



February 25, 2015

SPECIAL MEETING

The New Buffalo City Council will hold a Special Council Meeting on Monday, March 2, 2015, at 7:00 p.m., in the Council Chambers at City Hall, 224 W. Buffalo St., New Buffalo, MI 49117.

The following will be on the agenda:

- a. Water Intake/Shoreline Erosion

This meeting is an open meeting. The notice is posted in compliance with Open Meeting Act, Public Act 267 of 1976 and the Americans with Disabilities Individuals with disabilities requiring auxiliary aids should contact the City Clerk by writing or calling the following: Allyson Holm, City Clerk (269) 469-1500, 224 W. Buffalo St., New Buffalo, MI 49117.

Allyson Holm
City Clerk



SPECIAL CITY COUNCIL MEETING
Monday March 2, 2015 7:00 p.m.

1. Call Meeting to Order & Pledge of Allegiance
2. Roll Call
3. Approval of Agenda
4. Presentations
 - a. Wayne Lauer, President of Dunewood Homeowner's Association
 - b. Ron Watson, President of Sunset Shores Homeowner's Association
 - c. Jim Carson, President of Warwick Homeowner's Association
 - d. Adrienne Peterson, President of Peterson Environmental
 - e. Steve Pauowits, Forest Beach
 - f. Paul Leonard, President of the Grand Beach Village Council
 - g. Ed Oldis, Homeowner, City of New Buffalo
5. Public Comment – Specific to Water Intake/Shoreline Erosion
 - a. Sign-up sheet provided – Five-minute time limit enforced
6. Special Business:
 - a. Water Intake/Shoreline Erosion
7. Adjourn



RECV'D

FEB 27 2015

February 24, 2015

The New Buffalo City Council
224 W. Buffalo Street
New Buffalo, MI 49117

Dear Council Members;

Let me introduce myself, I am Wayne Lauer and I am President of Dunewood Condominium Association. Dunewood consists of five separate living buildings, the first was built in 1987 and the last was built in 1994. There are thirty-six (36) living units in Dunewood just south of the southern rock revetment to the harbor, and has Lake Michigan Yacht Club as its neighbor to the Northeast, and Sunset Shores as its neighbor to the Southwest. We have a mix of full and part time residents that enjoy the shores of Lake Michigan.

The purpose of this letter is to support the City's efforts to save the pump house by pursuing the strategies found in the United States Army Corps of Engineers (USACE) report of 2009. As you are aware, the pump house has been damaged by high wave action three times since 1975, when the harbor was constructed by the USACE. At the time of its construction, the pump house was protected from the damaging wave action by beach, lots of beach. In the USACE report, is a pictorial comparison of the extent of beach in 1967 and the clear loss of beach by 2005. The data in the USACE report under Sunset Shoreline Analysis states;

"The average recession rate reduced over the next two temporal periods to -0.823 ft/yr for 1973-1980 then to -0.266 ft/yr from 1980 to 2002. The shoreline recession analysis for this entire project site indicates that Sunset Shores has the greatest recession of all the stretches of shoreline".

The loss of the beach was the last line of defense to protect the pump house, and the loss of beach is clearly the result of the construction of the harbor revetment. The good news is the USACE 2009 report also suggests the solution to the pump house problem. In their 9.0 Conclusions and Recommendations they state;

"A number of solutions were analyzed. In general, it is recommended that some type of nourishment program be implemented at the Warwick Shores/Sunset Shores location. Modeling indicates that this portion of shoreline would be best suited for providing long term benefits to the rest of the shoreline south of the harbor".

