



Thompson Lake Dam  
Dam Identification No. 753 | City of Howell, Livingston County

## NATIONAL DAM SAFETY PROGRAM INSPECTION REPORT

December 20, 2021



**THOMPSON LAKE DAM  
DAM IDENTIFICATION NO. 753  
LIVINGSTON COUNTY, MICHIGAN**

**NATIONAL DAM SAFETY PROGRAM  
INSPECTION REPORT**

**Owner**

**Livingston County Drain Commissioner  
Mr. Brian Jonckheere  
2300 East Grand River Avenue.  
Howell, MI 48843  
517-546-0040**

**Hazard Potential Classification**

Significant

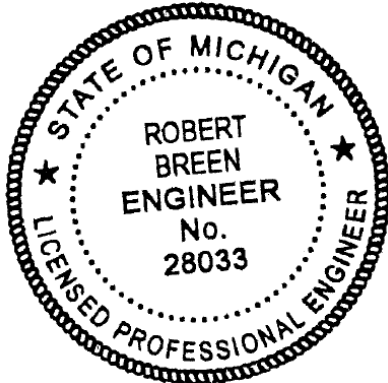
**Prepared By:**

Wade Trim Associates, Inc.  
555 Saginaw Street #201  
Flint, MI 48502  
(810) 235-2555

**Inspection Date**

August 12, 2021

This dam was inspected by, and report prepared by:



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Robert R. Breen, PE  
Michigan Registration No. 28033

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## **1. INTRODUCTION**

The purpose of this inspection is to evaluate the structural condition and hydraulic capacity of this dam as required by Part 315, Dam Safety, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. The Michigan Department of Environment, Great Lakes and Energy (EGLE) has classified this dam as having a significant hazard potential. Wade Trim was requested by Livingston County Drain Commissioner (LCDC) to prepare this report for the Thompson Lake Dam. The report includes discussion of observations based on a visual investigation of the dam and review of any previous inspection reports, plans, and data, which are available. No material testing was done for this report. The report also includes approximate hydraulic measurements from EGLE. This should not be considered an in-depth engineering investigation.



## **2. EXECUTIVE SUMMARY**

The Thompson Lake Dam is in generally fair condition overall. The embankment is in relatively good condition. It is well vegetated with no significant trees within the embankment area. The upstream side of the embankment is lacking some rip rap along the shoreline. The upstream concrete drop structure is showing signs of deterioration around the top portion of the structure. The concrete is cracked and is disintegrating at a number of contact points with the steel grating and safety handrail system. Several of the safety handrail anchor point connections to the concrete wing wall are loose. The following recommended actions are listed by priority. There are no apparent significant changes in the condition of the structure since the inspection completed in 2018.

Following are conclusions and recommendations for repair/maintenance items outlined in this report.

1. The upper 15 to 18 inches of the concrete drop structure is in poor condition and should be repaired.
2. The handrail connection should be re-designed to have further spacing between the assumed expansion anchor bolts. Recommended edge distance at concrete is minimum 5 x 'd' and spacing between bolts is minimum 10 x 'd' ('d' is diameter of anchor bolt).
3. The concrete cap on the south end of the wing wall should be repaired.
4. Repair minor area of erosion on the downstream embankment slope around the riprap culvert outlet along downstream embankment slope.
5. Add rip rap to the upstream embankment shoreline from edge of water, up the embankment.
6. Unplug foundation underdrains at outlet culvert

Based upon observations at the time of the inspection, there are no apparent deficiencies that may lead to failure. The dam has adequate capacity to convey design discharge.

The significant hazard potential rating for this dam remains appropriate. The dam location along the watercourse lends itself to the significant hazard rating.

### **3. PROJECT INFORMATION**

#### **A. Dam Description**

The LCDC is the present owner of the Dam and spillway, which is located approximately 100 yards downstream of the dam structure. The Dam and spillway are in the City of Howell, Section 25, Livingston County, Michigan.

