

Flat Rock Dam

Selected Chronology and Highlights

- Early 1800s Wyandotte Chief Splitlog ran a grist mill at the location of the existing Flat Rock Dam. An impoundment has existed at this general location for at least 170 years.
- 1921 Land at and adjacent to the dam acquired by Henry and Clara Ford.
- 1926 Ford Motor Co. obtained a lease on 1,936 acres of land from the Detroit, Toledo and Ironton Railroad Company. Lease was for 5 years and renewable thereafter, at \$35 per year.
- c.1929 Ford Motor Company constructs dam, power house and lamp plant. Dam constructed on land leased from DTI. Dam built for Ford by Stone & Webster. Dam is gravity type, approximately 492 feet long (not including abutments and breastworks, which bring the length to about 540 feet), with a continuous ogee-shaped crest. Top crest elevation 590.5; structural height 13.5 feet. Impoundment is approximately 250 acres. A railway/ roadway bridge above the dam constructed concurrently; bridge is structurally separate, but its piers extend through the dam spillway and are involved with the dam's foundation, which is keyed into bedrock. The bridge is located about 8 feet downstream of the dam, and includes 2 railway tracks and 2 vehicular lanes. The dam was originally intended to provide hydropower for adjacent Ford headlamp plant; the hydropower plant has not been used for many years. A boat lock is located at the dam's southwest end. The lock was constructed by Ford to allow barge traffic to the headlamp plant. (Due to cost of channel construction downstream of the dam, an approach channel was never dug and the lock never used).
- 1946 Major repairs to the bridge and lock by Ford, minor repairs were made to the dam's surfaces using gunite.
- 1951 Dam and adjoining land (approx. 349 acres) sold to HCMA by Ford Motor Company on August 16, 1951 for \$25,000. HCMA acquired the dam and land for the purpose of maintaining the impoundment and adjoining natural areas for recreational use. Ford assigned to HCMA its lease with DTI for the land upon which the dam was built. Ford also assigned HCMA its interests in electric, utility and gas pipelines attached to the roadway/ railway bridge, and its interest in ingress/ egress over the bridge. Ford also conveyed to the then-Village of Flat Rock land at each end of the dam, and the area southwest of the river between the river and mill race. Flat Rock's 20.8 acre "Hu-Roc Park" is now located on this land.
- 1951 Ford sold the lamp plant, hydropower plant and associated works to Moynahan Bronze Co. (plant now owned and operated by Flat Rock Metal, Inc.).
- 1951 Legal opinion from Miller Canfield dated September 26, 1951 comprehensively reviewing the Authority's obligations resulting from the 1951 purchase. The Opinion reviews status of Ford's leases assigned to HCMA, including original lease of DTI's land underlying dam to Ford dated June 1, 1926 and extended 07/25/31, 05/12/36 and 05/22/41. The 05/22/41 lease renewal extended lease term to 06/01/42 "and thereafter from year to year until terminated by either party giving the other one year's prior notice in writing of its intention to do so". Opinion concludes that HCMA is responsible to keep the dam in good repair so as not to adversely affect the rights of property owners above and below the dam.
- 1953 Contacts made by HCMA with DTI regarding renewal of the lease. However, apparently no new lease was ever prepared. The last payment of the \$35 rent was made by Ford in 1951. HCMA has never made a rent payment.
- 1956 The Village of Flat Rock and HCMA signed an agreement dated February 15, 1956 to allow Flat Rock to build a water intake in the lock portion of the dam. This agreement made Flat Rock responsible to perform "minor maintenance" of the dam.
- 1975 Boating accident occurred at the bridge and dam, two canoeists drowned.
- 1977 Wrongful death lawsuit filed against City of Flat Rock by plaintiff estate of Buell and Shoemaker, canoeists. Flat Rock implicated due to its (then) operation of water intake and plant at the dam, and its due care responsibilities under their 1956 lease. The Authority was brought into the lawsuit by later subrogation of Flat Rock's insurer, Transamerica.

