

3. RECENT HISTORY OF LAKE WINONA AND ITS ENVIRONS

Louis Hennepin, who travelled up the Mississippi River in 1680, was probably the first white man to visit the area. Between 1680 and 1803, the French were active in the region, primarily as fur traders. Their influence is still evidenced by the French names of many cities and landmarks within the region.

The most lucid early descriptions of the Winona area were those of Zebulon Pike (1811) who passed through the future site of Winona in 1805 on an exploratory mission for the U.S. Government. His descriptions are important because they portray the appearance of the Winona environment before it was modified by white men. On September 14, 1805, for example, he stood on a bluff top near Winona (probably Homer Ridge) and described the scene below:

On the right we saw the mountains which we had passed in the morning, and the prairie in the rear, and, like distant clouds, the mountains at the Prairie de la Crosse. On our left, and under our feet, the valley between the two barren hills, through which the Mississippi winds in numerous channels, formed many beautiful islands, as far as the eye could embrace the scene. Our four boats under full sail, their flags streaming before the wind, formed altogether a prospect so variegated and romantic as one may scarcely expect to enjoy more than twice or thrice in the course of his life.

Upon reaching the sandy delta of the Chippewa, Pike camped and reflected upon the nature of the terrain that he had seen during the past several days.

In the division of the Mississippi which we had passed from la Prairie des Chiens, the shores are more than three-quarters prairie on both sides, or, more properly speaking, bald hills, which instead of running parallel with the river, form a continual succession of high perpendicular cliffs and low valleys; they appear to head the river and to traverse the country in an angular direction. These hills and valleys exhibit some of the most romantic and sublime views I ever saw, but this irregular scenery is sometimes interrupted by a wide extended plain, which brings to mind the verdant lawns of civilized regions, and would almost induce the traveller to imagine himself in the center of a highly cultivated plantation. The timber of this division is generally birch, elm, and cotton wood, all the cliffs being bordered by cedars.

The first steamboat, the "Virginia" passed the future site of Winona in May, 1823. Captain Orrin Smith, owner of the steamboat "Nominee", is acknowledged by most as the founder of the first settlement at Winona in 1851. Not all settlers agreed that Winona (then called Wapasha Prairie) was a good site for a town. Willard B. Bunnell, for example, chose the site of Homer for his residence instead of Winona (Bunnell, 1897):

It will appear strange that with liberty to make his own selection, he should have preferred the site of Homer to that of Winona. But the reason was, that during the extreme high water of 1844, the sandy Wapasha Prairie seemed almost covered with water, a large body running into the Winona Lake from the sloughs above; making an island of Winona, and the Indians asserted in most positive terms that the prairie had been completely covered by water in olden times. That assertion was duplicated by some traders and rivermen, who looking from the deck of a steamer at the highest stage of flood, would say that "the dry land above, was not much larger in area than a turtle's back." The running aground of the steamer Lynx in that year, upon land quite high at the lower end of the prairie (1050 East Third Street) seemed to confirm all that has been said about "the sand bar," as the site of Winona was contemptuously called by some.

As if to illustrate this point, during the high water of 1852 Captain Harris Smith ran his steamboat past Minneowah (a former settlement near Homer), through Lake Winona, into Crooked Slough and back into the river again (Curtiss-Wedge and Whipple, 1913).

Nevertheless, the site of Winona was settled rapidly because of its easy access by steamboat. The County of Winona was created by the legislature of the Territory of Minnesota on February 23, 1854; by November, 1855 there were 160 buildings and 800 residents in Winona. By the 1870's the population of Winona was 7,000 and by 1890 it has swelled to 20,000 (Winona Daily News, November 19, 1955 p. 15). Early maps of Winona are shown in Figures 3-1,2. The appearance of Lake Winona from the mid-1800's until 1908 is shown in Figures 3-3,4,5.

As a result of its unique geological history, the topography of the Winona area is rugged, and very little agricultural land is level. Nevertheless, early settlers usually cultivated every part of their land which was not too steep for horse-drawn machinery. "Conservation" to most early farmers meant putting as much land as possible to the plow. Land too steep for plowing was grazed. Bluffs were frequently burned to discourage tree growth and to stimulate the production of grasses for additional grazing. Dairy cattle and horses were the principle grazers, but sheep and goats helped denude the bluffs of Winona County. Small grains such as wheat constituted the principle farm crops which were grown on the bluff tops, valley floors and natural terraces. Soil conservation measures such as crop rotation, contour tillage, strip-cropping and terracing were unheard of. As a result of this mismanagement of the land, area watersheds lost their protective vegetative cover and floods were regular events in most valleys.

