



**CITY COUNCIL AGENDA  
APRIL 27, 2020 – 7:00 P.M.**

**NOTICE:**

This public meeting will be held using Zoom video/audio conference technology due to the COVID-19 restrictions currently in place.

Join online by visiting:  
<https://zoom.us/j/97579699711>

Join by phone by dialing:  
**(312) 626-6799**  
**-or-**  
**(646) 518-9805**

Then enter “Meeting ID”:  
**975 7969 9711**

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF MINUTES
  - A. **Regular City Council Meeting of April 13, 2020 (ROLL CALL)**
4. MAYOR’S COMMENTS
5. CITY MANAGER’S COMMENTS
6. AGENDA CHANGES (ADDITIONS/DELETIONS)
7. GUEST SPEAKERS:
  - A. **Lt. Brett Ensfield – Allegan Co. Sheriff Department**
8. PUBLIC COMMENT *Agenda Items Only (Limit 3 minutes) Use the “raise hand” button in the participants screen in the Zoom interface or enter \*9 if you are calling in by phone to raise hand.*
9. REQUESTS FOR PAYMENT
  - A. **Approval of Accounts Payable (ROLL CALL)**
10. INTRODUCTION OF ORDINANCES:
11. PUBLIC HEARINGS: **None**
12. UNFINISHED BUSINESS: **None**
13. NEW BUSINESS
  - A. **Edgewater Resources – Downtown Riverfront High Water Report Project (ROLL CALL)**
14. CONSENT AGENDA: **None**
15. PUBLIC COMMENTS *(Limit 3 minutes) Use the “raise hand” button in the participants screen in the Zoom interface or enter \*9 if you are calling in by phone to raise hand.*
16. COMMUNICATIONS:
  - A. **FY 20/21 Millage Rate & Capital Improvement Master List Memo**
17. BOARDS, COMMISSIONS & COMMITTEE REPORTS:
  - A. **Fire Board, KLSWA, Tri-Community Recycling**
18. COUNCIL COMMENTS
19. ADJOURN (*ROLL CALL*)

**NOTICE**

Requests for accommodations or interpretive services must be made 48 hours prior to this meeting. Please contact Saugatuck City Clerk at 269-857-2603 or [monica@saugatuckcity.com](mailto:monica@saugatuckcity.com) for further information.

**Proposed Minutes**  
**Saugatuck City Council Meeting**  
**Saugatuck, Michigan, April 13, 2020**

The City Council met in regular session at 7:00 p.m. via Zoom video/audio conference technology due to the COVID-19 restrictions currently in place.

1. **Call to Order** by Mayor Trester at 7:00 p.m.
2. **Attendance:**  
Present: Bekken, Johnson, Leo, Lewis, Peterson, Verplank, & Trester  
Absent: None  
Others Present: City Manager Harrier, City Treasurer Stanislawski & City Clerk Nagel

Council Member Bekken entered into session at 7:02 p.m.

3. **Approval of Minutes:** A motion was made by Peterson, 2<sup>nd</sup> by Johnson, to approve the March 11, 2020 regular meeting minutes as presented. Upon roll call the motion carried unanimously.
4. **Mayor's Comments:** Mayor Trester announced the following: Pleased with city residents complying with the Governor's orders of shelter in place and social distancing to help combat COVID-19; thanked city staff, Department of Public Works and Sheriff Deputies for keeping city services available and taking measures to keep residents safe.
5. **City Manager's Report:** City Manager Harrier announced the following: The City is complying with the Governor's executive orders; City facilities are closed to the public, however, administrative staff is working remotely when possible and alternating times when in the office; DPW is on schedule with picking up brush and leaves for this week; flags were lowered to half staff per the Governors orders to recognize those that lost their battle with COVID-19; due to the high winds and storm surge, certain areas experienced flooding; Edgewater Resources will present Council with their Downtown Riverfront High Water report at the April 23, 2020 workshop meeting; Allegan County Health Department announced there are currently 23 positive COVID-19 cases in Allegan County.
6. **Agenda Changes:** None
7. **Guest Speakers:**  
**A. Lt. Brett Ensfield – Allegan Co. Sheriff's Department:** Provided Council with an update on the following: City Deputy Visser, who is a Captain in the Army National Guard, was deployed due to COVID-19 and is currently in New Jersey waiting for assignment; provided the Incident Analysis Report from March 30-April 13, 2020; will be monitoring city parks making sure individuals are practicing social distancing measures; due to COVID-19 the patrol structure has changed where deputies will work a continuous two-week shift
8. **Public Comment:** None
9. **Request for Payment:** A motion was made by Johnson, 2<sup>nd</sup> by Peterson, to approve the accounts payable in the amount of \$90,637.54. Upon roll call the motion carried unanimously.
10. **Introductions of Ordinances:** None
11. **Public Hearings:** None
12. **Unfinished Business:** None

**13. New Business:**

**A. Resolution No. 200413-A – Saugatuck Township Fire District’s Request to Construct Dock for Emergency Services:** A motion was made by Verplank, 2<sup>nd</sup> by Peterson, to approve Resolution No. 200413-A (version 09805-004-00105743.3) regarding Saugatuck Township Fire District’s request to construct a dock for emergency services. Upon roll call the motion carried by the following vote:

Council Member Leo lost internet connection at 7:25 p.m.

Yes: Verplank, Peterson, Lewis, Johnson, Bekken, Trester

No: None

Absent: Leo (*due to internet connectivity*)

**B. Resolution No. 200413-B – Authorizing Sale of City Personal Property without Competitive Bidding:** A motion was made by Johnson, 2<sup>nd</sup> by Verplank, to approve Resolution No. 200413-B authorizing sale of City Personal Property without competitive bidding as presented. Upon roll call the motion carried by the following vote:

Yes: Johnson, Verplank, Bekken, Trester

No: Peterson, Lewis

Absent: Leo (*due to internet connectivity*)

Council Member Leo regained internet connectivity at 7:40 p.m.

