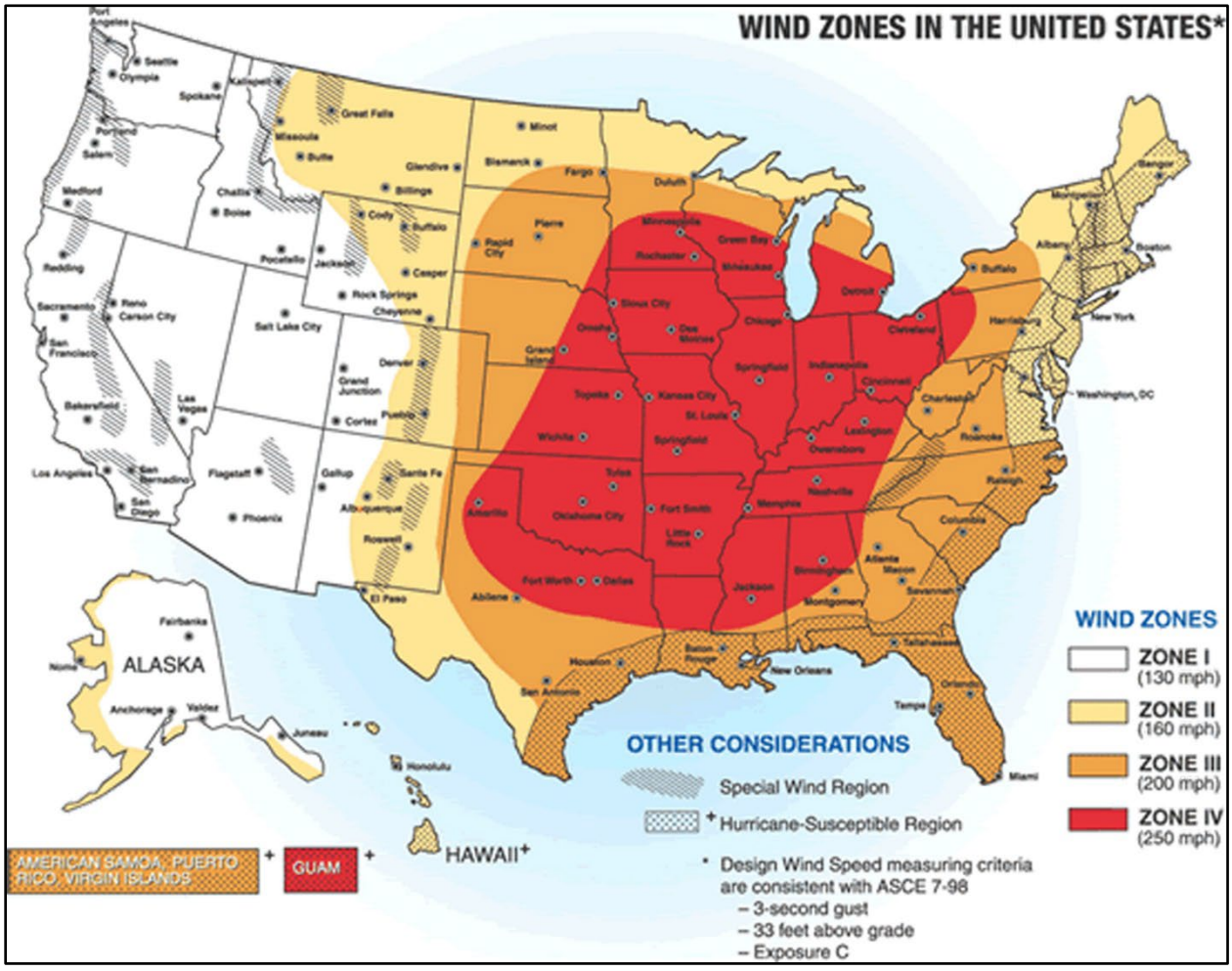
3.13.2. Area of Impact

As shown in Figure 23, the Tri-County region is located within Zone IV, where winds can be expected to reach up to 250 mph. Winds are not limited to a single geographic area and can impact anywhere in the planning area; when a severe wind event does occur, it can cause impacts across wide areas of land.

3.13.3. Extent

Severe winds can occur year-round throughout the entire Tri-County region. Figure 23 indicates the potential magnitude of wind speeds. Most of Michigan falls in Zones III and IV, which could result in winds up to 200 and 250 mph, respectively.

Figure 23. Wind Zones in the United States



Source: Taking Shelter from the Storm: Building a Safe Room Inside Your House, FEMA Publication 320, March 2021 Fifth Edition

Figure 24 shows the Beaufort Wind Force Scale. The Scale estimates wind speeds and their effects via visual observations. The scale begins with 0 and goes to a force of 12.

Figure 24. The Beaufort Wind Force Scale

#	MPH	Knots	Description	Specifications
0	< 1	< 1	Calm	Smoke rises vertically.
1	1-3	1-3	Light Air	Direction of wind shown by smoke drift but not by wind vanes.
2	4-7	4-6	Light Breeze	Wind felt on face; Leaves rustle; Wind vanes moved by wind
3	8-12	7-10	Gentle Breeze	Leaves and small twigs in constant motion; Wind extends light flag.
4	13-18	11-16	Moderate	Raises dust, loose paper; Small branches moved.
5	19-24	17-21	Fresh	Small trees begin to sway; Crested wavelets form on inland waters.
6	25-31	22-27	Strong	Large branches in motion; Whistling heard in telephone wires; Umbrellas used with difficulty.
7	32-38	28-33	Near Gale	Whole trees in motion; Inconvenience felt walking against the wind.
8	39-46	34-40	Gale	Twigs break off trees; Wind generally impedes progress; Mobile homes may shake.
9	47-54	41-47	Strong Gale	Slight structural damage occurs; Mobile homes, sheds, roofs, lanais, and RV's suffer minor damage.
10	55-63	48-55	Storm	Small trees uprooted; Moderate damage occurs to mobile homes and RV's; Brick and wood frame houses receive minor structural and roof damage; Some signs blown down.
11	64-73	56-63	Violent Storm	Moderate sized trees uprooted; Large branches snapped off trees; Chimneys and road signs toppled; Significant mobile home damage; Power lines downed.
12	74-95	64-83	Hurricane Category 1	Mobile homes overturned; Large trees and branches downed; Moderate roof damage to wood and brick homes; Minor pier damage.

Source: National Weather Service

3.13.4. Previous Occurrence

Within the Tri-County region between January 1, 1970, and December 31, 2020, the NCEI Storm Events Database includes reports of 295 severe wind events. During that period, Clinton, Eaton, and Ingham counties experienced the following:

Table 28. Severe Wind Summary for the Tri-County Region (1970–2020)

Location	Number of Severe Wind Events	Magnitude Range	Number of deaths	Number of injuries	Property Damage	Crop Damage
Clinton	99	0 – 80 mph	2	0	$2.080M	$70.00K
Eaton	83	0 – 100 mph	0	0	$4.686M	$180.00K
Ingham	113	0 – 89 mph	1	0	$5.050M	$55.00K
Total	295		3	0	11.81M	305.00K

Source: NOAA National Centers for Environmental Information Storm Events Database

From 1970 to December 31, 2020, the following presidential disasters involving wind (not including tornadoes) in the Tri-County region were declared:

- Ingham County: Severe Storms, High Winds, Flooding, DR-486-MI September 30, 1975
- Eaton and Ingham counties: Severe Storms, High Winds, Flooding, DR-465-MI, April 26, 1975

Notable wind events include a windstorm on March 8, 2017, that impacted all three counties. Widespread non-thunderstorm wind gusts of 60–70 mph on a sunny day caused hundreds of thousands of people to lose power. At one point, slightly over one million people were without power in Michigan. The winds caused numerous trees and tree limbs to fall, downing thousands of power lines, and several semis were flipped. The winds also caused damage to many homes, with numerous homes incurring significant roof damage; the NCEI recorded $10 million in property damages across the region.

On March 24, 2019, NCEI recorded a high wind event that caused $3 million in property damage to the region. Wind gusts of 55-65 mph resulted in the loss of power to around a million people on the March 24 and 25, downing tree limbs and power lines.

A review of incidents recorded by NCEI show that normal impacts of high winds include broken tree branches, broken power lines, and loss of power.

3.13.5. Probability

The probability of a severe wind incident was calculated based on existing historical data. Frequency was determined by dividing the number of events observed by the number of years and multiplying by 100. The formula for calculating the probability of future tornadic occurrences is:

Incidents/time = probability

In the period between 1970 and 2020, the NCEI reported 295 separate severe wind incidents in the Tri-County region. This calculates to approximately six severe wind events per year, a 100% chance of a severe wind event occurring somewhere in the region in any given year. Assuming this existing trend will continue, this figure can be predicted into the future as well.

3.13.6. Vulnerability Assessment

Damaging winds have occurred everywhere within the Tri-County region. Damage from high winds is often described in regional or broad areas, but downburst damage will impact a small area most generally less than three miles in diameter.

Specific vulnerabilities from high wind events include damage to poorly constructed buildings, building collapse and damage, flying debris, semi rollovers and car accidents, and downed power lines and electric system damage. Cascading hazards caused by high winds can include power loss, and depending on the time of the year, winds can also exacerbate snow and blizzards by creating deep snowdrifts over roads and affecting the normal flow of traffic. Damages to the Tri-County region have historically included downed power lines, significant roof and building damage, fallen trees, and downed tree limbs and debris.

3.13.6.1. Impacts on People

According to the Wind Zones map in Figure 23, the Tri-County region has a high vulnerability to severe winds that can reach up to 250 mph.

Since most thunderstorms produce some straight-line winds as a result of outflow generated by the thunderstorm downdraft, anyone living in thunderstorm-prone areas of the world is at risk of experiencing this hazard. Areas with high populations are at greater risk for property damage and human impact.

High levels of poverty can add to an area's vulnerability to the impacts of severe winds. Those with low income are less likely to have safe housing, access to health care services, and access to up-to-date news and emergency information.

People living in mobile homes are especially at risk for injury from severe winds, as mobile homes tend not to be as sturdy. The townships in the region have some buildings with lower levels that could be used for sheltering-in-place, but they are not certified or official shelters due to the risk for liability. While people who come for shelter will not necessarily be turned away, the region prefers to educate people on the need to have a plan in place – a place to go – when severe winds strike.

Those most at risk from severe winds include those who live in mobile homes. The Tri-County region is home to 62 mobile home parks – 20 in Ingham County (2.7% population), 20 in Eaton County (4.7%), and 22 (6%) in Clinton County. Some of the mobile home parks offer some sort of shelter, but they do not have the capacity to hold everyone in the park. Many mobile home residents come to the townships for shelter.

Also at high risk are people with disabilities and access and functional needs (DAFN). The DAFN community would include the elderly, children, women in late-stage pregnancy, those with limited English proficiency, deaf or hard of hearing, blind or low vision, developmental/intellectual disabilities, homeless, and transportation disadvantaged.

3.13.6.2. Impacts on Infrastructure

Severe winds in the Tri-County region can cause significant damage to infrastructure. The region should be prepared to meet and withstand power loss and its cascading effects on the ability of other critical infrastructure (telecommunications, natural gas, fuel oil, water supply, hospitals, and transportation) to continue providing services. Road blockage and damage from felled trees can restrict access to critical facilities.

All infrastructure in the Tri-County region is exposed to this hazard. All critical facilities in the Tri-County region are susceptible to the potential impacts of severe winds that could cause power outages, interrupting vital services. The region should ensure private medical facilities, such as urgent care and nursing homes and other long-term care facilities, are educated on the importance of backup power capabilities in the event of a power outage. The Tri-County region could consider assisting facilities with the cost of backup generators with a generator rebate program through the FEMA Hazard Mitigation Grant Program.

3.13.6.3. Impacts on the Economy

Any event that causes a business to close for a period will cause direct and indirect losses to the economy. Small businesses are the lifeblood of communities. Their survival after a disaster is critical to the community's recovery. Even if a business itself is not damaged by the event, it may find itself severely understaffed due to employees who have suffered severe damages or are unable to get to work due to road damage.

Michigan has a diversified economy based on agriculture, manufacturing, tourism, services, and professional trades. More automobiles and trucks are produced in Michigan than in any other state. The top three employers in Lansing are the State of Michigan (15,729), Michigan State University (10,253), and Sparrow Health System (7,600). The top private industry employer in Lansing is General Motors with 4,549 employees, according to the Lansing Economic Area Partnership (LEAP) (2019 data).

The Michigan Power Outage of 2017 was caused by a massive windstorm that surprised Michiganders as it was not the result of a thunderstorm but instead took place on a beautiful, sunny day when people were out and about, rather than hiding in a shelter. It took more than a week to restore power to the one million-plus customers who lost it as a result of the severe winds that day. During that time, many schools and businesses were closed for multiple days.

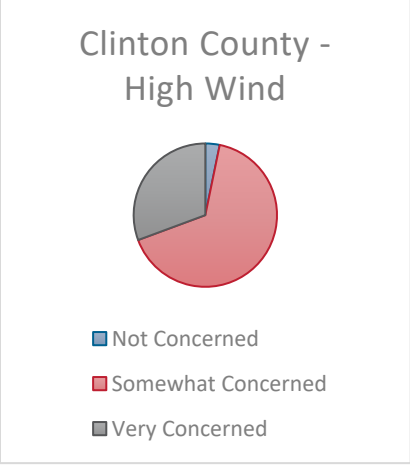
The Insurance Institute for Business and Home Safety estimates that one in four businesses forced to close by a disaster will never reopen. This means every community's economy is vulnerable to disasters. A community's resilience is directly linked to the survivability of its business community.

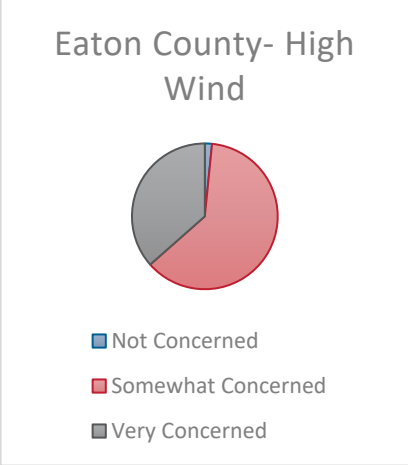
3.13.6.4. Impacts on the Environment

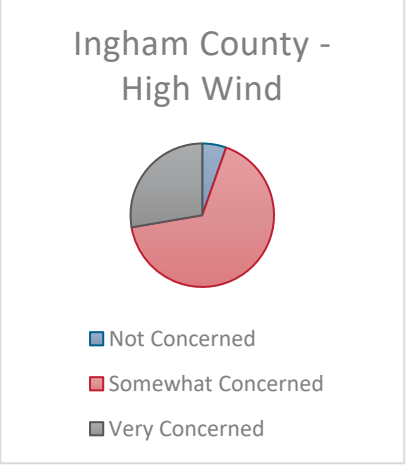
In addition to what can be massive personal and property losses after a natural disaster, there may also be unseen environmental impacts that must be mitigated against. Windstorms can spread pollutants into the air, soil, groundwater, watersheds, and lakes, upset the natural ecosystem, and disrupt habitats for fish, insects, birds, and mammals.

3.13.7. Public Input

Participants in the public survey were asked to assess and identify their level of concern of a severe wind incident occurring in their community. Across the Tri-County region, most respondents noted that they were only somewhat concerned about this hazard.







3.13.8. Hazard Significance Summary

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Highly Likely	Limited	Moderate	Medium	High
Eaton	Highly Likely	Limited	Moderate	Medium	High
Ingham	Highly Likely	Limited	Moderate	Medium	High

3.14. Severe Winter Weather

3.14.1. Hazard Profile

Severe winter weather is an annual occurrence in Michigan. Severe winter weather can produce a combination of freezing rain, sleet, heavy snow, blowing snow, ice storms, and sometimes dangerous wind chills. Severe winter weather is life-threatening. Most deaths from winter storms are not directly related to the storm itself but to traffic accidents on icy roads, hypothermia from prolonged exposure to extreme cold, and heart attacks while shoveling snow.

The Tri-County region experiences severe winter weather on a regular basis. The National Weather Service describes the varying types of severe winter weather events as follows:

Winter Storms

Blizzard. A blizzard is a dangerous winter storm that is a combination of blowing snow and wind resulting in very low visibilities. The main types of precipitation are snow, sleet, or freezing rain. While heavy snowfalls and severe cold often accompany blizzards, they are not required. Sometimes strong winds pick up snow that has already fallen, creating a ground blizzard. A blizzard carries winds over 35 mph with snow and blowing snow and reduces visibility to one fourth mile or less for at least three hours.

Ice storm. An ice storm is a storm which results in the accumulation of at least .25” of ice on exposed surfaces. An ice storm creates hazardous driving and walking conditions. Even a small amount of ice can be extremely dangerous to drivers and pedestrians, but large accumulations of ice can cause tree

branches to break and powerlines to easily snap under the weight. Ice storms can cause massive power outages that can disrupt entire communities for weeks at a time.

