LAKE LANSING DAM INSPECTION REPORT

Dam Identification No. 1957 Meridian Township, Ingham County, Michigan



12/29/2022

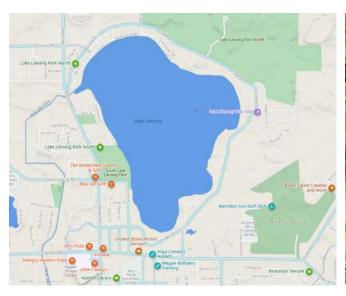






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Lake Level as Set per Court Order



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY 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: Lake Lansing Dam County: Ingham Dam ID: ______ Name of Waterbody: _____ Lake Lansing Date of Inspection: 12/14/2022 Level this date: 851.10
 Section:
 3
 Town:
 4N
 Range:
 1W
 Date elevation set by Court: February 26, 2003 Legal level: 851.77 Nov 15 - Feb Legal level: 852.29 Mar - Nov 14 Drawdown level: ______ High water make elevation: _____ Unknown EARTH EMBANKMENTS (LOOKING DOWNSTREAM) Left Embankment: 53 ft. Right Embankment: 30 ft. Total Length: 83 ft. **UPSTREAM** CROWN DOWNSTREAM VEGETATIVE Heavy vegetation in channel None Grasses COVER None EROSION None None SEEPAGE None SLIDES. SLUMPS, & None None None CRACKS ANIMAL None None None **BURROWS** WAVE ACTION Stone Riprap, Concrete & Wood N/A Seawall, Steel Sheet Piling PROTECTION REMARKS* See Attached Report

CONTROL STRUCTURE

TYPE Horizontal CMP intake with valve control	YEARS CONSTRUCTED 1975	STRUCTURAL HEIGHT (top of dam elevation minus stream invert) 6.6 ft.
LENGTH OF SPILLWAY 38 ft. with stilling basin	FREEBOARD 1.4 ft.	HYDRAULIC HEIGHT (design flood elevation minus stream invert) 5.3 ft.
VERTICAL PIPE SIZE N/A	HORIZONTAL PIPE SIZE 24" Diameter	HEAD (normal headwater minus normal tailwater) 4.5 ft.

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.

No stop logs were in place at the time of inspection. Water was low with no flowing water over the weir at the time of inspection. Stop log channel could use some upgrades but Maintenance personal report that the logs maintain the summer lake level satisfactorily.

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

CMP pipe is in poor condition. Evidence of holes in the pipe. Pipe end seems to be surrounded with sediments which some of it made it downstream when the valve was opened, end treatment is recommended. The gate and valve for the outlet pipe are damaged and not operable. Staff has propped the gate closed to prevent water from flowing out. **NEEDS IMMEDIATE ATTENTION**.

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

Minor cracking and spalling in structure. Overall sound condition. No need for immediate action

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

There are no walkways or railings. Deck and dock over drawdown pipe and valve are in poor condition. The dock is falling apart and unsafe to walk on. The valve is inoperable, and the deck need some attention before the next inspection. Recommend replacement of control structure, pipe, valve and related support structures ASAP.

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TRASHRACK OR LOG BOOM: Check if operable.

N/A

EMERGENCY SPILLWAY: Size, type, and condition.

N/A

INLET & OUTLET CHANNELS

	INLET	OUTLET
SIZE	N/A	5' average bottom width, less than 5' bank height
EXISTING CONDITION	N/A	Fair
EROSION	N/A	Minimal erosion
DEBRIS & OBSTRUCTIONS	N/A	Medium vegetation growth, Leaves and brush may cause backup in the still basin.
RIPRAP PROTECTION	N/A	Continued maintenance is recommended
REMARKS*	N/A	Fallen trees and branches in ditch, east and west of Marsh Road, need clearing. The east and west ends of the culvert under Marsh road are clear.

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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.

See attached report.

