Appendix B – Design Criteria

# RESOLUTION 7933

## A Resolution Adopting Design Criteria For Chapter 150 of the City Code, Subdivision Regulations

**WHEREAS,** Shakopee City Code Chapter 150 contains subdivision regulations; and

**WHEREAS,** City Code Sections 150.55 through 150.66 establish certain city design criteria pertaining to design, construction, and installation that all public improvements, subdivisions, and new buildings must follow; and

**WHEREAS,** the design criteria are defined in a separate standalone document by reference called the "City of Shakopee Design Criteria"; and

**WHEREAS,** the latest version of the city's Design Criteria was adopted by the City Council through Resolution 6805 on September 2, 2008; and

**WHEREAS,** the Erosion and Sediment Control, and the Storm Sewer sections of the Design Criteria have been updated to meet compliance requirements established by the Minnesota Pollution Control Agency as part of the city's Small Municipal Separate Storm Sewer System General Permit (MS4 Permit).

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SHAKOPEE, MINNESOTA:** that it hereby approves and adopts the revised Design Criteria, a copy of which is attached hereto for use with Chapter 150 of the City Code, Subdivision Regulations.

Adopted in regular session of the City Council of the City of Shakopee, Minnesota, held this 17th day of October 2017.

Mayor of the City of Shakopee

ATTEST:

City Clerk

# City of Shakopee

## Design Criteria

Revised: May 4, 2004 by Resolution No. 6041
Revised: April 4, 2006 by Resolution No. 6391
Revised: September 2, 2008 by Resolution No. 6805
Revised: October 17, 2017 by Resolution No. 7933

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## Design Criteria and General Plan Requirements - Grading, Street and Utility Improvements



## Sect. 1 – General

The requirements contained in this document are minimum general requirements for new construction. The City Engineer may require additional information and increase the minimum requirements on any project.

## Sect. 2 – Grading

**1. General.** The grading and erosion control plans shall conform to the most recent editions of "Minnesota Stormwater Manual" City of Shakopee **"Comprehensive Stormwater Management Plan"** or as modified herein and the City's most recent Standard Detail Plates.

**2. Grading and Erosion Control.**

**A.** The minimum allowable grade in non paved areas is 2%.

**B.** No final graded slopes shall be steeper than three (3) feet horizontal to one (1) foot vertical (3:1).

**C.** Driveway grades shall be less than ten (10) percent, and greater than one (1) percent. Driveway grades shall not be greater than six (6) percent within the right-of-way. Commercial and Industrial Driveway grades shall not be greater than six (6) percent for any part of the driveway.

**D.** Lots shall be graded so as to provide drainage away from building locations.

**3. Topsoil - Sodding and Seeding.** Topsoil moved during the course of construction shall be redistributed in turf establishment areas with a minimum of six (6) inches of topsoil. Disturbed

boulevard areas shall be restored in accordance with the City of Shakopee General Specifications and Standard Detail Plates for Street and Utility Construction. Additionally, sod must be installed the full easement width of all drainage swales leading to drainage structures on each lot (silt fence must be installed behind this sod).

**4. Drainage.** During the grading of the site, the natural drainage system shall be utilized as much as feasible for the storage and flow of runoff.

**5. As-built Grading Plan.** Upon completion of the grading of subdivisions, an as-built survey of the grading shall be submitted to the City. This plan must, at minimum, show the existing locations and elevations of all street centerline and top of curb high points and low points, all lot corners, building pads, intermediate tops of curb, sidewalks, trails, sanitary sewer structures, storm sewer structures, emergency over flows, high points in non-paved areas, ponding areas and watermain. The plan shall certify that all grading and erosion control is in conformance with the approved plans and that all ponding areas are within drainage and utility easements. Two benchmarks shall be shown on the as-built grading plan. No building permits shall be issued until this plan has been submitted and approved by the City Engineer.

An electronic copy must be submitted in a format approved by the City Engineer.

**6. Grading Permit.** Grading Permits will be required, as described in Section 151.110 of the City Code. Prior to issuance of a grading permit, the applicant shall strictly adhere to the requirements set forth in Chapter 54 of the City Code.

The applicant must submit a written application for stormwater management plan approval along with the site's stormwater management plan per requirements set forth in Chapter 54 of the City Code.

The applicant must submit the appropriate wetland applications in accordance with the Minnesota Wetland Conservation Act (WCA) per requirements set forth in Chapter 54 of the City Code.

**7. Tree Preservation Fence.** Existing trees, which are to be saved, shall be protected with a tree preservation fence installed at the drip line of the tree(s). No grading, construction materials, or equipment will be allowed beyond this fence.

**8. Plan Requirements.** The following are specific requirements related to the development of grading and erosion control plans for the proposed development and adjacent land within two-hundred (200) feet unless noted otherwise:

**A.** Show and label existing underground and overhead utilities.

**B.** Show the location and indication of demolition or relocation of existing structures.

**C.** Show lot corner elevations and benchmarks utilized.

**D.** Existing contours shall be at one (1) foot or two (2) foot intervals shown with dashed lines and screened. The contours shall extend beyond the proposed plat boundaries a minimum of two-hundred (200) feet or as necessary to completely

show the limits of a drainage basin not fully contained within the proposed plat. Ten (10) foot contour intervals shall be bold.

**E.** Proposed contours shall be at one (1) foot or two (2) foot intervals shown with solid lines. Ten (10) foot contour intervals shall be bold.

**F.** Ponds, wetlands, lakes, streams or manholes shall be shown with the following:

1. Show the NWL and HWL for ponds and wetlands.
2. Show OHWL and DNR number if applicable.
3. Ponds shall include ten (10) foot bench, sloping downward from the NWL ten (10) feet horizontal to one (1) foot vertical (10:1).
4. Show the delineated wetland boundary.

**G.** Show existing and proposed building footprints with proposed floor elevations.

**H.** The lowest floor elevations of affected structures adjacent to outletted ponds shall be in accordance with the City's Stormwater Management Plan.

**I.** Show emergency overflow routes from all low points and show the high point elevation along emergency overflow routes. Show directional flow arrows. Emergency overflows shall be a minimum of one (1) foot plus the high flow elevation (minimum of 1.5-feet) below the lowest opening elevation of adjacent affected structures.

**J.** Show limits of clearing and grubbing.

**K.** For proposed retaining walls, identify top and bottom elevations of retaining wall. Retaining walls greater than four (4) feet in height shall be designed and certified by a licensed professional engineer.

**L.** Show all lot numbers, block numbers, and drainage and utility easements.

**9. Haul Routes.** Prior to grading and erosion control operations commencing, a drawing must be submitted outlining the proposed haul routes for the import and export of all materials to and from the site. All haul routes are subject to approval by the City Engineer.

## Sect. 3 – Erosion and Sediment Control

**1. Purpose.** The purpose of this Section is to promote the public health, safety, property and general welfare of the citizens of the City and to conserve the soil, water and related resources and to control erosion and sedimentation caused by land disturbing activities.

**2. Administration.** The Building Official or the City Engineer (depending on the land disturbing activity) shall be designated as the Administrator of this Section.

**3. Activities Subject to Erosion Control Measures.**

**A.** Any land disturbing activity in residential, multi-family, commercial or industrial zones shall be subject to erosion control measures provided that:

1. An area of ten-thousand (10,000) square feet or greater will be disturbed by excavation, grading, filling or other earth moving activities resulting in the loss of protective vegetation; or,
2. Excavation or fill exceeding fifty (50) cubic yards; or,
3. The installation of underground utilities, either public or private, resulting in more than three-hundred (300) feet of trenching or earth disturbance.

**B.** Any subdivisions that require plat approval or a certified survey map.

**C.** Agricultural lands used mainly for the production of food, general farming, livestock and poultry enterprises, nurseries, forestry, etc., are not subject to the provisions of this Section.

**D.** Any other land disturbing activity for which the City Engineer determines to have the potential for substantial erosion.

**4. Erosion Control Plans.**

**A.** All land disturbing activities covered by this Section shall be required to have an approved erosion control plan, per requirements set forth in Chapter 54 of the City Code, on file with the City prior to any construction starting.

**B.** The erosion control plan shall contain any such information necessary for the Building Official and the City Engineer to determine that adequate erosion and sediment control measures are proposed. As a minimum, a topographic map showing existing and proposed contours, location of any natural watercourses and drainage ways, the extent of the land disturbing activity and any erosion control measures shall be shown on the plans submitted and approved.

**C.** In addition to the plans, a narrative report summarizing the proposed erosion control measures shall be submitted. This report shall include language discussing the timing of the installation, phasing, stabilization of all structures, maintenance and eventual removal of all structures. A Storm Water Pollution Prevention Plan (SWPPP) in compliance with National Pollutant Discharge Elimination System (NPDES) requirements must also be submitted.

**D.** At a minimum, the permittee shall meet the specifications set forth below and observe the standards established in the NPDES Construction General Permit requirements.

1. Soil Stabilization: Soil stabilization shall be completed in a time period as specified by the NPDES construction general permit and the city's general

specifications and standards. The city of Shakopee may require the site to be reseeded or a nonvegetative option employed.

2. Seeding: Seeding shall be in accordance with seeding specifications. All seeded areas shall be fertilized, mulched, and disc anchored as necessary for seed retention.
3. Soil Stockpiles: Soil stockpiles which shall be inactive for a period of fourteen (14) or more days must be stabilized or covered at the end of each workday. Stockpiles shall include perimeter sediment controls and must not be placed in natural buffers or surface waters, including stormwater conveyances.
4. Ninety Percent Coverage: The entire site must be stabilized at a ninety percent (90%) coverage, using a heavy mulch layer or another method that does not require germination to control erosion, at the close of the construction season.
5. Site Development Sediment Controls: Site development sediment controls practices shall include those identified in the City's general specifications including, but not limited to:
    a. Settling basins, sediment traps, or tanks.
    b. Protection for adjacent properties by the use of a vegetated buffer strip in combination with perimeter controls.
    c. Perimeter control including machine sliced silt fence or other city approved BMP, which shall be in place before, during and after grading of the site. Fencing shall be removed only after seventy percent (70%) stabilization.
    d. Areas designated as a temporary construction staging area.
6. Temporary sediment basins: For sites that have more than ten (10) acres of disturbed soil that drains to a common location (or, five (5) or more acres for special or impaired waters), one or more temporary sediment basins shall be constructed. Use of temporary basins is encouraged when construction projects will impact steep slopes or when highly erodible soils are present. The basin shall provide treatment to the runoff before it leaves the construction site or enters surface waters. The temporary sediment basins must be designed and constructed as follows:
    a. Provide live storage for a calculated volume of runoff from a two (2)-year, 24-hour storm from each acre drained to the basin. All basins shall provide at least 1,800 cubic feet of live storage from each acre drained or more.
    b. For basins where the calculation in Section 10-1-12, B.7.a. has not been performed, a temporary sediment basin providing 3,600 cubic feet of live storage from each acre drained to the basin shall be provided for the entire drainage area of the temporary basin.
    c. The outlet structure must be designed to withdraw water from the surface in order to minimize the discharge of pollutants.
    d. The basin outlet shall be designed to prevent short-circuiting and the discharge of floating debris.
    e. Ensure the basin can be completely drawn down to conduct maintenance activities.
    f. Include energy dissipation on the outlet of the basin and a stabilized emergency overflow to prevent failure of pond integrity.

g. Be located outside of surface waters or any buffer zone, and be designed to avoid draining water from wetlands unless appropriate approval from the U.S. Army Corps of Engineers and the Minnesota Department of Natural Resources is obtained.

h. If installation of a temporary sediment basin is infeasible, equivalent sediment controls such as smaller sediment basins, and/or sediment traps, silt fences, vegetative buffer strips, or any appropriate combination of measures are required for all down-slope boundaries of the construction area and for side-slope boundaries where appropriate. Determination of infeasibility shall be documented in the erosion and sediment control plan.

7. Individual Construction Site Sediment Controls: Individual construction site sediment controls shall include:
   a. Rock construction entrance (driveway);
   b. Perimeter controls including silt fence in place before, during and after grading of the site. Fencing shall be removed only after proper turf establishment.

8. Waterway and Watercourse Protection: Waterway and watercourse protection requirements shall include stabilization of the watercourse channel before, during and after any in-channel work consistent with the City's general specifications.
   a. A temporary stream crossing must be installed and approved by the local government unit and regulating agency if a wet watercourse will be crossed regularly during construction.
   b. The watercourse channel shall be stabilized before, during, and within 24 hours after any in-channel work.
   c. No in-water work shall be allowed in Public Waters during the MnDNR's work exclusion dates.
   d. Prior to placement of any equipment into any waters, all equipment must be free of aquatic plants and non-native animals.
   e. All on-site stormwater conveyance channels designed according to the criteria outlined in this document. Stabilization adequate to prevent erosion located at the outlets of all pipes and paved channels is required.

9. Site Dewatering: Site dewatering shall be conducted pursuant to the City's general specifications document. Water pumped from the site shall be treated by temporary sediment basins, grit chambers, sand filters, or other controls as appropriate to ensure adequate treatment is obtained and that nuisance conditions will not result from the discharge. Discharges from the site shall not be released in a manner that causes erosion, scour, sedimentation or flooding of the site, receiving channels or wetlands.

10. Waste and Material Disposal: All waste and unused building materials (including garbage, debris, cleaning wastes, wastewater, toxic materials or hazardous materials) shall be properly disposed of off-site and not allowed to be carried by runoff into a receiving channel or storm sewer system.
    a. Solid waste: All unused building materials and waste (including, but not limited to: collected sediment, asphalt and concrete millings, floating debris, paper, plastic, fabric, etc.) must be disposed of

accordingly and shall comply with disposal requirements set forth by the MPCA.

b. Hazardous/toxic waste: Paint, gasoline, oil and any hazardous materials must be properly stored, including secondary containment, to prevent spills, leaks or other discharges. Access to the storage areas must be restricted to prevent vandalism. Storage and disposal of hazardous or toxic substance must be in compliance with the requirements set forth by the MPCA.

c. Liquid waste: All other non-stormwater discharges (including, but not limited to, concrete truck washout, vehicle washing or maintenance spills) produced during the construction activity shall not be discharged to any surface waters.

d. External washing of equipment and vehicles: All external washing activities shall be limited to a designated area of the site. All runoff must be contained and wastes from external washing activities must be disposed of properly. No engine degreasing shall be allowed on the site.

e. Wastes generated by concrete and other washout operations: All liquid and solid wastes generated by any concrete or other washout operations must be contained in a leak proof facility or impermeable liner. Concrete waste must not come into contact with the ground. Concrete waste must be disposed of properly and in compliance with applicable MPCA regulations.

11. Drain Inlet Protection: All storm drain inlets shall be protected during construction until all sources with potential for discharging to the inlet have been stabilized. Inlet protection measures must meet the City's standards and specifications.

12. Energy Dissipation: Pipe outlets must have temporary or permanent energy dissipation within 24 hours of connection to a surface water.

13. Tracking: Vehicle tracking BMPs (including, but not limited to: rock pads, mud mats, slash mulch, concrete or steel wash racks, or similar systems) must be installed to minimize track out of sediment from the construction site. If vehicle tracking BMPs are not actively preventing sediment from being tracked into the street, the applicant must immediately utilize street sweeping to contain sediment; then, the applicant must implement additional BMPs to prevent tracking.

14. Final Stabilization: Final stabilization is not complete until the following criteria are met:

a. All land disturbing activities must be finished and all soils shall be stabilized by a uniform perennial vegetative cover with a density of 70 percent or greater of its expected final growth density over the entire pervious surface area, or other equivalent means necessary to prevent soil failure under erosive conditions.

b. The permanent stormwater management system is constructed, meets all of the required design parameters and is operating as designed.

c. All temporary synthetic and structural erosion prevention and sediment control BMPs (such as silt fence) have been removed. BMPs designed to decompose on site may be left in place.

d. For residential construction only, individual lots are considered finally stabilized if the structure(s) are finished and temporary erosion protection and down gradient perimeter control has been completed and the residence has been sold to the homeowner.

e. For construction projects on agricultural land the disturbed land has been returned to its preconstruction agricultural use.

## 5. Performance Standards.

**A. General Standards.** In general, this Section does not require the use of any particular type of structure to control erosion and sedimentation. The City Engineer or Building Official shall evaluate the proposed measures to determine if they follow current accepted design criteria and engineering standards.

1. The smallest practical area of land shall be exposed at any given time during development.
2. Exposed soil shall be seeded and mulched in accordance with NPDES Permit requirements.
3. All development shall conform to the natural limitations presented by the topography and soil as to create the best potential for preventing soil erosion.
4. Erosion control measures shall be coordinated with the different stages of development. Appropriate control measures shall be installed prior to development to control erosion.
5. The natural vegetation and plant covering shall be retained whenever possible. Temporary vegetation, mulching or other cover shall be used to protect critical areas and permanent vegetation shall be installed as soon as practical.

**B. Standards - Stormwater Runoff Erosion.**

1. The natural drainage system shall be used when and wherever is feasible for storage and flow of runoff. Stormwater drainage shall be discharged to retention basins or other treatment facilities. Temporary storage area or retention ponds shall be considered to reduce peak flows, erosion damage and construction costs. If the drainage area is over five acres, a sediment basin shall be utilized.
2. Silt fence or hay bales shall be utilized to control erosion and prevent sedimentation from leaving the construction site. These structures shall be properly installed according to the City of Shakopee Standard Specifications and Detail Plates.
3. If needed, sod shall be laid in strips at intervals necessary to prevent erosion and at right angles to the direction of drainage.
4. At existing storm sewer inlets, temporary sedimentation traps may be necessary to prevent erosion from entering the storm sewer system, and downstream water bodies.
5. Adequate provision shall be made to prevent the tracking or dropping of dirt or other materials from the site onto any street by the use of rock construction entrances.

C. **Exposed Slopes.** The following control measures shall be taken to control erosion during construction:

1. No exposed slope shall be steeper in grade than three (3) feet horizontal to one (1) foot vertical.
2. Exposed slopes steeper in grade than ten (10) feet horizontal to one (1) foot vertical shall be contour plowed to minimize direct runoff of water.
3. At the foot of each exposed slope, a channel and berm shall be constructed to control runoff. The channeled water shall be diverted to a sedimentation basin (debris basin, silt basin or silt trap) before being allowed to enter the natural drainage system.
4. Along the top of each exposed slope, a berm shall be constructed to prevent runoff from flowing over the edge of the slope. Where runoff collecting behind said berm cannot be diverted elsewhere and must be directed down the slope, appropriate measures shall be taken to prevent erosion. Such measures shall consist of either an asphalt paved flow apron and drop chute laid down the slope or a flexible slope drain. At the base of the slope drain or flood apron, a gravel energy dissipater shall be installed to prevent erosion at the discharge end.
5. Exposed slopes shall be protected by whatever means will effectively prevent erosion considering the degree of slope, soils materials, and expected length of exposure. Slope protection shall consist of mulch, sheets of plastic, burlap or jut netting, sod blankets, fast growing grasses or temporary seeding of annual grasses. Mulch consists of hay, straw, wood chips, corn stalks, bark or other protective material. Mulch shall be anchored to slopes with liquid asphalt, stakes, and netting or shall be worked into the soil to provide additional slope stability.
6. Control measures, other than those specifically stated above may be used in place of the above measures if it can be demonstrated that they will effectively protect exposed slopes.

D. **Dust Control Measures.**

1. Temporary mulching or seeding shall be applied to open soil to minimize dust.
2. Barriers such as snow fences, commercial wind fences and similar materials shall be used to control air currents and blowing soil if the City Engineer determines it is necessary.
3. The exposed soil shall be watered to control dust, with frequency of watering repeated as necessary.
4. Permanent vegetation shall be established in accordance with NPDES Permit requirements.

**6. Maintenance of Erosion Control Measures.**

A. The owner or developer shall be responsible for maintaining all erosion control structures in a condition that will ensure continuous functioning of those devices. If,

after the installation of the erosion control structure, the City Engineer determines that additional measures are needed, they shall be installed at the expense of the owner.

B. Any erosion or sediment that runs off or blows off the site onto adjoining properties, City streets, storm sewers, etc., shall be the responsibility of the owner or developer for clean up and restoration. If the owner fails to properly clean up or restore all areas affected by erosion the City will hire a contractor to complete the work and bill the owner for the expenses associated with the clean-up.

**7. Technical Reference.** The City officially designates the "Protecting Water Quality in Urban Areas" prepared by the Minnesota Pollution Control Agency as the technical reference for this Section. This reference will be used to ensure the proper placement and installation of any proposed erosion control structures.

**8. Security.** The owner or developer shall submit to the City either cash or a certified letter of credit in accordance with current City requirements to guarantee the faithful execution of the grading and erosion control plan. This security shall be in the amount of one-hundred twenty-five (125) percent of the costs for grading, the construction of all erosion control devices and site restoration or $1,000/disturbed acre, whichever is higher, including the costs of City construction observation and administration (as approved by the City Engineer). The City is authorized to draw against this security in the event the grading and erosion control plan is not followed.

**9. Unlawful Acts.** It is unlawful for any person, either by the owner or the occupant of premises, to violate, neglect or refuse to comply with the requirements of this Section. In addition, if the Building Official or the City Engineer determines that adequate erosion control measures are not being followed and there is little cooperation on the part of the owner to do so, a "stop work" order may be issued to all work on the site until such times as adequate measures are implemented.

## Sect. 4 – Storm Sewer

**1. Design Criteria.**

A. The design criteria, policies, and objectives shall be those described in the City's "Comprehensive Water Resource Management Plan". No existing ditch, stream, wetland, pond, drain or drainage canal shall be deepened, widened, filled, re-routed or filled without approval from the City Council.

B. Storm sewer shall be designed to have a minimum full flow velocity of three (3) feet/second.

C. Storm sewer structures exceeding four (4) feet in depth shall have a minimum diameter of forty-eight (48) inches.

**2. Pond Slopes.** Pond slopes below the HWL shall not be steeper than four (4) feet horizontal to one (1) foot vertical. All ponds shall have a bench at the normal water level. This bench shall be a minimum of ten (10) feet wide and the slope of this bench shall not be steeper than ten (10) feet horizontal to one (1) foot vertical.

**3. Plan Requirements.** A Stormwater Management Plan, along with supporting documentation, must be prepared and submitted that meets City drainage standards. Outlined below, please find a listing of information to be submitted:

**A.** Drainage reports and studies shall include an overall drainage plan. The information listed below, if not shown on the drawings, shall be included in the report. The use of appropriate forms and design aids is recommended.

1. Runoff rate and ponding calculations for the site for the two (2) year, ten (10) year and one-hundred (100) year rainfall events and the one-hundred (100) -year, ten (10) day snow melt event. These computations should be provided for both the existing and future conditions, or as necessary to demonstrate compliance with the City's Comprehensive Water Resource Management Plan. Computations shall identify the critical duration of the rainfall events.
2. Open channel flow calculations/computations.
3. Storm sewer and storm inlet flow calculations for the ten (10) year rainfall event.
4. Culvert design flow calculations for the ten (10) year and one-hundred (100) year rainfall events.
5. Summation of all design variables used and design assumptions made.
6. Soil classification reports and depth of underground water table throughout the study area when detention or retention ponds are used.
7. The boundary and designation of all tributary drainage areas and the area of each in acres.
8. The designation and location of each design point referred to in the calculations.
9. The reference source and a copy of all other monographs or design aids used in the calculations.

**B.** The preliminary drainage report shall be approved by the City Engineer prior to Engineering approval of any Preliminary Plat or Preliminary P.U.D. The study will consist of calculations, comments and descriptions on 8-1/2" x 11" paper and an area map on one 22" x 34" drawing. Calculations shall include the two (2) year, ten (10) year, and one-hundred (100) year rainfall events and the one-hundred (100) year, ten (10) day snow melt event calculations of all tributary areas to the development, all collection points within the development and all points discharging from the development. The 22" x 34"map shall be a topographic map of both the development and all areas tributary to the development. The map shall show the total acreage and anticipated runoff rates at all points noted in the calculations. In addition, the map shall show the proposed location of all drainage facilities to be located within the development and their relationship to existing facilities in adjacent developments. Any scale from 1" = 50' to 1" = 400' may be used to limit the drawing to one sheet.

**C.** A final drainage report shall be submitted and approved in conjunction with construction drawings. The study shall include calculations on 8-1/2" x 11" paper and a drainage map of the development of 22'' x 34" drawing. Calculations shall

address all aspects of runoff, retention, detention, channel flow, or other appropriate information that is necessary for the design of the drainage system. The drainage map shall be prepared on the overall grading plan for the development. It shall illustrate the drainage patterns in the development as well as the location of all drainage facilities within the development. The map shall also show the runoff rates and acreage tributary to all collection points within the development. When intersections serve as collector points, the flow in each curb line must be noted. This drawing may use scales from 1" = 50' to 1' = 200', in order to limit the drawing to one sheet. When more than one sheet is used a scale of 1" = 200' shall be utilized.

**D.** An overall drainage plan of the study area, including all areas outside of the study area, which contributes runoff to the study area and all downstream areas, which will be effected, by runoff from the study area, must be submitted. Drainage area plans shall be submitted showing the effects of the two (2) year, ten (10) year and one (100) year rainfall events and the one-hundred (100) year, ten (10) day snow melt event.

**E.** The following methods shall be used to verify the adequacy of designs submitted for approval: The method used shall be approved by the City Engineer.

1. Rational method for storm sewer design computations and peak discharge rates from a single isolated watershed.
2. Urban Hydrology for Small Wetlands Technical Release No. 55 and Technical Release No. 20 published by Soil Conservation Service, U.S. Department of Agriculture.
3. HEC-1, HEC-2, or HEC-RAS.
4. Minnesota Hydrology Guide published by Soil Conservation Service, U.S. Department of Agriculture.
5. Stormwater treatment ponds designed to NURP standards.

**F.** The following criteria shall be utilized in the analysis of the drainage system.

1. Runoff analysis shall be based upon proposed land use, and shall take into consideration all contributing runoff from areas outside of the study area.
2. The analysis of storm runoff from existing developed areas lying outside of the study area shall be based upon present land use and topographic features.
3. All undeveloped land lying outside of the study area shall be considered as fully developed based upon the most probable anticipated future land use. Provided, however, that whenever the future land use of a specific undeveloped area cannot be accurately predicted, the average runoff coefficient to be used in said area shall not be less than 0.60 for the Rational Method runoff coefficient or an approved equivalent value for any other method.
4. The probable future flow pattern in undeveloped areas shall be based on existing natural topographic features (existing slopes, drainage ways, etc.) and shall conform to the Comprehensive Storm Water Management Plan.

5. Average land slopes in both developed and undeveloped area may be used in computing runoff. However, for areas in which drainage patterns and slopes are established, these shall be utilized.
6. Flows and velocities which may occur at a design point when the upstream area is fully developed shall be considered. Drainage facilities shall be so designed such that increased flows and velocities will not cause erosion damage.
7. The use of on-site detention and natural drainage ways is recommended and encouraged whenever possible. The changing of natural drainage way locations will not be approved unless such change is shown to be without unreasonable hazard and liability, substantiated by thorough analysis and investigation.
8. The planning and design of drainage systems shall be such that problems are not transferred from one location to another. Outfall points shall be designed in such a manner that will not create flooding hazards downstream.

**G.** The rainfall intensities to be used in the computation of runoff shall be obtained from the Intensity - Duration - Frequency Curves for the Shakopee area in accordance with Atlas 14 data and shall be based upon a two (2) year, ten (10) year and one-hundred (100) year return frequency.

**H.** All lateral storm sewer facilities shall be designed to accommodate a ten (10) year rainfall event. The initial ten (10) year storm shall be conveyed without surcharging the system. Low points on streets shall be designed with an acceptable emergency overflow route.

**I.** Storm sewer pipe for all public systems and connection to public systems shall be reinforced concrete pipe (RCP), unless otherwise approved by the Public Works Director.

**J.** Connections to existing manholes or catch basins shall be core drilled.

**K.** Driveway culverts in rural areas shall be at least eighteen (18) inches in diameter. Plastic pipe is prohibited.

**L.** All storm sewer shall be at least fifteen (15) inches in diameter.

**M.** When a smaller sewer joins a larger one, the invert of the larger sewer should be lowered to maintain the same energy gradient. An acceptable method for securing these results is to place the 0.8 depth point of both sewers at the same elevation.

**N.** Storm sewer placed in non-paved areas must be placed on property corners and property lines when possible.

**O.** Catch basins in non-paved areas must be placed so as to minimize standing water. The spacing and locations are subject to the approval of the City Engineer.

P. ***Stormwater management requirements for permanent facilities.***

1. An applicant shall install or construct, on or for the proposed land disturbing or development activity, all stormwater management facilities necessary to meet the criteria of the city's Water Resources Management Plan, Design Criteria, and the NPDES Construction General Permit. No private stormwater facilities will be approved by the city unless a maintenance plan and maintenance agreement are provided that defines who will conduct the maintenance, the type of maintenance, and intervals of the maintenance. In the alternative, or in partial fulfillment of this requirement and upon approval of the Public Works Director, an applicant may make an in-kind or monetary contribution to the development and maintenance of regional stormwater management facilities designed to serve multiple land disturbing and development activities undertaken by 1 or more persons, including the applicant.

2. Proposed Stormwater Management Plans shall incorporate volume control, water quality control, and rate control as the basis for stormwater management in the proposed development plan on sites without restrictions. All proposed projects shall be in conformance with the City of Shakopee's Comprehensive Water Resources Management Plan, Design Criteria, and the most current requirements of the Minnesota Pollution Control Agency (MPCA) Municipal Separate Storm Sewer Systems (MS4) Permit, as applicable, meeting the more restrictive criteria.
   a. Volume Control
      i. New Development. For nonlinear projects and for developments, stormwater runoff volumes will be controlled and the post-construction runoff volumes shall be retained on site for 1.0 inches of runoff from all impervious surfaces.
      ii. Redevelopment. For redevelopment projects, stormwater runoff volumes will be controlled and the post-construction runoff volume shall be retained on site for 1.0 inches of runoff from the new impervious surfaces created by the project. There shall be a net reduction from the pre-project conditions (on an annual average basis) of:
         1) Stormwater discharge volume, unless precluded by the stormwater management limitations as defined by the Minnesota Pollution Control Agency MS4 Permit, as amended, and the limitations defined in this ordinance.
            a) Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS Industrial Stormwater Permit issued by the Agency.
            b) Where vehicle fueling and maintenance occur.
            c) With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.

d) Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.

2) Stormwater discharges of Total Suspended Solids (TSS).

3) Stormwater discharges of Total Phosphorus (TP).

b. Water Quality Control. For New Development, the water quality control standard shall be considered satisfied if the volume control standard has been satisfied. In the event that it is infeasible to meet the volume control standard due to contaminated soils, site constraints, etc., the proposed plan will need to maintain the TSS and TP loading; and for redevelopment the goal is to reduce the TSS and TP loadings (Non-Permit method – alternative method with little to no additional modeling required). Methods for meeting these requirements in the decreasing order of preference:

i. Credits and site design practices to minimize the creation of connected impervious surfaces are used to the extent practical.

ii. Underdrains to promote filtration instead of infiltration.

iii. Off-site infiltration.

iv. On-site wet detention with permanent pool volume below the normal outlet that is greater than or equal to the runoff from a 2.5 inch, 24-hour storm over the entire contributing drainage area, assuming full development.

c. Rate Control. Rate control measures are required on new development and redevelopment projects to meet the water quantity criteria of the latest city's Comprehensive Water Resource Management Plan.

Q. ***Pond design standards***. Stormwater detention facilities constructed in the city shall be designed according to standards established by the Engineering Division, and identified as follows:

1. A permanent pool (dead storage) volume below the principal spillway (normal outlet) which shall be greater than or equal to the runoff from a 2-1/2 inch rainfall over the entire contributing drainage area assuming full development;
2. A permanent pool average depth (basin volume/basin area) of 4 to 10 feet;
3. An emergency overflow (emergency outlet) adequate to control the 1% frequency/critical duration rainfall event;
4. Basin side slopes below the 100-year high water level should be no steeper than 4:1, and preferable flatter. A basin shelf with a minimum width of 10 feet and 1 foot deep below the normal water level is recommended to enhance wildlife habitat, reduce potential safety hazards, and improve access for long-term maintenance;
5. To prevent short-circuiting, the distance between major inlets and the normal outlet shall be maximized;
6. A flood pool (live storage) volume above the principal spillway shall be adequate so that the peak discharge rates meet the requirements of the city's comprehensive water resources management plan;

7. Pond outlets may not be smaller than the minimum size indicated in the city's comprehensive water resources management plan;
8. Consideration for aesthetics and wildlife habitat should be included in the design of the pond;
9. A skimming device must be provided to deter floatable pollutants from discharging out of pond;
10. Design of stormwater facilities shall accommodate the 100-year critical event (100- year, 24-hour storm event or 10-day snowmelt event). This includes lakes, ponds, and their outlets; and
11. Pond normal water level elevations shall be established above the ordinary high water level of adjacent public waters, except where topography of the site, floodplain mitigation activities, or other design considerations are determined to be unfavorable for these conditions to occur. This determination shall be performed by the applicant's engineer and approved by the Public Works Director.

R. ***Infiltration design standards.*** Best management practices to manage infiltration will be required to the maximum extent practical.

1. Volume control BMPs must be incorporated into the project design to minimize the creation of new impervious surface and reduce the existing impervious surfaces, minimize the amount of directly connected impervious surface, preserve and improve the infiltration capacity of the soil, and limit increases in runoff volume exiting the site to the extent feasible considering site-specific conditions.
2. When using infiltration for volume reduction, runoff must be infiltrated within 48 hours using accepted BMPs for infiltration, such as infiltration trenches, rainwater gardens, infiltration benches or infiltration basins. A site investigation must be conducted confirming adequate infiltration parameters. A post construction percolation test must be performed on each infiltration BMP and must demonstrate that the constructed infiltration rate meets or exceeds the design infiltration rate prior to the acceptance by the city.
3. The maximum extent practical required may be less if the Public Works Director determines that 1 or more of the following conditions apply. If 1 or more of the following conditions apply, the Public Works Director shall quantify the amount of infiltration that will be deemed as the maximum extent practical for the site:
    a. The infiltration characteristics of soils on the site are not favorable for the infiltration of stormwater;
    b. The site's drainage course is to regional infiltration or detention facilities controlled by the city that reduce runoff volumes;
    c. The development of the site does not increase the site's impervious areas; or
    d. Other site conditions that make the infiltration of stormwater impractical as determined by the Public Works Director.
4. Infiltration will be prohibited where the infiltration BMP will be constructed in any of the following areas:

a. Where documented past, present, or anticipated future land uses have resulted in or may result in contamination coming in contact with stormwater runoff.
b. With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
c. Where vehicle fueling and maintenance occur.
d. Where industrial facilities are not authorized to infiltrate industrial stormwater under and NPDES/SDS Industrial Stormwater Permit issued by the MPCA.

