



May 10, 2017

Open House Times:
12:00 – 3:00 p.m.
6:00 – 8:00 p.m.

Hiawatha Drain Informational Open House

Ottawa County Water Resources Commissioner

Prein & Newhof

Why are we here?



- The last public meeting was in 2010.
- Property ownership may have changed.
- Some residents may not know about the project.
- Joe Bush, the Water Resources Commissioner, wanted to provide residents the opportunity to learn more about it and why it is being done.
- This is not a required meeting and no decisions will be made today.



Why are we here?



Joe Bush

Water Resources Commissioner



Dana R. Burd, PE LEED® AP

Hydraulics/Drainage Engineer

... To try to answer your questions.



Why is this project happening?

- This project was petitioned by Grand Haven Charter Township in 2009 in response to flood events.
- In May of 2010 a public meeting was held called a “Board of Determination” meeting.
- Everyone in the district was notified of this meeting.
- At the meeting the drain project was determined necessary by Michigan’s Drain Code.
- This gave the project authority to proceed.





Tribune photo/Kyle Moroney

The intersection of Lakeshore and Hiawatha is shown here after the heavy rains in late April caused flooding in an area residents can't remember ever flooding before.

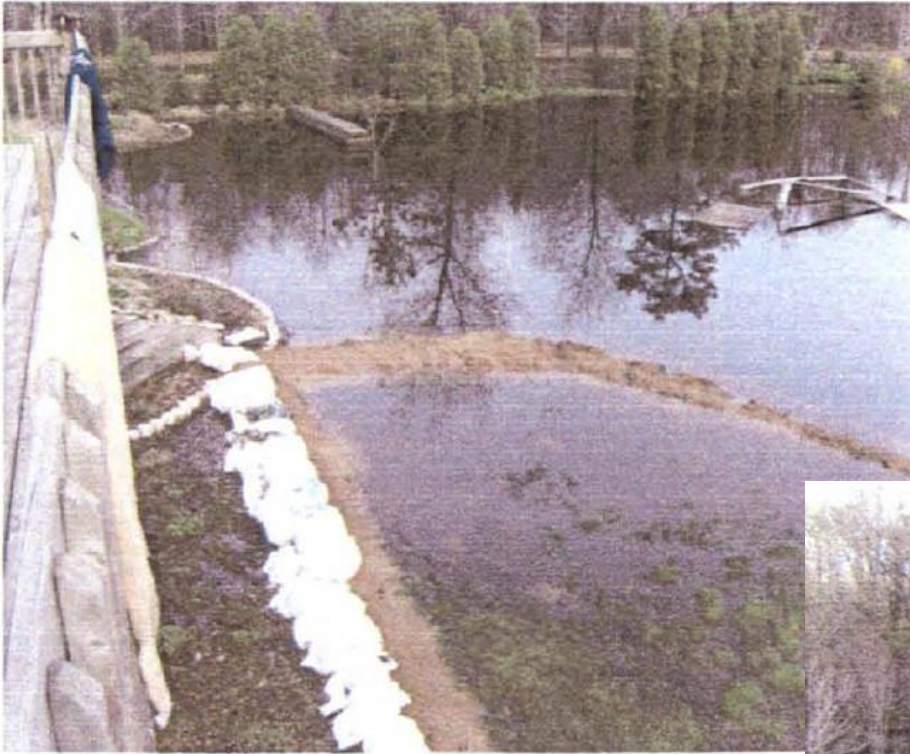
May 13, 2009 Grand Haven Tribune

Prein&Newhof



April 2009





Spring 09-South side

Spring 09-North side







2009

Prein&Newhof

What's been happening since 2010?

2010-2014

- Initial survey and design
- Alternatives review
- Easement acquisition
- Joe Bush elected in 2013 and changed the title of Drain Commissioner to Water Resources Commissioner
- Hiawatha Forest – grant funded Natural Features Inventory (County Parks)
- Project permitting



What's been happening since 2010?

2015-2016

- Review of additional alternatives
- Easement acquisition continued
- Apply for CZM grant funding with partners (funding not received)
- Install groundwater monitoring wells for design study

Partnerships Sought



Ottawa County Parks & Recreation Commission



What's been happening since 2010?



2015-2016

- County Parks review of Natural Features Inventory results
- Review route alternatives on County Parks property
- Apply for Michigan DNR grant funding (not received)
- Obtain Michigan DEQ permit
- Conclude groundwater study



What's been happening since 2010?

2017

- Easements & Permits obtained
- Project final design
- Financing alternatives reviewed
(15-20 year payment option)