**C. Department of Public Works Services – Postpone Spring Curbside “Junk Pickup” Services:** A motion was made by Peterson, 2<sup>nd</sup> by Verplank, to postpone the City of Saugatuck’s 2020 curbside junk pickup service and authorize the City Manager to establish another date during 2020 that does not interfere with other critical City Public Works operation or impact the community negatively during the tourist season. Upon roll call the motion carried unanimously.

**14. Consent Agenda:** None

**15. Public Comment:** None

**16. Communications:**

**A. 2019 Tree City USA Recognition – Accepted as information**

**17. Boards, Commissions & Committee Reports:** None

**18. Council Comments:** Council Member Peterson thanked all essential workers for being the front lines during this pandemic.

Council Member Johnson thanked all essential workers including city residents and neighbors for doing their part in helping flatten the curve.

Council Member Verplank thanked First Responders.

Council Member Bekken thanked essential workers and the community for practicing social distancing.

Council Member Lewis announced Dr. Laurie Birkholz is offering COVID-19 antibody testing and would like council to discuss a possible tax cut for businesses.

**19. Adjournment:** A motion was made by Johnson, 2<sup>nd</sup> by Verplank, to adjourn at 7:49 p.m. Upon roll call the motion carried unanimously.

Respectfully Submitted,

Monica Nagel, CMC  
City Clerk

**9.A**

| Vendor Name                        | Description                     | Amount    |
|------------------------------------|---------------------------------|-----------|
| 1. ALLEGAN COUNTY SHERIFF          | SHERIFF CONTRACT                | 25,725.72 |
| 2. BLOOM SLUGGETT PC               | LEGAL FEES                      | 1,555.50  |
| 3. COMCAST                         | TELEPHONES & INTERNET           | 284.60    |
| 4. DIANNA MC GREW                  | ASSESSING SERVICES              | 2,611.13  |
| 5. DUNESVIEW KWIK SHOP INC         | GASOLINE & DIESEL               | 1,012.49  |
|                                    | GASOLINE & DIESEL               | 451.37    |
|                                    | TOTAL                           | 1,463.86  |
| 6. FRONTIER                        | DPW TELEPHONES & INTERNET       | 171.93    |
|                                    | OVAL BEACH 911                  | 61.11     |
|                                    | TOTAL                           | 233.04    |
| 7. IHLE AUTO PARTS                 | REPAIRS                         | 87.55     |
| 8. INTERNAL SOUND & COMMUNICATIONS | TELEPHONE SYSTEM UPGRADE        | 155.00    |
| 9. MACATAWA BANK                   | 2017 ROAD BOND                  | 23,095.75 |
| 10. MERS                           | RETIREMENT                      | 4,500.00  |
| 11. MINER SUPPLY CO                | SUPPLIES                        | 5,355.91  |
| 12. SEPTIC TANK SYSTEMS CO INC     | BUTLER STREET PORTABLE RESTROOM | 155.00    |
|                                    | BUTLER STREET PORTABLE RESTROOM | 155.00    |
|                                    | TOTAL                           | 310.00    |
| 13. STANDARD INSURANCE COMPANY     | INSURANCE                       | 343.59    |
| TOTAL - ALL VENDORS                |                                 | 65,721.65 |
| <b>FUND TOTALS:</b>                |                                 |           |
| Fund 101 - GENERAL FUND            |                                 | 40,834.11 |
| Fund 202 - MAJOR STREETS           |                                 | 24.82     |
| Fund 203 - LOCAL STREETS           |                                 | 24.82     |
| Fund 301 - DEBT SERVICE            |                                 | 23,095.75 |
| Fund 661 - MOTOR POOL FUND         |                                 | 1,742.15  |



# City Council Agenda Item Report

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City of Saugatuck

**FROM:** Kirk Harrier, City Manager

**MEETING DATE:** April 27, 2020

**SUBJECT:** Downtown Riverfront High Water Report Project

**DESCRIPTION**

Attached is the final report from Edgewater Resources commissioned by City Council. The report developed a series of strategies to assist the City of Saugatuck in addressing the flooding concerns in the downtown riverfront business district. The City Council appropriated \$20,000 for flood related expenses in the FY 19/20 budget. The report focused on eight (8) public areas within the City that are under the control of the City of Saugatuck as listed below. The City Council reviewed the report at their April 23, 2020 workshop meeting and instructed the City Manager to place this item on this regular meeting agenda for further review and possible action to implement one or more of the recommend strategies identified in the report.

- City Marina South End of Griffith Street
- South End of Butler Street
- West End of Mason Street
- Wicks Park Marina
- Wicks Park Restroom Facilities
- Francis Street Road End
- Spear Street Boat Launch
- Water Street and Lucy Street Intersection

**BUDGET ACTION REQUIRED**

N/A

**COMMITTEE/COMMISSION REVIEW**

N/A

**LEGAL REVIEW**

N/A

**SAMPLE MOTION:**

Motion to direct the City Manager to implement a flooding mitigation strategy as follows: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
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# MEMO



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**To:** Kirk Harrier, City Manager  
City of Saugatuck

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**From:** Jon Moxey, PE  
Fleis & VandenBrink

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**CC:**

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**Date:** April 27, 2020

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**Re:** Kalamazoo River High Water

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As requested, we have reviewed the memorandum report generated by Edgewater resources presenting strategies for mitigating impacts of record high water levels for the Kalamazoo River on City infrastructure. In general, our view is that the City should use its limited funds carefully, especially now that municipal revenue forecasts are down on the order of 30% due to the current and lingering impacts of COVID-19 on the overall economy. The Corps of Engineers predicts record high water levels this summer, but this is still seen as a relatively short-term problem that has resulted from a 5-year period of elevated rainfall.

