

Hemlock Tile Drain

Board of Determination

Hemlock High School

July 29th, 2015

7:00 p.m.



Brian J. Wendling

Saginaw County Public Works Commissioner

Meeting Agenda

- I. Introduction
- II. Outline of the Board of Determination Procedures
- III. Opening of Board of Determination Meeting
- IV. Project History
- V. Engineering Presentation
- VI. Public testimony (3 minutes per person)
- VII. Vote of Board of Determination
- VIII. Appeal procedures and closing comments
- IX. Next Steps (if determined necessary)
- X. Adjournment

Role of the B.O.D.

- The Board of Determination's role is to make the following decisions:
 - ▣ Whether a maintenance/improvement project is necessary
 - ▣ Whether the consolidation of drain is necessary
 - ▣ Whether a portion of the cost is to be assessed at-large to the municipalities

Role of B.O.D. (cont.)

- The Board of Determination DOES NOT decide:
 - ▣ The scope of the project
 - ▣ The cost of the project
 - ▣ How much property owners and municipalities are assessed for the project

Information on these topics will be made available at a later date. Please see a member of the Public Works Commissioner's staff after the meeting if you have questions.

Public Comment

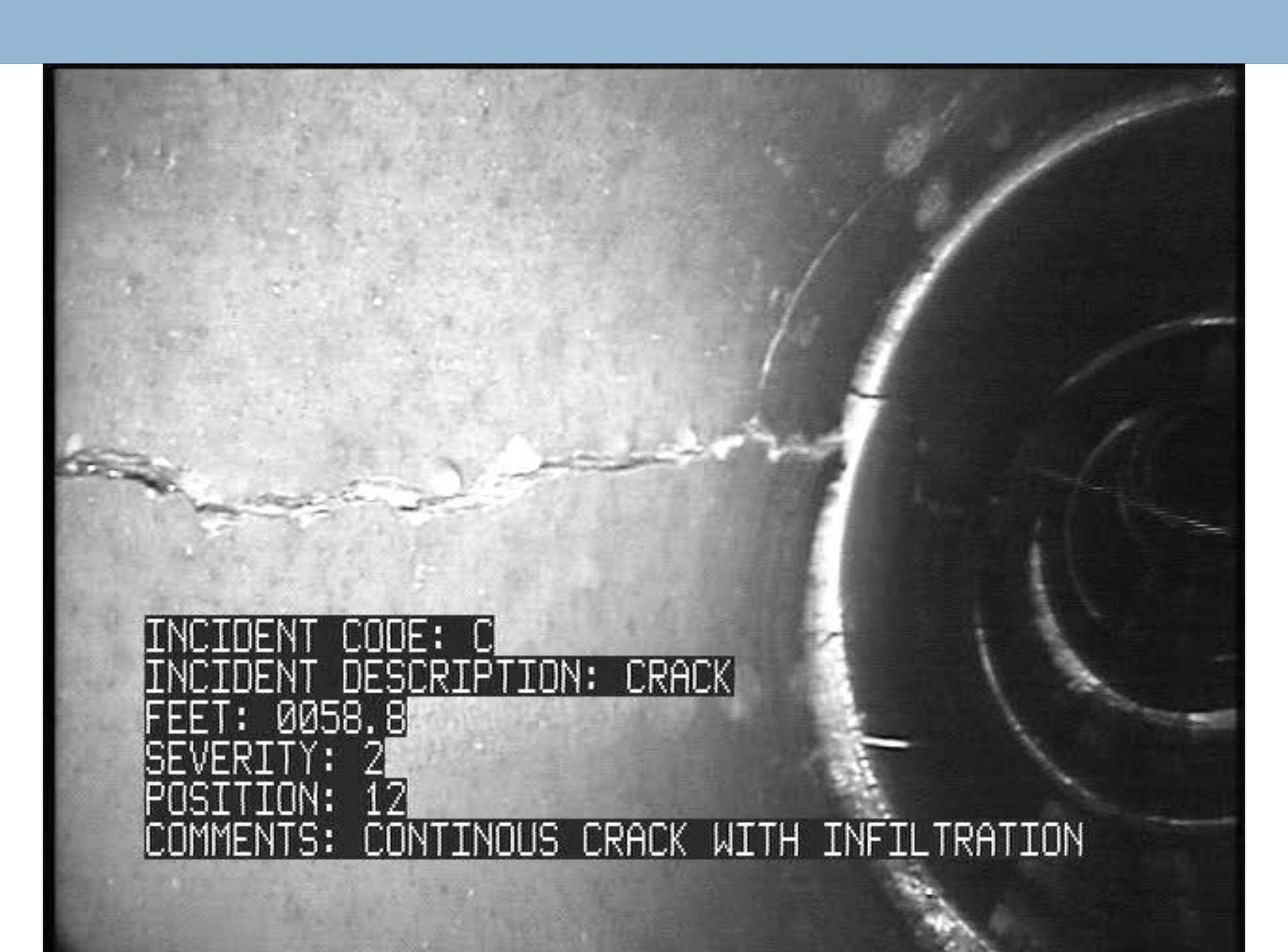
- Please form a line behind speaking area.
- The speaking order will be on a first come, first served basis.
- State your full name and address. Spell your last name for the court reporter.
- Limit comments to 3 minutes.