The dam is situated on the north end of Thompson Lake. The structure consists of concrete wing walls on both the upstream and downstream sides of the structure. The control structure consists of a concrete box weir with two sluice gates (one is a log gate and the other is a gate valve) used for water level operation.

The earth embankment is approximately 310 feet in length and a height of approximately 12 feet. The reinforced concrete drop structure is approximately 12 feet wide by 7.5 feet deep. The drop structure has a steel grated trash rack. The drop structure outlets into 8 feet by 4 feet precast concrete box culvert, which discharges into an earthen channel. The legal lake level for summer is 904.5. A 3-foot draw down is court ordered every 2 years. The top of the drop structure is 904.5. The winter lake level is 901.5.

Construction plan information is available and kept on file at the LCDC office and the EGLE Dam Safety Unit.

#### **B. Geology and Soils of the Area**

A review of the Soil Survey of Livingston County Area, Michigan published in 2015 by the U.S. Department of Agriculture Soil Conservation Service through the web soil survey indicates soils in the area of the Tributary to Bogue Creek at Thompson Lake Dam are predominately, Boyer-Oshtemo loamy sand, Alluvial land, Wawasee loam, and Carlisle muck.

#### **C. Classification**

Hazard Potential Classification refers to the potential loss of life and/or property damage, in the area downstream of the dam, in the event of a dam failure. This classification does not reflect upon the structural integrity of the dam. Dams conforming to criteria for the Low Hazard Potential category generally are located

in rural or agricultural areas where failure may damage farm buildings, limited agricultural land, township, or county roads. Significant Hazard Potential category structures are those located in predominantly rural or agricultural areas where failure may damage isolated homes, secondary highways or minor railroads or cause interruption of use or service of relatively important public utilities. Dams in the High Hazard Potential category are those located where failure may cause serious damage to homes, extensive agricultural, industrial, and commercial facilities, important public utilities, main highways, or railroads. The classification for the Thompson Lake Dam is in accordance with the following table.

<b>Table 1</b> <b>Hazard Potential Classification</b>		
<u>Category</u>	<u>Loss of Life</u> (Extent of Development)	<u>Economic Loss</u> (Extent of Development)
Low	None expected (no Permanent structures for human habitation)	Minimal (Undeveloped occasional structures or agriculture)
Significant	Few (No urban development and no more than a small number of inhabitable structures)	Appreciable (Notable agriculture, industry or structures)
High	More than few	Excessive (Extensive Community, industry or agriculture)

Based on impoundment capacity, size of the dam, location of the dam, available technical information, and engineering judgment, the Thompson Lake Dam has been classified in the Significant Hazard Potential category due to moderate potential of property damage and extremely moderate probability of loss of life in the event of a failure of the dam. It is the judgment of the inspector this hazard classification is correct.

The hazard potential rating is based upon the location and elevation of structures immediately downstream and does not reflect upon the structural integrity of the dam.

#### **4. SITE INVESTIGATION**

##### **A. General**

Wade Trim performed an inspection of the Thompson Lake Dam on August 12, 2021. The inspection was completed by senior structural engineer Robert Breen, PE, with assistance by Troy Andrews, PE. The inspection consisted of an evaluation of the embankment, drop control structure and outlet culvert and the tributary streambanks. Findings from the site investigation are detailed below.

##### **B. Embankment**

The embankment was examined and revealed no evidence of seepage or sloughing/settlement of soils due to seepage through the soils. No animal burrows were detected. There are no trees on the embankment property, but heavy overgrowth including trees exist just beyond the embankment. It appears they pose no threat to impacting the embankment. The upstream shoreline along Thompson Lake as well as the downstream streambanks could use some more rip rap to protect against wave action on the lake as well as generally fast outlet flows along the downstream banks at the box culvert outlet.