City Marina at South End of Griffith Street: We recommend Strategy 1 – Continue Current Approach. If summer water levels result in the new dock “overlay” being submerged on a regular basis, the City should consider a second “overlay” or Strategy 2 – Raise Temporary Dock Sections. The estimated engineering cost to implement either of those options (additional overlay or raising temporary dock sections) would be on the order of \$1,000 for basic plans and connection details.

South End of Butler Street: We recommend Strategy 1 – Continue Current Approach. If the City wants additional protection or the current approach is ineffective in mitigating operational issues in the area, the estimated engineering and permitting cost to implement Strategy 2 – Water Barrier and Pump would be on the order of \$3,000.

West End of Mason Street: We recommend Strategy 2 – Water Barrier, as there are currently no mitigation measures in place at this site. The estimated engineering cost to implement this option would be less than \$500 for guidance on layout and materials.

Wicks Park Marina: The report notes that the docks are at the same elevation as the adjacent concrete sidewalk (“boardwalk”). Therefore, only raising the docks could force people to walk through water on the sidewalk. We recommend Strategy 1 – Continue Current Approach. If summer water levels result in the dock/sidewalk being submerged on a regular basis, the City could consider Strategy 2 – Add Temporary Raised Dock Sections but extend the construction onto the concrete instead of ramping down to it along with water barrier. This would increase the estimated cost from the \$18,000 presented to something more, depending on the desired limits of landward construction. We suggest budgeting

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\$25,000 to \$30,000, including an estimate of \$2,000 for engineering.

**Wicks Park Restroom Facilities:** The long-term plan for this location is replacement of the restroom, however, that will be a costly endeavor. The work will be eligible for grant funding, but that can't be implemented in time for the summer season. We recommend Strategy 1 – Continue Current Approach. The City could also consider deploying temporary sanitary facilities (Porta Johns) at Wicks Park, strategically placed on higher ground in an inconspicuous area. This would be much more cost effective than Strategy 2 – Water Barrier and Pump, while maintaining sanitary service at the park.

**Francis Street Road End:** We prepared basic plans for addressing the settlement at this site (similar to Strategy 2 – Remove and Replace Boardwalk and Asphalt), however, that should likely be put on hold until the elevated water levels subside to allow the area to stabilize. In the meantime, we recommend Strategy 3 – Water Barrier, as there are currently no mitigation measures in place at this site. The estimated engineering cost to implement this option would be less than \$500 for guidance on layout and materials.

**Spear Street Boat Launch:** As this is a significant source of the flooding on Water Street, we recommend either Strategy 2 – Water Barrier or Strategy 3 – Water Filled Diversion Tube plus Strategy 4 – Add Temporary Raised Dock Section, depending on the City's tolerance to having the boat launch closed for the season. The estimated engineering cost to implement Strategy 2 is less than \$500 for assistance with layout and materials. The estimated engineering cost to implement Strategies 3 and 4 is \$2,000.

**Water Street and Lucy Street Intersection:** This has likely been the source of most concern from affected adjacent property owners. As the summer months of 2020 are expected to set new records for water levels, we recommend Strategy 2 – Upgrade the Pump System. In conjunction with the property owners (sharing costs, if appropriate), the existing sandbag walls could be replaced with a uniform system and pumping system upgraded to accommodate larger storms. This will likely not eliminate the need to close the intersection at certain times, but should reduce the occurrence and provide better protection during dry weather. The estimated engineering cost to implement this option is \$3,000 for layout and design assistance.

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## Report

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Date: April 22, 2020  
To: Saugatuck City Council  
From: Daryl Veldman  
Subject: City of Saugatuck, Kalamazoo River High Water

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Distribution: Kirk Harrier, Scott Herbert, Greg Weykamp

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On March 11, 2020 Scott Herbert, Jeff Yoakam (USACE) and Daryl Veldman of Edgewater Resources inspected various sites along the riverfront in downtown Saugatuck. The purpose of this visit was to investigate the flooding from the south end of Butler St, and along Water Street from Mason St to Lucy St.

The following report will describe site conditions at each site as well as several next steps to address the situation at each site. Photos are a combination of site visits by the City and myself. We have also included costs for some of the work items and these could vary depending on the amount work city staff can contribute as well as bidding environment and time of year.



## City Marina at South End of Griffith St

*Site Observations* - The City owns four docks at this location, which are submerged when the river rises from either a large rain event or wind surge, high water event, from Lake Michigan. During the summer of 2019, the Marina that operated the docks for the City built several dock sections and installed them on to the top of the existing dock.

### *Strategies:*

1. *Continue Current Approach:* At the time of the site visit the river level was below the bottom of the existing dock and the new dock section installed in 2019 was not touching the water. The new dock section did not appear to have any algae growth from last season and boaters should be able to navigate the dock without slipping.



Figure 1 Existing Dock with new dock on top



Figure 2 - March 6, 2020 Lower dock submerged

2. *Raise Temporary Dock Sections:* We were not on site during a storm event nor during a lake surge and did not observe if the dock would have been submerged. However, if the dock is overtopped and the City has a concern for the boaters using these docks, the 2019 docks could be removed, and the stringers could be replaced with 2"x12" treated wood. A transition ramp would need to be installed to ensure a smooth transition to the docks. Approximate cost - \$15,000
  3. *Remove and Elevate Existing Dock:* With this strategy the 2019 dock top extension would be removed as well as the original dock and the support structure. The existing piles can remain. A new support structure would need to be installed and a new dock section built at a higher elevation. Approximate cost - \$85,000
  4. *Remove and Replace with Floating Docks:* With this strategy the existing dock structure would be removed and replaced with a floating dock system. An elaborate gangway system would need to be installed to allow access to the docks when they are either above or below the boardwalk. A bubbler de-icing system would also need to be installed to preserve the floating docks during the winter. Approximate cost - \$95,000
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### South End of Butler Street

*Site Observations* – Butler St. dead ends at the river and during high water the end of Butler St and the Sergeant Marine parking lot are both under water. Currently, there are sandbags at the end of Butler St at the stairs to the docks, along the southern edge of the parking lot at Sergeant Marine, as well as along the south side of the Butler Restaurant. There was standing water at the low point on Butler St at the time of our site visit and at the center of the low point is a catch basin. The upland storm water collection system has an outlet to the river down Butler St and the catch basin is the last structure on this system.



