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SNAIL LAKE IMPROVEMENT DISTRICT

Pursuant to Minnesota Statutes, Chapter 103B.50 to 103B.581 and Department of Natural Resources (DNR) Rules, Part 6115.0900 to 6115.0980, this document has been created for and approved by the City Council of the City of Shoreview, Ramsey County, Minnesota to establish a Lake Improvement District for Snail Lake which is located wholly within the corporate boundaries of the City of Shoreview. Pursuant to Minnesota Statute 459.20, the City of Shoreview proposes to exercise similar authority provided to the County Board within Minnesota Statutes 103B.50 to 103B.581 and within said DNR Rules to establish and administer a Lake Improvement District for Snail Lake.

a. Statement of Lake Problems and Objectives. Snail Lake has an inadequate natural supply of water to maintain a water level which is appropriate for a Group 1 lake. Grass Lake Water Management Organization (GLWMO) has identified Snail Lake as a Group 1 water body with a high level and variety of uses in the watershed management plan. Since 1927, Snail Lake has been augmented from a deep-well ground water pump to maintain a surface water elevation of approximately 883.8 (MSL). In 1990, the DNR suspended the pumping permit which augmented Snail Lake with ground water. With no source to augment Snail Lake, the DNR has estimated that the lake will drop to a surface elevation of 877.3 (MSL). It is likely that this will change the lake into two small bodies of water that would be unusable for recreational functions, and would severely impact property values established to riparian owners on Snail Lake. The objective of the Lake Improvement District is to provide an operating organization to implement, administer and monitor an augmentation program for Snail Lake, along with the associated programs involved with improvements to the lake body and surface.

b. Types of Water Related Land Resource Management Programs. The primary purpose of the Lake Improvement District is to provide financial support for the construction and annual operating expenses of an augmentation plan, along with a water quality monitoring program to maintain the high water quality within the lake. The City and the Snail Lake Homeowner's Association have cooperatively prepared a plan that has studied alternatives to the augmentation of the lake, including an option of no augmentation. The study, prepared by SEH Engineers, Inc. in cooperation with Ramsey County and DNR staff, concluded with 95% certainty, that the lake would not sustain its recreational status without augmentation. The study recommended the implementation of a plan to purchase water from the St. Paul Water Utility supply system in nearby Sucker Creek, which is supplied with water from the Mississippi River. A program to monitor the impacts of introducing this additional source of water, and thus an additional source of nutrients, and potentially foreign matter, has been recommended as part of an overall district. Since neither the GLWMO nor the City of Shoreview are capable of providing all of the financing for the augmentation plan for Snail Lake, it is proposed that a Lake Improvement District be created to finance a majority of the costs to augment and monitor Snail Lake.

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The operation of Snail Lake augmentation system is proposed to start pumping just after ice-out until the lake reaches an elevation of 882.7. After June 1, pumping will only occur if the lake drops to an elevation of 881.5 or less. Pumping will occur each fall for a maximum of 1 month to reach an elevation of 882.7 before freeze-up. A high water overflow pipe at an elevation of 884.00 is to be installed as part of the Snail Lake Boulevard reconstruction project. It is expected that a 100-year rainfall event will raise the lake 1.5 feet. The outlet of the overflow pipe is into a large wetland complex located southeast of Snail Lake. The wetland area drains into Grass Lake.

c. Means for Financing Program. The primary purpose of the Snail Lake Improvement District is financial support of the augmentation project along with a program to monitor the water quality effects of the augmentation water on Snail Lake. In order for the City of Shoreview to establish a cost-sharing agreement with riparian property owners for the Snail Lake Augmentation Project, an assessment program is required. Minnesota State Statutes (M.S. 429), do not provide the City the authority of assessments to private property for an augmentation project. By establishing the Snail Lake Improvement District, the City of Shoreview has the authority to use the M.S. 429 Improvement Process to establish the direct benefit from augmenting Snail Lake necessary in the assessment process.

