HISTORICAL SOCIETY of BALTIMORE COUNTY

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September 20, 2022

Sen. Shelly L. Hettleman
James Office Building
11 Bladen Street Room 203
Annapolis, MD 21401

Dear Sen. Hettleman:

In response to a request from Maura Donigan in your office, we were able to find information on the history of Lake Roland and the probable source of the name Lake Roland.

Lake Roland was named for a stream which fed into it at the time, Roland Run. John McGrain, late Baltimore County Historian and a former member of the Baltimore County Planning Office published an article in 1979 in the ***Maryland Historical Society Magazine*** which detailed the history of Lake Roland and the likely source of its name.

I am enclosing copies of an article published in History Trails, a publication of the Historical Society of Baltimore County, and a copy of the McGrain article from 1979, both of which discuss the history of Lake Roland.

Hope this helps to answer your questions about the origins of the name Lake Roland.

Respectfully,

Sarah A. Riley

Sarah A. Riley
Volunteer Research Librarian

Encls.

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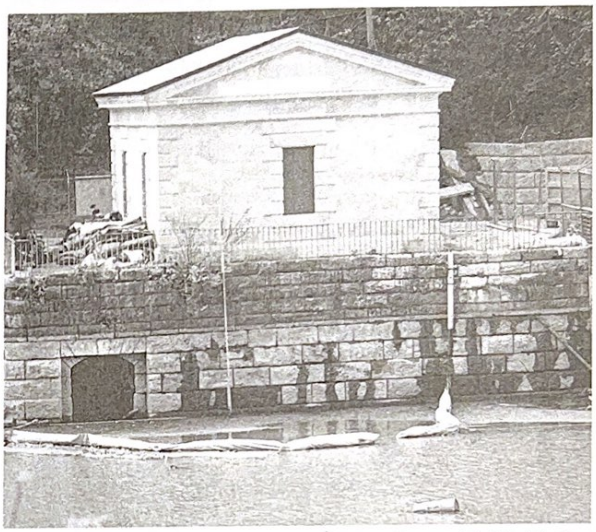
Lake Roland Dam And Gatehouse

by Ronald A. Thomas

The Lake Roland Water Supply Dam was built in response to Baltimore's need for increased water supply during the city's population expansion of the 1850s. The water supply system utilized watercourses along Jones Falls purchased from the privately-owned Baltimore Water Company, which supplied water to city residents from 1804 to 1854. The Baltimore City political leaders chose James Slade of Hartford, Connecticut, to design the water supply system. In 1857, the city purchased the right-of-ways for $289,000 and abandoned any alternative proposals.[1]

In the summer and autumn of 1857, a comprehensive survey of the water system corridor was conducted by Mr. Wampler. Actual construction began in 1858 under the supervision of Charles P. Manning. The project consisted of seven primary components: Lake Roland, Lake Roland Dam, the conduit from Lake Roland to Hampden Reservoir, Hampden Reservoir, the pipe line from Hampden to Mount Royal Reservoir, Mount Royal Reservoir, and the network of distribution mains from each reservoir.[2] The dam and the lake were available for use in 1860, although they were not finally completed until 1861; the conduit from the dam to Hampden Reservoir was finished by January 1, 1860. The cost of the excavation of the lake was $112,752.55, and the cost of the dam construction was $152,190.65.[3]

The core of the dam was built of heavy rubble stone taken from "the rough gigantic stone of the neighboring hillsides." Its outer facing was of regularly coursed, rough-cut stone blocks. A 125-foot waterway provided the overflow at the top of the dam, which was 40 feet high from base to crest. Wing walls, enclosed in earth embankments, rose six feet above the top of the dam. The dam's spillway surfaces were inclined, and its rear wall was perpendicular. The stone mass of the dam was 60 feet thick from the back of the dam to the front of its base. The waste flume and the gate chambers, which were lined with Texas (Maryland) limestone, were below the crest of the dam. At overflow conditions, the water surface stood 225 feet above mean tide at Baltimore. The dam was completed by August 1861.[4]