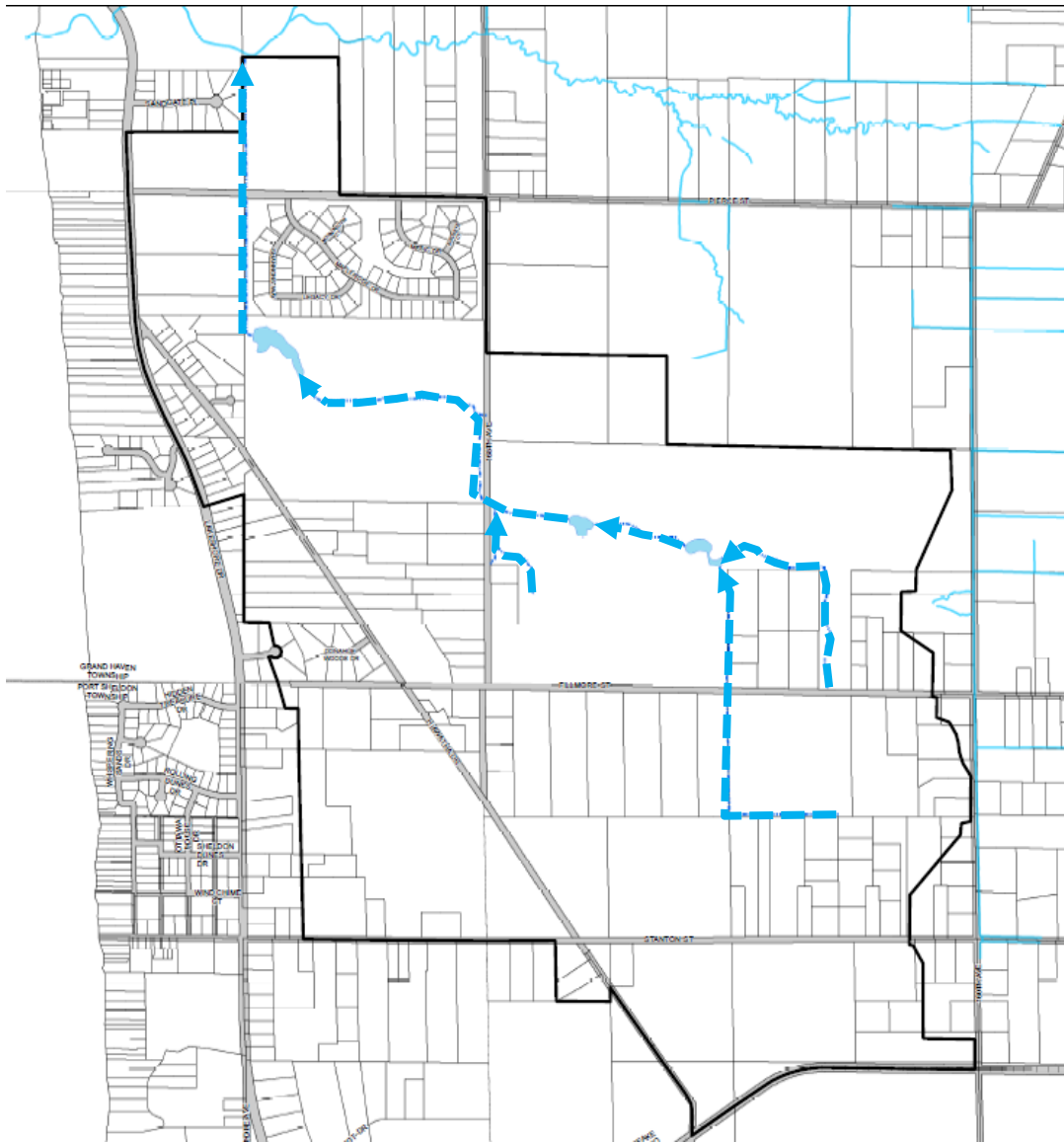
2017 *(remaining to do)*

- Project Bidding *(July)*
- Final apportionments/assessments determined *(July)*
- Day of Review *(July)*
- Construction *(Aug 2017-2018)*

