

**From:** [Rgrodek@mi.rr.com](mailto:Rgrodek@mi.rr.com)  
**To:** [Laurel Evans](#)  
**Subject:** South Bar Lake Drain meeting of Determination  
**Date:** Wednesday, October 21, 2020 2:17:55 PM  
**Attachments:** [Record Eagle Article.pdf](#)  
[Drain Commission Notice.pdf](#)  
[South Bar Lake Culvert Flow Observations.pdf](#)

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Dear Drain Commission and Board Members:

This email is in reference to the Notice of Meeting of the Board received by mail and post marked October 13, 2020 for the Matter of the South Bar lake Drain.

This email also refers to information provided in the above notice from The Leelanau Drain Commission, an Article published in the Record Eagle written by Patti Brandt Burgess, dated June 23, 2020, and a pdf document titled South Bar lake Culvert Flow Observations completed by the Village DPW and surveyors from Gosling Czubak Engineers in 2019. "Attachments"

The questions and comments I have concerning the proposed drain project are as follows:

- If the culvert outlet from South Bar Lake is at the same elevation or just above the existing Lake Michigan water level, then both of lakes are at and near equilibrium. If there is little to no freeboard available on South Bar Lake (claims of flooding) what impact will a new culvert have on reducing the level of South Bar Lake until the Lake Michigan water level recedes?
- If the existing culvert is being considered for replacement due to the end of its useful life, is it possible to set culvert inverts that allow for immediate service, proper function, and less maintenance prior to a lower Lake Michigan water level?
- Has a study been made to determine if addition rainfall within the water shed has affected the South Bar Lake level? Has growth and development within the water shed been large enough to increase the area of impervious surfaces within watershed to increase runoff? Has the recent rainfall intensity increased over previous years?
- My wife has a family member on the east side of South Bar lake, at the lakes north end, for the past two (2) years I have observed static water flow from their well head.

Has a study been completed by a soil's engineer to determine the affect the piezometric pressure from the additional Lake Michigan water head has on the aquifer (ground water table) in the area of South Bar Lake? Is the additional head pressure on the ground water table from the rise of Lake Michigan waters the cause for flooded basements, crawl spaces, water leaching thru concrete slabs, garage floor slabs, thru the ground and flowing out the well head? If so, will the culvert as proposed provide relief to the homeowners experiencing flooded basements and wet conditions?

- If cost effective and permittable through EGLE, is it be possible to bulkhead the existing culvert on the South Bar Lake side and install a pump lift station to draw down and maintain a desirable south Bar Lake water level until the Lake Michigan Water level recedes? Once the lake Michigan waters recede the bulkhead could be removed, and the gravity flow culvert would again be placed in service.

I am not looking for a direct response or email reply from the Drain Commission or Board Member. These are questions I might have if I were on the Board, or questions that I would ask if standing before the Board. I consider the questions and comments provided important for review and consideration prior to committing to a new culvert installation.

Sincerely,  
Richard A. Grodek  
10/20/2020  
Lot 63, Empire Hills Subdivision



# LEELANAU COUNTY DRAIN COMMISSION

Steve Christensen, *Drain Commissioner*

8527 E. Government Center Dr., Suite #205, Suttons Bay, MI 49682 ■ 231-256-9783

www.leelanau.gov ■ schristensen@co.leelanau.mi.us

TO: Owners of potential properties within the petitioned South Bar Drain Drainage District

FROM: The Office of the Leelanau County Drain Commissioner

SUBJECT: South Bar Lake Drain – Petition to Locate, Establish and Construct a New County Drain

DATE: October 2, 2020

A petition was filed with this office requesting to locate, establish, and construct a new County Drain, pursuant to the Michigan Drain Code of 1956, as amended. The Michigan Drain Code is the State law that governs the actions of my office and this particular process in that when a petition is received by my office, a public meeting, known as a Board of Determination, is to be held to determine if the petition request is necessary. The Board of Determination is comprised of three (3) citizens of Leelanau County who do not live in the Drainage District or own lands within the township(s) affected by the Drain. This Board will meet on the designated time and date to hear and consider input on the necessity of the drain petition and will give opportunity for public comment for all in attendance. If you cannot personally attend, you can have a representative attend to speak on your behalf or you can send written comments that will be given to the Board for consideration at the hearing. Written comments must be received by my office at least 24 hours prior to the hearing. Further, due to the current Executive Order issued by the Governor relating to Covid-19, you may attend virtually via Zoom, or watch the meeting on YouTube and comment by telephone. A maximum of 13 guests may attend the hearing in-person. The decision whether the new Drain is / is not necessary will be made at the end of the hearing by the three-person Board and will be based upon evidence (testimony, public comment, picture, documentation, etc.) as to whether a drainage problem exists, such that the petition can remedy the problem.