	1	
Inspection Ordered By: Mr. Paul C. P.	ratt Paul C	County Delegated Agent Delegated Agent
Inspector's Name Samir Matta	Signature	Sami F. Nette
P.E. Registration No. MI 41005	Phone:	517.819.2367
Address: 3681 Okemos Road, Sui	te 600	
City, State, Zip Code: Okemos, MI,	48864	
Please submit this completed report a deficiencies cited in the report to:	nd photographs of the dam	, downstream channel, and
	MANAGEMENT DIVISION TMENT OF ENVIRONMEN	I T, GREAT LAKES, AND ENERGY
*NOTE: If space is inadequate for rem	arks, attach additional shee	ets as needed.
If you need this information in an altern 800-662-9278.	nate format, contact EGLE-	Accessibility@Michigan.gov or call
EGLE does not discriminate on the bastatus, disability, political beliefs, heigh administration of any of its programs or required by applicable laws and regula Nondiscrimination Compliance Coordin 517-249-0906.	it, weight, genetic information of activities, and prohibits in tions. Questions or concert	on, or sexual orientation in the timidation and retaliation, as
This form and its contents are subject public.	to the Freedom of Informati	on Act and may be released to the
Michigan.gov/EGLE	Page 4 of 4	EQP4526 (Rev. 8/2022)

LAKE HISTORY

Lake Lansing, originally known as Pine Lake, served as a hunting and fishing ground for Indian tribes for centuries. Burial mounds have been found around the lake that pre-date the Chippewa Indians and Chief Okemos. The lake provided abundant fishing, and the surrounding woods were a source of wild game.

The lake was described by early writers as being clear, and well stocked with various kinds of fish. The shores were timbered on the north and east by yellow pine, the only sizeable tract in Ingham County. Hickory and oaks wooded the north and west shores.

During the next several decades, the land around, but not immediately on, the lake was settled and farmed. The lake became a popular recreation site in the late 19th century.

The Lake Lansing Dam (Dam ID# 1957) helps control the lake elevation according to the court order of February 26, 2003. The dam was inspected by Lockwood, Andrews, and Newnam, Inc. (LAN), at the request of the Ingham County Drain Commissioner's Office, as part of a regular scheduled inspection program.

The report Inspection form and some of the photographs highlighting the current condition of the Dam are attached for your review and use. LAN is also working closely with the Drain office to develop design improvements to address some of the issues noted in the inspection report.

The highlighted pictures, taken on December 14, 2022, in Appendix A depict the following:

- Figure 1: Shows the concrete stilling basin looking towards the lake.
- Figure 2: Shows the slide gate within the intake structure that controls the level of the lake outside the weirs/spillway control. Some leakage can be seen from the valve.
- Figure 3: Show the condition of the wooden dock.
- Figure 4: Indicates the water level of the lake at the time of inspection.
- Figure 5: Shows the Sea Wall and Approach to Spillway from the Dock location.
- Figure 6: Shows the riprap shoreline right of the spillway.
- Figure 7: Shows the spillway.
- Figure 8: Shows the sheet piling under the wooden deck.
- Figure 9: Shows the intake pipe underneath the dock.
- Figure 10: Shows the Spillway looking towards the Lake.
- Figure 11: Shows the Bypass Pipe into Still Basin.
- Figure 12: Shows the open channel looking downstream toward the Marsh Rd. outlet structure.
- Figure 13: Shows the Marsh Rd. outlet structure on the east side of Marsh Rd.

- Figure 14: Shows the Marsh Rd. outlet structure on the west side of Marsh Rd.
- Figure 15: Shows the Stop Log Channel.
- Figure 16: Shows the Spillway edge where vines are growing through cracks.
- Figure 17: Indicates the Dock Condition over the inlet structure.
- Figure 18: Shows the Seawall right of Spillway.

DAM CONDITION ASSESSMENT

LAN performed one site visit to inspect the dam. The visit was performed on December 14, 2022. Based on the inspection, the condition of the dam seems to be in a stable working state. However, some repairs are needed and one in particular requires immediate attention (Slide Gate and Valve). There is visible deterioration to both the concrete and steel structures that needs to be addressed as well as the wooden dock that is unsafe to use. There is no immediate failure potential to the dam, but repairs and improvements should be considered and incorporated in the near future.