##### **C. Drop Structure**

The portion of the drop structure visible during the inspection is in poor condition. The top of the structure is exhibiting cracking and spalling of the concrete surface. At the corners of the structure where the corner handrail posts are connected has extensive concrete cracking to the point where the handrail post anchor plates are very loose. It appears this is due to very close spacing of the expansion anchor bolts cracking the concrete. It is the opinion of this inspector that repairs should be made to the concrete and re-anchor the posts. It is uncertain, if the posts, as they currently exist, are capable of sustaining the design loads required for handrail posts. The embankment retaining/wingwalls appear to be in fair to good condition. There is general wear showing on the concrete with isolated cracking, spalling and delamination of the surface. Structurally, it appears sound otherwise. The two-step ladder from top of embankment to top of grating at drop structure is in good shape and appears to be securely anchored to the concrete wall.

**D. Outlet Culvert**

The 8-foot by 4-foot precast concrete box culvert that serves to convey downstream flow through the embankment is in good condition. There is some visible wear of the concrete surface near the waterline. There appears to be foundation underdrains that come through the side walls that appear plugged. There is no evidence (staining below outlet or water marks) that the outlet functions. The joints between the segments appear to be sound with no leakage showing.

## **5. STRUCTURAL STABILITY**

The general overall condition of the dam appears to be in fair condition. There is no visual evidence of any structural instability of the dam. Overall, the embankment itself is in good condition. A similar condition can be assumed for the outlet culvert. The drop structure that is visible is in poor to fair condition. The outlet culvert is in good condition.

## **6. HYDROLOGY AND HYDRAULICS**

### **A. Historical Data**

The Thompson Lake Dam (Dam ID # 0753) is located in Section 25 in the City of Howell, T3N – R4E, Livingston County, Michigan. The dam is an earth embankment with a concrete drop structure. The dam was originally constructed to power a gristmill in 1894. The dam was reconstructed in 1999.

### **B. Design Discharge**

According to the Dam Safety Act, “significant hazard potential dams shall be capable of passing the 200-year flood of record or 0.5% chance flood. In September 2021, EGLE-WRD provided the following flood discharge information for the Tributary to Bogue Creek at Thompson Lake Dam. The estimated 200-year peak discharge (0.5% chance flood) is 100 feet per second, based on a drainage area of approximately 10.3 square miles. Based upon the hydraulic evaluations that were previously completed and are on record at the MDEQ for this structure. The Thompson Lake dam has adequate capacity to pass the required 0.5% chance flood flow of 100 cfs.

## **7. OPERATION AND MAINTENANCE**

### **A. Dam Operation and Dam Maintenance**

The LCDC's office has developed a formal operation and maintenance manual/program for the Thompson Lake Dam. The LCDC actively maintains the dam structure in accordance with the O & M Manual.

### **B. Emergency Action Plan**

The Thompson Lake Dam is rated as a Significant Hazard dam. An Emergency Action Plan (EAP) is required. The EAP for this dam structure is on file with the Drain Office and is attached in Appendix A.5.



