

Ditch Records and Policy Considerations

Wenck File #0185-04-295

Prepared for:

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WATERSHED DISTRICT**
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1.0 Background

1.1 PROJECT PURPOSE

The primary purpose of this project was to compile and organize records available from Hennepin and Carver Counties; such as construction documentation, surveys and benefited parcel information; for the county/judicial ditch system in Minnehaha Creek Watershed District. A secondary purpose was to convert records into electronic form. This project is a first step to enable discussions of policy and management strategies for county and judicial ditches.

A 1992 ditch evaluation was completed by MCWD but that project was very limited in scope and did not thoroughly locate available records. The 1992 evaluation focused solely on ditch maintenance issues. System mapping, construction information and benefited parcel information were not part of the 1992 evaluation.

The District's Operations and Maintenance Manual was completed in 2000. The plan recognizes the existence of ditches and treats them as an O&M obligation. The 2000 O&M plan specifies that a ditch inspection and report should be completed on a five-year interval, beginning in 2001. Ditch inspections have not been budgeted through 2003.

Several related activities are currently being undertaken by MCWD that create a need to develop a management policy regarding ditches. These are:

- **NPDES Phase II** requirements will go into effect at the end of 2002 and will involve regulation of ditch systems as storm water conveyances.
- Many of the primary streams in the District are also county/judicial ditches. MCWD has begun an **assessment of primary streams** and will work to develop stream management strategies. Most streams are also county or judicial ditches and desirable ecological

management strategies for streams may conflict with maintenance of ditches as a public drainage system.

- Ditches are the primary conveyance of runoff, nutrients, and pollutants into Lake Minnetonka bays. Ongoing **H&H** modeling of the District may result in recommendations that could affect ditch alignment, function and/or hydraulic performance.
- The existing **O&M** manual for the District recognizes county/judicial ditches as a maintenance issue and requires inspections of the ditch system every 5 years. It is recommended that a comprehensive ditch inspection be budgeted for 2004.
- **Permit applications** may involve land development that affects county/judicial ditches. There is no discussion of county/judicial ditch standards or requirements in existing rules.
- MCWD is evaluating whether **wetland management** can be a means of reducing nutrient and pollutant loading to Jennings Bay. That evaluation needs to address management impacts on ditch alignment, function, and hydraulic performance.
- Some county/judicial ditches are functioning as city stormsewers. The MCWD needs to determine if these ditches should be transferred to the cities.

In order to begin developing a coherent and coordinated policy that takes many (possibly competing) activities into account, the basic existing information about the ditches needed to be compiled and organized. This report and the accompanying electronic database provides the basis for the Managers to begin developing ditch policies.

Information stated in this report on the impact of a ditch on wetland size and the timing of such impacts is for the purpose of this report and is not intended to reflect an examination for the purpose of regulatory discussion under the Wetland Conservation Act, protected waters statute, or §404.

1.2 HISTORY

Historically, counties were responsible for establishing and maintaining public drainage systems including ditches. Most ditches were established in the early 1900's to promote agricultural activities on lands that were marginally productive because of wet conditions or to enable other uses. These areas were ditched and tiled, through establishment of a public drainage system under Minnesota Statute Chapter 103E, so more land would be in agricultural production or in other use.

In areas that have since become urbanized, the need for agricultural productivity and drainage disappeared. Open ditches in urban areas were replaced with subsurface storm sewers. Often times the storm sewers were constructed in different locations and alignment than that of the ditch they replaced and the old channels were filled in. In the more rural areas of the District, the ditches remain to be open channels for the most part.

The District petitioned Hennepin County to transfer responsibility for the ditches to MCWD in 1971. The petition states that MCWD intended to define the function of the ditches. The authority for Judicial Ditch 2 (Six-Mile Creek) was transferred by court order on March 27, 1972 (a judicial ditch is located in more than one county). The authority for the seven Hennepin County Ditches was transferred by Hennepin County Board resolution on March 28, 1972.

Minnehaha Creek Watershed District has been responsible for eight public ditches since 1972. They are:

1. **Judicial Ditch 2** – Six Mile Creek (mainly open channel)
2. **County Ditch 10** – Painter Creek (mainly open channel)
3. **County Ditch 14** – from St. Louis Park into Lake Calhoun (storm sewer)
4. **County Ditch 15** – into Gleason Lake (open channel/sewer)
5. **County Ditch 17** – from Edina to Lake Calhoun (storm sewer)
6. **County Ditch 27** – part of Long Lake Creek (mainly open channel)

7. **County Ditch 29** – from St. Louis Park into Lake Calhoun (storm sewer)
8. **County Ditch 32** – out of Gleason Lake in Wayzata (open channel/sewer)

Figure 1 is a map showing the general locations of County/Judicial Ditches within the Minnehaha Creek Watershed District. The term “ditch” as used in this report generally refers to a public drainage system established under MS 103E.