Public Comment (cont.)

- Remember to stay on topic! Comments for tonight's meeting are limited to the current petition for the Hemlock Tile Drain only.
- The Public Works Commissioner's staff will gladly speak with you on other topics after the conclusion of tonight's meeting.

Project History

- Hemlock No. 2 Tile Drain Petitioned – June 11, 2013
 - Numerous complaints/service requests received from homeowners in the Drainage District regarding surface and basement flooding
 - Video evidence tile is in poor condition
 - Found necessary to implement a drainage improvement project



INCIDENT CODE: C
INCIDENT DESCRIPTION: CRACK
FEET: 0058.8
SEVERITY: 2
POSITION: 12
COMMENTS: CONTINUOUS CRACK WITH INFILTRATION



FEET: 0350.3

Project History

- Preliminary Engineering Review – Fall 2013
 - ▣ Sanitary pump records suggest storm water in sanitary sewer
 - ▣ Recommendation identifying sources
 - ▣ Review of past studies suggest simple replacement of Hemlock No. 2 Tile not enough to address flooding problems

Project History

- Richland Township had Sanitary Sewer Analysis
 - Public Information meeting July 21, 2014
 - Completed analysis Summer 2014
 - Presented to Township November 11, 2014
 - Sent survey mailer to sanitary customers
 - Flow metering
 - Smoke testing
 - Analysis concluded that storm water was entering sanitary system in locations outside of the Hemlock No. 2 Tile Drainage District
 - Also concluded system wide storm drain improvements needed to reduce storm water in sanitary sewer and reduce surface flooding throughout town

Project History

- Storm Sewer Inventory Completed – Spring 2015
 - ▣ Inventoried existing storm sewer structures and pipe networks throughout Hemlock
 - ▣ Identified 11 county drains impacting the Hemlock area

- Presented Findings to Richland Township Board – May 8, 2015
 - ▣ Following the presentation, petitions were signed by the Township to consolidate 9 county drains into the Hemlock Tile Drain Drainage District

Current Petition

- Received from Richland Township Board on May 18, 2015
- Petition to consolidate 9 County Drains within the Hemlock area into the Hemlock Tile Drain Drainage District as well as to maintain and improve the drainage system once consolidated
 - ▣ Addresses storm drainage infrastructure problems throughout town in 1 project
 - ▣ Allows to administer drainage system as 1 county drain in the future

Engineering Presentation

- Spring 2013 Storm Event
- Sanitary Sewer Study
- Observed Surface Flooding
- Drainage Infrastructure Inventory
- Conceptual Plan
- Drainage District Delineation

Spring 2013 Storm Event

- 5 inches of rain between April 8, 2013 and April 13, 2013
- Severe flooding occurred
- 20 million gallons of water pumped through sanitary sewer system in April 2013
 - ▣ Typically less than 5 million
- Questions and concerns
 - ▣ Where did water enter sanitary sewer?
 - ▣ Will replacement of Hemlock No. 2 Tile address flooding?