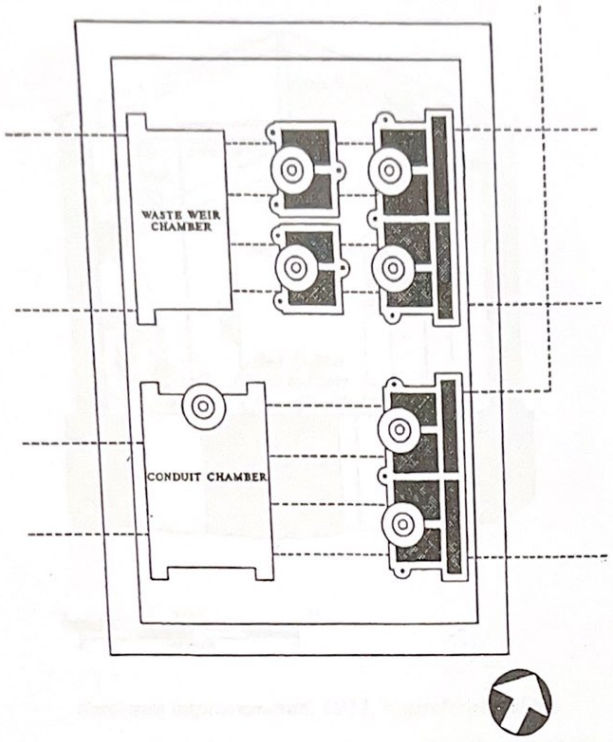


—John D. Maple, Baltimore County Public Works

The restored gatehouse in the summer of 1993.

The gatehouse controlled the seven gates built into the dam. Engineer Charles P. Manning described this flow control system in 1862:

> The gate chambers consist of two distinct apartments, the floors of which are at the respective heights of 201 and 210 feet above tide—or respectively 24 and 15 feet below the crest of the dam, and the usual surface of the lake. The lower chamber is provided with gates which regulate the discharge of water through the waste flume, and by means of which the lake can be drained to the bottom. The higher chamber is provided with gates by which the flow of water into the conduit is regulated, and another gate for occasional use, when a connection between the waste and conduit chambers may be needed. The gate chambers are enclosed by a substantial stone house, upon the floor of which are placed



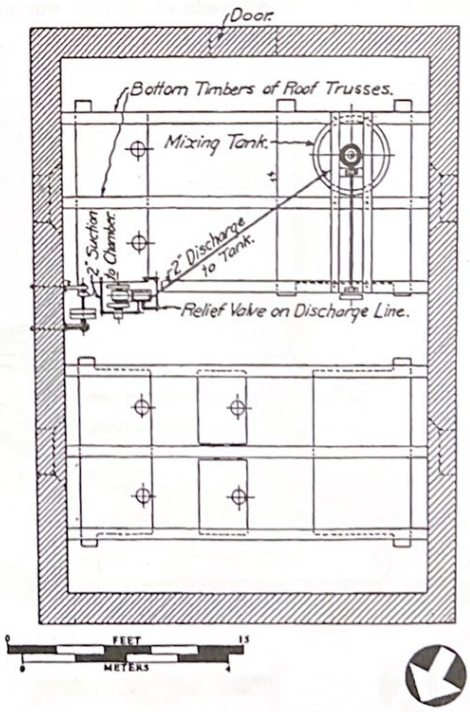
Lake Roland Dam and Gatehouse, "as built" floor plan. From 1860 plan in City Works File.

screw stands of the several gates. All the masonry of the dam was carefully laid in full beds of fresh hydraulic cement mortar, and where necessary, thoroughly grouted with the same material.[5]

