

**Michigan High Water Impacts
First Quarter, 2020**

Compiled by Pat McGinnis, Grand Haven City Manager

The following list of expenses was compiled by several Michigan City Managers over the past week. Numbers are gross estimates with some indication that this is only the beginning – Nine communities and \$22,598,000 identified as known costs so far.

Grand Haven

- 1) Three waterfront commercial buildings rendered uninhabitable by mold caused by high water levels: \$1,500,000
- 2) Neighborhood inundated; planning massive list station effort or purchase of several homes and installation of rain gardens/retention areas: \$1,500,000
- 3) Streets underwater; need to elevate and rebuild during and after water level increase: \$500,000 (current estimate)
- 4) Boat launch reconstruction – elevate and rebuild: \$400,000
- 5) Various water intake infrastructure exposed as public hazard: \$180,000

Ludington

- 1) Three homes needing complete gutting due to ongoing water damage: \$500,000
- 2) Intersection underwater with multiple homes and properties affected. Looking at potential of lift station or removal of roadway and replacement with green retention area: \$500,000-\$1,500,000.
- 3) Repair of lakefront park damage, installation of sheet piling: \$500,000 (Current Cost)
- 4) Water Damage at Maritime Museum due to high water overwhelming existing storm water system: \$180,000
- 5) Ludington Youth Sailing School Facility inaccessible and underwater: \$450,000 for Building Replacement
- 6) Multiple Boat Launches requiring repair: \$400,000

Holland

- 1) Lift Station to keep water off main north/south artery into town (Pine Avenue) ... \$219,000
- 2) Damage to various boardwalks/seawalls/boat launches ... \$50,000 spent so far and preparing for more damage next year
- 3) Expect that the water levels projected by the Army Corps next year will cause a few more roads to go underwater, most in lakeside neighborhoods but also an additional street intersection (South Shore Drive) ... cost yet unknown, but expect cost to be at least as much as Pine Avenue of \$219,000
- 4) Significant flooding at Windmill Island Gardens (it is an island) including possibly flooding the one roadway in/out to this huge attraction (116,000 visitors last year). Evaluating options, primarily for the roadway to the island, but probable only solution is to raise the level of the road ... cost yet unknown

Eaton Rapids

- 1) Ballfield restrooms/concession stand/storage buildings underwater in 2018: estimated cost to replace \$250,000

- 2) Total staff time responding to 2018 flooding incident to sandbag low parts of downtown: \$50,000
- 3) Regular flooding of downtown park. Mitigation plan is to replace sea walls on the island estimated cost \$1,000,000
- 4) Upgrades to mitigate future flooding of ballfields including the installation of larger pumps: \$10,000

Norton Shores

- 1) Replace 35 feet of Mona Lake channel steel sheeting: \$72,000
- ~~2) Dredge sand from channel (dune erosion): \$90,000~~
- 3) Replace walkway, dune retaining wall and stairs in Lake Harbor Park: \$40,000
- 4) Repair sink holes along seawall in Lake Harbor Park: \$5,000
- 5) Move sanitary sewer along Lake Michigan (2nd time in two yrs.): \$25,000
- 6) Replace emergency turnout near Lake Michigan: \$15,000
- 7) Rent auxiliary pump for sanitary sewer lift station: \$25,000
- 8) Elevate or buy out homes in flood plain along Mona Lake: \$???

Ontonagon

- 1) rebuild East Pier Path and repair adjacent property - \$75,000
- 2) repair erosion at Marina Park boardwalk - \$30,000
- 3) repairs to Island boardwalks & bank stabilization - \$35,000
- 4) stabilize 2 historic building foundations - \$45,000
- 5) repair inundated sanitary sewers due to high groundwater/lake levels - \$750,000
- 6) repair storm drain and lift Zinc Street - \$150,000
- 7) repair river bank erosion along River Road - \$100,000

Manistee

- 1) Riverbank erosion correction - \$1,540,000
- 2) Boardwalk replacement & repair - \$500,000
- 3) Damages past two seasons to Riverwalk, fishing piers, and parking areas - \$1,500,000

Pentwater

- 1) Long Bridge road repair - \$285,000
- 2) Marina seawall erosion and sidewalks that sunk - \$225,000
- 3) Marina docks - \$28,000 spent to date, \$600,000 replace fixed with floats
- 4) Pentwater Yacht club, \$75,000 damage to date. If pilings fail \$1,500,000
- 5) Two storm drains collapsed \$150,000
- 6) Lifted liner in EQ pond from high ground water - \$750,000
- 7) MDOT bus 31 culvert under water

Petoskey

- 1) Arrowhead Shores - \$81,000 in engineering; millions in restoration
- 2) Bayfront Park - sewer main relocation - \$300,000 so far, \$54,000 in additional engineering indicative of much larger project ahead
- 3) City Marina - \$100,000 in damages to fixed dock system. Floating dock system estimated at \$4,000,000

PRELIMINARY ESTIMATES OF PROJECT COSTS
2018 - 2019 WATER DAMAGES
April 13th, 2018 Meteotsunami, 2019 Lake Michigan Highwater, July 20th, 2019 Flood Event
MANISTEE, MICHIGAN

Item No	Estimated Quantity	Unit	Description	Unit Price	Amount
2018 - 2019 High Water Damage					
1.	1	LSUM	Riverwalk Damage near First Street Overlook	\$70,000	\$70,000
2.	1	LSUM	Arthur St Pier & Wall	\$40,000	\$40,000
3.	1	LSUM	First Street South Pier Walkway Damage	\$60,000	\$60,000
4.	1	LSUM	Lakeshore Drive Pump Station Bank Erosion	\$50,000	\$50,000
5.	1	LSUM	Lakeshore Drive Bank Erosion	\$50,000	\$50,000
6.	1	LSUM	First Street Overlook Bank Erosion (1)	\$50,000	\$50,000
7.	1	LSUM	First Street Overlook Bank Erosion (2)	\$110,000	\$110,000
8.	1	LSUM	First Street Overlook Bank Erosion (3)	\$100,000	\$100,000
9.	1	LSUM	River Walk Bank Erosion (Near Armory)	\$500,000	\$500,000
10.	1	LSUM	Riverwalk Bank Erosion (Cedar street)	\$120,000	\$120,000
11.	1	LSUM	Resetting Net Shed	\$50,000	\$50,000
12.	1	LSUM	First Street Overlook Wall	\$200,000	\$200,000
<u>Preliminary</u> Estimate of Project Costs Sub-Total:					\$1,400,000
April 13th, 2018 Meteotsunami					
1.	1	LSUM	Municipal Marina Docks (Docks 1-12)	\$710,000	\$710,000
2.	1	LSUM	Municipal Marina Docks (Docks 13-16)	\$390,000	\$390,000
<u>Preliminary</u> Estimate of Project Costs Sub-Total:					\$1,100,000
July 20th, 2019 Flooding Damage					
1.	1	LSUM	12th Street 1,500 feet west of Oak Street	\$375,000	\$375,000
2.	1	LSUM	Elm Street from 12th to 9th	\$25,000	\$25,000
3.	50	EACH	Flooded Basement Damage (Cleanup & Restoration)	\$10,000	\$500,000
<u>Preliminary</u> Estimate of Project Costs Sub-Total:					\$900,000
TOTAL <u>PRELIMINARY</u> ESTIMATE OF PROJECT COSTS (CONSTRUCTION, CONTINGENCY, AND ENGINEERING):					\$3,400,000



August 5th, 2019