The enclosed notice is being sent to you because you are an owner of record of property within the proposed Drainage District and may be liable for an assessment if the South Bar Lake Drain petition is found necessary. A Drainage District is the area of land that contributes at least some portion of water flowing in a drain or is comprised of properties benefiting from the proposed new Drain. Water in the Drain comes from rainfall on roads, driveways, fields, lawns, woods and roads and the Drain is typically the collection point of the downstream disbursement of various means of transport from upstream properties (ditch, culverts, pipes, etc.).

**SEE REVERSE SIDE FOR NOTICE OF MEETING, INCLUDING WAYS TO PARTICIPATE**





# LEELANAU COUNTY DRAIN COMMISSION

Steve Christensen, *Drain Commissioner*

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www.leelanau.gov ■ schristensen@co.leelanau.mi.us

## STATE OF MICHIGAN

### OFFICE OF THE LEELANAU COUNTY DRAIN COMMISSIONER NOTICE OF MEETING OF BOARD OF DETERMINATION

#### In the Matter of: South Bar Lake Drain

*Notice Is Hereby Given* to you as a property owner or municipality who may be liable for an assessment for benefits derived, that a Board of Determination, composed of three (3) disinterested property owners of Leelanau County and one (1) alternate will meet at **6:00 p.m. on Thursday, October 22, 2020, via Zoom and in person in the Commissioner Meeting Room of the Leelanau County Government Center, 8527 E. Government Center Dr., Suttons Bay, Michigan**, to hear all interested persons and evidence and to determine whether the drain, known as the **South Bar Lake Drain**, as prayed for in the petition for locating, establishing and constructing, dated June 11, 2020, is necessary and conducive to the public health, convenience, and welfare, located in both Empire Township and the Village of Empire of Leelanau County, in accordance with Sections 72 and 191 of Act No. 40, P.A. 1956, as amended. **A maximum of 13 guests are allowed into the in-person meeting room.**

Proceedings conducted at this public hearing will be subject to the provision of the Michigan Open Meetings Act. You are further notified that information regarding this meeting may be obtained from the Leelanau County Drain Commissioner. Persons with disabilities needing accommodations for effective participation in the meeting should contact the Leelanau County Drain Commissioner's office at the number noted below (voice) or through the Michigan Relay Center at 1-800-649-3777 (TDD) at least 72 hours in advance of the meeting to request mobility, visual, hearing or other assistance. Minutes of the meeting will be on file at the Leelanau County Drain Commissioner's office.

*You Are Further Notified* that persons aggrieved by the decisions of the Board of Determination may seek judicial review in the Circuit Court for the County of Leelanau within ten (10) days of the determination if the locating, establishing and constructing, of the drain is found necessary and conducive to the public health, convenience or welfare, a special assessment may be levied against properties or municipalities that benefit. Any owner or party having an interest in property that may be assessed, or his or her agent, may appear in person to comment on the necessity of the petition.

DATED: October 2, 2020

A handwritten signature in black ink, appearing to read "S. Christensen", with a horizontal line extending to the right.

Steve Christensen  
Leelanau County Drain Commissioner

**A live streaming of this meeting will be available  
for viewing via the following link –**

**[https://www.youtube.com/channel/UCNQTglgcTedF2qB8floC1GQ?view\\_as=subscriber](https://www.youtube.com/channel/UCNQTglgcTedF2qB8floC1GQ?view_as=subscriber)**

If you would like to provide comment during the meeting, please watch the livestreamed video, and call in during one of the two public comment portions on the agenda, to **231-256-8109**. There will be no queue, and calls will be taken in the order they are received.

**Emailed comments** are also welcomed prior to the meeting, and can be addressed to **[levans@co.leelanau.mi.us](mailto:levans@co.leelanau.mi.us)**

**Written comment submitted by mail** can be sent to: Leelanau County Administration, 8527 E. Government Center Dr., Suite 101, Suttons Bay, Michigan 49682.