Sheet Piling:

The sheet piling has shown some signs of corrosion and needs to be mitigated. Replacement may be an option, but other means could be considered such as restoration and painting of the steel while installing an outside concrete barrier for further protection.

Concrete Structures:

The concrete spillway and manhole seem to be in fairly good shape with minor cracking that need to be addressed. However, the concrete structure supporting the intake pipe is in deteriorated state and needs to be replaced when the fix is approved for the inlet pipe replacement/repair.

Intake Pipe:

The intake pipe which is located immediately underneath the wooden dock has rusted out and is pitted in many locations along its length. The condition could be observed, during previous inspections, when the valve is operational as bubbles are seen where holes are present. Furthermore, the intake pipe lacks any screens as to prevent fish or debris from washing into the drain.

Wooden Dock:

The wooden dock is in very poor condition. The dock is unstable and unsafe to walk on. It needs to be repaired or replaced.

Riprap Walls:

No significant erosion was observed at the time of inspection. It is recommended regular upkeep be done to prevent possible erosion.

Still Basin:

The still basin at the bottom of the spillway is usually full throughout the year and it is a cause for a foul smell from stagnant water and decomposed fish during the summer months.

Slide Gate (Valve):

The slide gate is not operational and is currently propped up by a chain and wedged with a 4x4 to maintain it in a closed position.

Spillway:

The spillway and water level control structure are in satisfactory condition with some minor cracks and spalling. Vines seems to be growing through some of the cracks along the spillway edge. The spillway, however, does not allow for fish to pass from Lake Lansing into the Pine Lake Outlet Drain. Modifications could be made to the spillway to allow for fish passage.

Open Channel Drain:

The outlet drain is in good condition. Regular clearing and grubbing of vegetation are recommended within the open channel to remove obstructions.

Marsh Road Outlet Culvert:

The outlet culvert is in good condition. Regular clearing and grubbing of vegetation around the outlet culvert are recommended especially along the downstream end of the culvert west of Marsh Road.

Water Level Monitoring:

The water level measuring device located along the concrete slab at the end of the dock has shifted and needs to be releveled to its original location. This will allow for a more accurate reading of the lake level as the water level is currently monitored on a monthly basis by maintenance staff. The installation of a remote sensor that reports water level information accessible via internet could also be installed to reduce the number of visits needed for water level monitoring.

RECOMMENDATIONS

LAN recommends that the Drain Commissioner's Office perform the following:

- 1. Perform rehabilitation of the corroded upper portion of the sheet piling along the span of the dam. (sandblasting, painting and encasement with concrete)
- 2. Replace or perform lining to the existing intake piping while replacing the valve control structure for lowering the lake level; Establish new uplift control for new/rehabilitated pipe with appropriate screening to prevent fish and other debris from washing downstream when the valve is open.
- 3. Repair damaged concrete structures.
- 4. Relevel water level measuring device on the concrete structure for a more accurate lake level reading.
- 5. Replace the wooden dock and maybe eliminate the deck over the valve control structure when performing the upgrade.
- 6. Evaluate the need to replace the still basin with other means of energy dissipaters.
- 7. Perform regular clearing and grubbing within the open drain and around culvert.
- 8. Perform regular upkeep on areas that experience erosion.