5. Infiltration will be restricted and subject to additional City review where the infiltration BMP will be constructed in any of the following areas:
   a. Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
   b. Where Drinking Water Supply Management Areas are present, as defined by Minn. R. 4720.51000, subp.13, unless precluded by a local unit of government with an MS4 permit.
   c. Soils are predominately Hydrologic Soil Group D (clay) soils.
   d. Soil infiltration rates are more than 8.3 inches per hour unless soils are amended to slow the infiltration rate below 8.3 inches per hour.
   e. Stormwater runoff shall be treated in a stormwater pond or by other means prior to entering an infiltration facility; or
6. The minimum infiltration requirements for any region of the city will be the requirements of the watershed district or watershed management organization policies that govern that region. These policies may be met through the use of regional or downstream systems prior to discharge of runoff to waters of the state.
7. Infiltration systems must not be excavated to final grade until the contributing drainage area has been constructed and fully stabilized. When the infiltration feature is excavated to final grade, rigorous erosion prevention and sediment control BMPs must be implemented to keep sediment and runoff completely away from the infiltration area.
8. To prevent clogging of the infiltration system, a pretreatment device must be used to settle particles before the stormwater discharges into the infiltrations system.
9. Areas of permanent pools tend to lose infiltration capacity over time and will not be acceptable as an infiltration practice.
10. Per Ordinance Section 54.15 Stormwater Management Plan Approval and Implementation Standards, the infiltration system must provide a water quality volume (calculated as an instantaneous volume) of one (1) inch of runoff (or one (1) inch minus the volume of stormwater treated by another system on the site) from the new impervious surfaces created by the project.
11. The applicant must ensure filtration systems with less than three (3) feet of separation from seasonally saturated soils or from bedrock are constructed with an impermeable liner.
12. A minimum maintenance access of twelve (12) feet is required.

*S. Mitigation.*

1. Where construction projects cannot meet volume, TSS, or TP reduction requirements for new development or redevelopment projects on the site of original construction, all methods must be exhausted prior to considering alternative methods and/or locations where volume and treatment standards can be achieved. If the city has determined that all methods have been exhausted, the permittee will be required to identify alternative locations where the standards can be achieved or alternative methods in the following order of preference:
   a. Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
   b. Locations within the same Department of Natural Resource (DNR) catchment area as the original construction activity.
   c. Locations in the next adjacent DNR catchment area up-stream.
   d. Locations anywhere within the City of Shakopee.
   e. Biofiltration.
2. In addition, mitigation projects must also meet the following criteria:
   a. Mitigation projects shall involve the establishment new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP.
   b. Previously required routine maintenance of structural stormwater BMPs cannot be considered mitigation.
   c. Mitigation projects must be finished within 24 months after the original construction activity begins.
   d. A maintenance agreement specifying the responsible party for long-term maintenance shall be identified.

## Sect. 5 – Sanitary Sewer

**1. General.** The minimum diameter for public sanitary sewer mains shall be eight (8) inches. Sanitary sewer design must account for the study area and all areas outside the study area which would naturally drain through the study area. Natural drainage areas will be established by using the Comprehensive Sewer Plan and Comprehensive Water Resource Management Plan adopted by the City. In no case shall the design velocity be less than 2.2 feet per second or more than ten (10) feet per second as computed by Manning's formula for flow in open channels (Manning's shall be 0.013 for purposes of design).

**2. Design Criteria.** Sanitary sewers shall be designed and constructed in accordance with the most current edition of Recommended Standards for Sewage Works; a report of Committee of the Great Lakes - Upper Mississippi River Board of State Sanitary Engineers.

**3. Plan Requirements and Design Guidelines.** The following are specific requirements related to the design of sanitary sewer and sanitary sewer services:

A. The sanitary sewer alignment shall follow the centerline of the street where practical.

B. The maximum spacing between manholes is four-hundred (400) unless approved otherwise.

C. All manholes at intersections shall be located at centerline/centerline.

D. Manholes are required on the terminus end of all stubs if the line will be active.

E. Connections to existing sanitary sewer manholes shall be core-drilled and fitted with a watertight boot.

F. Inside drop manholes are not allowed.

G. The minimum depth of a sanitary sewer manhole is nine (9) feet unless previously approved by the City Engineer.

H. Changing of pipe material between manholes is not permitted except at outside drops.

I. Sanitary sewer services shall be a minimum four (4) diameter PVC (SDR 26).

J. Sanitary sewer services shall not be connected to a manhole unless otherwise approved.

K. The minimum depth of the sanitary sewer service at the easement line shall be nine (9) feet unless otherwise approved.

L. Sanitary sewer pipe shall be PVC SDR 35 (0 - 18' deep) and PVC SDR 26 (18'-26') deep. Alternate pipe materials for sanitary sewer deeper than twenty-six (26) feet will be required as determined by the City Engineer.

M. Rerounding of pipe is not allowed unless previously approved by the City Engineer.

N. The contractor shall install a marker post at the end of each sanitary sewer service. The developer shall provide GPS coordinates of each marker post and GPS coordinates of each sanitary sewer service wye. Final record drawings submitted to the City shall have a table identifying each sanitary sewer service with the aforementioned GPS coordinates.

## Sect. 6 – Utilities

**1. Public Water.** Where a connection to the City water system is presently available at or reasonably near the boundary of the subdivision, water distribution facilities, including fire hydrants, shall be installed to serve all properties within the subdivision and shall be in accordance with policies of the Shakopee Public Utilities Commission. Public Water systems shall be designed and constructed in accordance with the standards and policies of the Shakopee Public Utility Commission.

**2. Other Utilities.** Electric service, phone service, and cable television installations to residential structures shall be underground from the main line to the residential structure except where extreme conditions prohibit and a variance from this requirement is authorized by the Planning Commission upon advice of the Utilities Commission. Provisions shall also be made for underground connections of street lights as required from main lines to the street line installation.

Where telephone, electric and/or gas service lines are to be placed underground, conduits or cables shall be placed within easements or dedicated public ways, in such a manner so as not to conflict with other underground services, and in locations as approved by the City Engineer. All drainage and other underground utility installations that traverse privately owned property shall be protected by easements.

## Sect. 7 – Street Lights

**1. Design Criteria.** The subdivider shall provide for installation of street lighting and operation for a period of three (3) years as prescribed by the Utilities Manager. Street lighting shall be designed and constructed in accordance with the standards and policies of the Shakopee Public Utility Commission and the City of Shakopee.

## Sect. 8 – Streets

**1. General.**

A. The arrangement of thoroughfares and collector streets shall conform as nearly as possible to the Comprehensive Plan. Except for cul-de-sacs, streets normally shall connect with streets already dedicated in adjoining or adjacent subdivisions, or provide for future connections to adjoining unsubdivided tracts, or shall be a reasonable projection of streets in the nearest subdivided tracts. The arrangement of thoroughfares and collector streets shall be considered in their relation to the reasonable circulation of traffic, to topographic conditions, to runoff of stormwater, to public convenience and safety, and in their appropriate relation to the proposed uses of the area to be served.

B. Where the plat to be submitted includes only part of the tract owned or intended for development by the subdivider, a tentative plan of a proposed future street system for the unsubdivided portion shall be prepared and submitted by the subdivider at the same scale as set forth herein.

C. When a tract is subdivided into larger than normal building lots or parcels, such lots or parcels shall be so arranged so as to permit the logical location and openings of future streets and appropriate resubdivision, with provision for adequate utility connections for such resubdivision.

## 2. Street Width and Right-of-Way Width.

**A.** Two-way right-of-way widths and pavement widths (back to back of curb) shall conform to the City's adopted Transportation Plan. with the exception of the local roads. The local road width shall be as follows:

| Classification | Right-of-Way | Roadway |
|---|---|---|
| Local (anticipated traffic of 200 or less cars per day, as determined by the City Engineer) | 60 Feet | 33 Feet |
| Local (more than 200 cars per day) | 60 Feet | 37 Feet |

**B.** All one-way right-of-way widths and pavement widths (back to back of curb) shall conform to the following minimum dimensions:

| Classification | Right-of-Way | Roadway |
|---|---|---|
| Local | 45 Feet | 25 Feet |
| Collector Streets | 60 Feet | 30 Feet |
| Arterial Streets | 60 Feet | 30 Feet |

## 3. Streets.

**A.** Public Streets and alleys shall be designed and constructed in accordance with the General Specification and Standard Detail Plates for Street & Utility Construction. All street and alley construction shall be inspected by the City Engineering Department.

**B.** The full width of the right-of-way of each street and alley dedicated in the plat shall be graded. The width shall comply with the surface provisions of this Chapter and Class 5 MN/DOT aggregate or other suitable base shall be required as prescribed by the Engineering Department.

**C.** All streets shall be surfaced with a bituminous surface or portland cement concrete.

**D.** Except where justified by special conditions, such as the continuation of an existing alley in the same block, alleys will not be approved in residential districts. Dead end alleys shall be avoided, whenever possible, but if unavoidable, such dead end alleys must provide adequate turnaround facilities at the closed end.

**E.** Concrete curb and gutter may be required as a part of the required street surface improvement and shall thus be designed for installation along both sides of all roadways in accordance with the standards of the City

**F.** Rural roadway sections, that do not include concrete curb and gutter, shall consist of roadside ditches and five (5) foot gravel shoulders.

**4. Grades.**

A. All center line gradients shall be at least 0.5 percent and shall not exceed the following:

| Classifications | Gradient Percent |
|---|---|
| Arterial Streets | 5 |
| Collector Streets | 6 |
| Local Streets | 7 |
| Marginal Access Streets | 7 |
| Alleys | 8 |

The grades at intersecting state-aid streets shall not be greater than 1.0% for 50' on either side of the state-aid street, and not greater than 2.0% for an additional 50'. The grades at intersecting arterial streets shall not be greater than 2.0% for 200' on either side of the intersection. On local streets, the grade shall not be greater than 3.0% for 100' on either side of the intersection. The more important street at an intersection, as determined by the City Engineer, shall govern the through grade.

**5. Street Jogs.** Street jogs (intersections less than 330 feet apart) must be approved by the City Engineer.

**6. Local Streets.** Local streets shall be so aligned that their use by through traffic will be discouraged. Dead end streets are prohibited, but cul-de-sacs will be permitted where topography or other conditions justify their use.

**7. Cul-de-sacs.** Maximum length of cul-de-sac streets shall be one-thousand (1,000) feet for rural service areas and seven-hundred fifty (750) feet for urban service areas measured along the center line from the intersection of origin to end of right-of-way. Cul-de-sacs shall have a dedicated right-of-way with a minimum radius of sixty (60) feet, and shall be paved with a minimum radius of forty-six (46) feet (to back of curb). Lot lines abutting cul-de-sacs shall be radial except in extreme cases where special permission may be granted otherwise.

**8. Temporary Cul-de-sacs.** In new subdivisions where a future public street will connect to a temporary street stub, a temporary cul-de-sac will be required. The maximum length of temporary cul-de-sac streets shall be seven-hundred fifty (750) feet for both rural service and urban service areas, measured along the center line from the intersection of origin to end of pavement. The minimum paved surface diameter shall be seventy (72) feet, without curb and gutter. A temporary cul-de-sac will not be required for street stubs that serve less than three (3) lots.

**9. Service Roads.** Where a subdivision abuts or contains an existing or planned service road or a railroad right-of-way, the Council may require a street approximately parallel to and on each side of such right-of-way for adequate protection of residential properties and to afford separation of through and local traffic. Such marginal access streets shall be located at a distance from the major thoroughfares of railroad right-of-way suitable for the appropriate use of the intervening land, as for park purposes in residential districts, or for commercial or industrial purposes in appropriate districts.

Such distances shall also be determined with due regard for the requirements of approach grades and future grade separations.

**10. Half Streets.** Half streets shall be prohibited, except where essential to the reasonable development of the subdivision in conformity with the other requirements of these regulations; and except where the Council finds it will be practicable to require the dedication of the other half when the adjoining property is subdivided. Wherever there is a half street adjacent to a tract to be subdivided, the other half of the street shall be platted within such tract.

**11. Surface.** All street surfaces shall be designed and constructed in accordance with the standard specifications and shall provide a warranty bond before being accepted by the City for maintenance. Curb and gutter or shoulder and bituminous surfacing shall be constructed at the same time.

**12. Reserve Strips.** Reserve strips controlling access to streets shall be prohibited.

**13. Hardship to Owners of Adjoining Property Avoided.** The street arrangement shall not be such as to cause hardship to owners of adjoining property in platting their own land and providing convenient access to it.

**14. Access to Arterial and Collector Roadways.** In the case where a proposed plat is adjacent to an arterial or collector road, the applicant shall not direct vehicle or pedestrian access from individual lots to such roadways. The subdivider will be required to provide access to all lots via public streets. Spacing of these public streets shall meet the requirements of the City's adopted Transportation Plan.

**15. Platting of Small Tracts.** In the platting of small tracts of land fronting arterial roadways where there is no convenient access to existing entrances and where access from such plat would be closer than 1/4 mile from an existing access point, a service road forty (40) feet wide shall be dedicated across the tract. As the neighboring land is platted and developed, and access becomes possible to the service road, direct access to the thoroughfares shall be prohibited.

**16. Deflections/Horizontal Curves.** When connecting street lines deflect from each other at any one point by more than ten (10) degrees, they shall be connected by a curve with a radius of not less than one-hundred twenty (120) feet. Depending on grades and projected traffic volumes the City Engineer may require a larger radius. This minimum curve radius does not apply to intersecting street lines (full street intersections) or to street lines connected at "T" intersections. Collector street horizontal centerline curves shall meet State Aid Standards.

**17. Street Vertical Curves.** Vertical curves on local roads shall be designed to meet a minimum design speed of thirty (30) mph. The City Engineer will determine the design speed for arterial and collector roads. The minimum allowable curve length is fifty (50) feet unless the algebraic difference between grades within a vertical curve is less than 1.2 percent, then the allowable minimum vertical curve length is twenty (20) feet.

**18. Angle of Intersections.** The angle formed by the intersection of streets shall be ninety (90) degrees. Any variance will require approval by the City Engineer.

**19. Size of Intersection.** Intersections of more than four corners shall be prohibited.

**20. Curb Return Radius.** Minimum curb return radii at intersections shall conform to the following table:

Curb Return Radius (feet) at Intersections

| | Local (33') | Local (37') | Collector | Arterial |
|---|---|---|---|---|
| Local (33' wide) | 20 | 0 | | |
| Local (37'wide) | 20 | 20 | | |
| Collector | 25 | 25 | 25 | |
| Arterial | 30 | 25 | 25 | 25 |
| Industrial | 30 | 25 | 25 | 25 |

The City Engineer may require larger radii. The County Engineer will determine radii at intersections at County roads.

**21. Crosspans.** Double crosspans may be used at the intersection of residential streets only when necessary to prevent flooding of one side of the street. Crosspans are not allowed across collector or arterial streets. Crosspans are not allowed on streets with storm sewer systems or on other streets designated by the City Engineer.

**22. Street Section Design.** The street section shall be designed as set forth in the "Geotechnical and Pavement Manual" (Chapter 5), as prepared by the Minnesota Department of Transportation. It shall be accompanied by a complete soils report certified by a licensed professional engineer. The following minimum pavement thickness and aggregate thickness shall apply to all streets:

| | Minimum Bituminous Pavement | Minimum Aggregate Base |
|---|---|---|
| Arterial Street | 5" | 10" |
| Collector Street (Residential) | 4" | 8" |

| | Minimum Bituminous Pavement | Minimum Aggregate Base |
|---|---|---|
| Collector Street (Commercial) | 5" | 10" |
| Collector Street (Industrial) | 5" | 10" |
| Local Street | 4" | 8" |

All streets with subgrade soil with an "R" value of thirty (30) or lower shall be constructed with two (2) feet of granular borrow and one-hundred (100) feet of drain tile connected to and centered on each low point catch basin.

The street section must be approved by the City Engineer and may be adjusted by the City Engineer based on the soils report.

## Sect. 9 – Sidewalks and Trails

**1. Sidewalks.**

**A.** The sidewalks shall not be located less than one foot from the property line, nor be adjacent to the curb except as determined in commercial areas. Sidewalks in industrial areas shall be located to conform to the anticipated pedestrian flow of the development.

**B.** Sidewalks shall slope 1/4 inch per foot away from the property line and the profile grades shall conform to street grades.

**C.** Planned unit development shall be subject to the location, widths, and grades set forth herein.

**D.** The subdivider shall install sidewalks on both sides of an officially designated arterial street and on one side of collector streets, and walkways to schools; such collector streets and walkways to be determined by the Planning Commission and approved by the Council. If the street is along a designated trail route, a bituminous trail may be required in place of the sidewalk, as determined by the Planning Commission and approved by the Council.

**E.** In blocks over nine-hundred (900) feet long, pedestrian crosswalks through the blocks, and at least ten (10) feet wide, may be required by the Council in locations deemed necessary to public health, convenience and necessity.

**F.** Curb returns and intersections where sidewalk is required shall have handicap ramps with truncated domes.

**G.** All sidewalks widths shall be five (5) feet, except in commercial areas where the width may be wider, as determined by the City Council.

## Sect. 10 – Lots and Blocks

**1. Easements.**

**A.** A minimum of five (5) feet drainage and utility easement is required adjacent to all side yard lot lines.

A minimum of ten (10) feet of drainage and utility easement is required adjacent to all front lot lines, rear lot lines or lot lines adjacent to public right-of-way.

A minimum twenty (20) feet of drainage and utility easement is required centered over all utilities less than five (5) feet deep.

For utilities deeper than five (5) feet, the minimum easement width shall be calculated assuming a one (1) foot trench bottom and 1-foot (vertical) to 1.5-foot (horizontal)

side slopes. For example, a utility ten (10) feet deep will require a minimum easement width of thirty (31) feet.

The City Engineer may increase easement requirements, as necessary

**B.** Where a subdivision is traversed by a water course, drainage way/swale, channel or stream, there shall be provided a stormwater easement or drainage right-of-way conforming substantially to lines of such watercourse, and such further width or construction, or both, as will be adequate for the purpose. Parallel streets or parkways may be required in connection therewith.

**C.** Drainage and utility easements shall be shown on the final plat, out to the one-hundred (100) year highwater level contour.

**D.** Access easements, for future maintenance, shall be provided for ponding areas within subdivisions.

**2. Blocks.**

**A.** Block length and width or acreage within bounding streets shall be such as to accommodate the size of residential lot required in the area by the Zoning Chapter and to provide for convenient access, circulation control and safety of street traffic.

**B.** Residential block lengths shall not exceed one-thousand three-hundred (1,300) feet. Blocks intended for commercial and industrial use must be designed as such, and the block must be of sufficient size to provide for adequate off-street parking, loading and such other facilities as are required to satisfy the requirements of the Zoning Chapter of the City Code.

**C.** A block shall be so designed as to provide two tiers of lots, unless it adjoins a railroad or major thoroughfare where it may have a single tier of lots.

**3. Lot Standards.**

**A.** The lot dimensions shall be such as to comply with the minimum lot areas specified in the Zoning Chapter.

**B.** Side lines of lots shall be substantially at right angles to straight street lines or radial to curved street lines.

**C.** In the subdividing of any land, due regard shall be shown for all natural features, such as tree growth, wetlands, steep slopes, watercourse, historic spots, or similar conditions, and plans adjusted to preserve those which will add attractiveness, safety and stability to the proposed development.

**D.** All remnants of lots below minimum size left over after subdividing of a larger tract must be added to adjacent lots rather than allowed to remain as unusable parcels.

**E.** Double frontage (lots with frontage on two parallel streets) or reverse frontage shall not be permitted except:

1. Where lots back on an arterial or collector street, in which case vehicular and pedestrian access between the lots and arterial streets shall be prohibited. Such double frontage lots shall have an additional depth of at least twenty (20) feet in order to allow space for screen planting along the back lot line.
2. Where topographic or other conditions render subdividing otherwise unreasonable, such double frontage lots shall have an additional depth of at least twenty (20) feet in order to allow space for screen planting along the back lot line.

**F.** All lots must abut their full frontage on a publicly dedicated street.

**G.** Rural service lots shall be designed in such a manner whereby septic tanks, drainfields and homes are located as to allow future subdivision of the land upon the requirement of the City Engineer where future urban service expansion is probable. The City may also require at the time of final subdivision approval that a covenant be recorded which requires the placement of future structures in accordance with approved preliminary plat design. Whenever a parcel of land is subdivided into lots containing one or more acres and there are indications that such lots may eventually be subdivided into smaller plats, the Council may require that such parcel of land be divided so as to allow for the future construction of streets and the extension of adjacent streets. Easements providing for the future opening and extension of such streets may be made a requirement of the plat.

**H.** All lots or parcels shall have direct adequate physical access for emergency vehicles along the frontage of the lot or parcel from a public roadway

**4. Buffering Residential Subdivisions Adjacent to Intermediate and Principal Arterial Roads.**

**A.** In all residentially zoned areas determined by the Administrator to have significant noise impact within one-hundred twenty-five (125) feet of the roadway right-of-way or areas of noise impact estimated to maintain ambient decibel ratings of seventy (70) DbA or greater, one or a combination of the following design requirements shall apply:

1. Lots adjacent to the roadway right-of-way shall be sized wherein a One-hundred twenty-five (125) foot buffer strip be provided as additional setback to lot depth or width standards supplementary to the minimum lot size and setback of the zoning provisions of the applicable district. An earth berm or other acceptable barrier technique shall be constructed to abate noise impact adjacent to roadway right-of-way equal to or below the seventy (70) DbA standard accompanied by the following:
   a. A plan showing the existing and anticipated noise levels in DbA that are or will be expected on the site and in the immediate vicinity of the site.

b. A description of the site plan construction techniques, architectural designs, and other measures expected to be taken to reduce ambient noise levels. Such description shall include sufficient plans and other drawings to enable the City to accurately identify the noise reduction measures expected to be taken.

**B.** Responsibility for any noise mitigation measures shall be the responsibility of the developer, its successors and/or assigns. This responsibility shall be included and clearly stated in plat approval resolutions or other relevant approval documents.

### 5. Buffering Residential Dwellings Adjacent to Wetlands and Stormwater Ponds

**A.** In all zoned areas where residential dwellings are adjacent to, or are within one-hundred (100) feet of a wetland or stormwater pond, the following design requirements shall apply:

1. All residential dwellings shall be at least thirty (30) feet horizontal from the one-hundred (100) year high water level of the wetland or pond. Building setbacks shall be in accordance with the latest addition of the City's Stormwater Management Plan.
2. In commercial or industrial zoned areas where a stormwater pond is proposed to be within one-hundred (100) feet of a residential dwelling, a fence shall be installed along the property line separating the commercial zoned (or industrial zoned) area and the residential property.

## Sect. 11 – Plan Standards

### 1. General Plan And Drafting Requirements.

**A.** Title Sheet

The title sheet shall include a project location map and an approval block for the City Engineer (approved for one year from the date of signing).

**B.** Overall Plan

Incorporated in the set of plans shall be an overall plan duplicating the entire project showing all proposed improvements with corresponding sheet numbers on each separate sheet and index. An approval block for Shakopee Public Utilities Commission shall be included on the overall plan sheet.

**C.** Standard Sheet

All drawings shall be submitted on standard sheets at standard scale.

Standard Sheet:

- Grading Plan - 22" x 34"
- Street and Utility Plan - 22" x 34"

Standard Scale:

- Horizontal 1" = 50'
- Vertical 1" = 5'

**D.** Plan

North arrow, rights-of-way and width, property lines, lot and block numbers, street names, utility lines and size, railroad track, ditches, easements and width, match lines and reference sheet numbers shall be shown on all plan sheets. All roadway improvements and utilities shall be tied to the centerline of City right-of-way, to the centerline of a City easement, to subdivision corners, to Government land corners or to Government land lines.

**E.** Profile

To be located directly below the plan with stationing aligned as closely as practical. Original ground (dashed) and proposed if different (solid). Profile shall locate and describe additional information required under the standards for the particular improvement proposed. All utilities shall be shown in profile to include sanitary sewer, watermain, storm sewer and storm sewer crossings.

**F.** Additional Sheets

Use standard sheet requirements with appropriate scales for additional sheets required by the City Engineer and not covered by City of Shakopee Standard Detail Plates or approved Mn/DOT Standard Plates. More than one (1) sheet may be necessary. Additional sheets may include, but are not limited to, unique project details, signage and striping, landscaping, SWPPP, turn lane construction, box culvert construction, etc.

**G.** Benchmark

Description on each sheet, elevation, USGS 1929 datum, tie to City bench loop, description of City benchmark to which it is tied.

**H.** Title Block

Shall include the name of project, subdivision or planned building group or street, as applicable and type of utility or roadway and the name, address, zip, telephone of the Engineer and developer.

I. Certification

Certification signature and registration number of Professional Engineer on each sheet.

J. Required Notes

These notes shall appear on the cover sheet. If no cover sheet, they shall be put on every sheet submitted for approval.

- All work shall be done in accordance with the City of Shakopee's General Specifications and Standard Detail Plates for Street and Utility Construction.
- The contractor shall install a steel marker post at the end of each sanitary sewer service. The developer shall provide GPS coordinates of each marker post and GPS coordinates of each sanitary sewer service wye. Final record drawings submitted to the City shall have a table identifying each sanitary sewer service with the aforementioned GPS coordinates.

**2. Record Plan Requirements.**

A. Record plans must submitted on mylar sepias from inked and clearly legible drawings. At a minimum, two (2) electronic copies in AutoCAD and Adobe Acrobat formats must be submitted with datum on the Scott County coordinate system. Specific electronic formats and/or versions will be determined by the City Engineer.

B. The record plans shall, at a minimum, include the following information:

- Locations and top of casting and invert elevations of all sanitary sewer and storm sewer structures and appurtenances.
- Locations and top-nut elevations for all fire hydrants.
- Locations and elevations for all gate valves.
- Revised pipe slopes, lengths and materials (if applicable).
- Revised horizontal locations of all street and utility improvements.
- Additional notes as required by the City Engineer.

C. Sanitary Sewer Services

- GPS coordinates at the end of all sanitary services and curb stop locations must be provided in a tabular format.
- Stationing of sanitary sewer wyes shall be indicated.
- All sanitary services shall be shown on the record plan with length, size, elevation, and pipe type noted. Indicate if jacked.
- If sanitary sewer wye only is constructed, it shall be noted as "Wye Only" after the stationing.
- The approximate invert elevation at the forty-five (45) degree bend of all sanitary sewer service stubs shall be shown on the plans. If deep risers are

placed, the height of each shall be indicated on the plans and each shall be drawn on the profile, and the height of the risers indicated.

**D.** Water Services

- GPS coordinates at the end of all sanitary services and curb stop locations must be provided in a tabular format.
- Stationing of water corporation cock shall be indicated.
- All water services shall be shown with length, size and pipe type noted. Indicate if jacked.

- All curb stop boxes shall be tied at the property line with at least two ties using the following priority:

    - Sanitary sewer manholes
    - Hydrants
    - Storm sewer manholes
    - Catch basins
    - Power transformers
    - Building corners

**E.** Watermain Fittings

All water fittings should be labeled as to size and type such as bends, ties, plugs, etc.

**F.** Gate Valves

All gate valves shall be tied with at least two ties using the following priority:

- Fire hydrants.
- Manholes.
- Catch basins, if curb and gutter are in.
- Buildings or other permanent structures.
- Telephone pedestals.
- Power poles, trees, other semi-permanent items.
- Stationing from hydrants, manholes, catch basins, if over one-hundred (100) feet.
- All ties should be less than two-hundred (200) feet whenever possible.

**G.** Fire Hydrants

All fire hydrants shall have a benchmark elevation shown for the top-nut of the fire hydrant.

**H.** All structures shall have the top of casting elevation and invert elevations shown.

**I.** Streets

Street record "as-built" plans/drawings shall include a typical street section and horizontal and vertical curve data.

**J.** Miscellaneous

The following information shall be shown on every sheet:

- Contractor's name
- Construction observer's name
- Project engineer's name

**K.** Sanitary Sewer Televising

The contractor must televise the entire sanitary sewer system and provide the City with one DVD of the sanitary sewer system along with a televising report. The report shall include the locations of all service wyes.

**L.** Operations Record Plan

An Operations Record Plan must be submitted to the City and to SPUC and approved by each entity prior to issuance of building permits in addition to the model building permit. The plan must include, at a minimum, the following information:

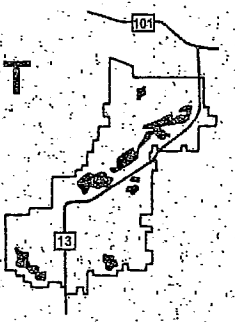
- Information as required in Sections A, B, C, D, E and H above.
- Information as required by the SPUC Water Policy Manual.

*The City Engineer may require additional information and increase the minimum requirements on any project.*

Appendix C – Water Resource Related Agreements

# PRIOR LAKE - SPRING LAKE WATERSHED DISTRICT

Phone (952) 447-4166
Fax (952) 447-4167
www.plslwd.org




**Memorandum**

September 6, 2005

To: Steve Albrecht, City of Prior Lake
Stan Ellison, Scott Walz, Shakopee Mdewakanton Sioux Community
Bruce Loney, City of Shakopee

From: Shannon Lotthammer, District Administrator

CC: Bryce Huemoeller, Huemoeller, Bates and Gontarek (District Attorney)

Re: Revised Joint Powers Agreement

Enclosed for your review, comment and approval are the proposed revisions to the Joint Powers Agreement (JPA) for the Prior Lake Outlet Channel. The proposed revisions reflect our discussions in recent years regarding updates to the JPA, as well as the cost-share approach we developed and discussed last spring for the construction of the Outlet Channel Restoration and Enhancement Project and the ongoing operation and maintenance of the Outlet Channel.

The enclosed document identifies the proposed JPA changes using underlining to denote additions to the text and strikethrough to denote deletions. It is a bit difficult to read in this format, so please let me know if you would like to receive a "clean" version with all the changes accepted, or if you prefer a PDF file.

The proposed JPA revisions were reviewed and discussed by the Prior Lake-Spring Lake Watershed District (PLSLWD) Board at a workshop on August 30, 2005, at which time the Board approved the revised JPA for signature by the PLSLWD once the Cities of Prior Lake and Shakopee and the Shakopee Mdewakanton Sioux Community (SMSC) have also approved the agreement. It is the PLSLWD's hope that the revised JPA can be reviewed, approved and executed by all the parties before the end of this year.

Finally, please note that as we discussed last spring, due to limitations of the State of Minnesota's joint powers agreement statute the SMSC cannot be a party to the JPA. Therefore, a separate Memorandum of Agreement (MOA) will need to be executed with the SMSC that has the same provisions as the JPA. I will send out a copy of that MOA to all of you once it is completed, which should be in the next two weeks. In the meantime, if you have any questions about the proposed revised JPA please contact me at (952) 447-4166 or slotthammer@plslwd.org.

Thank you for all of your assistance as we worked through the details of the cost share agreement and the changes to the JPA. I look forward to hearing from you, and to the final approval and execution of the revised JPA and the MOA!

# JOINT POWERS AGREEMENT

Agreement, made and entered into as of _____, 2005, by and between the City of Prior Lake, Minnesota, a municipal corporation, ("Prior Lake"); the City of Shakopee, Minnesota, a municipal corporation, ("Shakopee"); and the Prior Lake-Spring Lake Watershed District, Prior Lake, Minnesota, a political subdivision of the State of Minnesota, ("Watershed District").

~~WHEREAS, the Watershed District is presently engaged in the implementation of a project, identified as the "Lake Outlet Project, Number WD-76-4", ("Lake Outlet"), to construct an artificial outlet for Prior Lake for the purpose of draining water from Prior Lake and transporting such water to the Minnesota River; and~~

~~WHEREAS, the plans and specifications for the Lake Outlet require the improvement of certain natural drainage courses and the construction of certain drainage channels within the municipal boundaries of Shakopee and more particularly described on Exhibit "A", which is attached hereto and by reference made a part hereof; and~~

WHEREAS, since the completion of the Lake Outlet Project, as defined below, the Shakopee Mdewakantion Sioux Community has acquired land tributary to the Outlet Channel, as defined below, and development has occurred in areas of Prior Lake and Shakopee tributary to the Outlet Channel; and

WHEREAS, the approved comprehensive plans of Prior Lake, Shakopee and Scott County identify additional development that will occur during the next 40 years; and

WHEREAS, the cities of Prior Lake and Shakopee and the Shakopee Mdewakanton Sioux Community ("SMSC") have begun using the Outlet Channel to convey storm water from developed areas within their boundaries or ownership; and

WHEREAS, the Watershed District, Prior Lake, Shakopee and SMSC (jointly the "Project Cooperators") are planning a project to restore and enhance the Outlet Channel to complete needed repairs and ensure channel stability and capacity for existing and future storm water flows ("Outlet Channel Restoration and Enhancement Project") in accordance with a Conceptual Design, as defined below; and

WHEREAS, the Watershed District is planning modifications to the Outlet Structure, as defined below, to repair the Outlet Structure and improve its efficiency; and

~~WHEREAS, the temporary and permanent easements specified by the plans and specifications for the construction of the foregoing drainage improvements can only be obtained from the affected property owners with the cooperation and assistance of Shakopee; and~~

WHEREAS, the Outlet Channel ~~drainage improvements~~Restoration and Enhancement Project is ~~and easement acquisitions contemplated by the Watershed District are~~ of direct and immediate benefit to the SMSC, Prior Lake and Shakopee because (a) the ~~drainage channel improvements~~Outlet Channel Restoration and Enhancement Project ~~are~~ is in conformance with the SMSC's, Prior Lake's and Shakopee's overall drainage plan in the area of the ~~Lake Outlet~~Outlet Channel's drainage route; (b) the easements to be acquired within the City of Shakopee can also be used by Shakopee for public utility and ~~right-of-way~~drainage purposes, (c) the easements to be acquired within the City of Prior Lake can also be used by Prior Lake for public utility and drainage purposes, and (~~c~~d) ~~the channel improvements may reroute local runoff into Dean's Lake and thereby supplement and increase the level of the lake~~an operable Outlet Channel with adequate storm water conveyance capacity allows for the orderly development of the SMSC, Prior Lake and Shakopee; and

WHEREAS, Prior Lake and Shakopee desire to assist the Watershed District to acquire the easements necessary for the construction of the ~~drainage c~~Outlet Channel ~~improvements~~ Restoration and Enhancement Project ~~specified in the Lake Outlet plans and specifications~~, upon the conditions hereafter set forth; and

WHEREAS, the ~~implementation of the Lake~~ Outlet Structure is of direct and immediate benefit to Prior Lake because the ~~improvements contemplated by the Lake Outlet are~~ Outlet Structure is designed to reduce the impact of flooding on Prior Lake insofar as it affects the owners of property along the shore and within the established flood plain, and as it affects the capability of Prior Lake to provide essential municipal services during times of flooding; and

~~WHEREAS, Prior Lake desires to be made a part to this Agreement to enable it to participate in decisions affecting the use and management of the Lake Outlet; and~~

WHEREAS, there is a need to clarify responsibilities regarding the ongoing use, operation and maintenance of the Outlet Structure and Outlet Channel by the Watershed District, SMSC, Prior Lake and Shakopee, and

WHEREAS, the parties hereto desire to enter into a joint powers agreement pursuant to Minnesota Statutes Section 471.59~~1~~, (1949, as amended), upon the terms and conditions hereinafter specified; and

WHEREAS, the Watershed District has authority under Minnesota Statutes Section ~~112.43, Subd. 1(2)~~103D.335, Subd. 2, (~~1955~~1990, as amended), to contract with other public corporations to effectuate the purposes of the Act; and

WHEREAS, Prior Lake and Shakopee have authority to engage in a joint powers agreement for utility and drainage purposes pursuant to Minnesota Statutes Section 412.221, Subd. 2 (1949, as amended); and~~.~~

WHEREAS, for reasons of state law the SMSC does not have authority to engage in a joint powers agreement for utility and drainage purposes, and can only participate by executing a separate Memorandum of Agreement ("MOA") with one or more of the Project Cooperators; and

WHEREAS, this Agreement allocates responsibilities to the SMSC in anticipation that the SMSC will enter into and fulfill its obligations under a separate MOA with one or more of the Project Cooperators; and

WHEREAS, this Agreement provides alternate provisions in the event that the SMSC does not enter into an MOA with the Project Cooperators or meet its obligations under such a MOA;

NOW, THEREFORE, in consideration of the mutual covenants and agreements hereinafter contained, it is agreed by and between the parties hereto as follows:

## ARTICLE I
## DEFINITIONS

Unless otherwise expressly provided herein or the context otherwise requires, each of the following capitalized terms when used herein shall have the following defined meanings:

Conceptual Design – A plan for restoring and enhancing the Outlet Channel, as defined below, that was developed with the input of the Project Cooperators as part of the "Prior Lake Outlet Study and Lake Volume Management Study" completed by the District in 2003. The Conceptual Design is based on the use of bioengineering and natural stream technology practices to improve channel stability, reduce erosion, and enhance the habitat and aesthetics of the Outlet

Channel, as defined below. A copy of the Conceptual Design is attached hereto as Exhibit "A" and by reference made a part hereof.