Lake effect storm. As a cold, dry air mass moves over the Great Lakes regions, the air picks up a lot of moisture from the Great Lakes. This air, now full of water, dumps the water as snow in areas generally to the south and east of the lakes.

Snow

Precipitation falls as snow when air temperature remains at or below freezing from the cloud base to the ground.

Snow flurries. Light snow falling for short periods. Little accumulation is expected.

Snow showers. Occur when snow falls at varying intensities. Some accumulation is possible.

A snow squall. A brief, intense snow shower accompanied by strong, gusty winds. Accumulation may be significant. Snow squalls are best known in the Great Lakes region.

Sleet

There is a difference between sleet and freezing rain. Sleet occurs when snowflakes only partially melt when they fall through a shallow layer of warm air and become slushy. They refreeze as they fall through a deep layer of freezing air above the surface and eventually reach the ground as frozen rain drops that bounce on impact.

Freezing Rain

Freezing rain occurs when snowflakes descend into a warmer layer of air and melt completely. When they fall through another thin layer of freezing air just above the surface, they don't have enough time to refreeze before reaching the ground. They instantly refreeze upon contact with anything that is at or below freezing, creating a glaze of ice on the ground, trees, power lines, and even cars that are currently traveling. Freezing rain in light amounts can be dangerous for travel. In heavier amounts, it becomes an ice storm and can cause significant damage to trees and power lines.

3.14.2. Area of Impact

Winter storms have a large footprint and tend to impact entire regions at once. The risk of this hazard is uniform over the entire Tri-County region.

3.14.3. Extent

Winter weather in the Tri-State region generally runs from October/November to April, with the first snowfall usually arriving in November (sometimes as early as October) and the last snowfall arriving in April.

Since 1972, the Tri-County region has experienced five severe winter weather events that have resulted in a governor's declaration of disaster or state of emergency. Total seasonal snowfall for the Tri-County region averages around 43 inches, compared to the U.S. average of 28 inches and the Michigan state average of 61 inches. The greatest annual snowfall recorded in the state came in the winter of 1979–1980

at a whopping 355.90 inches. The greatest cumulative snowfall for Lansing was 86.3 inches and occurred during the year that ended December 31, 2008.

The Sperry-Piltz Ice Accumulation Index, or SPIA, is an ice accumulation and ice damage prediction tool that predicts potential damage from approaching ice storms. The SPIA is to ice storms what the Enhanced Fujita Scale is to tornadoes. It helps communities better prepare days in advance for the damaging impacts of ice storms. The SPIA forecasted the January 2009 ice storm that produced up to 1.5 inches accumulation from the Ozarks to the Ohio Valley as a level 5 storm 2–3 days in advance. The more time a utility has to prepare, the more time there is to acquire the resources necessary to restore power as expeditiously as possible. Using the SPIA, an ice storm's intensity and duration can be predicted 72–96 hours, or 3–4 days in advance.

Figure 25. Sperry-Piltz Ice Accumulation Index

The Sperry-Piltz Ice Accumulation Index, or "SPIA Index" – Copyright, February, 2009

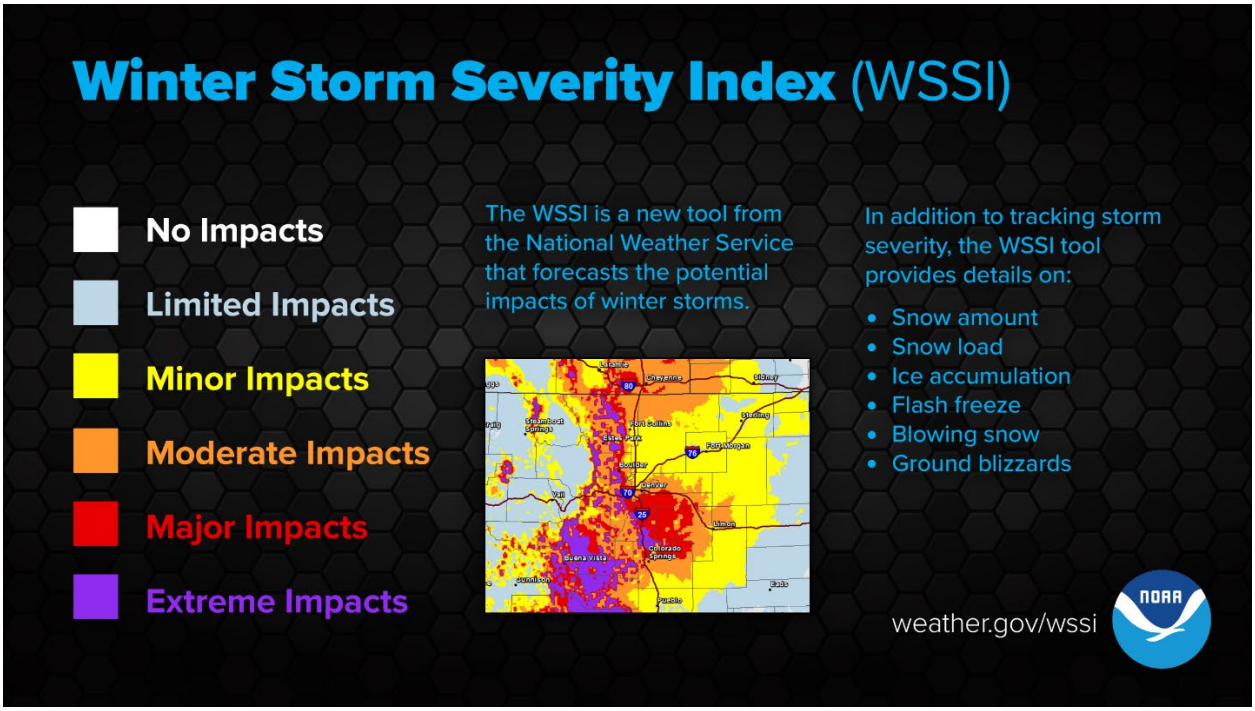
ICE DAMAGE INDEX	DAMAGE AND IMPACT DESCRIPTIONS
0	Minimal risk of damage to exposed utility systems; no alerts or advisories needed for crews, few outages.
1	Some isolated or localized utility interruptions are possible, typically lasting only a few hours. Roads and bridges may become slick and hazardous.
2	Scattered utility interruptions expected, typically lasting 12 to 24 hours. Roads and travel conditions may be extremely hazardous due to ice accumulation.
3	Numerous utility interruptions with some damage to main feeder lines and equipment expected. Tree limb damage is excessive. Outages lasting 1 – 5 days.
4	Prolonged & widespread utility interruptions with extensive damage to main distribution feeder lines & some high voltage transmission lines/structures. Outages lasting 5 – 10 days.
5	Catastrophic damage to entire exposed utility systems, including both distribution and transmission networks. Outages could last several weeks in some areas. Shelters needed.

(Categories of damage are based upon combinations of precipitation totals, temperatures and wind speeds/directions.)

Source: www.spia-index.com

The **Winter Storm Severity Index (WSSI)** is a spatial assessment of the societal impacts of winter storms. It highlights regions and localities with the forecasted potential of damaging and life-threatening effects brought on by winter weather, including tree and powerline damage, school closures, and transportation issues such as traffic accidents, road closures, and flight cancellations. The WSSI allows forecasters, emergency management, and the general public to make informed decisions about the potential for significant weather-related impacts.

Figure 26. Winter Storm Severity Index



Source: www.weather.gov

A winter storm warning is issued by NOAA to Lansing and lower mid-Michigan when hazardous winter weather is occurring, imminent, or highly likely over part or all of the warning forecast area. Winter storm warnings are usually issued 12–24 hours in advance and occasionally as much as 36 hours before the storm moves into the region. A major winter storm can last for several days.

3.14.4. Previous Occurrences

In 2003, a major ice storm in southern lower Michigan caused hundreds of thousands of people to lose power. The weight of the ice brought down thousands of trees and limbs and hundreds of power lines. Many people throughout the Tri-County region lost power for several days and some for up to a week. The ice storm resulted in nearly $1 million throughout the Tri-County region. Up to an inch of ice was received in some areas. The was one of the biggest ice storms to affect lower Michigan in the previous 50 years. Most counties throughout central and lower Michigan received at least a half an inch of ice with total accumulations.

In December 2013, an ice storm affected portions of southern lower Michigan. Ice accumulations of one half to three-quarters of an inch occurred across much of Eaton, Clinton, and Ingham counties as well as surrounding counties. This resulted in a very prolonged power outage that affected hundreds of thousands of residents across lower Michigan; many people in the Tri-County region waited 4–6 days before power was restored. At one point, over 15,000 people in Eaton County were without power. Widespread impacts included downed tree limbs and downed trees across the area. NCEI records $11 million in property damages in the Tri-County region as a result of this storm. Across the larger area of Michigan, over $60 million in property damage was recorded.

Within the Tri-County region between January 1, 1970, and December 31, 2020, the NCEI Storm Events Database includes reports of 63 severe winter weather events, including blizzard, heavy snow, ice storm, lake effect snow, sleet, winter storm, and winter weather. Table 29 includes a summary of severe winter weather events in the Tri-County region.

Table 29. Severe Winter Weather Summary for the Tri-County Region (1970-2020)

Location	Number of Events	Number of Deaths	Number of Injuries	Property Damage	Crop Damage
Clinton	51	0	0	$5.455M	$0
Eaton	59	0	0	$6.475M	$0
Ingham	57	0	0	$6.490M	$0
Total	**167**	**0**	**0**	**$18.42M**	**$0**

Source: NOAA National Centers for Environmental Information Storm Events Database

From 1970 to December 31, 2020, the following presidential disasters involving severe winter weather in the Tri-County Region were declared:

- Eaton and Ingham counties: Snow, EM-3160, December 11, 2000 – December 31, 2000
- Clinton, Eaton, and Ingham counties: Blizzards & Snowstorms, EM-3057-MI, January 27, 1978
- Eaton County: Snowstorms, EM-3030-MI, February 5, 1977
- Clinton, Eaton, and Ingham counties: Severe Storm, Freezing, DR-330-MI, April 5, 1972

Notable events include the 1978 Blizzard. According to the National Weather Service in Detroit/Pontiac, the winter of 1977-78 had been one of the coldest on record in many areas from the Rockies to the Appalachians. This monster winter storm made its power felt in record breaking lower pressure readings in Cincinnati, Rochester, Toronto, and Wilmington, NC, with damaging winds reaching Boston and Tallahassee, FL. The headline of the 8:00 AM EST Special Weather Statement issued by the NWS Forecast Office in Ann Arbor on January 26 read “A Great Storm is Upon Michigan.”

“Heavy snow and blizzard conditions were extensive as wind gusts in excess of 35 mph whipped the snow into huge drifts across much of southeast lower Michigan. Other areas of eastern Michigan, Indiana, and Ohio reported near hurricane-force winds, heavy snow, and temperatures hovering between zero and 10 above, resulting in extreme blizzard conditions. These conditions later expanded further east into Pennsylvania and West Virginia and prevailed into the night (26-27th) across much of the eastern Great Lakes, southern Ontario, and the Upper Ohio Valley. With the storm generating copious amounts of snow and very strong winds, whiteout conditions were widespread. All land and air traffic came to a standstill in the affected regions. Several major roads were closed for at least two to three days, if not longer, while

clean up got underway. Numerous NWS employees were stranded at work, home, or on the road somewhere between the two. Several employees worked double shifts into at least Friday (some longer) because of the impassable roads with others simply unable to get to work."

Record 24-hour snowfall totals from the storm included 16.1 inches at Grand Rapids, 15.4 inches at Houghton Lake, and 12.2 in Dayton, Ohio. Snowfalls for the entire storm (January 25-27) included 30.0 inches at Muskegon, 19.3 at Lansing, and 19.2 at Grand Rapids.

Twenty people died in Michigan as a direct or indirect result of the storm, most due to heart attacks or traffic accidents. Many from homes that lost power and heat were hospitalized for exposure. The Tri-County region did not suffer any deaths or injuries.

3.14.5. Probability

According to the NCEI Storm Events Database, the Tri-County region reported 63 severe winter weather events between January 1, 1970, and December 31, 2020, including five ice storms, 28 winter storms, two blizzards, 15 heavy snow events, four lake effect snow events, one sleet event, and eight winter weather events. This total of 63 severe winter weather events translates to an annual probability of 126%, or a little over one severe winter weather events per year, making the probability rating "Highly Likely."

3.14.6. Vulnerability Assessment

The Tri-County region is vulnerable to the effects of severe winter weather. Freezing rain, sleet, ice, and snow on roads, highways, and bridges create hazardous conditions for driving and walking, resulting in traffic accidents, the leading cause of death in winter storms. Emergency services may be unable to respond. The likelihood of power failure increases during severe winter weather due to accumulation of ice on utility poles and power lines. According to the June 2015 Tri-County regional Hazard Mitigation Plan, Snowstorms and Ice/Sleet Storms ranked at 4 and 6 on the list of hazards and how they impacted the Tri-County region and local communities.

3.14.6.1. Impacts to People

The entire population of the Tri-County region is vulnerable to severe winter weather. Most deaths from severe winter weather are not related to a winter storm but to traffic accidents on icy roads, heart attacks while shoveling snow, and hypothermia from prolonged exposure to the cold. Vulnerable populations will have a higher vulnerability to severe winter weather due to age, lack of resources, and education.

Of injuries related to ice and snow, about 70% occur in automobiles and 25% are people caught out in the storm. The majority are males over 40 years old. Of injuries related to exposure to cold, 50% are people over 60 years old, 75% are male, and 20% occur in the home.

Snow packed roads, bridges, hilly areas, and black ice increase the risk for traffic accidents which can result in death or injury. Hypothermia is caused by prolonged exposures to very cold temperatures resulting in the body's loss of heat at a faster pace than it is produced. Lengthy exposure will eventually use up your body's stored energy, which leads to lower body temperature. Those at most risk of hypothermia are older adults with inadequate food, clothing, or heating, babies sleeping in cold

bedrooms, people who remain outdoors for long periods, and people who drink alcohol or use illicit drugs. People, pets, and livestock are susceptible to frostbite and hypothermia during winter storms.

Those engaged in outdoor activity, such as shoveling snow or digging out vehicles, are at risk of heart attack in addition to frostbite or hypothermia.

Those with lower incomes may not have access to housing with adequate heating even when power outages are not an issue. They may use kerosene heaters, space heaters, or their oven as a source of heat. There are warming shelters made available throughout the region. There is a plan in place with Ingham and Clinton Counties for heating centers for the general public if the power goes out. They coordinate with the 211 system and advertise via social media, the news, etc.

3.14.6.2. Impacts to Infrastructure

Roads/Transportation: Snow and ice accumulation could cause significant risk to all transportation in the Tri-County region. Dangerous roads and road closures may obstruct the ability of emergency services such as police, fire, and emergency medical services to respond to emergencies and provide medical care or access to safe shelter. Severe winter weather could also disrupt normal operations at the Capital Region International Airport and the region's other airports, including private business airports as well as Sparrow Hospital Heliport and Ingham Medical Helistop. Snow and ice can impact runway safety and cause delays in flight schedules as well as cancellations.

Power Supplies: The most serious and dangerous ramifications of severe winter weather on the Tri-County region's infrastructure is power outage caused by damaged power lines suffering from the weight of ice accumulation.

Natural Gas: During severe winter weather, and especially in the aftermath of ice storms, Michigan Gas Utilities may experience difficulties in meeting the needs of the Tri-County region, including falling power lines, debris from damaged trees, damage to gas meters, and risk to field staff, including hypothermia, downed power lines, and dangerously slick road conditions.

Critical Facilities: Critical facilities including hospitals, fire stations, police stations, hospitals, nursing homes, and other similar facilities that provide critical services are vulnerable to the impacts of severe winter weather. Power outages can disrupt vital services, and roads can be inaccessible due to snow, ice, or debris from damaged trees.

Water/Sewage: Power outages could pose a significant danger to the Tri-County region's three water treatment plants and eight wastewater treatment plants.

3.14.6.3. Impacts to the Economy

Businesses experience loss of income as a result of closure during winter storms or power outages or the inability for customers or staff to commute to work on dangerous or closed roads. Ice accumulation during severe winter weather can cause damages to power lines due to the weight of the ice on the lines and equipment as well as damage caused to lines and equipment from falling trees and tree limbs weighted down by ice. Losses could include the cost of repair or replacement of damaged facilities and lost economic opportunities for businesses. Secondary effects of power outages could include burst water pipes in homes, businesses, or critical facilities without electricity during winter storms.

