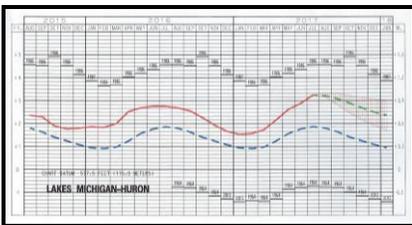


**GRAND TRAVERSE BAY WATERS**



**TODAY'S WEATHER:**

[www.wunderground.com/us/mi/kewadin](http://www.wunderground.com/us/mi/kewadin)



**L. Michigan-Huron Water Level**  
**17 in. over Avg – 6 in. over last year. 16 in. below 1986 High**

**HARBOR DREDGING**

BY: Chuck May, Chair of the Great Lakes Small Harbors Coalition as reported by GLC Board member Ron Watson of New Buffalo, MI.

Michigan has 46 small harbors partly supported by the Harbor Maintenance Trust Fund. Funding was lost in 1998; it had never been fully funded. Money was also misallocated to dredging and infra-structure backlog. Michigan needs \$7 million for small harbor maintenance

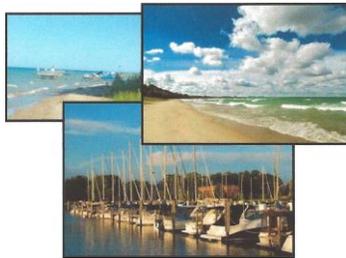
Twenty-two (22) harbors were dredged in 2016 with 19 on the waiting list.

(TNN Note: ER Harbor dredging is self-financed from slip fees). Dredging is important to keep all small harbors open even, as GLC (and TNN) strive to moderate Great Lake levels.

Average lake levels provide more beach. But it is just as important that dredged sand be used to fill-in littoral drift sand reduced by harbor breakwaters and to put sand back into the littoral system. (TNN Note: This was not done in Elk Rapids in 2017 when dredged sand was wasted in a land fill)

**TNN President's Message**

Shoreline erosion is back with higher water which is still well below the record highs of 1986. High winds add seiches which pile water against the Bay shore between Eastport and Elk Rapids. I added sandbags to stiffen my boardwalk and protect some prized Mugo pines –and will add more. Sandbags laid down in 1986 are exposed after not being seen for over 30 years. Hope is works, but I'm listening to neighbors who are talking shore hardening. (Cont'd on Page 2)



**THREATS TO GREAT LAKES' SHORELINES**

BY: Guy Meadows, PhD, Director, Great Lakes Research Center at Michigan Technological University. Excerpts are from a presentation to the Great Lakes Coalition for Shoreline Preservation (GLCSP), Ron Watson, GLC Director.

Dr. Meadows outlined areas of concern: water levels & FEMA, plight of small boat harbors, dangerous nearshore currents, Straits of Mackinac

**Water Levels and FEMA**

There is almost a 6½ foot difference between the all-time 1986 high of 582.3 feet and the all-time low on January 2013 at 576 feet. Contributing factors for higher water are: frequency and intensity of storms; and a range of 20 to 90% ice cover. FEMA has reestablished their floodplain designations. The statutory ordinary high water mark is set at 580.7 feet (about equal to the water level in July 2017). He stressed the need to educate property owners and prospective buyers that water levels may not always be as they appear today.

**Plight of Small Boat Harbors**

Small boat harbors support the local economy and are symbols of pure Michigan and of course provide safe refuge for boaters. Navigational jetties are short. This means that sand and sediments remain in the active surf zone and are not washed out and beyond the 'depth of closure', about 20 feet of water. Small harbors have active citizens' support by boaters and by communities. The State of Michigan and Army Corps of Engineers no longer pay for dredging rendering many harbors unusable. Dr. Meadows suggested shared use or coordinated commercial dredging to put the sand back into the nearshore system to nourish beaches.

**Dangerous near shore currents**

Great Lakes dynamics create dangerous "rip currents". On the Great Lakes there is a 5 second interval between waves whereas oceans have a 15 second or more interval. Strong winds can actually create "wind tides" or "seiches" where the water is pushed towards one shore increasing the water level. These currents are well known as the Ojibway described them as "underwater panther". All beaches have dangerous near shore currents which persist long after the waves subside.

**Straits of Mackinac**

Dr. Meadows reported that he has been appointed to the pipeline safety advisory board with a mission to develop advanced underwater sensing technology to monitor the Enbridge Pipeline system. Michigan Tech is working with U of M to develop this technology. A new monitoring buoy #41575 located in the Straits of Mackinac can be checked out at <http://greatlakesbuoys.org>

**CARE FOR YOUR SEPTIC, SAVE \$\$**

BY: Mike Moyer

Folks in my neighborhood have been learning to save money by properly caring for their septic tanks and drain fields. Rather than have their tanks pumped every 3 years (at \$350 per pump-out) or replacing their whole septic system in 20-25 years (a \$10K expense) they have been following the teachings of Walt Steuer Pumping Service in Traverse City.