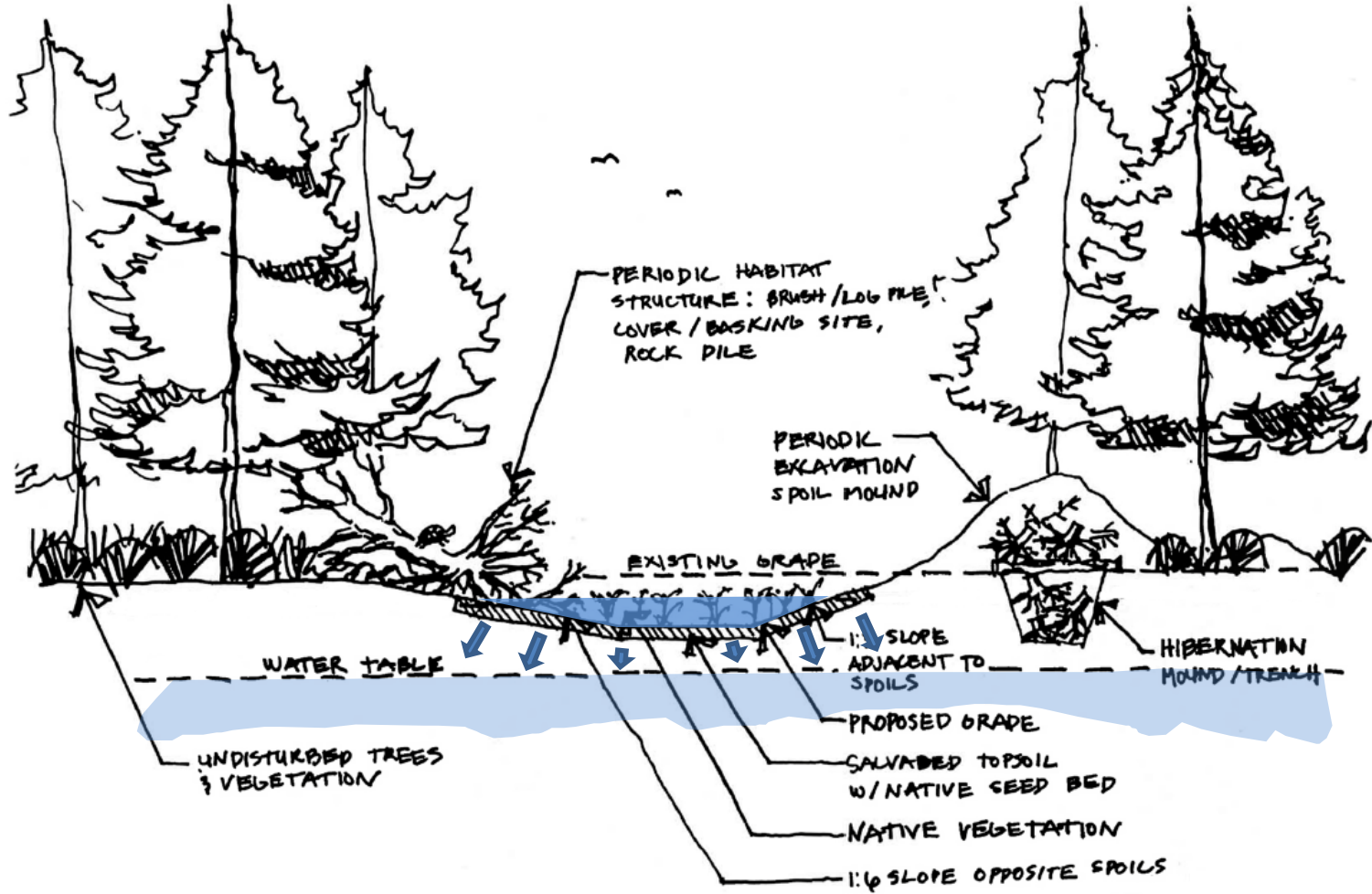


What is the project now?

- 2.6 miles of infiltration and drainage swale,
- 0.4 miles of enclosed storm water collection piping,
- Three detention and infiltration basins, and
- An outfall to Little Pigeon Creek.



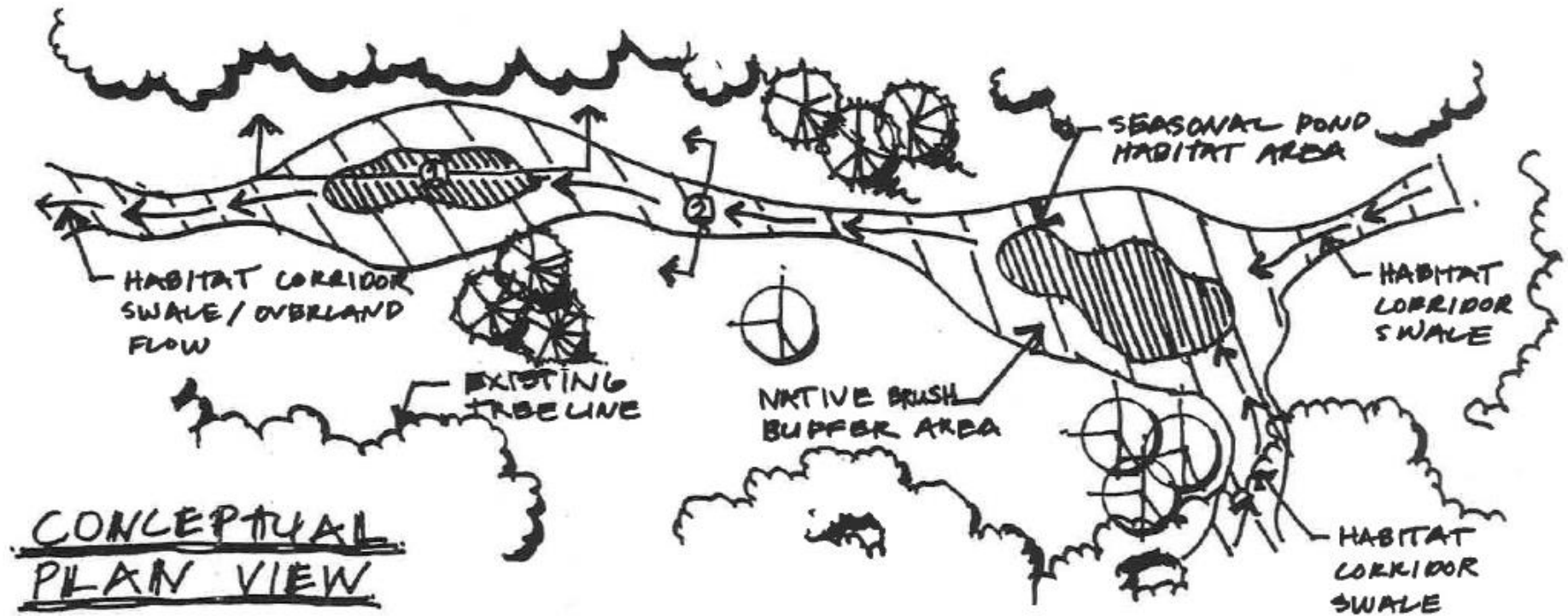
What is the project now?