Figure 3 – Sergeant Marine Parking Lot



Figure 4 - Butler St Low Spot



Figure 5 - Sand Bags at Butler Restaurant



Figure 6 – March 6, 2020 High Water





### *Strategies:*

1. *Continue Current Approach* – At the time of our site visit the water was not touching any of the adjacent structures. The water level is the same as the level of the Kalamazoo River. The road was closed to traffic at the south end of the dead-end road. The existing sandbag barriers on both public and private properties would need to be inspected periodically to ensure their integrity is still solid. Traditionally lake levels have gone down after August 1. This is noted on charts from the Army Corp of Engineers. If we look at the cyclical trend of water on the great lakes, the high-water situation could be with us for another year or two, possibly longer.
  2. *Water Barrier and Pump:*
    - a. Place a Hesco water barrier along the north side of the catch basin between the timber landscape wall and the sidewalk and then south across the driveway to the boardwalk to create a continuous barrier across the south end of Butler St. Approximate cost to furnish and install 140' of a Hesco Barrier system \$5,500
    - b. Purchase a 3" dia Water Pump, 290 gpm, head lift 85 ft and suction lift 26 ft (\$600) in catch basin to draw water down as needed.
    - c. Pumping operations would be completed by City crew or a hired contractor who would be at the site during a flooding event.
    - d. An approximate cost for this work is based on the following: We are going to assume 12 events during the year and each event would require an average of four manhours. Cost associated with City Personnel = \$11,000 Contractor = \$13,000 The costs for a-c are included in these numbers.
  3. *Plug and Pump:*
    - a. Install a valve that would be closed to control the water flowing from the Kalamazoo River through the storm outlet during high water conditions and opened to allow gravity flow during normal conditions.
    - b. Install a permanent pumping/lift station to remove water during high water conditions. The pumps and control system would be above ground and would be screened by either a fence or a landscape wall.
    - c. Verify with EGLE if the pumping operation would need to be permitted.
    - d. The cost for this effort would be approximately \$370,000.
  4. *Raise the Street:* With this strategy, the roadway would be elevated above the current high-water elevation, allowing traffic to move through this area during times of high water. The adjacent driveways would have to be replaced and raised as well. Currently the road is below the adjacent properties. The new roadway and adjacent parking would meet the existing wood retaining wall on the west side and the elevated parking north parking lot of Sergeant Marine. The driveway to the south parking lot of Sergeant Marine would slope downward from the proposed roadway. The proposed roadway would not shed water on to the adjacent properties. The scope of work for this strategy would include the following tasks:
    - a. Sawcut and remove approximately 100' of roadway
    - b. Add a new gravel base
    - c. Install new curb and gutter and driveways
    - d. Reestablish parkways
    - e. Place new asphalt with a reverse crown to collect water in the middle of the road similar to existing
    - f. The cost for this effort would be approximately \$50,000
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## West End of Mason Street

*Site Observations* – Mason St dead ends at the river and during high water the end of Mason St is under water. Currently, there are no sandbags at the end of Mason St. At the time of our site visit, there was no standing water at the low spot at the west edge of the pavement; however, debris from the last storm event was present. The upland storm water collection system has an outlet to the river down Butler St and the catch basin is the last structure on this system.



Figure 7 – Mason St. Looking southwest



Figure 8 - Mason St Looking northwest

### *Strategies:*

1. *Continue Current Approach:* At the time of our site visit there was no standing water and the road was open to traffic. The lower level of Coral Gables is lower than the pavement; however, during normal rain events the storm water should stay within the curb line. Traditionally lake levels have gone down after August 1. This is noted on charts from the Army Corp of Engineers. If we look at the cyclical trend of water on the great lakes, the high-water situation could be with us for another year or two, possibly longer.
  2. *Water Barrier:*
    - a. Place a Hesco water barrier along the northern edge of Mason St to prevent river water from entering the City ROW and on to Coral Gables property. Approximate cost \$1,200
  3. *Raise the Street Elevation -* With this strategy, the roadway would be elevated above the current high-water elevation, allowing traffic to move through this area during times of high water. The proposed roadway would not shed storm water on to the adjacent properties.
    - a. Sawcut and remove approximately 50' of roadway
    - b. Add a new gravel base
    - c. Install new curb and gutter
    - d. Reestablish parkways
    - e. Install new Coral Gables delivery sidewalk
    - f. Place new asphalt with a reverse crown to collect water in the middle of the road similar to existing
    - g. The cost for this effort would be approximately \$30,000
-



## Wicks Park Marina

*Site Observations* - The City owns five docks at this location, which are partially submerged when the river rises from either a large rain event or a surge from Lake Michigan. The docks are at the same elevation as the concrete boardwalk and on the day of our site visit the bottom of the docks were several inches above the water.

### *Strategies:*

1. *Continue Current Approach:* At the time of the site visit, the river level was a few inches from the bottom of the existing dock. The dock sections did not appear to have any algae growth from last season and boaters should be able to navigate the dock without slipping.