Lake Outlet Project – A project completed by the Watershed District in 1983 to construct an artificial outlet for Prior Lake for the purpose of draining water from Prior Lake and transporting such water to the Minnesota River, including the improvement of certain natural drainage courses and the construction of certain drainage channels within the municipal boundaries of Prior Lake and Shakopee.

Outlet Channel – The seven miles of natural and constructed drainage courses within the municipal boundaries of Prior Lake and Shakopee that were connected, constructed and improved as part of the Lake Outlet Project. The Outlet Channel extends from the Outlet Structure, as defined below, north to the Minnesota River at Blue Lake. For the purposes of planning and construction of restoration/enhancements and maintenance, the Outlet Channel is divided into the following eight segments:

- Segment 1: Prior Lake to County Road 42
- Segment 2: County Road 42 to the inlet of Pike Lake
- Segment 3: The outlet of Pike Lake to Pike Lake Trail
- Segment 4: Pike Lake Trail to County Road 16
- Segment 5: County Road 16 to the inlet of Dean Lake
- Segment 6: The outlet of Dean Lake to State Trunk Highway 169
- Segment 7: State Trunk Highway 169 to State Trunk Highway 101
- Segment 8: State Trunk Highway 101 to the Minnesota River

Outlet Structure – The structure and pipe that was installed on Lower Prior Lake by the Watershed District in 1983 as part of the Lake Outlet Project, to provide an outlet for the lake.

Project Cooperators – The Prior Lake-Spring Lake Watershed District, City of Prior Lake, City of Shakopee and Shakopee Mdewakanton Sioux Community, who are jointly undertaking the Outlet Channel Restoration and Enhancement Project.

Construction Fund – A fund established for costs associated with construction of the Outlet Channel Restoration and Enhancement Project, pursuant to Article VII below.

Operating Fund – A fund established for the costs of Outlet Channel operation and routine maintenance, pursuant to Article VII below.

Emergency Maintenance Fund – A fund established for the costs of emergency maintenance and repair of the Outlet Channel, pursuant to Article VII below.

Outlet Operating Plan (2004, as amended) – A plan documenting the management policy and operating procedures for the Outlet Structure, as developed by the Watershed District and approved by the Minnesota Department of Natural Resources. A copy of the Plan is attached hereto as Exhibit "B" and by reference made a part hereof.

## ARTICLE ~~II~~III

## STATEMENT OF PURPOSE

Section ~~1~~2.01. General Purpose. The general purpose of this Agreement is to (a) provide a format by which the Project Cooperators can restore and enhance the Outlet Channel to meet existing and future lake outlet and storm water conveyance needs, (b) facilitate the fair distribution of the costs of restoring, enhancing, operating and maintaining the Outlet Channel, and (c) provide a format whereby the Watershed District can ~~construct and~~ operate, repair, improve and maintain an artificial outlet that ~~can be~~ is used to drain flood waters from Prior Lake and transport them to the Minnesota River via the Outlet Channel. The ~~construction~~restoration and enhancement of the ~~Lake Outlet~~ Outlet Channel requires the acquisition of easements in Prior Lake and Shakopee and construction of enhancements. ~~Thereafter, the Watershed District must construct improvements to~~ the ~~drainage channel~~Outlet Channel along the ~~entire~~ system. The ~~portion of the drainage channel~~Outlet Channel is located ~~in Shakopee is~~ within an area which has been identified by Prior Lake, Shakopee and the SMSC as needing future capacity in excess of the levels projected by the Watershed District as being required for safe and efficient operation of the ~~Lake~~ Outlet Structure. It is the intention of the parties to this Agreement to establish a legally binding procedure for acquiring the necessary additional easements ~~in Shakopee and to set forth conditions that must be fulfilled to~~and sharing the costs of the construction and ~~operate~~ maintenance of the necessary Outlet Cehannel ~~improvements~~Restoration and Enhancement Project. The Agreement shall specify the procedures and responsibilities for maintenance of the Outlet Cehannel ~~improvements~~ and the conditions that must be fulfilled ~~prior to actually releasing~~during the release of water from Prior Lake. The Agreement shall specify the responsibilities of the parties with respect to maintenance of the ~~drainage channel~~Outlet Channel and the additional uses that may be made of the additional easements by Prior Lake and Shakopee.

ARTICLE ~~V~~III

~~USED~~ USES OF ~~DRAINAGE~~ OUTLET CHANNEL

Section ~~5~~3.01 Permitted Uses by Watershed District. The Watershed District shall use the ~~drainage c~~Outlet Channel for the purpose of draining water from Prior Lake and for no other purposes.

Section ~~5~~3.02. Permitted Uses by Prior Lake, Shakopee and SMSC. Prior Lake, Shakopee and the SMSC shall use the Outlet Channel for the purposes of conveying storm water from drainage areas tributary to the Outlet Channel. The tributary drainage areas downstream of Prior Lake are identified in Table 1 below, and the maximum allowable discharge rates to the Outlet Channel from the Watershed District, Prior Lake, Shakopee and the SMSC are specified in Table 2. Table 3 presents the peak flow rates to the Outlet Channel for each segment. These peak flow rates were calculated for each Outlet Channel segment by multiplying the drainage area from Table 1 by the applicable discharge rate per acre from Table 2 for each Project Cooperator. ~~reserves the right to use the easements obtained by the Watershed District in connection with its overall drainage plans as they are from time to time developed by Shakopee.~~

Table 1: Outlet Channel Tributary Drainage Areas (downstream of Prior Lake).

| Outlet Channel Segment | Watershed District | Prior Lake | SMSC** | Shakopee | SubTotal |
|---|---|---|---|---|---|
| 1 | N/A* | 658 | 28 | 0 | 686 |
| 2 | * | 261 | 3 | 0 | 264 |
| 3 | * | 1,145 | 5 | 94 | 1,244 |
| 4 | * | 827 | 1,787 | 2,622 | 5,236 |
| 5 | * | 0 | 7 | 758 | 765 |
| 6 | * | 0 | 261 | 927 | 1,188 |
| 7 | * | 0 | 0 | 1,407 | 1,407 |
| 8 | * | 0 | 0 | 101 | 101 |
| Total | * | **2,891** | **2,092** | **5,909** | **10,892** |

*The Watershed District's contribution to the Outlet Channel is not dependent on drainage area; it is based on a maximum flow through the Outlet Structure of 65 cubic feet per second.
**Includes Fee and Trust lands.

Table 2: Outlet Channel Maximum Discharge Rates per Acre.

| Project Cooperator | Maximum flow rate to Outlet Channel, per acre |
|---|---|
| Watershed District | 65 cfs total (max flow through Outlet Structure) |
| City of Shakopee South of Dean Lake (Upstream) | 0.10 cfs/acre |
| City of Shakopee North of Dean Lake (Downstream) | 0.33 cfs/acre |
| City of Prior Lake | 0.17 cfs/acre |
| Shakopee Mdewakanton Sioux Community | 0.05 cfs/acre |

Table 3: Allowable Peak Discharge Rates to the Outlet Channel, by Project Cooperator and Segment.

| | Peak Discharge Rates, in cfs, by Project Cooperator | | | |
|---|---|---|---|---|
| Segment | Watershed District | Prior Lake | SMSC | Shakopee |
| 1 | 65 | 112 | 1 | 0 |
| 2 | 65 | 156 | 2 | 0 |
| 3 | 65 | 351 | 2 | 9 |
| 4 | 65 | 492 | 91 | 272 |
| 5 | 65 | 492 | 92 | 347 |
| 6 | 65 | 492 | 105 | 656 |
| 7 | 65 | 492 | 105 | 1125 |
| 8 | 65 | 492 | 105 | 1159 |

The tributary areas and drainage rates in Table 2 and Table 3 shall be the basis for the hydrologic and hydraulic design capacity of the Outlet Channel Restoration and Enhancement Project.

Section 3.03. Exceeding Allowable Discharge Rates. The Watershed District may request that the Project Cooperators provide verification that new developments within the drainage areas tributary to the Outlet Channel downstream of Prior Lake will not result in an increase in the per acre drainage rate specified in Table 2 or the peak discharge rates specified in Table 3. In the event that an increase in ~~runoff~~discharge rate beyond those specified in Tables 2 or 3 ~~in Shakopee~~ results in or causes the need for repairs, maintenance, or expansion of the design capacity for the ~~drainage~~ Outlet ~~channel~~Channel beyond that specified in this Agreement, the Project Cooperator discharging the additional flow ~~Shakopee~~ shall make or install all repairs,

maintenance or improvements necessary to ~~increase the capacity of the drainage channel to~~ handle the increased flow. Any such repairs, maintenance or improvements shall be at the sole cost or expense of the Project Cooperator with the increased discharge~~Shakopee~~; and ~~both Prior Lake and the Watershed District~~the other Project Cooperators shall be indemnified and held harmless from any and all liability for such cost or expense and for such increased flow.

Section ~~5~~3.0~~4~~3 Additional Authorized Prior Lake and Shakopee Uses. Prior Lake and Shakopee may, subject to the limitations of specific easements, use the easements without termination of this Agreement~~,~~ for the installation, operation and maintenance of public services and utilities to include without limitation public streets, sanitary sewer, water, storm sewer, electrical and natural gas. In no event shall such uses interfere or otherwise restrict the drainage function of the ~~channel~~Outlet Channel. All cost or expense to install, operate and maintain such utilities and any damage to the ~~channel~~ Outlet Channel resulting from such installation, operation and maintenance shall be borne by either Prior Lake or Shakopee and ~~both Prior Lake and the Watershed District shall be indemnified and held harmless from any liability therefore~~the responsible City shall indemnify and hold harmless from any liability the other Project Cooperators.

## ARTICLE ~~H~~IV

## ACQUISITION OF ~~DRAINAGE~~ OUTLET CHANNEL EASEMENTS

Section ~~2~~4.01. Acquisition of Outlet Channel ~~Channel~~ Easements. To the extent possible, the Project Cooperators intend to obtain the necessary easements for the construction of the Outlet Channel Restoration and Enhancement Project and the ongoing operation and maintenance of the Outlet Channel by dedication pursuant to the applicable subdivision ordinances within Prior Lake and Shakopee. If the timing of the construction of the Outlet Channel Restoration and Enhancement Project requires that easements be obtained prior to subdivision, ~~T~~the Watershed District is authorized to negotiate for and acquire ~~suitable~~ the necessary Outlet Channel easements within the municipal boundaries of Prior Lake and Shakopee~~ for the construction of the Lake Outlet.~~ In conducting the negotiations and/or condemnation proceedings necessary for the acquisition of the ~~required~~ easements, the Watershed District shall comply in all respects with Shakopee Resolution No. 1643, entitled "A Resolution Adopting A Policy For The City Of Shakopee Concerning The Condemnation Of

Easements And Land Needed For The Installation Of Public Improvements". To the extent possible within the budgetary limitations established by the Watershed District for the Lake Outlet, the Watershed District shall also endeavor to acquire easements in dimensions required by Shakopee. The plans and specifications for the ~~Lake Outlet~~Outlet Channel Restoration and Enhancement Project shall specify the ultimate alignment and dimensions of the easements.

Section ~~24~~.02. Uses of and Title to Easements. The easements to be acquired by the Watershed District shall be for ~~utility and~~ drainage purposes over, under, and across the affected properties. In the City of Shakopee, t~~T~~he title to the easements shall be acquired in the ~~Joint~~ joint names of the Watershed District and Shakopee.

Section ~~24~~.03. Assistance by Shakopee. In the event that it becomes necessary in the opinion of the Watershed District to acquire the required easements by means of condemnation proceedings, Shakopee shall cooperate with and assist the Watershed District in pursuing condemnation. In that event, all legal proceedings shall be brought in the joint name of the Watershed District and Shakopee by the Shakopee City Attorney in accordance with Shakopee Resolution No. 1643.

Section ~~24~~.04. Easement Acquisition Costs. All costs or expense necessary and incidental to the acquisition of ~~the~~ easements for the Outlet Channel shall be the responsibility of and borne by the ~~Watershed District~~Project Cooperators according to the cost-share allocation specified in Article VII. The Project Cooperators shall contribute their share of the easement acquisition costs to the Construction Fund. ~~The costs for which the Watershed District shall have direct and exclusive responsibility shall include without limitation all costs related to the acquisition of the easements, legal fees, court costs, appraisal fees, survey fees, abstracting fees, and recording fees. The Watershed District agrees to indemnify and hold Shakopee harmless from any and all liability of any nature arising from, and for all cost and expense relating to, the acquisition of the easements.~~

~~Section 2.05. Payment of Easement Acquisition Costs. The Watershed District shall pay the easement acquisition costs on or before 30 days following receipt of the proceeds from the sale of the municipal bonds used to finance the Lake Outlet in the event that the contracts for the improvements are let and the work on the improvements proceeds. In the event that the Watershed District elects either not to let contracts for the improvements or elects not to let contracts for the improvements or elects not to commence work on the improvements, the~~

~~easement acquisition cost shall be paid on or before 30 days after receipt of the reimbursement funds received from Scott County in accordance with Minnesota Statutes Section 1112.47, Subd. 2, (1955, as amended). The Watershed District agrees to indemnify and hold Shakopee harmless from any costs or expenses related to easement acquisition.~~

## ARTICLE V
## CONSTRUCTION OF OUTLET CHANNEL RESTORATION AND ENHANCEMENT PROJECT

Section 5.01. General. The Outlet Channel is in need of restoration and enhancement to stabilize the channel banks and ensure adequate capacity for existing and future storm water conveyance needs. The final design for each segment of the Outlet Channel Restoration and Enhancement Project shall be consistent with the Conceptual Design and shall accommodate the expected drainage capacity needs of the Project Cooperators as identified in Table 3 above.

Section 5.02. Responsibilities for Outlet Channel Restoration and Enhancement Project. The Watershed District will lead and coordinate the project to design and construct the Outlet Channel restoration and enhancements. Prior to construction, the District shall obtain all permits and approvals required by any governmental unit having jurisdiction over the Outlet Channel Restoration and Enhancement Project, including without limitation Prior Lake, Shakopee, the Lower Minnesota River Watershed District, the Department of Natural Resources and the U.S. Army Corps of Reserves. The District shall design the Outlet Channel Restoration and Enhancement Project to conform to generally acceptable engineering practices and the Conceptual Design, and shall consult with the Project Cooperators during the final design of each channel segment. The Watershed District shall furnish the Project Cooperators with complete copies of the final draft plans and specifications for each segment of the Outlet Channel for their review and comment. The Project Cooperators shall approve the plans and specifications or request modifications within 60 days of receiving the final draft plans from the Watershed District. The Watershed District shall endeavor to incorporate the comments and needs of the Project Cooperators into the plans. However, if situations arise where the Watershed District receives comments that are inconsistent with the Outlet Channel design capacity needs, the Conceptual Design or with other comments, to avoid delays in the project the

Watershed District's determination on questions of design shall be conclusive and the dispute resolution provisions of Article X shall not apply.

Section 5.03. Construction Schedule. The design and construction of the Outlet Channel Restoration and Enhancement Project is expected to occur over a period of five years, beginning in 2005. The construction activities will be scheduled to coordinate with the subdivision and development of land adjacent to the Outlet Channel to the extent possible. The anticipated construction schedule for the Outlet Channel Restoration and Enhancement Project is more particularly described in Exhibit "C", which is attached hereto and by reference made a part hereof.

Section 5.04. Use of the Outlet Channel During Construction and Vegetation Establishment. The Outlet Channel will continue to be used by the Project Cooperators for stormwater conveyance while the Outlet Channel Restoration and Enhancement Project is under construction and before the vegetation is fully established. During construction and until the vegetation is established, erosion control best management practices will be installed and maintained and the construction efforts will be sequenced to protect downstream resources. Despite these efforts, a situation may arise where a downstream impact occurs following a large rainfall or other runoff- or weather-related event. In the event of a downstream impact, the Project Cooperators shall work together to remediate the impact, and shall include that work as an element of the overall Outlet Channel Restoration and Enhancement Project, subject to the cost-share allocation specified in Article VII.

Section 5.05. Obligation to Contribute to the Cost of the Outlet Channel Restoration and Enhancement Project. All costs and expense for the design and construction of the Outlet Channel Restoration and Enhancement Project are the responsibility of the Project Cooperators as specified in Article VII. A Construction Fund shall be established for the costs of constructing the Outlet Channel Restoration and Enhancement Project, according to Article VII below.

## ARTICLE VI

## OPERATION AND MAINTENANCE OF ~~DRAINAGE~~ OUTLET CHANNEL

~~Section 6.01. Obligation of Watershed District to Provide Initial Construction Warranty for Drainage channel Improvements. For a period of three (3) years following completion of the~~

~~improvements made to the drainage channel as part of the initial construction of the Lake Outlet, the Watershed District shall have the sole and exclusive obligation to stabilize the channel bank and restore any damage to the drainage channel or adjoining property resulting from the initial construction work. In addition, any work performed by the Watershed District during the foregoing three (3) year period to repair, replace or correct defects that arise out of or in connection with the initial construction shall be similarly guaranteed for an additional three (3) year period from and after the date of such repair, replacement or correction.~~

Section 6.01. General. Following the completion of each segment of the Outlet Channel Restoration and Enhancement Project, annual operation and maintenance activities will be necessary to monitor the status of the Outlet Channel and ensure the stability and continued performance of the channel. In addition, occasional emergency repairs may be required following significant or sustained flow events, and due to normal wear and tear.

Section 6.02. Responsibilities for Outlet Channel Operation and Maintenance. The Watershed District shall be responsible for inspecting and coordinating the operation and maintenance of the Outlet Channel. All maintenance activities shall conform to the maintenance plan for the Outlet Channel, generally acceptable engineering practices and the Conceptual Design. The District shall obtain all permits and approvals required for the maintenance activities by any governmental unit having jurisdiction over the Outlet Channel, including without limitation Prior Lake, Shakopee, the Lower Minnesota Watershed District, the Department of Natural Resources and the U.S. Army Corps of Reserves. When immediate action is not required to address an identified maintenance need, the Watershed District shall furnish the Project Cooperators with complete copies of the plans and specifications for the maintenance activity for their review and comment. The Project Cooperators shall approve the plans and specifications or request modifications within 15 days of receiving them from the Watershed District. The Watershed District shall endeavor to incorporate the comments and needs of the Project Cooperators into the plans. However, if situations arise where the Watershed District receives comments that are inconsistent with the Outlet Channel maintenance needs, the Conceptual Design or with other comments, to avoid delays in Outlet Channel maintenance the Watershed District's determination on questions of maintenance shall be conclusive and the dispute resolution provisions of Article X shall not apply.

Section 6.03. Inspection of the Outlet Channel. Each year, the Watershed District shall inspect the Outlet Channel according to the procedures established in the Outlet Operating Plan (2004, as amended). In the event that an inspection reveals that repair or maintenance is required to maintain the stability of the channel banks, ensure the free flow of water through the Outlet Channel, or prevent downstream impacts, the District shall coordinate the completion of such repairs or maintenance in accordance with this Article.

Section 6.04. Routine Maintenance. Routine maintenance of the Outlet Channel, such as mowing or burning the vegetation and removing sediment from accumulation zones, shall be necessary to ensure continued bank stability, prevent encroachment by undesirable weed species, and prevent migration of sediment downstream. For each segment of the Outlet Channel, a maintenance plan shall be completed and shall be reviewed by the Project Cooperators prior to commencement of the routine maintenance activities. The Project Cooperators shall approve the maintenance plan or request modifications within 60 days of receiving it from the Watershed District. The Watershed District shall endeavor to incorporate the comments and needs of the Project Cooperators into the plan. However, if situations arise where the Watershed District receives comments that are inconsistent with the Outlet Channel maintenance needs, the Conceptual Design or with other comments, to avoid delays in Outlet Channel maintenance the Watershed District's determination on questions of maintenance shall be conclusive and the dispute resolution provisions of Article X shall not apply.

Section 6.05. Emergency Repair and Maintenance. On occasion, weather conditions or flow patterns along the Outlet Channel may result in a bank failure, culvert obstruction or other condition that requires prompt repair or maintenance to ensure free flow of water in the Outlet Channel, maintain channel stability and avoid downstream impacts. The need for emergency or non-routine maintenance activities may be identified by any of the Project Cooperators and communicated to the Watershed District. Once the need is identified, a plan shall be developed for completing the necessary repair or maintenance that conforms to the Conceptual Design. If the Watershed District is unavailable or unable to respond to complete the emergency repair or maintenance, any of the Project Cooperators may complete the maintenance and the associated costs shall be paid from the Emergency Maintenance Fund. The Project Cooperator completing the emergency repair or maintenance shall endeavor to provide the other Project Cooperators with 24 hours notice of any emergency repair or maintenance activity; however, the Project

Cooperator is entitled to move forward with the emergency maintenance activity regardless of response from the other Project Partners, provided that the activity conforms to the Conceptual Design.

Section 6.06. Obligation to Pay for the Costs of Outlet Channel Operation and Maintenance.

(a) The Project Cooperators shall have a continuing obligation throughout the entire term of this Agreement to contribute to the cost incurred for the routine operation and maintenance of the Outlet Channel, including vegetation management, sediment removal, and Outlet Channel inspections. An Operating Fund shall be established for the costs of operation and routine maintenance according to Article VII below.

(b) The Project Cooperators shall also have a continuing obligation throughout the entire term of this Agreement to contribute to the cost incurred for the emergency repair and maintenance of the Outlet Channel, provided that the need for the emergency repair or maintenance is not the result of flows exceeding the flow limitations identified in Tables 2 and 3. An Emergency Maintenance Fund shall be established for the costs of emergency repair and maintenance according to Article VII below. If the need for emergency repair or maintenance results from flows exceeding the flow limitations identified in Tables 2 and 3, the parties that exceed their flow limitations shall be responsible for the costs of the emergency repair or maintenance in an amount proportional to their flow.

~~Section 6.02. Obligations of Watershed District to Contribute to the Routine Maintenance of Drainage Channel.~~

~~(a) In addition to its obligations to provide construction warranties pursuant to Section 6.01, the Watershed District shall have a continuing obligation throughout the entire term of this Agreement to contribute to the cost incurred for the routine maintenance of the drainage channel. The amount of the Watershed District's contribution to the routine maintenance of the drainage channel shall be determines as follows:~~

~~(i)Before the time that Shakopee alters or otherwise makes use of the drainage channel in connection with its overall drainage plan or in connection with the installation of public services and utilities, the Watershed District shall have~~

~~sole and exclusive obligations to perform and pay the cost of all routine maintenance to the drainage channel.~~

~~(ii)After the time that Shakopee modifies the drainage channel in connection with its overall drainage plan or in connection with the installation of public services and utilities, the Watershed District shall have the sole and exclusive obligation to perform and pay the cost of all routine maintenance to that portion of the drainage channel lying southerly of Dean's Lake (including the Dean's Lake diversion structure); provided, however, that at such time as there exists continuous flow of water between the main outlet structure on Prior lake and State Highway No. 101, the Watershed District shall have sole and exclusive obligation to perform and pay the cost of routine maintenance for the entire drainage channel. In no event, however, shall the Watershed District have any responsibility for loss or damage to any public services or utilities installed or maintained in the drainage channel easement by Shakopee.~~

~~(b) In addition to the continuing obligations of the Watershed District to contribute to the routine maintenance of the drainage channel, the Watershed District shall have the obligation of inspecting the drainage channel before and after releasing water from Prior Lake and shall repair any impediment to such discharge before releasing water and restore any damage caused to the drainage channel by such discharge thereafter. The post-discharge inspection shall be made as soon as practical after the discharge has ended. Any emergency restoration work as evidenced by the inspection shall be made as soon as practical after the discharge has ended. Any emergency restoration work as evidenced by the inspection shall be completed within a time frame consistent with the severity of the damage caused and such other physical and weather conditions that may bear upon the work to be performed. In no event, however, shall the time frame for completing permanent repairs exceed one (1) year from the date that the discharge causing the damage was ended.~~

~~Section 6.03. Obligation of Shakopee to Contribute to the Routine Maintenance of Drainage Channel.~~

~~(a) Before the time that Shakopee modifies the drainage channel in connection with its overall drainage plan or in connection with the installation of public services and utilities,~~

~~Shakopee shall have no obligation to contribute to the cost of the routine maintenance of the drainage channel.~~

~~(b) After the time that Shakopee modifies the drainage channel in connection with its overall drainage plan, or in connection with the installation of public services and utilities, and except as otherwise provided in Section 6.02 (a) (ii) Shakopee shall have the sole and exclusive obligation to perform and pay the cost of all routine maintenance to that portion of the drainage channel lying southerly of Dean's Lake.~~

## ARTICLE VII

## OUTLET CHANNEL COST-SHARE AND FUNDING

Section 7.01. General. The responsibility of the cost for the design, construction, operation, repair and maintenance of the Outlet Channel shall be distributed among the Project Cooperators based on the following general principles:

(a) The cost-share obligation shall be allocated among the Project Cooperators based on each Project Cooperator's estimated need for and anticipated use of the Outlet Channel for stormwater conveyance.

(b) The Watershed District's cost-share obligation shall be based on the maximum 65 cubic feet per second discharge from the Outlet Structure.

(c) The cost-share obligation for Prior Lake, Shakopee and the SMSC shall be based on each Project Cooperator's contributing drainage area to the Outlet Channel downstream of the Outlet Structure and their stated rate control goals for the Outlet Channel drainage area(s) within their jurisdiction.

(d) The contributing drainage area from the SMSC shall include lands held in fee and lands held in trust.

(e) A separate cost-share allocation shall be determined for each Outlet Channel segment.

(f) Each Project Cooperator's cost-share obligation shall begin at the point where stormwater from that Project Cooperator's jurisdictional boundaries flow into the Outlet Channel, and shall extend from that first point of discharge downstream to the point of inlet into Blue Lake.

Section 7.02. Cost-Share Allocation. All costs and expense for the design and construction of the Outlet Channel Restoration and Enhancement Project in conformance with the Conceptual Design, and the ongoing operation, maintenance and repair of the Outlet Channel are the responsibility of the Project Cooperators as specified in Table 4. The costs shall include without limitation all costs for the construction, operation and maintenance of the Outlet Channel, including construction costs, easement acquisition costs, design costs, engineering fees, vegetation management costs, staff costs, legal fees, and permit application fees and related expenses. The formula used to calculate the cost-share allocation is based on the hydrologic and drainage area information described in Tables 1 through 3, and is more particularly described on Exhibit "D", which is attached hereto and by reference made a part hereof. The estimated cost to each Project Cooperator for the design and construction of the Outlet Channel Restoration and Enhancement Project and the first five years of maintenance is more particularly described on Exhibit "E", which is attached hereto and by reference made a part hereof. If the SMSC fails to meet its obligations under the separate MOA with the Project Cooperators, the cost-share allocated to the SMSC shall be shared by the Watershed District, Prior Lake and Shakopee according to the cost-share percentages calculated without the SMSC.

Table 4. Cost-Share Allocation for Outlet Channel

| **Outlet Channel Segment** | **Cost-Share Percentage for Each Project Cooperator** | | | | **Total** |
|---|---|---|---|---|---|
| | Watershed District | City of Prior Lake | City of Shakopee | SMSC | |
| 1 | 91.7% | 7.9% | 0% | 0.4% | 100% |
| 2 | 88.9% | 10.7% | 0% | 0.4% | 100% |
| 3 | 76.7% | 20.7% | 2.2% | 0.4% | 100% |
| 4 | 40.1% | 15.2% | 33.5% | 11.2% | 100% |
| 5 | 36.6% | 13.9% | 39.2% | 10.3% | 100% |
| 6 | 36.9% | 14.0% | 37.3% | 11.9% | 100% |
| 7 | 29.1% | 11.0% | 50.5% | 9.4% | 100% |
| 8 | 28.7% | 10.9% | 51.2% | 9.2% | 100% |

Section 7.03. Revisions to the Cost-Share Allocation Due to Changes in Drainage Area Downstream of the Outlet Structure. Because the cost-share allocation is based in part on relative drainage area within the Outlet Channel watershed downstream of the Outlet Structure, if this Outlet Channel drainage area changes by more than 40 acres for any of the Project

Cooperator, the cost-share allocation will be revised according to the method described in Exhibit D. Following such a revision any easement acquisition, design, construction, operation or maintenance costs incurred after the change in drainage area will be borne by the Project Cooperators according to the revised cost-share allocation, except that if the change in drainage area results in an increased flow to the Outlet Channel beyond the design parameters specified in this Agreement, the Project Cooperator with the increased flow shall make or install at its sole cost all improvements necessary to increase the capacity of the Outlet Channel to handle the increased flow. The costs shall include without limitation all costs for the construction of the increased capacity for the Outlet Channel, including direct construction costs, easement acquisition costs, design costs, engineering fees, staff costs, legal fees, and permit application fees and related expenses.

Section 7.04. Annual Coordination and Planning Meeting. Each year in March, the Watershed District shall convene the Project Cooperators to discuss the design, construction, operation and maintenance activities planned for the Outlet Channel that year, and to develop budgets for construction, operation and maintenance activities. The Project Cooperators shall also review the previous year's activities, review any requested modifications to the cost-share allocation due to changes in drainage area, and refine the construction cost estimates based on the most recent project data. If for any reason the Project Cooperators fail to agree on a budget for Outlet Channel construction, operation and maintenance activities, the budget for the prior year shall apply to the next year, and the annual contribution of each project Cooperator shall be based on that budget.

Section 7.05. Creation of Construction Fund and Payment of Construction Cost-Share. Beginning in 2006, a Construction Fund shall be established for the cost of designing and constructing the Outlet Channel Restoration and Enhancement Project and acquiring necessary easements. In January of each year of the construction project, each Project Cooperator shall deposit into the Construction Fund their share of the engineer's estimate of the design, easement acquisition and construction costs for that calendar year, according to the cost-share allocation in Section 7.02. The Construction Fund shall be administered by the Watershed District in accordance with the following provisions:

(a) The Watershed District may access the Construction Fund at any time to pay the actual costs of acquiring easements for and design and construction of the Outlet

Channel Restoration and Enhancement Project, including appraisal fees, easement transaction costs, engineering and design fees, permitting fees, construction costs, and staff costs;

(b) The Watershed District shall provide a summary of the Construction Fund balance to the Project Cooperators on a quarterly basis;

(c) Following the end of the fiscal year and before January 30 of the next year, the Watershed District shall provide the Project Cooperators with a detailed accounting of the Construction Fund for the previous year. Any funds remaining at year end shall be credited to each Project Cooperator according to the cost-share allocation in Section 7.02 and the amount shall be subtracted from the next year's funding contribution;

(d) All interest earned by the Construction Fund shall remain in the fund for future construction expenditures. Funds shall be retained in accounts that conform to the requirements of Minnesota Statutes Chapter 118A; and

(e) Following the construction of the Outlet Channel Restoration and Enhancement Project and the completion of all construction contracts and obligations, the Watershed District shall prepare and furnish to the Project Cooperators a final accounting report for the Construction Fund. The balance of the Construction Fund upon completion of the Outlet Channel restoration and Enhancement Project shall be returned to the Project Cooperators according to the cost-share allocation in Section 7.02 or applied to a Project Cooperator's share of the annual Operating Fund contribution at the Project Cooperator's direction.

Section 7.06. Creation of Operating Fund and Payment of Operation and Maintenance Cost-Share. Beginning in 2006, the Project Cooperators shall establish an Operating Fund to pay the costs of Outlet Channel operation and routine maintenance activities. In January of each year, each Project Cooperator shall deposit into the Operating Fund their share of the operations and routine maintenance budget for that year, according to the cost-share allocation in Section 7.02. The Operating Fund shall be administered by the Watershed District in accordance with the following provisions:

(a) The Watershed District may access the funds in the Operating Fund at any time to pay the actual costs of operation and routine maintenance of the Outlet Channel, including construction and maintenance costs, staff costs and engineering fees;

(b) The operation and routine maintenance expenditures shall be consistent with the budget developed during the annual Coordination and Planning Meeting. Any variation from the budget of more than 10 percent shall first be agreed upon in writing by the Project Cooperators;

(c) The Watershed District shall provide a summary of the Operating Fund balance to the Project Cooperators on a quarterly basis;

(d) Following the end of the fiscal year and before January 30 of the next year, the Watershed District shall provide the Project Cooperators with a detailed accounting of the Operating Fund for the previous year, and shall either invoice the Project Cooperators for any deficit, refund any surplus, or carry forward the balance to the next year of Outlet Channel operations and routine maintenance; and

(e) All interest earned by the Operating Fund shall remain in the fund for future operation and routine maintenance expenditures. Funds shall be retained in accounts that conform to the requirements of Minnesota Statutes Chapter 118A.