APPENDIX A:

FIGURES



Figure 1 – Still Basin



Figure 2 – Slide Gate (Valve)



Figure 3 – Wooden Dock

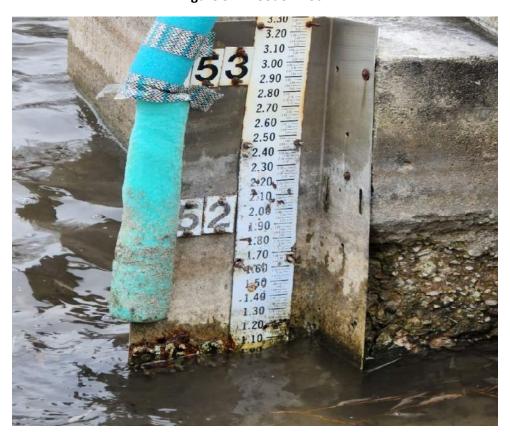


Figure 4 – Water Level



Figure 5 – Sea Wall and Approach to Spillway from the Dock location



Figure 6 – Riprap Shoreline Right of Spillway from the Dock location



Figure 7 – Spillway

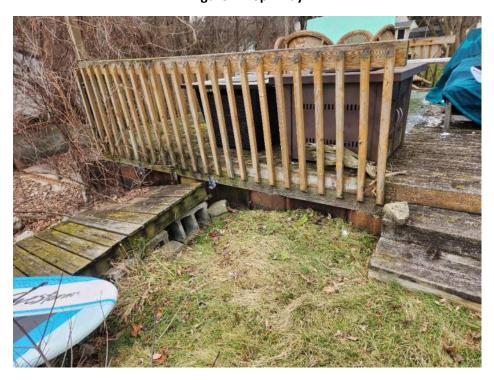


Figure 8 – Sheet Piling Right of Spillway



Figure 9 – Intake Pipe under the Dock



Figure 10 – Spillway looking towards the Lake



Figure 11 – Bypass Pipe into Still Basin



Figure 12 – Open Channel Looking downstream



Figure 13 - Marsh Rd. Outlet Structure: East End



Figure 14 – Marsh Rd. Outlet Structure: West End



Figure 15 – Stop Log Channel



Figure 16 – Spillway edge where vines are growing through cracks



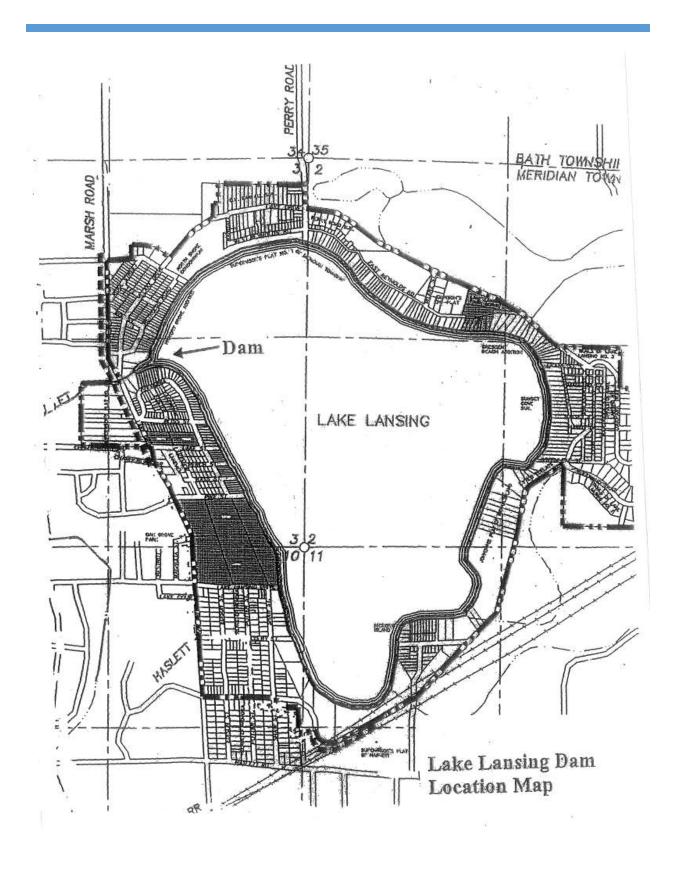
Figure 17 – Dock Condition over the inlet structure

