

RAMSEY COUNTY  
**History**  
*A Publication of the Ramsey County Historical Society*

Spring, 1998

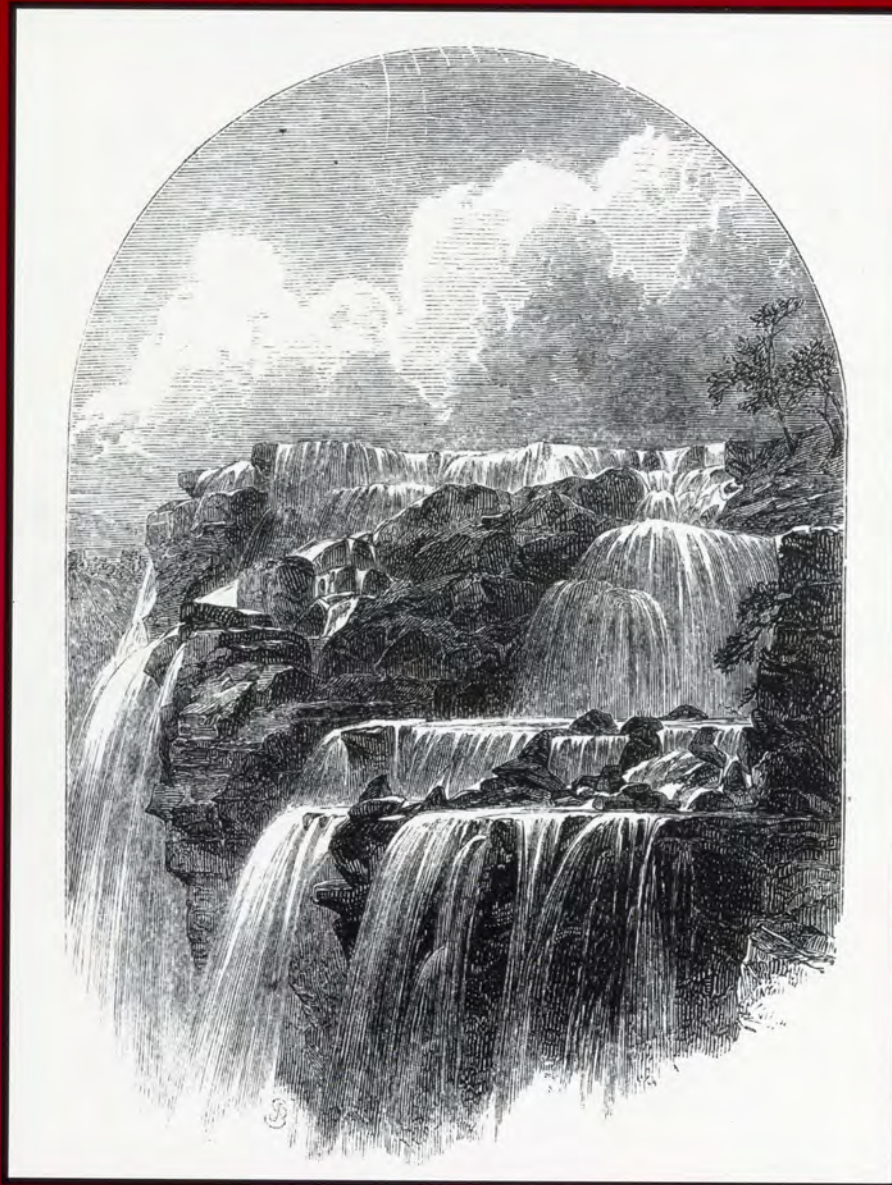
Volume 33, Number 1

Westminster Junction—  
Turn-of-the-Century  
Railroad 'Highway'

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*The Diverting Story of Cascade Creek—Page 4*



*Cascade Creek, from Harper's New Monthly Magazine, in 1860. The creek was named after a waterfall that was described in early travel literature about the St. Paul area. This engraving probably depicts the namesake cascade. The waterfall, now dry, can be seen today along the Mississippi bluffs near Colborne Street. See the article beginning on page 4. Photo from the Minnesota Historical Society collections.*



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# RAMSEY COUNTY History

Volume 33, Number 1

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Publication of *Ramsey County History* is supported in part by a gift from Clara M. Claussen and Frieda H. Claussen in memory of Henry H. Cowie, Jr. and by a contribution from the late Reuel D. Harmon