Conveyance



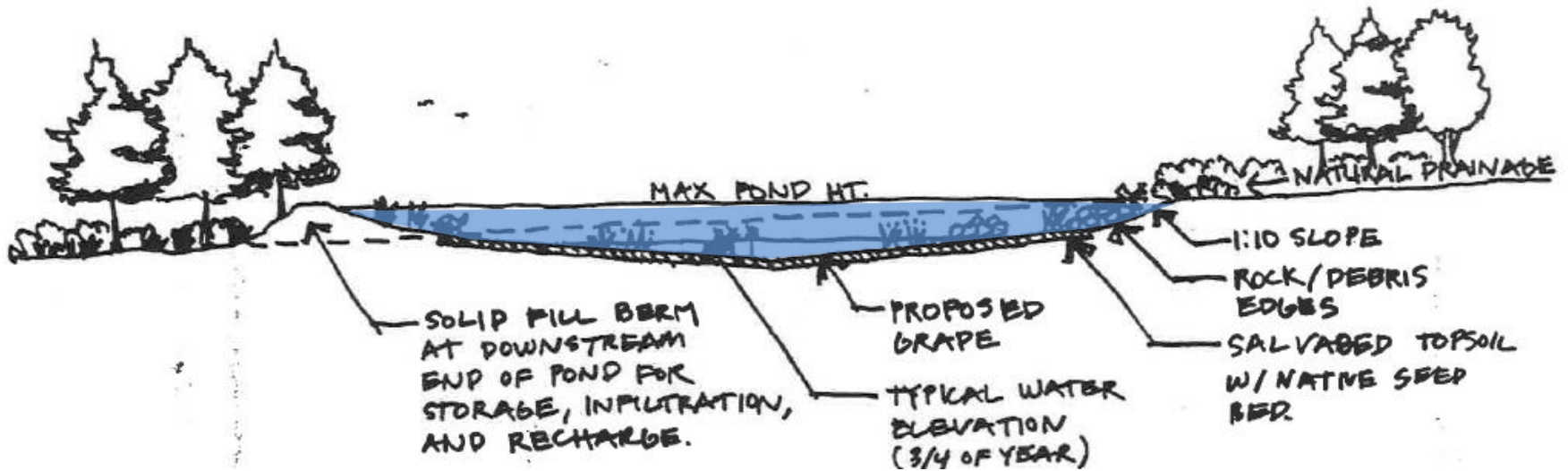
What is the project now?



*Controlled Overland
Flow*



What is the project now?