DREDGING

Because of soil erosion problems and the transporting of agricultural soil into Lake Winona during floods of Gilmore Creek, Lake Winona has been dredged several times. The first dredging occurred

in 1913, and dredged material was used to construct Lake Park, Maxwell Field and the Huff Street Dike (Figs. 3-6,7,8).

In the 1930's the City of Winona purchased a dredge and used it to fill lowlands east of Franklin Street. The project was suspended during World War II, but was resumed in 1950 through 1953, when the entire lake was dredged extensively because it had again filled with soil. This dredging deepened the lake to an average depth of 8 feet at a cost of \$485,900 and provided most of the land upon which the hospital and the high school have been constructed. In fact, most of the land between Sarnia Street and Lake Winona has been formed by dredging (Figs. 3-9,10). The lake was dredged again in 1957 and 1958, on a small scale, to improve the lake for swimming. The maximum depth of the lake immediately after dredging was 44 feet.

MANIPULATIONS OF GILMORE CREEK

The fate of Lake Winona is intimately associated with Gilmore Creek, and Winona residents began manipulating Gilmore Creek in 1885. The following account illustrates the complexity of these manipulations.

The City of Winona encompasses the mouths of Burns Valley Creek and Gilmore Creek, both of which flooded frequently in the early days. Each time the creeks flooded, they carried tons of eroded soil and debris into Winona. Gilmore Creek frequently flooded the west end of the city. In 1902, such a flood inundated the flat land lying below Gilmore Valley, and the creek became swollen to a width of more than a mile. Traffic by road was impossible, and those who wished to travel had to use boats. When the waters receded, there were deposits of mud as deep as four feet on the flat lands and on the road (Winona Daily News, November 19, 1955).

Because it has such a large watershed, Gilmore Creek is especially prone to flooding. At its maximum flow on July 21, 1951, Gilmore Creek carried 5,360 cubic feet of water per second (Upper Mississippi River Comprehensive Basin Study Committee, 1970). The Mississippi River, by comparison, at its minimum flow on December 29, 1933, contained only 2,250 cfs. The severity of Gilmore Creek floodings is illustrated in Figures 3-11 and 3-12.

Because Burns Valley Creek and Gilmore Creek posed constant threats to the city, various channelization, diversion and diking projects were employed to prevent their flood waters and their sediment loads from damaging the city and Lake Winona.

Gilmore Creek is the only stream within the Lake Winona watershed which is capable of year-round flowage. Originally, Gilmore Creek flowed into the slough now known as Boller Lake and then flowed west to join Rollingstone Creek. The combined creeks then flowed into the upper end of Crooked Slough (Fig. 3-2). In 1885, however, Gilmore Creek was diverted into Lake Winona (Fig. 3-13). From Pelzer Street to Lake Winona, the creek then followed virtually the same path that it does today (U.S. Army Corps of Engineers, 1970).

The marsh now known as Boller Lake continued to drain with Rollingstone Creek into Crooked Slough. The beds of the two creeks separated sometime during the 1880's, however, and for a time the two creeks ran distinct, but parallel, paths into Crooked Slough. Farmers were plagued by flooding and siltation from both streams, especially since Gilmore Creek still flowed through Boller Lake during flood time. Lloyd E. Pfeiffer who has lived in the area since 1892 distinctly recalls the flood problem because the Pfeiffer farm was bounded by the two creeks which drained into Crooked Slough. He reports that marshy areas became filled to depths of 10 feet with silt. Fence posts were often completely covered so that new fence-lines had to be erected atop the old.

A severe flood on June 10, 1899 caused Rollingstone Creek to radically change its path so that it left its meandering path and flowed directly into Crooked Slough (Winona Republican Herald, 1899).