## A Message from the Editorial Board

**T**wo themes run through this spring issue of *Ramsey County History*. One theme is engineering; the other is people. Greg Brick's lead article, which tells the story of Cascade Creek, is another in our St. Paul Underground series, which was suggested some years ago by the late Reuel Harmon. Both this article and that by Andrew Schmidt on the local railroad area known as Westminster Junction represent historical research into little-known sources of St. Paul engineering and transportation history

The theme of people plays a secondary role in the stories of Cascade Creek and Westminster Junction, but this theme is foremost in Jean Hanna's account of her mother, Rose Hanna, and her journey from Palestine to St. Paul in the 1950s; in Joe Lepsche's article on the history and people of the Upper Levee; and in Charlotte McKendree Wright Lewis's reminiscence of the Fourth of July Extravaganza on Grand Hill. These writers convey vividly the enduring diversity of the area's people and how their individual stories are today a part of the larger story of St. Paul and Ramsey County.

*John M. Lindley*  
Chair, Editorial Committee



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## Stairway to the Abyss

# The Diverting Story of Cascade Creek And Its Journey

Greg Brick

Back in the early days of St. Paul, possibly ever since the last Ice Age, there was a little stream that flowed down from the highlands of the city. In some seasons, perhaps dwindling to a mere trickle, it threaded its way among the Fort Road wetlands before plunging over an eighty-foot bluff into the gorge of the Mississippi River. Down on the floodplain it resumed its peaceful course, meandering lazily among the willows until being swallowed up at last by the great Father of Waters.

This little stream, now bricked over and made to run through passages more than a hundred feet below the streets of St. Paul, still makes its way to the Mississippi, though darkly. Human eyes no longer rest upon it, unless by the ghostly illumination of a sewer-worker's flashlight. Even that much is to risk sudden death. A flashflood could fill the vaults with water in seconds.

What follows is the hitherto untold story of Cascade Creek, one of the most obscure streams running through St. Paul history. Yet in the Roaring Twenties, this little stream inspired some of the most spectacular sewer architecture in the entire St. Paul underground, costing more than half-a-million dollars. It was a stream whose very name, judging from Public Works contracts, was unknown even to the engineers who buried it!<sup>1</sup>

Modern street maps do not show Cascade Creek. One of the few historical maps to do so was the 1877 map accompanying N. H. Winchell's *Geology of Ramsey County*. Originating in a wetland near what is today Cretin High School, the stream drained toward the east down the ravine later occupied by Ayd Mill Road, continued approximately along the line of Jefferson Avenue, and joined the Mississippi River near the foot of Western Avenue.<sup>2</sup>

The name "Cascade Creek" first appears on the plat of "A. V. Brown's Subdivision of Blocks 19, 24, and East Half of 26, in Stinson, Brown & Ramsey's Addition to St. Paul," dated 1856. A

short segment of stream, seemingly oblivious to the proposed lots, wanders across the plat. However, a place name, Cascade Street, had appeared even earlier on "Stinson, Brown & Ramsey's Addition to St. Paul," dated 1854. On May 1, 1940, Cascade Street became part of Palace Avenue.<sup>3</sup>

The name Cascade Creek is fascinating because it suggests the existence of a cascade or waterfall somewhere. While no historical maps depict such a feature, clues to its whereabouts are found in the historical literature.

E. S. Seymour, in *Sketches of Minnesota, The New England of the West*, published in 1850, after describing a visit to Fountain Cave, wrote that, "A short distance below the cave there is a little creek or rivulet, that leaps over a succession of cascades, making, in all, a fall of about eighty feet, and forming, if flowing at the same rate during the season, an excellent water power."

William Gates Le Duc, a self-described "Bookseller and Stationer" who later became Commissioner of Agriculture under President Rutherford B. Hayes, published the *Minnesota Year Book* in the early 1850s. In the 1852 edition he informed travelers that "Between St. Paul and Fort Snelling may be seen a beautiful cascade, that tumbles through a rocky defile, one mile above the town." Recommending an itinerary, he wrote that, "Arrived at the Fort [Snelling] . . . a drive of 3 miles will take [the traveler] to Spring cave [Fountain Cave], after look-

ing at which he will probably have time enough to stop at the Cascade a moment, and return to St. Paul before dark."