d. Boundaries of District. The boundaries of the Snail Lake Improvement District and the watershed boundary are attached hereto as Exhibit 1. Since the direct benefit of augmentation and water quality monitoring is to riparian property and the general public users of the lake, it is proposed that the Lake Improvement District be limited to the properties shown on the attached Exhibit 1. All dwellings within the proposed district are permanent.

e. Number of Directors. The Lake Improvement District is proposed to be governed by a Board of Directors, comprised of five (5) members, to be appointed by the Shoreview City Council, at a later date, from a list of nominees. The Board of Directors shall be residents of the District. The Board of Directors shall have authority to recommend improvements and expenditures to the Shoreview City Council and the Grass Lake Water Management Organization, but will not have authority to approve expenditures. The Board shall at a minimum hold an Annual Meeting, at which they shall recommend to the City Council a budget for the succeeding year. The Board shall also annually review the monitoring program proposed for the lake water quality data and shall recommend revisions to the City Council and GLWMO as deemed appropriate.

f. Local Ordinances which Regulate Use of Lake. The existing public access to Snail Lake is regulated by Minnesota Statutes Section 97A.141 of the Minnesota Game and Fish Laws. Ramsey County and Shoreview Ordinances regulating the use of the lake and public access are attached hereto.

g. Local Interest and Commitment. The improvement of Snail Lake has been a cooperative project between the Snail Lake Homeowner's Association and the City of Shoreview since early in 1990. The City and

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the Homeowner's Association have already contributed \$20,000 each toward the preparation of the Study Report on augmentation issues on the lake. Staff representatives from Ramsey County, the DNR and the GLWMO have also contributed considerable time and effort toward finding a solution to the issues related to Snail Lake. Attached is a copy of a petition circulated to all the properties proposed to be included within the Lake Improvement District. The petition represents the approval and request for the Lake Improvement District formation along with the augmentation project from over 83% of the property within the proposed District. Numerous meetings have been held with the Snail Lake Homeowner's Association, which represents a majority of those properties within the Lake Improvement District, and unanimous approval of the District and the project details have always been received. Meetings continue to be held with the Board of Directors for the Homeowner's association on a bi-monthly basis to continue movement toward the goal of augmentation of the lake.

h. Adversely Impacted Lands and Waters. An integral part of the proposed augmentation project would require that the water quality of the source water (Sucker Lake), as well as its effects upon Snail Lake, be assessed on a regular frequency over a minimum short time period (three to five years). Two assessment options relating to both the lake and augmentation water source are available to the proposed Snail Lake Improvement District to satisfy this requirement.

The St. Paul Water Utility (SPWU) has conducted a water quality monitoring program since 1984 on both Sucker Lake and its outlet to Vadnais Lake on both a monthly and bi-weekly basis, respectively. As a first option, the data from the SPWU monitoring program would likely be adequate for use in describing the source water for augmentation from Sucker Lake.

The second option would involve grab sampling the augmentation discharge manhole entering Snail Lake. The District would obtain twelve (12) samples from the discharge over the augmentation period for analysis of total and ortho-phosphorus. The second option would be implemented if the SPWU were to discontinue its water quality monitoring program. If monitoring were undertaken under Option Two, the estimated annual (1993) cost would be approximately \$1,650 (analytical, labor and misc. expenses).

Water quality monitoring of Snail Lake has been undertaken by the Environmental Services Division of the Ramsey County Public Works Department (Terry Noonan, Limnologist) since 1985. There are two options for consideration of determining whether the augmentation of Snail Lake adversely affects the lake's water quality. The first option would involve the review and use of the Ramsey County data, assuming their present program continues uninterrupted. This program includes the analysis of in-lake nutrient (nitrogen and phosphorus species), physical (temperature, dissolved oxygen and secchi disc transparency) and biological (zooplankton, phytoplankton, and macrophyte) data at two representative sample stations. In the absence of the Ramsey County program, the District would continue a similar water quality monitoring

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program on Snail lake at an estimated annual (1993) cost of \$8,500 (analytical, equipment rental, labor, and misc. expenses).