Figure 9 - Existing Docks at Wicks Park

2. *Add Temporary Raised Dock Sections:* Build a new dock section and place it on top of the existing dock along with a ramp down to the concrete boardwalk - \$18,000
  3. *Remove and Replace with Floating Docks:* With this strategy the existing dock structure would be removed and replaced with a floating dock system. An elaborate gangway system would need to be installed to allow access to the docks when they are either above or below the boardwalk. A bubbler de-icing system would also need to be installed to preserve the floating docks during the winter. Approximate cost - \$100,000
  4. *Raise Docks, Boardwalk and some of Parking Lot:*
    - a. Remove and elevate the existing dock and concrete boardwalk.
    - b. Utilize the existing piles and construct new docks at a higher elevation.
    - c. Remove and replace the existing concrete boardwalk as well as a portion of the parking lot, with smooth transitions for pedestrian access.
    - d. Approximate cost \$145,000
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## Wicks Park Restroom Facilities.

*Site Observations* – Wicks Park has a concrete block restroom facility which experiences flooding during periods of high water. There is a catch basin at the entrance and water ponds here and enters the building.



Figure 10 – Restroom looking southwest



Figure 11 – Restroom looking southeast



Figure 12 – Catch basin at entrance



Figure 13 – Water level just below the frame

### *Strategies:*

1. *Continue Current Approach:* At the time of our site visit, water was not ponding at the site. The water level is the same as the level of the Kalamazoo River, and the water level was just inches below the catch basin frame. The City can continue to shut down the restroom at high water events and clean up the high-water damage.
  2. *Water Barrier and Pump* – With this strategy the following tasks would take place:
-



- a. Place a Hesco water barrier around the catch basin. Approximate cost \$2,400
  - b. Place barricades around the catch basin to create a protected area for temporary pumps and piping.
  - c. Install a platform for the placement of the pump during a high-water event as well as a place for the pump operator to stand.
  - d. Purchase a 3" dia Water Pump, 290 gpm, head lift 85 ft and suction lift 26 ft (\$600) in catch basin to draw water down as needed.
  - e. Pumping operations would be completed by City crew or a hired contractor who would be at the site during a flooding event. The discharge hose for the pump would be placed on top of the grass and across the boardwalk. A protective trip hazard would cost approximately \$3,000
  - f. An approximate cost for this work is based on the following: We are going to assume 12 events during the year and each event would require an average of four manhours. Cost associated with City Personnel = \$10,000 Contractor = \$12,000 The costs for a-e are included in these numbers.
3. *Raise or Replace the Building:*
- a. Raise the existing building above the current high-water elevation, allowing pedestrian traffic to move through this area during times of high water – or –
  - b. Replace the existing building with a new structure constructed at the appropriate grades to prevent flooding
  - c. The range of cost for this effort would be approximately \$100,00 - 250,000
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### Francis Street Road End

*Site Observations* – The boardwalk at Francis St has been settling and the adjacent concrete is currently several inches below the sheet pile cap, allowing water to pass through this gap onto Water St. The sheet piling appears to be in good condition and there are no signs of failure. The dock at this location is not owned by the City and will not be part of our discussion.



Figure 14 – Boardwalk settlement



Figure 15 – Adjacent parking and sidewalk settlement

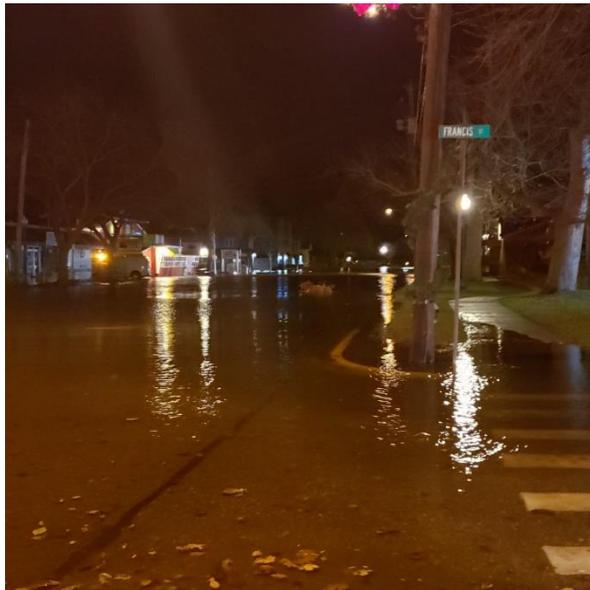


Figure 16 – Flooding on Water St looking north



Figure 17 – Flooding looking northwest





**Strategies:**

1. *Continue Current Approach:* At the time of our site visit the water was not ponding at the site, and the water level was approximately one foot below the top of the sheeting. The City can continue to shut down the Water St at high water events and clean up the high-water damage. The City would need to address the trip hazard from the settling boardwalk.
  2. *Remove and Replace Boardwalk and Asphalt:*
    - a. Remove concrete boardwalk.
    - b. Remove adjacent asphalt parking to allow sufficient grade for storm water to sheet drain into the river.
    - c. Remove the backfill behind the wall to a depth of approximately two feet.
    - d. Place geotextile fabric over the sheet pile joints to stop the migration of backfill into the river
    - e. Install, grade, and compact backfill behind the sheeting and as a base for the new boardwalk and pavement
    - f. Place concrete boardwalk of the same size and configuration as existing.
    - g. Place asphalt for parking.
    - h. The cost for this effort would be approximately \$15,000.
  3. *Water Barrier:*
    - a. Place a Hesco water barrier across the Francis St boardwalk. The barrier would be parallel to the sheet pile cap and would be as high as the perpendicular sheet wall on the south and the north.
    - b. The approximate cost for the water barrier would be \$2,200.
-



### Spear Street Boat Launch.

*Site Observations* – The boat launch at Spear St is a significant point of entry for river water to Water St during high water events. River water will flow through the opening of the boat launch as well as “boil” up through a catch basin on Water St as shown in Figure 20. The figures below show the site after two different high-water events as well as a normal spring 2020 day. The boat launch has a fixed dock which was submerged after two recent high-water events. The dock is of metal construction and has slight grooves in the surface for the purpose of traction.