The most detailed account is found in Elizabeth Ellet's *Summer Rambles in the West*, published in 1853. "A miniature waterfall flashes through the depths of a narrow dell," she wrote, "making thirteen successive shoots in a winding course, each falling into a lovely basin several feet in depth, which serves for a bathing-place, curtained by a drapery of woods. This little cascade is closely embowered in foliage of vivid green, and its picturesque beauty makes up for the want of grandeur. It is a lovely spot to spend a summer morning or afternoon." The waterfall was located about half-a-mile downriver from Fountain Cave, according to Mrs. Ellet.

The first installment of Manton Marble's "To Red River and Beyond," an article describing a trip from St. Paul to the Fraser River goldfields of British Columbia, was published in *Harper's New Monthly Magazine* for August, 1860. It contains an engraving of a "Cascade near St. Paul," which is quite possibly the cascade in question. As shown on (reconstructed) maps of the Red River trails, one branch of the trail crossed over Cascade Creek.<sup>4</sup>

It is reasonable to surmise that the namesake cascade was located where the creek plunged over the Mississippi River bluff. The 1885 *Sanborn Insurance Atlas*, while not depicting the creek itself, does show a pronounced "Ravine" in the bluff-line near Cascade Street. This ravine is the best candidate for the "rocky defile" of Le Duc and the "narrow dell" of Ellet, and could have resulted from a waterfall eroding its way back into the bluff.

Proof of this surmise came while this writer was examining thousands of old



## Under St. Paul

aperture cards at the St. Paul Public Works Department for any information they might contain regarding St. Paul's underground. One of them was a railroad plan, dated March, 1886, depicting a segment of Cascade Creek along the bluff-line.<sup>5</sup> When adjusted to the scale of the Sanborn atlas, and superimposed on it, the creek lined up with and ran through the ravine. The location of the extinct waterfall had been pinpointed.

The same ravine was famous as an archeological site. J. Fletcher Williams, in *A History of the City of Saint Paul to 1875*, noted that "One of the handsomest stone axes ever found in the Northwest was picked up by Eugenio A. Johnson, C.E., in the ravine near the City Hospital, and presented by him to the Historical Society."

In 1923, the Milwaukee Road spanned the ravine with a wooden trestle built to carry a spur line to the Ford Motor Company plant in Highland Park.<sup>6</sup> The dry waterfall ravine, long used as a dump by local residents, can be seen today behind Bridgeview School, on Colborne Street.

Cascade Creek was famous as a mill-stream, too, though not because of the drop in elevation provided by its waterfall. In 1860, John Ayd built the first and only grist mill in Reserve Township near present-day Ayd Mill Road. The creek was dammed to form a mill pond, which a subsequent owner stocked with trout. When the Milwaukee Road ran the Short Line up the ravine, it put the mill out of business.<sup>7</sup>

\* \* \*

At this point the investigation of Cascade Creek took a subterranean turn. Assuming that rainfall patterns had not changed since the previous century, what had become of the stream and its waterfall? Most likely, that same water was now draining to a storm sewer somewhere. If that sewer could be identified, it would be possible to follow the course of



*Drawing of Ayd's Mill, published on July 12, 1889, in St. Anthony Hill Graphic. Photo from the Minnesota Historical Society. (See the fall, 1974, issue of Ramsey County History for an article on "John Ayd's Grist Mill—And Reserve Township History" by Donald Empson.*

the creek underground.

Another aperture card, "Map of Levee from Eagle St. to Fountain Cave" (undated), aided in this new quest. It depicted, at sufficiently large scale, the point where the surface creek had joined the river. Hopefully, there would be a sewer outfall on the riverbank at that location, the entrance to a supposed Cascade Creek tunnel.<sup>8</sup>

In a visit to the spot on a hot summer day, however, it was apparent that landmarks had changed considerably since the old levee map had been drafted. At Ross Island, just off Shepard Road, an abandoned power station towers like a dinosaur over the rank vegetation of the floodplain. After some bushwacking, a likely tunnel entrance was found under the old Kaplan scrapyard. The water was waist deep at the mouth of the sewer, and coated with an oily green scum, but it shallowed rapidly to flowing water of ankle depth a short distance up the tunnel. Was this the modern Cascade Creek? This explorer stepped over a bloated carp and continued.