Section 7.07. Creation of Emergency Maintenance Fund and Payment of Emergency Maintenance Cost-Share. An Emergency Maintenance Fund of $250,000 shall be established during the first five years of the Outlet Channel Restoration and Enhancement Project to provide a stable funding source for the completion of emergency maintenance and repairs as needed along the Outlet Channel. The Emergency Maintenance Fund shall be established by five years of annual contributions of $50,000 from the Project Cooperators, beginning in the year 2006, according to the cost-share allocation identified in Section 7.02. The Emergency Maintenance Fund shall be administered by the Watershed District in accordance with the following provisions:

(a) A Project Cooperator that completes emergency repair or maintenance of the Outlet Channel according to Section 6.05 may access the funds in the Emergency Maintenance Fund at any time to pay the costs of the emergency maintenance. Eligible costs may include but are not limited to construction costs, staff costs and engineering fees;

(b) Following the completion of the non-routine or emergency maintenance, the Project Cooperator that completed the work shall submit to the other Project Cooperators an accounting of the cost of the maintenance, including construction costs, engineering

fees and staff costs, and the Watershed District shall reimburse the Project Cooperator for the cost of the non-routine or emergency maintenance work from the Emergency Maintenance Fund;

(c) In the first full fiscal year following the completion of an emergency or non-routine maintenance activity, the Project Cooperators responsible for that segment shall, by January 30, replenish the Emergency Maintenance Fund in an amount equal to the cost of the maintenance activity, including engineering fees and staff time plus an inflation factor equal to the *Engineering News Record* Construction Cost Index, according to the cost-share formula identified in Section 7.02;

(d) The Watershed District shall provide a summary of the Emergency Maintenance Fund balance to the Project Cooperators on a quarterly basis;

(e) Following the end of the fiscal year and before January 30 of the next year, the Watershed District shall provide the Project Cooperators with a detailed accounting of the Emergency Maintenance Fund for the previous year; and

(f) All interest earned by the Emergency Maintenance Fund shall remain in the fund for future maintenance expenditures. Funds shall be retained in accounts that conform to the requirements of Minnesota Statutes Chapter 118A.

Section 7.08. Administration and Recordkeeping. The Watershed District shall administer the Construction Fund, Operating Fund, and Emergency Maintenance Fund according to the following provisions:

(a) The Watershed District shall retain all financial records for a period of six years following the completion of the work;

(b) The Watershed District shall provide quarterly fund balance statements to the Project Cooperators;

(c) By January 30 of each year, the Watershed District shall provide the Project Cooperators with a detailed accounting of the income, expenditures, and year-end balance for each Fund for the previous year;

(d) The Watershed District shall include the Funds in its annual audit and provide a copy of the audit to the Project Cooperators, and upon request shall make these financial records available for review or audit by any Project Cooperator; and

(e) The Watershed District shall be entitled to reimbursement from the Operating Fund for the actual staff costs and accounting fees associated with maintaining the financial records and completing the reporting for the Construction Fund, Operating Fund, and Emergency Maintenance Fund.

ARTICLE ~~III~~VIII

CONSTRUCTION AND OPERATION OF ~~LAKE~~ PRIOR LAKE OUTLET STRUCTURE

Section ~~3~~8.01. Obligation of Watershed District. The construction of the Outlet Structure on Prior Lake~~Lake Outlet~~, including ~~without limitation the construction of all channel improvements appurtenant thereto~~any repairs or improvements, shall be the sole and exclusive responsibility of the Watershed District. Prior to the commencement of construction, the Watershed District shall obtain all permits and approvals required by any governmental unit having jurisdiction over the ~~Lake Outlet improvements~~Outlet Structure, including without limitation permits from ~~Shakopee, the Lower Minnesota Watershed District, the Minnesota Water Resources Board~~ Prior Lake, and the Minnesota Department of Natural Resources~~, the Environmental Quality Council and the Metropolitan Council~~.

Section ~~3~~8.02. Plans and Specifications for the ~~Lake~~ Outlet Structure~~Improvements~~. The Watershed District shall design the ~~Lake Outlet~~ Outlet Structure improvements to conform with generally acceptable engineering specifications and the findings of the "Prior Lake Outlet Channel and Lake Volume Management Study", May 2003. The Watershed District shall furnish ~~Shakopee~~ Prior Lake with complete copies of the plans and specifications for the ~~Lake Outlet~~Outlet Structure improvements certified to by the Watershed District's engineer. Prior Lake ~~Shakopee~~ shall approve or request modification to all such plans and specifications as they relate to improvements to be placed within its corporate limits within 60 days of receiving a completed request for approval from the Watershed District. The Watershed District's determination on questions of design shall be conclusive as to the parties to this Agreement, so long as the design is consistent with the outlet structure concept identified in the "Prior Lake Outlet Channel and Lake Volume Management Study", May 2003.

Section ~~3~~8.03 Payment of ~~Lake~~ Outlet Structure Construction Costs. All costs or expenses incurred to construct, repair and maintain the ~~Lake~~ Outlet Structure ~~improvements~~ shall be the responsibility of and borne by the Watershed District. The costs to be paid by Watershed

District shall include without limitation all direct construction costs, engineering fees, legal fees, administration expense and permit application fees. The Watershed District shall indemnify and hold Prior Lake and Shakopee harmless from any liability for any cost or expense incurred in constructing or maintaining the ~~Lake~~ Outlet Structure~~improvements~~.

Section 8.04. Operation of Outlet Structure. Water shall be released from the Prior Lake Outlet Structure in accordance with the Outlet Operating Plan (2004, as amended).

~~ARTICLE IV~~

~~OPERATION OF LAKE OUTLET~~

~~Section 4.01. General.~~

~~(a)Water shall not be released from Prior Lake by opening the main Lake Outlet gate at any time when such discharge would jeopardize the health, safety or property of the residents or property owners of Shakopee.~~

~~(b)The determination of when and to what degree such jeopardy has ceased, or has been reduced to the extent that the discharge of water from Prior Lake may commence, shall by made jointly by the engineers of the Watershed District, Shakopee and Prior Lake in accordance with the following procedures:~~

~~(i)An inspection shall be made to determine the depth and velocity of the flow at various locations in the drainage channel.~~

~~(ii) The available capacity in the drainage channel shall be determined by using Manning's equation for open channel flow. All calculations shall be performed by the Watershed District's engineer and shall be confirmed by the engineers of Prior Lake and Shakopee.~~

~~(iii) The "available capacity in the drainage channel" shall be defined as the calculated maximum rate of discharge at which the Lake Outlet can be allowed to operate without resultant damage to the drainage channel or to adjoining properties.~~

~~(c)After the available capacity in the drainage channel has been determined by the engineers of the Watershed District, Prior Lake and Shakopee, the main Lake Outlet gate may be opened subject to adjustment so as to release water at a rate that will not exceed the available capacity in the drainage channel.~~

~~Section 4.02. Notice to Shakopee of Intent to Open Main Lake Outlet Gate. Prior to the opening of the main Lake Outlet gate and the release of water from Prior Lake, the Watershed District shall give Shakopee no less than 24 hours' advance notice in accordance with Section 12.01.~~

~~Section 4.03. Inspection of Drainage Channel.~~

~~(a)Prior to the opening of the main Lake Outlet gate and the release of water from Prior Lake, the Watershed District shall inspect the drainage channel to insure the free flow of water for the anticipated rate and duration of the release period and to determine the available capacity in the drainage channel in accordance with Section 4.01 (b). Notice of any such inspection shall be given to the engineers of Prior Lake and Shakopee and either City may elect to have a representative present for any inspection. In the event that the inspection reveals that repair or maintenance is required to insure the free flow of water through the drainage channel, the party having responsibility for such repair and maintenance in accordance with Article VI shall promptly perform such repairs or maintenance so as to prevent any undue delay in the release of water from Prior Lake. In the event that such repairs are not promptly undertaken by the responsible party, the Watershed District shall have the right to perform, or cause to be performed, the repairs to be made after 24 hours' notice and to recover the costs pertinent thereto from the responsible party. Daily inspections of drainage channel conditions shall be made by the Watershed District during times that Lake Outlet drainage rates exceed 20 CFS. In such event, the responsible party shall reimburse the Watershed District upon due demand therefore for all sums paid, or the fair value of any work performed, by the Watershed District in connection with such repair or maintenance.~~

~~(b) After the main Lake Outlet gate has been closed and the water in the drainage channel has receded, the Watershed District shall make an inspection of the drainage channel to determine whether it has been damaged by the flow of water from Prior Lake. Notice of any such inspection shall be given to the engineers of Prior lake and Shakopee, and either city may elect to have a representative present for any inspection. In the event that the inspection reveals that repair or maintenance is required to insure the free flow of water through the drainage channel, the party having responsibility for such repair and maintenance in accordance with Article VI shall promptly perform such repairs or maintenance so as to prevent any undue delay in the release of water from Prior Lake.~~

(c)The inspection requirements set forth in Sections 4.03 (a) and (b) constitute the minimum obligation of the parties; and any party to this Agreement shall have the full right to make such additional inspection of the drainage channel as it may deem necessary, with or without notice to any other party.

(d)Written reports of all inspections shall be made by the inspection party and shall be forwarded to each of the other parties.

Section 4.04. Operation of Dean's Lake Diversion Structure Gate.

(a) The Watershed District shall have the exclusive authority for the operation of the Dean's Lake diversion structure gate except as otherwise provided in this Section 4.04.

(b) The normal position of the Dean's Lake diversion structure gate (that is; the position of the gate during times that water is not being released from Prior Lake) shall not direct the flow of runoff through Dean's Lake. Nevertheless, the Watershed District agrees to comply with reasonable requests by Shakopee to divert normal runoff through Dean's Lake provided, however, that such request shall be made to the Watershed District in writing and shall be accompanied by the Agreement of Shakopee to indemnify and hold the Watershed District harmless from any liability for loss, damage and cost, including without limitations reasonable attorney's fees, resulting from the diversion of runoff through Deans' lake pursuant to the request of Shakopee.

(c) During the periods that water being released from Prior Lake is flowing through Dean's Lake diversion structure, the diversion structure gate shall be positioned so as to divert all runoff through Dean's Lake. However, in the event that the diversion of runoff into Dean's Lake is causing or creates an eminent danger to private property, Shakopee shall have the authority to abate the flow of runoff into Dean's Lake by repositioning the diversion structure gate to direct all or part of the runoff to the existing natural drainage route. Shakopee shall give the Watershed District prior notice of its intent to redirect the flow of runoff by adjustment of the diversion structure gate.

Section 4.05. Additional Operation Conditions Imposed Upon the Watershed District. The Lake Outlet will be operated in accordance with the terms and conditions of the permit issued by the Minnesota Department of Natural Resources. A copy of the permit is attached hereto as Exhibit "B", and by reference made a part hereof.

ARTICLE ~~VIII~~IX

INDEMNIFICATION

Section ~~7~~9.01. Indemnification of Shakopee and Prior Lake by the Watershed District. Subject to the limitations of Minnesota Statutes Sections 466.01 to 466.15 (1963, as amended), ~~T~~the Watershed District shall indemnify and hold Shakopee and Prior lake harmless from any and all liability, cost or expense, including without limitation reasonable attorney's fees and court costs, arising out of or in connection with the construction, improvement, use and maintenance of the ~~drainage channel~~Outlet Channel by the Watershed District.

Section ~~7~~9.02. Indemnification of the Watershed District and Prior Lake by Shakopee. Subject to the limitations of Minnesota Statutes Sections 466.01 to 466.15 (1963, as amended), Shakopee shall indemnify and hold the Watershed District and Prior Lake harmless from any and all liability, cost or expense, including without limitation reasonable attorney's fees and court costs, arising out of or in connection with Shakopee's improvement, use and maintenance of the ~~drainage channel~~Outlet Channel ~~and the drainage channel easement~~.

Section 9.03. Indemnification of the Watershed District and Shakopee by Prior Lake. Subject to the limitations of Minnesota Statutes Sections 466.01 to 466.15 (1963, as amended), Prior Lake shall indemnify and hold the Watershed District and Shakopee harmless from any and all liability, cost or expense, including without limitation reasonable attorney's fees and court costs, arising out of or in connection with Prior Lake's improvement, use and maintenance of the Outlet Channel.

Section ~~7~~9.~~03~~04. Insurance and Evidence Thereof. Each of the parties to this Agreement shall provide on the demand of the other, evidence that the risks covered by this Article are insured through an insurance company licensed to do business in the State of Minnesota by a policy or policies having minimum per occurrence limits of three Hundred Thousand ($300,000.) Dollars.

ARTICLE ~~VIII~~X

RESOLUTIONS OF DISPUTES

Section ~~8~~10.01. Policy for Resolving Disputes. The parties to this Agreement acknowledge that if disputes do arise over the construction of this Agreement, or over the rights and obligations of the parties hereto, such disputes will, in all likelihood, affect substantial rights

with respect to the health and safety of the persons and property of the citizens residing within their respective jurisdictions and will further arise under the time frames that do not allow for extended investigation or negotiations regarding the relative merits of the respective position to the dispute. Therefore, the following procedure for resolving disputes has been implemented to give each party to this Agreement the opportunity to present, to the fullest extent possible, the essence of their position to a qualified arbitrator and yet at the same time receive a knowledgeable decision, from a person having sufficient technical experience and expertise, within the shortest possible time.

Section ~~8~~10.02. Procedure for Resolving Disputes. All disputes arising out of or in connection with this Agreement shall be resolved as follows:

(a) A meeting between the parties shall be held promptly within five (5) days after delivery of notice of any dispute to attempt in good faith to negotiate a resolution of the dispute. The dispute notice shall be delivered to all parties in the manner provided herein for notices.

(b) If within five (5) days after such meeting, or any additional meetings as the parties mutually deem necessary, or if the parties fail to meet within five (5) days after delivery of the initial dispute notice, the parties agree to submit the dispute to mediation in accordance with Rule 114 of the Minnesota General Rules of Practice and bear equally the costs of the mediation. The parties agree to participate in good faith in the mediation and negotiations related thereto for a period of ten (10) days, unless the parties mutually extend the mediation period.

(c) If the parties are not successful in resolving the dispute through mediation, then any remaining unresolved controversy or claim arising out of or in connection with this Agreement shall be resolved by binding arbitration in accordance with Minnesota Statutes Section 572.08(c) (1957, as amended), and the following conditions:

(i) The dispute shall be heard by a panel of three (3) arbitrators, one of whom shall be selected by each of the parties hereto within five (5) days after expiration of the ten (10) day period for mediation of the dispute. The selection of arbitrators shall be made in a notice delivered to all other parties in the manner provided herein for notices. If any party fails to select an arbitrator within the five (5) day selection period, the remaining arbitrator(s) shall be selected within two

(2) days after expiration of the initial selection period by the arbitrator(s) previously appointed by the parties.

(ii) The hearing before the arbitrators shall be held within ten (10) days after selection of the arbitration panel, unless otherwise mutually agreed by the parties.

(iii) The decision of the arbitrators shall be rendered within fifteen (15) days after selection of the arbitration panel, unless otherwise mutually agreed by the parties.

~~All disputes arising out of or in connection with this Agreement shall be resolved by arbitration in accordance with Minnesota Statutes Section 572.08 (c), (1957, as amended), the Minnesota Uniform Arbitration Act, and the following conditions:~~

~~(a)The dispute shall be heard by a board consisting of three (3) arbitrators. The Watershed District and Prior Lake shall appoint one (1) member to the Board. Shakopee shall appoint one (1) member to the Board. The third Board member shall be appointed by the members previously appointed by the parties.~~

~~(b)The election to arbitrate disputes shall be made in writing, duly served upon all of the other parties in the manner provided herein for notices.~~

~~(c)The hearing before the arbitrators shall be held within five (5) days after service of the election to arbitrate, unless otherwise agreed in writing by each of the parties.~~

~~(d)~~(a) ~~The decision of the arbitrators shall be rendered not later than seven (7) days after service of the election to arbitrate, unless otherwise agreed in writing by each of the parties.~~

Section ~~8~~10.03. Enforcement of Award. The award of the arbitrators shall be enforceable by any district judge of the First Judicial District of the State of Minnesota.

## ARTICLE ~~IX~~XI
## AMENDMENT

Section ~~9~~11.01. Amendment. Any amendment to this Agreement shall be in writing and duly executed by each of the parties. Any amendment shall be effective from and after the date that it is recorded in the Office of the Scott County Recorder.

## ARTICLE XII
## TERMINATION

Section ~~10~~12.01 Perpetual. The duration of this Agreement shall be perpetual, or until otherwise expressly rescinded or terminated by the parties. Any such agreement of rescission or termination shall be recorded in the Office of the Scott County Recorder.

## ARTICLE ~~XI~~XIII
## DISTRIBUTION OF PROPERTY

Section ~~11~~13.01. Distribution of Property Generally. In the event of the rescission or termination of this Agreement, all property or surplus monies acquired as a result of the joint exercise of powers provided for herein shall be returned to the contributing party in proportion to the contribution provided for the respective party.

Section ~~11~~13.02. Title to Easements Upon Termination. Upon termination of this Agreement, the Watershed District shall convey to Shakopee, all of its right, title and interest in that portion of the ~~drainage channel~~Outlet Channel lying ~~southerly~~ northerly of Scott County Road 16 and within the municipal limits of Shakopee.

## ARTICLE ~~XII~~XIV
## MISCELLANEOUS

Section ~~12~~14.01. Notices. Any notice required to be given or submitted under this Agreement shall be duly given if delivered personally or if mailed, by certified or registered mail, postage prepaid, addressed to the ~~parties at their respective addresses specified below, or to such other address with respect to any party as such party shall notify the others in writing~~administrator or manager of the addressee at their respective principal offices, or to such other address with respect to any party as such party shall notify the others in writing.

Section ~~12~~14.02. Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the legal successors and assigns of the parties.

Section ~~12~~14.03. Construction. This Agreement shall be construed in accordance with the law of the State of Minnesota.

~~If to Prior Lake:~~

~~(Name)~~

~~City Manager~~

~~16200 Eagle Creek Avenue SE~~

~~Prior Lake, Minnesota 55372~~

~~If to Shakopee:~~

~~(Name)~~

~~City Administrator~~

~~129 South Holmes~~

~~Shakopee, Minnesota 55379~~

~~Prior Lake-Spring Lake Watershed District~~

~~By:~~

~~Its:~~

~~And:~~

~~Its:~~

CITY OF PRIOR LAKE

BY
ITS MAYOR

AND
ITS CITY MANAGER

CITY OF SHAKOPEE

BY
ITS MAYOR

AND
ITS CITY ADMINISTRATOR

PRIOR LAKE-SPRING LAKE
WATERSHED DISTRICT

BY _____
ITS PRESIDENT

AND _____
ITS SECRETARY

STATE OF MINNESOTA)

) ss

COUNTY OF SCOTT )

On this _____day of _____, 2003, the foregoing Joint Powers Agreement was acknowledge before me by _____ and _____, the _____and _____, the_____, respectively, of the City of Prior Lake, a municipal corporation, on behalf of said corporation.

_____

Notary Public

STATE OF MINNESOTA)

) ss

COUNTY OF SCOTT )

On this _____day of _____, 2003, the foregoing Joint Powers Agreement was acknowledged before me by _____and _____, the_____and_____ the_____, respectively of the City of Shakopee, a municipal corporation, on behalf of said corporation.

_____

Notary Public

STATE OF MINNESOTA)

) ss

COUNTY OF SCOTT )

On this _____day of _____, 2003, the foregoing Joint Powers Agreement was acknowledged before me by _____and _____the _____and _____ respectively, of the Prior Lake-Spring Lake Watershed District, a political subdivision of the State of Minnesota, on behalf of said district.

_____

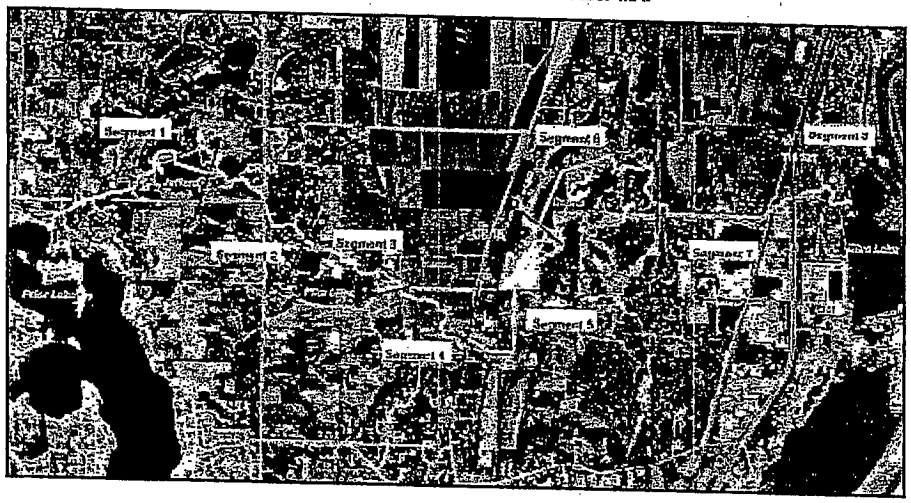
Notary Public

EXHIBIT A

Conceptual Design

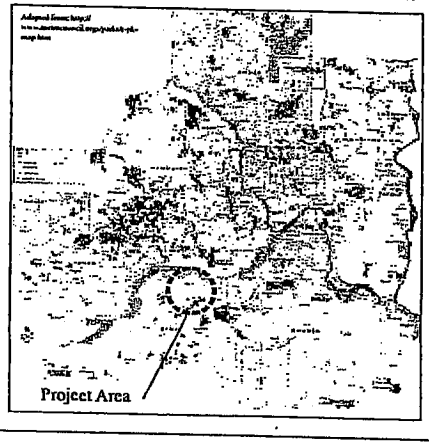
(Excerpted from "Prior Lake Outlet Channel Lake Volume Management Study," PLSLWD, May 2003)

PRIOR LAKE OUTLET CHANNEL CONTEXT MAP




NOT TO SCALE

TWIN CITIES METRO REGIONAL CONTEXT MAP




# PRIOR LAKE OUTLET CHANNEL FUTURE CONCEPTUAL PLAN

Shakopee, Prior Lake MN

| SHEET INDEX | |
|---|---|
| Cover Sheet | 1 |
| Goals and Design Directives | 2 |
| Proposed Outlet Channel Improvements Plan and Profile Drawings | 3 - 12 |


*Owner:*
**Prior Lake-Spring Lake Watershed District**
16670 Franklin Trail
Suite 110
Prior Lake, MN 55372
(952) 447-4166
(952) 447-4167

*District Engineer:*
**Wenck Associates, Inc.**
1800 Pioneer Creek Center
Maple Plain, MN 55359
Ph. (763) 479-4200
Fax (763) 479-4242

*District Ecological Designer:*
**The Kestrel Design Group, Inc.,**
5136 Hankerson Ave. Suite 1
Edina MN 55436
Ph. 952 928-9600
Fax 952 928-1939
www.kestreldesigngroup.com



Portions of the concept development funded by the Minnesota Department of Natural Resources through a Flood Damage Reduction Grant


Rev. No
Rev. Date:

Drawn By:
Checked By:
Project No:
Date: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PRIOR LAKE OUTLET CHANNEL
Prior Lake MN
*Owner:*
Prior Lake - Spring Lake Watershed District

COVER SHEET

# PRIOR LAKE OUTLET CHANNEL

## MISSION

To insure adequate capacity and channel stability of the Prior Lake Outlet Channel into the future under existing flow and easements to convey Prior Lake overflow waters to Blue Lake and prevent arbitrary closures of the channel to Prior Lake discharges.

## PROJECT APPROACH AND TIMELINE:

- Coordination with property owners and stakeholders is essential for successful ecological design
- Outline of concept planning coordination and review for Prior Lake Outlet Channel:
  - o Property owners
  - o Technical Advisory Committee
  - o Board Review
  - o Agency Review
- Prior Lake Outlet Channel Concept Plan is conceptual in nature.
- Prior Lake Outlet Channel Treatments outlined in Concept Plan are general.
- Prior Lake Outlet Channel construction documents will be produced based on Concept Plan recommendations with field fitting employed throughout.

## PROJECT LIMITS (PHYSICAL PARAMETERS):

- Primarily a 30' to 50' easement that occassionally expands, also including public waters alongside the outlet channel route.

## PROJECT GOALS:

### 1. Hydrological Parameters:

- Minimize property damage to landowners along the channel, while minimizing Prior Lake water level fluctuations and property damage to lakeshore owners.
- Preserve Prior Lake-Spring Lake Watershed District's Prior Lake discharge capacity rights to the outlet channel from consumption by stormwater generated from new development.
- Limit flow rate from Prior Lake to maximum capacity of existing pipe: 65 cfs.
- Require entities using the channel as a stormwater trunk facility to provide or pay for this capacity and contribute proportionally to the maintenance trust.
- Use a holistic approach that combines upstream runoff management within Prior Lake Watershed to minimize runoff to Prior Lake Channel with an efficient outlet and stable channel.
- Repair/ retrofit of driveway crossings by Prior Lake-Spring Lake Watershed District where hydrologically necessary. Crossings become property of land owner.
- Issues of steady base flow or navigation were not considered – this outlet channel was designed as an intermittent flow regime.

### 2. Stabilization:

- Stabilize banks so that they stay within easement.
- Use an integrated structure approach to soil stabilization focused on soil/root interface rather than a surface application approach: maximize rhizosphere and minimize use of hard armor by using vegetative soil stabilization rather than fieldstone for bank toe stabilization whenever possible.
- Where hard armor is necessary; use fieldstone (igneous rock) rather than limestone to maximize life span.

### 3. Natural aesthetic:

- Give this man made channel (ditch) a more natural channel stream feel.
- Stabilize in a natural aesthetic.
- Maximize use of vegetative soil stabilization and minimize use of hard armor.

### 3. Wildlife Corridor:

- Provide wildlife habitat structure both in aquatic and terrestrial zones of the Prior Lake Outlet Channel where possible.
- Preserve, protect or enhance the aquatic environment of the waterbodies along the outlet channel.
- Preserve/enhance habitat corridor for wildlife migration patterns especially Neotropical migrants, amphibians, and charismatic lepidoptera (butterflies).
- Preserve/ create/ enhance a community asset that combines a corridor for watchable wildlife and native vegetation with a functional channel for conveying water runoff.

### 4. Maintenance:

- Secure maintenance access throughout channel length.
- Minimize long term maintenance needs and capital expenditures for the outlet system.
- Minimize maintenance by mimicking presettlement vegetation structure.
- Anticipated maintenance requires controlled burns, selective shade reduction and other measures to maintain integrity of vegetative treatments and their rhizosphere (root zone).

## DESIGN ASSUMPTIONS:

- Assume future stormwater discharges to the channel based on future conditions land use models provided by the Cities of Shakopee and Prior Lake.

# POTENTIAL PROJECT EXPANSION

## MISSION

A) Stabilize Prior Lake Outlet Channel under existing flow and a much wider easement – 200 to 300' wide – to both convey Prior Lake overflow water to Blue lake and provide a corridor for a greenway connection from Prior Lake to the Minnesota River Wildlife Refuge...

B)...with a potential non-consumptive recreation trail connection per above.

## PROJECT LIMITS (PHYSICAL PARAMETERS)

- Easement extended to 200' to 300' wide where feasible

## GOAL

- To become part of a larger greenway connection, managed cooperatively with other stakeholders and interested parties.

DESIGN DIRECTIVES

SHEET 2 of 12

Rev No
Rev Date:

Drawn By:
Checked By:
Project No:
Date:


District Ecological Designer:
The Kestrel Design Group, Inc.,
5136 Hankerson ave. Suite 1
Edina MN 55436
Ph. 952 928-9600
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District Engineer:
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1800 Pioneer Creek Center
Maple Plain, MN 55359
Ph. (763) 479-4200
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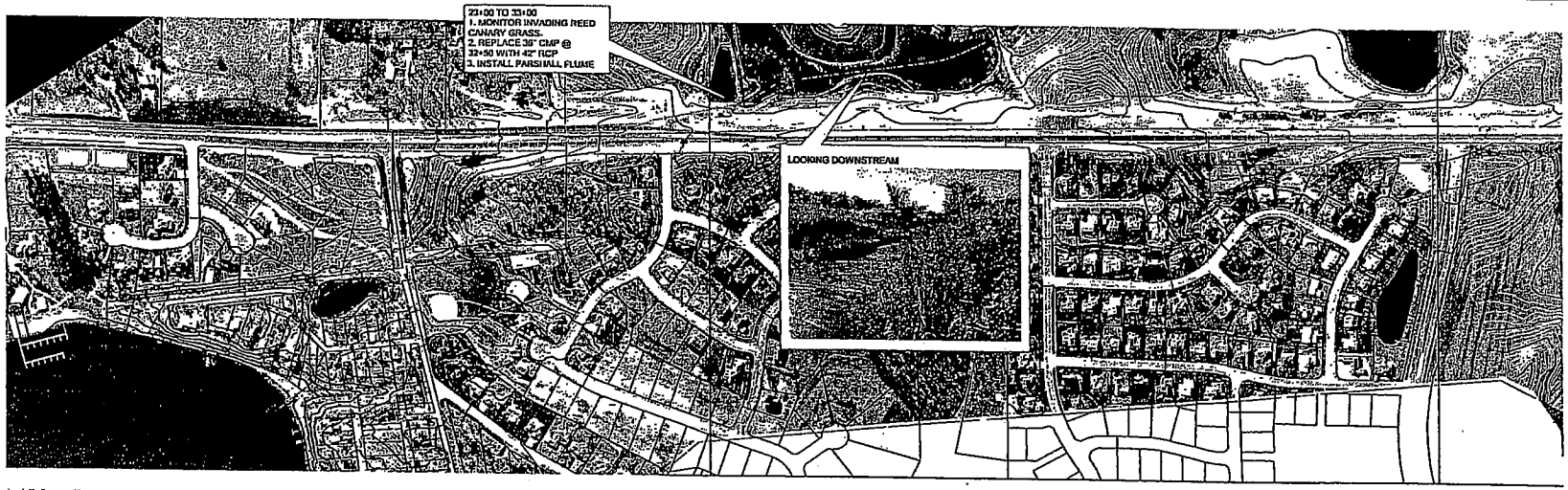
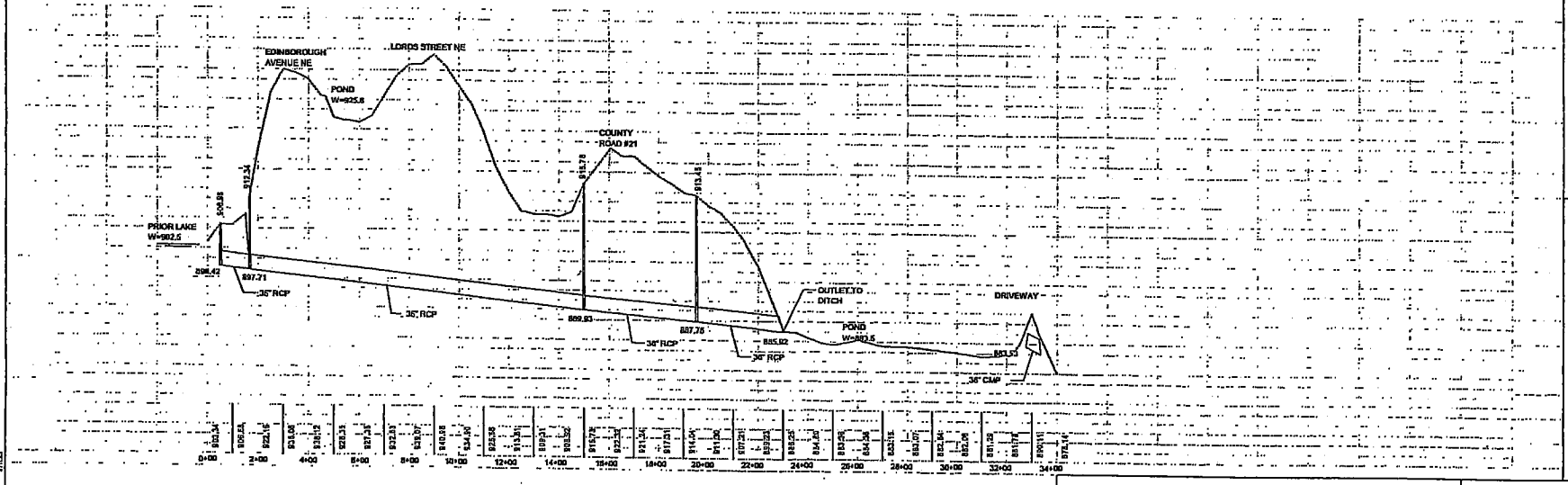
PRIOR LAKE
OUTLET CHANNEL
Prior Lake MN

Owner:
Prior Lake - Spring Lake
Watershed District




BENCH MARK ELEV

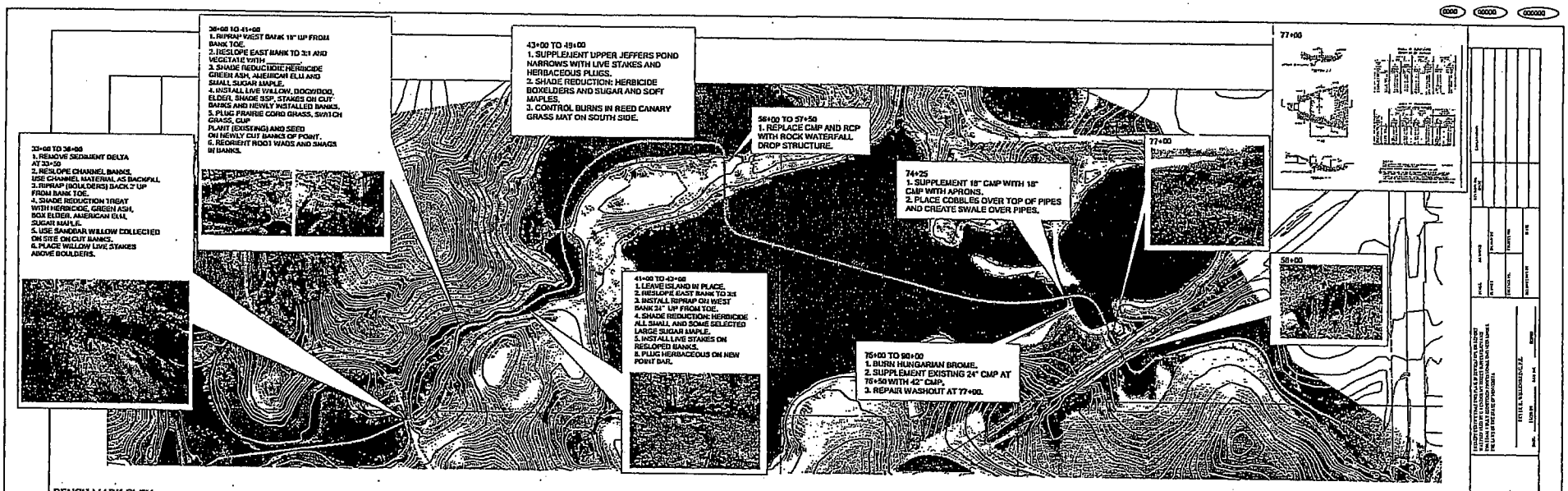
BENCH MARK ELEV




PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA

Plan and Profile

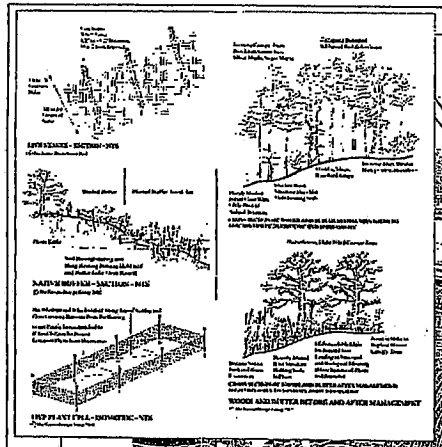
SHEET 3 of 12



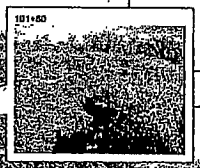

PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA

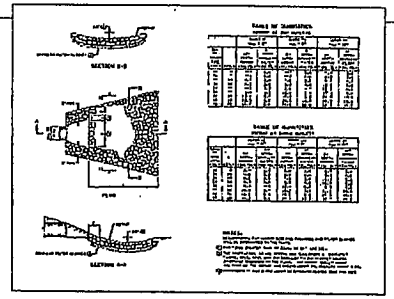
Plan and Profile

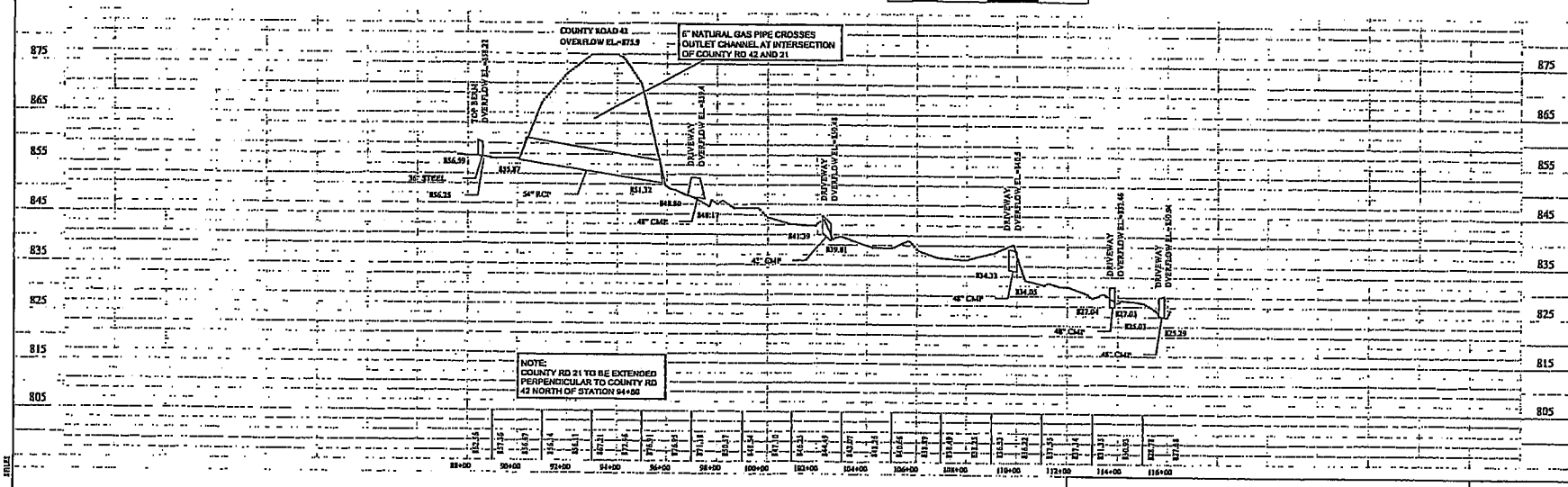
SHEET 4 of 12



98+00 to 111+50
1. INSTALL PLUNGE POOLS 20 FEET WIDE x 30 FEET LONG AT DOWNSTREAM END OF CULVERTS. 97+00, 100+50, 110+00.
2. INSTALL RIPRAP ON OUTSIDE BENDS. ENTIRE LENGTH, 2 FEET UP FROM BANK TOE.
3. REMOVE LOGS AND SNAGS IN CHANNEL. REUSE CHANNEL R.O.W.. USE ROOT WADS ON CUT BANKS.
4. RESLOPE ALL BANKS AT 3:1 FOR LOWEST 10 FEET.
5. INSTALL LIVE STAKES IN RESLOPED BANKS.
6. INSTALL LIVE HERBACEOUS PLUGS IN POINT BARS.
7. DEEP SHADE REDUCTION: HERBICIDE SUGAR, SILVER MAPLES AND BUCKTHORN.




PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA

Plan and Profile

SHEET 5 of 12

113+50 TO 116+60
1. BOULDER TOE ON CUT BANKS ONLY.
2. SHADE REDUCTION: BOX ELDER, ASPEN, SUGAR/SILVER MAPLE AND BUCKTHORN.
3. INSTALL HERBACEOUS LIVE PLUGS IN POINT BARS.
4. INSTALL LIVE CUT BRANCHES IN CUT BANKS.

116+50 TO 119+00
1. REMOVE SNAGS IN CHANNEL AND PLACE IN CHANNEL R.O.W.
2. DEEP SHADE REDUCTION: HERBICIDE BOX ELDER, SUGAR/SILVER MAPLE AND BUCKTHORN.
3. INSTALL HERBACEOUS LIVE PLUGS IN POINT BARS.
4. INSTALL LIVE STAKES IN CUT BANKS.

119+00 TO 121+00
1. INSTALL RIPRAP ON CUT BANK AT 120+00, ONE TO TWO ROCK VANES.
2. REORIENT TREE WADS IN BANK.
3. INSTALL LIVE STAKES IN CUT BANKS.
4. DEEP DEEP SHADE REDUCTION HERBICIDE SUGAR/SILVER MAPLE AND BUCKTHORN.
5. INSTALL HERBACEOUS LIVE PLUGS IN POINT BARS.

131+38 TO 135+00
1. SUPPLEMENT EXISTING 36" CMP WITH ANOTHER 36" CMP @ 131+38.
2. BURN CATTAIL WETLAND ON A 2 TO 3 YEAR CYCLE.
3. CONSTRUCT PLUNGE POOL AT DOWNSTREAM END OF TWO 36" CMP'S AT 131+38.

138+00 TO 144+00
1. REMOVE ROCK IN CHANNEL AND PLACE INTO TOE OF SLOPE.
2. REMOVE AND DISPOSE OF GEOSYNTHETIC FABRIC IN CHANNEL BOTTOM.
3. INSTALL BOULDER RIP RAP AT 2 FEET UP FROM TOE OF BANK.
4. SHADE REDUCTION: HERBICIDE BOX ELDER AND SMALL SUGAR/SILVER MAPLE.
5. INSTALL LIVE STAKES ON RESLOPED BANKS OF CUT BANKS.
6. INSTALL HERBACEOUS LIVE PLUGS IN POINT BARS.
7. CONSTRUCT PLUNGE POOL AT 136+00.
8. SUPPLEMENT EXISTING 30" CMP WITH ONE 36" CMP AT 136+00.
9. CONSTRUCT 2 RIFFLES WITHIN REACH.
10. INSTALL 24" HDPE BYPASS PIPE FROM SWIMING BEACH TO 141+00.

145+00 TO 155+00
1. BURN OPEN WETLAND EDGE ON TWO TO THREE YEAR CYCLE.

CONTROLLED BURN

NATIVE BUFFER - SECTION - NTS

PHOTO FLOWN APRIL 16, 1998

NOTE:
THINNING AND SHADE REDUCTION WILL BE COORDINATED WITH PROPERTY OWNERS.

200 0 200 400 600 Feet

LIVE STAKES - SECTION - NTS

131+50 AND 137+00

110+00 TO 121+00 AND 136+00 TO 144+00

DRIVEWAY OVERFLOW EL=820.84
DRIVEWAY OVERFLOW EL=822.6
DRIVEWAY OVERFLOW EL=818.0
POND W=820.0
819.04
819.34
36" CMP
819.73
818.48
36" CMP ARCH

820
810
800
790
780
770

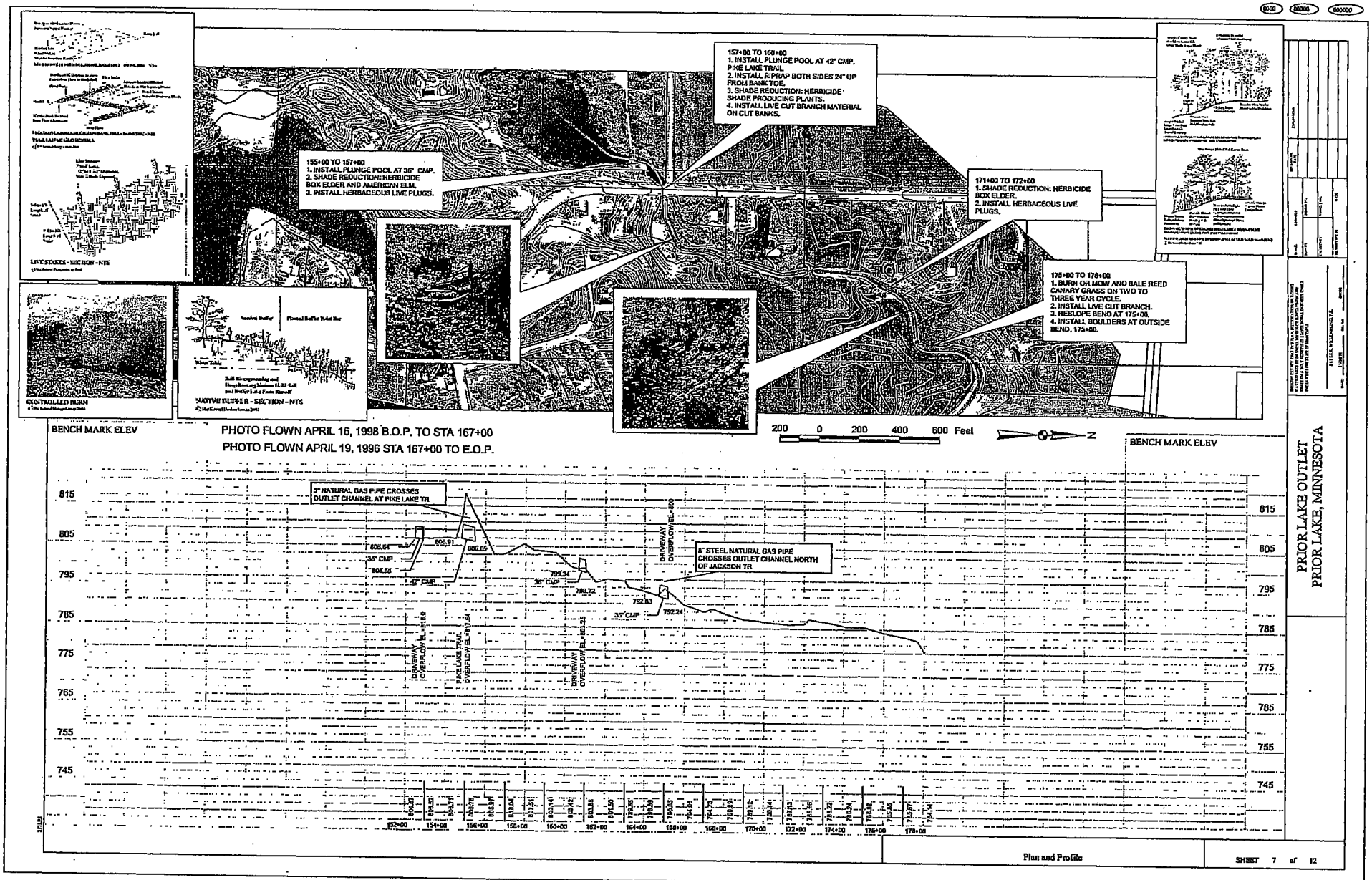
840
830
820
810
800
790
780
770

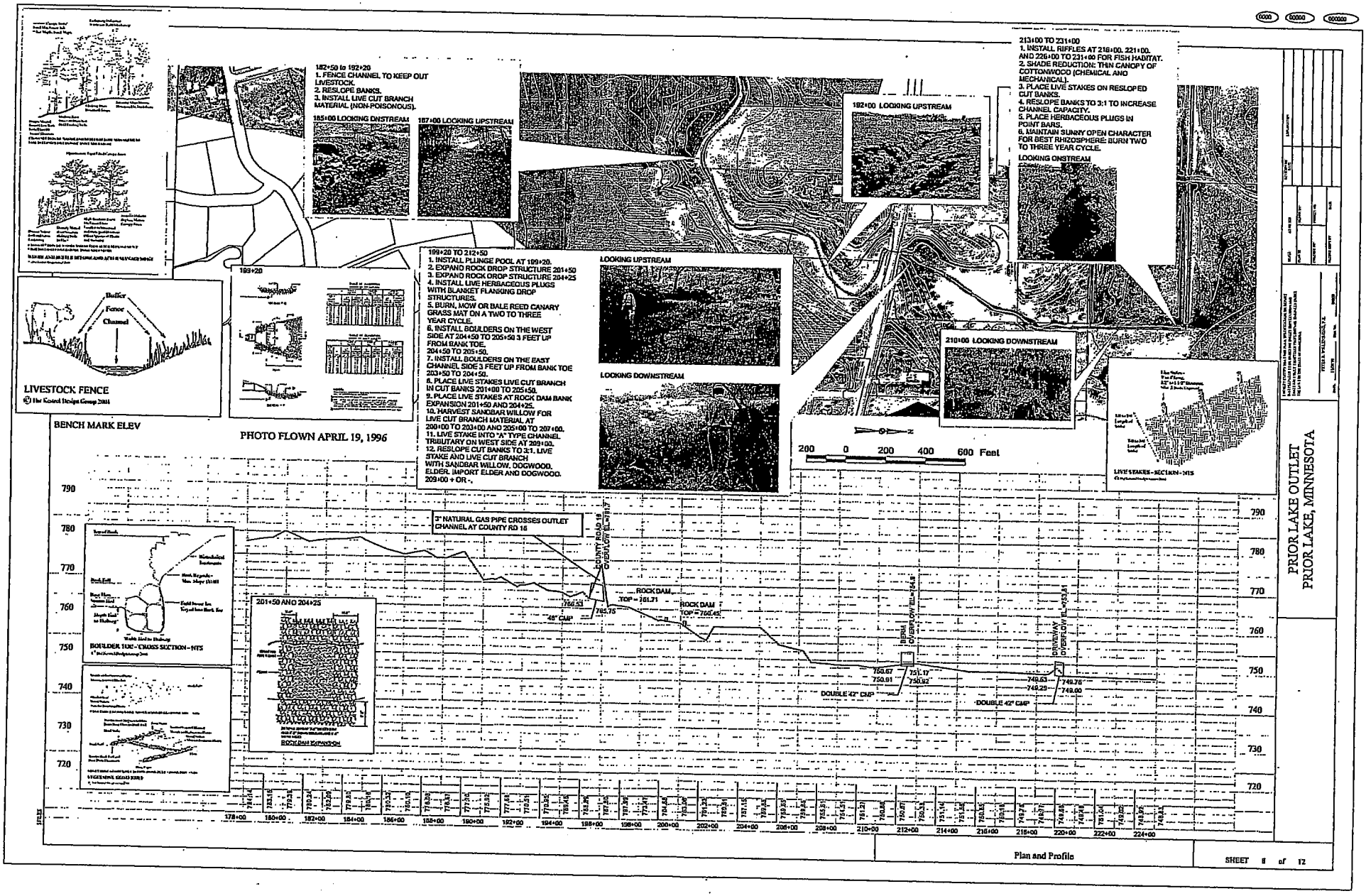
116+00 118+00 120+00 122+00 124+00 126+00 128+00 130+00 132+00 134+00 136+00 138+00 140+00 142+00 144+00 146+00 148+00 150+00 152+00

PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA

Plan and Profile

SHEET 6 of 12


LIVE STAKES - SECTION - NTS
CONTROLLED BURN
NATIVE BUFFER - SECTION - NTS
155+00 TO 157+00
1. INSTALL PLUNGE POOL AT 35° CMP.
2. SHADE REDUCTION: HERBICIDE BOX ELDER AND AMERICAN ELM.
3. INSTALL HERBACEOUS LIVE PLUGS.
157+00 TO 160+00
1. INSTALL PLUNGE POOL AT 42" CMP, PIKE LAKE TRAIL
2. INSTALL RIPRAP BOTH SIDES 24" UP FROM BANK TOE.
3. SHADE REDUCTION: HERBICIDE
SHADE PRODUCING PLANTS.
4. INSTALL LIVE CUT BRANCH MATERIAL ON CUT BANKS.
171+00 TO 172+00
1. SHADE REDUCTION: HERBICIDE BOX ELDER.
2. INSTALL HERBACEOUS LIVE PLUGS.
175+00 TO 176+00
1. BURN OR MOW AND BALE REED CANARY GRASS ON TWO TO THREE YEAR CYCLE.
2. INSTALL LIVE CUT BRANCH.
3. RESLOPE BEND AT 175+00.
4. INSTALL BOULDERS AT OUTSIDE BEND, 175+00.
200 0 200 400 600 Feet
N
BENCH MARK ELEV
PHOTO FLOWN APRIL 16, 1998 B.O.P. TO STA 167+00
PHOTO FLOWN APRIL 19, 1996 STA 167+00 TO E.O.P.
BENCH MARK ELEV
3" NATURAL GAS PIPE CROSSES OUTLET CHANNEL AT PIKE LAKE TR
8" STEEL NATURAL GAS PIPE CROSSES OUTLET CHANNEL NORTH OF JACKSON TR
DRIVEWAY OVERFLOW EL=806.91
PIKE LAKE TRAIL OVERFLOW EL=807.64
DRIVEWAY OVERFLOW EL=800.35
DRIVEWAY OVERFLOW EL=800
806.64
806.91
806.05
806.55
36" CMP
42" CMP
799.34
799.72
792.83
792.24
815
805
795
785
775
765
755
745
152+00
154+00
156+00
158+00
160+00
162+00
164+00
166+00
168+00
170+00
172+00
174+00
176+00
178+00
PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA
Plan and Profile
SHEET 7 of 12


182+50 to 192+20
1. FENCE CHANNEL TO KEEP OUT LIVESTOCK.
2. RESLOPE BANKS.
3. INSTALL LIVE CUT BRANCH MATERIAL (NON-POISONOUS).
185+00 LOOKING ONSTREAM
187+00 LOOKING UPSTREAM
192+00 LOOKING UPSTREAM
213+00 TO 231+00
1. INSTALL RIFFLES AT 216+00, 221+00, AND 226+00 TO 231+00 FOR FISH HABITAT.
2. SHADE REDUCTION: THIN CANOPY OF COTTONWOOD (CHEMICAL AND MECHANICAL).
3. PLACE LIVE STAKES ON RESLOPED CUT BANKS.
4. RESLOPE BANKS TO 3:1 TO INCREASE CHANNEL CAPACITY.
5. PLACE HERBACEOUS PLUGS IN POINT BARS.
6. MAINTAIN SUNNY OPEN CHARACTER FOR BEST RHIZOSPHERE: BURN TWO TO THREE YEAR CYCLE.
LOOKING ONSTREAM
Buffer
Fence
Channel
LIVESTOCK FENCE
199+20
199+20 TO 212+50
1. INSTALL PLUNGE POOL AT 199+20.
2. EXPAND ROCK DROP STRUCTURE 201+50
3. EXPAND ROCK DROP STRUCTURE 204+25
4. INSTALL LIVE HERBACEOUS PLUGS WITH BLANKET FLANKING DROP STRUCTURES.
5. BURN, MOW OR BALE REED CANARY GRASS MAT ON A TWO TO THREE YEAR CYCLE.
6. INSTALL BOULDERS ON THE WEST SIDE AT 204+50 TO 205+50 3 FEET UP FROM BANK TOE.
204+50 TO 205+50.
7. INSTALL BOULDERS ON THE EAST CHANNEL SIDE 3 FEET UP FROM BANK TOE 203+50 TO 204+50.
8. PLACE LIVE STAKES LIVE CUT BRANCH IN CUT BANKS 201+00 TO 205+50.
9. PLACE LIVE STAKES AT ROCK DAM BANK EXPANSION 201+50 AND 204+25.
10. HARVEST SANDBAR WILLOW FOR LIVE CUT BRANCH MATERIAL AT 200+00 TO 203+00 AND 205+00 TO 207+00.
11. LIVE STAKE INTO "A" TYPE CHANNEL TRIBUTARY ON WEST SIDE AT 209+00.
12. RESLOPE CUT BANKS TO 3:1. LIVE STAKE AND LIVE CUT BRANCH WITH SANDBAR WILLOW, DOGWOOD, ELDER. IMPORT ELDER AND DOGWOOD. 209+00 +OR-.
LOOKING UPSTREAM
LOOKING DOWNSTREAM
210+00 LOOKING DOWNSTREAM
LIVE STAKES - SECTION - NTS
BENCH MARK ELEV
PHOTO FLOWN APRIL 19, 1996
200 0 200 400 600 Feet
3" NATURAL GAS PIPE CROSSES OUTLET CHANNEL AT COUNTY RD 16
COUNTY ROAD 16 OVERFLOW EL=761.7
ROCK DAM TOP = 761.71
ROCK DAM TOP = 760.45
48" CMP
764.53
765.75
BERM OVERFLOW EL=754.9
DRIVEWAY OVERFLOW EL=753.81
750.67
750.91
751.17
750.92
DOUBLE 42" CMP
748.53
748.29
749.76
749.00
DOUBLE 42" CMP
BOULDER TOE - CROSS SECTION - NTS
201+50 AND 204+25
ROCK DAM EXPANSION
790
780
770
760
750
740
730
720
178+00 180+00 182+00 184+00 186+00 188+00 190+00 192+00 194+00 196+00 198+00 200+00 202+00 204+00 206+00 208+00 210+00 212+00 214+00 216+00 218+00 220+00 222+00 224+00
PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA
Plan and Profile
SHEET 8 of 12

213+50 to 230+00
1. MAINTAIN SUNNY CHARACTER FOR BEST RHIZOSPHERE: BURN REED CANARY GRASS MAT 215+00 TO 220+00 ON TWO TO THREE YEAR CYCLE.
2. RIP RAP UPSTREAM AND DOWNSTREAM CULVERTS PER MNDOT DETAIL FOR PLUNGE POOL AND EXTEND RIP RAP FROM CULVERT INVERT TO EDGE OF FARM ROAD, 213+50 221+00, 227+50, AND 232+50.
3. EXTEND PLUNGE POOL OF THREE CULVERTS AT 234+50 50 FEET DOWNSTREAM 3 FEET UP FROM TOE OF BANK.
4. RESLOPE CUT BANKS 3:1 FOR ENTIRE REACH.
5. WILD LIFE AND LIGHT REQUIREMENTS: INSTALL A DIVERSITY OF LIVE CUT BRANCH MATERIAL THROUGHOUT (STAKES, BRUSH BUNDLES & WATTLES) DOGWOOD BLACKBERRY, ELDER, WILLOW, RASBERRY AND BUTTON BUSH.
6. SHADE REDUCTION: THIN CANOPY OF COTTONWOOD (CHEMICAL AND MECHANICAL.

235+00 TO 254+00
1. INVESTIGATE WITH OWNERS TO ESTABLISH MEANDERS AND OXBOW WETLANDS FOR WATER STORAGE AND QUALITY IN SAND OUTWASH PLAIN FOR INFILTRATION.
2. RIFFLES FOR HABITAT.
3. MAINTAIN SUN REGIME: BURN, MOW AND BAIL WITH HERBICIDE SPRAYING OF REED CANARY GRASS MAT.
4. INSTALL LIVE PLUGS WITH EC BLANKET ON CUT BANKS AND EMERGENTS ON CHANNEL POINT BARS (ALL PLUGS IN LPC).
5. WILDLIFE TWO TO SIXTEEN TWENTY INCH NORTHERN PIKE AT 235+00 AND PLAIN POCKET GOPHER IN CHANNEL SAND STOCK PILE.

228+00

151+50

227+50, 233+00, 235+00

MEANDER - TYPICAL PLAN - NTS

CONTROLLED BURN

BENCH MARK ELEV

N

200 0 200 400 600 Feet

BENCH MARK ELEV

760
750
740
730
720
710
700
690

DRIVEWAY OVERFLOW EL=753.0

DRIVEWAY OVERFLOW EL=753.0

DRIVEWAY OVERFLOW EL=752.0

748.90 (30")
748.52(48")
748.85 (30")
748.43(48")
30" CUP A
48" RCP
54" STEEL
748.58
747.35
747.55(42")
748.34(30")
747.89(36")
747.75(36")
747.67(42")
747.52(30")
36" CUP
42" CUP A
30" CUP

BRUSH BUNDLES - SECTION - NTS

WATTLES

LIVE STAKES - SECTION - NTS

NOTES:
COORDINATE WITH SCOTT COUNTY HIGHWAY DEPARTMENT REGARDING FUTURE ROUTE OF COUNTY RD 21 AND DEVELOPMENT OF REGIONAL STORM WATER MANAGEMENT FACILITIES. THE PROPOSED ALIGNMENT OF COUNTY RD 21 WILL CROSS OUTLET CHANNEL BETWEEN STATIONS 240+00 AND 245+00

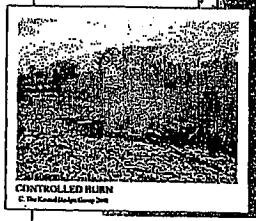
224+00 226+00 228+00 230+00 232+00 234+00 236+00 238+00 240+00 242+00 244+00 246+00 248+00 250+00 252+00 254+00 256+00 258+00 260+00 262+00 264+00 266+00

PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA

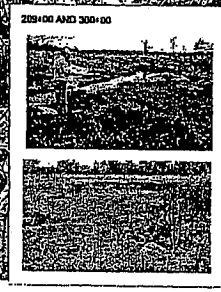
Plan and Profile

SHEET 9 of 12

380+00 TO 326+00
1. INSTALL LIVE PLUGS IN SEDGE MEADOW OPENINGS.
2. WOODY INVASIVE SUPPRESSION. BURN REED CANARY GRASS MAT AND EMERGENTS OF ENTIRE REACH ON A TWO TO THREE YEAR CYCLE.
3. INVESTIGATE MEANDERING 315+00 TO 326+00.
4. RIP RAP CUT BANKS 315+00 TO 326+00 2 FEET UP FROM TOE OF BANK.
5. INVESTIGATE CONSTRUCTION INFILTRATION WETLANDS (OXBOW) OPEN FLATS ADJACENT TO CHANNEL SAND OUTWASH.
6. USE HERBACEOUS LIVE PLUGS ONLY TO MAINTAIN OPEN, SUNNY CHARTER FOR GOOD RHIZOSPHERE DEVELOPMENT.

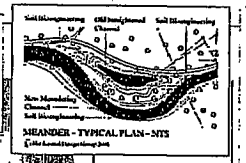


CONTROLLED BURN

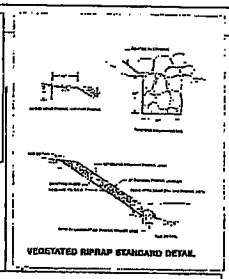


209+00 AND 300+00

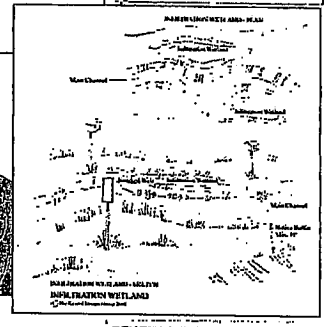
305+00



MEANDER - TYPICAL PLAN - NTS



VEGETATED RIPRAP STANDARD DETAIL



INFILTRATION WETLAND

BENCH MARK ELEV

PHOTO FLOWN APRIL 19, 1996

200 0 200 400 600 Feet

BENCH MARK ELEV

760
750
740
730
720
710
700
690

DEAN'S LAKE
W=747

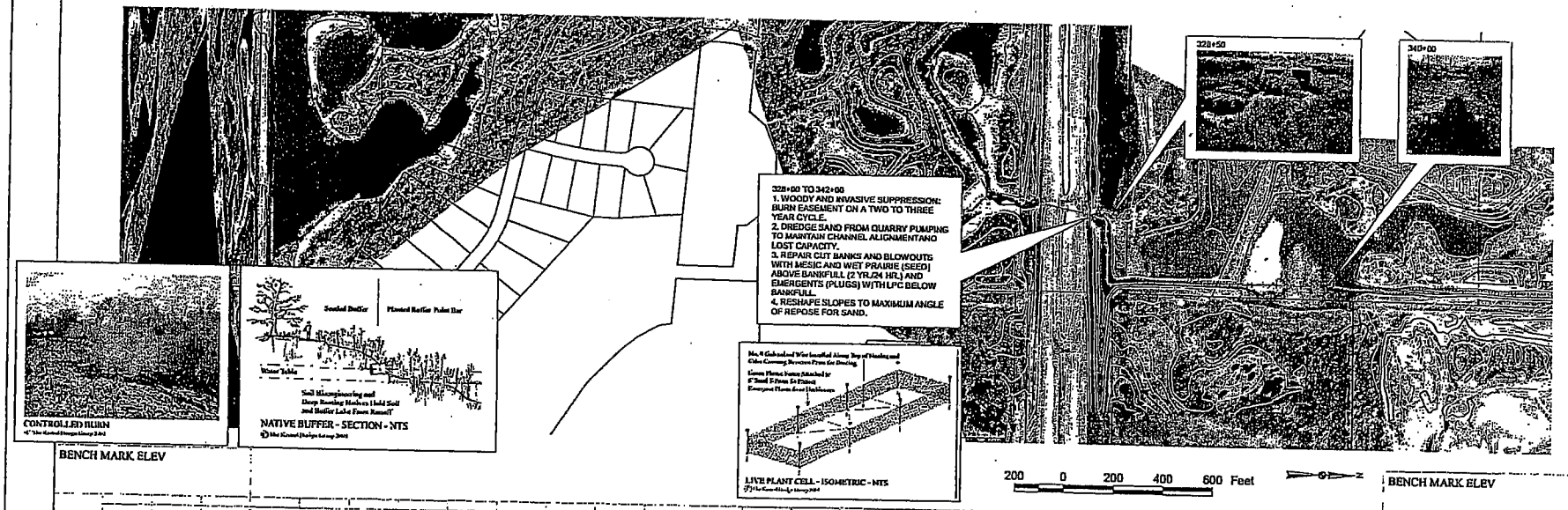
NOTE:
CONSIDER OUTLET STRUCTURE FOR DEANS LAKE AND MODIFICATIONS TO BY-PASS IN CONTEXT OF LAKE MANAGEMENT GOALS.

265+00 268+00 270+00 272+00 274+00 276+00 278+00 280+00 282+00 284+00 286+00 288+00 290+00 292+00 294+00 296+00 298+00 300+00 302+00 304+00 306+00 308+00 310+00 312+00 314+00 316+00 318+00 320+00

PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA

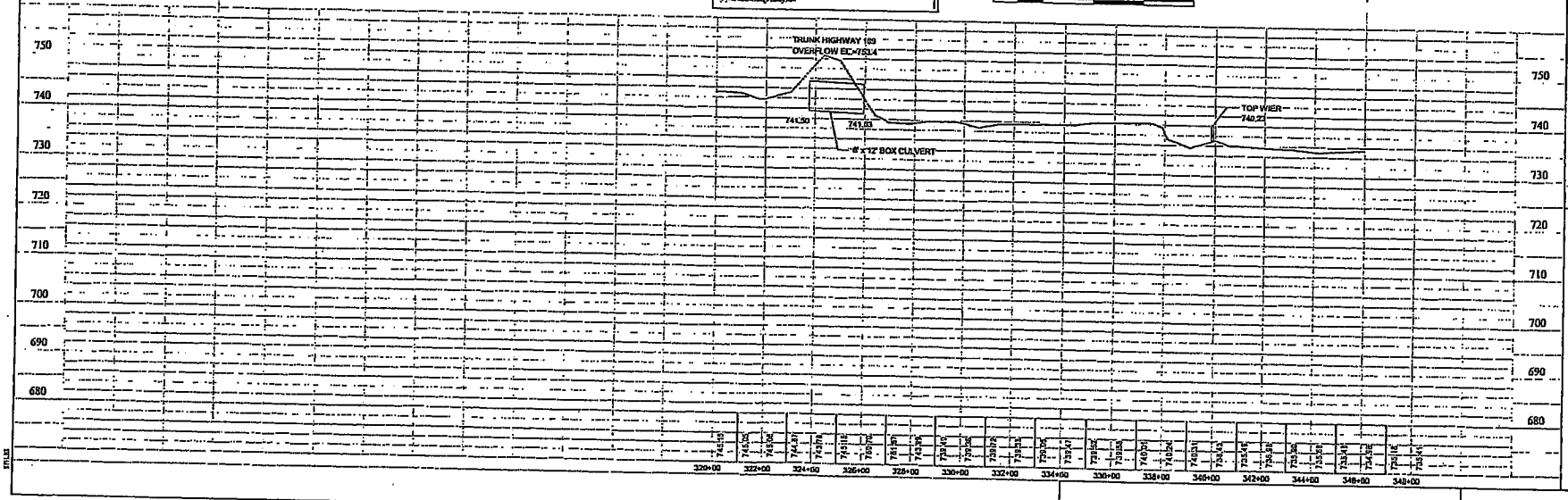
Plan and Profile

SHEET 10 of 12




BENCH MARK ELEV

BENCH MARK ELEV




PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA

Plan and Profile

SHEET 11 of 12

342+00 TO 355+00
1. RESLOPE CHANNEL BANKS TO 1.5:1
2. RIP RAP LOWER 3 FEET.
3. PLANT WITH SAND PRAIRIE MIX SEED AND HERBACEOUS LIVE PLUGS.
4. REMOVE SEDIMENT IN CHANNEL TO MAINTAIN ALIGNMENT VOLUME APPROX.15 FEET WIDE BY 23 FEET DEEP.
5. INSTALL RIP RAP AT APRONS AND CUT BANKS AT THE DOWNSTREAM SIDE OF THE TWO 48" RCP AT 347+00.
6. MAINTAIN SUNNY OPEN, SAND PLAIN CHARACTER: BURN THROUGH CORRIDOR ON TWO TO THREE YEAR CYCLE.

355+00 TO 380+00
1. 355+00 REFORM PLUNGE POOL AT DOWNSTREAM SIDE OF WEIR APPROX. 30 FEET x 50 FEET.
2. 355+00 TO 355+90 REMOVE SEDIMENT BETWEEN WEIRS TO KEEP FLOW IN CHANNEL (15 FEET W. x 3 FEET H. x 50 FEET L.).
3. 355+90 REFORM PLUNGE POOL AT DOWNSTREAM SIDE OF WEIR APPROX. 30 FEET x 50 FEET.
4. FILL IN SHEET PILING TIE BACKS IN TO BANKS AT BOTH WEIRS WITH RIP RAP.
5. INSTALL LIVE CUT BRANCHES AROUND SHEET PILING AT BOTH WEIRS.
6. REPAIR FAILING CUT BANKS AT DOWN STREAM SIDE OF SECOND WEIR 355+90, 25 FEET L. x 15 FEET H. WITH BOULDERS, LIVE STAKE BETWEEN BOULDERS.
7. PLANT RIVER BANK GRAPE ON RANGE FENCE ON SHEET PILING WEIR FACES.
8. MAINTAIN SAND PRAIRIE MATRIX: BURN THROUGH CORRIDOR ON TWO TO THREE YEAR CYCLE.
9. RESLOPE CHANNEL BANKS TO 1.5 : 1.