Sanitary Sewer Study

- Township operates and maintains
 - ▣ 10 miles of pipe
 - ▣ 3 pump stations
 - ▣ Lagoon treatment system – 3 ponds
 - ▣ 534 customers
- Expected Flow (based of number of customers)
 - ▣ Approx. 120,000 gallons per day
- Average Daily Flow (reported flow meter data)
 - ▣ Approx. 222,000 gallons per day

Sanitary Sewer Study

- Questionnaire was distributed to 534 sanitary sewer customers in July 2014
- 95 customers responded
 - ▣ 53% experienced or observed surface flooding
 - ▣ 40% have experienced basement flooding consisting of either sanitary or storm water
 - ▣ 65% have sumps pumps

Sanitary Sewer Study

- Smoke testing was performed over a five day period which began September 1, 2014
- Direct storm water inflow observed at 13 locations
- Richland Township has started to address these issues

Sanitary Sewer Study

- Evaluation based on reported flow rates collected from July 21, 2014 through September 7, 2014
- Seven (7) flow meters placed at strategic locations in the sanitary sewer system
- 1 rain gauge placed at pump station
- Purpose of flow metering is to isolate sources of infiltration and storm water inflow (I/I)

Sanitary Sewer Study

Recommendations to Township

- Correct sources of direct storm water inflow
- Establish an annual sanitary sewer televising and cleaning program
- Request SCPWC perform evaluation of storm sewer system
- Request SCPWC implement a project to address flooding
- Implement a sump pump disconnect program

Observed Surface Flooding

- August 13, 2014
 - 1.9 inches of rain
- Surface flooding observed in numerous locations throughout town, with the most notable being:
 - Road Commission storage yard
 - Family Dollar parking lot
 - West of apartments within Sandridge subdivision
 - Richland Township Park parking lot
 - Near Hemlock High School on Hemlock Road
 - Near Middle School

Photos



Looking North at the Richland Township Park



Looking West Across Parking Lot of Park

Photos



Looking East from Parkside Lane



Intersection of Sandridge Road and Parkside Lane

Photos



Looking West across Road Commission Yard



Looking South down N. Hemlock Road

Photos



Family Dollar Parking Lot



Intersection of S. Pine Street and Henry Street

Drainage Infrastructure Inventory

- Jurisdiction of storm sewers within proposed Hemlock Tile consolidated drainage district
 - ▣ Public Works (Drain) Commissioner
 - 10 Separate Drains
 - ▣ Road Commission
 - ▣ MDOT
 - ▣ Private

Drainage Infrastructure Inventory

- Inspected manholes and catch basins
- Measured pipe sizes and depths
- Assess condition based on observation at manholes



Conceptual Plan

- Consider past studies
- Utilize existing storm infrastructure that is in fair condition
- Coordination with MDOT
- Provide adequate storm sewer outlet for each lot
- Utilize existing right of way as much as possible
- Utilize multiple outlets
- Utilize storm water detention

Preliminary Drainage District

- What is the drainage district?
 - ▣ Lands that contributes storm water to drain
 - ▣ Drainage District serves as the special assessment district
 - ▣ Hemlock Tile Drain Drainage District includes:
 - Saginaw County
 - Richland Township
 - Mid-Michigan Railroad
 - Michigan Department of Transportation
 - Landowners – Approximately 500 parcels
 - Approximately 485 Acres

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Next Steps

(if determined necessary)

- Video and clean storm sewer considered to remain
- Easement coordination
- Topographical survey
- Final scope determination
- Utility coordination
- Coordinate MDOT, Road Commission and Railroad
- Public Meeting
- Schedule for construction completion late 2017

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