Arched with limestone rubble masonry, this tunnel was a colorful place. Iron, nature's favorite pigment, had stained the walls yellow, orange, and red. My flashlight illuminated a beautiful, transparent water-mold in a pool. The tunnel veered to the left, then to the right, with smaller passages branching off to either side. At this point, however, I realized that I had entered the distinctive, nineteenth-century sandrock labyrinth that honeycombs the West Seventh Street area. It's unmistakable. It also indicated that I no longer was following anything that could be called Cascade Creek. The whereabouts of the stream remained a mystery. Little did I realize how far back in history the answer to this puzzle would be found.

Norman W. Kittson is famous in the early history of Minnesota. By the 1840s he was established in Pembina on the Red River of the North where he helped to develop the famous ox cart trade that brought furs to Mendota and St. Paul. He also operated a steamboat line on the river and thereafter was known as "Com-





Cascade Creek's location in 1877. This map from N. H. Winchell's *Geology of Ramsey County*, published in 1878 by Johnson, Smith & Harrison of Minneapolis, shows the meandering course of the creek. Look for it at the third "S" in the word Mississippi. Today the creek flows through tunnels more than a hundred feet below the West Seventh Street area. Photo from Minnesota Historical Society.

modore." Later he formed the Red River Transportation Company with James J. Hill and became involved in railroading. He owned a gigantic house on the site where the St. Paul Cathedral later was built. He retired from business and became a horse-fancier, with stables in the Midway area of St. Paul, and Erdenheim, Pennsylvania. The St. Paul stables were known as Kittsondale

Midway, as a place name, appeared at least as early as the plat of Midway Heights, dated 1885, which was located midway between St. Paul and Minneapolis. This symmetry came into play when the sewer drainage of the area was planned. Although there had been small diameter sewers in the area for years, it was not until the late 1920s and early 1930s that the large "Kittsondale tunnels" (as they are still referred to in Public Works documents) were constructed.

Two mirror-image tunnels, draining

sewage in opposite directions, were dug. Kittsondale East drained sewage from Midway toward the east, to an outfall on the Mississippi River at Bay Street, while Kittsondale West drained toward the west, to an outfall on the river near the Marshall Avenue bridge. After the Pig's Eye Plant became operational in 1938, only storm water flowed through these tunnels.<sup>9</sup>

Someone once wondered whether these two tunnels met somewhere under the Midway district, providing a continuous pathway so that an intrepid sewer-explorer might enter one of the outfalls at the river, walk clear under the city, and emerge at the opposite side. This turned out to be merely a "pipe-dream," however, because the tunnels diminish in diameter upstream as they approach each other, and nowhere do they connect.