Figure 18 –Feb 24, 2020 submerged fixed dock



Figure 19 – Feb 24, 2020 – looking northeast



Figure 20 – March 6, 2020 high water, looking west



Figure 21 – 3/6/20 high water, looking southwest



Figure 22 – March 11, 2020 site – looking west



Figure 23 – March 11, 2020 – looking northeast

### Strategies:

1. *Continue Current Approach:* At the time of our site visit the water was not flowing into Water St; however, the photos provided to us by the City show the extent of the flooding during two recent high-water events. The water level was approximately one foot below the top of the sheeting. The City can continue to shut down the Water St at high water events and clean up the high-water damage. The City would need to close the boat launch during high water events.
  2. *Water Barrier:* Close the boat launch until water levels trend back down to a non-flood stage elevation. Place a Hesco Water Barrier across boat launch from the steel sheet pile wall on the south to a semi-circle around the catch basin shown in Figures 20 and 21 and then back to the base of the Star of Saugatuck sign. The barrier would serve the purpose of holding the river water from the boat launch as well as the water that would boil up through the catch basin. Approximate cost \$3,500
  3. *Water Filled Diversion Tube:* Close boat ramp during high-water events by placing a water filled barrier as needed and removing when flooding stops. The temporary barrier would be placed across boat launch from the steel sheet pile wall on the south to a semi-circle around the catch basin shown in Figures 20 and 21 and then back to the base of the Star of Saugatuck sign. The barrier would be the same elevation as the sheet pile wall and would serve the purpose of holding the river water from the boat launch as well as the water that would boil up through the catch basin. High wind and large storm events would need to be monitored and the water tube barrier would need to be reinstalled with anticipation of an upcoming high-water event. Approximate cost to purchase and install/reinstall 12 times - \$8,000
  4. *Add Temporary Raised Dock Section:* Build a new dock section and place it on top of the existing dock along with a ramp down to the concrete ramp - \$9,000
  5. *Remove and Raise Dock:*
    - a. Remove and elevate the existing dock and gangway
    - b. Utilize the existing piles and construct new docks at a higher elevation.
    - c. Approximate cost - \$13,000
    - d. Floating Dock and gangway - \$17,000
-



## Water Street and Lucy Street Intersection

*Site Observations* – The intersection of Water St and Lucy St is currently near the elevation of the river and during high water events the river water ponds in this intersection. The water enters this intersection through several locations:

1. Francis Street boat launch
2. Gap between the two small cottages north of the Star of Saugatuck
3. Driveway on south side of Old Boat House
4. Storm water system backing up

The Francis St boat launch is addressed in the previous section. Items 2 and 3 are currently sandbagged by their respective property owners. The storm sewer collection system currently has sandbags around the catch basins and there is a modified sump pump system in place near the catch basin closest to the First Responder Dock. The upland storm water collection system has an outlet to the river down Lucy St and the catch basin is the last structure on this system. The existing storm water collection is properly constructed and relies on gravity to drain the pipes. When the outlet to the collection system is under water, the storm water cannot flow out into the river and if the elevation of the river is higher than the metal grate on the catch basin the river water will actually flow into the storm system and flow up thru the grate.



Figure 24 – Water/Lucy Intersection looking west



Figure 25 – Water and Lucy intersection looking SW



Figure 26 - Sandbaged Catch Basins – looking east Figure 27 – Water St looking south



Figure 28 – Sandbags, sump pump and discharge



Figure 29 – Sandbags at driveway S. of Old Boat House





Figure 30 - Sand Bags and sump pumps at cottages    Figure 31 - Sand Bags at river behind cottages

### Strategies:

1. *Continue Current Approach:* At the time of our site visit the water was not touching any of the adjacent structures; however, the photos provided to us by the City show the extent of the flooding during two recent high-water events. The water level is the same as the level of the Kalamazoo River. The road was not closed to traffic at the time of our site visit. The existing sandbag barriers on both public and private properties would need to be inspected periodically to ensure their integrity is still solid. The pump system at the intersection and near the cottages would need to be checked for possible maintenance or replacement of pumps. The sump pump system could probably keep the water off the pavement during a normal day; however, during a high-water event the river water will pond in the intersection. The City can continue to shut down the Water St/Lucy St intersection at high water events and clean up the high-water damage. A concern is accessibility to the first responder docks during a high-water event as well as accessibility of emergency vehicles passing through the intersection either during the warm months as well as during cold weather.
  2. *Upgrade the Pump System:*
    - a. Remove and replace the sandbag system and add a Hesco System at all current locations.
    - b. Purchase a 3" dia Water Pump, 290 gpm, head lift 85 ft and suction lift 26 ft in catch basin to draw water down as needed.
    - c. Pumping operations would be completed by City crew or a hired contractor who would be at the site during a flooding event.
    - d. An approximate cost for this work is based on the following: We are going to assume 12 events during the year and each event would require an average of four manhours. Cost associated with City Personnel = \$11,000 Contractor = \$13,000 The costs for a-c are included in these numbers
  3. *Plug and Pump:*
    - a. Install a valve that would be closed to control the water flowing from the Kalamazoo River through the storm outlet during high water conditions and opened to allow gravity flow during normal conditions. During high water river events the storm water is not flowing out to the river and is sitting in the pipes. The only time water will flow thru the pipe into the river is when there is enough pressure from upgradient
-