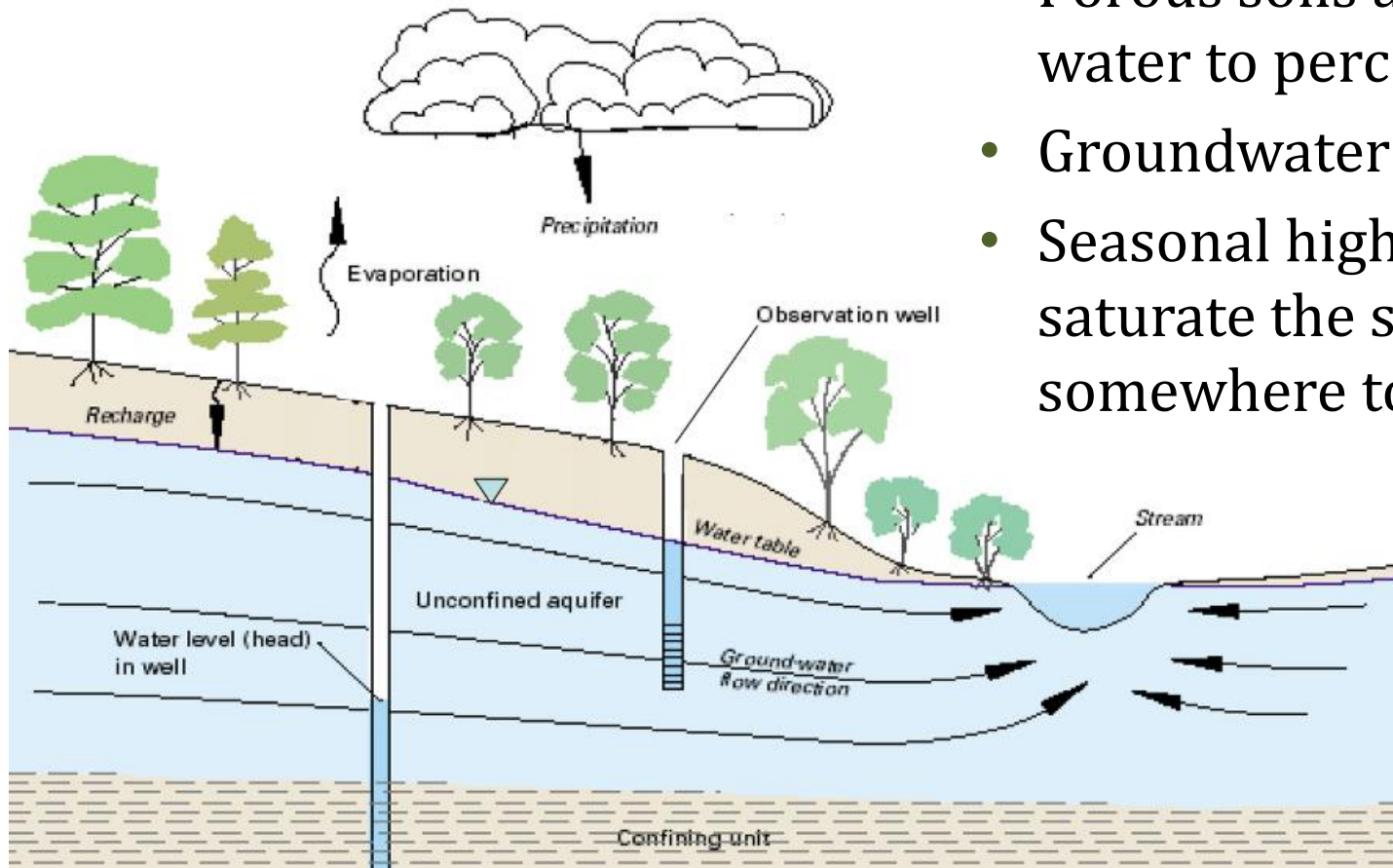


Typical detention pond/vernal pond section view

Storage

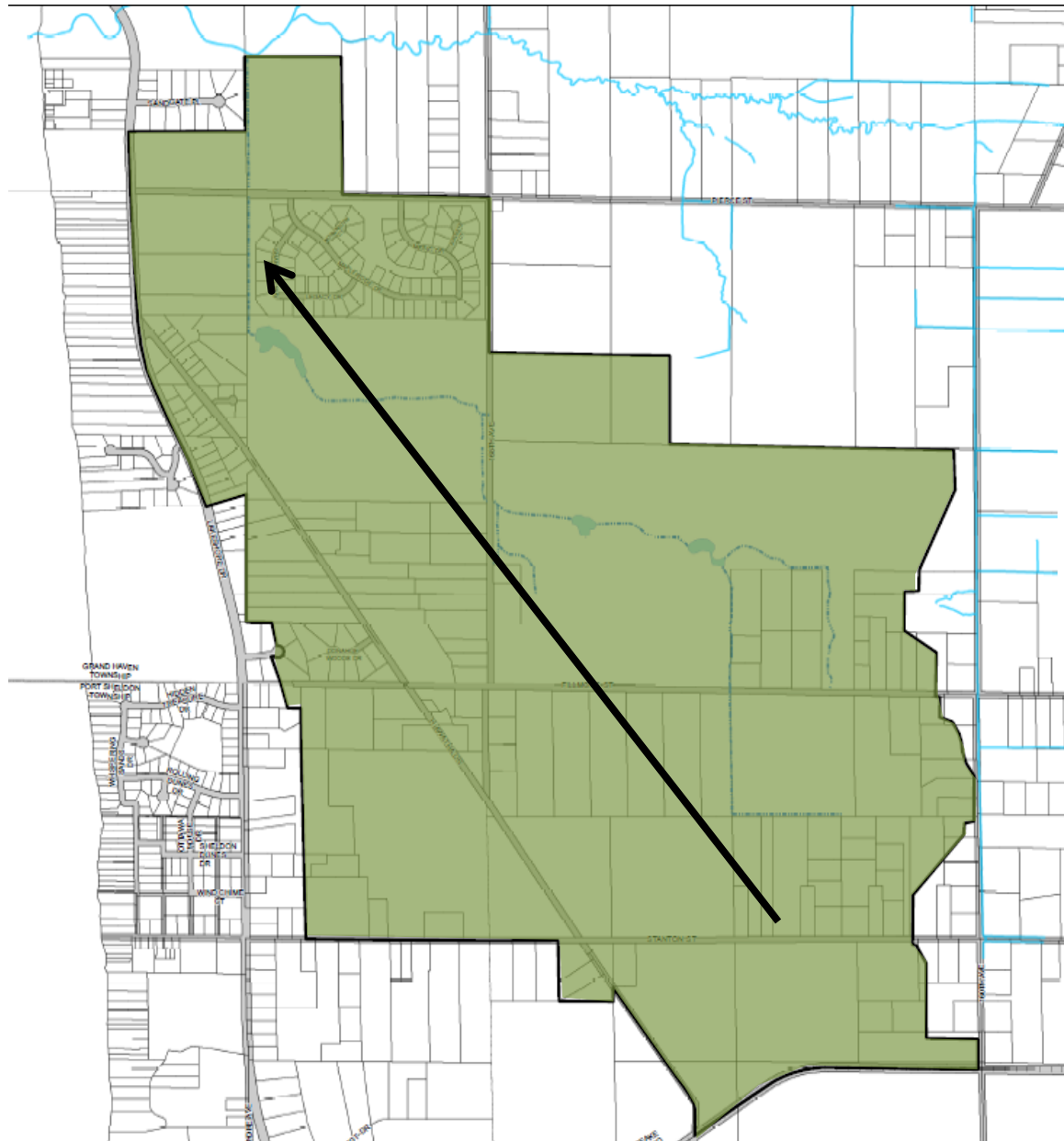


What is the basis for the current design?