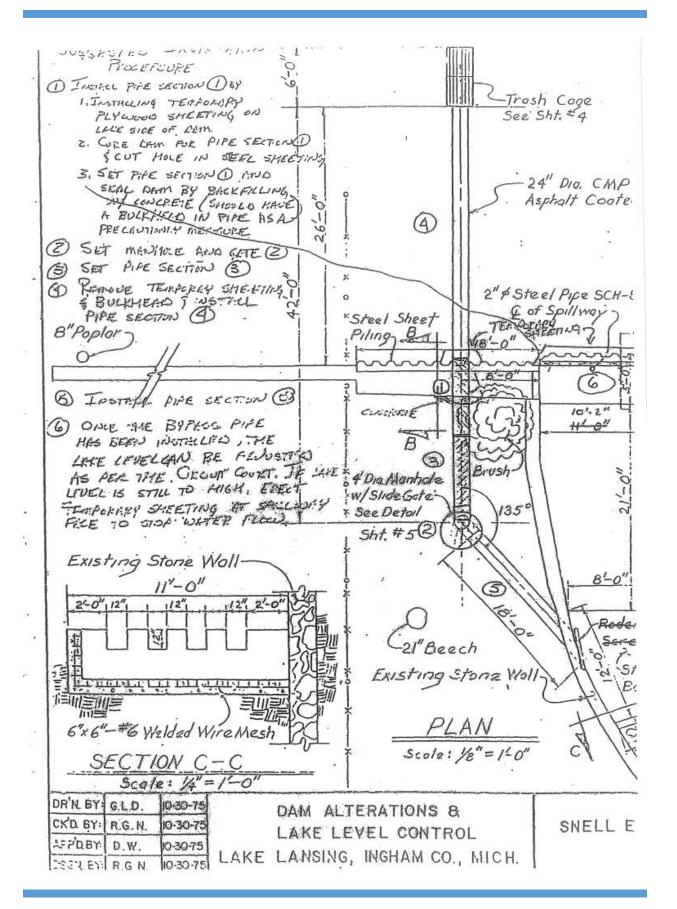


Figure 18 – Seawall right of Spillway

APPENDIX B:

DAM DETAILS





APPENDIX C:

LAKE LEVEL COURT ORDER



RECEIVED

COHL, STOKER, TOSKEY & McGLINCHEY, P.C. FEB 2 8 2003

ATTORNEYS AND COUNSELORS 601 NORTH CAPITOL

LANSING, MICHIGAN 48933

INGHAM CTY, DRAIN COMMISSIONER

DAVID G. STOKER ROBERT D. TOWNSEND BONNIE G. TOSKEY JOHN R. McGLINCHEY RUTH E. MASON RICHARD D McNULTY NAOMI A. GAYNOR

TIMOTHY M. PERRONE

PETER A. COHL

February 26, 2003

(517) 372-9000 FAX (517) 372-1026

Patrick Lindemann, Drain Commissioner Ingham County 707 Buhl Avenue P.O. Box 220 Mason, MI 48854

In the Matter of the Petition of Ingham County Board of Commissioners, a Municipal Corporation, and Patrick E. Lindemann, Ingham County Drain Commissioner, for modifications of the normal lake level for Lake Lansing, County of Ingham, State of Michigan Ingham County Circuit Court File No. 03-4-CE

Dear Commissioner Lindemann:

Enclosed please find a copy of an Order signed by the Honorable William Collette regarding the above referenced matter. The Court agreed to the modifications as requested in the Petition. As such, the boards will not need to be removed in June, in accordance with the new Order and the removal of the boards in December is moved to mid-November. We appreciate the effort and concern put forth by your office in this matter.

If you have any questions regarding the enclosed, please do not hesitate to contact this office.

Very Truly Yours,

COHL, STOKER, TOSKEY & McGLINCHEY, P.C.