**A Zoom Meeting ID** is available by contacting **[levans@co.leelanau.mi.us](mailto:levans@co.leelanau.mi.us)**



[https://www.record-eagle.com/news/local\\_news/new-culvert-may-be-on-the-horizon-for-south-bar-lake/article\\_67ca1a9e-b181-11ea-9d91-fb7adb67f5e5.html](https://www.record-eagle.com/news/local_news/new-culvert-may-be-on-the-horizon-for-south-bar-lake/article_67ca1a9e-b181-11ea-9d91-fb7adb67f5e5.html)

## New culvert may be on the horizon for South Bar Lake

By Patti Brandt Burgess [pburgess@record-eagle.com](mailto:pburgess@record-eagle.com)

Jun 23, 2020



From left, Gavin Bourquin, 8, of Traverse City, Maleah Brandt, 7, of South Boardman and Ali Brandt, 10, of South Boardm in South Bar Lake in Empire. A nearby culvert that drains South Bar Lake into Lake Michigan is failing, with high water, wi waves clogging it with sand about once a week. An increase in rain and stormwater runoff has exacerbated the problem, c the water levels in South Bar to rise.

Record-Eagle/Jan-Michael Stump



EMPIRE — A culvert that drains South Bar Lake into Lake Michigan is failing, with high water,

winds and waves clogging it with sand about once a week.

The cost of all that unclogging is falling on Empire Village, as well as keeping its two-man public works department very busy, said Wayne Aylsworth, village president.

"It's taken a vast amount of the DPW's time to unclog it," Aylsworth said.

The problem has been ongoing for years, Aylsworth said, though an increase in rain and stormwater runoff has exacerbated the problem, causing the water levels in South Bar to rise.

Some homeowners are seeing soggy yards, damp garages and wet basements.

The Empire Village Council recently petitioned the Leelanau County Drain Commission to create a Drainage District that would allow for assessments on properties in the district to pay for a South Bar Lake Drain to take care of the issue.

"We've been talking about this for multiple years," Aylsworth said. "It was just time to vote on it."

The cost of the project is not yet known.

"The last thing I want to do is incur another cost on the residents," Aylsworth said. "But it's a major issue. It has to be fixed."

The culvert runs under a private drive at the south end of South Bar Lake. The culvert needs repaired or replaced and wood supports around the culvert are bowing out, Aylsworth said. Sheet pilings were recently added to hold the supports for the time being, he said.

The next step in the process is to declare the size of the district and the number of properties within it. Because the district was requested by the village, it does not need approval of the individual property owners, said Steve Christensen, drain commissioner.

He estimates there are more than 100 properties in the district.

The cost is not assessed until the project is done, Christensen said, and could be stretched out over several years.

There are also four at-large entities, including the village and Empire Township, that will pick up 20 to 30 percent of the cost of the project. There are also the Leelanau County Road Commission and the Michigan Department of Transportation, who are considered at-large because a state highway and a county road are located within the district.

The next step in the process is to schedule a Board of Determination hearing in which a three-member panel chosen by Christensen will decide if the drain is needed. Those on the panel must live in Leelanau County, but not in Empire Village, Empire Township or the proposed district, or have any interests in the district.

Once the panel determines the drain is needed, the process of garnering easements can begin, Christensen said.

“Easements can take quite a long time to garner,” he said, calling them a “major wild card.”

Christensen has been working for several years to get easements on other county drain projects, including one at Schomberg Road.

Establishing drainage districts can sometimes be tricky because there are always people who live at the top of a hill, Christensen said.

“People at the top of the watershed really don’t have any problems,” he said. “It’s the people at the bottom who do.”

Drainage districts are established under the Michigan Drain Code of 1956, which was written so those at the bottom can get relief from flooding situations, he said. They do not require public hearings.

The last steps are to finalize the design, go out for bids and hire a contractor.



Rising waters

## Record-Eagle Events

See All Events Add your event

Fri, Oct 16

Fri, Oct 16

Fri, Oct 16

Fri, Oct 16

Fr



### Color Catchers Exhibition

Crooked Tree Arts Center



FRI  
16

SAT  
17

SUN  
18

MON  
19

TUE  
20

WED  
21

THU  
22

FRI  
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SAT  
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SUN  
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MON  
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TUE  
27

### Virtual "Good Fight 5K" Remembrance Run

Traverse City, MI

### One, Together Exhibition

Crooked Tree Arts Center

### First Chapter Fridays

Traverse Area District

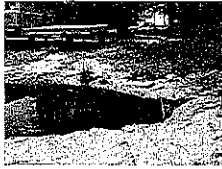
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## Patti Brandt Burgess

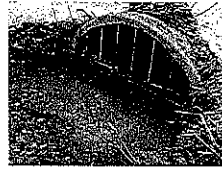
Reporter

## South Bar Lake Outlet Minimum Lake Level Control

- Minimum S. Bar Lake levels have long been controlled by a "level block" (miniature dam) at the S. Bar entrance to the outlet culvert into Lake Michigan.
- In 2019, the village DPW and surveyors from Gosling Czubak Engineering measured the height of the level block in the same terminology as government measuring of Lake Michigan water levels.
- The level block measures 582.1 feet, this is the minimum controlled height of S. Bar Lake.