The Kittsondale tunnels are distinguished from all other tunnels under the

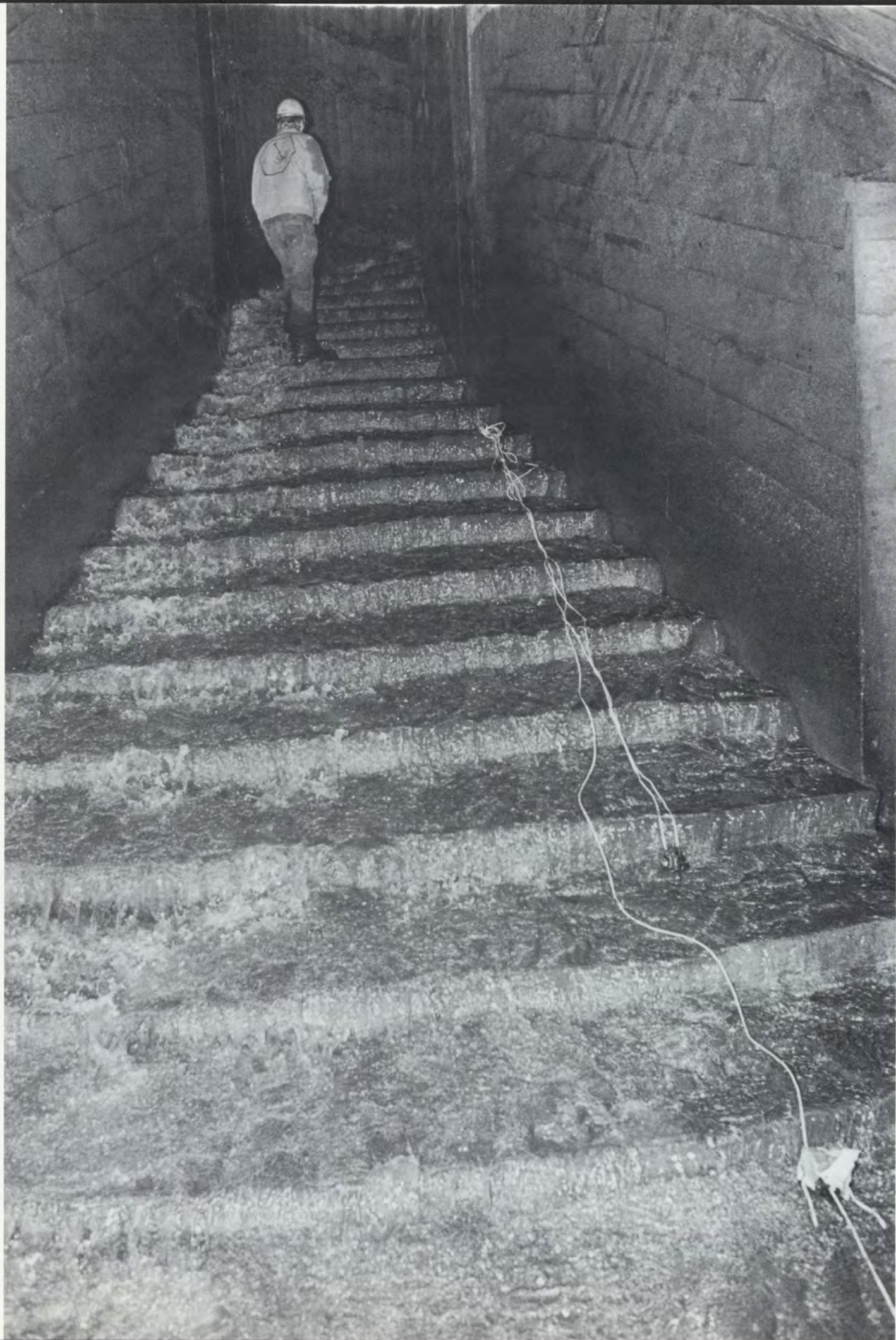
Twin Cities by their curious architecture. They contain vast subterranean stairways along their courses, stairways that descend more than a hundred feet into the bowels of the earth. And strangely enough, these stairways were not intended for human beings. What was their purpose?

Stairways are just one engineering solution to the problem of erosion caused by falling water. According to a leading textbook of sewer design, "flight sewers," or sewers that resemble a flight of stairs, are "occasionally required where a heavy drop in the grade of a main sewer [is] necessary."<sup>10</sup> In most cases, where small volumes of water and short drops

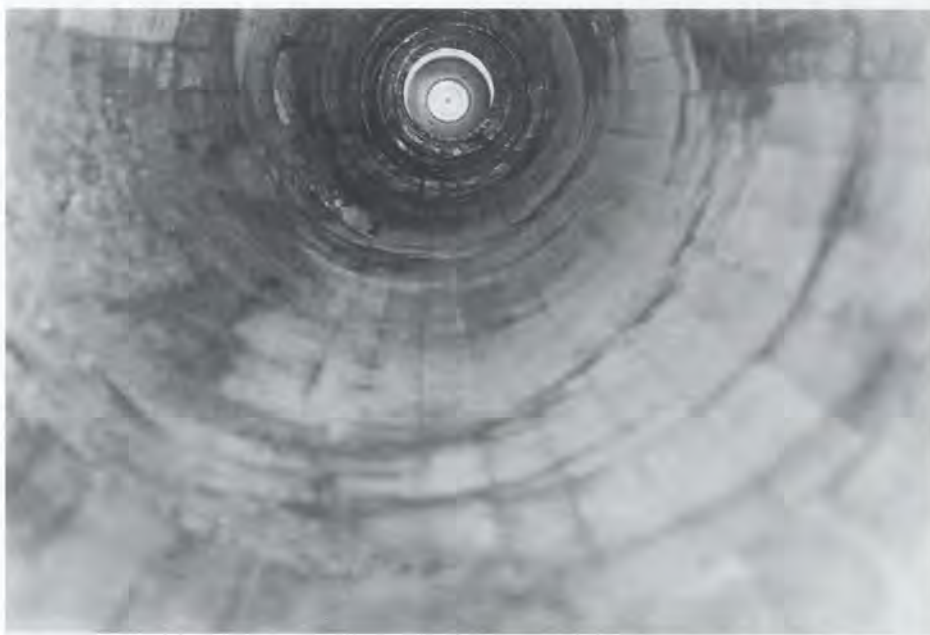
*Stairway to the abyss, the East Kittsondale spiral stairway where descending waters have encrusted the stairs with flowstone.*