ESTABLISHMENT OF COUNTY DITCH NO. 3

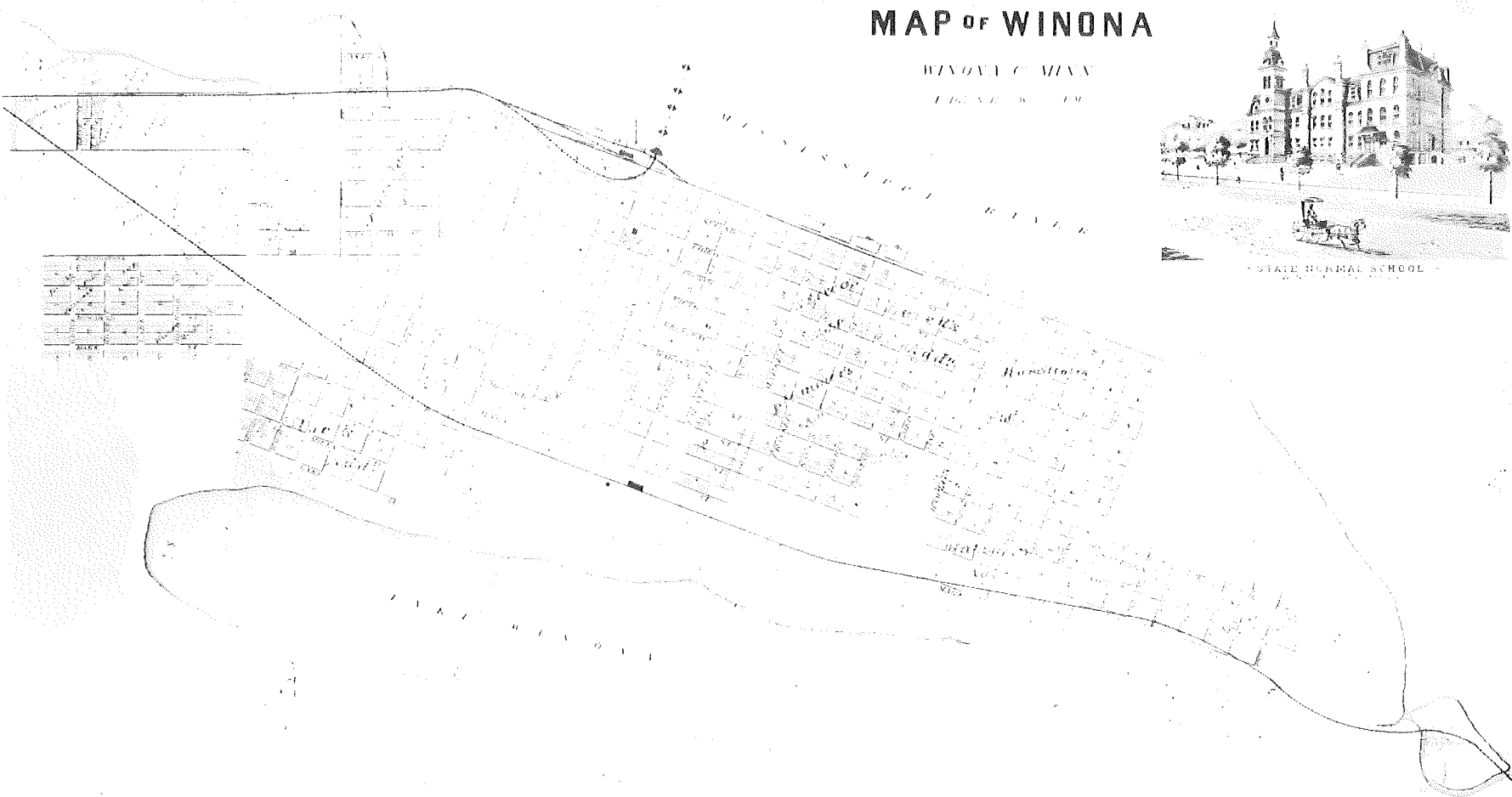
In 1908, the creek which ran from Boller into Crooked Slough was channelized and was designated County Ditch No. 3 (Petition for Public Ditch, Winona Co., 1908). The purpose of the ditch was apparently to drain the surrounding marsh land for agriculture, and to alleviate flooding and siltation caused by flood waters which often spilled into the area from Gilmore Creek. Thus, County Ditch No. 3 intermittently served as an outlet for Gilmore Creek.

The original County Ditch No. 3 which drained Boller Lake apparently became obsolete because of continued siltation. The consequent elevation of the flood plain at the west end of Boller Lake probably increased the severity of Gilmore Creek floods because the flood waters could not flow readily into Crooked Slough.

In 1928, the channel of Gilmore Creek was improved, and levees were built from the old Highway 14 bridge to Lake Winona. Three small, fixed-crest overflow dams were constructed as erosion control measures. These improvements proved inadequate, however, for large flood flows which later damaged the dams and destroyed sections of the levees. Subsequently, the dams were removed, the levees repaired, and additional dredging of the channel was accomplished (U.S. Army Corps of Engineers, 1970). For reasons not apparent at this writing, the latter channel was also named County Ditch. No. 3.

ESTABLISHMENT OF COUNTY DITCH NO. 4

In 1929, construction of County Ditch No. 4 between Lake Winona and the Mississippi River was approved. The outlet channel from Lake Winona was enlarged and a double box culvert control was constructed at the down-stream end of the Mankato Avenue Bridge. The upstream end of the culvert floor was at elevation 646.0 and vertical lift gates were provided at the downstream end so that flood water from the Mississippi River could be prevented from backing into the lake. The box culverts extended about 32 feet downstream from the bridge to a concrete end wall on which manual gate controls were located (U.S. Army Corps of Engineers, 1970).