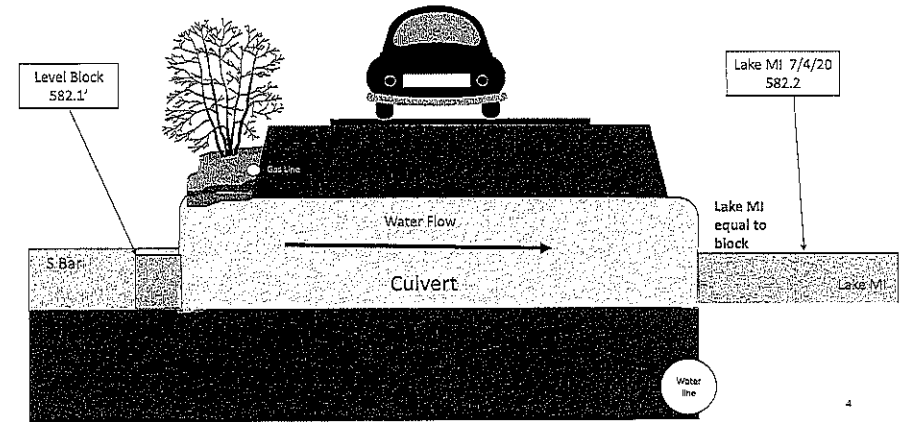
S. Bar Lake outlet culvert



Outlet culvert "level block"

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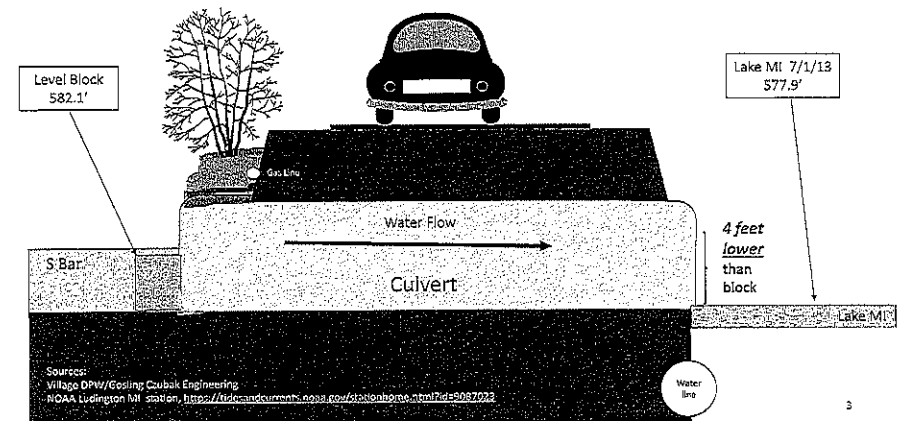
July 1, 2019  
Lake levels become "equal" – Lake MI compared to minimum S Bar level



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## South Bar Lake Culvert Flow Observations

July 1, 2013  
Strong water flow, plenty of lake level height difference



Sources:  
Village DPW/Gosling Czubak Engineering  
NOAA Ludington MI station, <https://tidesandcurrents.noaa.gov/stationhome.html?tid=5087032>

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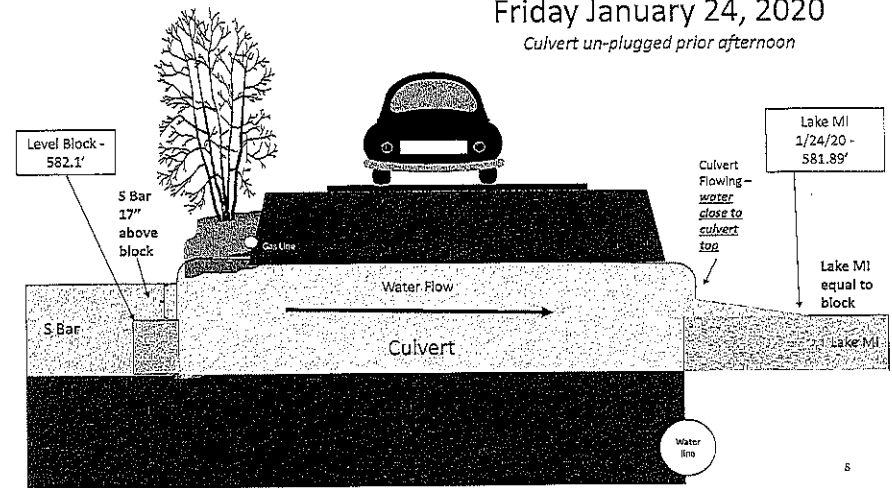
### With high Lake MI water levels come “plug ups”