## **APPENDICES**

APPENDIX A.1: LOCATION MAP/PART 307 FORMS

APPENDIX A.2: DAM STRUCTURE DRAWINGS

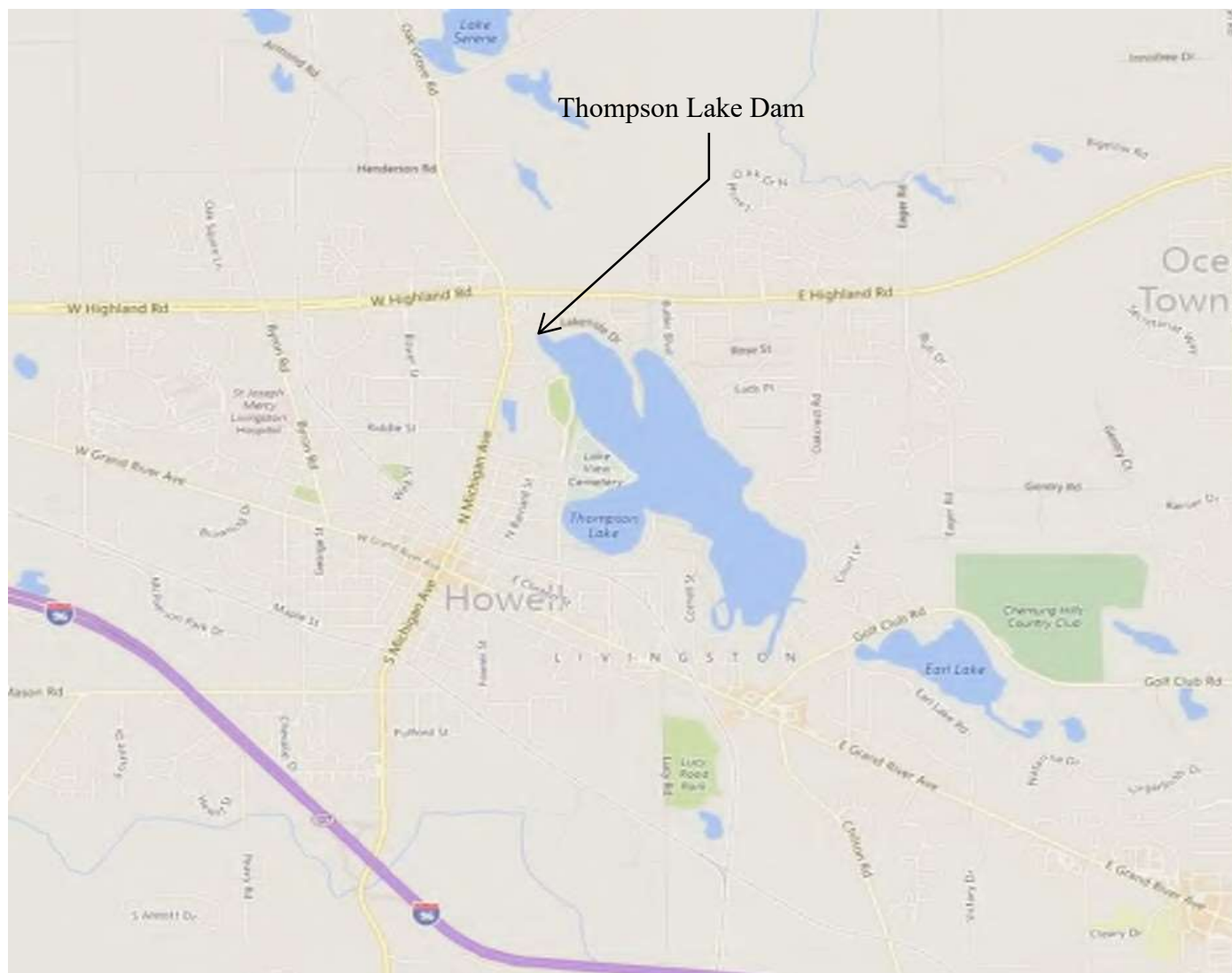
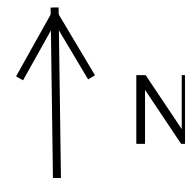
APPENDIX A.3: EGLE 200-YEAR PEAK DISCHARGE DATA

APPENDIX A.4: INSPECTION PHOTOGRAPHS

APPENDIX A.5: EMERGENCY ACTION PLAN

**APPENDIX A.1**  
**LOCATION MAP/PART 307 FORMS**

# Thompson Lake Dam Location Map





**MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER RESOURCES DIVISION  
DAM INSPECTION REPORT**

This form is to be used for inspection reports required by Part 307, Inland Lake Levels, for those dams that do not meet the size criteria as defined by Part 315, Dam Safety, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended. Dams six (6) feet or more in height, as defined by Part 315, and impounding five (5) acres or more at the design flood elevation, must meet the inspection report format as outlined in Section 31518 of Part 315.