2.0 Summary

The District's ditches fall into three general categories: stormsewer, open ditch, and streams. The stormsewer category includes those ditches that have been converted to stormsewer along most if not all of their length and stormsewer now serves to drain the area. These ditches are County Ditch 14, County Ditch 17, and County Ditch 29. The open ditch category includes those ditches that are still open channels and maintain originally constructed form. These are County Ditch 10, County Ditch 15, and County Ditch 32. The third category is streams. The streams category includes those public ditches that were established to improve the drainage of the natural stream system that was present at the time of establishment. These ditches have generally maintained some of their natural stream qualities. These are Judicial Ditch 2 and County Ditch 27.

In addition, the ditches could also be classified by primary current land use as those that remain mostly agricultural and those that are not agricultural. The agricultural ditches are Judicial Ditch 2, County Ditch 10, and County Ditch 27. All of the other ditches are in areas that that have become primarily residential and commercial and no longer have agricultural land uses.

There are four figures for each ditch included in this report. The figures show location, alignment, benefited parcels, public waters, and land use. Much of the information shown was either digitized or scanned from County records and layered with aerial photography and U.S.G.S. quadrangle maps. All of the digital information and this report is included on CD for future use by MCWD staff. The report and figures are included on the CD in Portable Document Format (pdf) to view using Adobe Acrobat. The ditch maps are included either as shape files or georectified Tagged Image Format (tif) files for use in ArcView with the District's GIS system.

Information for this report was primarily collected from Hennepin County. Joel Settles of Hennepin County Environmental Services provided copies of the information on file at the

Medina office. These were Judicial Ditch 2 and County Ditches 15, 27, 29, and 32. Terry Gillis and Jim Holan of Hennepin County Taxpayer Services provided copies of the information on file in that department. These were Judicial Ditch 2 and County Ditches 10, 14, and 17. The drawings for County Ditch 10 were on file at Wenck Associates. Additional information was also gathered from 1992 ditch investigation records on file at MCWD offices. A number of people were contacted in an attempt to gather further relevant information on the ditches. These include staff at Carver County, MCWD, City of St. Louis Park, City of Minneapolis, City of Edina, Hennepin County Surveyor, Smith Parker, Svoboda, and Montgomery Watson.

3.0 Judicial Ditch 2 – Six Mile Creek

3.1 ALIGNMENT

A petition for establishment of a public ditch in the Town of Minnetrista in Hennepin County and the Town of Lake Town in Carver County dated September 12, 1903 was filed with Hennepin County on October 1, 1903. The proposed alignment of the ditch as stated in the petition was to begin at the outlet of Lake Auburn and continue to Parley Lake then to Rice Lake or Klatz Lake (now called Mud Lake) then through “the stream or outlet known as Six Mile Creek” to end at Halsted’s Bay. The ditch and Six Mile Creek are designated as Judicial Ditch 2 in Hennepin County and Judicial Ditch 4 in Carver County. Hereinafter, the ditch is referred to as Judicial Ditch 2. As stated in the court order transferring jurisdiction over Judicial Ditch 2, the ditch is located:

from the east line of the west half of the Northeast Quarter of Section 9, Township 116, Range 24 in Carver County where the Lake Auburn outlet crosses said line to Parley Lake to Mud Lake, then following Six Mile Creek to Halstead Bay, Lake Minnetonka.

Neither Hennepin County nor Carver County have found any documentation indicating specific alignment or easements for Judicial Ditch 2. An engineer’s report on file at Hennepin County states that the ditch was constructed 30 feet in width with a bottom 3 feet below the top of Minnetonka Dam at Gray’s Bay. *(Note: Hennepin County has two ditches called Judicial Ditch 2. The documents on file at Hennepin County that are labeled Judicial Ditch 2 were reviewed. The plans and drawings on file are actually parts of Purgatory Creek. Information for the Six Mile Creek Judicial Ditch 2 included only petitions and reports.)* Carver County shows Judicial Ditch 4 within Six Mile Creek in their Water Resources Management Plan. Carver County has no other documentation of the ditch.