380+00 TO 385+00
1. RESLOPE AT 1.5 : 1.
2. INSTALL BOULDER TOE ON CUT BANK.
3. INSTALL PLUNGE POOL DOWNSTREAM SIDE OF CULVERT AT 385+00 6 FEET W. x 50 FEET L.
5. SHADE REDUCTION: HERBICIDE SHADE PLANTS IN PLACE.
6. INSTALL LIVE CUT BRANCHES AND HERBACEOUS LIVE PLUGS.

385+00 TO 395+00
1. REMOVE TREES FROM CHANNEL.
2. SHADE REDUCTION: REMOVE AMERICAN HONEYSUCKLE AND SHADE PLANTS.
3. RESLOPE BANKS TO 2 : 1.
4. INSTALL LIVE CUT BRANCHES, SANDBAR WILLOW.
5. HARVEST EXISTING SANDBAR WILLOW.

360+00 TO 370+00 (RR)
1. RIP RAP LOWER 6 FEET OF BANK ON CUT BANK. USE EXISTING LIMESTONE AS BEDDING AND FACE WITH GRANITE FIELDSTONE. 360+00 TO 362+00.
2. INSTALL LIVE CUT BRANCHES BETWEEN 6 FEET TO 20 FEET FROM BOTTOM OF CHANNEL. 360+00 TO 370+00.
3. BURN REED CANARY GRASS MATS AND UNDERGROWTH.
4. SHADE REDUCTION: THIN MAPLES. HERBICIDE IN PLACE.
5. 362+00 TO 367+00 RIP RAP LOWER 20 FEET OF OUTSIDE BANKS.
6. 367+00 TO 370+00 RIP RAP LOWER 3 FEET.

370+00 (RR) TO 380+00
1. SHADE REDUCTION: HERBICIDE BUCKTHORN AND AMERICAN HONEYSUCKLE.
2. RIP RAP BOTH BANKS 3 FEET H. 370+00 TO 380+00.
3. SUPPLEMENT OAK SAVANNA CANOPY WITH OAK SEEDLINGS.

347+00, 385+00, 404+00

384+00

362+00

363+50

362+50

364+00

386+50

382+00

388+50

380+00

395+00 TO 400+00
1. BURN REED CANARY GRASS MAT. ON A TWO TO THREE CYCLE.
2. SHADE REDUCTION: HERBICIDE BUCKTHORN IN PLACE.

397+00

CONTROLLED BURN

NATIVE BUFFER - SECTION - NTS

400+00 TO 408+00 (END)
1. SHADE REDUCTION: AMERICAN ELM, AND BOX ELDER 400+00 TO 402+00.
2. RESLOPE BANKS 402+00 TO 408+00. 1.5: 1.
3. RIP RAP BOTH SIDES 400+00 TO 402+00. 4 FEET UP FROM BANK TOE AND VEGETATION.
5. INSTALL LIVE CUT BRANCHES.
6. INSTALL PLUNGE POOL AT CULVERT AT 403+50.
7. REMOVE SHADE PLANTS 405+00, GREEN ASH, BUCKHORN, RED OAK AND ASPEN.
8. INSTALL LIVE BRANCHES INTO CUT BANKS.
8. RIP RAP 6 FEET H. BOTH SIDES 402+00 TO 406+00.

402+00

406+00

407+00

200 0 200 400 600 Feet

BENCH MARK ELEV

BENCH MARK ELEV

TOP WIER 734.41

TOP WIER 734.33

723.21

724.00

724.10

723.07

60" CPM

8' x 12' BOX CULVERT

35" 719.37
72" 719.50

36" 716.00
72" 716.23

716.11

714.75

38" RCP x
72" CMP

38" CMP

ROAD OVERFLOW EL=725.5

CHAIN RAILROAD OVERFLOW EL=727.1

TRUNK HIGHWAY 101 OVERFLOW EL=725.5

DRIVEWAY OVERFLOW EL=725.5

TRAIL OVERFLOW EL=705.5

703.52

703.00

36" RCP

VEGETATED RIPRAP STANDARD DETAIL

NOTE:
DESIGN DIMENSIONS OF BLUE LAKE OUTLET AND EMERGENCY OVERFLOW STRUCTURES PROVIDED BY BARR ENGINEERING ON SEPARATE PLANS

PRIOR LAKE OUTLET
PRIOR LAKE, MINNESOTA

Plan and Profile

SHEET 12 of 12

EXHIBIT B

Outlet Operating Plan

# PRIOR LAKE-SPRING LAKE WATERSHED DISTRICT

# OUTLET CONTROL STRUCTURE FOR PRIOR LAKE

# MANAGEMENT POLICY AND OPERATING PROCEDURES

REVISED OCTOBER 2004

PRIOR LAKE-SPRING LAKE WATERSHED DISTRICT
15815 FRANKLIN TRAIL S.E., SUITE 100
PRIOR LAKE, MN 55372

## TABLE OF CONTENTS

# LAKE OUTLET CONTROL STRUCTURE
# MANAGEMENT POLICY AND OPERATING PROCEDURES

## INTRODUCTION

The purpose of this document is to state the goals, policies and operating procedures that govern the use of the Prior Lake Outlet Structure.

The Outlet Structure is designed to allow water to be drained off Prior Lake during times of high lake levels in order to minimize the effects on structures around Prior Lake. The outlet has been used to discharge excess water from Prior Lake since it was constructed in 1983. The original structure controls discharge by means of a front slide gate and 16 side gates. However, after 20 year of use the structure has some cracks, monitoring has shown that it is inefficient in maximizing the use of the 36 inch reinforced concrete outlet pipe, and it is being used more than originally anticipated. In addition, the channel downstream of the outlet box could also be modified in several places to operate more efficiently and in ways that take care of erosion problems and enhance the environment. The District has therefore proposed channel improvements and a new outlet box.

The new outlet box will consist of a fix-crested weir set at an elevation of 902.5 feet (mean sea level), which will eliminate the need to manually open and close the outlet to discharge water from the lake. The outlet box will be equipped with a slide gate to allow manual discharge of water between lake elevations 902.0 feet and 902.5 feet as allowed by this Operating Plan. The new outlet box will also be equipped with a slide gate on the outlet pipe to allow for closure of the outlet if needed.

This revised Operating Plan reflects operating changes for the new outlet structure. Maintenance of the channel improvements is covered in the Joint Powers Agreement and the Outlet Channel Maintenance Plan that is being developed for the channel improvements. Background information and studies leading up to the decision for channel improvements and a new box are documented in the *Environmental Assessment Worksheet for the Prior Lake Outlet and Channel Improvement Project* prepared by the Prior Lake-Spring Lake Watershed District July 2004, and

the *Prior Lake Outlet Channel and Lake Volume Management Study* prepared by the District in May 2003. Preparation of this study was made possible by a Flood Damage Reduction Grant from the Minnesota Department of Natural Resources, and included significant input from the public and from project partners such as the Cities of Prior Lake and Shakopee and the Minnesota Department of Natural Resources (DNR). Plans for the new structure are included as Attachment 1.

The District anticipates constructing the new outlet box in 2006 or 2007. In the interim, this updated Operating Plan will govern the operations of the existing outlet structure, except that the outlet gates will need to be manually opened and closed in accordance with this Plan until the new outlet box is constructed.

The original lake outlet operation plan outlined four guidelines to follow with regard to lake outlet operation. The following is a list of the guidelines excerpted from that procedure.

1. Runoff from the District shall, whenever and wherever practical, be retained or detained in storage upstream from Prior Lake as opposed to being allowed to flow to the lake and to the outlet.

2. The District intends to fully comply with all of the provisions of the Joint Powers Agreements.

3. The establishing of hard and fast "release or no release" conditions and elevations for opening and closing the outlet will limit the necessary flexibility required for proper water resource management and should be decided in favor of closely monitoring conditions and reacting rationally to those conditions, predicted probable conditions, and predetermined calculations which indicate probable results of contemplated actions.

4. At any time the lake level reaches 903.5, the outlet will be open and sufficient water released to allow for the runoff from 10-year, one-hour storm.

This Management Policy and Operating Procedure, though not adopting these guidelines specifically, has been written to continue using guidelines that are protective of downstream interests while minimizing property damage to Prior Lake lakeshore owners. This is reflected in the goals and policies presented in the next sections.

## SECTION I – MANAGEMENT GOALS

The Management Goals are the desired end to which the District's policies are directed. The 1987 Operating Plan listed three specific goals to guide management of the outlet structure. The three goals are:

1. To reduce flooding on the lake and discharge channel to the greatest practical extent.
2. To enhance recreation, wild and aquatic life survival and aesthetics when feasible and consistent with the operating policy.
3. To minimize shoreline problems and downstream channel erosion by stabilizing lake levels and discharge rates.

The new planning efforts for the project add a fourth goal which is:

4. To use a holistic approach for managing runoff to limit downstream flows that combines upstream runoff management within the watershed with an efficient outlet and stable channel.

## SECTION II – MANAGEMENT POLICY

The Management Policies are a means to achieving an established goal. They are listed according to the goal they are designed to help achieve.

### A. Flood Reduction Goal

1. The District will control the discharge from Prior Lake to a flow rate not to exceed the lesser of the maximum capacity of the drainage channel or 65 cubic feet per second (cfs).
2. The District will require all upstream stormwater conveyance systems be designed to ensure flood protection for downstream receiving waters.
3. The District will require the optimum use of wetlands, detention ponds and infiltration techniques for the temporary storage of stormwater runoff.
4. The District will cooperate with other involved agencies to manage development based on the 100-year flood level for all bodies of water

### B. Enhancement of Recreation, Wild and Aquatic Life Survival and Aesthetics Goal.

1. The District will require erosion control measures to be implemented to improve and protect the appearance of shoreline areas.
2. The District will discourage the use of lake beds and beds of water bodies for the placement of roads, highways, utilities, and other non-water related activities.
3. The District will encourage the wise use of shorelands and other sensitive areas (e.g., steep slopes) in the Watershed District.

### C. Improvement of Conditions Goal

1. The District will apply a multi-use approach to consider the benefits and detriments to not only the water resources but also on wild and aquatic life, recreation and aesthetics.

2. The District will seek opportunities to develop or improve wild and aquatic life, recreation and aesthetics in conjunction with District projects.
3. The District will work to improve outlet channel conditions by stabilizing discharges.
4. The District will restore/enhance and maintain the outlet channel according to the conceptual design identified in the *Prior Lake Outlet Channel and Lake Volume Management Plan* completed by the District in May 2003 and the Joint Powers Agreement.

## SECTION III – OPERATING PROCEDURES

The Outlet Operating Procedure establishes the limits within which discharges may occur. The procedure establishes discharge zones that are described as a function of lake level. A range of discharges is defined for each zone because of the numerous considerations which must be taken into account for operation of the outlet. The discharge zones are based on sound hydrologic principles and are designed to achieve the Management Goals and Policies. Hydrologic analysis and decisions related to establishing the discharge zones are documented in the *Prior Lake Outlet Channel and Lake Volume Management Study* completed by the District in May 2003. The attached exhibits show the discharge zones and their allowable discharge rates. These zones are described in Section III.A below.

The Joint Powers Agreements with the Cities of Prior Lake and Shakopee specify certain actions to be taken before releasing any water through the Lake Outlet. Prior to discharge of water through the outlet, 1) the City of Shakopee must be given 24 hour notice in writing of the potential for the outlet to begin discharging, 2) the drainage channel must be inspected to insure free flow of water, and 3) the available capacity of the discharge channel must be verified.

### A. Discharge Settings and Adjustments

The discharge setting and adjustments are described as zones of control in the following paragraphs.

#### A-1: Zone 1 – Maximum Drainage Channel Capacity

At the lake elevation of 904.0, structures around the lake begin to experience damage due to flooding. To effectively respond to potential flooding, it is necessary for discharge to begin at lower lake levels. Zone 1 starts at lake elevation 903.5. For this situation, the maximum allowable rate shall be the available capacity in the drainage channel. As part of the overall Outlet and Channel Improvement Project, the outlet channel will be restored and enhanced to ensure it has the capacity to accept a maximum rate of flow from Prior Lake of 65 cfs without resultant damage to the drainage channel or to adjoining properties. The 65 cfs maximum

discharge is based on the capacity of the outlet pipe that extends from the outlet below County State-Aid Highway (CSAH) 21, to the channel just west of CSAH 21.

Each year, prior to the outlet beginning to discharge, the drainage channel must be inspected to insure free flow, and whenever the elevation of Prior Lake approaches 902.5 feet and the District anticipates that the outlet will soon begin to flow, a 24-hour notice must be given to the Cities of Shakopee and Prior Lake and the DNR regarding the potential for the Lake Outlet to begin to discharge..

**A-2: Zone 2 – 58 cfs Maximum**

Allowable discharges within this zone range from zero to 58 cfs depending on the time of the year, elevation of Prior Lake, upstream reserves, channel stability and potential for flooding. The Lake Outlet is designed such that discharge will occur above elevation 902.5. Attachment 2 provides the rating curve for the outlet box and identifies the flow rates calculated for various lake levels. The District will monitor lake levels and notify the Cities of Prior Lake and Shakopee and the DNR when it appears that, based on an analysis of current lake level, upstream reserves and predicted precipitation, the level of Prior Lake is about to exceed 902.5 feet and the outlet is about to begin discharging.

**A-3: Zone 3 – Spring Discharge Period**

During March and April, discharge will be allowed above elevation 902.0, with the approval of the DNR Regional Office, based on an analysis of expected lake level increase due to snowmelt and upstream reserves. Allowable discharges within this zone range from zero to 30 cfs.

**A-4: Zone 4 – No Discharge**

Unless approved by the DNR, discharges will not be allowed when the lake is below elevation 902.5 except during March and April when discharges will not be allowed below elevation 902.0.

The District may also request permission on a case by case basis from DNR to discharge when the lake elevation is between 902.0 and 902.5 in the fall of the year under extraordinary wet

conditions. These wet conditions would consist of there is still a significant amount of the flow coming into Prior Lake from Spring Lake by November 1. This flow would need to create a risk for an over-winter rise in lake level, freeze-up of the outlet panel(s), and potential spring flooding problems in combination with snow melt. For consideration the District must provide evidence of the wet condition, and the risk of spring flooding.

B. Data Collection and Discharge Adjustment Procedures

Field data shall be collected and discharge adjustments at the Lake Outlet Control Structure shall be performed in accordance with this section to implement the policy identified in Section I, Management Policy.

**B-1: Outlet Channel Discharge Data**

Discharge measurements will be taken using continuous recording equipment installed at the outlet when the outlet structure is in operation. The outlet channel will also be routinely inspected (i.e., approximately daily during the first week of discharge from the outlet, and approximately every other day during subsequent weeks of discharge) at selected locations, such as road crossings, during outlet operation. These inspections will be completed to identify erosion or flooding problems and adjust outlet discharges in conformance with the JPA.

**B-2: Lake Levels, Ditch and Creek Discharge Data**

The following data will be collected:

| Data | Frequency |
|---|---|
| Water levels on Fish, Spring, Prior and Pike Lakes | Monthly (minimum) during open water season |
| Flows from County Ditch 13 to Spring Lake | Continuous recording during open water season |
| Flows from Spring Lake to Prior Lake | Continuous recording during open water season |

**B-3: Analysis and Reporting of Data**

The District shall analyze all data collected on a regular basis. A summary of that data shall be transmitted to the Managers and the DNR Regional Office annually, or more frequently if problems or issues arise. Should quickly changing conditions be encountered, verbal reports will be transmitted as required.

All verbal summary reports shall include a recommendation for adjustment, if any, of the discharge at the control structure along with the time the adjustment is to be implemented. The recommendations shall also identify when the adjustment will be implemented.

**B-4: Implementation of Recommended Action**

Upon verbal approval by a majority of the Managers, the District shall implement the recommended discharge adjustment as directed and in accordance with Section III Operating Procedures. If the discharge adjustment is a significant change from the current discharge condition, the adjustment will be approved by the Board of Managers at the next regularly scheduled meeting of the Board.

**B-5: Frequency of Discharge Adjustment**

Discharge adjustment frequency will be limited, to the extent practical. Emergency discharge adjustments may be implemented under the conditions specified in paragraphs B.6 or B.7 below.

**B-6: Emergency Adjustment**

The District shall have the authority to change the discharge between regular adjustments where immediate change is necessary to reduce or avoid significant risk to safety or damage to property which would likely result if the change is made. The District Staff shall promptly communicate all such emergency adjustments to the Managers, the Cities of Prior Lake and Shakopee, and the DNR.

If sudden conditions produce high outlet channel flows due to downstream runoff and it is feasible to store water on the lake for 12 to 48 hours, the outlet will be closed to allow outlet

channel flows to abate. The District has developed a monitoring program using flow gauging stations and rain gauges to assist with promptly reacting to extreme rainfall events.

**B-7: High Water Conditions**

When high water conditions are reported or predicted, the District shall promptly investigate the reported or predicted high water condition and determine whether adjustment can be made in the discharge through the control structure that would reduce the high water conditions. If adjustments can be made that are consistent with the Management Policy, the District shall promptly make such adjustments as are appropriate to reduce high water conditions as soon as possible.

**B-8: Operational Responsibility**

The District may enter into a contract with another governmental agency to provide operating personnel. Employees of the contracting agency will handle minor maintenance and repairs when required and will make regular trips to the site as directed by the District.

The control structure shall be operated by the District in accordance with the limitations set forth in the Lake Outlet Control Structure Management Policy and Operating Procedures, Minnesota DNR Permit No. 79-6016 and the Joint Powers Agreement with the Cities of Prior Lake and Shakopee.

**B-9: Annual Summary of Data**

The District shall prepare an annual summary of all data received regarding outlet operations, including adjustments made in the discharge rate. This summary shall be distributed to the Managers, the Minnesota Department of Natural Resources, the municipalities of Prior Lake and Shakopee and the Board of County Commissioners of Scott County and shall be available to interested persons.

## SECTION IV – TERMS AND AMENDMENTS TO THE MANAGEMENT POLICY AND OPERATING PROCEDURES

### A. Term

This document defines the Management Policy and Operating Procedures for the Lake Outlet Control Structure at Prior Lake for the period of January 1, 2005, and thereafter. Any amendments to this document shall be made pursuant to Section IV.2 below.

### B. Review of Management Policy and Operating Procedures

On or before October 1, 2007, the District shall submit to the DNR any amendments to this Management Policy and Operating Procedures deemed necessary by the District for the three (3) year period commencing January 1, 2008. At least thirty (30) days prior to any submittal to the DNR, the District shall provide the municipalities within the watershed a copy of the proposed amendments such that sufficient opportunity to submit comments to the DNR is allowed. Within sixty (60) days of receipt, the DNR shall advise the District in writing of the acceptance, rejection, modification or additions to the proposal.

Any public hearing that may be held on proposed amendment to the Management Policy and Operating Procedures shall be governed by Minnesota Statutes 103G.311. If a hearing is held, the existing operational procedures shall remain in full force and effect until a final administrative decision is reached. Following the final administrative hearing decision, or if no hearing is held, the amendments, if any, shall be incorporated into the foregoing Management Policy and Operating Procedures for the following three (3) year term commencing January 1, 2008 and be distributed to affected municipalities and agencies.

This review procedure shall be repeated every three (3) years.

## Attachment 1:

## Conceptual Plans for Revised Outlet Structure

Attachment 2:
Rating Curve for Existing and Proposed New Outlet Structure

| Depth | WSEl | New Rating Curve Q- cfs | Old Rating Curve Q- cfs |
|---|---|---|---|
| 0 | 898.68 | 0 | 0 |
| 0.6 | 899.28 | 0 | 0 |
| 1.2 | 899.88 | 0 | 0 |
| 1.8 | 900.48 | 0 | 0 |
| 2.4 | 901.08 | 0 | 0 |
| 3 | 901.68 | 0 | 0 |
| 3.1 | 901.78 | 0 | 0 |
| 3.2 | 901.88 | 0 | 0 |
| 3.3 | 901.98 | 0 | 0 |
| 3.4 | 902.08 | 0 | 0 |
| 3.5 | 902.18 | 0 | 0 |
| 3.6 | 902.28 | 0 | 0 |
| 3.7 | 902.38 | 0 | 7.12 |
| 3.8 | 902.48 | 0 | 14.24 |
| 3.9 | 902.58 | 6.72 | 21.36 |
| 4 | 902.68 | 22.68 | 28.48 |
| 4.1 | 902.78 | 44 | 35.59 |
| 4.2 | 902.88 | 56.54 | 42.71 |
| 4.3 | 902.98 | 56.75 | 49.83 |
| 4.4 | 903.08 | 56.95 | 55.14 |
| 4.5 | 903.18 | 57.15 | 57.15 |
| 4.6 | 903.28 | 57.35 | 57.35 |
| 4.7 | 903.38 | 57.55 | 57.55 |
| 4.8 | 903.48 | 57.75 | 57.75 |
| 4.9 | 903.58 | 57.94 | 57.94 |
| 5 | 903.68 | 58.14 | 58.14 |
| 5.1 | 903.78 | 58.34 | 58.34 |
| 5.2 | 903.88 | 58.53 | 58.53 |
| 5.3 | 903.98 | 58.73 | 58.73 |
| 5.4 | 904.08 | 58.92 | 58.92 |
| 5.5 | 904.18 | 59.12 | 59.12 |
| 5.6 | 904.28 | 59.31 | 59.31 |
| 5.7 | 904.38 | 59.5 | 59.5 |
| 5.8 | 904.48 | 59.7 | 59.7 |
| 5.9 | 904.58 | 59.89 | 59.89 |
| 6 | 904.68 | 60.08 | 60.08 |
| 6.1 | 904.78 | 60.27 | 60.27 |
| 6.2 | 904.88 | 60.46 | 60.46 |
| 6.3 | 904.98 | 60.65 | 60.65 |
| 6.4 | 905.08 | 60.84 | 60.84 |
| 6.5 | 905.18 | 61.02 | 61.02 |
| 6.6 | 905.28 | 61.21 | 61.21 |
| 6.7 | 905.38 | 61.4 | 61.4 |
| 6.8 | 905.48 | 61.58 | 61.58 |
| 6.9 | 905.58 | 61.77 | 61.77 |

(Cont.)

| Depth | WSEl | New Rating Curve Q- cfs | Old Rating Curve Q- cfs |
|---|---|---|---|
| 7 | 905.68 | 61.95 | 61.95 |
| 7.1 | 905.78 | 62.14 | 62.14 |
| 7.2 | 905.88 | 62.32 | 62.32 |
| 7.3 | 905.98 | 62.51 | 62.51 |
| 7.4 | 906.08 | 62.69 | 62.69 |
| 7.5 | 906.18 | 62.87 | 62.87 |
| 7.6 | 906.28 | 63.05 | 63.05 |
| 7.7 | 906.38 | 63.24 | 63.24 |
| 7.8 | 906.48 | 63.42 | 63.42 |
| 7.9 | 906.58 | 63.6 | 63.6 |
| 8 | 906.68 | 63.78 | 63.78 |
| 8.1 | 906.78 | 63.96 | 63.96 |
| 8.2 | 906.88 | 64.13 | 64.13 |
| 8.3 | 906.98 | 64.31 | 64.31 |
| 8.4 | 907.08 | 64.49 | 64.49 |
| 8.5 | 907.18 | 64.67 | 64.67 |
| 8.6 | 907.28 | 64.84 | 64.84 |
| 8.7 | 907.38 | 65.02 | 65.02 |
| 8.8 | 907.48 | 65.2 | 65.2 |
| 8.9 | 907.58 | 65.37 | 65.37 |
| 9 | 907.68 | 65.55 | 65.55 |
| 9.1 | 907.78 | 65.72 | 65.72 |
| 9.2 | 907.88 | 65.9 | 65.9 |
| 9.3 | 907.98 | 66.07 | 66.07 |
| 9.4 | 908.08 | 66.24 | 66.24 |
| 9.5 | 908.18 | 66.41 | 66.41 |

# EXHIBIT C

## Outlet Channel Restoration and Enhancement Project Construction Schedule

| | Segment | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Prior Lake To CR 42 | D | C (winter 05-06) | M1 | M1 | M1 | M1 | M1 | M2 | M2 | M2 | M2 |
| 2 | CR 42 to Pike Lake Inlet | | D | C (winter 06-07) | M1 | M1 | M1 | M1 | M1 | M2 | M2 | M2 |
| 3 | Pike Lake Inlet to Pike Lake Trail | | | D | C (winter 07-08) | M1 | M1 | M1 | M1 | M1 | M2 | M2 |
| 4 | Pike Lake Trail to CR 16 | | | D | C (winter 07-08) | M1 | M1 | M1 | M1 | M1 | M2 | M2 |
| 5 | CR 16 to Deans Lake Outlet | D | C (winter 05-06) | M1 | M1 | M1 | M1 | M1 | M2 | M2 | M2 | M2 |
| 6 | Deans Lake Outlet to TH 169 | D | C (fall-winter 05-06) | M1 | M1 | M1 | M1 | M1 | M2 | M2 | M2 | M2 |
| 7 | TH 169 to TH 101 | | D | C (winter 06-07) | M1 | M1 | M1 | M1 | M1 | M2 | M2 | M2 |
| 8 | TH 101 to Blue Lake Inlet | | | | D | C (winter 08-09) | M1 | M1 | M1 | M1 | M1 | M2 |

Notes: D= Design, C= construction, M1= 0-5 yr maintenance, M2, 6+ yr maintenance.

# EXHIBIT D

## Calculation Method for Outlet Channel Cost-Share Allocation

The Outlet Channel cost-share allocation in Table 4 was calculated for each Outlet Channel segment as follows:

1. The tributary drainage area for each Project Cooperator from Table 1 was multiplied by the maximum discharge rate per acre from Table 2.

2. The resulting peak discharge rate for each Project Cooperator was then multiplied by a duration factor (see Table D-1) to factor in the period of discharge in addition to the maximum discharge rate.

Table D-1. Duration Factors.

| Project Cooperator | Duration Factor Used (Days) |
|---|---|
| Prior Lake-Spring Lake Watershed District | 10 |
| City of Shakopee, south of Dean Lake (Upstream) | 2 |
| City of Shakopee, north of Dean Lake (Downstream) | 1 |
| City of Prior Lake | 0.5 |
| Shakopee Mdewakanton Sioux Community | 2 |

3. The flows from each Project Cooperator were then added to determine the total flow for that segment, in cfs-days.

4. Finally, for each Project Cooperator the relative flow contribution was determined as a percent of the total. That percent was then identified as the cost-share allocation for the Project Cooperator for that segment (see Table D-2).

Table D-2. Cost-Share Allocation Calculation Table.

| Segment | Stakeholder | Tributary Drainage Area (acres) | Flow (cfs) | Resulting Flow (cfs-days) | % of Total with Duration Factor |
|---|---|---|---|---|---|
| 1 | Prior Lake Spring Lake Watershed District (PLSLWD) | -- | 65 | 650 | 91.7% |
| | City of Shakopee | 0 | 0 | 0 | 0.0% |
| | City of Prior Lake | 658 | 112 | 56 | 7.9% |
| | Shakopee Mdewakanton Sioux Community (SMSC) | 28 | 1 | 3 | 0.4% |
| 2 | PLSLWD | -- | 65 | 650 | 88.9% |
| | City of Shakopee | 0 | 0 | 0 | 0.0% |
| | City of Prior Lake | 261 | 156 | 78 | 10.7% |
| | SMSC | 3 | 2 | 3 | 0.4% |
| 3 | PLSLWD | -- | 65 | 650 | 76.7% |
| | City of Shakopee | 94 | 9 | 19 | 2.2% |
| | City of Prior Lake | 1,145 | 351 | 175 | 20.7% |
| | SMSC | 5 | 2 | 4 | 0.4% |
| 4 | PLSLWD | -- | 65 | 650 | 40.1% |
| | City of Shakopee | 2,622 | 272 | 543 | 33.5% |
| | City of Prior Lake | 827 | 492 | 246 | 15.2% |
| | SMSC | 1,787 | 91 | 182 | 11.2% |
| 5 | PLSLWD | -- | 65 | 650 | 36.6% |
| | City of Shakopee | 758 | 347 | 695 | 39.2% |
| | City of Prior Lake | 0 | 492 | 246 | 13.9% |
| | SMSC | 7 | 92 | 183 | 10.3% |
| 6 | PLSLWD | | 65 | 650 | 36.9% |
| | City of Shakopee | 927 | 656 | 656 | 37.3% |
| | City of Prior Lake | 0 | 492 | 246 | 14.0% |
| | SMSC | 261 | 105 | 209 | 11.9% |
| 7 | PLSLWD | | 65 | 650 | 29.1% |
| | City of Shakopee | 1,407 | 1125 | 1125 | 50.5% |
| | City of Prior Lake | 0 | 492 | 246 | 11.0% |
| | SMSC | 0 | 105 | 209 | 9.4% |
| 8 | PLSLWD | | 65 | 650 | 28.7% |
| | City of Shakopee | 101 | 1159 | 1159 | 51.2% |
| | City of Prior Lake | 0 | 492 | 246 | 10.9% |
| | SMSC | 0 | 105 | 209 | 9.2% |

# EXHIBIT E

## Outlet Channel Restoration and Enhancement Project
## Construction and Maintenance Costs

The following table presents the engineer's estimate for the costs of the design and construction of the Outlet Channel Restoration and Enhancement Project and the first five years of maintenance, by Project Partner:

| | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|
| PLSLWD | $ - | $904,095 | $475,501 | $398,591 | $222,551 | $181,567 |
| City of Shakopee | $ - | $434,533 | $267,753 | $209,693 | $173,369 | $100,299 |
| City of Prior Lake | $ - | $192,996 | $114,165 | $115,049 | $59,875 | $44,379 |
| SMSC | $ - | $119,424 | $68,427 | $57,647 | $38,326 | $25,135 |
| Total | $ - | $ 1,651,048 | $ 925,845 | $ 780,980 | $ 494,120 | $ 351,380 |

| | 2011 | 2012 | 2013 | 2014 | 2015 | Partner Total |
|---|---|---|---|---|---|---|
| PLSLWD | $155,731 | $117,642 | $81,281 | $81,281 | $77,865 | $2,696,105 |
| City of Shakopee | $ 86,027 | $68,796 | $49,103 | $49,103 | $43,014 | $1,481,688 |
| City of Prior Lake | $ 38,064 | $29,993 | $20,323 | $20,323 | $19,032 | $654,198 |
| SMSC | $ 21,558 | $16,623 | $11,878 | $11,878 | $10,779 | $381,677 |
| Total | $301,380 | $ 233,055 | $ 162,585 | $ 162,585 | $ 150,690 | $ 5,213,669 |

Note:
Annual costs shown here include capital and maintenance costs, but not any easement acquisition costs. Capitol construction cost estimates are based on $150/ linear foot of channel.

# JOINT POWERS AGREEMENT

AGREEMENT, made and entered into by and between the CITY OF PRIOR LAKE, Minnesota, a municipal corporation, ("PRIOR LAKE"); the CITY OF SHAKOPEE, Minnesota, a municipal corporation, ("SHAKOPEE"); and the PRIOR LAKE-SPRING LAKE WATERSHED DISTRICT, Prior Lake, Minnesota, a political subdivision of the State of Minnesota, ("WATERSHED DISTRICT").

WHEREAS, the Watershed District is presently engaged in the implementation of a project, identified as the "Lake Outlet Project, Number WD 76-4", ("Lake Outlet"), to construct an artificial outlet for Prior Lake for the purpose of draining water from Prior Lake and transporting such water to the Minnesota River; and

FINAL DRAFT (SIGNED)

WHEREAS, the plans and specifications for the Lake Outlet require the improvement of certain natural drainage courses and the construction of certain drainage channels within the municipal boundaries of Shakopee and more particularly described on Exhibit "A", which is attached hereto and by reference made a part hereof; and

WHEREAS, the temporary and permanent easements specified by the plans and specifications for the construction of the foregoing drainage improvements can only be obtained from the affected property owners with the cooperation and assistance of Shakopee; and

WHEREAS, the drainage improvements and easement acquisitions contemplated by the Watershed District are of direct and immediate benefit to Shakopee because (a) the drainage channel improvements are in conformance with Shakopee's overall drainage plan in the area of the Lake Outlet's drainage route; (b) the easement to be acquired can also be used by Shakopee for public utility and right-of-way purposes, and (c) the channel improvements may reroute local runoff into Dean's Lake and thereby supplement and increase the level of the lake; and

WHEREAS, Prior Lake and Shakopee desire to assist the Watershed District acquire the easements necessary for the construction of the drainage channel improvements specified in the Lake Outlet plans and specifications, upon the conditions hereinafter set forth; and

Section 2.03. Assistance by Shakopee. In the event that it becomes necessary in the opinion of the Watershed District to acquire the required easements by means of condemnation proceedings, Shakopee shall cooperate with and assist the Watershed District in pursuing condemnation. In that event, all legal proceedings shall be brought in the joint name of the Watershed District and Shakopee by the Shakopee City Attorney in accordance with Shakopee Resolution No. 1643.

Section 2.04. Easement Acquisition Costs. All costs or expense necessary and incidental to the acquisition of the easements shall be the responsibility of and borne by the Watershed District. The costs for which the Watershed District shall have direct and exclusive responsibility shall include without limitation all costs related to the acquisition of the easements, legal fees, court costs, appraisal fees, survey fees, abstracting fees, and recording fees. The Watershed District agrees to indemnify and hold Shakopee harmless from any and all liability of any nature arising from, and for all cost and expense relating to the acquisition of the easements.

Section 2.05. Payment of Easement Acquisition Costs. The Watershed District shall pay the easement acquisition costs on or before 30 days following receipt of the proceeds from the sale of the municipal bonds used to finance the Lake Outlet in the event that the contracts for the improvements are let and the work on the improvements proceeds. In the event that the Watershed District elects either not to let contracts for the improvements or elects not to let contracts for the improvements or elects not to commence work on the improvements, the easement acquisition cost shall be paid on or before 30 days after receipt of the reimbursement funds received from Scott County in accordance with Minnesota Statutes Section 112.48 , Subd. 2, (1955, as amended). The Watershed District agrees to indemnify and hold Shakopee harmless from any costs or expenses related to easement acquisition.

ARTICLE III

CONSTRUCTION OF LAKE OUTLET

Section 3.01. Obligation of Watershed District. The construction of the Lake Outlet, including without limitation the construction of all channel improvements appurtenant thereto, shall be the sole and exclusive responsibility of the Watershed District. Prior to the commencement of construction, the Watershed District shall obtain all permits and approvals required by any governmental unit having jurisdiction over the Lake Outlet improvements, including without limitation permits from Shakopee, the Lower Minnesota Watershed District, the Minnesota Water Resources Board, the Department of Natural Resources, the Environmental Quality Council and the Metropolitan Council

Section 3.02. Plans and Specifications for the Lake Outlet Improvements. The Watershed District shall design the Lake Outlet improvements to conform with generally acceptable engineering specifications. The Watershed District shall furnish Shakopee with complete copies of the plans and specifications for the Lake Outlet improvements certified to by the Watershed District's engineer. Shakopee shall approve all such plans and specifications as they relate to improvements to be placed within its corporate limits. The Watershed District's determination on questions of design shall be conclusive as to the parties to this Agreement.