A person failing to comply, or falsely representing dam conditions, is guilty of misconduct in office.

DAM NAME Thompson Lake	DAM ID 753	COUNTY Livingston
DATE OF INSPECTION 8/12/2021	NAME OF WATERBODY Thompson Lake	SECTION, TOWN, RANGE Sec. 25 T 3N R 4E
DATE ELEVATION SET BY COURT 1985	LEGAL LEVEL 904.50	DRAWDOWN LEVEL 901.50
		HIGH WATER MARK ELEVATION Unknown

**EARTH EMBANKMENTS** LEFT EMBANKMENT 270 FT. RIGHT EMBANKMENT 40 FT. TOTAL LENGTH 310 FT.  
(LOOKING DOWNSTREAM)

	UPSTREAM	CROWN	DOWNSTREAM
VEGETATIVE COVER	Grass/Lake shoreline	Grass	Brush/Natural Vegetation, 6+/- 6" to 24" Trees at toe of slope
EROSION	None	None	None
SEEPAGE			None, DS toe drain located and functioning as designed
SLIDES, SLUMPS & CRACKS	Minor US embankment settlement noted behind south wing wall	None visible	Minor rip rap slide observed on left side of DS wing wall
ANIMAL BURROWS	None visible	None visible	None visible
WAVE ACTION PROTECTION	Natural shoreline embankment and rip rap at structure sides.		Rip rapped channel in good condition.
REMARKS*			

**CONTROL STRUCTURE**

TYPE Concrete weir and stop log adjustment with concrete box culvert inlet. Open drain channel to CMP controlled outlet DS.	YEAR CONSTRUCTED 1998 reconstructed	STRUCTURAL HEIGHT (top of dam elevation minus stream invert)  19.5 ft.
LENGTH OF SPILLWAY  26'-10"	FREEBOARD 1.0 ft.	HYDRAULIC HEIGHT (design flood elevation minus stream invert)  18.5 ft.
VERTICAL PIPE SIZE  None	HORIZONTAL PIPE SIZE  None	HEAD (normal headwater minus normal tailwater)  Unknown

**DESCRIBE CONDITION OF THE FOLLOWING ITEMS.**

STOPLOG VALVES AND GATES (open and close to check condition): Check location of top stoplog in relation to top of riser pipe intake box or fixed crest, for leakage, and condition of stoplogs, valves and gates.  
Wood stop logs controlling level in good condition. North sluice gate allowing controlled flow through the gate. Appears in good condition at time of inspection.

OUTLET PIPE: Check for damage from ice, logs, vandalism; inside discharge pipe for settlement and/or joint separation; condition of pipe coating.

CMP outlet in good condition. Some surface corrosions at flow line of outlet pipe. Upstream rip rap and outlet pipe control bracing intact and maintaining restriction elevation.

#### CONTROL STRUCTURE (continued)

CONCRETE STRUCTURE: Check for erosion; location of cracking or spalling. If old or new; settlement; need for crack repairs.

US Concrete drop structure failing at right side railing/anchor locations. The upper 15 to 18 inches of the concrete drop structure at that area may need the brackets reinforced or need to be removed and repaired. Surface cracking and spalling noted at NE wing wall. Small amount of reinforcement exposed @ SW corner of spillway near Handrail

WALKWAY & RAILING: Check if in place or removed, condition, and if adequate protection provided.

In place with warning sign. Railing connections are failing.

TRASHRACK OR LOG BOOM: Check if operable.

Top grate functions as a trash rack.

EMERGENCY SPILLWAY: Size, type, and condition.