Figure 2 shows the alignment of the centerline of Six Mile Creek as mapped from current aerial photographs. The locations of the beginning and end of the Judicial Ditch portion of Six Mile Creek are shown. Since no plan drawings were available, it is inferred that the ditch ends where Six Mile Creek meets the OHW of Lake Minnetonka.

3.2 BENEFITED PROPERTIES AND LAND USE

A total of 19 landowners filed the original petition for establishment of Judicial Ditch 2. There is no documentation of where their properties were located. It is possible that additional landowners benefited from establishment of the ditch and also may have been assessed for its construction. No assessment records could be located.

Land use at the time of ditch establishment was primarily agricultural. By 1945, 2 percent of the area was in residential use. In 1959, 3 percent was residential. Figure 3 shows the areas that were residential in 1945 and 1959. Data was only available for residential land use, inferring other uses did not represent a significant part of development. Figure 4 shows the land use in 1997 for the area surrounding Judicial Ditch 2. Land use in 1997 was 52 percent agricultural, 21 percent parks, and 5 percent residential. This is an area experiencing increased residential development in recent years.

3.3 PUBLIC WATERS

Figure 5 shows the location of DNR public waters and public wetlands overlaid on a U.S.G.S. topographic map. The entire length of the ditch is a public watercourse. The ditch runs through the public waters Lunsten Lake, Parley Lake, Mud Lake, and unnamed water bodies between Auburn and Lunsten. The ditch also flows through one public wetland that includes Six Mile Creek between Mud Lake and Halsted Bay.

3.4 FUNCTION

As stated in the original petition for the establishment of Judicial Ditch 2, the ditch was necessary “for the purpose of preserving the public health, removing stagnant waters and miasma, and the reclamation of a large amount of land to agricultural uses now wholly useless and unfit for any purpose.” Judicial Ditch 2 continues to drain agricultural land as was originally intended.

4.0 County Ditch 10 – Painter Creek

4.1 ALIGNMENT

County Ditch 10 was established around 1905 according to ditch drawings on file with Hennepin County. The ditch begins at the outlet to Lake Katrina in Baker Park and extends southwesterly to a large wetland located near the intersection of County Road 6 and Game Farm Road then runs southeasterly to the outlet in Jennings Bay (Figure 6).

Figure 6 shows the location of the original alignment of the ditch from the 1905 drawings (orange), the current alignment of Painter Creek from 2000 aerial photography (red), and benefited parcel boundaries shown on the ditch plans (white). The alignment has not changed significantly since establishment of the ditch. The wetlands shown on the original ditch plans are essentially the same size and shape in the 2000 aerial photographs as they were when the ditch was established. The ditch remains open channel aside from road and railroad crossings.

4.2 BENEFITED PROPERTIES AND LAND USE

Benefited properties are shown on Figure 7 outlined in white as digitized from the original plan. No branches or laterals off of the ditch are shown on the original set of drawings, nor were records of establishing such laterals on file at Hennepin County. However, lateral systems are known to exist.

The area surrounding County Ditch 10 was in agricultural use at the time of establishment. By 1945, land use was 1 percent residential. There was no increase in residential land use by 1959. As shown on Figure 8, the 1997 land use is primarily agricultural (78 percent). Residential is the second largest current land use (13 percent).

4.3 PUBLIC WATERS

Figure 9 shows the location of DNR protected waters in the area of County Ditch 10. Painter Creek is shown on the DNR maps as a public ditch. The ditch also runs through four public wetlands, numbers 917, 918, 923, and 937. County Ditch 10 begins in Lake Katrina and ends in Jennings Bay of Lake Minnetonka, both public waters.

4.4 FUNCTION

County Ditch 10 still largely functions to drain agricultural land as was originally intended.

5.0 County Ditch 14

5.1 ALIGNMENT

County Ditch 14 was likely established prior to 1908. *(Note: the date is illegible on the original County Ditch 14 plans. However, it is inferred that County Ditch 14 was established prior to County Ditch 17. The earliest plans for County Ditch 17 are dated August 22, 1908.)* At its establishment, the ditch extended from the western edge of a wetland northwest of Bass Lake in St. Louis Park, into Bass Lake, and southeasterly through a wetland into Lake Calhoun at about 36th Street. A wetland south of Bass Lake was also connected by a channel into Bass Lake.