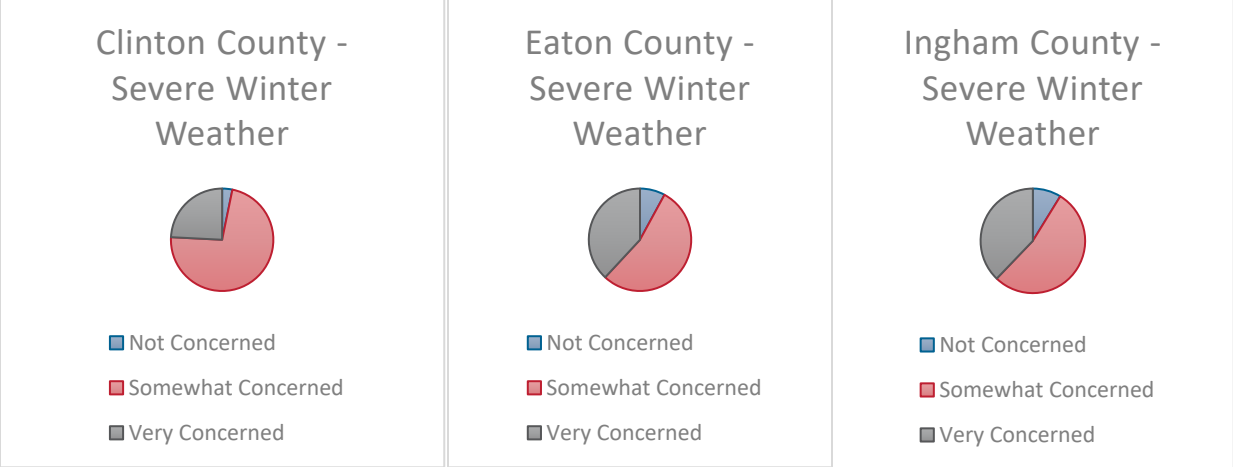
But one of the biggest damages suffered by the economy during a severe winter weather event is in the form of lost income and sales at restaurants and retailers.

3.14.6.4. Impacts to the Environment

Tree loss is to be expected in ice storms. Michigan has a total tree population of 14 billion or 226 trees per acre. Severe ice storms can have a devastating impact on tree growth in the Tri-County region.

3.14.7. Public Input

Participants in the public survey were asked to assess and identify their level of concern of a severe winter weather incident occurring in their community. Across the Tri-County region, most respondents noted that they were somewhat concerned about this hazard. Very few listed a low level of concern.



3.14.8. Hazard Significance Summary

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Highly Likely	Limited	Moderate	Medium	High
Eaton	Highly Likely	Limited	Moderate	Medium	High
Ingham	Highly Likely	Limited	Moderate	Medium	High

3.15. Tornado

3.15.1. Hazard Profile

The National Oceanic and Atmospheric Administration (NOAA) National Severe Storms Laboratory (NSSL) defines a tornado as a "narrow, violently rotating column of air that extends from a thunderstorm to the ground." When we see a tornado, we are not seeing the invisible, rotating wind but its visible result. We are seeing a wind funnel made of water, dust, and debris picked up by the wind in its wake. Tornadoes are generally formed out of severe thunderstorms. They require warm, moist, rising air, a source of lift,

and wind shear. Tornadoes are considered the most violent of all the severe weather storms we experience.

The updraft of a tornado (the force that lifts upward inside a funnel cloud, able to lift and move vehicles, houses, trees, and other large objects) is extremely dangerous, but it is the flying debris caught within that updraft that experts consider to be the most dangerous aspect of a tornado. Objects caught within those high-speed winds can be as large as a car or even a structure or as small as shards of broken glass or nails. These items become lethal airborne missiles and pose the greatest threat to living creatures caught in a tornado.

About 1,200 tornadoes hit the U.S. each year, resulting in approximately 400 million dollars in damages and killing 56 people on average (mostly from flying debris). The extreme winds obliterate homes, devastate businesses, destroy bridges and other infrastructure, hurl cars and trucks through the air, and ravage the landscape by shredding the bark from trees and siphoning all the water from riverbeds. The spring of 2011 was one of the deadliest and costliest tornado seasons on record. Between April and June 2011, tornadoes killed more than 580 people and caused more than $21B in economic damages. The high death toll was partially attributed to a lack of adequate storm shelters and people who did not seek shelter in time.

Winds of a tornado may reach 300 miles per hour and can strike with little to no warning time (the current average lead-time for tornado warnings is 15-18 minutes). Damage paths can be in excess of one mile wide and 50 miles long. The tornado outbreak of December 10, 2021, spawned a reported 44 tornadoes across nine states including Missouri, Illinois, Arkansas, Kentucky, Tennessee, Mississippi, Alabama, Indiana, and Ohio. One tornado in this storm tore a continuous path across 128 miles in Kentucky. Another was on the ground for at least 71.6 miles across northwest Tennessee and was more than half a mile wide at times. With a death toll of 90, this tornado outbreak broke the death toll of that set by the outbreak that produced the Joplin tornado.

3.15.2. Area of Impact

Tornado season in Michigan is typically from April to August, with June being the peak of the tornado season in the state, but tornadoes can occur during any time of the year and have been recorded in Michigan in every month but January and December. And while some regions of the U.S. are more prone to tornadoes than others (Oklahoma and Texas have the highest number per year per 10,000 square miles), tornadoes have been documented in every U.S. state, including Michigan.

Since 1970, the NOAA National Centers for Environmental Information (NCEI) reports more than 500 tornadic events in the state. The Flint-Beecher tornado of 1953 ranks among the deadliest tornadoes in U.S. history. An F5 tornado on June 8 of that year was produced by a larger outbreak of severe weather that began in Nebraska before moving across the Great Lakes states and then into New York and New England. Michigan was also hit by several other tornadoes that same day ranging from F0–F4. At 116 fatalities, the Flint-Beecher F5 produced the last 100+ death toll for a single tornado in U.S. history until the 2011 Joplin tornado.

Most tornadoes are found in the Great Plains of the central U.S. Cold, dry air moving south from Canada meets warm, moist air moving north from the Gulf of Mexico, creating the perfect unstable environment for the development of severe thunderstorms and the formation of tornadoes. Violent tornadoes have

formed over rivers and lakes and have been known to cross the Mississippi River. Strong tornadoes have been known to cross the Detroit River and St. Clair River separating southeast Michigan and southwest Ontario. Tornadoes can strike in both rural areas and urban. More than 100 tornadoes have been reported to strike downtown areas of large cities.

Tornadoes are more likely to touch down in landscape transition zones, where the terrain shifts from urban to rural or from forest to farmland. Tornadoes cover relatively small areas when compared to blizzards or hurricanes, but the damage is often more severe, causing deaths and damage to property and the natural landscape.

3.15.3. Extent

Prior to February 1, 2007, the Fujita Scale was used to measure tornado intensity. The F Scale was developed based on damage intensity and not wind speed; wind speed ranges are estimated by rating, based on the extent of observed damage caused by a tornado. Table 30**Error! Reference source not found.** shows the Fujita Scale.

Table 30. Fujita Scale

Fujita Scale (For Tornadoes Prior to February 1, 2007)			
F Scale	Character	Estimated Winds	Description
F0	Weak	40–72 mph	**Light Damage**. Some damage to chimneys, branches broken off trees, shallow-rooted trees uprooted, sign boards damaged
F1	Weak	73–112 mph	**Moderate Damage**. Roof surfaces peeled off, mobile homes pushed with foundations overturned, moving autos pushed off road
F2	Strong	113–157 mph	**Considerable damage**. Roofs torn off from frame houses, mobile homes demolished, boxcars pushed over, large trees snapped or uprooted, heavy cars lifted or thrown
F3	Strong	158–206 mph	**Severe Damage**. Roofs and some walls torn from well-constructed houses, mobile homes demolished, boxcars pushed over, large trees snapped or uprooted, light objects become projectiles
F4	Violent	207–260 mph	**Devastating Damage**. Well-constructed houses leveled, structures with weak foundation blown some distance, cars thrown, large missiles generated
F5	Violent	260–318 mph	**Incredible Damage**. Strong frame houses lifted off foundations, carried considerable distances, and disintegrated, auto-sized missiles airborne for several hundred feet or more, trees debarked

Source: National Weather Service

The Enhanced Fujita Scale (EF Scale) became operational on February 1, 2007 and is used to assign each tornado a rating based on estimated wind speeds and related damage. When tornado-related damage is surveyed, it is compared to a list of damage indicators and degrees of damage, which help estimate a

better range of wind speeds likely produced by the tornado. The EF Scale revised the original Fujita Scale to better reflect tornado damage surveys and align to wind speeds more closely associated with storm damage. The National Weather Service (NWS) is the only federal agency with the authority to provide "official" tornado EF Scale ratings. Table 31 shows the Enhanced Fujita Scale.

Table 31. Enhanced Fujita Scale

Enhanced Fujita Scale		
EF Rating	3-Second Wind Gust	Expected Damage
0	65–85 mph	Minor damage. Shingles blown off or parts of a roof peeled off, damage to gutters/siding, branches broken off trees, shallow-rooted trees toppled
1	86–110 mph	Moderate Damage. More significant roof damage, windows broken, exterior doors damaged or lost, mobile homes overturned or badly damaged
2	111–135 mph	Considerable Damage. Roofs torn off well-constructed homes, homes shifted from foundations, mobile homes completely destroyed, large trees snapped or uprooted, cars can be tossed
3	136–165 mph	Severe Damage. Entire stories of well-constructed homes destroyed, significant damage done to large buildings, homes with weak foundations blown away, trees begin to lose their bark
4	166–200 mph	Extreme Damage. Well-constructed homes leveled, cars are thrown significant distances, top story exterior walls on masonry buildings likely to collapse
5	Over 200 mph	Massive/Incredible Damage. Well-constructed homes swept away, steel-reinforced concrete structures critically damaged, high-rise buildings sustain severe structural damage, trees are usually completely de-barked, stripped of branches and snapped

Source: National Weather Service

Tornadoes and associated tornado strength are unpredictable. The Tri-County region is susceptible to tornadoes of any strength based on the EF Scale.

3.15.4. Previous Occurrences

Tornado events have occurred in the Tri-County region. Between January 1, 1970, and December 31, 2020, the NCEI Storm Events Database includes reports of 57 tornado events. Table 32

Table 32: NCEI Tornado Events by County

Location	Number of Tornadoes	Magnitude Range	Number of Deaths	Number of Injuries	Property Damage	Crop Damage
Clinton	13	F0-F2	0	7	$1.327M	150.00K
Eaton	17	F0-F3	2	51	$53.682M	225.00K
Ingham	23	FO-F2	3	4	$24.445M	200.00K
Total	53		5	62	$79.454M	$575.00K

Source: NOAA National Centers for Environmental Information Storm Events Database

Ingham, Clinton, and Eaton counties have not been included in any presidential disaster declarations that involved tornadoes since 1970. Notable tornado events include:

August 24, 2007 — Eaton County was the victim of a line of thunderstorms that culminated in an EF3 tornado with winds estimated at 140 mph. The tornado had a path of 200–300 yards wide and six and one-half miles long. Fifteen homes were seriously damaged, most beyond repair, including a single-story home that literally lost its roof and garage (they were never found) as well as its windward-facing walls. Five injuries were reported, and damages totaled more than $40M.

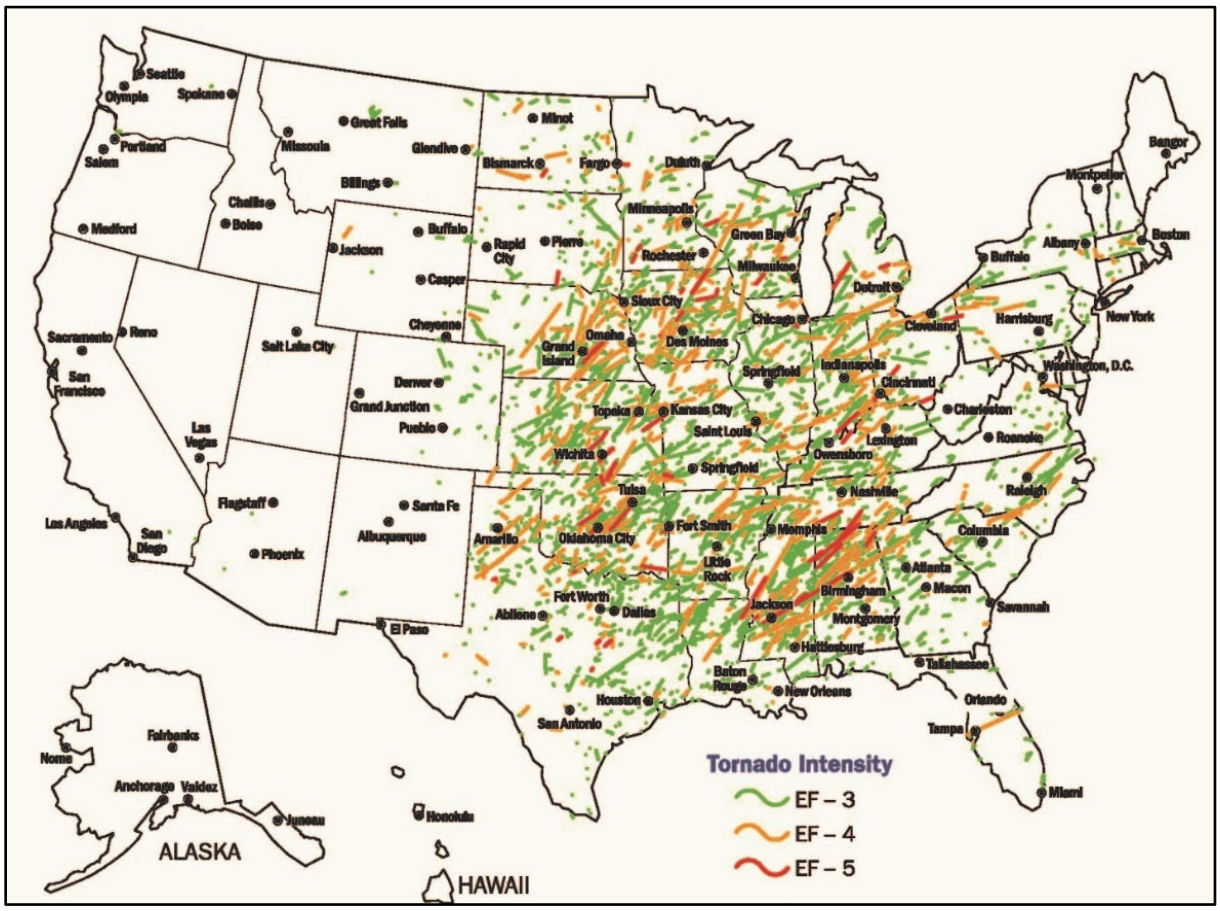
October 18, 2007 — As if to prove that tornadoes are not confined to any particular "season," Ingham County experienced an EF2 tornado with top winds estimated between 120–130 mph. The tornado began just northeast of Mason and moved northeast through the town of Williamston, where approximately 100 structures were damaged in a subdivision on the south side of Williamston. Two fatalities occurred about four miles northeast of Williamston where a modular home and its two occupants were flipped into a pond. Property damages exceeded $15M.

3.15.5. Probability

The probability of occurrence of tornadoes varies across the country and within each state. Comparing the numbers of tornadoes recorded in different areas of the country can provide a better understanding of potential tornado activity in those areas.

Figure 27 shows the general locations of recorded EF3, EF4, and EF5 tornadoes in the U.S. between 1950 and 2018 (NOAA NCEI, Undated and NOAA National Weather Service Storm Prediction Center Undated).