*That's the author on the stairs. Photo by George Heinrich for Ramsey County History.*









*The view from below. This view looks straight up the hollow core of the spiral stairway and shows a reassuring burst of sunlight through the spiderweb manhole grate at the top. Bad weather with flashfloods can be dangerous in deep sewer exploration. Photo by George Heinrich for Ramsey County History.*

are concerned, water is allowed to drop down a shaft. The role of the Kittsondale stairways is to convey much larger amounts of water from the highlands of the city down to the level of the Mississippi.

Flight sewers are not uncommon, even in the Twin Cities. What makes the Kittsondale stairways unique is that they are spiral stairways. While I had long known of the existence of these spirals, of which there are four under St. Paul, it did not immediately occur to me, while investigating Cascade Creek, that one of them was located directly under the former surface course of the stream. In other words, Cascade Creek was being diverted into the East Kittsondale tunnel. A spiral stairway—a man-made cascade of sorts—had replaced the old waterfall at the river bluff. The diverted Cascade Creek now joins the Mississippi at the Bay Street outfall, three-quarters of a mile upstream from their original junction.<sup>11</sup>

Having established the significance of the East Kittsondale tunnel, a more detailed description of the stairway is warranted. Blueprints of the spiral stairway at the St. Paul Public Works Department suggest a subterranean Tower of Pisa.<sup>12</sup> Located under the Milwaukee Road

right-of-way, near where Interstate 35E passes over Jefferson Avenue, the spiral has vertical dimensions of more than a hundred feet and is twenty feet in diameter. The stairway was “cast in monolith” (poured as a single mass of concrete) by the Northern States Contracting Company in 1929. Together with the outfall tunnel to the river, it cost more than half a

million dollars.<sup>13</sup>

The spiral consists of seven whorls of stairs wrapped around a hollow core. There are twenty-four steps to one complete turn of spiral. The hollow core is a manhole capped with a spiderweb-pattern grate. On the surface, the grate may be seen next to the railroad tracks. When visiting the spiral, I made certain that stormy weather had not been forecast, but all the same, being half an hour from the nearest exit, it was reassuring to look up from the bottom of this manhole and see a ray of sunlight shining through the spiderweb grate, far above.

The East Kittsondale tunnel is nearly seventy years old, time enough for the growth of formations mimicking those found in natural limestone caves. Water, having dissolved lime from concrete in the upstream reaches of the sewer, is subjected to turbulence as it descends the stairs, causing it to redeposit the lime as a coating known as “flowstone.” Instead of eroding the stairs, the water has strengthened them over the years.

Even after carpeting the stairway with flowstone, however, the water has not wholly exhausted its mineral content. The floor of the tunnel downstream from the stairway is corrugated with a series of “rimstone dams,” as they are called, each

*Continued on page 27*



*The Bay Street outfall. While other streams in St. Paul have been put underground, none has undergone such drastic reroutings as Cascade Creek, which currently joins the Mississippi three-quarters-of-a-mile upstream from its original junction with the river. Photo by the author.*





View from Lake Elmo Lodge in 1882. Sketch from the Minnesota Historical Society.

inative property owners: "Spray Island," "the Ramble," "Brightwood," "Glooskap" (after an Indian spirit). Then there was the movement from rusticity—very big in the nineteenth century—to the tonier neoclassical with its giant porticos. It was an era when families and friends chose to vacation all together and all at once. In 1880 the Griggs and Foster families built a "vast barnlike structure, its lake exposure wrapped with a two-story veranda" at Spring Park on Minnetonka. Larson writes that "During the summer of 1892 the entire Griggs and Foster families and their in-laws, seventeen people in all, vacationed together at the cottage.