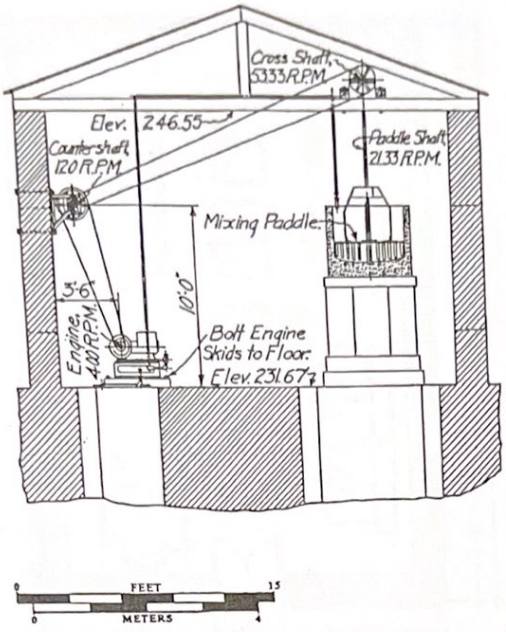
The one-story, one bay, Greek Revival gatehouse with pedimented front gable was built on the southeast side of the dam by the firm of J. B. and T. F. Connolly of common bond brick faced with finely cut limestone from their Texas, Maryland, quarries. The firm maintained an office on East Madison Street in Baltimore. The corners of the regularly coursed, squared ashlar structure are highlighted with projecting quoins and the door and window openings surrounded by projecting limestone blocks. Large, projecting, rectangular name and date stones set into the wall above the recessed five-panel double entry door read: "Lake Roland" "1861." The building contains two three-foot-wide, rectangular windows on each side and one three-foot-wide, rectangular window in the rear gable end; all five windows are spanned and sealed by wooden doors. The gatehouse sits on a full-story, limestone block foundation which houses the seven gates that controlled the outflow of water from Lake Roland. All exterior architectural details, including the full entablature and wide trim in the gable ends, and the ogee-molded water course, are of Texas limestone.

The gatehouse interior contains a one-room plan with an open, king-post roof framing system and modern paint and plaster covering the original plaster on the walls. Decorative detailing is limited to the limestone portal which surrounds the double entry doors. The seven iron screw stands which open and close the sluice gates are set into the limestone floor and are surrounded on three sides by iron grating. Three stone plaques are set into the gable and wall. The first, a narrow rectangular plaque centered above the window reads: "Baltimore Aqueduct." The other two plaques, which are placed on either side of the window, list the names of members of the Board of Water Commissioners at the commencement (1858) and completion (1861) of the Lake Roland construction project. Original hardware, including door and window hinges and latches, a door handle and the iron grates surrounding the screw stands, remain intact but in poor condition.

An iron railing which divides the southwest section of the structure from the principal interior space runs between the front and rear gable ends on the west side of the door. The area between the railing and the west wall is spanned by a wooden platform which extends from the rear end wall to what remains of the cement chlorine mixer installed in the plant in 1911. The installation of the mixer, and of the



Floor plan of 1911 improvements, from drawing of hypochlorite plant, Lake Roland.



Sectional improvements, 1911, hypochlorite plant.

belts and engine required for its operation, represents the only addition or change to the gatehouse during its 50 years of operation. Although the engine and belts have been removed from the structure, one of the countershafts remains on the east side wall.

Construction of the gatehouse was completed in October 1861. The firm of A. & W. Denmead and Sons, who operated the Monumental Iron Works located at Monument Street and Guilford Avenue in Baltimore, "executed the iron work, and fitted up the gates of the several gate chambers, and cast the curved and branch pipes of the pipeline."[6]