- 1977 Flat Rock began prohibiting portaging around the dam, partly in response to the canoe accident.
- 1979 Dam inspected by Ayres, Lewis, Norris & May under the U.S. Army Corps of Engineers' National Dam Safety Program. Inspection found some cracking and spalling of the ogee spillway. ALNM recommended that deficiencies be repaired in the near future and to avoid future problems.
- c.1980 City of Flat Rock connects to Detroit City water and abandons their water intake in the lock structure.
- c.1980 Discussions regarding constructing a fish ladder begun between MDNR, Huron River Fishing Association and HCMA.
- 1981 Consent Judgment between Flat Rock's insurer and the Buell and Shoemaker estates, entered April 21, 1981; payments totaling \$450,000 made by Flat Rock.
- 1982 Court of Claims ruling dated October 27, 1982, denied an indemnity claim by Transamerica against the Authority
- 1983 Settlement agreement requiring City of Flat Rock to provide canoe access around dam.
- 1984 MDNR Fisheries Division (Ron Spitler, District Fisheries Biologist), by letter to HCMA dated October 18, 1984, request consideration by HCMA that the Flat Rock Dam be removed; by letter dated November 9, 1984, HCMA denied request.
- 1986 Legal opinion from Miller Canfield dated September 5, 1986, affirming HCMA's right to maintain the dam due to its status as lessee. Opinion notes that while the nominal rent to the railroad company (then Grand Trunk, currently Canadian National Railway) of \$35 annually has not been paid by the Authority for years and the lease has not been renewed, "the Authority would probably be considered to be continuing as a tenant at will, unless and until evicted by the Railroad". Restates Authority's obligation to "maintain the dam so as not to adversely affect the rights of nearby owners of river-front property".
- 1987 ALNM retained by HCMA to re-inspect the dam. Inspection found severe horizontal cracking of the crest of half the length of the dam, and severe separation of the gunite from the original concrete mass for about 115 feet of length. Five alternatives presented; recommendation that repairs be made to restore the structure to original shape. HCMA Board approves this recommendation at January, 1988 meeting.
- 1988 MDNR Fisheries Division again request that HCMA consider removing the dam. Letter includes an 11 page report entitled "Huron River Management Plan" dated 09/22/87 stating that either the Flat Rock Dam should be removed or a new fish passage should be constructed. HCMA Naturalists Robert Wittersheim and Gerald Wykes prepared report in response on the impoundment which discussed the diversity of wildlife and wetland vegetation that has developed of the years, separate from the fishery. Wittersheim and Wykes concluded that the dam and impoundment are a crucial part of Oakwoods Metropark and its unique natural areas. The Board, at their January 1988 meeting, elected to repair the dam crest to its original condition.
- 1989 MDNR Internal memorandum from District Fisheries Biologist to the Regional Fisheries Biologist discussing the improvement of the fishery for anadromous species that dam removal would provide. No discussion on the effects of dam removal on non-fish species and vegetation.
- 1990 HCMA completed a contract to repair the Dam (Saturn Construction) in the amount of \$363,825
- 1990 Michigan's Dam Safety Act, PA 300 of 1989 takes effect on June 1. Flat Rock Dam, ID No. 00556, classified as high hazard potential and required to be inspected every 3 years. HCMA being a local public agency, MDEQ was required to perform inspections upon request at no cost to the local agency.
- 1991 MDEQ waives the 1991 inspection since they had observed the 1990 repairs.

- 1994 Dam Safety Inspection and Report provided by MDEQ Dam Safety Inspection Unit.
- 1995 The Huron River Fishing Association completed the construction of the fish ladder, located in the lock, with volunteer labor, some donated materials, and some contracted work. HCMA supplied limestone at a cost of \$5,000. Total cost was approximately \$150,000, secured through private donations and grants (Fish ladder dedicated May 3, 1997).
- 1999 ALNM retained to perform an inspection of the dam due to some observed anomalies in flow patterns. The MDEQ was present at the inspection as part of the scheduled inspection. Varying degrees of delamination of gunite and spalling were observed in the section not rehabilitated in 1990. ALNM's recommendations included regular monitoring of delaminated areas of the spillway to note changes in deterioration; removal of debris from the spillway; and some abutment repairs. A letter was sent to CNR, successor to Grand Trunk and DTI, regarding the observed serious deterioration of the bridge piers.
- 2002 Dam Safety Inspection and Report provided by Mr. Paul Wessel of the MDEQ Dam Safety Inspection Unit. Dam was noted to be in fair overall condition, and required ongoing monitoring of deteriorating areas.
- 2005 Dam Safety Inspection and Report prepared by Stantec (formerly ALNM). HCMA had requested MDEQ to perform the inspection, but funding issues related to the MDEQ Dam Safety Inspection Program prevented HCMA from requesting the normal MDEQ inspection. Stantec noted several areas of the dam having deficiencies: cracking and spalling of the right retaining wall and abutment, with areas of erosion; concrete deterioration in the left spillway abutment; deterioration of areas of the spillway crest.
- 2006 Stantec retained by HCMA on March 9 to perform a preliminary engineering study of the dam in the amount of \$57,400. Study included a detailed inspection of the dam structure, an evaluation of the extent of deterioration, determination of the scope of a repair project, an estimated cost of construction and a proposed schedule.
- 2007 Stantec submits report dated February 2007 to HCMA and MDEQ highlighting concerns include cracking and spalling of the right (west) retaining wall and abutment (the abandoned lock portion) along with areas of erosion, concrete deterioration in the left (east) spillway abutment, and deterioration of areas of the spillway crest. Construction cost of a repair project estimated at \$1,600,000.
- 2007 Stantec retained by HCMA on February 15 to provide design and construction phase engineering services in the amount of \$145,000.