3-5

Fig. 3-1 1874 map of Winona. Note that Lake Winona is not fed at this time by Gilmore Creek and that the lake has not been divided by the Huff Street causeway. From "An Illustrated Historical Atlas of the State of Minnesota" by A. T. Andreas Publishing Co., Chicago, 1874.

3-6

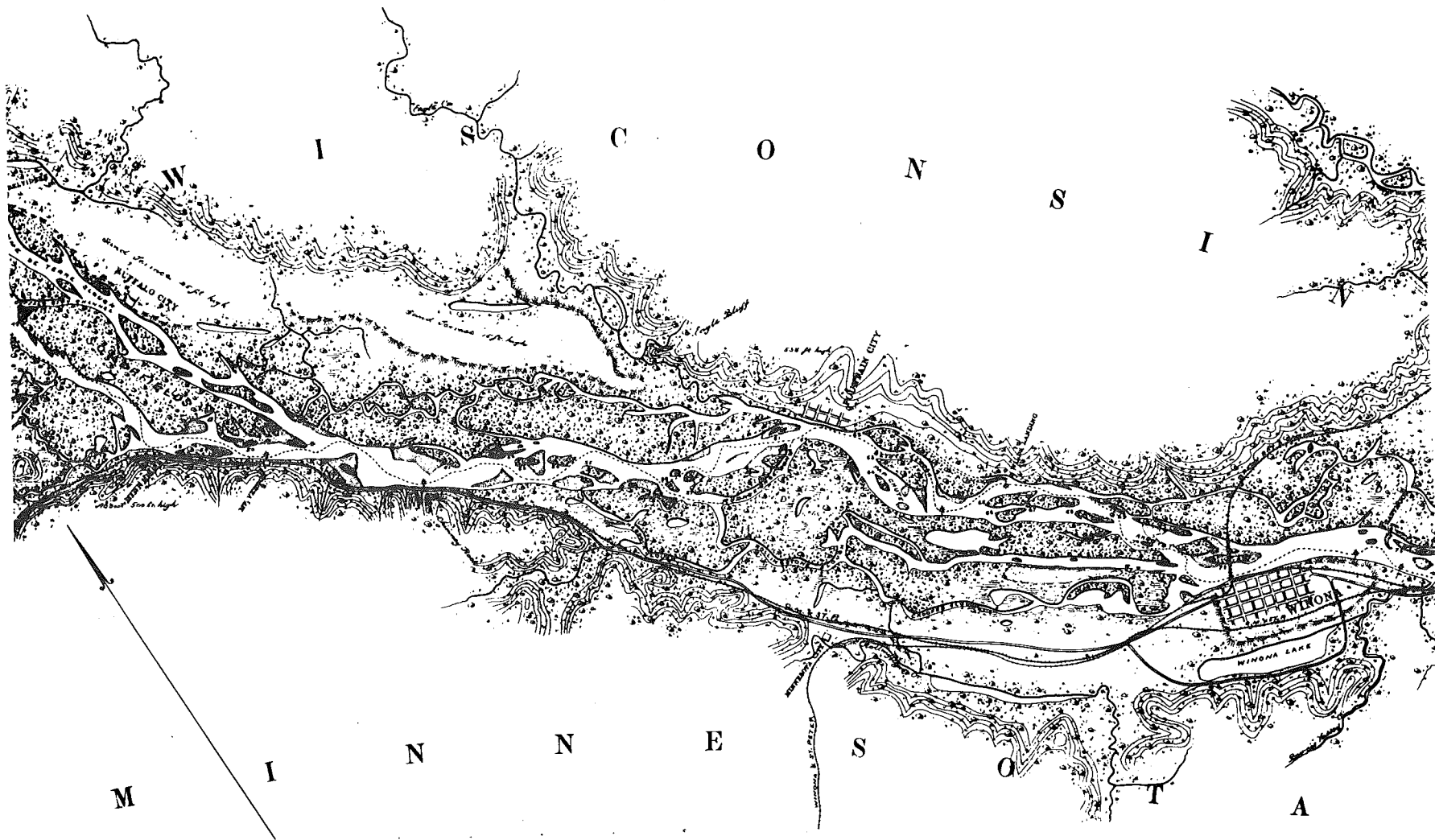


Fig. 3-2. 1878 map of the Winona area. (sheet 5, Map of the Mississippi River from the Falls of St. Anthony to the Junction of the Illinois River in 26 sheets. 1878. U.S. Army Engineer Department.)