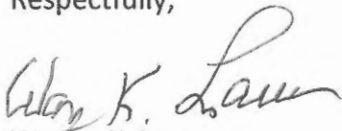
Specifically, adding 120,000 y³ of sand every three years would add enough beach to protect the pump house. Also moving 20,000 y³ a year from the north accretion fillet for three years would, as stated in the USACE study :

- 1. Potential reduction in the amount of sediment shoaling in the harbor.*
- 2. Reduction in beach width on north side to provide better access to the water.*
- 3. Increased sediment to the south.*
- 4. Lower costs associated with less handling of material.*

Dunewood has approximately 600 feet of lakefront, half of which is usable beach and the balance with a waterline up to the revetment for that part of the property. The wave action of the lake has caused serious erosion of that part of the revetment, so much so that the revetment has been breached and is failing. Dunewood has received approval from the MDEQ to begin the rebuild of the failed revetment, and should receive USACE approval in the next few weeks. To further complicate the revetment issue, an active sewer line extends from the Lake Michigan Yacht Club through the Dunewood property between the buildings and Lake Michigan. The sewer line is not currently in jeopardy, but further beach and revetment erosion could breach both our new (yet to be re-built) revetment and the sewer line. Dunewood will take the financial impact of the revetment rebuild, but increased beach front would not only protect the new revetment but also the sewer line.

We support the efforts of the City to request funding from the federal government to fund the conclusions of the USACE report of 2009. Specifically, to nourish Sunset Shores through Warwick Shores with 120,000 y³ of sand. We believe this should be done every three years. And we believe the federal government should fund the relocation of 20,000 y³ of sand from the North Accretion Fillet to the South Accretion Fillet or directly at the pump house to protect that structure. We believe this should be done for the three years as per the USACE study.

Respectfully,



Wayne K. Lauer

Dunewood Condominium Association



RECV'D
FEB 27 2015

From: Ronald Watson
Sunset Shores Property Owners Association President

Date: February 21, 2015

Subject: Beach Nourishment and Pump House Protection

Dear Mayor and City Council Members:

I am the president of the Sunset Shore Property Owners Association (SSPOA). Sunset Shores consists of 175 homes and has over 450 residents. Our subdivision has over 2100' on Lake Michigan and contains 3 Community Beaches.

The water intake / pumping station and the water filtration system reside within our boundaries. Sunset Shores was developed in the late 50's / early 60's by a local developer and was significantly developed prior to the Harbor construction in 1973/1974. We have approximately 20 home sites on Lake Michigan.

This letter is to express our concern over the negative impacts of beach erosion caused by the construction of the harbor and the lack of planned (promised) beach re-nourishment. We are urging the City of New Buffalo to join us in our effort to obtain federal funding to re-establish beaches that will protect the water intake plant, save our lakefront homes, and provide for the enjoyment and the wellbeing of our residents.

The loss of our beaches has created significant problems for both the city and our residents. A home on Shore Drive south of the water intake plant is uninhabitable due to foundation failure as a result of erosion. Lakefront owners are being forced to spend thousands of dollars on improved revetments, we have lost our community beaches, and our water pumping station is being threatened. All of this means increased costs to the city and homeowners and even greater future potential losses due to loss of tax base, less beach use and a "loss of appeal" of New Buffalo. The beaches of New Buffalo are a significant part of what makes New Buffalo the "Gem" of Harbor Country!

For these reasons it is imperative that we join with the City of New Buffalo to resolve our problems in an efficient and expedient way.

We support the City of New Buffalo to obtain federal funding to restore our beaches. Federal funding is appropriate since it was the Army Corp of Engineers (ACOE) who designed the harbor and underestimated the amount of sand that would build up north of the harbor and under estimated the erosion impact from the loss of sand south of the harbor, especially in the Sunset Shores area. Budget cuts to the ACOE may have played a part in the lack of re-nourishment activity and lack of correcting issues related to their harbor design and analysis. However, the result is that the City of New Buffalo and many of our residents are paying the costs! It is time for the ACOE to get funding to resolve these issues.

Examination of the ACOE Harbor design proposals, assumptions and analysis (circa 1963-1967) reveal that erosion of the beaches south of the harbor would happen and annual beach nourishment would be required. The ACOE underestimated the amount of the re-nourishment needed and failed to properly budget for that

maintenance. Further, the assumptions made concerning the amount of natural increase of accretion south of the harbor (after a 5 year period) was flawed.