The massive summer house of Walter and Mahala Douglas on Lake Minnetonka, would be of special interest right now. Douglas, a Quaker Oats heir, went down on the *Titanic*, only six years after acquiring the property for his eighteenth century Franco-Italian palace.

"In a fashion typical of nineteenth-century industrial magnate," Larson writes, "Douglas named it 'Walden II,' after Henry David Thoreau's crude pond-side retreat that had come to symbolize the simplicity of life without money or possessions. This latter-day Walden had brocaded walls, Gobelin

tapestries, a ceiling copied from an Italian palazzo, and a morning room decorated in French period style."

Virginia Brainard Kunz is editor of Ramsey County History.

Cascade Creek

*Continued from page 8*

six inches high, spanning the width of the tunnel. The stream has in effect created its own obstacles, as if a runner were to set up hurdles as he goes along.

The West Kittsondale tunnel, built in 1931, is not associated with any known historical stream. Nor, for some reason, does it have any cave formations. To compensate, however, this tunnel has three spiral stairways, rather than just one. Two of them are small-diameter brick spirals situated at points where branches join the tunnel, while the other is a concrete spiral, located under the intersection of University and Fairview avenues. It is similar in design to the East Kittsondale spiral. An interesting difference between the small and large diameter spirals is that they coil in opposite directions.<sup>14</sup>

The story of Cascade Creek is indeed a "diverting" story, worthy of more attention than it hitherto has received. While other streams in St. Paul have been put underground, none have undergone such drastic reroutings as Cascade Creek. Old wine in new bottles.

## NOTES

1. Minneapolis also had a Cascade Creek, as seen on Nicollet's famous 1843 map, *Hydrographical Basin of the Upper Mississippi River*, but it is better known today as Minnehaha Creek.

2. The anastomosing drainage of the Fort Road wetlands often led to confusion between Cascade Creek and Fountain Creek. See for example Mark Fitzpatrick's "Forgotten Facts About St. Paul" column in the *St. Paul Shopper* for April 25, 1945.

3. *Street Name Changes, City of St. Paul*. This leather-bound manuscript volume is maintained at the St. Paul Public Works Department.

4. Rhoda R. Gilman, Carolyn Gilman, and Deborah M. Stultz, *The Red River Trails* (St. Paul: Minnesota Historical Society Press, 1979), p. 85.

5. Jacket 6, Pigeon Hole drawer. Obviously, then, the waterfall was in existence as late as the spring of 1886.

6. John C. Luecke, *Dreams, Disasters, and Demise: The Milwaukee Road in Minnesota* (Eagan, MN: Grenadier Publications, 1988) p. 144.

7. Donald Empson, "John Ayd's Grist Mill—And Reserve Township History," *Ramsey County History* Vol. 11, No. 2 (1974): 3–8.

8. Jacket 56, Pigeon Hole drawer.

9. An earlier version of the Kittsondale concept was unitary, involving a single, longer tunnel draining to the west. See Sewer Drawing No. 313, "Geologic Section of Proposed Kittsondale Outfall Sewer," dated May, 1927. George M. Shepard was chief engineer for the project.

10. Leonard Metcalf and Harrison P. Eddy, *American Sewerage Practice* (New York: McGraw-Hill Book Company, 1928), Volume 1, pages 47, 52, and 566. The second edition, contemporaneous with the project itself, has been cited, rather than more recent editions. Today, an impact chamber would be favored in this setting.

11. The complete story of the Cascade Creek diversion is more complicated than this because the Jefferson Avenue sewer had already had an impact on the drainage. Contract 1133, dated 1912, was for an open ditch on Jefferson from "Victoria Street to the Creek West of Chatsworth Street." The creek would drain through the ditch and into the sewer. Contract S-1219, dated 1914, specified that "An inlet shall be provided for the creek on Jefferson avenue about 340 feet west of Chatsworth street." This inlet, choked with sediments and serving as an animal den, was re-excavated by the author in 1998.