Fig. 3-3 Lake Winona and Sugar Loaf Mountain in the mid-1800's. From a lithograph by G. P. Putnum and Sons, Publishers, N.Y. Courtesy of the Winona County Historical Society.

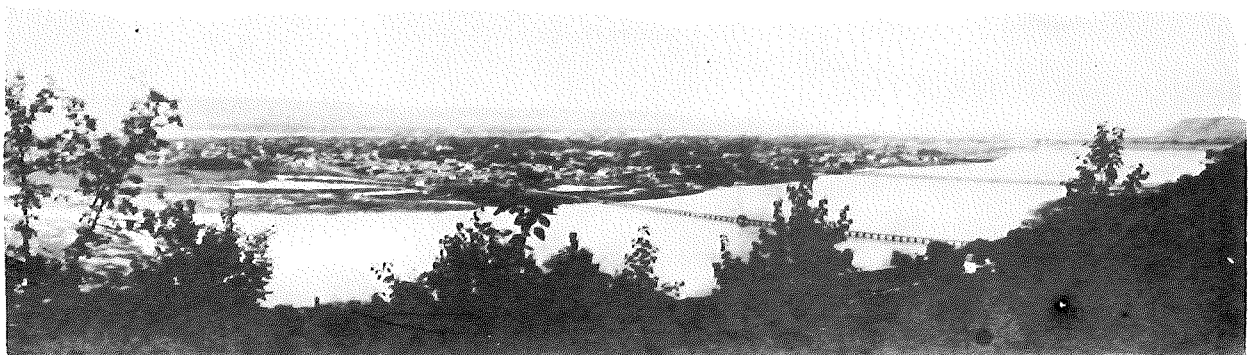


Fig. 3-4 Lake Winona in the late 1800's. Photo courtesy of the Southeast Minnesota Historical Center, Winona, Mn.; from Winona State University Archives Photographs, Box 6, Folder 2.



Fig. 3-5 Lake Winona in 1908. Students in the foreground are on a botany field trip with John M. Holzinger, biology professor at Winona State Normal School. Photo courtesy of the Southeast Minnesota Historical Center, Winona, Mn.; from Winona State University Archives Photographs, Box 6, Folder 2.



Fig. 3-6 Construction of Lake Park, Maxwell Field and Huff Street Causeway with soil dredged from Lake Winona in 1913. Photo reference same as Fig. 3-5.



Fig. 3-7 Construction of Huff Street Causeway by dredging in 1913. Photo reference same as Fig. 3-5.



Fig. 3-8 Dredge crew, Huff Street Causeway, 1913. Photo reference same as Fig. 3-5.