County Ditch 14 has since been largely converted to stormsewer along the majority of its length. The stormsewer drains similar areas as the original ditch, but the stormsewer is only in the same location as the original ditch between Bass Lake and Lake Calhoun. This section of stormsewer is known to be in poor condition as a result of inspections conducted as a prelude to the design of the Southwest Lake Calhoun Ponds project. A portion of County Ditch 14 through the Minnekahda Club Golf Course remains an open ditch along a similar alignment to the original.

Figure 10 shows the location of the original ditch centerline (orange), the areas of current open ditch (red) and the existing stormsewer system (green). The properties shown on the original ditch maps are shown in white. Blocks and areas that were platted into smaller lots are labeled with a “P”. The location of wetlands and lakes at the time of ditch establishment is shown in blue.

Comparing the historic location of the wetlands to the current aerial photograph shows that the size of the wetlands has been greatly reduced. A wetland to the west of Bass Lake is now entirely developed, and much of the fringe of Bass Lake has also been developed. Bass Lake has

decreased in size by 48% since establishment of County Ditch 14. Highway 25 (called Highway 7 further west) is located in the wetland that was ditched to drain into Bass Lake.

5.2 BENEFITED PROPERTIES AND LAND USE

Benefited properties include a number of platted City lots as well as about 23 large landowners within the area south of Lake Street, north of 38th Street, west of Lake Calhoun, and east of about Highway 100.

The platting of a number of blocks into smaller lots suggests that the area was not planned to remain agricultural at the time of ditch establishment. The ditch may have been constructed to drain wetlands to allow residential development of the area. Many of the home foundations and public utilities in this area are known to be constructed on piling to prevent settlement. A number of those platted city lots also became what is now the Minnekahda Golf Club. As shown in Figure 11, by 1945 residential land use in the area of the ditch was 15 percent. By 1959, the area of residential land use had increased to 29 percent. Figure 12 displays the land use in the area of County Ditch 14 in 1997. Land use is 14 percent industrial, 12 percent commercial, 16 percent single family residential, 12 percent multi-family residential, and 28 percent parks.

The historic wetland that was present to the west of Bass Lake at the time of ditch establishment has been entirely converted to commercial and industrial properties. The historic wetland that was present to the south of Bass Lake at the time of ditch establishment is now parking lot, apartment buildings, and parkland. Much of the fringe of Bass Lake has also been converted to commercial, industrial, or multi-family residential property.

5.3 PUBLIC WATERS

County Ditch 14 flows through Bass Lake and outlets into Lake Calhoun. Both of these lakes are public waters. No other public waters or public wetlands are present along the course of the ditch. Figure 13 shows the location of the public waters on a topographic map. Bass Lake is a DNR protected water, but it has wetland characteristics and very little open water.

5.4 FUNCTION

Aside from the Minnekahda Golf Course area, County Ditch 14 has been converted to an area served by stormsewer, rather than the original open channel. Therefore, the function of the ditch now has largely been eliminated and replaced by subsurface pipe conveyances.

6.0 County Ditch 15

6.1 ALIGNMENT

County Ditch 15 is located in the City of Plymouth and drains wetland areas north of Gleason Lake along Dunkirk Lane. The ditch outlets into a small sedimentation pond (Gleason Lake Phase II project) and then into the northern part of Gleason Lake. The County Ditch 15 plans are undated in the plans on file at Hennepin County.

The ditch is currently in much the same condition as when originally designed. Figure 14 shows the alignment of the original ditch taken from the drawings (orange) and the existing ditch as shown in recent aerial photography (red).

The sizes of the lakes and wetlands at the time of ditch establishment are shown in blue. Many of the lakes and wetlands shown have decreased in size since the time of ditch establishment. Snyder Lake, for example, (then called Kratz Lake) has decreased in size by 78%. The DNR wetland 468W, located west of Snyder Lake, has decreased in size by 35% since establishment of County Ditch 15.

6.2 BENEFITED PROPERTIES AND LAND USE

Land use at the time of ditch establishment was most likely agricultural. As shown in Figure 15, there was no residential land use in 1945. By 1959, the area was 5 percent residential land use. The original benefited properties are shown in black in Figure 16 overlaid on a map of the current land use. The ditch map lists the owner of the property, the acreage of the property, and the acreage of the lakes and wetlands on each property. The current land use is primarily single

family residential (57 percent) with 14 percent multi-family residential, 8 percent vacant/agricultural, 6 percent parks, and some commercial, public, and industrial use (Figure 16).