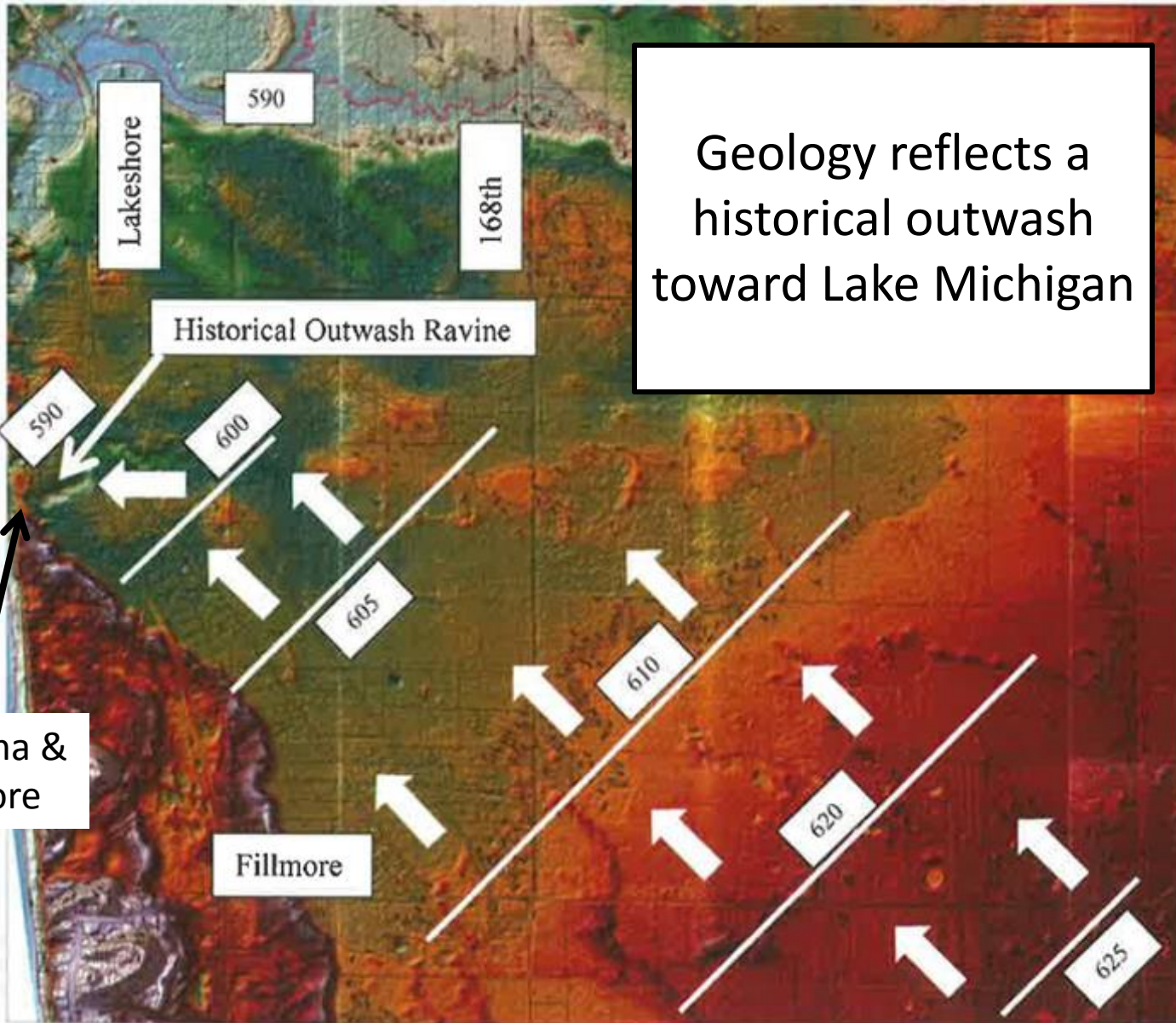
- Porous soils allow surface water to percolate.
- Groundwater levels vary.
- Seasonal high levels saturate the soil and need somewhere to go.