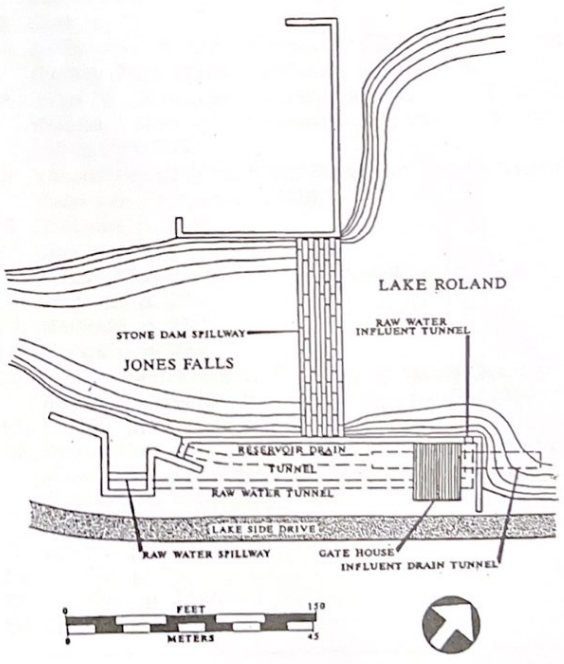
Another component of the construction of the water supply system was the purchase and excavation of the 50 acres of land that would become Lake Roland. The area had little agricultural value, and excavation of the Jones Falls ravine provided a basin able to contain 500 million gallons of water. However, the engineer, James Slade, never considered the potential problems of siltation and soil erosion, which eventually caused the system to fail.[7]

The Lake Roland Water Supply System was supplying the city of Baltimore with water by 1861; but within two years, it was recognized as insufficient to fulfill the city's needs. Siltation and the inflow of waste led to pollution of the water, causing city-wide outbreaks of typhoid fever in the 1860s. The city implemented a series of stopgap measures, including the construction of the Rogers Reservoir at Druid Hill Park, of an earth-fill dam across Druid Lake, and of a temporary pumping station at Meredith's Ford.[8]

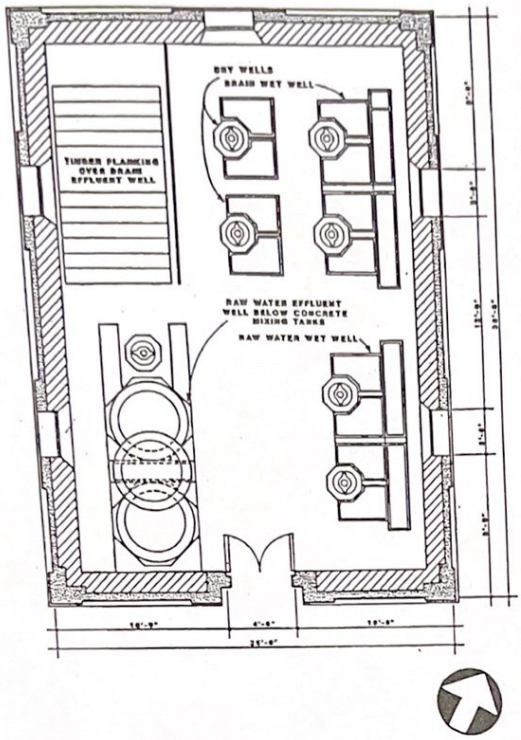
The problem of pollution flowing into Lake Roland continued into the 1870s and included the waste water and products from a slaughter-house built near the lake. During the remaining years of the operation of the water supply system, the city was forced to spend funds annually to clean the silt and refuse from the lake and the conduits.[9]

Physical improvements to the Lake Roland Reservoir made between 1861 and 1915 included the construction of a wood panel fence around Lake Roland (1861), the addition or replacement of rip-rap around the lake (1862, 1879, and 1902), the construction of a tree-lined road to allow visitor access to the lake (1862), and the additions of a boat house, ornate cast-iron bridge, and hay barracks around the lake for use by these visitors.[10]

A new and larger dam was constructed at Loch Raven in 1914, and use of the Lake Roland Water Supply System was discontinued on November 19, 1915. The Lake Roland system was briefly brought back into use on December 2 as the result of a leak in the new system but ceased to function after that date. Beginning in 1916, some parcels of land around Lake Roland were sold to the L'Hirondelle Club, the rest eventually coming under the domain of the City Department of Recreation and Parks. Lake Roland continued to experience siltation, so that by 1952, ten feet of silt was recorded. Other problems included the formation of large shallow flats where mosquitos bred, and erosion from the adjacent Baltimore Beltway and the Jones Falls Expressway. By 1978, the city of Baltimore decided to abandon any future attempts at



Site plan in 1993, Lake Roland dam and gatehouse.