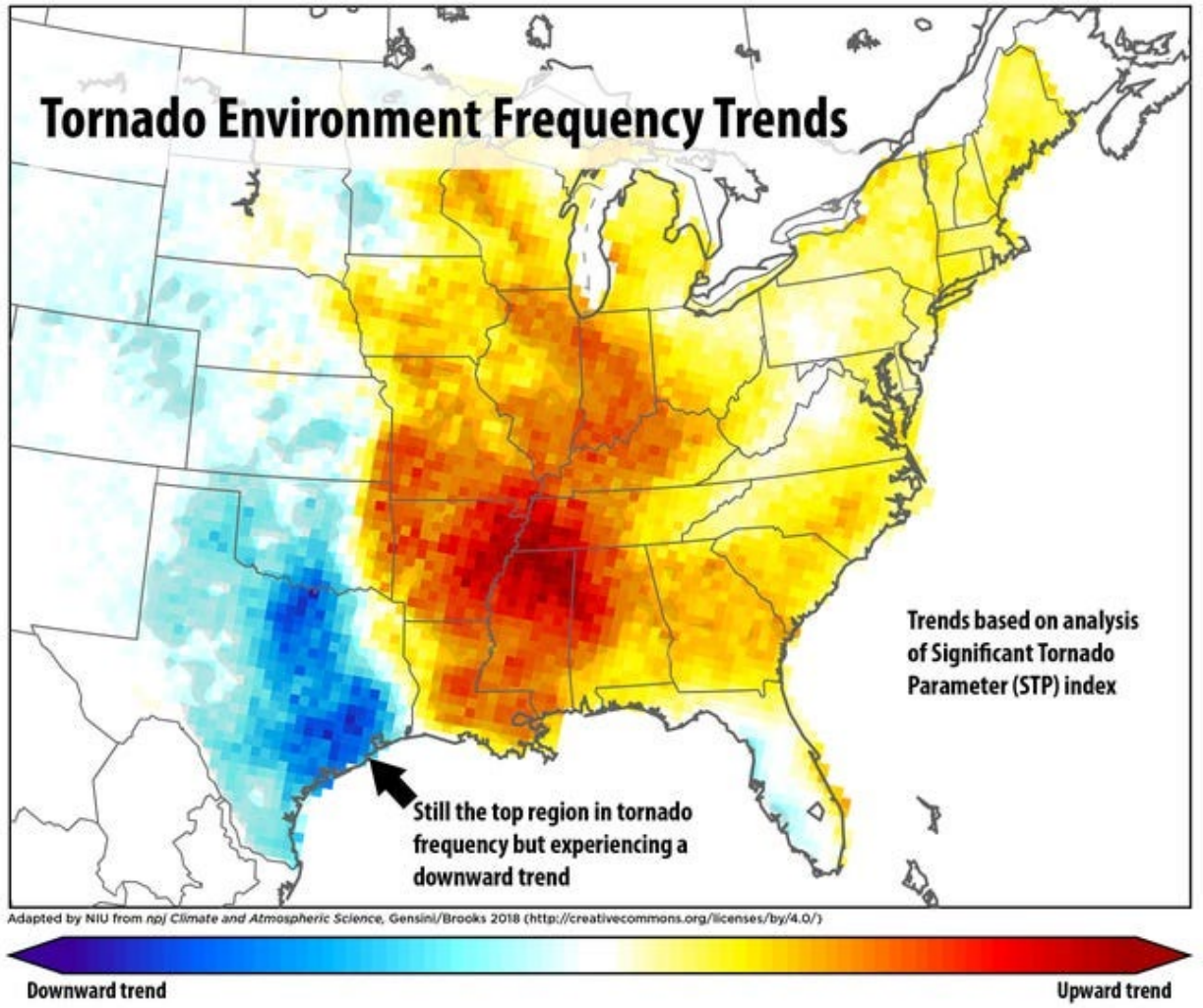
Figure 27. Tornado Activity in the United States 1950–2018



Source: Taking Shelter From the Storm, FEMA Publication 320, fifth edition

While "Tornado Alley," an area in the U.S. where tornadoes are reported most frequently, has traditionally covered the areas of Texas, Louisiana, Arkansas, Oklahoma, Kansas, South Dakota, Iowa, and Nebraska, researchers are noticing a trend in tornado activity moving from the Great Plains toward the Midwest and Southeast. At present, this shift in activity has not included Michigan, which continues to average about 15 tornadoes annually.

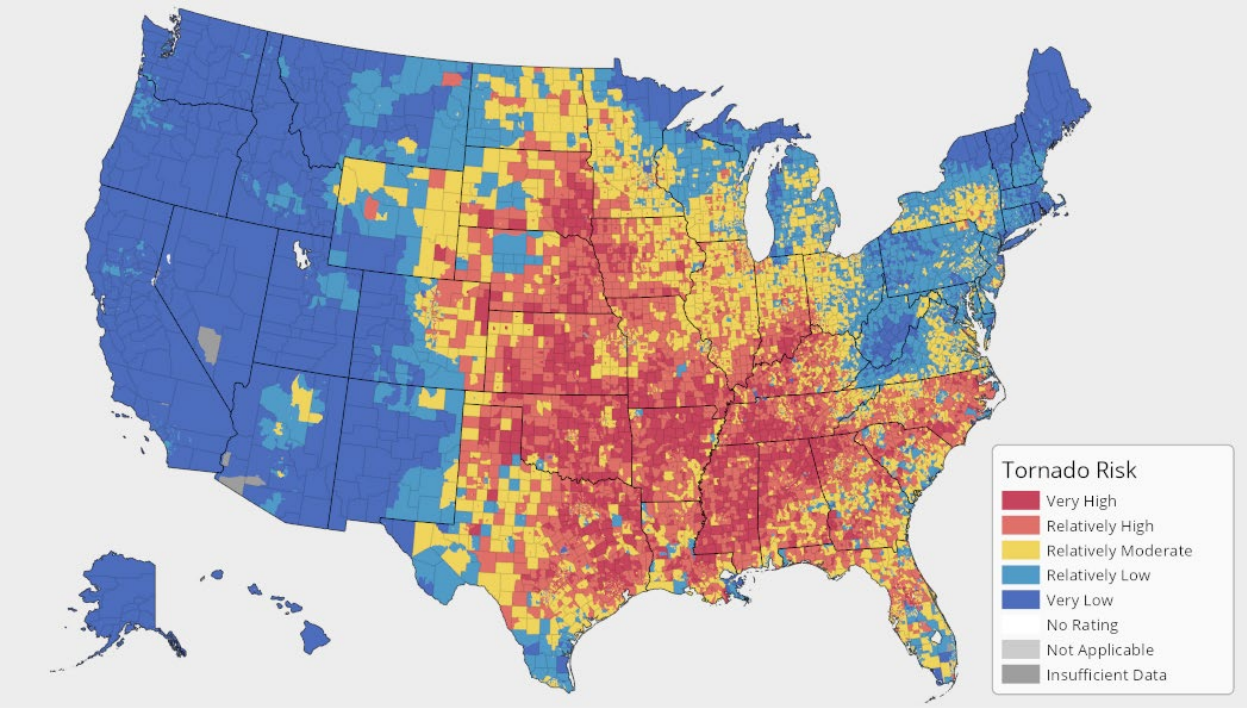
Figure 28: Tornado Frequency Trends



Source: Nature Partner Journal Climate and Atmospheric Science

According to the FEMA National Risk Index Tornado Vulnerability Index in Figure 32, the Tri-County region has a relatively moderate vulnerability to tornadoes.

Figure 29. Tornado Vulnerability Index



Source: FEMA National Risk Index

The probability of a tornado incident in the Tri-County region was calculated based on existing historical data. Frequency was determined by dividing the number of events observed by the number of years and multiplying by 100. The formula for calculating the probability of future tornadic occurrences is:

Incidents/time = probability

In the period between 1970 and 2020, the NCEI reported 54 separate tornado incidents in the Tri County region. This calculates to approximately one tornado per year, a 100% chance of a tornado occurring somewhere in the region in any given year. Assuming this existing trend will continue, this figure can be predicted into the future as well.

3.15.6. Vulnerability Assessment

Factors leading to vulnerability include poverty, mobile homes, areas with fewer hospitals, the average strength of tornadoes, and the number of tornadoes.

Population: Areas with high populations are at greater risk for property damage and human impact.

Poverty: High levels of poverty can add to an area's vulnerability to the impacts of a tornado. Those with low income are less likely to have safe housing, access to health care services, and access to up-to-date news and emergency information.

Mobile homes: A mobile home is one of the most dangerous places to be during a tornado. They are not secured to the ground, and they have no interior rooms or basements in which to take shelter. They are easily moved, lifted, and turned over by tornadoes and high winds.

Hospital scarcity: Without the ability to access care for the kind of trauma incidents tornadoes can bring, areas can be vulnerable to fatalities and severe injuries.

Those most at risk from tornadoes include those who live in mobile homes and other homes without secure foundations or basements. The Tri-County region is home to 62 mobile home parks — 20 in Ingham County (2.7% population), 20 in Eaton County (4.7%), and 22 (6%) in Clinton County.

Shelter scarcity: There are no official or certified public or mass shelters in the Tri-County region. Some of the mobile home parks offer small shelters, but they lack the capacity to hold everyone at the parks.

Also at high risk are people with disabilities and access and functional needs (DAFN). The DAFN community would include the elderly, children, women in late-stage pregnancy, those with limited English proficiency, deaf or hard of hearing, blind or low vision, developmental/intellectual disabilities, homeless, and transportation disadvantaged.

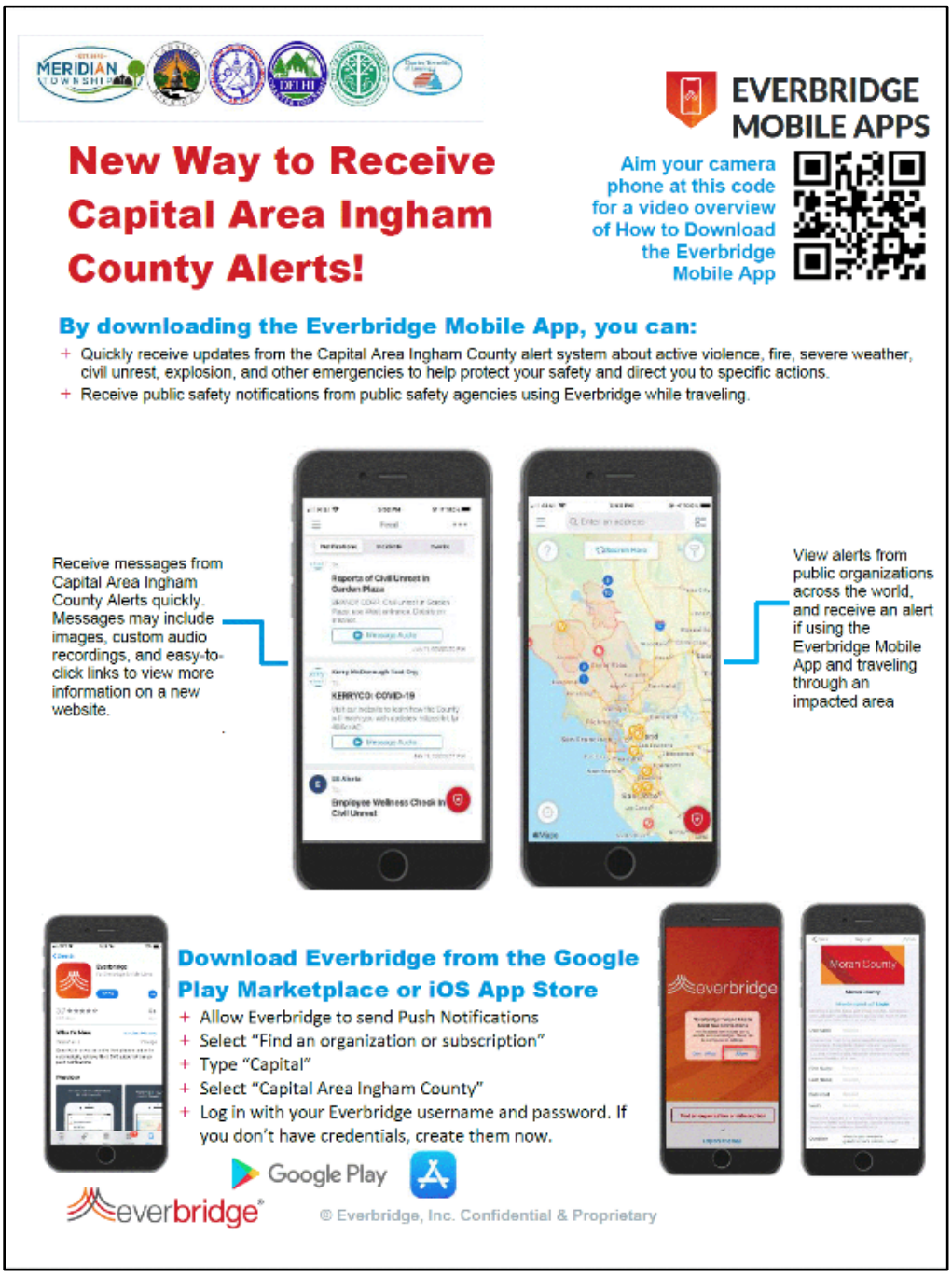
Due to the potential for damaging tornadoes in the Tri-County region, the magnitude was determined to be a 4 — "Catastrophic."

Warning mechanisms: Warning mechanisms and notification methods include Everbridge (subscription-based, and not everyone has a subscription); social media, and apps. None of the rural townships have access to an outdoor warning system.

3.15.6.1. Impacts on People

All the residents of and visitors to the Tri-County region are exposed and at risk for experiencing this hazard. Timely, accurate public warning systems and networks are key to public safety during severe storms with high winds and the potential for tornadoes. The purpose of the outdoor warning siren alert system is to provide warnings for those outside; however, many residents rely on them as their primary notification. The Tri-County region should educate the public on all methods of weather alerts, including NOAA radios, IPAWS notifications, social media, and alert apps such as the Everbridge Mobile App.

Figure 30. Ingham County Alerting



Source: Ingham County, MI

Some residents are more vulnerable than others to the risks inherent in high winds and tornadoes. Areas in the Tri-County region with a wider income disparity are more vulnerable to this hazard than areas with a higher per capita income. People with disabilities and the AFN community are at higher risk due to

factors such as language barriers and quality of housing. Social vulnerability plays a role in a resident's ability to remain safe during an event and to be resilient going forward.

3.15.6.2. Impacts on Infrastructure

Tornadoes in the Tri-County region can cause significant damage to infrastructure. The region should be prepared to meet and withstand power loss and loss of services due to damage to critical infrastructure, including natural gas, fuel oil, water supply, hospitals, and transportation systems; electricity generation, transmission, and distribution; and telecommunications. Tornadoes, flash flooding, debris, and hail can cause damage that results in loss of critical services throughout the region. Road blockage and damage can restrict access to critical facilities. The region's Continuity of Operations (COOP) Plan(s) should address alternate methods of communication during loss of cellular service and landlines.

All critical facilities in the Tri-County region are exposed to this hazard. All essential critical facilities should have backup generators as well as storm shelters.

3.15.6.3. Impacts on the Economy

Any event that causes a business to close for a period will cause direct and indirect losses to the economy. Small businesses are the lifeblood of communities. Their survival after a disaster is critical to the community's recovery. Even if a business itself is not damaged by the event, it may find itself severely understaffed due to employees who have suffered severe damages or are unable to get to work due to road damage.

The Insurance Institute for Business and Home Safety estimates that one in four businesses forced to close by a disaster will never reopen. This means every community's economy is vulnerable to disasters. A business's survival is directly linked to a community's resilience. Damaging high winds or tornadoes in areas of the Tri-County region that bring in more sales tax revenue would cause more significant loss than other areas of the region.

Every business in the region needs a business continuity plan that covers all likely hazards, and those plans should be regularly tested with exercises.

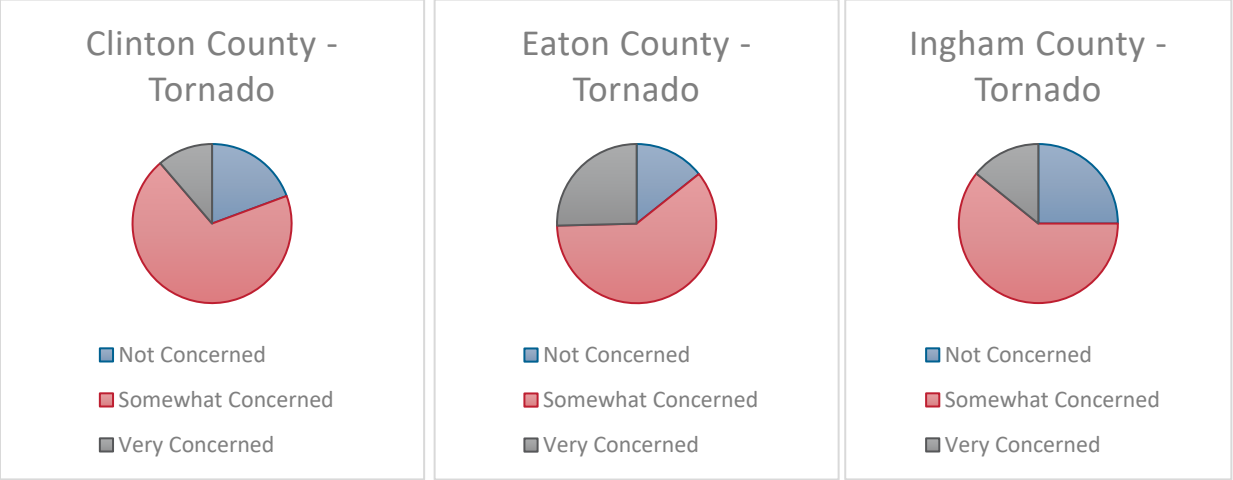
3.15.6.4. Impacts on the Environment

Tornadoes destroy property and wildlife. Even though a tornado generally has a smaller footprint than other disasters, the damage is frequently more severe, though often less apparent. Debris from damaged structures can result in a spread of asbestos over great distances, creating toxic levels of asbestos in the soil, poisoning the habitat and water supply of both people and animals. Household hazardous waste in the form of cleaning products, automotive supplies, paint, and insecticides can contaminate the water and soil, creating a toxic environment for animals and plants.