- Wave action with winds anywhere from southwest to northwest drift sand constantly
- Drifting much higher up since water levels are higher
- Result: S Bar Lake outlet culvert is continuously plugging up in the Lake MI side
- DPW with backhoe on the beach “un-plugging” every 2 to 5 days
- Fire hosing, kneeling in waders, on the level block to push sand out from culvert inside

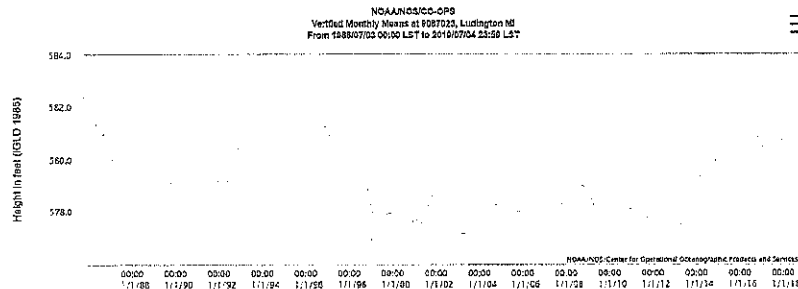
A recent few days of “plugging and un-plugging follow...

Friday January 24, 2020

*Culvert un-plugged prior afternoon*

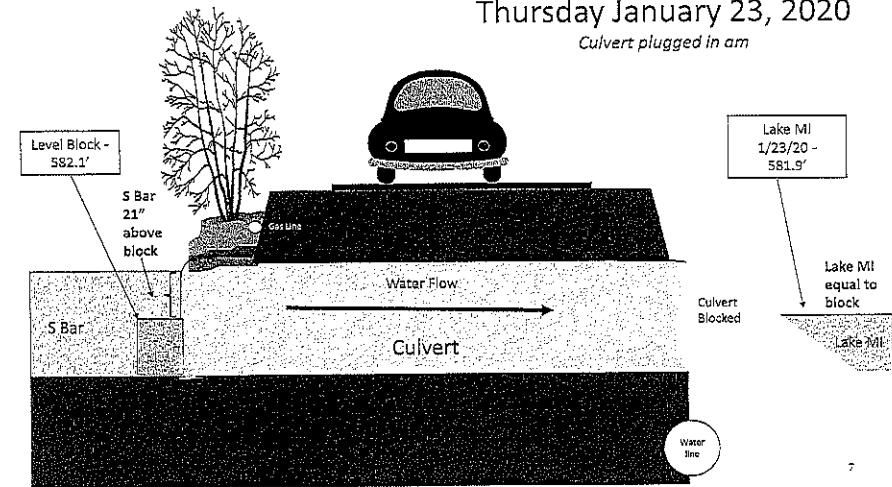


### Thirty-three years on Lake Michigan water levels



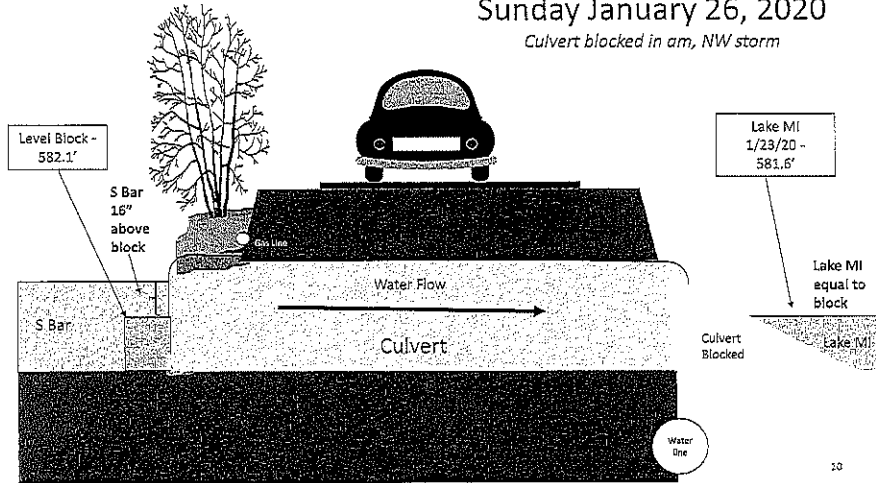
Thursday January 23, 2020

*Culvert plugged in am*



Sunday January 26, 2020

Culvert blocked in am, NW storm



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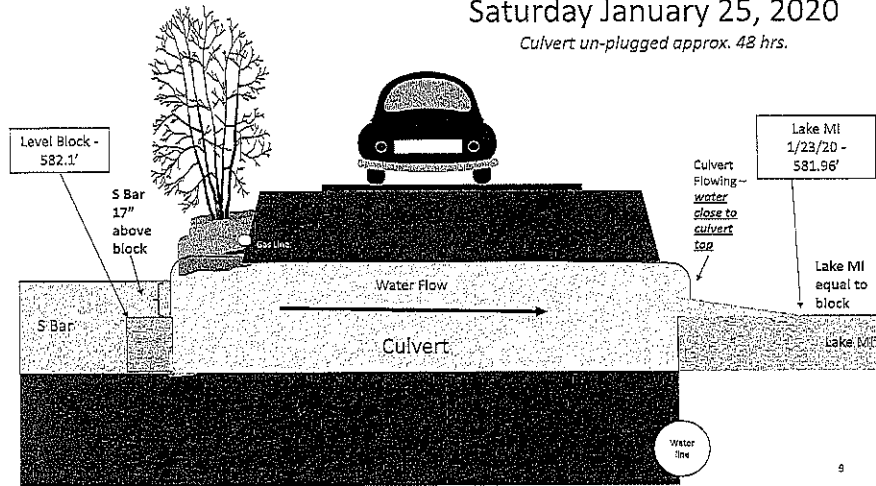
## Observations/Conclusions

- Since 2019, Lake MI water level is effectively equal to S. Bar "normal height" maintained by the historic culvert level block