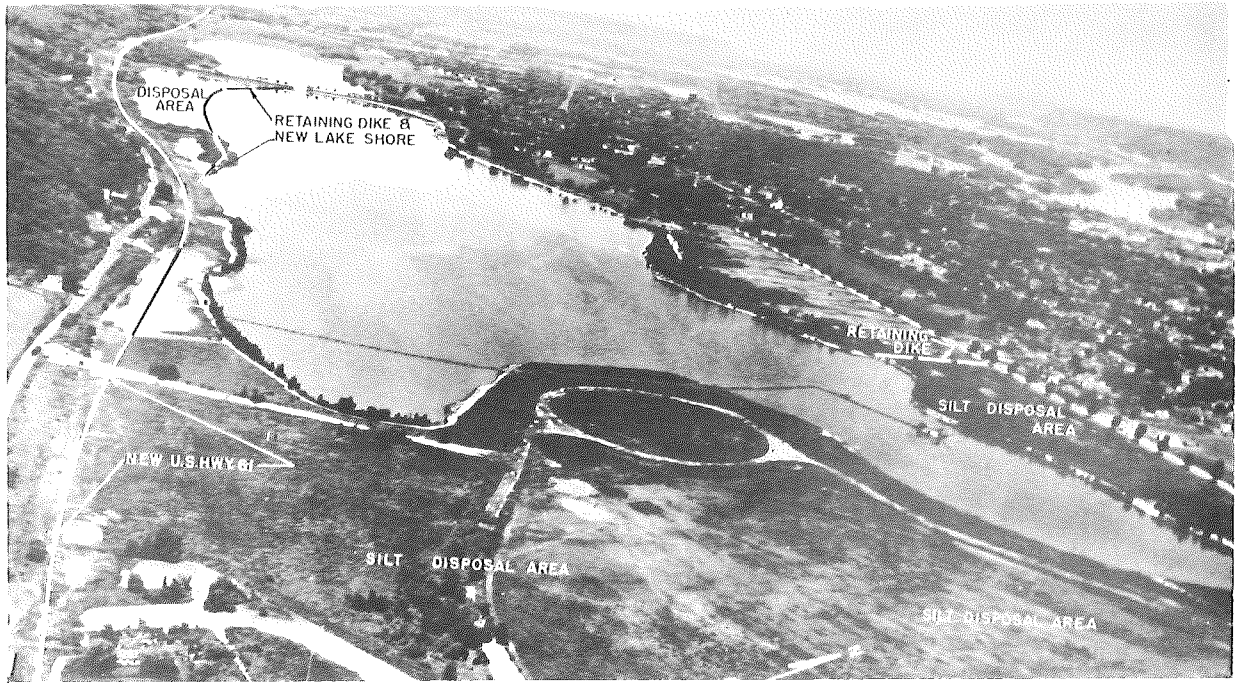
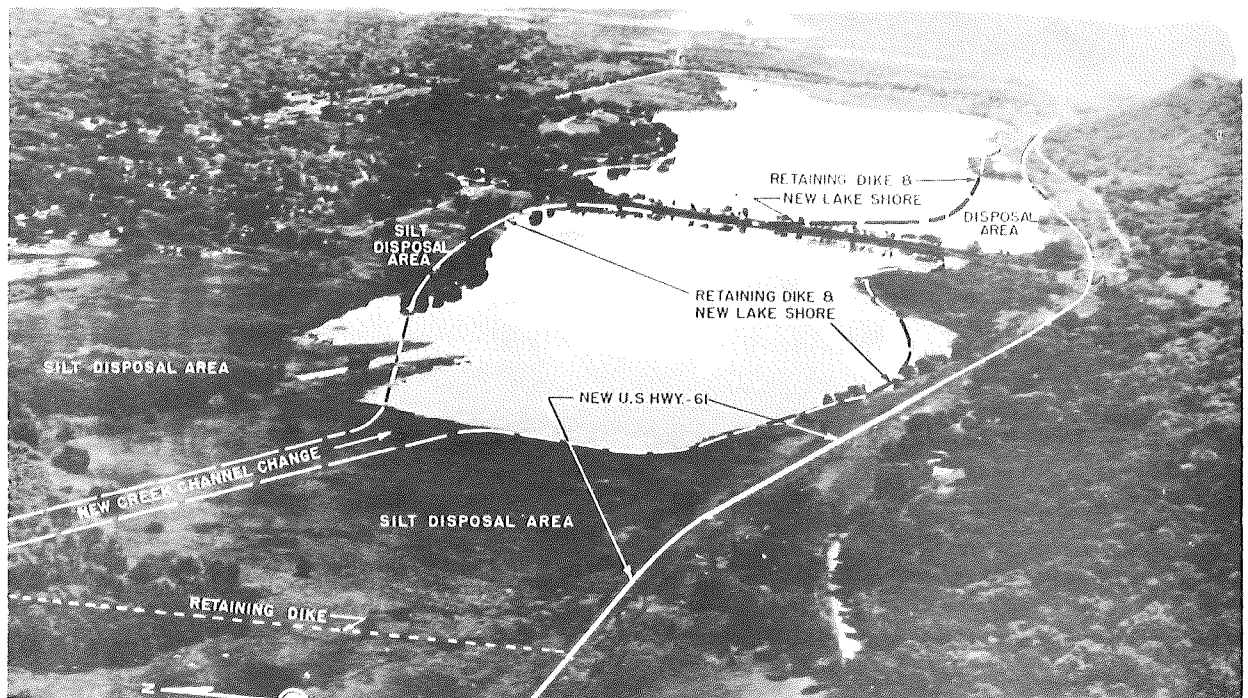


Fig. 3-9 Dredging of lower Lake Winona 1950-1953. Photo courtesy of City Engineer, Winona.

Fig. 3-10 Dredging of upper Lake Winona 1950-1953. Photo courtesy of City Engineer, Winona.



GILMORE CREEK DIVERSION PROJECT

In spite of the previously listed improvements, Gilmore Creek still posed a flood threat to the city. It also promised to rapidly fill Lake Winona again with eroded agricultural soil. Consequently, the Minnesota State Department of Highways and the City of Winona agreed, in 1944, to share equally the costs of a Gilmore Creek Diversion Project. The purpose of the project was to divert Gilmore Creek, once again, into the oxbow marsh which has become known as Boller Lake. The Creek, after flowing through Boller Lake, was directed through County Ditch No. 3 to Lake Winona (Fig. 3-13). Since 1944, Boller Lake has served effectively as a sediment trap and flood storage reservoir with a capacity of about 1,700 acre feet. Sedimentation of Lake Winona has thus been reduced and flash floods on Gilmore Creek have been contained.