6.3 PUBLIC WATERS

The ditch outlets into Gleason Lake, a public water. Snyder Lake, a public water, and two public wetlands are located along the course of County Ditch 15. Figure 17 shows the location of these waters and wetlands.

6.4 FUNCTION

County Ditch 15 no longer drains agricultural land, and therefore no longer serves its original intended function. However, the channel does serve as an important stormwater conveyance for the City of Plymouth.

7.0 County Ditch 17

7.1 ALIGNMENT

County Ditch 17 was established in 1908 as indicated on the earliest plan drawings available at Hennepin County. The ditch was intended to drain a large wetland complex in St. Louis Park, Minneapolis, and Edina. The alignment extends from what is now the intersection of Morningside and Browndale to the outlet at Lake Calhoun around 37th Street.

The ditch has since been entirely converted to stormsewer. The stormsewer does not follow the exact path of the former ditch, but generally receives drainage from the same areas. Figure 18 shows the alignment of the ditch as established in 1908 (orange) and the original outline of the wetland areas (blue). The current stormsewer lines are shown in green. These stormsewers were intercepted and diverted into the stormwater ponds built by MCWD as part of the Southwest Lake Calhoun Ponds project.

7.2 BENEFITED PROPERTIES AND LAND USE

The original benefited properties generally included the area south of Excelsior Boulevard, east of Highway 100, north of 46TH St., and west of Xerxes Avenue. The majority of this area was already platted as city lots, but 18 larger landowners were included, primarily in Edina and St. Louis Park. A total of 77 acres is listed as Browndale Farm in the area that is currently Browndale Park in St. Louis Park and westward to Highway 100. At the time of ditch establishment, the lots in Minneapolis had been platted as small city lots, but were most likely undeveloped at the time because of wet conditions. The original ditch drawings list the owners of the larger parcels with the total acreage of the lot and the wetland on the property. Each of the

small lots in the platted blocks was not digitized onto the maps, but each block with platted small lots is marked with a “P” on Figure 15.

Land use at the time of ditch establishment is inferred to be agricultural or vacant residential. As shown in Figure 19, land use by 1945 was 65 percent residential and by 1959 that had increased to 77 percent. It is likely that the ditch was established in order to drain wetland areas to allow for primarily residential development. Land use in 1997 was mostly single family residential (67 percent) with 6 percent multi-family residential, 10 percent parks, and 10 percent commercial (Figure 20).

7.3 PUBLIC WATERS

Lake Calhoun, the outlet for the stormsewer system that replaced the open channel ditch, is the only public water affected by this ditch (Figure 21).

7.4 FUNCTION

County Ditch 17 has been converted to an area entirely served by stormsewer rather than the original open channel. Therefore, the function of the ditch has largely been eliminated and replaced by subsurface pipe conveyances.

8.0 County Ditch 27 – Long Lake Creek

8.1 ALIGNMENT

County Ditch 27 includes two separate areas, a portion of Long Lake Creek, and the outlet for French Lake. The Long Lake Creek portion of the ditch begins just south of the Luce Line Trail and outlets into Tanager Lake. The French Lake portion begins at the outlet to French Lake and enters Crystal Bay of Lake Minnetonka. The ditch was originally established in 1915 according to the oldest plans on file with Hennepin County. A profile drawing of the ditch and the laterals was included in the original plans.

Figure 22 shows that the Long Lake Creek portion of the original ditch (orange) remains an open channel (red) in much the same location as in the original plans. The wetland areas that were present at the time of ditch establishment are almost exactly as they remain today. Much of the ditch through the wetlands adjacent to French Lake is no longer present as a visible open channel, but the outlet to French Lake remains open and in a similar location (Figure 22).

8.2 BENEFITED PROPERTIES AND LAND USE

Benefited properties at the time of ditch establishment were primarily large lots that were presumably agricultural. One area off of Smiths Bay had smaller platted lots as part of a subdivision. Benefited parcels are shown in white in Figure 23 and in black in Figure 24.

As shown in Figure 23, land use was only 9 percent residential by 1945. Residential land use had increased to 11 percent in 1959. Figure 24 shows that current land use is now 28 percent single family residential, 42 percent agriculture/vacant, and 9 percent parks.

8.3 PUBLIC WATERS

County Ditch 27 is located in the portion of Long Lake Creek that is a public water wetland. The French Lake portion of County Ditch 27 is listed as a public water (French Lake) and a public watercourse (the stream into Lake Minnetonka). Figure 25 shows the locations of the public waters and public wetlands in the area of County Ditch 27.