**Three important things are taught:**

- (1) regular use of root-killer (copper sulfate) to keep tree roots from clogging the tank and the drain-field;
- (2) regular use of special enzymes to keep the digesting bacteria in the tank healthy in the presence of even minor amounts of greases and disinfectants rinsed down the drains ; or if we are away for several months at a time
- (3) minimize putting down the drains: garbage, egg shells, banana peels, coffee grounds, plastics, tampons, and other things the bacteria cannot digest. Cost for monthly applications of root killer and enzymes is \$120 per year. Compare that with annual sewer bills.

Indeed, experience on our street shows pumping frequency being reduced from every 2-3 years to 6-8 years or less. Local homes' healthy tanks and drain fields here are only 35-40 years old but working toward at least 50 years of septic system life reported elsewhere.

Beware of lobbyists seeking pumping mandates and/or inspections every 3 years. Instead, learn to take proper care of your system, do the math, and save the money for a new boat.

**7<sup>th</sup> ANNUAL TNN TRI-TOWNSHIP FISCAL COMPARISON**

Elk Rapids, Milton, and Torch Lake Townships

*Three Townships Spent \$3.55 Million for Fiscal 2016-17*

12 Months FY 2016-17	Elk Rapids Twp	Milton Twp	Torch Lake Twp	3 Townships
<b>OVERHEAD COST</b>	<b>\$ 308,126</b>	<b>\$ 428,924</b>	<b>\$ 276,942</b>	<b>\$ 1,013,992</b>
<b>Overhead % of Total</b>	<b>38%</b>	<b>28%</b>	<b>23%</b>	<b>29%</b>
<b>Building Related</b>	<b>29,091</b>	<b>34,607</b>	<b>16,603</b>	<b>80,301</b>
<b>Discretionary Expenses</b>	<b>8,045</b>	<b>6,400</b>	<b>9,396</b>	<b>23,842</b>
<b>Elected Officials</b>	<b>85,583</b>	<b>136,655</b>	<b>87,427</b>	<b>309,665</b>
<b>Gen Admin &amp; Personnel</b>	<b>100,722</b>	<b>136,193</b>	<b>79,197</b>	<b>316,113</b>
<b>Professional Support</b>	<b>40,207</b>	<b>28,160</b>	<b>31,857</b>	<b>100,223</b>
<b>Taxation Related</b>	<b>44,478</b>	<b>86,909</b>	<b>52,462</b>	<b>183,849</b>
<b>PUBLIC SAFETY/SERVICE</b>	<b>\$ 466,366</b>	<b>\$ 924,156</b>	<b>\$ 598,994</b>	<b>\$1,989,515</b>
<b>Safety/Service % of Total</b>	<b>58%</b>	<b>61%</b>	<b>49%</b>	<b>56%</b>
<b>EMS</b>	<b>252,954</b>	<b>225,000</b>	<b>341,144</b>	<b>819,09</b>
<b>Fire</b>	<b>155,859</b>	<b>194,247</b>	<b>111,712</b>	<b>461,819</b>
<b>Roads, Parks, Elections</b>	<b>57,552</b>	<b>504,908</b>	<b>146,138</b>	<b>708,598</b>
<b>CAPITAL EXPENSE</b>	<b>\$ 32,291</b>	<b>\$ 167,406</b>	<b>\$ 351,996</b>	<b>\$ 551,694</b>
<b>Capital Exp. % of Total</b>	<b>4%</b>	<b>11%</b>	<b>29%</b>	<b>16%</b>
<b>Fire</b>	<b>32,291</b>	<b>-</b>	<b>351,996</b>	<b>384,287</b>
<b>Land Purchase</b>	<b>-</b>	<b>110,000</b>	<b>-</b>	<b>110,000</b>
<b>Mortgage</b>	<b>-</b>	<b>57,406</b>	<b>-</b>	<b>57,406</b>
<b>GRAND TOTAL</b>	<b>\$ 806,782</b>	<b>\$1,520,487</b>	<b>\$ 1,227,932</b>	<b>\$ 3,555,201</b>

**How This Study Was Done:** All Townships supplied data in Excel by E-mail for this report.

The 12 month totals may differ from Townships actuals because of reporting variations.

Analyst: Jim Welsh – Data: Mike Szymanski, Elk Rapids Township; Liz Atkinson, Milton Township; Kathy Windiate, Torch Lake Township

**Goal: More Output per \$ for Direct Public Benefit Without Increased Spending**

**TNN President's Message** (Continued)



Shore hardening is an and expensive matter but works if done right. So TNN is reviewing the experts who have evaluated hardening schemes. This will be reported in Autumn TNN News. The hardening done in 1986 just below Erickson Road is doing well with current high water. Unrealistic advocates say, build further back – even though thousands of homes have been here for decades and met all setback rules and regulations at the time of construction. In this edition, TNN features an overview by a noted scientist from Michigan Technological University. And also a report on the critical need for harbor dredging and returning dredged sand to the littoral flow, the 'river of sand' alongshore. Enjoy this edition of TNN News, *Keith Termaat, TNN President*