No Outlet or
Controlled Flow Path
Means...
Nowhere To Go





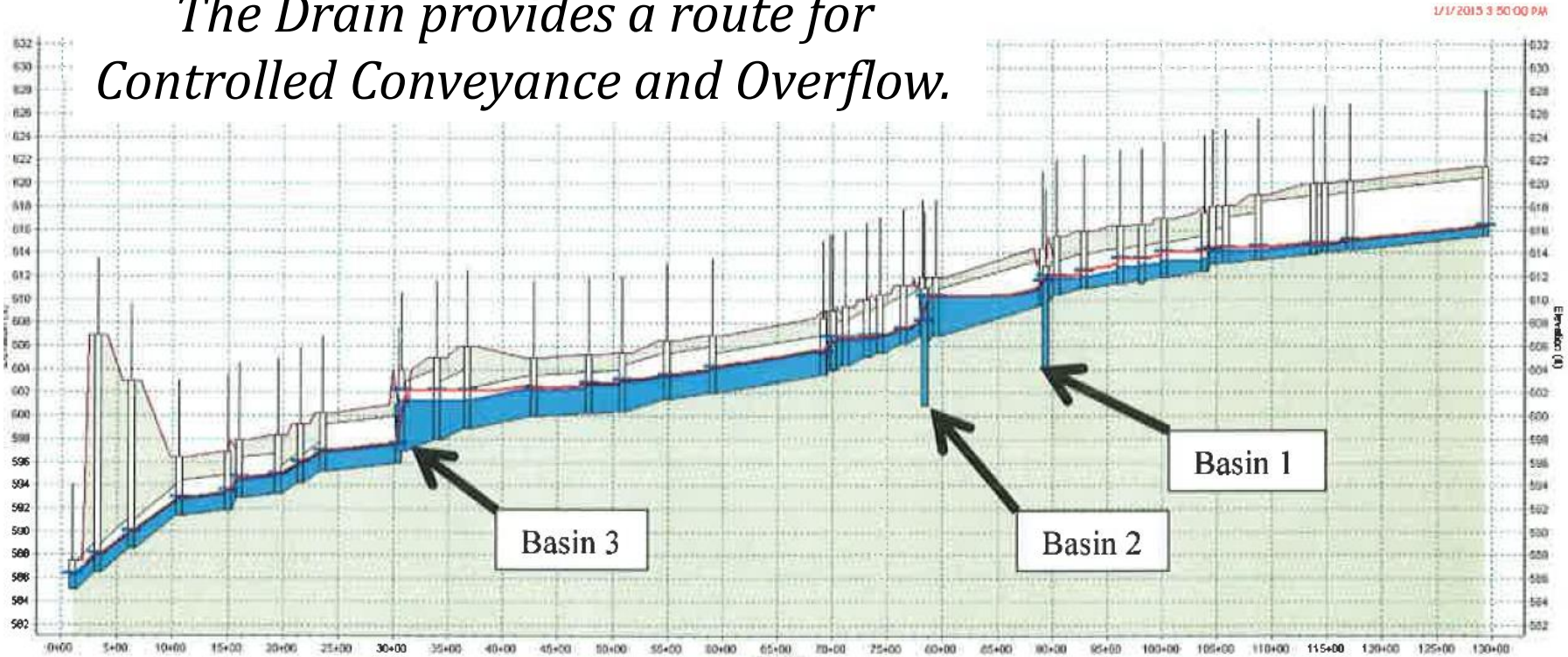
Geology reflects a historical outwash toward Lake Michigan

Hiawatha & Lakeshore



What is the basis for the current design?

The Drain provides a route for Controlled Conveyance and Overflow.



Profile view of proposed Hiawatha Drain from hydraulic model



Multiple Alternatives Were Reviewed

Each alternative had unique design and constructability challenges.

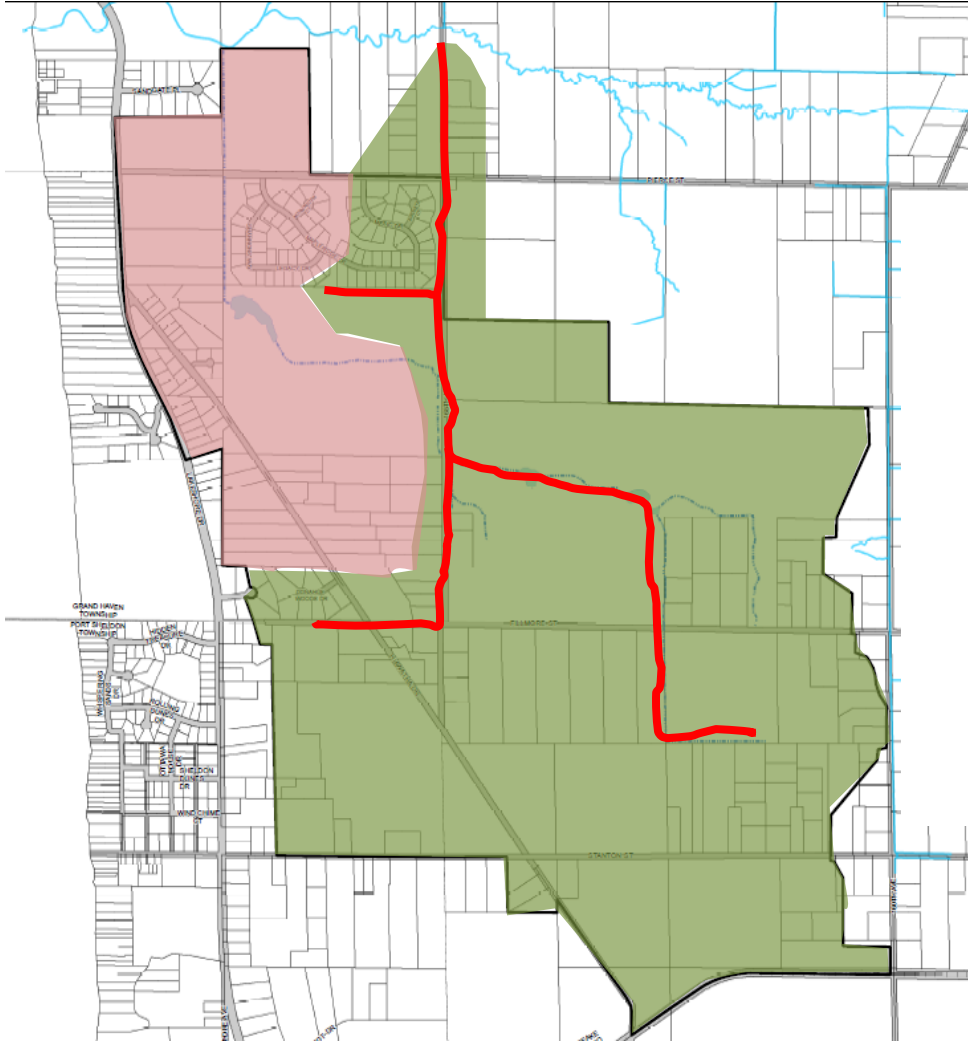
All were either less effective, or more costly than the chosen alternative.