- storm water. The valve would be open when gravity flow of the storm water to the river is practical during the occasion of a low river elevation.
- b. Install a permanent pumping/lift station to remove water during high water conditions. The pumps and control system would be above ground and would be screened by either a fence or a landscape wall. The high groundwater table makes the underground installation of the pump system cost prohibitive.
  - c. Verify with EGLE if the pumping operation would need to be permitted.
  - d. The cost for this effort would be approximately \$320,000.
4. *Raise the Street*: With this strategy, the roadway would be elevated above the current high-water elevation between the Francis Street/Water St intersection through the road bend to the Lucy St/Butler St intersection. The new road elevation would allow traffic to move through this area during times of high water. The adjacent driveways would have to be removed and replaced as well. The storm water collection system would need to be modified to collect water from adjacent properties which might not be able to sheet drain on to the proposed elevated road. The proposed roadway would not shed water on to the adjacent properties. The scope of work for this strategy would include the following tasks:
- a. Sawcut and remove approximately 1,000' of roadway
  - b. Add a new gravel base
  - c. Install new curb and gutter and driveways
  - d. Reestablish parkways
  - e. Place new asphalt with a reverse crown to collect water in the middle of the road similar to existing
  - f. The cost for this effort would be approximately \$450,000

## NOAA PROJECTIONS

We are all aware of the current record high water levels along the shoreline of Lake Michigan, and according to NOAA, the trend for these high waters will continue through the 2020 season. The water level has continued to rise since its record low in 2013 due to heavy winter ice cover, large spring rainfall, and reduced evaporation. The lake levels are currently at monthly mean record highs and may exceed the record high set in 1986 this season. These events have been well documented and are highlighted in a webinar from NOAA:

<https://www.regions.noaa.gov/great-lakes/index.php/project/>

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## COST SUMMARY

### City Marina at South End of Griffith Street

- Raise Temporary Dock Sections - \$15,000
- Remove and Elevate Existing Dock - \$85,000
- Remove and Replace with Floating Docks - \$95,000

### South End of Butler Street

- Water Barrier and Pump - City Personnel - \$11,000  
Contractor - \$13,000
- Plug and Pump - \$370,000
- Raise the Street - \$50,000

### West End of Mason Street

- Water Barrier - \$1,200
- Raise the Street - \$30,000

### Wicks Park Marina

- Add Temporary Raised Dock Sections - \$18,000
- Remove and Replace with Floating Docks - \$100,000
- Raise Docks, Boardwalk and some of Parking Lot - \$145,000

### Wicks Park Restroom Facilities

- Water Barrier and Pump - City Personnel - \$10,000  
Contractor - \$12,000
- Raise or Replace the Building - \$100,000 – 250,000

### Francis Street Road End

- Remove and Replace Boardwalk and Asphalt - \$15,000
- Water Barrier - \$2,200

### Spear Street Boat Launch

- Water Barrier - \$3,500
- Water Filled Diversion Tube - \$8,000
- Add Temporary Raised Dock Section - \$9,000
- Remove and Raise Dock - \$13,000
- Remove and Replace with Floating Dock - \$17,000

### Water Street and Lucy Street Intersection

- Upgrade the Pump System - City Personnel - \$11,000  
Contractor - \$13,000
  - Plug and Pump - \$320,000
  - Raise the Street - \$450,000
-



## MEMO

To: Saugatuck City Council  
 From: Kirk Harrier—City Manager  
 Date: April 24, 2020  
 Re: FY 20/21 Millage Rate & Capital Improvement Master List

### **OPERATING MILLAGE RATE**

- FY 20/21 projected City operating millage rate maximum due to Headlee Rollback **11.1800**
- FY 19/20 maximum rate was 11.4788
- FY 20/21 projected 1 mill generates \$167,000 in revenue
- 2019 taxable value \$162,136,249
- 2020 projected taxable value \$167,000,000

### **NON-OPERATING MILLAGE RATES**

#### Voted Local Roads Millage

- 2 mills approved by voters in 2016
- Expire in 2031
- FY 20/21 projected extra-voted local roads millage rate maximum due to Headlee Rollback is **1.8200**

#### Voted Road Bond Debt Millage

- Approved by voters in 2008
- FY 20/21 projected millage rate required to support the bond payment is **1.4000**
- The voted road bond debt millage will expire in 2028

### **MILLAGE RATE LEVY**

| <b>FY 20/21</b>   | <b>MILLS</b>   | <b>REVENUE</b> | <b>*Avg. Cost To Taxpayer</b> |
|-------------------|----------------|----------------|-------------------------------|
| Charter Operating | 11.1800        | \$1,898,352    | \$2,236                       |
| Local Roads       | 1.8200         | \$312,318      | \$364                         |
| Road Bond Debt    | 1.4000         | \$232,050      | \$280                         |
| <b>TOTAL LEVY</b> | <b>14.4000</b> |                |                               |

*\*Based on a property with a \$200,000 taxable value (\$400,000 market value)*

| <b>FY 19/20</b>   | <b>MILLS</b>   | <b>REVENUE</b> | <b>*Avg. Cost To Taxpayer</b> |
|-------------------|----------------|----------------|-------------------------------|
| Charter Operating | 11.4788        | \$1,861,130    | \$2,295                       |
| Local Roads       | 1.8885         | \$306,194      | \$378                         |
| Road Bond Debt    | 1.4000         | \$227,000      | \$280                         |
| <b>TOTAL LEVY</b> | <b>14.7673</b> |                |                               |