8.4 FUNCTION

County Ditch 27 continues to function as a drainage system for agricultural land.

9.0 County Ditch 29

9.1 ALIGNMENT

County Ditch 29 is located in St. Louis Park and begins at about Minnetonka Boulevard and Highway 100 and runs east to its terminus near the railroad tracks. This area drains southeast to Lake Calhoun. The ditch plans are undated. A date of establishment of County Ditch 29 is unknown.

The ditch has been completely converted to stormsewer. The stormsewer lines are closely matched, for the most part, to the location of the former ditch. Figure 26 shows the location of the ditch when it was established (orange) and the location of the current St. Louis Park and Minneapolis storm sewers (green).

9.2 BENEFITED PROPERTIES AND LAND USE

Very few properties were listed as benefited for this ditch. The properties include four blocks of platted lots, and eight larger landowners. In 1945, 35 percent of the land use was residential. By 1959, residential land use had increased to 59 percent (Figure 27). Land use in 1997 was 43 percent single-family residential, 16 percent multi-family residential, 8 percent parks, 7 percent commercial, and 7 percent industrial (Figure 28).

9.3 PUBLIC WATERS

Lake Calhoun, the outlet of the ditch, is the only public water located along the course of the ditch (Figure 29).

9.4 FUNCTION

County Ditch 29 has been converted to an area entirely served by stormsewer rather than the original open channel. Therefore, the function of the ditch has been eliminated and replaced by subsurface pipe conveyances.

10.0 County Ditch 32

10.1 ALIGNMENT

County Ditch 32 is located in a wetland that is now intersected by Highway 12 and entrance ramps for Highway 101. The ditch plans on file at the County are undated, but appear to be more recent than most of the other plans reviewed. The County Ditch 32 drawing includes a profile view of the main ditch and the laterals showing the depth of excavation.

As shown in the original plans, the ditch does not connect directly to any other water body. At that time, the ditch likely discharged to a natural stream with an outlet in Wayzata Bay near downtown Wayzata. The original ditch alignment is shown on Figure 30 as an orange line.

The ditch is currently an open channel in wetland areas and in culverts under the highway (Figure 30, red line). The current ditch follows relatively closely with the original ditch plan. The drainage then flows south through stormsewer constructed was part of the Gleason Lake Phase I project to Wayzata Bay of Lake Minnetonka.

10.2 BENEFITED PROPERTIES AND LAND USE

The benefited properties include three areas with platted smaller lots and 19 larger parcels (Figure 31). All of the smaller platted lots currently remain wetland areas aside from those on the far western side.

Land use in 1945 was 13 percent residential. By 1959, residential land use had increased to 35 percent (Figure 31). In 1997, the most recent data available, land use of the benefited parcels

was 32 percent single family residential, 14 percent multi-family residential, 12 percent vacant, 10 percent public, and 8 percent highway (Figure 32).

10.3 PUBLIC WATERS

No public waters or public wetlands are present along the course of County Ditch 32 (Figure 33).

10.4 FUNCTION

County Ditch 32 no longer drains agricultural areas, but does function as an open stormwater conveyance that is important to the Cities of Wayzata and Plymouth.

11.0 Policy Recommendations

11.1 BACKGROUND

Public ditches are regulated by Minnesota Statutes Chapter 103E. The Minnehaha Creek Watershed District, as the drainage authority, is generally allowed to:

construct and maintain drainage systems; deepen, widen, straighten, or change the channel or bed of a natural waterway that is part of the drainage system or is located at the outlet of a drainage system; extend a drainage system into or through a municipality for a suitable outlet; and construct necessary dikes, dams, and control structures and power appliances, pumps, and pumping machinery as provided by law.

However, if a waterbody or watercourse is a public water, the drainage proceedings are subject to DNR approval under Section 103G.241, public waters law. Therefore, all ditches within public waters, such as Judicial Ditch 2, would be regulated under both public waters law, 103G, and ditch law, 103D and 103E. The DNR Rules, however, allow an exemption for public ditches established under 103D or 103E.