An extensive study by the ACOE in 2008/2009 confirmed that sand was building extensively north of the harbor and at the harbor mouth (resulting in required dredging) and the erosion of beaches south of the harbor was significant and continuing.

They completed an extensive and comprehensive sediment analysis of the beaches north and south of the harbor that included examination of historical data, analysis of lake bottom physical data, performed 2D and 3D computer modeling of the sediment mechanics, and completed a cost analysis for several possible solutions that would reduce erosion. One of their recommendations was adding nourishment in the Sunset Shores/Warwick Shores beach area since this location was most beneficial to sustain the beach area for the entire area south of the harbor. Based on the ACOE engineering modeling, the placement of sand very near the water pumping station was the optimum area for this nourishment. This area provides a natural "node" where sand will move up and down the beach which will achieve optimum nourishment mechanics.

Specifically, they recommend adding 120k cubic yards of sand for initial beach nourishment and 20k cubic yards per year for maintenance. The maintenance sand should come from north of the harbor where an excessive amount of sand is building. In addition, they recommend creating a "sand bank" that would provide funds to repeat the nourishment program as often as every 3 years. We support their analysis and recommendation. This effort will restore our beaches, protect our pump station, and save the New Buffalo Lakefront homes at a lower cost than alternatives that have been explored.

It is important to note that several other options such as installing off shore submerged breakwaters (including some initial nourishment) were studied that could provide longer term protection and reduce the need for continued nourishment, but at a higher initial cost. These options could be implemented if the "nourishment only" program proves insufficient. The final decision should be supported by a detailed engineering design analysis and recommendation.

It is difficult to overestimate the value of our beaches south of the harbor to the City of New Buffalo. Protecting the pump station, of course, is an overriding concern. If we can protect our pump house via a restored beach we also will maintain/increase our lakefront property value, increase our recreational use, and enable us to enjoy the great natural resources of our area. This is critical to long term growth (attractiveness) of New Buffalo!

I understand that the city has evaluated moving the pump house. However, that will be a more costly alternative and cause significant disruption to our area. Additionally, that solution does not address the loss of property (value) and loss of recreational use for our residents as the beach continues to erode. Something will have to be done, sooner or later, to address the erosion issues.

We strongly support your efforts to obtain federal funding to replenish our beaches and to establish a periodic replenishment program so that our restored beaches provide the required protection for our pump station, homeowners, and to provide recreational opportunities.

I am available to support you or to discuss this matter with you if you would like.

Sincerely,

Ron Watson
President of SSPOA



RECV'D

FEB 27 2015

Mayor Pete Weber and Council Members
New Buffalo City Hall
224 W. Buffalo St.
New Buffalo, Michigan 49117

February 21, 2015

Dear Mayor Weber and Council Members:

I am the President of the Warwick Shores Condominium Association with its five member Board and representing 74 mostly long term homeowners. On behalf of the Board and Homeowners, I am writing to express our concern that the intake water pumping station located near to our property is in jeopardy of failing. While submitting to the Army Corps of Engineers and the DNR/DEQ for permits to do some storm damage repairs to our revetment, we learned that there is a high risk that the New Buffalo water pumping station is at risk for storm damage that will shut down its ability to supply water to the communities it serves. This was further confirmed by a storm on October 31, 2014 that has virtually destroyed an adjacent house. It is our understanding that the building and equipment is at risk for exposed erosion wave damage and the under water intake pipe is exposed to damage due to sand erosion.

A detailed study conducted by the Army Corps in 2009-2010 identified a cost effective solution. We support the City of New Buffalo's initiative to implement this solution. Specifically, with help for funding from the federal government, implement a sand nourishment program to refill the eroding sand base due to the littoral currents as a result of the harbor structures. The proposal is to place 120,000 cubic yards of sand on both sides of the pumping station and periodic replenishment thereafter (e.g. every 3 years or as directed by the Army Corp). This will push the surface wave action away from the pumping station building and fill around and support the underwater intake pipe.

We believe that since the problems were caused by structures built by the federal government, the negative outcome should be solved by the federal government including funding the initiative. We were among the homeowners who helped fund the 2009-2010 study and have already invested sizeable amount of money to protect our own properties for the same reasons.