The District's Board of Directors would be responsible for preparing an annual report which would summarize the water quality data from the augmentation source and Snail Lake. The report would address the extent to which there may be significant increase (greater than one standard deviation from the mean concentration over the period of record of sampling for Sucker Lake) in total and orthophosphorus data. The lake water quality data gathered by Ramsey County includes nutrients (nitrogen and phosphorus), biological (chlorophyll a, macrophytes, and zooplankton) and physical (temperature, dissolved oxygen, and secchi disc) constituents. The Snail Lake Study (September 30, 1991) identified a period of record mean summer chlorophyll a concentration of six parts-per-billion. The report would address whether the mean summer concentration has been exceeded by more than one standard deviation from the mean and if such a change may be the result of lake augmentation nutrient sources. Should the mean annual chlorophyll a concentration be significantly exceeded, the report would address the steps necessary in the upcoming growing season to alleviate the problem, if necessary. The estimated annual (1993) cost of the report would be \$1,200.

The Snail Lake Improvement District will also monitor, and attempt to prevent and/or remove, if necessary, the introduction of Eurasian Water Milfoil, Zebra Mussels and other harmful aquatic species that may or may not be introduced through the proposed augmentation system. This monitoring will be done by the Ramsey County Environmental Services Staff as currently performed, or through a program administered by the District if deemed necessary for the identification and control. The Snail Lake Augmentation Study by SEH, Inc. stated that the likelihood of the introduction of Eurasian Water Milfoil from the St. Paul Water Utility (SPWU) system is low. Currently, the only lake within the SPWU system that has Eurasian Water Milfoil is Vadnais Lake, which is downstream from Snail Lake. Lakes upstream of Snail Lake (Pleasant Lake and Sucker Lake) do not have Eurasian Water Milfoil based on a field survey investigation by Ramsey County. All lakes mentioned receive water from the St. Paul Water Utility system. It is clear that the introduction of Eurasian Water Milfoil to Vadnais Lake did not come from an upstream source and it is unlikely that it will occur to Snail Lake via the St. Paul Water Utility.

i. Adequacy and Ownership of Public Access and Public Lands. The public access, beach area, and park (see Exhibit 1) are owned by Ramsey County. This park is currently planned to be developed into a regional park as part of the Ramsey County Park & Recreation Master Plan, and proposed to be financed through grants from the Metropolitan Council. The Metropolitan Council approval of improvement of the Park into a Regional Park is likely to be subject to the approval of this proposed district and implementation of an augmentation plan to maintain the recreational value of Snail Lake and thus the value of the Park.

j. Estimate of Total Equalized Valuation. Based on property values taken from the Ramsey County Taxation Books, the total value of private property within the proposed district is \$13,023,300. No dollar value

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has been assigned to the Snail Lake Regional Park; however, Ramsey County is proposing \$3,015,891 in improvements to the Park over the next 8 year period.

k. City Officer Responsible for Supervision. The Director of Public Works for the City of Shoreview shall be responsible for supervision of all programs carried out by the Snail Lake Improvement District. All District operations will be operations of the City of Shoreview and approved by the City Council. The Director of Public Works is also on the Grass Lake Watershed Management Organization Technical Advisory Committee. The District will coordinate all projects with Ramsey County, Grass Lake Water Management Organization, Minnesota Department of Natural Resources, Minnesota Pollution Control Agency, and any other agency that has regulatory control over Snail Lake.

l. Public Hearing Date. A hearing is called for July 6, 1992, at 7:00 p.m. in the City Council Chambers, City of Shoreview City Hall, 4600 N. Victoria Street, Shoreview, Minnesota 55126. This hearing shall be preceded by 40-day mailed notice to the Commissioner of the Department of Natural Resources and the Minnesota Pollution Control Agency. At least 21 days prior to the hearing, mailed and published notice shall be given to all property owners within the proposed District.

m. Other Information.