After a tornado, household and industrial waste is often washed into the stormwater drains, rivers, and lakes, having a long-term effect on the area's flora and fauna. The Tri-County region should address these issues with the Department of Environment, Great Lakes and Energy (EGLE) during the recovery period and have a debris removal plan in place for the proper disposal of debris resulting from tornado events.

3.15.7. Public Input

Participants in the public survey were asked to assess and identify their level of concern of a tornado incident occurring in their community. Across the Tri-County region, most respondents noted that they were somewhat concerned about this hazard.



3.15.8. Hazard Significance Summary

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Highly Likely	Limited	Limited	Medium	Medium
Eaton	Highly Likely	Limited	Limited	Medium	Medium
Ingham	Highly Likely	Limited	Limited	Medium	Medium

3.16. Wildfire

3.16.1. Hazard Profile

A wildfire is considered any unplanned fire that occurs in a wildland area, such as a grassland, forest, or brush-filled area, regardless of cause. Wildfires are an integral part of the natural management of forest ecosystems; naturally occurring wildfires are most frequently caused by lightning strikes. Wildfires can also be caused by humans; common causes include campfires, discarded cigarettes, prescribed burns that get out of control, arson or illegal burning, sparking equipment, and power lines and utilities. Nationally, over 80% of forest fires are started by negligent human behavior, such as discarding cigarettes in wooded areas or improperly extinguishing campfires. The second-most common cause for wildfire is lightning.

There are three classes of wildland fires – surface fire, ground fire and crown fire. A surface fire is the most common and burns along the floor of a forest, moving slowly and killing or damaging trees. A ground fire is usually started by lightning or human carelessness and burns on or below the forest floor. Crown fires spread rapidly by wind and move quickly by jumping along the tops of trees. Wildland fires are usually signaled by dense smoke that fills the area for miles around. The strength and behavior of

wildfire is influenced by three factors — fuel type and availability, surrounding weather, and topography of the area.

3.16.2. Area of Impact

The entirety of the Tri-County region is susceptible to wildfire, though certain areas are more at risk than others.

The Wildland-Urban Interface (WUI) is the zone of transition between unoccupied land and human development. It is the line, area, or zone where structures and other human development meet or intermingle with undeveloped wildland or vegetative fuels. While wildfires are generally thought of as a problem more attuned to the western states, more than 46 million residences in 70,000 communities in the United States live in an area at risk for fires in the WUI. According to the USFA, between 2002 and 2016, an average of over 3,000 structures per year were lost to WUI fires in the U.S.

The Federal Register definition splits the WUI into two categories based on vegetation density:

- Intermix WUI, or lands that contain at least one housing unit per 40 acres in which vegetation occupies more than 50% of terrestrial area; a heavily vegetated intermix WUI is as an area in which vegetation occupies over 75% of a 5 square kilometer terrestrial area.
- Interface WUI, or lands that contain at least one housing unit per 40 acres in which vegetatian occupies less than 50% of terrestrial area.

Figure 31, Figure 32 and Figure 33 show the WUI areas in Clinton, Eaton, and Ingham counties.

Figure 31: Clinton County Wildland-Urban Interface Areas

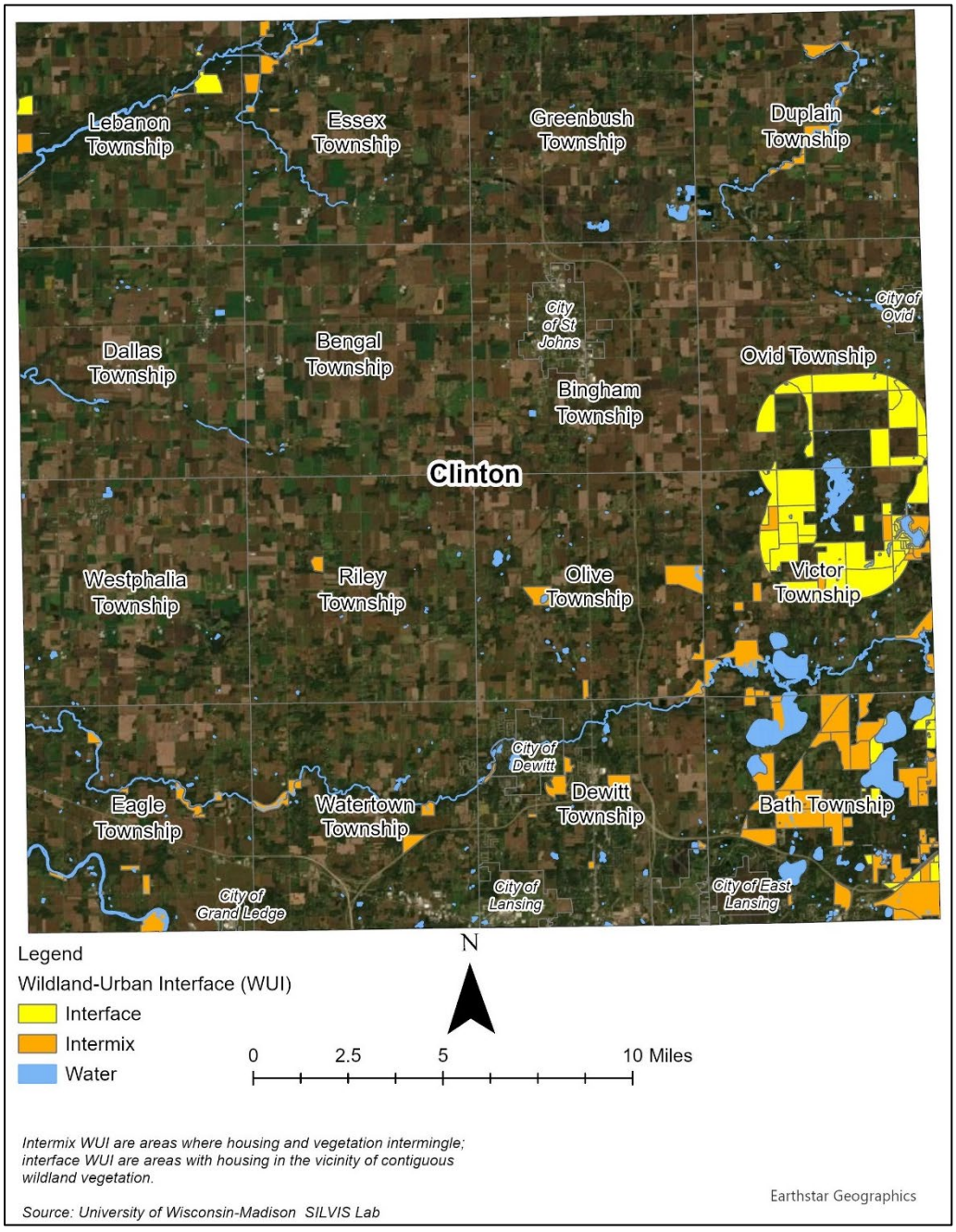


Figure 32: Eaton County Wildland-Urban Interface Areas

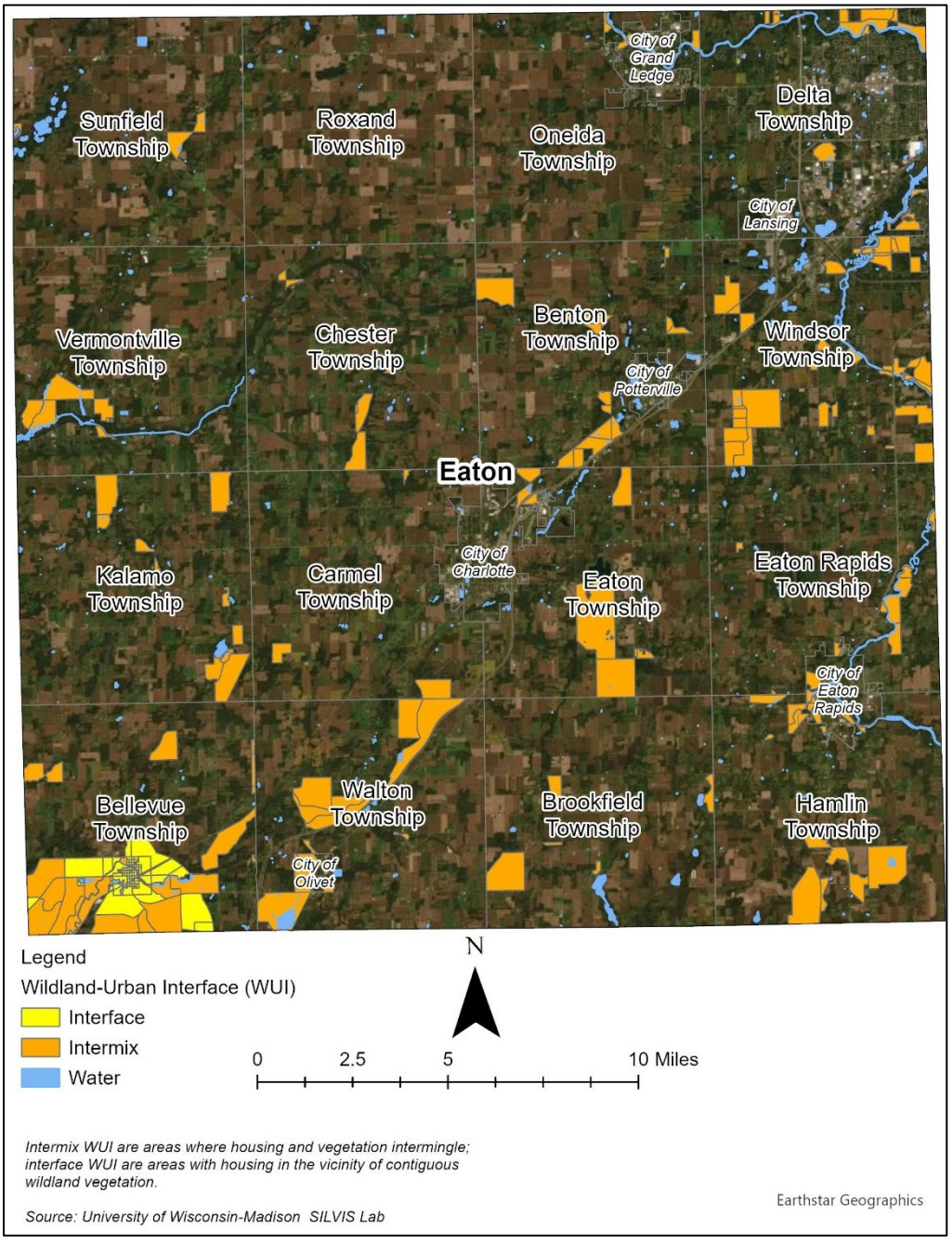
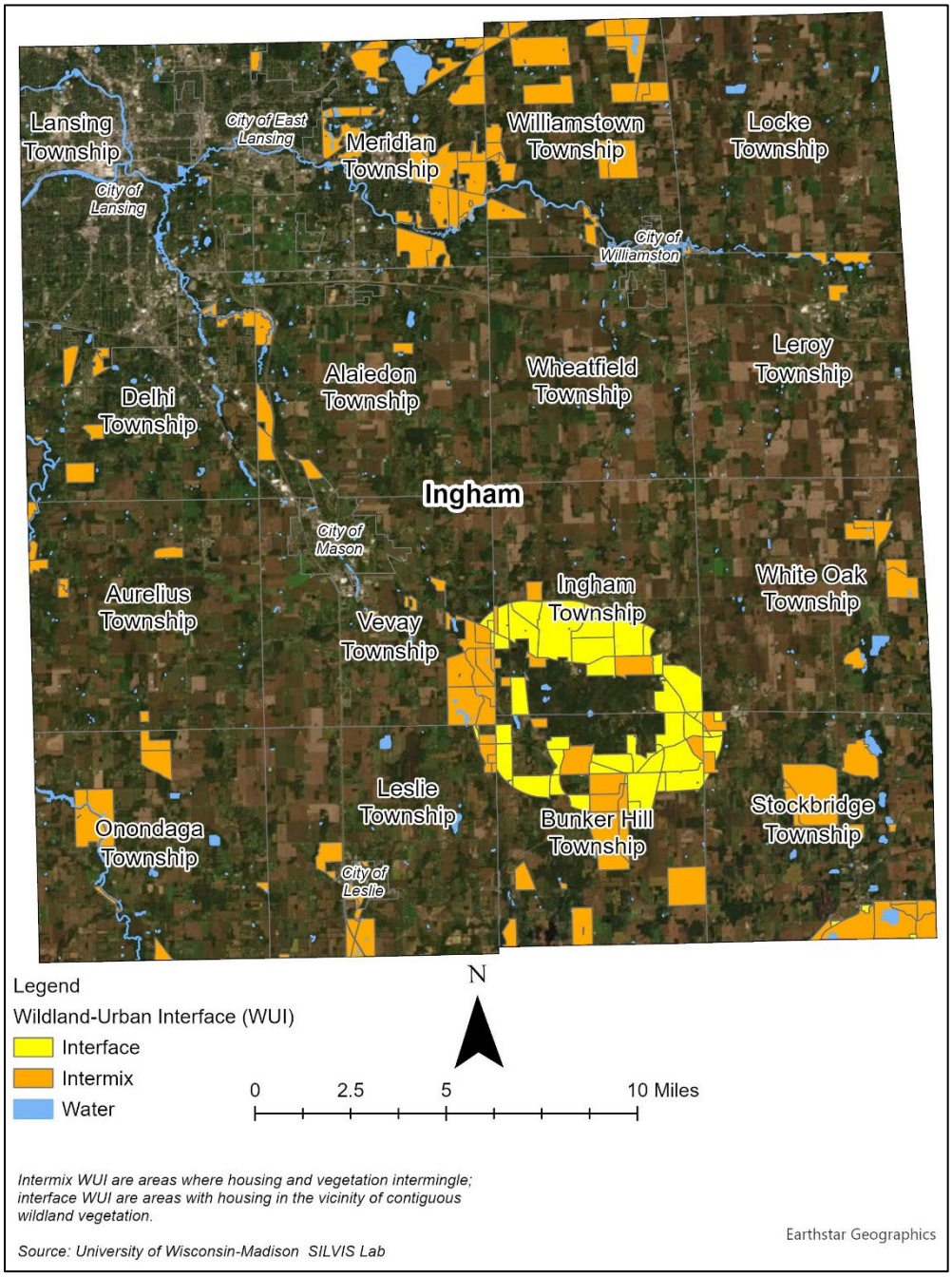


Figure 33: Ingham County Wildland-Urban Interface Areas



3.16.3. Extent

Wildfire extent can be described in terms of size and type of fire. According to the National Wildfire Coordinating Group, there are seven classes of wildfire sizes, categorized from A–G.

- Class A — one-fourth acre or less
- Class B — more than one-fourth acre but less than 10 acres
- Class C — 10 acres or more but less than 100 acres
- Class D — 100 acres or more but less than 300 acres
- Class E — 300 acres or more but less than 1,000 acres
- Class F — 1,000 acres or more but less than 5,000 acres
- Class G — 5,000 acres or more

Different types of fires demonstrate different characteristics that impact how a fire spreads. A surface fire burns along the floor of a forest; a ground fire burns on or below the forest floor, and crown fires spread rapidly by wind and move quickly by jumping along the tops of trees.

3.16.4. Previous Occurrences

The 2015 Tri-County Hazard Mitigation Plan noted no historical occurrences of large-scale wildfires in Clinton, Eaton, or Ingham counties. For the plan update, multiple sources were reviewed to catalogue previous wildfire occurrences. According to the 2019 Michigan State Hazard Mitigation Plan, the State of Michigan averages less than one wildfire incident per year. Most fires occur in the more wooded areas of the Upper Peninsula of the state. A search was also run in the National Interagency Fire Center database; while the database noted fires across the state, none were listed for any of the counties in the Tri-County region. A review of Fire Management Assistance Grants (FMAG) and Fire Suppression declarations showed none for the counties in the region.

During Planning Meeting #2, participants were asked to describe fire risk and history in their respective counties and communities. Participants noted a series of brush fires that occurred in Spring 2021; one fire was responded to by 33 separate fire departments. Participants noted that local fire departments did a good job of catching and containing fires before they grew; participants also noted that they were much more concerned with brush fires and did not normally see large-scale wildfires in the region.

3.16.5. Probability

During the planning meetings, attendees confirmed that some level of forest/intermix fire is an annual occurrence across Michigan and the Tri-County region. However, these incidents very rarely rise above a Class B incident as defined by the National Wildfire Coordinating Group. The probability of a major wildfire occurring anywhere in the region is low.