- Continuous sand clogging at current Lake MI water levels results in continuous S. Bar Lake flooding
- Flood levels vacillate from 16" to 24" (give or take) over culvert level block
- Not enough duration between clogs to bring S. Bar level down (made worse by increased flow into S Bar?)
- *Will a larger flow structure (replacing the current culvert) + design aimed at sand buildup help? Engineering consulting needed?*
- *What "public" is responsible for maintaining lake levels - Lake property owners? The village overall? The watershed (village + parts of the township)?*
- *What will higher Lake MI levels predicted in 2020 do? Culvert will want to flow backward if not for sand clogging? OR S. Bar floods higher and seeks new outflow?*

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Saturday January 25, 2020

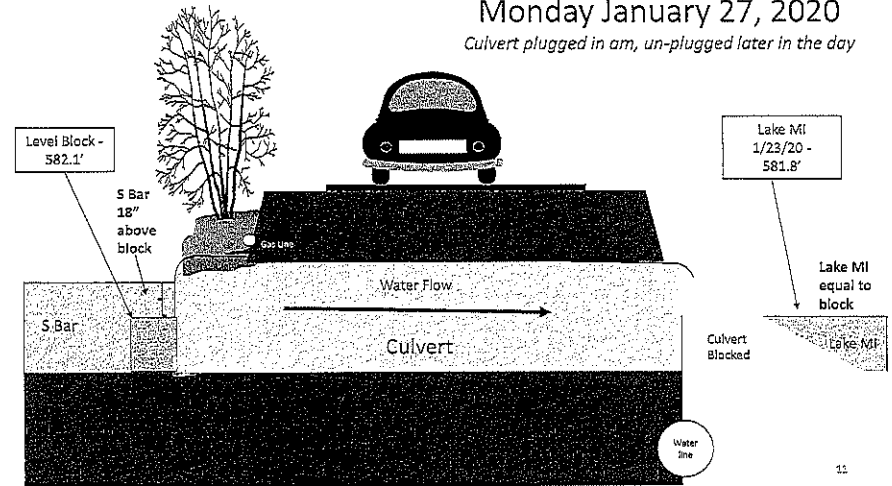
Culvert un-plugged approx. 48 hrs.



9

Monday January 27, 2020

Culvert plugged in am, un-plugged later in the day



11