According to Chapter 103E.015, decisions regarding drainage work conducted under public ditch authority should take into account the following when determining the public benefit of a project:

1. Benefits and costs of the project
2. Present and anticipated agricultural land availability and use
3. Present and anticipated land use
4. Flooding characteristics
5. Alternative measures to use, conserve, allocate, or retain waters
6. Effect on water quality
7. Fish and wildlife resources

8. Groundwater availability and use
9. Overall environmental impact

When considering the management and maintenance of the existing ditches under MCWD authority the District should take into account the above considerations and evaluate options such as abandonment or transfer of ditches that have been converted to stormsewer.

11.2 ABANDONMENT

The 1992 Public Ditch evaluation recommended possible abandonment or transfer of authority to the Cities who own the stormsewer for County Ditches 14, 17, and 29, the three that drain into Lake Calhoun, and County Ditch 15 in Plymouth. County Ditch 15 remains primarily open ditch, and was recommended for possible abandonment because of the lack of agricultural land use in the area. County Ditch 32 is also in an area that is no longer in agricultural use.

Each of the three ditches draining into Lake Calhoun contains a portion of stormsewer which is located within the original legal ditch alignment. County Ditch 29 contains a majority of the stormsewer alignment within the original ditch alignment. County Ditches 14, 17, and 29 have been converted to stormsewer, are located in entirely urban areas, no longer function as a traditional ditch, and, for the most part, are not located within the original ditch alignment. For these reasons, they would be good candidates for abandonment.

County Ditches 15 and 32 would be candidates for abandonment solely because of the lack of agricultural land use in the area. These would likely be more difficult to legally abandon, but may be better candidates for transfer of authority to a city.

Abandonment of a ditch under Section 103E.811 requires a petition signed by at least 51 percent of the properties assessed for construction of the drainage system. The petition must show that “the drainage system is not of public benefit and utility because the agricultural property that

used the drainage system has been generally abandoned”. A hearing would then be held to consider the petition. The difficulty in attempting a legal abandonment of a ditch in an urban area is that 51 percent of the landowners within the benefited areas of County Ditches 14, 17, 29 is a large number of people. Getting a petition signed by all of the required landowners would likely be a long and difficult undertaking. Additionally, 103E.811 states that the petition must be denied if the system serves a “useful purpose to any affected property.” This is an equally difficult obstacle to the abandonment process.

The portion of the ditch upstream of where the ditch serves any purpose may be abandoned based on the petition of a single benefited landowner. However, the entire ditch cannot be abandoned in this manner.

Abandonment of the ditches, if possible, would ease any confusion over who is responsible for the maintenance of the City stormsewer systems.

11.3 TRANSFER

A second possibility is to transfer the ditch authority to the city. County Ditches 14, 17, and 29 have all been converted to stormsewer by the cities. These ditches would be prime candidates for transfer to the cities since each city has already altered the drainage system to meet the city’s needs. County Ditch 14 and County Ditch 29 are located in St. Louis Park and Minneapolis. County Ditch 17 is located in Edina, St. Louis Park, and Minneapolis. Authority could be transferred to the city for the portion of the ditch within each city. Alternatively, County Ditches 14, 17, and 29 could all be transferred to a stormwater authority such as a Joint Powers Authority to manage the system.

County Ditch 15 remains primarily open ditch, but is an important drainage system for the City of Plymouth. It is entirely within Plymouth and could be transferred to the city. County Ditch

32 is also an important drainage system for the City of Wayzata. It is entirely within Wayzata and could be transferred to the city.

The District could petition for transfer of the ditches. As discussed in MS 103E.812, the petition must show that “the transfer is necessary for the orderly management of storm, surface, or flood waters, including management for water quality purposes.” The petition must also indicate the impact of the transfer on benefited properties. In addition, the transferee must prepare an engineering report establishing the nature and extent of the drainage easement and the as-built depth, grade, and hydraulic capacity of the system. The transfer would generally release the ditch from regulation under MS 103E, although the drainage rights of any benefited properties that continue to use the system must be preserved by the stormwater authority to whom the system is transferred.

11.4 DITCH MANAGEMENT

The current MCWD Rules do not specifically address the District’s authority over Public Ditches. A rule revision that recognizes the District’s ditch authority under Section 103E and addresses how drainage issues along the ditches will be managed could be beneficial in clarifying management strategies and requirements when a project affects a stream that is also categorized as a public ditch. However, since most projects conducted within ditches will be completed by MCWD as the ditch authority, this may not be necessary. Additionally, MCWD Rules provide protection for “watercourses”, which generally includes ditches.

The District should determine management strategies for each ditch based on an analysis of the nine categories listed in 103E.015 and on a consideration of the results of the District’s wetland function and value assessment and hydrology and hydraulics study. General recommendations for each ditch are listed below.