Photo Credit: Michigan Amphibian and Reptile Best Management Practices, HRM



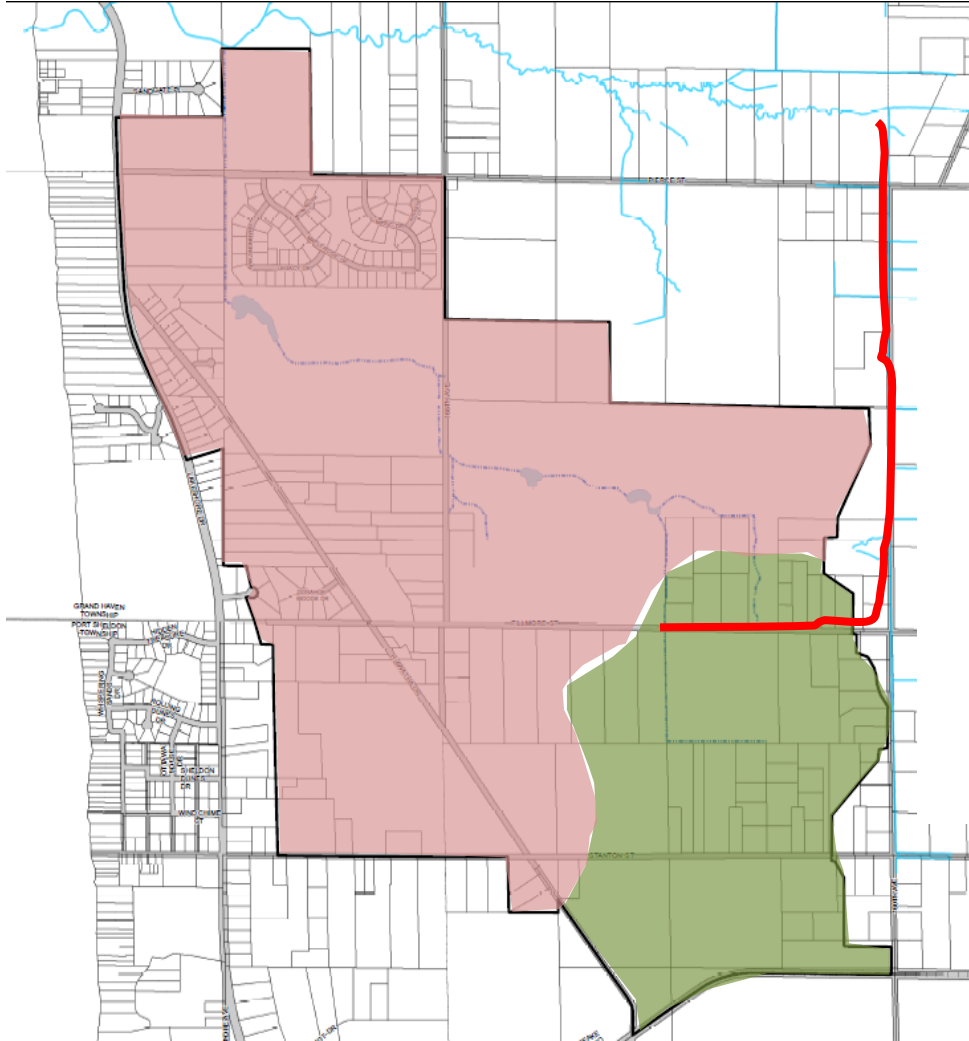
Alternative – 168th Avenue Outlet



Not constructible due to:

- Cost of buried sewer
- Elevation challenges
- Not most effective design

Alternative – Cooper Drain Outlet



Not constructible due to:

- Elevation challenges
- Lack of capacity in existing Drain
- Ineffective design



Project Apportionments

- Drain assessments are not known at this time.
- They won't be determined until project bids are received.
- Property owners will be sent a separate mailing call the "Notice of Letting and Day of Review of Apportionments"
- This will likely be sent in July or August of 2017, and will be when apportionments for each parcel and municipality may be reviewed.



Project Apportionments

- Michigan Drain Code requires that apportionments be based on benefits derived as determined by the Water Resources Commissioner.
- The cost of the project is shared by all property owners and municipalities within the district.
- Each property will be assigned its share, which is determined on benefit received.
- Methods for determining benefit are based on a variety of factors.



Project Apportionments

For the Hiawatha Drain Project...

- Cost will be shared between: private property owners, Grand Haven Charter Township, Port Sheldon Township, the Ottawa County Road Commission, and County Parks.

The following factors were considered:

- Base Benefit Factor
- Runoff Factor (based on hard surface area and soil type)
- Parcel Benefit Factor (based on benefit)
- Weighted Acreage Factor (based on area of parcel)



*Thank You and please
feel free to see Joe or
Dana with your
questions.*