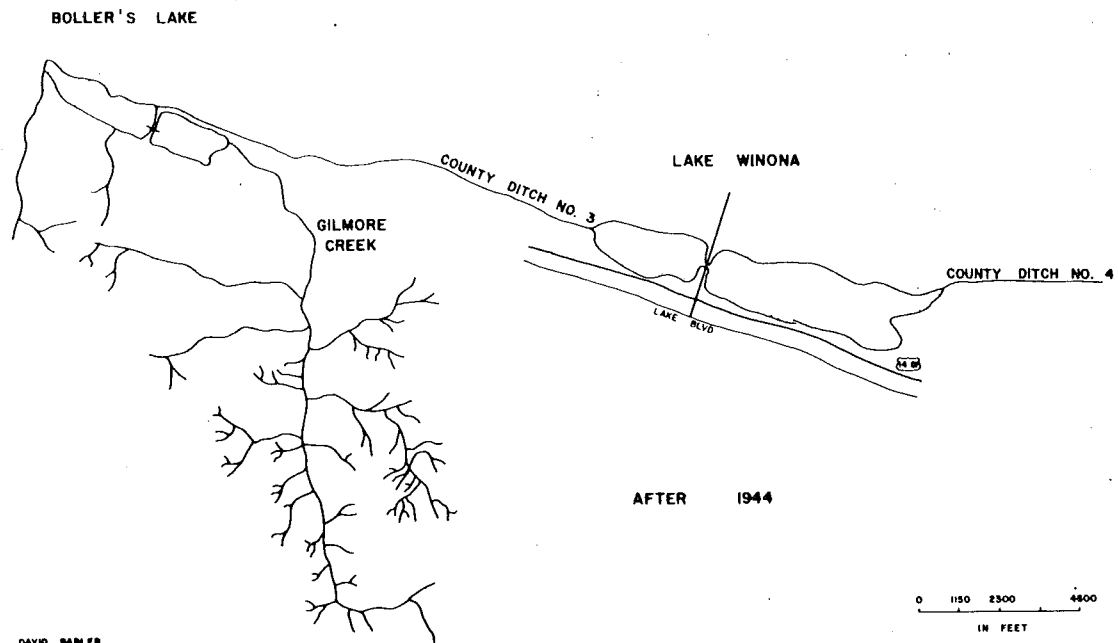
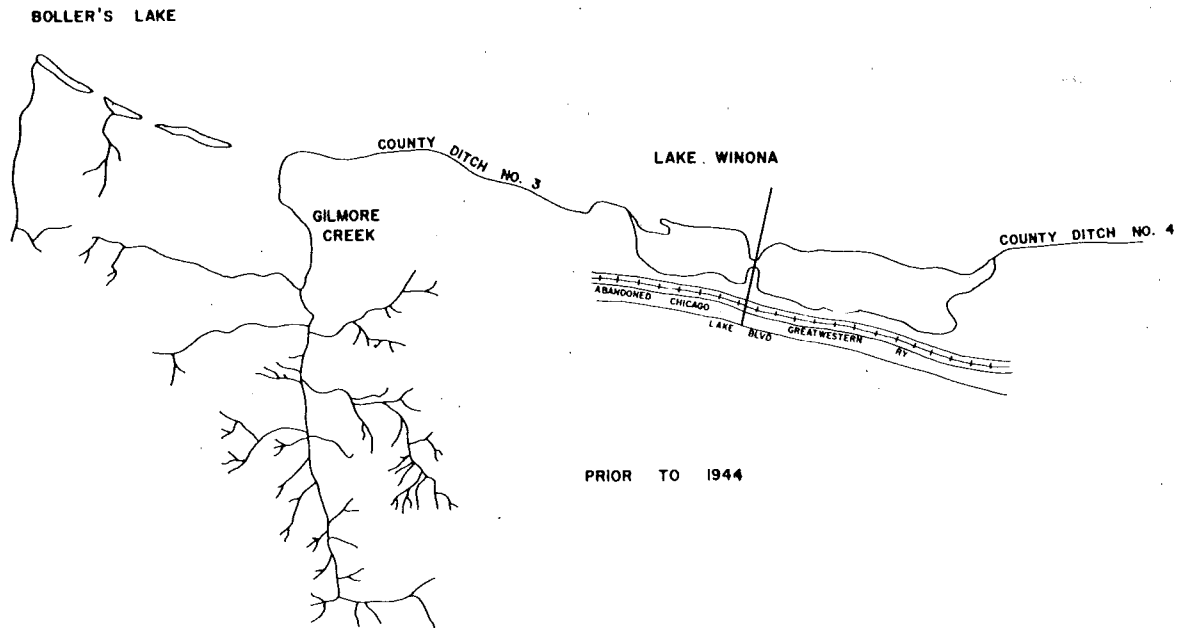
Gilmore Creek presently flows under Highway 14 at St. Mary's College, into the reservoir (Boller Lake), down County Ditch No. 3, through the St. Teresa campus, and finally into Lake Winona. Most of the water is "lost" in Boller Lake due to evaporation and seepage. There are times, however, throughout the year when water is allowed to pass out of Boller Lake and reach Lake Winona via the County Ditch. The water level of Boller Lake is regulated by a stop-log dam built into the causeway which divides the lake into two sections. This stop-log dam is located at the north end of the causeway and a bridge is located at the south end. Water from Gilmore Creek must therefore pass westward through the bridge and then eastward through the dam before it ultimately is passed on to Lake Winona. The outlet of Lake Winona is at Mankato Avenue, and County Ditch No. 4 drains the lake into the Mississippi River.