None

#### INLET & OUTLET CHANNELS

	INLET	OUTLET
SIZE	No channel. Inlet is bounded by shoreline and earthen embankment with rip rap at water elevation.	15 to 20 ft.
EXISTING CONDITION	Good	Good
EROSION	None visible	Some adjacent to the DS wing wall at the riprap transition.
DEBRIS & OBSTRUCTIONS	Clear. No weeds or vegetation, some drift debris present.	Downstream of box culvert channel clear through past 72" dia. Outlet CMP
RIPRAP PROTECTION	Good	Good throughout, some minor erosion exists adjacent to DS area.
REMARKS*		

#### RECOMMENDATIONS

List work needed, how to be done, by whom, estimated cost, source of funds, recommended completion date. If emergency, to what extent. ADDITIONAL COMMENTS.

The upper 15 to 18 inches of the concrete drop structure is in poor condition and should be repaired. The deterioration of the concrete drop structure appears to be a result of the connection between the steel grating, the handrail, and the drop structure itself. It appears that this is being caused by the anchor connection being too close together and are too close to the concrete edges. We recommend the design of these connection/anchor points be revised as recommended previously. The concrete cap on the south end of the wing wall should be repaired. Repair minor area of erosion on the downstream embankment slope around the riprap culvert outlet along downstream embankment slope.

Inspection Ordered By: Brian Jonckheere, Drain Commissioner

Livingston

County Delegated Agent

Robert R. Breen, PE

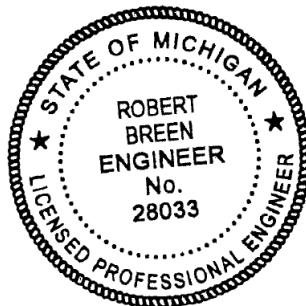
INSPECTOR'S NAME (PRINTED)



SIGNATURE

28033

P.E. REGISTRATION NO.



ADDRESS 25251 Northline Road

CITY, STATE, ZIP CODE Taylor, MI 48180

TELEPHONE NUMBER 734-947-2675

Please submit this completed report and photographs of the dam, downstream channel, and deficiencies cited in the report to:

DAM SAFETY PROGRAM  
WATER RESOURCES DIVISION  
MICHIGAN DEPARTMENT OF ENVIRONMENTAL QUALITY  
PO BOX 30458  
LANSING MI 48909-7958

\*NOTE: If space is inadequate for remarks, attach additional sheets as needed.

EQP 4526 (Rev. 9/2004)

**APPENDIX A.2**  
**DAM STRUCTURE DRAWINGS**

**On file with the Livingston County**  
**Drain Commission**

**APPENDIX A.3**  
**EGLE 200 -YEAR PEAK**  
**DISCHARGE DATA**

From: EGLE-wrd-qreq <EGLE-wrd-qreq@michigan.gov>  
Sent: Thursday, September 30, 2021 9:43 PM  
To: Williams, Tia  
Subject: RE: flood or low flow discharge request (ContentID - 168812)  
This message originated from outside of Wade Trim

We have processed the discharge request submitted by email on September 7, 2021 (Process No. 20210465), as follows:

Tributary to Bogue Creek at Thompson Lake Dam, Dam ID 753, Section 25, T3N, R4E, City of Howell, Livingston County, has a total drainage area of 10.3 square miles and a contributing drainage area of 10.1 square miles. The design discharge for this dam is the 0.5% chance (200-year) flood. The 2%, 1%, and 0.5% chance peak outflows are estimated to be 60 cubic feet per second (cfs), 80 cfs, and 100 cfs, respectively. (Watershed Basin No. 32C Shiawassee).

Please include a copy of this letter with your inspection report or any subsequent application for permit. These estimates should be confirmed by our office if an application is not submitted within one year. If you have any questions concerning the discharge estimates, please contact Ms. Susan Greiner, Hydrologic Studies and Floodplain Management Unit, at 517-927-3838, or by email at: GreinerS@michigan.gov. If you have any questions concerning the hydraulics or the requirements for the dam safety inspection report, please contact Ms. Amira Oun of our Dam Safety Unit at 517230-5866, or by email at: OunA@michigan.gov.