3.16.6. Vulnerability Assessment

3.16.6.1. Impacts to People

The most obvious impacts to people are from direct contact with a wildfire, in the form of burns or smoke inhalation. Particulate matter can cause a wide range of health issues, including respiratory problems and cardiovascular problems. Fires and resulting smoke and ashes can cause:

- Burns and injuries.
- Eye, nose, throat, and lung irritation.
- Decreased lung function, including coughing and wheezing.

- Pulmonary inflammation, bronchitis, exacerbations of asthma, and other lung diseases.
- Exacerbation of cardiovascular diseases, such as heart failure.

Infants, young children, women who are pregnant, and older adults are more susceptible to health impacts from smoke and ash, and smoke and ash can greatly impact those with pre-existing conditions like respiratory diseases or heart disease. Firefighters and emergency response personnel can also be greatly impacted by on-scene injuries, burns, and smoke inhalation.

Another significant health effect of wildfires is potential impacts to mental health and well-being since, depending on the size and scope of the fire, homes, businesses, and livelihoods could be severely impacted.

3.16.6.2. Impacts to Infrastructure

Fires can disrupt transportation routes, tax water supplies, disrupt utilities, and destroy crop lands. Infrastructure located within a Wildland-Urban Interface area is most at risk from a wildfire; this infrastructure can include buildings, utilities, transportation routes and other critical assets located within the region.

The FEMA National Risk Index (NRI) estimates annual loss by hazard on a county-by-county basis, including estimates for wildfire. Table 33 shows the expected annual loss due to wildfire in Clinton, Eaton, and Ingham counties based on data from the FEMA National Risk Index.

Table 33. Expected Annual Loss due to Wildfire

Location	Total Loss	Building Value	Population Equivalence	Population	Agriculture Value
Clinton	$163	$151	$12	0.00	$0
Eaton	$75	$68	$8	0.00	$0
Ingham	$528	$449	$79	0.00	$0
Regional Totals	**$766**	**$668**	**$99**	**0.00**	**$0**

Source: FEMA National Risk Index

The NRI also estimates exposure values by hazard on a county-by-county basis; exposure values illustrate the potential value of infrastructure located in a risk zone. Table 34 shows exposure values for Clinton, Eaton, and Ingham counties for a wildfire.

Table 34. Exposure Values to Wildfire

Location	Total	Building Value	Population Equivalence	Population	Agriculture Value
Clinton	$796,988,088	$13,966,491	$782,829,723	103.00	$191,874
Eaton	$643,265,720	$8,913,897	$634,238,216	83.45	$113,607
Ingham	$4,144,435,808	$36,870,103	$4,107,404,994	540.45	$160,711
Regional Totals	**$5,584,689,616**	**$59,750,491**	**$5,524,472,933**	**727**	**$466,192**

Source: FEMA National Risk Index

3.16.6.3. Impacts to the Economy

At the outset of a wildfire, economic impacts include the cost of a wildfire suppression. These costs can include staffing, equipment, and responder care. According to the National Interagency Fire Center, the federal cost of wildfire suppression in the United States has spiked from an annual average of roughly $425 million from 1985–1999, to $1.6 billion from 2000–2019. While historic fires in the Tri-County region have been relatively contained and short-lived, a large-scale fire could cost millions in response.

Lost infrastructure can also cause economic impacts, due to direct rebuilding costs, as well as cascading impacts if a burned structure or system is a key part of a supply chain. Insurance costs for property loss can add up in a large-scale response.

3.16.6.4. Impacts to the Environment

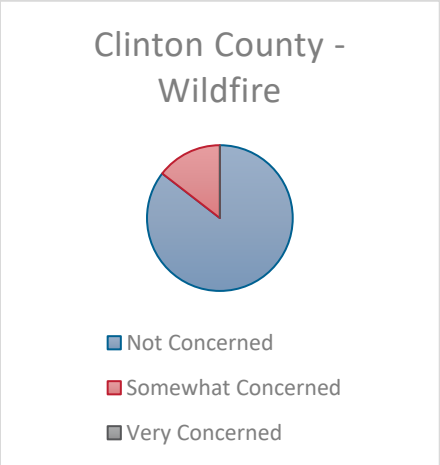
Wildfire is a keystone process and is part of the natural cycle. Fire shapes ecosystems by clearing out overgrown brush and dead or dying trees. Dry conditions and high winds can exacerbate fire risk.

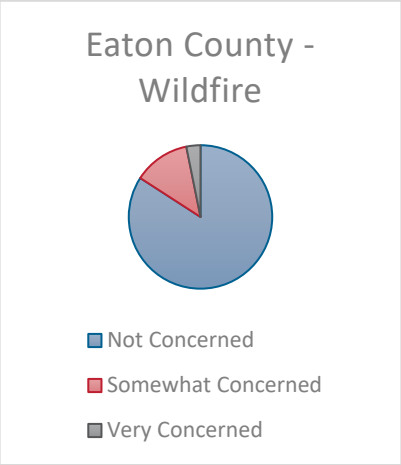
As noted in Section 3.16.6.1, wildfires can deteriorate air quality. Large fires can disrupt weather patterns as well as send carbon monoxide, carbon dioxide, and fine particulate matter into the atmosphere. Wildfire smoke is a mixture of air pollutants of which particulate matter is the principal public health threat.

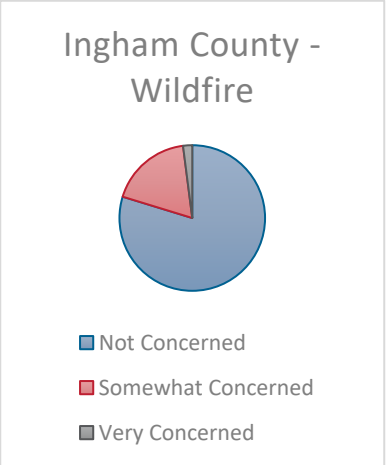
Fire can destroy habitat and cause migrations of wildlife. Fire can also sear the surrounding soil; after vegetation burns, soil can become hydrophobic which prevents the absorption of water and impacts stormwater runoff.

3.16.7. Public Input

Participants in the public survey were asked to assess and identify their level of concern of a wildfire incident occurring in their community. Across the Tri-County region, the vast majority of respondents noted that they were not concerned about this hazard.







3.16.8. Hazard Significance Summary

County	Probability of Occurrence	Severity of Impact	Extent	Public Input	Total Ranking
Clinton	Unlikely	Limited	Minimal	Low	Low
Eaton	Unlikely	Limited	Minimal	Low	Low
Ingham	Unlikely	Limited	Minimal	Low	Low

4. HAZARD MITIGATION STRATEGY

4.1. Introduction

Chapter 4 identifies the goals and strategies the Tri-County region has identified to buy down the risks associated with the hazards in Chapter 3.

4.2. Goals

To begin the mitigation strategy development process, the planning team reviewed and identified potential goals to assist in aligning and focusing specific hazard mitigation strategies. The expressed goals are broad policy statements that represent long-term results.

Each county discussed the goals from the 2015 plan and potential replacements for the 2022 update. During the discussion, each county agreed to the following updated goals:

Goal 1. Reduce the risk of hazards to life and property.

Goal 2. Protect critical infrastructure and essential facilities.

Goal 3. Build community and public resiliency.

4.3. Strategy Development

Using the updated goals as a planning tool to guide mitigation planning efforts, the planning committee collaborated to identify a 2022 hazard mitigation strategy that is both effective and feasible for the counties and participating communities in the Tri-County region. As part of the process, the group reviewed the mitigation strategy from the previous plan and reported on the status of specific hazard mitigation actions. These actions were divided into three categories. Completed actions are those activities that the Tri-County region has implemented over the life of the previous plan; these are located in Section 4.6. Deleted actions are those activities that the committee reviewed and decided to remove from the new hazard mitigation strategy; these are located in Section 4.7. Continued actions are those actions that have either not been started yet or are in the process of being implemented; elements of each action are included in Sections 4.8. Implementation and maintenance of the hazard mitigation strategy are included in Chapter 5 of this plan.

At the beginning of the planning process, the planning team set out participation requirements for jurisdictions to be considered full participants in the hazard mitigation plan. Among these requirements, the planning committee asked that each jurisdiction that wanted to be considered a full participant under the 2022 Tri-County Hazard Mitigation Plan identify at least one new or continuing hazard mitigation action to reduce risk in their community.

4.4. Action Prioritization

To assist in the prioritization process and provide the planning committee with a starting point, each mitigation action was reviewed and scored on a scale of 1-3 points based on metrics including the

action's impact on life safety, critical infrastructure protection, potential reduction of response actions, and the STAPLEE method. The scores were then tabulated to provide an initial prioritization of high, medium, and low actions.

Criterion	Score	Explanation
Lives Saved	0	Little to no impact on potential lives saved
	1	Some potential for lives saved
	2	High likelihood of lives saved
Reduced Property Damages	0	Little to no impact on potential reductions in property damage
	1	Some potential for reductions in property damage
	2	High likelihood of reductions in property damage
Reduced Response Actions	0	Little to no impact on the potential need for response actions
	1	Some potential for reduced response actions
	2	High likelihood of reduced response actions
Benefits Exceed Costs	0	Benefits do not exceed costs
	1	Benefits and costs are equal
	2	Benefits exceed costs
Social Acceptability	0	Project not socially acceptable
	1	Social support is neutral for project
	2	Strong social support for project
Technical Feasibility	0	Project is not technically feasible
	1	Project is partially technically feasible
	2	Project is technically feasible
Administrative Capability	0	There is no administrative capability to manage the project
	1	There is some administrative capability to manage the project
	2	The administrative capability is in place to manage the project
Political Desirability	0	No political desirability for project
	1	Minor political desirability for project
	2	Major political desirability for project
Legal Authority	0	There is no legal authority to implement the project
	1	Possible legal authority to implement the project
	2	The legal authority exists to implement the project
Economic Benefits	0	No economic benefits projected from project
	1	Minor economic benefits projected from project
	2	Major economic benefits projected from project
Environmental Benefits	0	No environmental benefits projected from project
	1	Minor environmental benefits projected from project
	2	Major environmental benefits projected for project
Hazard Impact	0	Low
	1	Medium
	2	High
Number of Hazards Addressed	0	One hazard addressed
	1	Two hazards addressed
	2	More than two hazards addressed

Each potential hazard mitigation action could score up to 26 points. To begin prioritization, scores corresponded to the following priority levels:

- 0-8 Low Priority
- 9-18 Medium Priority
- 19 and above High Priority

Once the initial scores were tallied and actions prioritized, they were presented to the planning committee for review during Meeting 3. The group reviewed the scores and corresponding initial prioritization and elected to accept the data during the meeting. Committee members were invited to review the scoring further during the committee plan review period and provide any additional comments or concerns on action prioritization; no further comments were received.

4.5. 2015 Hazard Mitigation Strategy Review

At the time of the plan's publication, Clinton County, Eaton County, Ingham County and Delta Township in Eaton County were considered full participants in the plan and identified a comprehensive hazard mitigation strategy to reduce risks. As part of the 2022 update process, these jurisdictions were asked to review the 2015 strategy separately and identify the status of each of the mitigation actions presented for their specific jurisdiction. Each jurisdiction was asked to categorize each action into one of four categories:

Completed. The mitigation action was implemented.

In progress. The mitigation action has been started but is not yet completed.

Not started. The mitigation action has not been started.

Canceled. The mitigation action is no longer relevant and should be removed.

The 2015 mitigation strategy did not differentiate between jurisdictions when it laid out mitigation actions, so each participating jurisdiction was asked to provide a status report on each action to ensure a comprehensive understanding of the action's status across the Tri-County region. Section 4.6 notes hazard mitigation actions identified as completed; Section 4.7 notes hazard mitigation actions that were canceled.

4.6. Completed Hazard Mitigation Actions

The following 2015 hazard mitigation actions were considered completed by Clinton County, Eaton County, Ingham County, and Delta Township.

4.6.1.1. Clinton County Completed Hazard Mitigation Actions

Ingham County did not identify any hazard mitigation actions that had been completed.

4.6.1.2. Eaton County Completed Hazard Mitigation Actions

2015 Action ID	2015 Hazard Mitigation Action	Explanation
1.7	Develop internal facility emergency/disaster warning systems.	Project completed.
3.5	Increase attendance at National Weather Service Spotter classes through media (local weather stations, internet, newspapers, etc.).	Project completed.
5.5	Create an overlay zoning district that can be applied to the lands along the riverbanks.	Project Completed.

4.6.1.3. Ingham County Completed Hazard Mitigation Actions

Ingham County did not identify any hazard mitigation actions that had been completed.

4.6.1.4. Delta Township Completed Hazard Mitigation Actions

2015 Action ID	2015 Hazard Mitigation Action	Explanation
1.3	Seek funding for NOAA weather radios for facilities caring for special needs populations and special needs populations living independently.	Radios distributed. No further need.
3.1	Encourage the construction of shelters at city and county parks.	Bathroom shelters have been constructed/modified in two township parks.
5.5	Create an overlay zoning district that can be applied to the lands along the riverbanks.	Layer created.

4.7. Canceled Hazard Mitigation Actions

The following 2015 hazard mitigation actions were canceled by Clinton County, Eaton County, Ingham County and Delta Township.

4.7.1.1. Clinton County Canceled Hazard Mitigation Actions

2015 Action ID	2015 Hazard Mitigation Action	Explanation
1.3	Seek funding for NOAA weather radios for facilities caring for special needs populations and special needs populations living independently.	With the onset of notifications to mobile devices through WEAs, this is no longer a goal.
1.5	Mass mail all special needs facilities a brochure on facility disaster preparedness.	Social media is a more effective means to disseminate this information.

4.7.1.2. Eaton County Canceled Hazard Mitigation Actions

2015 Action ID	Hazard Mitigation Action	Explanation
1.3	Seek funding for NOAA weather radios for facilities caring for special needs populations and special needs populations living independently.	This activity was completed when Emergency Management was part of the sheriff's office. It has since been made an independent office within the county government, and grant funds are decreasing.
1.4	Give disaster kits to caretakers of special needs populations, including hospice patients and facilities caring for special needs populations.	This activity was completed when Emergency Management was part of the sheriff's office. It has since been made an independent office within the county government, and grant funds are decreasing.
1.5	Mass mail all special needs facilities a brochure on facility disaster preparedness.	This project has never been completed.
3.1	Encourage the construction of shelters at city and county parks.	This activity never began under the previous Emergency Management division.
3.2	Encourage the construction of shelters at mobile home / manufactured housing communities.	This activity never began under the previous Emergency Management division.
3.3	Increase public awareness of safe rooms and enhanced construction methods in newly constructed homes through brochures, internet, and other literature to be made available from county and private entities	This activity never began under the previous Emergency Management division.

4.7.1.3. Ingham County Canceled Hazard Mitigation Actions

2015 Action ID	2015 Hazard Mitigation Action	Explanation
1.3	Seek funding for NOAA weather radios for facilities caring for special needs populations and special needs populations living independently.	Limited funds and limited value.
1.4	Give disaster kits to caretakers of special needs populations, including hospice patients and facilities caring for special needs populations.	No funds for kits. Preparedness action.
1.5	Mass mail all special needs facilities a brochure on facility disaster preparedness.	No funds for mailings. Preparedness action.
3.1	Encourage the construction of shelters at city and county parks.	No interest or funding.
3.2	Encourage the construction of shelters at mobile home / manufactured housing communities.	No interest or funding.
3.3	Increase public awareness of safe rooms and enhanced construction methods in newly constructed homes through brochures, internet, and other literature to be made available from county and private entities	Preparedness action.
4.1	Discourage unplanned sprawl conditions in area without existing infrastructure.	Not a mitigation action.
4.2	Identify infrastructure that needs rehabilitation.	Not a mitigation action.
4.3	Suggest local governments find sources of funding to fund rehabilitation projects.	Not a mitigation action.
4.4	Create a digital GIS layer displaying locations of generators throughout county.	Not a mitigation action.
5.1	Create an overlay zoning district that can be applied to the lands abutting water resources to manage growth and development, ensure sufficient setback distances, and preserve natural features.	Not a mitigation action.
5.2	Work with the Department of Environmental Quality to enforce water quality regulations.	Not a mitigation action.

2015 Action ID	2015 Hazard Mitigation Action	Explanation
5.3	Consider the potential impacts of stormwater runoff on water quality.	Not specific enough.
5.4	Provide incentives to preserve frontage and vegetation along the riverbanks.	Unclear.
5.5	Create an overlay zoning district that can be applied to the lands along the riverbanks.	Unclear.
5.6	Consider the established federal floodplain boundaries as a part of any proposed regulations. All local jurisdictions should participate in the National Flood Insurance Program and Repetitive Loss Programs, planning and implementing federally recognized mitigation efforts.	NFIP function.
5.7	Encourage cooperative and coordinated planning efforts among neighboring communities.	No clear purpose for cooperative efforts; implementation action.