In closing, this is a potential crisis waiting to happen with the next major storm that will paralyze our community including our water supply for our homes, businesses, commerce, tourism, fire, police, schools, and other government operations. Clearly there is a major safety and health risk and action needs to take place proactively now.

Sincerely,

Dr. James Carson
President,
Warwick Shores Condominium Association

Cc: Joseph Galetto, Vice President, WSCA

RECV'D

FEB 27 2015



February 26, 2015

Sent via Email & US Mail

City Council
City of New Buffalo
224 West Buffalo Street
New Buffalo, MI 49117

Re: Support of Long Term Beach Nourishment Protection of the City of New Buffalo's Low Lift Pump Station (Water Intake) and Properties Located South of the Harbor

Dear City Council:

On behalf of F. Robert and Donna Salerno, please consider this letter support for long term beach nourishment for the protection of the City of New Buffalo's Low Lift Pump Station (LLPS) and properties located along the shoreline of Lake Michigan south of the New Buffalo Harbor. Mr. & Mrs. Salerno own two lakeshore residences, 18200 and 18300 Fern Glen in New Buffalo Township, Berrien County. Their properties are located south of the New Buffalo Harbor piers between Warwick Shores Condominium Association and Forest Beach Association.

As stated in the New Buffalo littoral analysis and sediment budget study initiated by the Detroit District United States Army Corps of Engineers (USACE) in 2008, the shoreline along Forest Beach has continued to recede since 1938 with a significant increase from 1967 to 1973 of -6.81 ft/yr (start of construction of the harbor piers - 1973), -1.54 from 1973 to 1980 and -1.77 ft/yr from 1980 to 2002. The shoreline along Warwick Shores had drastic recession (loss of beach) rates of -13.947 ft/yr from 1967 to 1973 with some accretion (increase of beach) between 1973 and 1980 of 1.283 ft/yr and moderate recession from 1980 to 2002 of -1.614. The Salerno properties are located between Forest Beach and Warwick Shores so the effect on their properties would be somewhere in between these rates. North Shore, which is located north of the harbor, had accretion along the shoreline after 1980 to 2002 of 3.048 ft/yr. Considering the Lake Michigan water level was at its all time high in 1986 of 582.35 IGLD (International Great Lakes Datum) 1985, it is obvious that the harbor pier is collecting the long shore drift on the north side in North Shore and preventing the sand from continuing to the south.

Studies have shown that the New Buffalo harbor piers prevent the long shore drift of sand along the shoreline causing an accretion of sand (increase of beach) north of the piers and a recession of sand (loss of beach) along the south shoreline of the piers. The limited nourishment of the shoreline south of the piers over the years can really be noticed as the water levels come up from their all time low in 2012 of 576.02 IGLD 1985. The Lake Michigan water levels in October, 2014 were at ~578.92 IGLD 1985. During this time, the waves were already crashing on the rock bank stabilization at the toe of the dune down to the lake. The Salerno's homes and most of the lakeshore homes in this area are located at the top of these sand dune bluffs that the rock protects (for the fortunate home owners). The US Army Corps of Engineers predicts that the water levels will continue to go up (see enclosed chart). In July 2015, they are

PO Box 262
Spring Lake, Michigan 49456
Office: 616.844.2441 ~ Cell: 616.402.7592
www.petersonenviro.com

forecasting that the Lake Michigan water levels will be ~580 IGLD 1985 or roughly a foot higher than in October 2014. Once the ice currently protecting the shoreline melts, the shoreline south of the harbor is going to be greatly impacted by the wave action because of the lack of beach nourishment over the years since the piers were constructed.