NG/im Enclosure

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COHL, STOKER & TOSKEY, P.C. ATTORNEYS AND COUNSELORS GOI NORTH CAPITOL LANSING, MICHIGAN 48933

STATE OF MICHIGAN

IN THE CIRCUIT COURT FOR THE COUNTY OF INGHAM

IN THE MATTER OF THE PETITION OF INGHAM COUNTY BOARD OF COMMISSIONERS, A MUNICIPAL CORPORATION AND PATRICK E. LINDEMANN, INGHAM COUNTY DRAIN COMMISSIONER, for modifications of the normal lake level for Lake Lansing, County of Ingham, State of Michigan.

Case No. 03-4-CE

Hon. William Collette

Petitioners.

COHL, STOKER, TOSKEY & McGLINCHEY, P.C. Peter A. Cohl (P12029) Naomi Gaynor (P48594) Attorneys for Petitioners 601 N. Capitol Avenue Lansing, Michigan 48933 (517) 372-9000

ORDER MODIFYING THE LAKE LEVELS FOR LAKE LANSING

At a session of said Court, held in the Circuit Courtrooms in Mason Michigan, County of Ingham, State of Michigan, this 264 day of February, 2003.

WHEREAS, Pursuant to a petition by Ingham County under the authority of the Inland Lake Levels Act, pursuant to MCL 281.61 et seq; MSA 11.30 (1) et seq., and now governed by MCL 324.30701 et seq.; MSA 13a.30701 et seq., a petition was filed in 1975 to establish a lake level for Lake Lansing.

WHEREAS, On July 24, 1975, the Ingham County Circuit Court entered an Order establishing the lake level (Exhibit A) which established the lake level for Lake Lansing as follows:

Level Period	Level
a) June - November	852.08 ft.
b) December - February	851.72 ft.
c) March - May	852.29 ft

WHEREAS, MCL 324.30707(5); MSA 13a.30707, grants this Court continuing jurisdiction to modify the normal level as necessary to accomplish the purposes of the Inland Lake Levels Act.

WHEREAS, Ingham County and the Ingham County Drain Commissioner filed a Petition for Modification of the Lake Level for Lake Lansing on January 1, 2003 (the "Petition").

WHEREAS, By Order dated January 6. 2003 this Court set the date for the hearing of the Petition, and ordered that Petitioners to provide notice of the hearing both by publication and by first-class mail to each person whose name appears within the current special assessment roll as owning land at the address shown on the roll; to the governing body of each political subdivision of the state in which Lake Lansing is located; to the governing body of each affected political subdivision of the state; and by serving notice on the Michigan Department of Environmental Quality.

WHEREAS, Petitioner has satisfied the notice requirements of the January 6, 2003 Order, and this Court having held a hearing on this matter on February 26, 2003.

NOW THEREFORE, The Court having considered the Petition for Modification of the Lake Levels for Lake Lansing, the exhibits and the testimony heard it open court, and being otherwise fully advised in the premises and for good cause shown:

IT IS HEREBY ORDERED that Petitioner's Petition for Modification of the Lake Levels for Lake Lansing is GRANTED, and the normal lake level to be established for the waters of Lake Lansing, County of Ingham, State of Michigan be and is hereby established at:

Level Period	Level
a) November 15 - February	851.72 feet above sea level.
b) March - November 14	852.29 feet above sea level

These levels shall be maintained as nearly as possible to do at said levels.

IT IS FURTHER ORDERED that this Court shall have continuing jurisdiction and may provide for the departure from the normal lake level and the above stated deviations therefrom as may be necessary to accomplish the purposes of the Act.

IT IS FURTHER ORDERED that there shall be no pumping of waters into Lake Lansing, County of Ingham, State of Michigan, if same extracts water from below the ground level to meet or fulfill the normal lake level and the deviations therefrom excep upon Order of this Court.

Dated:	WILLIAM E. COLLETTE
	Hon. William Collette
	Circuit Court Judge

Prepared by:
Naomi Gaynor (P48594)
COHL, STOKER TOSKEY & MCGLINCHEY, P.C.
Attorneys for Petitioners
601 N. Capitol Avenue
Lansing, Michigan 48933
517/372-9000

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A TRUE COPY
CLERK OF THE COURT
30th JUDICIAL CIRCUIT COURT

STATE OF MICHIGAN .