Current floor plan, Lake Roland Gatehouse.

dredging the lake and to allow it to continue to fill with silt.[11]

The Lake Roland Water Supply System was the first municipal water supply system to be built in the City of Baltimore, as well as one of the first municipal waterworks constructed in the State of Maryland. Incorporating the watercourses owned and operated from 1804 to 1854 by the privately-owned Baltimore Water Company, the Lake Roland Water Supply System was neither the city's first public water supply system nor one of the nation's earliest municipal waterworks. A municipal water system consisting of a well from which water was pumped to fill a reservoir and then distributed through wooden pipes was constructed in New York City as early as 1774. Known as the New York Water Works, the system was utilized until the British occupation of the city in 1776.[12] In 1799, Philadelphia's city fathers participated in the decision-making process surrounding the construction of the Fairmont Waterworks; and in 1839, the City of Cincinnati purchased the Cincinnati Water Company and assumed responsibility for that city's water supply system.[13] The first municipal waterworks in the State of Maryland was built by the City of Frederick in 1845.[14]

While the construction of the Lake Roland system does not represent a milestone in terms of technological innovation or municipal provision of a public water supply, it is significant as one of the first sites in the United States at which the large-scale purification of water with liquid chlorine was tested. During the nineteenth century, concern about the purity of city water led to the use and development first of filters, which removed particles and sediment, and then of chlorine.[15] The first documented use of filters to improve water quality and remove particles and sediment from public water supply systems occurred in Britain and dates to the 1820s.[16] Large-scale use of chlorine first occurred in England in 1904-1905 when Sir Alexander Houston utilized hypochlorite to purify London's water supply.[17] Large-scale hypochlorite testing using powdered chlorine bleach was conducted in the United States by Col. George A. Johnson and Dr. J. L. Leal for the Jersey City Water Company between 1908 and 1910. The first use of liquid chlorine in the United States occurred in 1910 at the Jersey City Water Company's Boonton plant. In 1911, a chlorinating system consisting of a mixing machine, which utilized countershafts to connect belts to an engine, was installed in the Lake Roland gatehouse. Known thereafter as a hypochlorite plant, the Lake Roland waterworks was one of two sites used for large-scale testing of the application of liquid chlorine to a public water supply system. Experiments conducted at the plant documented the merit of utilizing liquid chlorine and led to its widespread use in public water supply systems in the United States both before and after filtration.[18]

NOTES:

1. Louis F. Gorr, "Baltimore's First Public Utility," *Baltimore Engineer,* February 1976, p. 10.
2. Gorr, p. 10.
3. J. Thomas Scharf, *History of Baltmore City and County* (Philadelphia, 1881)., pp. 218-219.
4. John W. McGrain, "Historical Aspects of Lake Roland," *Maryland Historical Magazine,* 74 (Fall 1979): 254-255.
5. *Annual Report of the Water Department of the City of Baltimore* (Baltimore, 1863), p. 24.
6. McGrain, p. 256.
7. Gorr, p. 10.
8. Scharf, *History of Baltimore City and County,* p. 220.
9. McGrain, p. 259.
10. McGrain, p. 259.
11. McGrain, p. 271.
12. James Owen Draffin, *The Story of Man's Quest for Water* (Champaign, Illinois, 1939), pp. 154-155.
13. Draffin, pp. 151-152.
14. Diane Shaw Wasch, "City Building in Frederick, Maryland, 1816-1860," Master's Thesis, George Washington University, Washington, D.C., 1990, pp. 220-222.
15. Draffin, pp. 72-74.
16. Draffin, p. 72.
17. Draffin, pp. 74-75.
18. Draffin, pp. 74-75.

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