Section 3.03. Payment of Lake Outlet Construction Costs. All costs or expenses incurred to construct the Lake Outlet improvements shall be the responsibility of and borne by the Watershed District. The costs to be paid by the Watershed District shall include without limitation all direct construction costs, engineering fees, legal fees, administration expense and permit application fees. The Watershed District shall indemnify and hold Shakopee harmless from any liability for any cost or expense incurred in constructing the Lake Outlet improvements.

ARTICLE IV

OPERATION OF LAKE OUTLET

Section 4.01. General.

(a) Water shall not be released from Prior Lake by opening the main Lake Outlet gate at any time when such discharge would jeopardize the health, safety or property of the residents or property owners of Shakopee.

(b) The determination of when and to what degree such jeopardy has ceased, or has been reduced to the extent that the discharge of water from Prior Lake may commence, shall be made jointly by the engineers of the Watershed District, Shakopee and Prior Lake in accordance with the following procedures:

( i) An inspection shall be made to determine the depth and velocity of the flow at various locations in the drainage channel.

( ii) The available capacity in the drainage channel shall be determined by using Manning's equation for open-channel flow. All calculations shall be performed by the Watershed District's engineer and shall be confirmed by the engineers of Prior Lake and Shakopee.

(iii) The "available capacity in the drainage channel" shall be defined as the calculated maximum rate of discharge at which the Lake Outlet can be allowed to operate without resultant damage to the drainage channel or to adjoining properties.

(c) After the available capacity in the drainage channel has been determined by the engineers of the Watershed District, Prior Lake and Shakopee, the main Lake Outlet gate may be opened subject to adjustment so as to release water at a rate that will not exceed the available capacity in the drainage channel.

Section 4.02. Notice to Shakopee of Intent to Open Main Lake Outlet Gate. Prior to the opening of the main Lake Outlet gate and the release of water from Prior Lake, the Watershed District shall give Shakopee no less than 24 hours advance notice in accordance with Section 12.01.

Section 4.03. Inspection of Drainage Channel.

(a) Prior to the opening of the main Lake Outlet gate and the release of water from Prior Lake, the Watershed District shall inspect the drainage channel to insure the free flow of water for the anticipated rate and duration of the release period and to determine

the available capacity in the drainage channel in accordance with Section 4.01(b). Notice of any such inspection shall be given to the engineers of Prior Lake and Shakopee, either City may elect to have a representative present for any inspection. In the event that the inspection reveals that repair or maintenance is required to insure the free flow of water through the drainage channel, the party having responsibility for such repair and maintenance in accordance with Aticle VI shall promptly perform such repairs or maintenance so as to prevent any undue delay in the release of water from Prior Lake. In the event that such repairs are not promptly undertaken by the responsible party, the Watershed District shall have the right to perform, or cause to be performed, the repairs to be made after 24 hours' notice and to recover the costs pertinent thereto from the responsible party. Daily inspections of drainage channel conditions shall be made by the Watershed District during times that Lake Outlet drainage rates exceed 20 cfs. In such event, the responsible party shall reimburse the Watershed District upon dur demand therefore for all sums paid, or for the fair value of any work performed, by the Watershed District in connection with such repair or maintenance.

(b) After the main Lake Outlet gate has been closed and the water in the drainage channel has receded, the Watershed District shall make an inspection of the drainage channel to determine whether it has been damaged by the flow of water from Prior Lake. Notice of any such inspection shall be given to the engineers of Prior Lake and Shakopee, and either City may elect to have a representative present for any inspection. In the event that the inspection reveals that repair or maintenance is required to insure the free flow of water through the drainage channel, the party having responsibility for such repair and maintenance in accordance with Aticle VI shall rpomptly perform such repairs or maintenance so as to prevent any undue delay in the release of water from Prior Lake.

(c) The inspection requirements set forth in Sections 4.03(a) and (b) constitute the minimum obligation of the parties; and any part to this Agreement shall have the full right to make such additional inspection of the drainage channel as it may deem necessary, with or without notice to any other party.

(d) Written reports of all inspections shall be made by the inspecting party and shall be forwarded to each of the other parties.

Section 4.04. ~~Operation of Dean's Lake Diversion Structure Gate.~~

(a) ~~The Watershed District shall have the exclusive authority~~ for the operation of the Dean's Lake diversion structure gate except as otherwise provided in this Section 4.04.

(b) ~~The normal position of the Dean's Lake diversion~~ structure gate (that is, the position of the gate during times that water is not being released from Prior Lake) shall direct the [or per amendment] ~~flow of runoff through Dean's Lake~~. Nevertheless, the Watershed District agrees to comply with reasonable requests by Shakopee to divert normal runoff through Dean's Lake; provided, however, that such request shall be made to the Watershed District in writing and shall be accompanied by the Agreement of Shakopee to indemnify and hold the Watershed District harmless from any liability for loss, damage and cost, including without limitations reasonable attorney's fees, resulting from the diversion of runoff through Dean's Lake pursuant to the request of Shakopee.

(c) During the periods that water being released from Prior Lake is flowing through the Dean's Lake diversion structure, the diversion structure gate shall be positioned so as to divert all runoff through Dean's Lake. However, in ~~the event that the diversion of runoff into Dean's Lake is causing or creates an eminent danger to private property, Shakopee shall have the authority to abate the flow of runoff into Dean's Lake by repositioning the diversion structure gate to direct all or part of the runoff to the existing natural drainage route.~~ Shakopee shall give the Watershed District prior notice of its intent to redirect the flow of runoff by adjustment of the diversion structure gate.

Section 4.05. ~~Additional Operational Conditions Imposed Upon the Watershed District.~~ The Lake Outlet will be operated in accordance with the terms and conditions of the permit issued by the Minnesota Department of Natural Resources. A copy of the permit is attached hereto as ~~Exhibit [redacted]~~ and by reference made a part hereof.

## ARTICLE V

## ~~USES OF DRAINAGE CHANNEL~~ [redacted]

Section 5.01. Permitted Uses by Watershed District. The Watershed District shall use the drainage channel for the purpose of draining water from Prior Lake and for no other purposes.

Section 5.02. Permitted Uses by Shakopee. Shakopee reserves the right to use the easements obtained by the Watershed District in connection with its overall drainage plans as they are from time to time developed by Shakopee. In the event runoff in Shakopee results in or causes the need for expansion of the design capacity for the drainage channel, Shakopee shall make or install all improvements necessary to increase the capacity of the drainage channel to handle the increased flow. Any such improvements shall be made at the sole cost or expense of Shakopee; and both Prior Lake and the Watershed District shall be indemnified and held harmless from any and all liability for such cost or expense and for such increased flow.

Section 5.03. Additional Authorized Shakopee Uses. Shakopee may use the easements without termination of this Agreement, for the installation, operation and maintenance of public services and utilities to include without limitation public streets, sanitary sewer, water, storm sewer, electrical and natural gas. In no event shall such uses interfere or otherwise restrict the drainage function of the channel. All cost or expense to install, operate and maintain such utilities and any damage to the channel resulting from such installation, operation and maintenance shall be borne by Shakopee and both Prior Lake and the Watershed District shall be indemnified and held harmless from any liability therefor.

ARTICLE VI

~~MAINTENANCE OF DRAINAGE CHANNEL~~

Section 6.01. ~~Obligation of Watershed District to Provide~~ Initial Construction Warranty for Drainage Channel Improvement. For a period of ~~three (3) years~~ following completion of the improvements made to the drainage channel as part of the initial construction of the Lake Outlet, the Watershed District shall have the sole and exclusive obligation to stabilize the channel bank and restore any damage to the drainage channel or adjoining property resulting from the initial construction work. In addition, any work performed by the Watershed District during the foregoing three (3) year period to repair, replace or correct defects that arise out of or in connection with the initial construction work shall be similarly guaranteed for an additional three (3) year period from and after the date of such repair, replacement or correction.

Section 6.02. Obligations of Watershed District to Contribute to the Routine Maintenance of Drainage Channel.

(a) In addition to its obligations to provide construction warranties pursuant to Section 6.01, the Watershed District shall have a continuing obligation throughout the entire term of this Agreement to contribute to the cost incurred for the routine maintenance of the drainage channel. The amount of the Watershed District's contribution to the routine maintenance of the drainage channel shall be determined as follows:

(i) ~~Before the time that Shakopee alters or~~ otherwise makes use of the drainage channel in connection with its overall drainage plan or in connection with the installation of public services and utilities, ~~the Watershed District shall have sole and exclusive obligations to perform and pay the cost of all routine maintenance to the drainage channel.~~

(ii) After the time that Shakopeee modifies the drainage channel in connection with its overall drainage plan or in connection with the installation of public services and utilities, the Watershed District shall have the sole and exclusive obligation to perform and pay the cost of all routine maintenance to that portion of the drainage channel lying southerly of Dean's Lake (including the Dean's Lake diversion structure); provided, however, that at such time as there exists a continuous flow of water between the main outlet structure on Prior Lake and State Highway No. 101, the Watershed District shall have the sole and exclusive obligation to perform and pay

the cost of routine maintenance for the entire drainage channel. In no event, however, shall the Watershed District have any responsibility for loss or damage to any public services or utilities installed or maintained in the drainage channel easement by Shakopee.

(b) In addition to the continuing obligations of the Watershed District to contribute to the routine maintenance of the drainage channel, the Watershed District shall have the obligation of inspecting the drainage channel before and after releasing water from Prior Lake and shall repair any impediments to such discharge before releasing water and restore any damage caused to the drainage channel by such discharge thereafter. The post-discharge inspection shall be made as soon as practical after the discharge has ended. Any emergency restoration work as evidenced by the inspection shall be made as soon as practical after the discharge has ended. Any emergency restoration work as evidenced by the inspection shall be completed within a time frame consistent with the severity of the damage caused and such other physical and weather conditions that may bear upon the work to be performed. In no event, however, shall the time frame for completing permanent repairs exceed one (1) year from the date that the discharge causing the damage was ended.

Section 6.03. Obligation of Shakopee to Contribute to the Routine Maintenance of Drainage Channel.

(a) Before the time that Shakopee modifies the drainage channel in connection with its overall drainage plan or in connection with the installation of public services and utilities, Shakopee shall have no obligation to contribute to the cost of the routine maintenance of the drainage channel.

(b) After the time that Shakopee modifies the drainage channel in connection with its overall drainage plan, or in connection with the installation of public services and utilities, and except as otherwise provided in Section 6.02(a) (ii) Shakopee shall have the sole and exclusive obligation to perform and pay the cost of all routine maintenance to that portion of the drainage channel lying southerly of Dean's Lake.

ARTICLE VII

INDEMNIFICATION

Section 7.01. Indemnification of Shakopee and Prior Lake by the Watershed District. The Watershed District shall indemnify and hold Shakopee and Prior Lake harmless from any and all liability, cost or expenae, including without limitation reasonable attorney's fees and court costs, arising out of or in connection with the construction, improvement, use and maintenance of the drainage channel by the Watershed Diatrict.

Section 7.02. Indemnification of the Watershed District and Prior Lake by Shakopee. Shakopee shall indemnify and hold the Watershed District and Prior Lake harmless from any and all liability, cost or expense, including without limitation reasonable attorney'a fees and court costs, arising out of or in connection with Shakopee's improvement, use and maintenance of the drainage channel and the drainage channel easement.

Section 7.03. Insurance and Evidence Thereof. Each of the parties to this Agreement shall provide on the demand of the other evidence that the risks covered by this Article are insured throug an insurance company licensed to do business in the State of Minnesota by a policy or policies having minimum per occurrence limits of Three Hundred Thousand ($300,000) Dollars.

ARTICLE VIII

RESOLUTIONS OF DISPUTES

Section 8.01. Policy for Resolving Disputes. The parties to this Agreement acknowledge that if disputes do arise over the construction of this Agreement, or over the rights and obligations of the parties hereto, such disputes will, in all likelihood, affect substantial rights with respect to the health and safety of the persons and property of the citizens residing within their respective jurisdictions and will further arise under the time frames that do not allow for extended investigation of or negotiations regarding the relative merits of the respective position to the dispute. Therefore, the following procedure for resolving disputes has been implemented to give each party to this Agreement the

opportunity to present, to the fullest extent possible, the essence of their position to a qualified arbitrator and yet at the same time receive a knowledgeable decision, form a person having sufficient technical experience and expertise, within the shortest possible time.

Section 8.02. Procedure for Resolving Disputes. All disputes arising out of or in connection with this Agreement shall be resolved by arbitration in accordance with Minnesota Statutes Section 572.08 (c), (1957, as amended), the Minnesota Uniform Arbitration Act, and the following conditions:

(a) The dispute shall be heard by a board consisting of three (3) arbitrators. The Watershed District and Prior Lake shall appoint one (1) member to the Board. Shakopee shall appoint one (1) member to the Board. The third Board member shall be appointed by the members previously appointed by the parties.

(b) The election to arbitrate a dispute shall be made in writing, duly served upon all of the other parties in the manner provided herein for notices.

(c) The hearing before the arbitrators shall be held within five (5) days after service of the election to arbitrate, unless otherwise agreed in writing by each of the parties.

(d) The decision of the arbitrators shall be rendered not later than seven (7) days after service of the election to arbitrate, unless otherwise agreed in writing by each of the parties.

Section 8.03. Enforcement of Award. The award of the arbitrators shall be enforceable by any district judge of the First Judicial District of the State of Minnesota.

## ARTICLE IX

## AMENDMENT

Section 9.01. Amendment. Any amendment to this Agreement shall be in writing and duly executed by each of the parties. Any amendment shall be effective from and after the date that it is recorded in the Office of the Scott County Recorder.

ARTICLE X

TERMINATION

Section 10.01. Perpetual. The duration of this Agreement shall be perpetual, or until otherwise expressly rescinded or terminated by the parties. Any such agreement of rescission or termination shall be recorded in the Office of the Scott County Recorder.

ARTICLE XI

DISTRIBUTION OF PROPERTY

Section 11.01. Distribution of Property Generally. In the event of the rescission or termination of this Agreement, all property or surplus monies acquired as a result of the joint exercise of powers provided for herein shall be returned to the contributing party in proportion to the contribution provided for by the respective party.

Section 11.02. Title to Easements Upon Termination. Upon termination of this Agreement, the Watershed District shall convey to Shakopee, all of its right, title and interest in that portion of the drainage channel lying southerly of Scott County Road 16 and within the municipal limits of Shakopee.

ARTICLE XII

MISCELLANEOUS

Section 12.01. Notices. Any notice required to be given or submitted under this Agreement shall be duly given if delivered personally or if mailed, by certified or registered mail, postage prepaid, addressed to the parties at their respective addresses specified below, or to such other address with respect to any party as such party shall notify the others in writing.

If to Prior Lake:

Michael A. McGuire
(Name)
City Manager
4629 Dakota Street Southeast
Prior Lake, Minnesota 55372

If to Shakopee:

John K. Anderson
(Name)
City Administrstor
129 East 1st Avenue
Shakopee, Minnesota 55379

If to the Watershed District: Don O. Benson
(Name)

Staff Administrator
4690 Colorado Street Southeast
Prior Lake, Minnesota 55372

Section 12.02. Successors and Assigns. This Agreement shall be binding upon and inure to the benefit of the legal successors and assigns of the parties.

Section 12.03. Construction. This Agreement shall be construed in accordance with the law of the State of Minnesota.

Section 12.04. Definitions. The terms defined in this Section 12.04 (except as may be otherwise expressly provided in this Agreement or when the context otherwise requires) shall for all purposes of this Agreement have the following respective meanings:

(a) "CFS" shall mean and refer to cubic feet per second.

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the 2nd day of June, 1981.

CITY OF PRIOR LAKE

By: Walter Thomas Stock

Its: Mayor

And: Michael A. McGuire

Its: City Manager

CITY OF SHAKOPEE

By: [signature]

Its: Mayor

And: John K. Anderson

Its: City Administrator

AMENDMENT OF JOINT POWERS AGREEMENT

AGREEMENT, made and entered into by and between the CITY OF PRIOR LAKE, Minnesota, a municipal corporation, ("PRIOR LAKE"); the CITY OF SHAKOPEE, Minnesota, a municipal corporation, ("SHAKOPEE"); and the PRIOR LAKE-SPRING LAKE WATERSHED DISTRICT, Prior Lake, Minnesota, a political subdivision of the State of Minnesota, ("WATERSHED DISTRICT").

WHEREAS, the parties hereto are all of the parties to a Joint Powers Agreement, dated on the 2nd day of June, 1981, filed for record in the Office of the Scott County Recorder on the ____ day of _____, 19__, as document number _____, relating to the Watershed District's implementation of a project, identified as the "Lake Outlet Project, Number WD 76-4", to construct an artificial outlet for Prior Lake for the purpose of draining water from Prior Lake and transporti ; such water to the Minnesota River; and

WHEREAS, Section 4.04(b) of the Joint Powers Agreement contains a "scrivener's error" that occurred during the typing of the final draft of the Joint Powers Agreement and which consists of the omission of a word which materially changes the meaning of Section 4.04(b) in a manner contrary to the intention of the parties; and

WHEREAS, the parties hereto desire by this Agreement to amend the Joint Powers Agreement to correct the foregoing drafting error.

NOW, THEREFORE, in consideration of the mutual covenants hereinafter contained, the parties hereto agree that Section 4.04(b) of the aforementioned Joint Powers Agreement shall be, and hereby is, effective on the date hereof, amended to read as follows:

> "(b) The normal position of the Dean's Lake diversion structure gate (that is, the position of the gate during times that water is not being released from Prior Lake) shall not direct the flow of runoff through Dean's Lake. Nevertheless, the Watershed District agrees to comply with reasonable requests by Shakopee to divert normal runoff through Dean's Lake; provided, however, that such request shall be made to the Watershed District in writing and shall be accompanied

Orr
Schelen
Maveron &
Associates, Inc.

300 Park Place Center
5775 Wayzata Boulevard
Minneapolis, MN 55416-1228

612-595-5775
1-800-753-5775
FAX 595-5774

Engineers
Architects
Planners
Surveyors

June 28, 1993

Mr. Bruce Bullert
Director of Public Works
City of Savage
6000 McColl Drive
Savage, MN 55423

Re: Stormwater Management Plan for Boiling Springs Area within
Cities of Shakopee and Savage
OSM Project No. 4925.00

Dear Bruce:

Attached is our previously drafted letter regarding the above project, the map showing the drainage areas as mentioned in this letter of April 8, 1993 and a copy of the Joint Powers Agreement between the City of Shakopee and the City of Savage.

Please review and advise us of any comments you may have.

Sincerely,

ORR-SCHELEN-MAYERON
& ASSOCIATES, INC.

Peter R. Willenbring, P.E.
Manager, Water Resource Department

enclosures

c: Dave Hutton w/attachments
City of Shakopee

Orr
Schelen
Mayeron &
Associates, Inc.

300 Park Place Center
5775 Wayzata Boulevard
Minneapolis, MN 55416-1228

612-595-5775
1-800-753-5775
FAX 595-5774

Engineers
Architects
Planners
Surveyors

April 8, 1993

Mr. Bruce Bullert
Director of Public Works
City of Savage
6000 McColl
Savage, MN 55378

Mr. Dave Hutton
City of Shakopee
129 East Avenue
Shakopee, MN 55379

Re: Stormwater Management Plan for Boiling Springs Area within the Cities of Shakopee and Savage.
OSM Project No. 4925.00 Task 4464

Gentlemen:

As a follow-up to our previous meeting, we have revised our hydrologic analysis for the Boiling Springs Area to reflect the inclusion of a 130 acre watershed on the west side of County Road 89 that will be directed to the east from Shakopee into the City of Savage. Attached please find a map showing the drainage areas tributary to the City of Savage from the City of Shakopee along with the computer output from our hydrologic model which was set up for this area within the City of Shakopee. This revised analysis yielded the following information:

1. The peak discharge rate directed into the City of Savage from the City of Shakopee at the outlet of Watershed 7 is anticipated to be 25.5 cfs for a 10-year return frequency event and 46.8 cfs for a 100-year return frequency event.

2. The peak discharge rate out of Subwatershed 8 which will be directed into the City of Savage is anticipated to be limited to 2.3 cfs for a 10-year event and 4.1 cfs for a 100-year event.

As can be observed from this information, the City of Shakopee is proposing to limit the total discharge rate across the municipal boundary in this area to approximately 28 and 51 cfs for a 10 and 100-year return frequency storm respectively. Based on the total tributary drainage area being approximately 329 acres, this represents a peak discharge rate of approximately .16 cfs per acre for a 100-year event which is considerably less than the .33 cfs per acre standard that has been typically utilized throughout the remaining

areas within the City of Shakopee. In addition, please find attached a draft joint powers agreement which has been prepared for your review.

It is requested you review this information and advise me of any concerns you may have with this proposed drainage concept.

Sincerely,

ORR-SCHELEN-MAYERON
& ASSOCIATES, INC.

Peter R. Willenbring, P.E.
Manager, Water Resource Department

enclosures

bjf

# JOINT POWERS AGREEMENT BETWEEN THE CITY OF SHAKOPEE AND THE CITY OF SAVAGE RELATING TO STORMWATER MANAGEMENT PLANNING WITHIN THE EAGLE CREEK WATERSHED

THIS AGREEMENT is entered into between the City Shakopee, a Minnesota municipal corporation, hereinafter called "Shakopee" and the City of Savage, a Minnesota municipal corporation, hereinafter called "Savage".

WHEREAS, Savage and Shakopee are preparing or will prepare comprehensive stormwater management plans which must address stormwater run-off transcending their municipal boundary in the vicinity of Eagle Creek, and

WHEREAS, the City of Savage is currently constructing or will construct storm drainage improvements associated with development in this area, and

WHEREAS, the Minnesota Department of Natural Resources is encouraging the City of Savage and the City of Shakopee to direct stormwater run-off away from Eagle Creek as much as can be reasonably accommodated so as to protect this trout stream resource from impact, and

WHEREAS, the City of Shakopee has within its municipal boundaries, a drainage area of approximately 328.9 acres that currently is directed into the City of Savage or will overflow into the City of Savage, and

WHEREAS, both the Cities of Shakopee and Savage desire to enter into an agreement that defines the anticipated rates and volumes of run-off directed across the municipal boundary so that adequate stormwater management planning and design can be implemented by both communities, and

NOW THEREFORE, Savage and Shakopee agree as follows:

1. The surface area within Shakopee that will be tributary to Savage is approximately 328.9 acres as shown on the attached Savage/Shakopee drainage study map, dated April 6, 1993.
2. The peak discharge rate from Watershed 7 will be 25.5 and 46.8 cfs for a 10 and 10-year return frequency event, and the peak discharge rate from Subwatershed 8 will be 2.3 and 4.1 cfs for a 10 and 100-year return

frequency event as shown on a table within the Savage/Shakopee drainage study map, dated April 6, 1993 and supported by the hydrologic model output for this area, referred to as Exhibit 2 and dated April 6, 1993.

3. The parties mutually recognize and agree that the City of Savage shall be responsible for the design, construction, and supervision of all necessary stormwater related improvements to accommodate the discharge rates outlined in Item 2. above.

4. The City of Shakopee will have the right at all reasonable times to review and examine any construction documents relating to the drainage improvements proposed in this area, as well as examine the installation and construction of any existing or future systems.

5. Savage agrees to indemnify and hold harmless Shakopee from any and all claims, actions, or causes of action for damage to persons or property including legal or other expenses in any way arising out of the negligence of Savage in the design, operation or maintenance of the systems constructed within the City of Savage.

IN WITNESS WHEREOF, the parties have set their hands this ____ day of _____, 1993.

CITY OF SAVAGE

_____
Mayor

_____
City Administrator

CITY OF SHAKOPEE

_____
Mayor

_____
Manager

# JOINT POWERS AGREEMENT
# BETWEEN THE CITY OF SHAKOPEE AND THE CITY OF SAVAGE
# FOR STORM SEWER CONSTRUCTION WITHIN
# EAGLE CREEK 1ST ADDITION
# CITY PROJECT NO. 94-02

**THIS AGREEMENT** is entered into between the City of Shakopee, a Minnesota municipal corporation, hereinafter called "Shakopee," and the City of Savage, a Minnesota municipal corporation, hereinafter called "Savage," as a Joint Powers Agreement under the authority of Minnesota Statute 471.59.

**WHEREAS**, Shakopee has prepared a Comprehensive Stormwater Management Plan for the Eagle Creek drainage watershed, that provides for a portion of Shakopee's stormwater runoff to drain towards Savage; and

**WHEREAS**, Savage has adopted the Eagle Creek Stormwater Management Plan as part of the AUAR Mitigation Strategy and overall city-wide Comprehensive Stormwater Plan, and

**WHEREAS**, Savage has designed and awarded a contract for Eagle Creek 1st Addition, said project includes provisions for upgrading the storm sewer facilities in Savage to include the additional runoff from a portion of the area in Shakopee draining towards Savage; and

**WHEREAS**, both Shakopee and Savage desire to enter into an agreement that provides cost sharing for the construction of the storm sewer facilities proposed by Savage, said cost sharing to be based on a specified plan for the Eagle Creek Watershed flow as determined by the City of Shakopee Stormwater Management Plan completed by OSM, dated June 24, 1994; and

**WHEREAS**, the City of Savage will no longer be able to discharge stormwater runoff into Eagle Creek due to the mitigation plan adopted as part of the AUAR and will now need to route the Zinran Avenue outlet directly to the Minnesota River (via Mn/DOT detention ponds).

**NOW, THEREFORE,** Shakopee and Savage agree as follows:

1. Recommended Improvement Alternative No. 3, as listed in the Shakopee Stormwater Management Plan for Eagle Creek, will be the alternative utilized to accommodate stormwater runoff out of the Eagle Creek Watershed.

2. That during the peak discharge rate of the Eagle Creek Watershed in the 100-year, 24-hour storm event, Shakopee contributes 26% to the total peak flow and Savage contributes 74% to the total peak flow.

3. That Shakopee will pay 0% of the costs to upgrade the stormwater outlet system from Zinran Avenue to the Minnesota River.

4. That Shakopee will limit its peak flow from Subwatershed 8 (as shown on Attachment A) to 4cfs. Savage will construct the storm sewer in Eagle Creek 1st Addition large enough to handle the additional 4 cfs from Shakopee.

5. That Savage will construct the regional NURP pond identified as Pond 15 on Figure 4 in the Eagle Creek Stormwater Plan, and Shakopee will pay its proportionate share of the pond based on contributing flow as outlined in paragraph 6 below. (See Attachments A and B).

6. The cost of the storm sewer to be paid by Shakopee is 14.8%, because its contributing flow is 4 cfs of the total flow in the storm sewer of 27 cfs (4/27 = 14.8%). The estimated pond costs for Shakopee is based on 6.7% because its contributing flow is 4 cfs of the total pond inlet flow of 59.7 cfs (4/59.7 =6.7%). The cost apportionment consists of the construction cost based on bids received, plus Savage's standard 26% for engineering and administrative costs.

   Shakopee's total proposed cost is as follows:

   A. Total Storm Sewer Cost to Shakopee = $145,591.89 x 14.8% = $21,547.60

   B. Total pond cost to Shakopee = $7,941.18 (see Attachment C)

   **Total cost is $29,488.78**

7. Shakopee shall pay to Savage its share of the costs related to these pipe segments in one (1) lump sum payment by January 1 of the year following the date that Shakopee starts utilizing the storm sewer as an outlet. The costs shall be the actual construction cost, plus engineering, administrative, and legal costs, as listed above in paragraph 6. Shakopee shall not be charged any interest from the time the construction is completed until Shakopee utililizes the storm sewer an an outlet.

8. Shakopee will limit flows from Subwatershed 8 to the rates established in the Stormwater Management Plan by constructing on-site storage and retention facilities as development or redevelopment occurs. Said on-site storage facilities in Shakopee will be owned and operated by Shakopee. All improvements and piping in Savage will be owned and operated by Savage. Shakopee and Savage do not intend to acquire any jointly owned personal property or real estate under the provisions of this agreement.

9. The parties mutually recognize and agree that Savage shall be the contracting party and shall be responsible for the design, supervision, and completion of the construction contracts. In so doing, Savage shall proceed pursuant to Minnesota Statute 429. Shakopee shall concur in the award of the contract to the lowest responsible bidder. Upon award of the contract to the successful bidder, Savage will deliver an executed copy thereof to Shakopee. After completion of the project, Savage shall provide ongoing maintenance of the storm sewer facilities in Savage covered by this agreement.

10. Shakopee shall have the right at all reasonable times to review and examine the installation and construction. If for any reason the contract costs increase significantly, or if changes must be made to the contract as a result of conditions being different than originally contemplated, Savage shall obtain the approval of Shakopee for such cost increases or changes.

11. Savage agrees to indemnify and hold harmless Shakopee from any and all claims, actions, or causes of action for damage to persons or property, including legal or other expenses in any way, arising out of the negligence of Savage in the operation and maintenance of the project described herein.

**IN WITNESS WHEREOF**, the parties have set their hands this 20th day of February, 1996.

**CITY OF SAVAGE:**

By: _____
Mayor

By: _____
City Administrator

**CITY OF SHAKOPEE:**

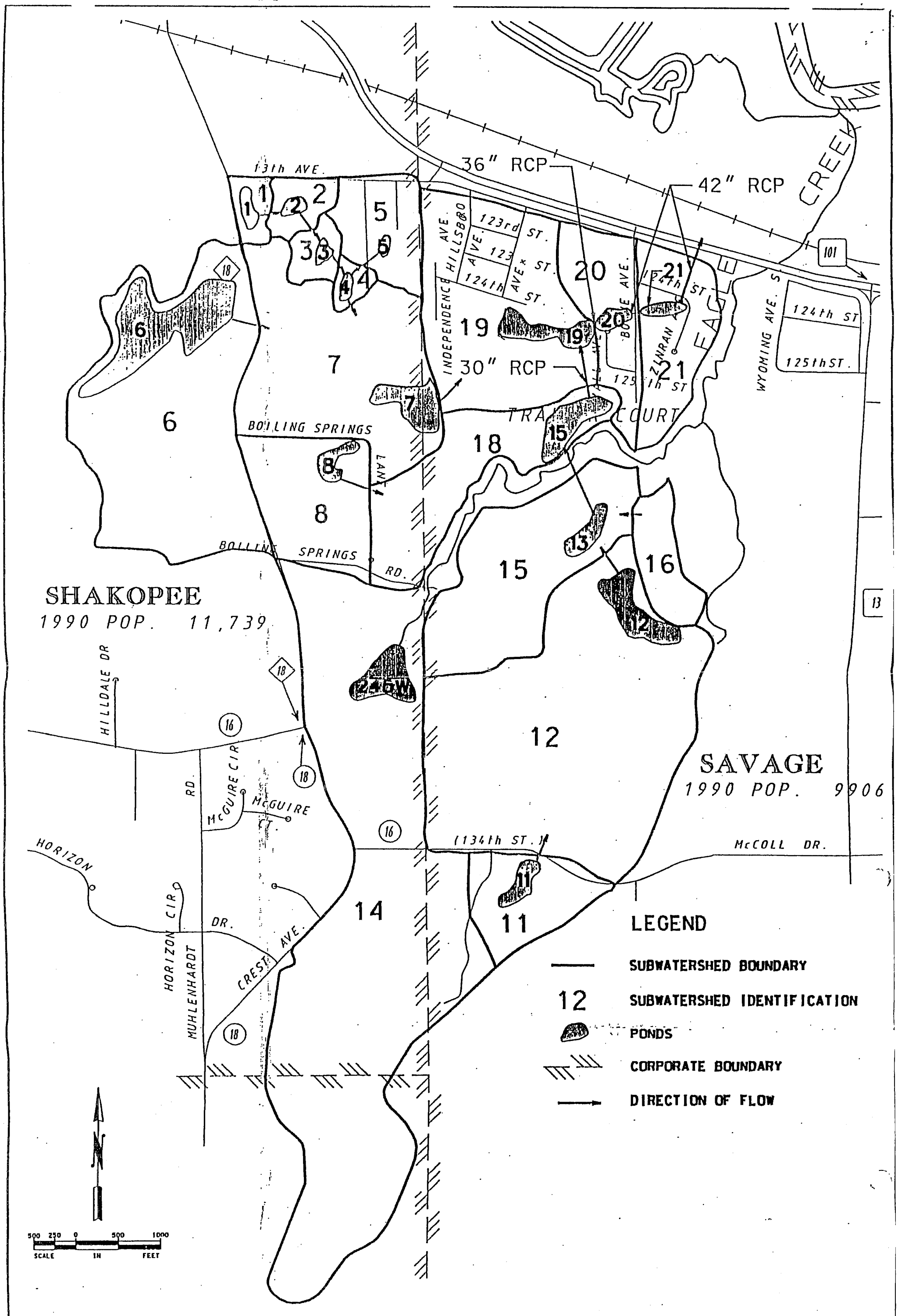
By: _____
Mayor

By: _____
City Administrator

By: _____
City Clerk

F:\USERS\ENGINEER\94-02\JNTPWRS.F14

ATTACHMENT A




Orr Schelen Mayeron & Associates, Inc.
Engineers ▪ Architects ▪ Planners ▪ Surveyors