4.7.1.4. Delta Township Canceled Hazard Mitigation Actions

2015 Action ID	2015 Hazard Mitigation Action	Explanation
1.4	Give disaster kits to caretakers of special needs populations, including hospice patients and facilities caring for special needs populations.	This can be addressed via local preparedness programs.
1.5	Mass mail all special needs facilities a brochure on facility disaster preparedness.	Preparedness action, not hazard mitigation.
1.7	Develop internal facility emergency/disaster warning systems.	Currently have systemic facility paging and emergency notification alerting via Text 'Em All.
4.1	Discourage unplanned sprawl conditions in areas without existing infrastructure.	Planning/Zoning action; not specifically hazard mitigation.
5.2	Work with the Department of Environmental Quality to enforce water quality regulations.	Not specific enough.

2015 Action ID	2015 Hazard Mitigation Action	Explanation
5.3	Consider the potential impacts of stormwater runoff on water quality.	Not specific enough.
5.4	Provide incentives to preserve frontage and vegetation along the riverbanks.	Better implemented by the Middle Grand River Organization of Watersheds (MGROW) and the Michigan Department of Environment, Great Lakes, and Energy (EGLE).

4.8. Hazard Mitigation Strategy

Goal 1: Reduce the Risk of Hazards to Life and Property.

Goal 1 Mitigation Actions – Basic Information

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
1.1	Implement Public Alert and Warning system	Delta Township Emergency Management	Purchase the RAVE alerting system to provide localized emergency notifications specific to Delta Township residents	Severe Weather (including fog, lightning and hail) Severe Wind Severe Winter Weather (including ice, sleet and snowstorm) Tornado Wildfire
1.2	Perform regular drainage system maintenance	Eaton County Emergency Management Eaton County Drain Commission	Routine drainage maintenance reduces the risk of significant flooding.	Flood
1.3	Create defensible space around structures and infrastructure in the Wildland-Urban Interface (WUI)	Eaton County Emergency Management Eaton County area fire departments	Encourage the public and private sector to increase the defensible space around their homes and buildings through the use of an aggressive social media campaign.	Wildfire

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
1.4	Replace existing sandbag wall around Eaton Rapids business district with more permanent solution to protect against flooding.	City of Eaton Rapids Eaton County Emergency Management	Constructing a permanent solution would mitigate future flood risk in the commercial area.	Flood
1.5	Identify infrastructure that needs restoration and rehabilitation.	Eaton County Emergency Management	By identifying the aging infrastructure, the possibility of adopting and enforcing up-to-date building codes, and retrofitting and strengthening infrastructure to resist natural hazards exists. It's critical to maintain continued services or functions. It can enhance resiliency and reduce risk.	Severe Wind
1.6	Inventory critical structures at risk of flood inundation.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	By identifying those critical structures, projects can be developed to help divert water away from the communities in the event of flooding.	Flood

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
1.7	Inventory and mitigate utilities in the floodplain.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville Eaton County Emergency Management	By sandbagging or elevating at-risk utilitiies, the potential impact to those services is reduced.	Flood
1.8	Develop a database/list for those people in the community who may need special assistance during and after a hazard event.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	A list of vulnerable individuals within the community who may require assistance in the event of extreme hot or cold temperatures will mitigate issues associated with trying to identify who they are and where they're located during an emergency.	Extreme Temperatures
1.9	Utilize the Land Preservation acquisition fund to preserve environmentally sensitive lands.	Meridian Charter Township	Keep floodprone properties from developing.	Flood

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
1.10	Implement Property Owner Assistance Program for Basement Backup Protection	City of East Lansing	Professionally installing backflow prevention valves or equivalent infrastructure to mitigate sewer backups due to flooding in homes	Flood Severe Weather (including fog, lightning and hail)
1.11	Create defensible space around structures and infrastructure in the Wildland-Urban Interface (WUI)	Ingham County Fire Departments	Encourage the public and private sector to increase the defensible space around their homes and buildings through the use of an aggressive social media campaign.	Wildfire
1.12	Perform regular drainage system maintenance.	Ingham County Drain Commission	Routine drainage maintenance reduces the risk of significant flooding.	Flood
1.13	Inventory critical structures at risk of flood inundation.	Ingham County	By identifying those critical structures, projects can be developed to help divert water away from the communities in the event of flooding.	Flood
1.14	Inventory and mitigate utilities in the floodplain.	Ingham County	By sandbagging or elevating at-risk utilities, the potential impact to those services is reduced.	Flood

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
1.15	Develop a database/list for those people in the community who may need special assistance during and after an extreme temperature event.	Ingham County	A list of vulnerable individuals within the community who might need assistance in the event of extreme hot or cold temperatures will enhance the quick response and mitigate any problems in trying to identify who they are and where they're located.	Extreme Temperatures
1.16	Upgrade and expand the Ingham County Outdoor Warning Siren network	Ingham County	Upgrade and expand the outdoor warning siren network	Severe Weather (including fog, lightning and hail) Severe Wind Tornado
1.17	Install snow fences or living snow fences to limit blowing and drifting snow.	Clinton County	Improve travel conditions on roadways when winter weather occurs.	Severe Winter Weather (including ice, sleet and snowstorm)
1.18	Develop programs to remove dead or decaying trees that can become projectiles during severe weather or kindling during a wildfire incident.	Clinton County	Reducing the amount of dead trees and limbs in areas would reduce injury and property damage when severe wind occurs.	Severe Wind Tornado
1.19	Encourage EAP compliance.	Victor Township	Amend the Victor Township Master Plan to include the encouragement of EAP compliance.	Dam Failure

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
			Implementation includes notifying the Lake Victoria Property Association and filing documentation when provided.	
1.20	Follow all rules and regulations laid out in the National Flood Insurance Program (NFIP).	Victor Township	Many areas of Victor Township are identified as FEMA floodplains requiring residents to participate in the National Flood Insurance Program. Following rules and regulations helps residents access FEMA assistance in times of need.	Flood
1.21	Incorporate procedures for tracking high water marks following a flood into emergency plans.	Victor Township	Areas of Victor Township are prone to flooding, specifically the Looking Glass River and surroundings. Documenting high water marks will help inventory critical areas of need as well as support land use planning and drain maintenance.	Flood

Goal 1 Mitigation Actions – Background Information

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
1.1	Local Funding	Delta Township Fire/Emergency Management	Less than $10,000	2023
1.2	BRIC Funding HMGP Funding Local Funding	Eaton County Drain Commissioner	Less than $100,000	2024
1.3	Local Funding	Eaton County area fire departments	Less than $10,000	2024
1.4	BRIC Funding FMA Funding HMGP Funding Local Funding Other Private Funding State Funding	City of Eaton Rapids	Less than $500,000	2025
1.5	BRIC Funding HMGP Funding Local Funding Private Funding State Funding	Eaton County Equalization	Less than $1,000,000	2027
1.6	BRIC Funding FMA Funding HMGP Funding Local Funding Private Funding State Funding	Eaton County Drain Commissioner Eaton County Emergency Management	Less than $10,000	2025

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
1.7	BRIC Funding FMA Funding HMGP Funding Local Funding Private Funding State Funding	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville Eaton County Emergency Management	Less than $1,000,000	2026
1.8	Local Funding Private Funding	Eaton County Emergency Management	Less than $10,000	2023
1.9	Local Funding	Meridian Charter Township Parks & Recreation	Unknown	2027
1.10	Local Funding	City of East Lansing Public Works and Environmental Services	Less than $1,000,000	2024
1.11	Local Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2024
1.12	BRIC Funding FMA Funding HMGP Funding Local Funding	Ingham County Drain Commission	Less than $100,000	2024
1.13	BRIC Funding FMA Funding HMGP Funding Local Funding Private Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2025

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
1.14	BRIC Funding FMA Funding HMGP Funding Local Funding Private Funding State Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $1,000,000	2027
1.15	BRIC Funding HMGP Funding Local Funding	Ingham County	Less than $10,000	2024
1.16	BRIC Funding HMGP Funding Local Funding Private Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $500,000	2027
1.17	Local Funding Other State Funding	Clinton County Road Commission	Greater than $1,000,000	2027
1.18	Local Funding	Victor Township	Less than $10,000	2023
1.19	Local Funding	Victor Township	Less than $10,000	2023
1.20	Local Funding	Victor Township	Less than $10,000	2024

Goal 1 Mitigation Actions – Scoring Information

Action ID	Lives Saved	Reduced Property Damages	Reduced Response Actions	Benefits Exceed Costs	Social Acceptability	Technical Feasibility	Administrative Capability	Political Desirability	Legal Authority	Economic Benefits	Environmental Benefits	Hazard Impacts	Numbers of Hazards Addressed	TOTAL	PRIORITY
1.1	1	0	1	1	1	2	1	1	0	0	0	0	2	10	Medium
1.2	0	0	0	1	1	2	2	1	0	0	1	0	0	8	Low
1.3	1	1	2	2	1	2	1	1	0	1	1	1	0	14	Medium
1.4	0	2	1	1	1	2	1	1	0	2	1	1	0	13	Medium
1.5	0	1	0	0	1	2	1	1	1	1	1	0	0	9	Medium
1.6	0	1	0	0	1	2	1	1	1	1	1	0	0	9	Medium
1.7	0	1	0	0	1	2	1	1	1	1	1	0	0	9	Medium
1.8	1	0	2	2	1	2	1	1	0	0	0	0	1	11	Medium
1.9	0	0	0	1	1	2	1	1	0	1	2	0	0	9	Medium
1.10	0	1	1	2	1	2	1	1	0	0	0	0	0	9	Medium
1.11	1	1	2	2	1	2	1	1	0	1	1	1	0	14	Medium
1.12	0	0	0	1	1	2	2	1	0	0	1	0	0	8	Low
1.13	0	1	0	0	1	2	1	1	1	1	1	0	0	9	Medium
1.14	0	1	0	0	1	2	1	1	1	1	1	0	0	9	Medium
1.15	1	0	2	2	1	2	1	1	0	0	0	0	1	11	Medium
1.16	1	0	1	2	1	2	0	1	0	0	0	0	2	10	Medium
1.17	1	0	0	0	1	2	1	1	0	0	0	0	0	6	Low
1.18	0	0	0	0	1	2	1	1	0	0	1	0	0	6	Low
1.19	2	2	2	2	2	2	2	2	0	1	1	1	0	19	High
1.20	0	2	2	2	2	2	2	2	2	2	1	1	0	20	High

Action ID	Lives Saved	Reduced Property Damages	Reduced Response Actions	Benefits Exceed Costs	Social Acceptability	Technical Feasibility	Administrative Capability	Political Desirability	Legal Authority	Economic Benefits	Environmental Benefits	Hazard Impacts	Numbers of Hazards Addressed	TOTAL	PRIORITY
1.21	0	1	1	2	1	1	1	1	1	1	1	1	0	12	Medium

Goal 2: Protect Critical Infrastructure and Essential Facilities.

Goal 2 Mitigation Actions – Basic Information

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
2.1	Consolidate Bank and Briggs Branch drains	Delta Township Eaton County	Combine two (2) drains into an intercounty drain system with larger capacity to mitigate the lack of capacity of the individual drains.	Flood
2.2	Upgrade Water Resource Recovery Facility	Delta Township	Relocate the facility out of the floodplain by constructing a new facility in phases.	Flood
2.3	Encourage dam EAP compliance and updates to ensure information remains current.	Eaton County Emergency Management	Having current dam EAPs with annual reviews identifies incidents that can lead to a potential emergency, areas that can be affected, and pre-planned	Dam Failure

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
			actions to minimize property damage or loss of life.	
2.4	Encourage owners of Myers-Henderson Dam to write an EAP in accordance with state mandates to identify lines of communication, specific data for potential inundation, and lay out public warning mechanisms.	Delta Township Eaton County Drain Commissioner	Having an EAP in place that's in accordance with state mandates would provide for the safety of both persons and property in the immediate area.	Dam Failure Flood
2.5	Ensure all public electronic infrastructure is protected with surge protectors.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	By ensuring the use of surge protectors on critical electronic infrastructure, it will reduce the possibility of damage to the equipment in the event of a power surge when power is restored. This encouragement for stakeholders to use surge protectors can be done by the use of an aggressive social media campaign.	Severe Weather (including fog, lightning and hail)

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
2.6	Identify backup sources of power for critical facilities.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville Eaton County Emergency Management	By identifying backup sources of power for critical infrastructure, it will ensure continued services for the community. This can be done through a coordinated public information campaign in addition to having resources available in a Resource Manual within the EOC.	Severe Wind
2.7	Retrofit critical structures to increase resistance to storm hazards and promote hazard-resistant construction.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	By retrofitting vulnerable structures that house critical infrastructure, it will increase the resistance to strong storms, high wind, lightning, and other natural hazards.	Severe Weather (including fog, lightning and hail)
2.8	Ensure all public electronic infrastructure is protected with surge protectors.	Ingham County	By ensuring the use of surge protectors on critical electronic infrastructure, it will reduce the possibility of damage to the equipment in the event of a power surge when power is restored. This encouragement for stakeholders to use surge protectors can be done by the use of an aggressive social media campaign.	Severe Weather (including fog, lightning and hail)

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
2.9	Identify backup sources of power for critical facilities.	Ingham County	By identifying backup sources of power for critical infrastructure, it will ensure the continued services expected in the community. This can be do through a coordinated public information campaign in addition to having resources available in a Resource Manual within the EOC.	Flood Severe Weather (including fog, lightning and hail) Severe Wind Severe Winter Weather (including ice, sleet and snowstorm) Tornado
2.10	Retrofit critical structures to increase resistance to storm hazards and promote hazard-resistant construction.	Ingham County	By retrofitting vulnerable structures that house critical infrastructure, it will increase the resistance to strong storms, high wind, lightning, and other natural hazards.	Flood Severe Weather (including fog, lightning and hail) Severe Wind Severe Winter Weather (including ice, sleet and snowstorm) Tornado
2.11	Encourage the construction of shelters at City and County Parks	Clinton County	Develop a program to build saferooms in public buildings and public spaces.	Severe Weather (including fog, lightning and hail) Severe Wind Tornado
2.12	Coordinate with schools to help identify timely warning needs.	Clinton County	Ensure that all schools in Clinton County have indoor warning capabilities.	Severe Weather (including fog, lightning and hail) Severe Wind Tornado

Goal 2 Mitigation Actions – Background Information

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
2.1	Local Funding State Funding	Delta Township Utilities Director Special Drain Commissioner for Eaton County	Greater than $1,000,000	2025
2.2	Local Funding	Engineering Department Utilities Department	Greater than $1,000,000	2025
2.3	Local Funding	Eaton County Emergency Management	Less than $10,000	2025
2.4	Local Funding	Delta Township Fire Department	Less than $10,000	2024
2.5	BRIC Funding HMGP Funding Local Funding Private Funding State Funding	Eaton County Emergency Management	Less than $10,000	2025
2.6	BRIC Funding HMGP Funding Local Funding Private Funding State Funding	Eaton County Emergency Management	Less than $100,000	2025

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
2.7	BRIC Funding FMA Funding HMGP Funding Local Funding Other Private Funding State Funding	Eaton County Equalization	Greater than $1,000,000	2027
2.8	BRIC Funding HMGP Funding Local Funding Private Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2025
2.9	BRIC Funding HMGP Funding Local Funding Private Funding State Funding	Ingham County	Less than $100,000	2025
2.10	BRIC Funding HMGP Funding Local Funding Private Funding State Funding	Ingham County	Greater than $1,000,000	2027
2.11	Local Funding Other	Clinton County Community Development	Greater than $1,000,000	2027
2.12	Local Funding Other Private Funding State Funding	Clinton County Emergency Management	Greater than $1,000,000	2026

Goal 2 Mitigation Actions – Scoring Information

Action ID	Lives Saved	Reduced Property Damages	Reduced Response Actions	Benefits Exceed Costs	Social Acceptability	Technical Feasibility	Administrative Capability	Political Desirability	Legal Authority	Economic Benefits	Environmental Benefits	Hazard Impacts	Numbers of Hazards Addressed	TOTAL	PRIORITY
2.1	0	1	0	1	1	2	1	1	0	0	0	0	0	7	Low
2.2	0	0	0	1	1	2	0	1	0	1	1	1	0	8	Low
2.3	0	1	1	2	1	2	1	1	1	0	0	0	0	10	Medium
2.4	1	1	1	1	1	2	1	1	1	0	0	0	0	10	Medium
2.5	0	0	0	2	1	2	2	1	0	1	0	0	0	9	Medium
2.6	0	0	0	1	1	2	1	1	0	1	0	0	0	7	Low
2.7	0	1	0	0	1	2	0	1	0	1	0	0	0	6	Low
2.8	0	0	0	2	1	2	2	1	0	1	0	0	0	9	Medium
2.9	0	0	0	1	1	2	1	1	0	1	0	0	0	7	Low
2.10	0	1	0	0	1	2	0	1	0	1	0	0	0	6	Low
2.11	1	0	1	0	1	2	0	1	0	0	0	0	1	7	Low
2.12	1	0	0	1	1	2	1	1	0	0	0	0	0	7	Low

Goal 3: Build Community and Public Resiliency.