Because the Fort Street sewer, of which the Jefferson Avenue sewer was a branch, discharged to the Mississippi at the Eagle Street outfall, there was a period during which water from Cascade Creek discharged at downtown St. Paul. Thus, even before diversion into the East Kittsondale tunnel, segments of Cascade Creek had been flowing underground through sewers. The construction of Interstate 35E further altered the original drainage.

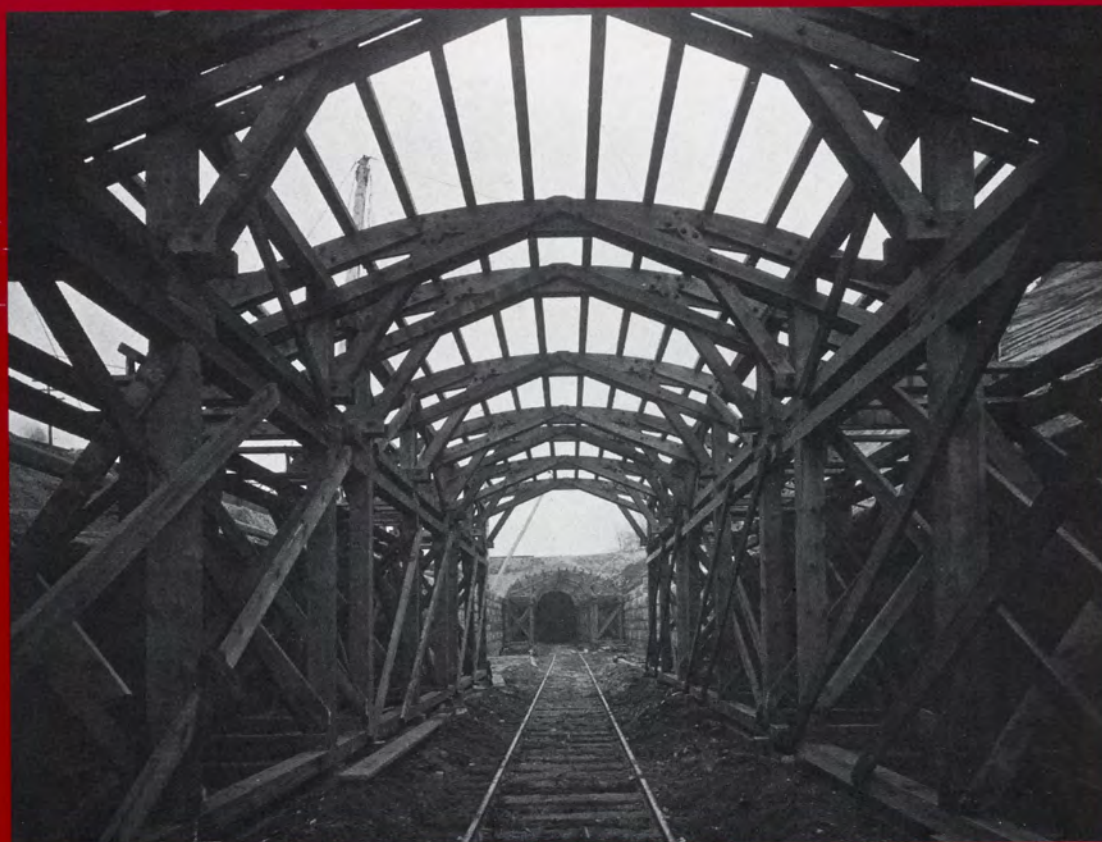
12. Drawing No. 20585.

13. Contracts 1970 and 1972. Strictly speaking, the term "Kittsondale" does not include anything upstream from the spiral stairways.

14. Contracts 2012 and 2012. The two brick spirals are depicted on Drawing No. 191.

*Greg Brick, after earning a master's degree in geology from the University of Connecticut, worked for the U.S. Army Corps of Engineers in St. Louis, Missouri. He would especially like to thank Tony Dagostino, Dave Dickhut, Dick Hedman, and Bill McDonald at St. Paul Public Works for their generous assistance.*





*Centers for the flat arch of the Westminster tunnel. This view, taken on April 9, 1886, is looking toward the south. Photo courtesy of the National Railway Historical Society, North Star Chapter. See article beginning on page 9.*

**R.C.H.S.**

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Published by the Ramsey County Historical Society  
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75 West Fifth Street  
Saint Paul, Minnesota 55102

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