IN THE CIRCUIT COURT FOR THE COUNTY OF INGHAM

IN Re:

PETITION FOR THE ESTABLISHMENT OF A NORMAL LAKE LEVEL FOR LAKE LANSING, COUNTY OF INGHAM, STATE OF MICHIGAN.

Case No. 75-17402 (

ORDER

At a session of said Court held in the Circuit Courtrooms in the City Hall in the City of Lansing, County of Ingham, State of Michigan, on the 2400 day of July, 1975.

PRESENT: The Honomable Jack W. Warren, Circuit Judge

This cause came on to be heard by this Court for a determination of a normal lake level for Lake Lansing, County of Ingham, State of Michigan, on Petition by the Ingham County Board of Commissioners, County of Ingham, State of Michigan, pursuant to 1961 P.A. 146, as amended.

It appearing to this Court from the pleadings, exhibits and testimony heard in open court that Petitioner's request in the above-entitled cause should be granted.

IT IS HEREDY ORDERED AND ADJUDGED that the normal lake level to be established for the waters of Lake Lansing, County of Ingham, State of Michigan be and is hereby determined and established at 852.08 feet above sea level and shall be maintained as nearly as it is possible to do so at said level for the months June through November; provided, however,

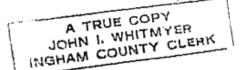
that a deviation from said normal lake level be permitted and shall be at as near as possible to be 851.72 feet above sea level for the months of December through February: provided further, that a further deviation from the normal level be permitted and shall as near as possible be at 852.29 feet above sea level for the months March through May.

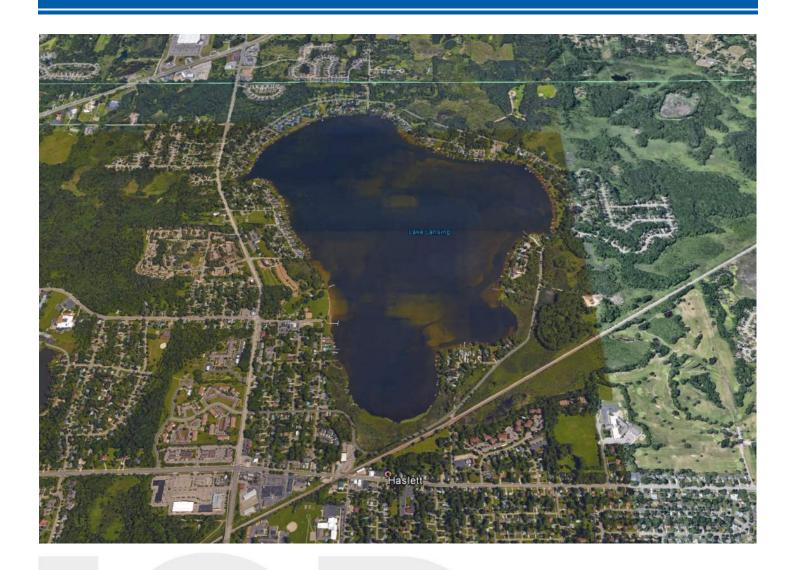
IT IS FURTHER ORDERED AND ADJUDGED that this Court shall have continuing jurisdiction and may provide for the departure from the normal lake level and the above stated deviations therefrom as may be necessary to accomplish the purposes of the Act.

IT IS FURTHER ORDERED AND ADJUDGED that there shall be no pumping of waters into Lake Lansing, County of Ingham, State of Michigan, if the same extracts water from below the ground level to meet or fulfill the normal level and the deviations therefrom except upon Order of this Court.

IT IS FURTHER ORDERED AND ADJUDGED that this Court confirms the special assessment district boundaries as specified in this Court on the 16th day of July, 1975.

JACK W. WARREN





Headquarters

2925 Briarpark Drive Suite 400 Houston, TX 77042 713.266.6900

Info@lan-inc.com

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