Goal 3 Mitigation Actions – Basic Information

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
3.1	Develop drought communication plan to facilitate timely communication of relevant information to officials, decision makers, emergency managers, and the general public.	Eaton County Emergency Management Eaton County area fire departments	Using social media strategies and other public information strategies, information can be relayed quicker and on a timelier basis to the affected stakeholders.	Drought
3.2	Remain compliant with regulations of National Flood Insurance Program.	Eaton County Emergency Management City of Eaton Rapids Village of Dimondale City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	Eaton County communities that participate in the NFIP will continue to enforce floodplain management regulations that help mitigate flooding effects.	Flood
3.3	Ensure adequate backup copies of data exist.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	A data backup system, along with a disaster recovery plan, will allow a business to recover with minimal disruption. A public information campaign through social media will remind the businesses and infrastructure entities of the importance to backing up their data systems.	Severe Weather (including fog, lightning and hail)

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
3.4	Educate residents on personal wildfire mitigation techniques, including defensible space and fire loading.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	A strong social media campaign, especially in times of dry conditions or drought, will educate the public on mitigation techniques and what defensible spaces are. This campaign can be conducted with the cooperation and participation of the local fire departments.	Wildfire
3.5	Develop a public awareness campaign for personal preparedness.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	A strong social media campaign advertising the benefits of personal mitigation efforts will enhance the community resilience and make it more self-sufficient before, during, and after a disaster.	Dam Failure Drought Extreme Temperatures Flood Severe Weather (including fog, lightning and hail) Severe Wind Severe Winter Weather (including ice, sleet and snowstorm) Tornado Wildfire
3.6	Develop public awareness around freezing pipes and insulation techniques.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	By providing a strong social media campaign through various outlets and public information avenues, people can be told how to insulate the pipes in their homes and how to prevent them from freezing, thus reducing personal losses as	Extreme Temperatures

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
			a result of extreme temperatures.	
3.7	Develop public awareness around encouraging residents to relocate utilities and water heaters above base flood elevation and using tank-less heaters in limited spaces.	Eaton County Emergency Management	A strong social media campaign, much like a personal preparedness campaign, using social media and other outlets in addition to printed materials can educate the public on how to mitigate damage to their home utilities.	Flood
3.8	Educate citizens about flood risks, flood conditions, and safe conduct during an incident.	Eaton County Emergency Management	A strong social media campaign directed at flooding education and using other avenues of information output will help minimize the dangers of citizens being caught in flood situations and increase the safety of those individuals.	Flood
3.9	Encourage residents to implement mitigation techniques such as metal roofs, shutters, hail-resistant glass, hail resistant siding and electronic surge protectors.	Eaton County Emergency Management	A strong social media campaign used in conjunction with other media outlets to explain different techniques that can be used to mitigate against damage by installing different protective measures at their homes will reduce the overall loss	Severe Weather (including fog, lightning and hail)

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
			and enhance the safety of citizens in the event of severe weather.	
3.10	Educate residents about tornado safety.	Eaton County Emergency Management	A strong social media campaign to emphasize the dangers of tornadoes during Severe Weather Awareness Week, in addition to those times when severe weather is forecasted will only enhance the safety of the citizens of Eaton County.	Tornado
3.11	Educate residents on personal wildfire mitigation techniques, including defensible space and fire loading.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	A strong public-education campaign through social media, television, and print media will educate the public on defensible spaces and other mitigation techniques put into place far in advance of and in preparation for the dry season. This will help protect the community from substantial losses due to wildfire.	Wildfire

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
3.12	Educate residents about good burning practices and burn bans.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	A strong public-education campaign through social media, television and print media will help educate the public on when to or not to burn. It will also educate the public on how to do a safe burn.	Wildfire
3.13	Encourage citizens to take water-related measures such as installing low-flow toilets and showerheads, adjusting sprinklers to water the law instead of the sidewalk, and other water conservation methods.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville	A strong public information campaign through social media and other outlets will educate the public on different techniques they can use to conserve water and thus lower the impact on the drought conditions within the community.	Drought
3.14	Develop a public awareness campaign around DAFN populations and needs during a disaster.	City of Eaton Rapids Village of Dimondale Township of Delta City of Grand Ledge City of Potterville City of Charlotte City of Olivet City of Bellevue Village of Vermontville Eaton County Emergency Management	By developing a strong community approach through published literature, local media outlets, and a strong social media campaign, the DAFN population will be less impacted in the event of an emergency or disaster.	Dam Failure Drought Extreme Temperatures Flood Severe Weather (including fog, lightning and hail) Severe Wind Severe Winter Weather (including ice, sleet and snowstorm) Tornado Wildfire

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
3.15	Tree pruning, burn practices, crop insurance	Locke Township Locke Township Fire Department	Reduce risks, protect infrastructure	Drought Flood Severe Weather (including fog, lightning and hail) Severe Wind
3.16	Educate residents about good burning practices and burn bans	Williamstown Township	Educating residents on burn regulations encourages sound wildfire mitigation practices by individuals.	Drought Extreme Temperatures
3.17	Sycamore Creek Cleanup	Ingham County	Survey the creek area and clean up as needed	Flood
3.18	Develop drought communication plan to facilitate timely communication of relevant information to officials, decision makers, emergency managers, and the general public.	Ingham County	Using social media strategies and other public information strategies, information can be relayed quicker and on a timelier basis to the affected stakeholders.	Drought
3.19	Remain compliant with regulations of National Flood Insurance Program.	Ingham County	Ingham County communities that participate in the NFIP will continue to enforce floodplain management regulations that help mitigate flooding effects.	Flood

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
3.20	Ensure adequate backup copies of data exist.	Ingham County	A data backup system, along with a disaster recovery plan, will allow a business to recover with zero-to-minimal damage to the business, reputation, and data. A public information campaign through social media will remind the businesses and infrastructure entities of the importance to backing up their data systems.	Severe Weather (including fog, lightning and hail) Severe Wind
3.21	Develop a public awareness campaign for personal preparedness.	Ingham County	A strong social media campaign advertising the benefits of personal mitigation efforts will enhance the community resilience and make it more self-sufficient before, during, and after a disaster.	Drought Extreme Temperatures Flood Severe Weather (including fog, lightning and hail) Severe Wind Severe Winter Weather (including ice, sleet and snowstorm) Tornado Wildfire
3.22	Develop public awareness around freezing pipes and insulation techniques.	Ingham County	By providing a strong social media campaign through various outlets and public information avenues, people can be told how to insulate the pipes in their homes and how to prevent them from freezing, thus	Extreme Temperatures

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
			reducing personal losses as a result of extreme temperatures.	
3.23	Develop public awareness around encouraging residents to relocate utilities and water heaters above base flood elevation and using tank-less heaters in limited spaces.	Ingham County	A strong social media campaign, much like a personal mitigation campaign, using social media and other outlets in addition to printed materials can educate the public on how to mitigate against damage to their home utilities.	Flood
3.24	Educate citizens about flood risks, flood conditions, and safe conduct during an incident.	Ingham County	A strong social media campaign directed at flooding education and using other avenues of information output will help minimize the dangers of citizens being caught in flood situations and increase the safety of those individuals.	Flood

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
3.25	Encourage residents to implement mitigation techniques such as metal roofs, shutters, hail-resistant glass, hail resistant siding and electronic surge protectors.	Ingham County	A strong social media campaign used in conjunction with other media outlets to explain different techniques that can be used to mitigate against damage by installing different protective measures at their homes will reduce the overall loss and enhance the safety of citizens in the event of severe weather.	Severe Wind
3.26	Educate residents about tornado safety.	Ingham County	A strong social media campaign to emphasize the dangers of tornadoes during Severe Weather Awareness Week, in addition to those times when severe weather is forecasted will only enhance the safety of the residents and visitors of Ingham County	Tornado
3.27	Educate residents about good burning practices and burn bans.	Ingham County Fire Departments	A strong public-education campaign through social media, television and print media will help educate the public on when to or not to burn. It will also educate the public on how to do a safe burn.	Wildfire

Action ID	Mitigation Action	Jurisdiction(s)	Project Benefits	Hazard(s) Addressed
3.28	Encourage citizens to take water-related measures such as installing low-flow toilets and showerheads, adjusting sprinklers to water the law instead of the sidewalk, and other water conservation methods.	Ingham County	A strong public information campaign through social media and other outlets will educate the public on different techniques they can use to conserve water and thus lower the impact on the drought conditions within the community.	Drought
3.29	Develop a public awareness campaign around DAFN populations and needs during a disaster.	Ingham County	By developing a strong community approach through published literature, local media outlets, and a strong social media campaign, the DAFN population will be less impacted in the event of an emergency or disaster.	Drought Extreme Temperatures Flood Severe Weather (including fog, lightning and hail) Severe Wind Severe Winter Weather (including ice, sleet and snowstorm) Tornado Wildfire
3.30	Increase number of outdoor warning systems	Delhi Township	Adding an outdoor warning system to the southwest area of the township that is unable to hear the existing warning systems due to thick vegetation that cannot be removed.	Tornado

Goal 3 Mitigation Actions – Background Information

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
3.1	Local Funding	Eaton County area fire departments	Less than $10,000	2023
3.2	FMA Funding Local Funding	Eaton County Emergency Management	Less than $10,000	2023
3.3	BRIC Funding HMGP Funding Local Funding Private Funding State Funding	Eaton County Emergency Management	Less than $1,000,000	2025
3.4	Local Funding	Eaton County Emergency Management	Less than $10,000	2023
3.5	BRIC Funding HMGP Funding Local Funding State Funding	Eaton County Emergency Management	Less than $10,000	2023
3.6	Local Funding	Eaton County Emergency Management	Less than $10,000	2024
3.7	Private Funding	Eaton County Emergency Management	Less than $10,000	2024
3.8	BRIC Funding FMA Funding HMGP Funding Local Funding Private Funding State Funding	Eaton County Emergency Management	Less than $10,000	2024
3.9	Private Funding	Eaton County Emergency Management	Less than $100,000	2024
3.10	Local Funding	Eaton County Emergency Management	Less than $10,000	2023

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
3.11	Local Funding	Eaton County Emergency Management	Less than $10,000	2023
3.12	Local Funding	Eaton County Emergency Management	Less than $10,000	2023
3.13	Local Funding	Eaton County Emergency Management	Less than $10,000	2024
3.14	BRIC Funding FMA Funding HMGP Funding Local Funding Private Funding State Funding	Eaton County Emergency Management	Less than $10,000	2024
3.15	Local Funding	Locke Township	Less than $10,000	2022
3.16	Local Funding	Williamstown Township	Less than $10,000	2023
3.17	FMA Funding HMGP Funding Local Funding State Funding	Ingham County Drain Commission	Less than $100,000	2024
3.18	Local Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2023
3.19	FMA Funding Local Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2024
3.20	BRIC Funding HMGP Funding Local Funding Private Funding State Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $1,000,000	2026

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
3.21	BRIC Funding HMGP Funding Local Funding Private Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2025
3.22	BRIC Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2024
3.23	Private Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2025
3.24	BRIC Funding FMA Funding HMGP Funding Local Funding Private Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2024
3.25	BRIC Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $100,000	2024
3.26	Local Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2025
3.27	Local Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2025
3.28	Local Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2025
3.29	BRIC Funding FMA Funding HMGP Funding	Ingham County Office of Homeland Security & Emergency Management	Less than $10,000	2026

Action ID	Potential funding sources	Lead Agency(ies)	Estimated cost	Completion Timeline
	Local Funding Private Funding State Funding			
3.30	Local Funding State Funding	Delhi Township Emergency Management	Less than $100,000	2025

Goal 3 Mitigation Actions – Scoring Information

Action ID	Lives Saved	Reduced Property Damages	Reduced Response Actions	Benefits Exceed Costs	Social Acceptability	Technical Feasibility	Administrative Capability	Political Desirability	Legal Authority	Economic Benefits	Environmental Benefits	Hazard Impacts	Numbers of Hazards Addressed	TOTAL	PRIORITY
3.1	0	0	0	1	1	2	1	1	0	0	0	0	0	6	Low
3.2	0	0	0	2	1	2	2	1	2	0	1	0	0	11	Medium
3.3	0	0	0	2	1	2	2	1	0	0	0	0	0	8	Low
3.4	1	1	1	2	1	2	1	1	0	0	0	0	0	10	Medium
3.5	0	0	1	2	1	2	1	1	0	0	0	0	2	10	Medium
3.6	0	1	0	2	1	2	1	1	0	0	0	1	0	9	Medium
3.7	0	1	0	2	1	2	1	1	0	0	0	0	0	8	Low
3.8	1	1	1	2	1	2	1	1	0	0	0	0	0	10	Medium
3.9	0	1	0	2	1	2	1	1	0	0	0	0	0	8	Low
3.10	1	1	0	2	1	2	1	1	0	0	0	0	0	9	Medium
3.11	1	1	0	2	1	2	1	1	0	0	0	0	0	9	Medium
3.12	0	1	1	2	1	2	1	1	0	0	1	0	0	10	Medium

3.13	0	1	0	2	1	2	1	1	0	0	0	0	0	8	Low
3.14	0	0	0	2	1	2	1	1	0	0	0	1	2	10	Medium
3.15	0	0	0	0	1	2	0	1	0	0	1	0	2	7	Low
3.16	0	1	1	2	1	2	1	1	0	0	1	0	0	10	Medium
3.17	0	0	0	0	1	2	0	1	0	0	2	0	0	6	Low
3.18	0	0	0	1	1	2	1	1	0	0	0	0	0	6	Low
3.19	0	0	0	2	1	2	2	1	2	0	1	0	0	11	Medium
3.20	0	0	0	2	1	2	2	1	0	0	0	0	0	8	Low
3.21	0	0	1	2	1	2	1	1	0	0	0	0	2	10	Medium
3.22	0	1	0	2	1	2	1	1	0	0	0	1	0	9	Low
3.23	0	1	0	2	1	2	1	1	0	0	0	0	0	8	Low
3.24	1	1	1	2	1	2	1	1	0	0	0	0	0	10	Medium
3.25	0	1	0	2	1	2	1	1	0	0	0	0	0	8	Low
3.26	1	1	0	2	1	2	1	1	0	0	0	0	0	9	Low
3.27	0	1	1	2	1	2	1	1	0	0	1	0	0	10	Medium
3.28	0	1	0	2	1	2	1	1	0	0	0	0	0	8	Low
3.29	0	0	0	2	1	2	1	1	0	0	0	1	2	10	Medium
3.30	1	0	1	1	1	2	0	1	0	0	0	0	2	9	Medium

5. PLAN IMPLEMENTATION AND MAINTENANCE

5.1. Formal Adoption

The purpose of formally adopting the Tri-County Hazard Mitigation Plan is to secure buy-in from participating jurisdictions, raise awareness of the plan, and formalize the plan's implementation. The governing board for each participating jurisdiction has adopted this local hazard mitigation plan by passing a resolution. This plan will be updated and re-adopted every five (5) years in accordance with federal requirements.

5.2. Implementation

Once adopted, participating jurisdictions may begin implementing the hazard mitigation strategy in Chapter 4 of this document. The mitigation strategy identifies responsible agencies and entities, general timelines, prioritization, and potential funding sources to assist in strategy implementation.

5.3. Maintenance

To remain a living document of maximum use to the jurisdictions, the mitigation plan requires periodic maintenance.

Maintenance Schedule

The emergency management departments in Clinton, Eaton, and Ingham counties are responsible for initiating an annual plan review to monitor progress and update the mitigation strategies. An annual mitigation action progress report will be prepared by the Emergency Management Coordinators and kept on file to assist with future updates.

The plan will require a full review and update ahead of its five (5)-year expiration date unless a disaster or other circumstances require a change to this schedule. It is recommended that the process to prepare the update should begin no later than 12 months prior to its expiration.

Maintenance Evaluation Process

The mitigation planning team from each county will be invited to review and update the plan annually. The plan evaluation will focus on three (3) key areas of the 2022 Tri-County Hazard Mitigation Plan:

- Changes in capabilities
- Changes in hazards and new hazard history
- Status updates and reviews of the mitigation strategy

Each county can utilize the Annual Review Tool to assist in this process. This reporting tool allows for continual tracking of evolving risks to the jurisdictions as well as progress toward the mitigation of the risks and impacts.

Incorporation into Existing Planning Mechanisms

The capabilities assessment summary in Chapter 2 of this document highlights specific planning mechanisms that can inform or be informed by the hazard mitigation plan.

Continued Public Involvement

Input from the public was an integral part of the preparation of this plan and will continue to be essential as the plan evolves. Any significant change to this plan will require an opportunity for the public to provide input. Continued public involvement includes advertisement of any planned public meetings and posting revisions for public comment. This process will follow all county or jurisdiction rules as applicable.