The Low Lift Pump Station is located in this area south of the New Buffalo harbor. In 2009, the MDEQ was already concerned for its long term protection when the water levels were low at an elevation of 578.2 IGLD 1985. With the water levels increasing, the MDEQ's statement in their May 26, 2009 letter "Our concern is that shore erosion will continue along this area. This on-going process, combined with high lake levels and another storm with "extremely high energy wave action" could again threaten or destroy shore protection and the LLPS". The MDEQ recommended relocating the LLPS shoreward. Nies Engineering, Inc. retained by the City of New Buffalo has stated in a letter dated April 30, 2009 that "Land for a new LLPS moved off the shoreline would be difficult to obtain and connections to the existing intake pipelines would be very deep (80 ft) below the bluff that residential housing currently sits on (costly to construct)."

Therefore, since it is not feasible to move the LLPS landward, the existing LLPS must be protected. The study initiated in 2008 by the US Army Corps of Engineers has determined that ongoing beach nourishment south of the pier would provide the best long term benefits to the shoreline south of the harbor. The federal government needs to replace the sand that is being held back by the piers that were constructed to protect the harbor. The Salerno's are in support of federally funded solution that includes the placement of 120,000 cubic yards of sand south of the pier every 3 years to protect the LLPS and give relief to the southern properties that have been impacted by the construction of the New Buffalo harbor piers. Using the sand to the north of the pier that has been trapped by the pier for some of the beach nourishment seems like a logical, cost effective solution. The US Army Corps of Engineers should determine the most cost effective alternatives to nourish the southern shoreline.

A lack of beach and waves crashing up the rock threatening the homes have a tremendous impact on the values of the Salerno's homes, all of the homes south of the harbor and the safety of the City of New Buffalo water intake (LLPS).

Thank you for your consideration in this matter. If you have any questions, please contact me at your convenience.

Sincerely,



Peterson Environmental, LLC
Adrienne Peterson

Enclosures

cc: Robert & Donna Salerno



RECV'D

FEB 27 2015

February 26, 2015

City Council
City of New Buffalo
224 West Buffalo Street
New Buffalo, MI 49117

Re: Support of Long Term Beach Nourishment Protection of the City of New Buffalo's
Low Lift Pump Station (Water Intake) and Properties Located South of the Harbor

Dear City Council:

Forest Beach Estates is very concerned with the imperiled situation of the City of New Buffalo's Low Lift Pump Station (Water Intake) located south of the New Buffalo harbor and the long term protection of our shoreline. Forest Beach Estates consists of approximately 2,500 feet of Lake Michigan shoreline south of the New Buffalo harbor in New Buffalo Township, Berrien County. It is positioned between Grand Beach on the south and Robert & Donna Salerno's two homes on the north. Warwick Shores Condominium Association is located just to the north of the Salerno properties. Forest Beach Estates is made up of 44 lots of which 17 of these lots are located along the shoreline of Lake Michigan. There are three community beach accesses. Forest Beach Estates owns the beach area from the edge of the privately owned shoreline lots to the water's edge, which is very narrow area at this time. The beach is a vital part of our community. It is the draw for our home owners to this area.

All of our home owners receive their water service from New Buffalo Township via the City of New Buffalo Water Treatment Facility. If the Low Lift Pump Station (Water Intake) located south of the New Buffalo pier heads is damaged, it will have a direct impact on all of our home owners and the many other home owners that utilize the City of New Buffalo water. Long term preventative action needs to be taken as soon as possible to prevent damage to the City of New Buffalo's water intake and the shoreline south of the harbor.

The New Buffalo harbor piers prevent the long shore drift of sand along the shoreline causing an increase of beach (accretion of sand) north of the piers and a loss of beach (recession of sand) along the south shoreline of the piers. This fact has been documented by many studies

[REDACTED]
[REDACTED]
[REDACTED]

including the Detroit District United States Army Corps of Engineers (USACE) – 2009 New Buffalo littoral analysis and sediment budget study.