*\*Based on a property with a \$200,000 taxable value (\$400,000 market value)*

**CITY OF SAUGATUCK  
CAPITAL IMPROVEMENTS PLAN  
FEBRUARY, 2020**



Project No.: 840640  
By: JWM  
Date: 2/18/2020

**Road & Utility Projects**

| Project No. | Location and Limits                                  | Anticipated Scope of Work  | Estimated Project Cost | PASER Rating | Traffic Volume |
|-------------|--|--|------------------------|--------------|----------------|
| 1           | Park Street - Mt. Baldhead Park to North City Limits | Combination of mill & fill and crush & shape strategies. Coordinating with Saugatuck Township to complete their short section as part of the project.  | \$ 300,000             | 2            | Local          |
| 2           | Lakeview Street - Park Street to East End            | Stabilize existing gravel surface with millings from the Park Street project.  | \$ 10,000              | N            | Local          |
| 3           | Interlaken Drive - Park Street to East End           | Stabilize existing gravel surface with millings from the Park Street project.  | \$ 10,000              | N            | Local          |
| 4           | Campbell Road - Manchester Drive to Park Street      | Replace existing 6-inch water main with 8-inch. Crush & shape Manchester to "the hill". Reconstruct "the hill with underdrain and storm sewer improvements. Shared project cost with Douglas (half of total shown).  | \$ 300,000             | 2            | Moderate       |
| 5           | Park Street - Campbell Road to Perryman Street       | Widen shoulders (where topography practically allows), miscellaneous asphalt replacement, slurry seal.   | \$ 480,000             | 2            | Heavy          |
| 6           | Butler Street - Culver Street to Lucy Street         | Replace existing 4-inch and 6-inch water main with 8-inch. Slip line existing sanitary sewer between Culver Street and Mason Street. Replace deteriorated storm sewer and catch basins/manholes. Mill and fill remaining asphalt pavement with miscellaneous curb and sidewalk replacement. For constructability reasons, project is recommended to be placed on hold until Kalamazoo Lake returns to a more normal level. | \$ 1,220,000           | 2            | Heavy          |
| 7           | Maple Street - Blue Star Highway to North Street     | Replace existing 4-inch and 6-inch water main with 8-inch or 12-inch. Address miscellaneous sanitary sewer needs. Crush & shape from Blue Star Highway to ~500 feet south of North Street. Reconstruct the 500 feet south of North Street with underdrain and geotextile stabilization. Shared project cost with township/road commission (60% of total shown).  | \$ 750,000             | 2            | Moderate       |
| 8           | Griffith Street - Culver Street to Francis Street    | Miscellaneous asphalt replacement followed by slurry seal.   | \$ 120,000             | 2-3          | Heavy          |
| 9           | Mason Street - Elizabeth Street to Grand Street      | Reconstruct with storm sewer replacement, miscellaneous water main and sanitary sewer repairs.   | \$ 500,000             | 2            | Low            |
| 10          | State Street - Lake Street to Maple Street           | Slurry seal to address cracking associated with difficult paving on steep slope.   | \$ 40,000              | 2            | Low            |
| 11          | Lucy Street - Water Street to Holland Street         | Slurry seal to address premature cracking associated with high water table (after water level returns to a more normal condition).   | \$ 50,000              | 4            | Moderate       |
| 12          | Culver Street Parking Lot                            | Resurface.   | \$ 330,000             | N            | N              |
| 13          | Bridge Street - Blue Star Highway to City Limits     | Crush and shape.   | \$ 80,000              | 1            | Local          |
| 14          | Grant/Elizabeth Street - Holland St. to North St.    | Slurry seal.   | \$ 40,000              | 2            | Low            |
| 15          | Mill Street - Holland Street to Simonson Drive       | Gravel base improvements & paving for the unpaved portion (approximately 200 feet). Alternatively, could cap with asphalt millings (similar to Newnman several years ago) for a few thousand dollars.  | \$ 15,000              | N            | Local          |
| 16          | Stormwater Pump Station at Water & Lucy Street       | Install precast wet well structure, pumps, piping, electrical, outlet plug, etc.   | \$ 100,000             | N            | Low            |
| 17          | Stormwater Pump Station at S. End Butler Street      | Install precast wet well structure, pumps, piping, electrical, outlet plug, etc.   | \$ 100,000             | N            | Local          |

**Subtotal Priority Road & Utility Projects: \$ 4,445,000**

**Park Projects (Summary of Prior Parks CIP with estimated inflationary adjustment)**

| Project No. | Location                              | Anticipated Scope of Work  | Total Est. Project Cost |
|-------------|---------------------------------------|--|-------------------------|
| 1           | Oval Beach (2 options for wastewater) | Restroom building, well & drain field improvements, parking lot expansion, maintenance/storage building  | \$ 1,200,000            |
| 2           | Mt. Baldhead Park (Upper)             | Restroom building, well & sanitary sewer connection, parking lot expansion, maintenance/storage building | \$ 1,600,000            |
| 3           | Mt. Baldhead Park (Stairs)            | Address radar building contamination, radar tower dome repairs, water main (reservoir feed) imps.        | \$ 150,000              |
| 4           | Mt. Baldhead Park (Lower)             | Stringer repair/replacement (~5 sections), upper deck improvements and general maintenance               | \$ 150,000              |
| 5           | Information/Directional Kiosks        | Pavilion replacement, restroom building, picnic area, parking improvements, drainage improvements        | \$ 550,000              |
| 6           | Wicks Park                            | Approximately 10 throughout downtown   | \$ 10,000               |
| 7           | Willow Park                           | Restroom improvements and performance space, address pavilion  | \$ 300,000              |
| 8           | Village Square                        | Deck/platform and miscellaneous improvements (coordinate with dock)                                      | \$ 100,000              |
| 9           | Rose Garden Park                      | Paver repairs, playground improvements, court improvements, restroom renovations                         | \$ 300,000              |
| 10          | Coghlin Park                          | Fence replacement  | \$ 25,000               |
| 11          | City Dock Improvements                | Develop a space to house temporary/seasonal sanitary facilities.   | \$ 15,000               |
| 12          | Blue Star Trail                       | Floating docks at Coghlin Park (2), Wicks Park (5) and Spear Street Boat Launch (1)                      | \$ 200,000              |
| 13          | Willow Park Sidewalk Extension        | Trail development. Budgetary cost is highly dependent on trail layout TBD.                               | \$ 600,000              |
| 14          | Chain Ferry                           | Install sidewalk along the west side of Water Street from Spear Street to Willow Park.                   | \$ 70,000               |
|             |                                       | Landing Improvements   | \$ 25,000               |

**Subtotal Park Projects (using second Oval Beach option): \$ 4,095,000**