-----Original Message-----

From: DoNotReply@michigan.gov <DoNotReply@michigan.gov>  
Sent: Tuesday, September 7, 2021 11:51 AM  
To: EGLE-wrd-qreq <EGLE-wrd-qreq@michigan.gov>  
Subject: flood or low flow discharge request (ContentID - 168812)

Requestor: Tia Williams  
Company: Wade Trim  
Address: 555 Saginaw St. #201  
City: Flint/Michigan  
Zip: 48502  
Phone: 810-620-0048  
Date: 2021-09-07  
F2percent: Yes  
F1percent: Yes  
F0.5percent: Yes  
ContactAgency: None Selected  
ContactPerson:  
Watercourse: Thompson Lake Dam ID #753  
LocalName: Tributary to Bogue Creek at Thompson Lake Dam ID #753  
CountyLocation: Livingston  
CityorTownship: City of Howell  
Section: 25  
Town: 03 N  
Range: 04 E

Location: Thompson Lake Dam ID # 753, 165' S. of Lakeside Drive, SE of M-59 & Michigan Avenue. FFR1: Dam  
fpReqEmailAddr: twilliams@wadetrim.com



**APPENDIX A.4**  
**INSPECTION PHOTOGRAPHS**

## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



LOOKING DOWNSTREAM AT DAM & DROP STRUCTURE



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



LOOKING SOUTH DROP CONTROL STRUCTURE AND WEST EMBANKMENT



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



WEST EMBANKMENT AND RIP RAP ON IMPOUNDMENT SIDE



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



LOOKING NORTH AT DROP CONTROL STRUCTURE



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



LOOKING NORTH AT EMBANKMENT ADJACENT AND OVER SPILLWAY



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



LOOKNG EAST AT DROP STRUCUTRE



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



DROP STRUCTURE AND WINGWALL HANDRAIL



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



LOOKING SOUTH AT DROP STRUCTURE – STEEL BAR GRATING FLOOR



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



EMBANKMENT AROUND OUTLET CULVERT



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



LOOKING UPSTREAM AT OUTLET CULVERT

## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



OUTLET CULVERT LOOKING UPSTREAM



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



SIDEWALL OF OUTLET CULVERT



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



CLOSE UP OF HANDRAIL ANCHORAGE TO CRACKED /LOOSE CONCRETE – POSTS ARE NOT SECURE



CLOSE UP OF HANDRAIL ANCHORAGE TO CRACKED CONCRETE WALL -POSTS ARE NOT SECURE



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



RIP RAP ADJACENT TO DROP STRUCTURE



UPSTREAM SHORELINE OF EMBANKMENT



## 2021 LIVINGSTON COUNTY DRAIN COMMISSION DAM INSPECTIONS



RIP RAP DOWNSTREAM OF SPILLWAY



MINOR CONCRETE SCALING OF TOP OF WINGWALL ADJACENT TO DROP STRUCTURE



**APPENDIX A.5**  
**EMERGENCY ACTION PLAN**

***LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE***

***THOMPSON LAKE DAM***  
**EMERGENCY ACTION PLAN**



**February 2021**

# **THOMPSON LAKE DAM EMERGENCY ACTION PLAN**

## **INTRODUCTION**

The action plan is to be instituted to warn people in the downstream flood plain of the Thompson Lake Dam and Bogue Creek area in the event of an emergency situation that could result in sudden flooding.

### **Dam Description**

The Livingston County Drain Commissioner (LCDC) is the present owner of the Dam and spillway, which is located approximately 100 yards downstream of the dam structure. The Dam and spillway are located in the City of Howell, Section 25, Livingston County, Michigan. The original Thompson lake Dam was constructed in 1894.

The dam is situated on the north end of Thompson Lake. The structure consists of concrete wing walls on both the upstream and downstream sides of the structure. The control structure consists of a concrete box weir with two sluice gates (one is a log gate and the other is a gate valve) used for winter drawdown. By Court Order the legal lake level is established at elevation 904.5 feet, and the level of the lake is dropped 3 feet every other year, on even years, during the winter months as a means of suppressing weed growth.