This study found the following:

- The shoreline along the Village of Grand Beach receded from 1938 to 1967 with an average rate of -3.366 ft/yr with a significant increased rate of recession (loss of beach) from 1967 to 1973 of -10.384 ft/yr. The shoreline was stable from 1973 to 1980 with some accretion (gain of beach) from 1980 to 2002.
- **The shoreline along Forest Beach has continued to recede since 1938 with a significant increase from 1967 to 1973 of -6.81 ft/yr (start of construction of the harbor piers - 1973), -1.54 from 1973 to 1980 and -1.77 ft/yr from 1980 to 2002.**
- The shoreline along Warwick Shores had drastic recession (loss of beach) rates of minus 13.947 ft/yr from 1967 to 1973 with some accretion (increase of beach) between 1973 and 1980 of 1.283 ft/yr and moderate recession from 1980 to 2002 of -1.614.
- North Shore, which is located north of the harbor, had accretion along the shoreline after 1980 to 2002 of 3.048 ft/yr.

The Lake Michigan water level was at its all time high in October 1986 of an elevation of 582.35 IGLD 1985 (International Great Lakes Datum). After 1986, the water levels continued to decrease with an all time low in December 2012 of an elevation of 576.02 IGLD 1985 and January 2013 of 576.15 IGLD 1985. The Lake Michigan water level in December 2012/January 2013 was roughly 6.3 feet lower than the all time high water level in October 1986. The shorelines should all be experiencing a significant accretion of sand or increase in beach in the past years of low water levels. This has not been the case along the shoreline south of the New Buffalo Harbor pointing to the lack in sand available south of the harbor to create any beach.

The lowering Lake Michigan water levels since 1986 have camouflaged the need for beach nourishment along the shoreline south of the harbor. Now that the water levels are increasing, it is obvious that the appropriate quantities of beach nourishment (sand) have not been placed by the U. S. Army Corps of Engineers. While the water levels were low, there appears to have been a misperception that a significant amount of beach nourishment was not needed. The U. S. Army Corps of Engineers is forecasting that there will be an increase in the Lake Michigan water level of approximately 15 inches this year. The extent of the damage that the lack of beach nourishment will do to the shoreline during higher water levels is becoming evident and it will continue to be apparent to an even greater extent as the water levels increase. In October 2014, the Lake Michigan water levels were approximately 578.892 IGLD 1985 or approximately 3.5 feet lower than the all time high. Lake Michigan was already crashing on the existing riprap protecting the water intake and dune at this water level. If the water levels

reach the all time high again, the damage to the water intake and the shoreline will be extreme with the lack of beach (sand) present.

The MDEQ's statement in their May 26, 2009 letter stated the following "Our concern is that shore erosion will continue along this area. This on-going process, combined with high lake levels and another storm with "extremely high energy wave action" could again threaten or destroy shore protection and the LLPS". The MDEQ recommended moving the water intake structure landward even before the higher water levels in the fall of 2014. Nies Engineering, Inc. retained by the City of New Buffalo has stated in a letter dated April 30, 2009 that "Land for a new LLPS moved off the shoreline would be difficult to obtain and connections to the existing intake pipelines would be very deep (80 ft) below the bluff that residential housing currently sits on (costly to construct)." The only option is to protect the existing water intake structure in a long term way.

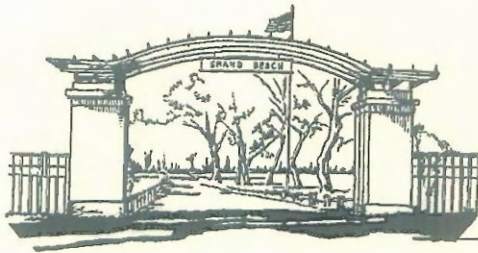
The 2009 U.S. Army Corps of Engineers study has determined that ongoing beach nourishment south of the pier would provide the best long term benefits to the shoreline south of the harbor. The federal government needs to replace the sand that is being held back by the piers that were constructed to protect the harbor. Forest Beach Estates is in support of a federally funded solution that includes the placement of 120,000 cubic yards of sand south of the pier every 3 years (or more if deemed appropriate) to protect the water intake and provide relief to the southern properties that have been impacted by the construction of the New Buffalo harbor piers. Using the sand to the north of the pier that has been trapped by the pier for some of the beach nourishment seems like a logical, cost effective solution. The U.S. Army Corps of Engineers would need to determine the most cost effective alternatives to nourish the southern shoreline.