11.4.1 Judicial Ditch 2

Judicial Ditch 2 is within a public watercourse and travels through a number of public waters. For this reason, the ditch should be given a higher level of protection than that required solely by ditch law. Judicial Ditch 2, however, is in an area still used for agriculture although development is rapidly expanding into this area. Agricultural concerns should be taken into account under MS 103 where applicable. New, non agricultural, development in the area of the ditch should consider the ditch a public water. A survey of the current ditch profile should be conducted to establish a baseline for future inspections and for evaluation of future projects along the ditch.

11.4.2 County Ditch 10

County Ditch 10 is also located in an agricultural area with increasing residential development. Painter Creek, however, has maintained its excavated channel nature to a greater extent than Judicial Ditch 2/4. County Ditch 10 is not a public watercourse. Projects affecting the public wetlands along the course of the ditch should be protected as public wetlands or WCA wetlands as applicable. Projects in other portions of the ditch should be regulated under ditch law. A survey of the current ditch profile should be conducted to establish a baseline for future inspections and for evaluation of future projects along the ditch.

11.4.3 County Ditch 14

County Ditch 14 has been mostly converted to stormsewer and is in an urban area with no agricultural land use. It is a prime candidate for abandonment. If the abandonment process is too difficult or unsuccessful, the ditch should be transferred to St. Louis Park and Minneapolis. If the transfer is also unsuccessful, the ditch should be treated as a City stormsewer system and maintenance should be handled by each City. Drainage concerns related to the area of County Ditch 14 should be handled jointly by the City and the District.

11.4.4 County Ditch 15

County Ditch 15 is still mostly open ditch, but is now located in a residential and commercial area. The ditch does not provide drainage for any agricultural land. Although abandonment may be possible due to the change in land use it may be more difficult because the ditch is still mostly open channel. Transfer of authority is a better option for County Ditch 15. If the transfer process is unsuccessful, the ditch should be managed as allowed under ditch law. A survey of the current ditch profile should be conducted to establish a baseline for future inspections and for evaluation of future projects along the ditch.

11.4.5 County Ditch 17

County Ditch 17 has been entirely converted to stormsewer. Although portions of the sewers are along the same alignment as the ditch, the majority of the sewers are not. County Ditch 17 is in an urban area with no agricultural land use. It is a prime candidate for abandonment. However, if the abandonment process is too difficult or unsuccessful, the ditch should be transferred to Edina, St. Louis Park, and Minneapolis. If the transfer is also unsuccessful, the ditch should be treated as a City stormsewer system and maintenance should be handled by each City. Drainage concerns related to the area of County Ditch 17 should be handled jointly by the City and the District.

11.4.6 County Ditch 27

County Ditch 27 is in an area that remains somewhat agricultural/vacant with a large proportion of the land use also residential. County Ditch 27 remains an open channel in natural stream condition in most areas. A survey of the ditch profile should be conducted. The ditch is within public waters, public wetlands, and public watercourses and should be held to the level of protection generally given to these water bodies. If abandonment is possible, it would facilitate restoration of the stream water quality and afford Long Lake Creek a higher level of protection.

A survey of the current ditch profile should be conducted to establish a baseline for future inspections and for evaluation of future projects along the ditch.

11.4.7 County Ditch 29

County Ditch 29 has been entirely converted to stormsewer. The majority of the sewers are along the same alignment as the ditch. County Ditch 29 is in an urban area with no agricultural land use. It is a prime candidate for abandonment. If the abandonment process is too difficult or unsuccessful, the ditch should be transferred to St. Louis Park and Minneapolis. If the transfer is also unsuccessful, the ditch should be treated as a City stormsewer system and maintenance should be handled by each City. Drainage concerns related to the area of County Ditch 29 should be handled jointly by the City and the District.

11.4.8 County Ditch 32

County Ditch 32 remains an open channel but is in an area that is now residential, vacant, and highway. The ditch drains into an open stream that enters stormsewer within Wayzata and outlets into Lake Minnetonka. County Ditch 32 does not provide drainage for any agricultural land. Although abandonment may be possible due to the change in land use it may be difficult because the ditch is still mostly open channel. Transfer of authority to Wayzata would be a better option. If transfer is not possible, the ditch should be managed as allowed under ditch law. A survey of the current ditch profile should be conducted to establish a baseline for future inspections and for evaluation of future projects along the ditch.