### **Responsibilities**

The Livingston County Drain Commissioner (LCDC) provides for operation, maintenance and inspection of the dam.

The Livingston County Emergency Management Department (LCEMD) provides for emergency preparedness, response, and services.

The Livingston County Central Dispatch (LCCD) will notify all listed agencies and issue emergency alerts.

The City of Howell Police Department, the Livingston County Sheriff Department and the Howell Fire Department provide for public safety and immediate warning of the public.

The Livingston County Road Commission (LCRC) will barricade any road that enters or connects to the hazard area.

## ***NOTIFICATION***

### **Serious Condition**

The LCDC should be contacted immediately if conditions observed at the dam could lead to failure. These conditions could include the following:

- Overflow of the dam embankments
- Erosion of the embankments
- Seepage or flow through the embankment

The phone number of the LCDC is 517-546-0040. After 5 p.m. or on weekends, call one of the following at home in the order listed:

1. Rod Soos, Dam Operator: 517-861-0128
2. Ken Recker, Livingston County Drain Commissioner Chief Deputy: 517-404-6420
3. Brian Jonckheere, Livingston County Drain Commissioner: 517-404-6421
4. Howell Police Dept.: 517-546-1330.

### **Emergency Conditions**

When the LCDC has determined that there is an emergency condition, such as immediate flooding of the downstream area or an impending failure of the dam, the emergency Action Plan will be implemented. The LCCD will be contacted on their Administrative phone line 517-546-9111 or 911. LCCD will notify the following agencies:

- A. Livingston County Drain Commissioner
  - 517-546-0040
  - After Hours – Please call the personnel listed in previous section.
- B. Livingston County Emergency Management Department
  - Office 517-540-7926
  - Therese Cremona – Mobile 517-599-6916
- C. Michigan State Police – Brighton Post
  - 810-227-1051 or 911
- D. Livingston County Sheriff Department
  - 517-546-2440 or 911
- E. Howell Police Department
  - 517-546-1330 or 911
- F. Howell Fire Department
  - 517-546-0560 or 911
- G. Michigan Department of Environment, Great Lakes, and Energy (EGLE) - Dam Safety Unit
  - 800-292-4706
- H. Livingston County Road Commission
  - 517-546-4250

- I. City of Howell, Public Works Department
  - 517-546-7510
- J. Michigan Department of Transportation
  - Brighton Service Center /Maintenance Garage 810-227-4681
- K. Joe Lieberman (Owner of Oak Grove Mill Pond)
  - 517-546-1114 (evenings)
  - 517-546-9674 (days)

#### **Emergency Warning and Action Plan**

LCCD will issue an Emergency Alert utilizing the Livingston County Public Alert System, RAVE utilizing the EAS (Emergency Alert System). They will also contact WHMI with emergency information regarding conditions and evacuation details.

The Livingston County Road Commission will barricade any roads that enter or connect to the hazard area.

The Department of Transportation will be informed of the dam failure and the possible effect to the bridge at M-59 and Bogue Creek.

The Police and Fire Departments will assist in warning all persons in the hazard area and assist in evacuation of the downstream flood plain area of the dam. The potential affected area is shown on the map included with this action plan. The floodplain is generally located along the Bogue Creek influence.

The following is a list of residents/property owners in the potential affected area:  
5835 Fisher Rd, American Mfg, Chuck Gotberg, Property Owner 248-842-0006

#### ***EMERGENCY ACTION AND REPAIRS***

The LCDC will take immediate steps to control, repair and/or remediate, if possible, conditions found at the dam.

#### ***EMERGENCY TERMINATION***

The termination of the emergency will be made by the LCDC if the emergency condition has stabilized or the dam operation has returned to normal. The determination shall be coordinated with the LCEMD.