Winona's flood dike now isolates Lake Winona from the Mississippi River. Lake Winona receives no water directly from the river. The level of Lake Winona rises and falls with river level, however, because the sand bar which separates the lake from the river is very porous.

Lake Winona runs the length of the City of Winona and it is very important to the City because it acts as a sump in flood time. The permanent pumping station located on the lower end of County Ditch No. 4 keeps Lake Winona's level constant during flood time by pumping its waters over Winona's permanent flood dike into the Mississippi River. This makes it possible to commensurately lower the water table beneath the City of Winona, thus preventing basements from being flooded. It is obvious that no encroachment should be ever allowed which would decrease the volume of the lake.

Fig. 3-11

GILMORE CREEK DRAINAGE SYSTEM



0 1150 2300 4600
IN FEET

DAVID BABLER

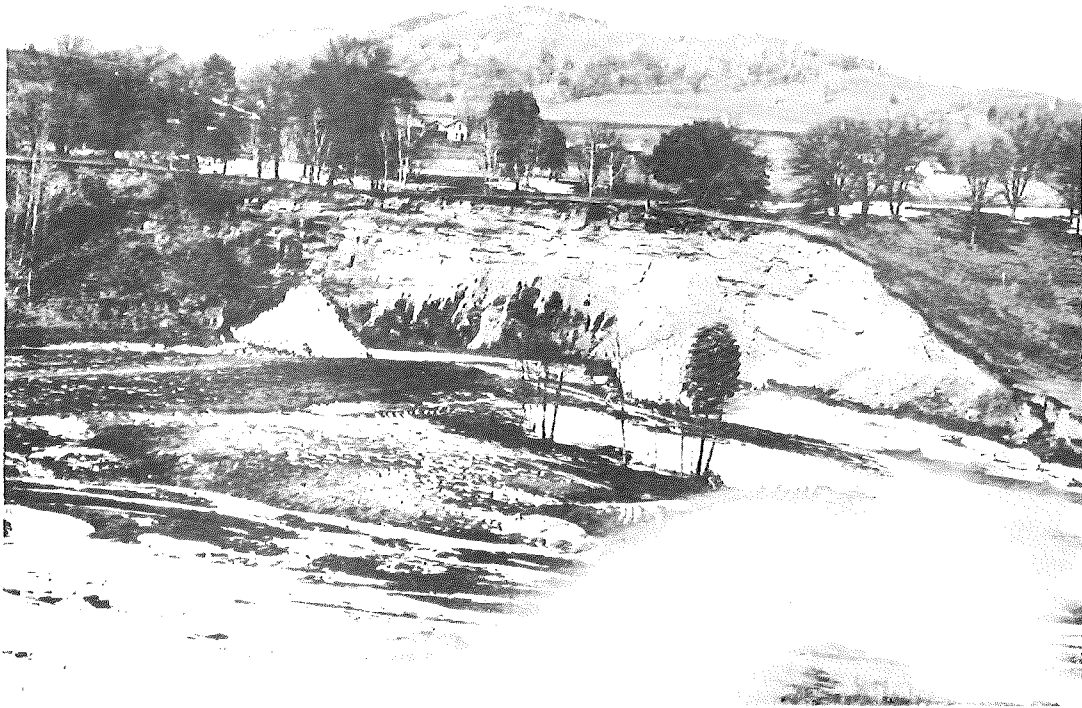


Fig. 3-12 Severe streambank erosion along Gilmore Creek caused by flooding during the 1930's. View is toward Knopp Valley from St. Mary's College campus. Note wing dams. 1938 USDA photo.



Fig. 3-13 St. Mary's College dam on Gilmore Creek washed out by flood. 1938 USDA photo

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