The uncertainty of the safety of our water supply due to a lack of beach nourishment is unacceptable. It is the Federal Government's responsibility to conduct the beach nourishment required to replace the long shore drift sand deficit along the shoreline created by the New Buffalo harbor pier heads. The sand deficit is putting our water intake (water supply) and many lakeshore homes south of the harbor in jeopardy. A home, one house south of the water intake structure, is already being lost to erosion along the shoreline taking with it a tax base to the community. The lack of beach nourishment needs to be addressed immediately. We support the City of New Buffalo in their request for federal funds to address this situation.

Thank you for your time and consideration in this matter. If you have any questions, please contact me at your convenience.

Sincerely,

Carter Eckert
Forest Beach Estates



Village of Grand Beach

48200 PERKINS BLVD.

GRAND BEACH, MI 49117

February 20, 2015

RECV'D

FEB 27 2015

City Council
City of New Buffalo

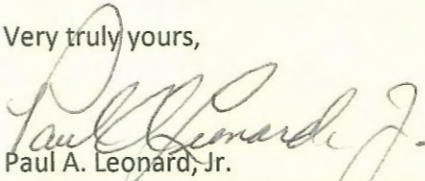
I am Paul A. Leonard, Jr., President of the Grand Beach Village Council, and Grand Beach Village Commissioner of Streets and Water. I am authorized by the Village Council to write this letter in my official capacities. You may know that the Village of Grand Beach is a self-governing municipality located several miles south of New Buffalo. The Village Council supports the City's efforts to save the City's pump house. You may not know that the Village of Grand Beach has an emergency inter-connect with the water distribution system of New Buffalo Township, which in turn is dependent upon the City's pump house. The violent windstorms of October and November, 2014, caused damage to the City's pump house, thereby creating a significant risk to the distribution of water to the City and surrounding communities, including the Village of Grand Beach.

The USACE Report of 2009 lays out a prudent strategy of beach replenishment that serves the purpose of protecting the pump house and the beaches to the south of the City. The Village of Grand Beach supports the recommendation of adding 120,000 cubic yards every three (3) years of beach nourishment. We also support the removal of 20,000 cubic yards each year from the north accretion fillet (public beach). The Village of Grand Beach agrees with the conclusion of the USACE Report, "*In general, it is recommended that some type of nourishment program be implemented at the Warwick Shores/Sunset Shores location. CMS modeling indicates that this portion of shoreline would be best suited for providing long term benefits to the rest of the shoreline south of the harbor.*"

The serious erosion that has occurred, and which will continue to occur, to the shoreline south of the harbor is attributable to decisions and actions taken by the federal government related to the design and construction of the breakwater for the New Buffalo harbor. Data contained in the report, and the obvious erosion of the shoreline in the years following construction, supports the hypothesis that the breakwater disrupted the near-shore currents that transport sand to the shoreline south of the harbor and which would otherwise replenish the shoreline. The federal government has a responsibility to take steps necessary to rectify the causes of the shoreline erosion and to aid the City in protecting the pump house upon which so many communities depend. This is a matter of public health and safety as the pump house is the critical link in the water distribution system in the City, Township and County. The October pump house damage was the third time this structure has been damaged since the harbor breakwater was constructed. Failure of the pump house will result in catastrophic consequences to tens of thousands of people. In addition, the continuing erosion of the shoreline has negatively impacted property values, tourism, and the rental and retail industries in our local communities. The shoreline is a critical driver in our local economies. The loss of use of shoreline due to erosion is no less a threat to our local economies than loss of the pump house itself.

On behalf of the Village of Grand Beach, we support the efforts of the City of New Buffalo to secure a long-term shoreline and beach nourishment plan and urge implementation of the recommendations contained in the USACE Report of 2009.

Very truly yours,

A handwritten signature in dark ink, appearing to read "Paul A. Leonard, Jr.", written in a cursive style.

Paul A. Leonard, Jr.

President, Grand Beach Village Council

Commissioner, Streets and Water, Grand Beach Village