EAGLE CREEK WATERSHED S

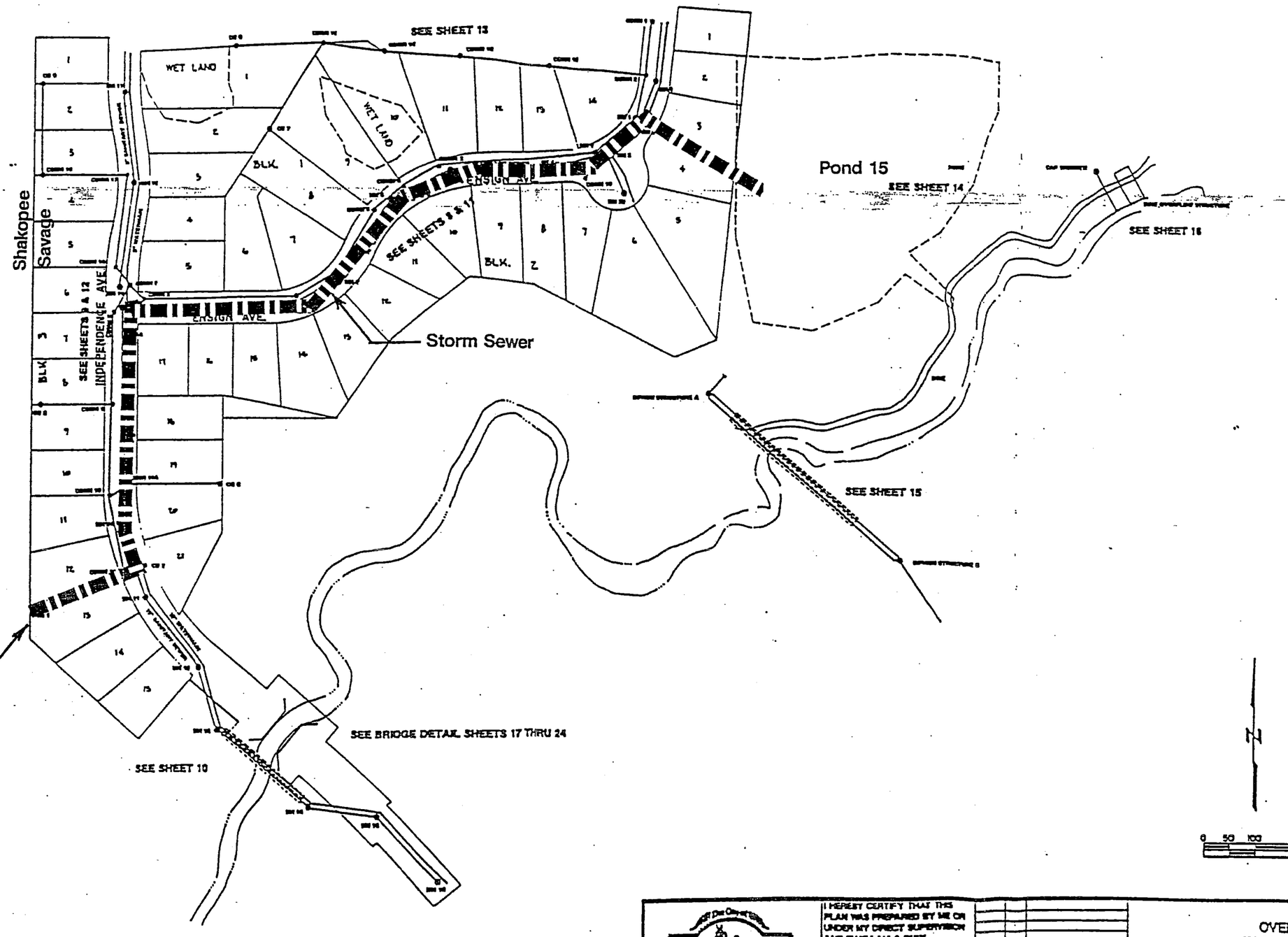
I HEREBY CERTIFY THAT THIS PLAN SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA

PETER R. WILLENBRING

| | |
|---|---|
| SCALE: AS NOTED | |
| PLAN BY: TAW | DESIGN BY: |
| CHECKED BY: PRW | CONSULTING: 1776.78 |

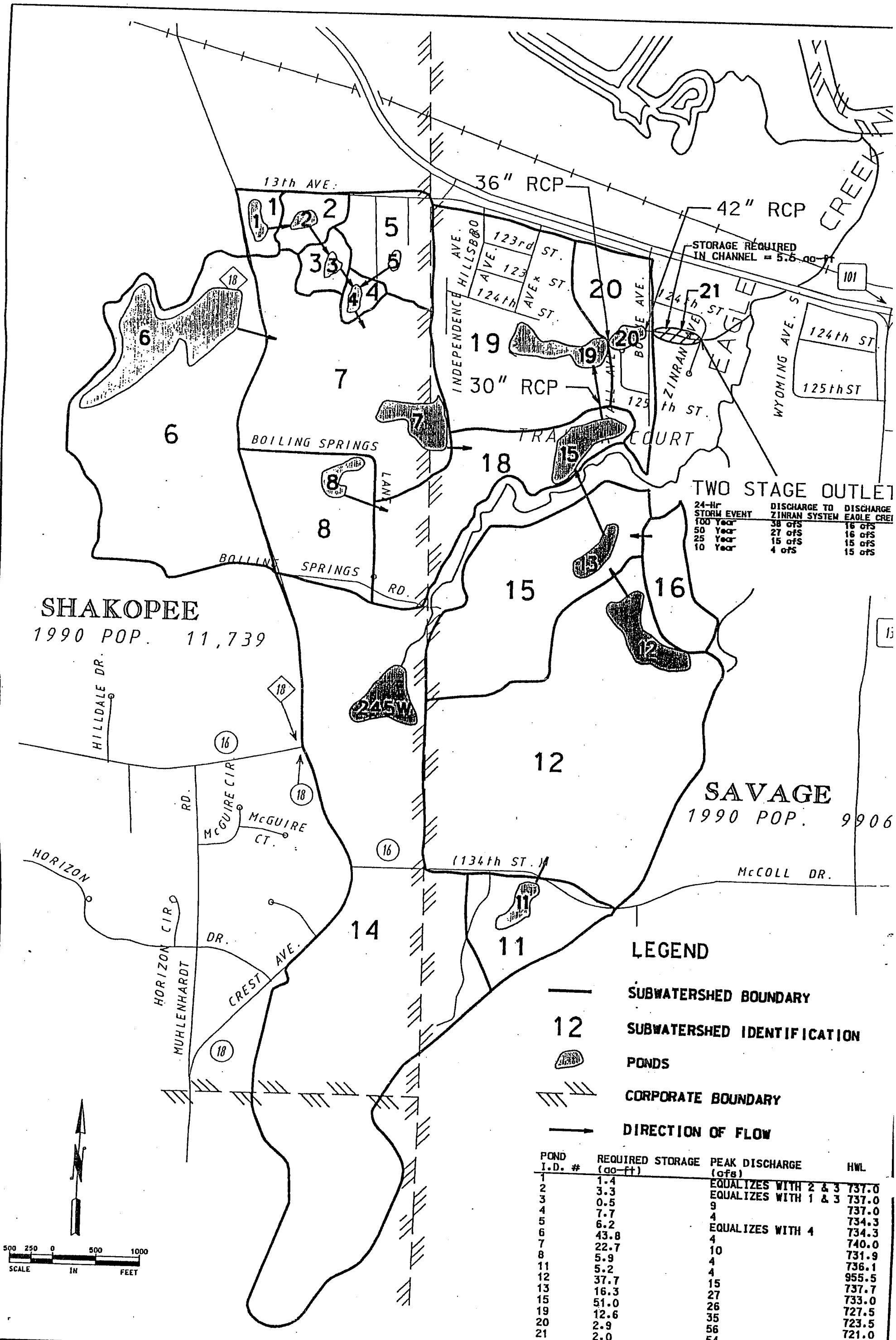
ATTACHMENT B

# EAGLE CREEK 1ST ADDITION




I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF

OVERALL
EAGLE CREEK
CITY PROJECT 94-02




| POND I.D. # | REQUIRED STORAGE (ac-ft) | PEAK DISCHARGE (cfs) | HWL |
|---|---|---|---|
| 1 | 1.4 | EQUALIZES WITH 2 & 3 | 737.0 |
| 2 | 3.3 | EQUALIZES WITH 1 & 3 | 737.0 |
| 3 | 0.5 | 9 | 737.0 |
| 4 | 7.7 | 4 | 734.3 |
| 5 | 6.2 | EQUALIZES WITH 4 | 734.3 |
| 6 | 43.8 | 4 | 740.0 |
| 7 | 22.7 | 10 | 731.9 |
| 8 | 5.9 | 4 | 736.1 |
| 11 | 5.2 | 4 | 955.5 |
| 12 | 37.7 | 15 | 737.7 |
| 13 | 16.3 | 27 | 733.0 |
| 15 | 51.0 | 26 | 727.5 |
| 19 | 12.6 | 35 | 723.5 |
| 20 | 2.9 | 56 | 721.0 |
| 21 | 2.0 | 54 | 716.1 |

Orr Schelen Mayeron & Associates, Inc.
Engineers ■ Architects ■ Planners ■ Surveyors
Park Place East ■ 5775 Wayzata Boulevard
Minneapolis, MN 55416-1228 ■ 612-595-5775

EAGLE CREEK WATERSHED ST
ALTERNATIV

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PETER R. WILLENBRING

SCALE: AS NOTED
PLAN BY: TAW
DESIGN BY:
CHECKED BY: PRW
COMPUTED: 1776 76

FI 4

# Attachment C

## NURP Pond Cost Split

I. Construction Cost (from bids)

| | |
|---|---|
| Nurp Pond Bid | $ 75,137.60 |
| Clay liner for dike | 43,387.50 |
| | $118,525.10 |

II. Cost Breakdown: (Percentages are based on total cfs.)

A. Shakopee: 6.7% of $118,525.10 $ 7,941.18

B. Covington Ponds 3rd Addition (Previously Assessed): $ 42,162.53 (developer)
City portion of Covington Ponds 3rd Addition: $ 7,467.08 (City)

C. Eagle Creek 1st Addition:

$118,525.10
18,600.00 (Estimated 6,000 c.y. @ $3.10/c.y. price for filling streets in Covington Ponds
$ 99,925.10 east of the the NURP pond)

61% of $99,925.10= $60,954.31
($20,000 of this cost will be paid for by the City for grading of the regional pond east of the NURP pond)

Eagle Creek 1st Addition (Hirscher Farms): $ 40,954.31 (developer)
City portion of Eagle Creek 1st Addition $ 20,000.00 (City)

III. Summary for NURP Pond:

| | | |
|---|---|---|
| 1. | Shakopee | $ 7,941.18 |
| 2. | Covington Ponds 3rd | 42,162.53 |
| 3. | Eagle Creek 1st Addn. | 40,954.31 |
| 4. | City | 27,467.08 |
| | | $118,525.10 |

Revised 4/15/97
Revised 4/12/95
Revised 3/15/95

# JOINT POWERS AGREEMENT
# BETWEEN THE CITY OF SHAKOPEE AND THE CITY OF SAVAGE
# FOR STORM SEWER

## City Project 94-05
## Covington Ponds Third Addition

**THIS AGREEMENT** is entered into between the City of Shakopee, a Minnesota municipal corporation, hereinafter called "Shakopee" and the City of Savage, a Minnesota municipal corporation, hereinafter called "Savage", as a Joint Powers Agreement under the authority of Minnesota Statute 471.59.

**WHEREAS**, Savage and Shakopee have prepared comprehensive plans which include storm sewer plans that provide for a portion of Shakopee to drain towards Savage; and

**WHEREAS**, Savage has held public hearings for Project 94-05, has awarded a contract for this project, and has completed the construction of this project; and

**WHEREAS**, said project included provisions for upgrading the storm sewer facilities in Savage to include the runoff from a portion of the area in Shakopee draining towards Savage; and

**WHEREAS**, both Shakopee and Savage desire to enter into an agreement that provides cost sharing for the improvement of the storm sewer facilities constructed by Savage, said cost sharing to be based on a specified plan for the Eagle Creek Watershed flow as determined by the Storm Water Management Plan completed by OSM dated June 24, 1994; and

**WHEREAS**, Savage has previously completed the construction of storm drainage facilities, under City Project 91-18, to accommodate storm water flow from future development in Section 18 in Savage to Zinran Ave. outlet to Eagle Creek; and

**WHEREAS**, the City of Savage will no longer be able to discharge stormwater runoff into Eagle Creek due to the mitigation plan adopted as part of the AUAR and will now need to route the Zinran Avenue outlet directly to the Minnesota River (via Mn/DOT detention ponds).

**NOW, THEREFORE**, Shakopee and Savage agree as follows:

1. Recommended Improvement Alternative No. 3 will be the alternative utilized to accommodate storm water runoff out of the Eagle Creek Watershed.

2. That during the peak discharge rate out of the Eagle Creek Watershed in the 100-year 24-hour storm event, Shakopee contributes 26% to the peak flow and Savage contributes 74% to the peak flow.

3. That Shakopee will pay 0% of the costs to upgrade the storm water outlet system from Zinran Avenue to the Minnesota River.

4. That Savage will construct the NURP pond as shown on Exhibit A at no cost to Shakopee.

5. That the cost to Shakopee for connection to the 126th Street storm sewer system in Savage is $40,000.

6. That Shakopee is creating a wetland 2-3 acres in size as a part of their Maras Street Improvement Project, and the estimated value of this wetland creation is between $15,000 and $20,000 per acre, with a total estimated value of $30,000 to $60,000.

7. That Shakopee will allow Savage to use the wetland credits created by the Shakopee Maras Street Improvement Project in lieu of $40,000 for the 126th Street storm sewer connection.

8. That in the event that circumstances do not allow the exchange of these wetland credits to Savage from Shakopee,

Shakopee shall pay to Savage $40,000 in exchange for the 126th Street storm sewer connection, in one lump sum payment or in ten (10) equal installments with simple interest commencing the 1st of the month following the date of signing of this Joint Powers Agreement. The interest rate shall be the rate that Savage pays for its general obligation bonds in the year that this agreement is finalized. For the purposes of this agreement, the interest rate is assumed to be 8%. Said rate will be adjusted when the actual rates are known.

9. Shakopee will limit flows from said undeveloped lands to the existing pre-developmental rates by constructing on-site storage and retention as development occurs. Said on-site storage facilities in Shakopee will be owned and operated by Shakopee. All improvements and piping in Savage will be owned and operated by Savage. Shakopee and Savage do not intend to acquire any jointly owned personal property or real estate under the provisions of this agreement in its present form.

10. Savage shall provide routine maintenance of the storm sewer facilities covered by this agreement.

11. Savage agrees to indemnify and hold harmless Shakopee from any and all claims, actions or causes of action for damage to persons or property, including legal or other expenses in any way, arising out of the negligence of Savage in the operation and maintenance of the project described herein.

12. Either city can terminate this agreement upon a one (1) year written notice to the other city, on the condition that Savage receives full payment of all amounts owed under the terms of this agreement by the effective date of the termination.

**IN WITNESS WHEREOF,** the parties have set their hands this _____day of _____, 1997.

**CITY OF SAVAGE:**

By: _____
Its Mayor

By: _____
Its City Administrator

**CITY OF SHAKOPEE:** 4-15-97

By: _____
Its Mayor

By: _____
Its City Administrator

By: _____
Its City Clerk

JSS

C:\WPDOCS\MISC\JNTAGMT.M15

Appendix D – Hydrologic/Hydraulic Modeling Results

SHAKOPEE

# STORM WATER MODELING REPORT

December 10, 2018

Prepared for:
City of Shakopee

WSB PROJECT NO. 011510-000

wsb

# STORM WATER MODELING REPORT

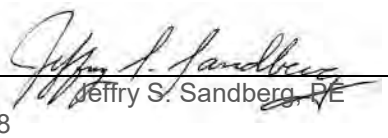
# CITY OF SHAKOPEE, MINNESOTA

**DECEMBER 2018**

**Prepared by:**

# CERTIFICATION

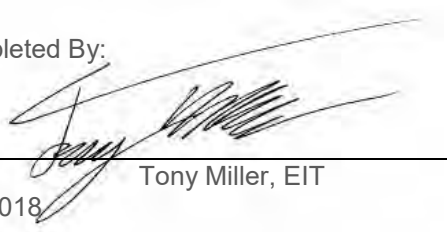
I hereby certify that this plan, specification or report was prepared by me or under my direct supervision and that I am a duly licensed professional engineer under the laws of the State of Minnesota.



Jeffry S. Sandberg, PE

Date: December 5, 2018 Lic. No. 25393

Quality Control Review Completed By:



Tony Miller, EIT

Date: December 5, 2018

# TABLE OF CONTENTS

## 1.0 INTRODUCTION/BACKGROUND

The City of Shakopee (the City) consists of more than 18,000 acres of residential, agricultural and industrial land use. The storm water model created consists of over 27,000 acres, made up of the City of Shakopee, portions of the City of Prior Lake, portions of the Shakopee Mdewakanton Sioux Community and surrounding areas. About 12,500 acres of the model's runoff is directed into the Minnesota River through a network of storm sewer pipes. Runoff from the remaining subwatersheds is generally routed through one of the surrounding waterbodies such as Blue Lake, Eagle Creek, Louisville Pond, Mill Pond, Rice Lake, or Sand Creek before flowing into the Minnesota River. The City is broken up into ten subwatersheds and was modeled using XP-SWMM (Stormwater Wastewater Management Model by XP Software, Inc.). The subwatersheds and models are outlined below, a map depicting these can be found in **Appendix A, Figure 1**.

The subwatershed names are listed in bold italics below along with a description of the general drainage patterns.

- ***BL*** drains through a series of storm sewer pipes, which heads north discharging into Blue Lake. The subwatershed is made up of areas discharging into Blue Lake not included in PLOC or SMSC subwatersheds.
- ***DT*** drains through a series of storm sewer pipes in downtown Shakopee, which flow north discharging into the Minnesota River.
- ***EC*** drains through a series of storm sewer pipes, north of Highway 13 West and south of Highway 169 discharging into Eagle Creek.
- ***LV*** drains west to the newly constructed Louisville Pond. These were historically part of the Mill Pond subwatershed.
- ***MP*** includes Mill Pond, and the lake systems in the southwest quadrant of the city. This runoff discharges into the Minnesota River via storm sewer pipes and overland flow.
- ***MR*** drains into the Minnesota River through a series of storm sewer pipes and overland flow and is located west of Blue Lake.
- ***PLOC*** drains into Blue Lake through a series of storm sewer pipes and is located north of Lower Prior Lake and east of Mystic Lake.
- ***RL*** drains into Rice Lake through a series of storm sewer pipes and is located east of Eagle Creek.
- ***SC*** drains into Sand Creek through a series of storm sewer pipes and is located west of Marschall Road.
- ***SMSC*** drains into Blue Lake through a series of storm sewer pipes within the Shakopee Mdewakanton Sioux Community and is located south of Eagle Creek.

These ten subwatersheds were combined into four XPSWMM models based on general drainage patterns. The model names are listed in bold italics along with the subwatersheds the model encompasses.

- ***Blue Lake Model*** consists of the BL, PLOC, and SMSC subwatersheds.
- ***Downtown Model*** consists of the DT subwatershed.
- ***Eagle Creek and Rice Lake Model*** consists of the EC and RL subwatersheds.
- ***Upper Valley Model*** consists of the LV, MP, MR, and SC subwatersheds.

## 2.0 PURPOSE/GOALS

These models were generated as part of a city-wide effort to better understand the storm water conveyance systems capacity and ability to transport runoff to Sand Creek, Eagle Creek, Mill Pond, Louisville Pond, Blue Lake, Rice Lake, and the Minnesota River. As redevelopment of land and improvements to public streets and utilities occur in the future, City staff will utilize these models to plan improvements to the existing storm water conveyance systems by identifying the following:

- Over capacity storm sewer features
- Existing flooding locations and sources
- Opportunity locations for storm water treatment BMPs
- Impacts of Atlas 14 precipitation frequency estimates

The models created as part of this effort are intended to be "living" constructs of the City's storm water system. It is anticipated that these models will be modified as needed over the years to improve their usefulness, reliability and relevance as new construction or reconstruction of storm water features occurs. As the models are modified, discrepancies between the model and printed results will occur, and the printed results may no longer be valid.

XP-SWMM software was utilized for this project. This program is capable of simulating continuous rainfall events to estimate water quantity. XP-SWMM simulates storm water flow through complex networks of storm sewer piping, natural channels and street overflow routes. Storage of storm water in the modeled system allows this program to help identify locations in the system where flooding is anticipated to occur.

## 3.0 PROCEDURES AND METHODS

This section outlines the procedures and methods used to develop the XP-SWMM model for the City. The following data sources were utilized to construct the models described in this report:

- City asbuilt records
- Natural Resources Conservation Service Soil Survey Geographic Database (SSURGO) (dated 2018)
- City GIS shapefile data
- City GIS land use shapefile data
- City HydroCAD model (1995)
- Upper Valley Drainageway XPSWMM model (2015)
- Minnesota State land use shapefile
- Light Detection and Ranging (LiDAR) (dated 2013)
- National Oceanic and Atmospheric Administration (NOAA) Atlas 14 Rainfall Data
- Shakopee Mdewakanton Sioux Community (SMSC) Current SSA stormwater model (dated October 15, 2018)
- Prior Lake Spring Lake Watershed District (PLOC) XP-SWMM model (dated September 25, 2018)

### 3.1 Hydraulic Analysis (XP-SWMM)

XP-SWMM version 2018.1 was used to build the storm water model for this analysis. XP-SWMM software utilizes simultaneous routing to calculate hydraulic conditions for the entire model during each time increment. This allows the model to account for system interactions such as tailwater conditions and surcharging. The following describes the procedures followed to develop the model in XP-SWMM:

*XP-SWMM Model*

Much of the pipe and node network in the XP-SWMM models was imported directly from the City's GIS data or other existing stormwater models. In areas where large gaps in data exist, City asbuilts were used. In situations where asbuilts were not available, LIDAR data and linear interpolation was used to fill gaps in the GIS data. The City drainage area maps were imported into the models to help users orientate themselves within the model.

There were also inputs imported from outside sources for some major watersheds areas, specifically the SMSC and PLOC subwatersheds. See narrative in **Section 3.2 Model Limitations** for further discussion.

*Storm Water Routing*

Each of the ten drainage areas were divided into subwatersheds using two-foot (2') contour and storm sewer data. Every subwatershed was given a unique identification number. The figures in **Appendix A** show the layout of the subwatershed delineations and the subwatershed IDs. Subwatersheds were defined using the City's trunk storm sewer system.

Each subwatershed ID corresponds to a unique node name, created for the XP-SWMM models. In situations where more than one catch basin is located within one subwatershed, the storm water was generally routed to the upstream catch basin.

Minnesota Department of Transportation (MnDOT) interstates and trunk highways including Highway 169, CSAH 101, and Highway 21 were modeled in aggregate and not to the same level of detail as the rest of the City's system. The City has not identified flood concerns within the MnDOT system; therefore, extensive modeling wasn't warranted for this project.

*Overland (Street) Flow Routes*
The model includes a dual system of conveyance. The runoff from small storm events is typically contained in the pipe system. In the event that the runoff exceeds the storm sewer system capacity, overland flow routes (typically a street) are incorporated into the hydraulics layer. Typical residential street sections with 0.5-foot (1/2') high curbs were used to model most of the overland flow. More detailed sections were used as warranted by the quantity of overflow. GIS aerial and LiDAR data was used for in these situations.

*Design Storms*
Global storm events were modeled for this analysis using the NOAA Atlas 14 rain events. These storms included the 2-year, 10-year, and 100-year, MSE Type 3, 24-hour storm events and the 10-day, Type II snowmelt event. The following table illustrates the rainfall depths modeled for each of the design storms:

**Table 1: Global Storm Events**

| Storm Event | Annual Return Frequency | Rainfall Depth (in.) | Rainfall Distribution |
|---|---|---|---|
| 2-year | 50% | 2.90 | MSE3 |
| 10-year | 10% | 4.20 | MSE3 |
| 100-year | 1% | 7.40 | MSE3 |
| 10-day snowmelt | n/a | 7.20 | Type II |

These values correspond to data published by the National Oceanic and Atmospheric Administration (NOAA) for the city of Shakopee, MN. This data is endorsed by NOAA regarding stormwater modeling.

*Time of Concentration (TC)*
Two methods were used for quantifying time of concentration.

1. USDA's Watershed Lag Method

   For areas without known storm sewer networks and areas with storm sewer that were greater than 150 acres in size, Time of Concentration was calculated based on the USDA's Watershed Lag Method, using average land slope, empirical flow length calculations, and a composite retardation factor (Curve Number). A minimum TC of 10 minutes was assigned to all subwatersheds.

2. Direct Entry

   It was determined that for subwatershed areas with storm sewer networks and areas less than or equal to 150 acres, the Watershed Lag Method alone could not accurately calculate Time of Concentration due to storm sewer routing effects. Instead, the following step function was created and utilized:

   - TC of 10 minutes was applied to subwatersheds with drainage area less than 15.0 acres.
   - TC of 15 minutes was applied to subwatersheds with a drainage area of 15.0-50.0 acres.
   - TC of 30 minutes was applied to subwatersheds with a drainage area of 50.0-150.0 acres.

   This function was based on LiDAR data, aerial mapping, and comparisons to average Watershed Lag Method TC estimates for each area range.

*Soils*

Nearly all of the City's soils are classified as hydrologic soil group (HSG) A or B by the Natural Resources Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO). Due to potential changes from construction activity, and as a conservative assumption, all soil in the City was assumed to be type B. This corresponds to a pervious curve number of 61.

*Land Use*

City and state GIS files representing land uses for the area of interest were used primarily for Curve Number estimates. The file assigned areas of the city land uses based on aerial data comparisons of the city. These areas were used in an area-weighted average to calculate a composite Curve Number for each subwatershed based on a maximum percentage of imperviousness for each land use type. A table of the Curve Numbers used in this method is shown below.

| Land Use | Max Impervious | CN |
|---|---|---|
| Water | 100% | 100 |
| Downtown Business District | 95% | 98 |
| Transportation | 80% | 92 |
| Downtown Transition | 75% | 90 |
| Industrial | 75% | 90 |
| Mixed Employment Center | 75% | 90 |
| Mixed Use Commercial Center | 75% | 90 |
| Downtown Riverfront | 60% | 85 |
| Mixed Residential | 50% | 80 |
| Old Shakopee Neighborhood | 50% | 80 |
| Public Institution | 50% | 80 |
| Entertainment | 35% | 75 |
| Suburban Residential | 35% | 75 |
| Rural Transition | 20% | 68 |
| Suburban Edge Residential | 20% | 68 |
| Open Space | 0% | 61 |
| Park | 0% | 61 |

*Energy Losses*

Entrance and exit losses for all pipe conduits modeled were standardized with a coefficient of 0.5 and 1.0 respectively, which is typical for concrete pipes with groove ends projecting from fill. These coefficients affect pipe flow under outlet control.

Flooding occurring as a result of limited catch basin capacity has been evaluated separately from flooding occurring as a result of limited pipe capacity. Inlet capacity is not specifically included in the model. **Appendix B** indicates locations where there is insufficient inlet capacity.

### 3.2 Model Limitations

Some caution must be taken when analyzing the results presented in the XP-SWMM models, as the accuracy of the models is somewhat limited based on the assumptions made. A discussion of these limitations follows:

1. The XP-SWMM model developed for this analysis does not take into account catch basin inlet capacity. As a result, the model may under estimate the amount of storm water flow through the street in some cases where catch basin inlet capacity or clogging is an issue.

2. Storm sewer base flows resulting from ground water inflow and other sources are not simulated in the XP-SWMM model. However, these flows are anticipated to be negligible during design storm events.

3. Generalized assumptions were made in the XP-SWMM model for parameters such as times of concentration, curve numbers, head losses, and roughness coefficients to streamline the modeling effort as described previously. It is expected that these assumed parameters may not be appropriate for every subwatershed feature. However, significant time and effort may be invested in the future to fine tune these parameters if desired. This can be done in areas of concern or where modeled results do not match observed conditions.

4. Stormwater models were imported from outside entities for the SMSC and PLOC watersheds. Those models had to be manipulated to be in the same coordinate system and each drainage area reviewed and modified as needed to be consistent with the overall model inputs. While WSB made modifications as outlined above, we can make no representation as to the accuracy of inputs or outputs in these subwatersheds that were provided to us.

## 4.0 RESULTS

The model results can be viewed by City staff with the use of the XPSWMM Viewer software. This software allows the user to view the results of the model, however, the user does not have the abilities to edit or run additional rainfall scenarios. This software can be used to view all results except catch basin inlet capacity, which can be found in **Appendix B**.

**Appendix A** spatially represents areas with the greatest flood concerns during the Atlas-14 100-year storm event. Flooding concerns for nodes were based on maximum water surface elevation as compared to manhole elevation. Areas in which water surface exceeded manhole elevation by 2.0 feet were noted as potentially severe flooding areas. Potentially severe flooding areas were used to determine areas of high priority for the City which are shown on **Figures 2-5** in **Appendix A** for each XPSWMM model. All 14 target priority areas within the city are shown on **Figure 1** in **Appendix A**.

### 4.1 Catch Basin Capacity

Flooding occurring from limited catch basin inlet capacity was evaluated separately from flooding occurring from limited storm sewer pipe capacity. The tables in **Appendix B** list the results of the catch basin analysis. This analysis assumes a constant rate of 3 cfs discharge per catch basin. Peak runoff of each subwatershed was compared to the number of known catch basins within the subwatershed multiplied by 3 cfs discharge per catch basin. Runoff rates that exceeded the calculated combined catch basin inlet capacity were noted as potential flood areas. This approximation method relies on the accuracy of available storm sewer data.

### 4.2 Peak Discharge Rates Policy

Information from the City's existing HydroCAD model was converted to XPSWMM for many of the sub-drainage areas of the city. While this XPSWMM model did not specifically limit discharge rates from each subcatchment to meet established city policies and agreements for rate control, the rate control is somewhat "built-in" to the model by default. The previous modeling and subsequent sizing of infrastructure was based on rate control policies that (for much of the city) limited peak discharges to 0.1 cfs/acre in the 100-year 24-hour TP-40 design event. High water levels and EOF's were established and low building openings were required to be a minimum of 2' above those established high water elevations. The results of the XPSWMM model for the ATLAS-14 event indicates that there are 14 locations as outlined above where there is no longer any freeboard available. The modeling shows that many other locations in the city have less than the 2' of freeboard in the "new" (ATLAS-14) design event. Current city policies state that low openings for new construction must maintain 2' of freeboard from the ATLAS-14 high water event.

Since undeveloped areas of the city were not modeled limiting peak discharge rates to 0.1 cfs/ acre, the model was created to show a worst-case condition. If the city maintains the current rate control policies for future developments, the downstream conditions will only improve, and more freeboard will likely be available to building structures in an ATLAS 14 event. It is our recommendation that the city continues with the rate control policies that are currently in place, and work to reduce discharges in noted "problem areas" by holding to the rate control policies and look for opportunities to create rate and volume control BMP's upstream of problem areas as new development or redevelopment occurs.

## 5.0 CONCLUSIONS/RECOMMENDATIONS

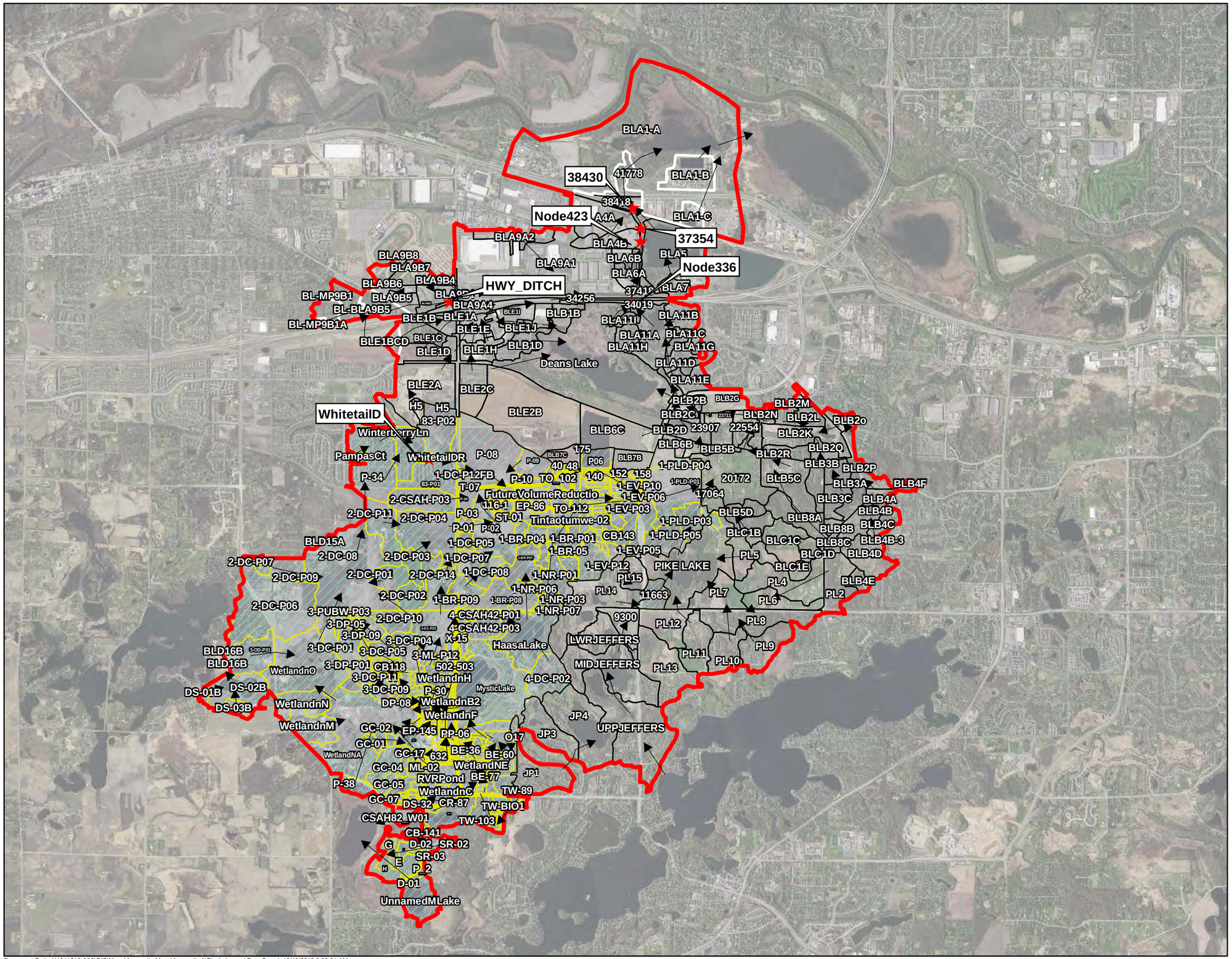
As the City moves forward with its efforts to improve flooding areas, the results of this analysis may be used as a tool for measuring success. The data presented in this report serves as a starting point.

### 5.1 Recommendations

The following recommendations may be implemented using the information provided by this report:

1. Prioritize major storm sewer systems for flow monitoring and verify input parameters.
2. Prioritize areas for implementing storm water treatment devices.
3. Evaluate potential flooding areas identified by the model and develop a strategy for addressing flooding risk through volume reduction or storm sewer modifications.

**Appendix A**
Figures/Maps




# Stormwater Modeling Report
# Shakopee Subwatershed

## Figure 2: Blue Lake Subwatershed Map For Appendix A

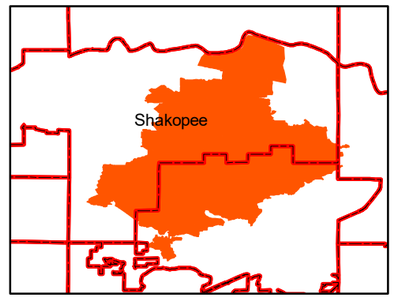
**Legend**

- Flood Priority Areas
- Flow Arrows
- Blue Lake XPSWMM Model Boundaries

**Subwatersheds**

- BL
- PLOC
- SMSC

| Flood Priority Area | Desciption |
|---|---|
| 37354 | Flooding at trail crossing |
| 38430 | Flooding at RV World |
| HWY_DITCH | Flooding at parking lot |
| Node336 | Flooding at trail crossing |
| Node423 | Flooding at trail crossing |
| WhitetailD | Flooding at backyards on Whitetail Dr |




N

0 4,000 Feet

1 inch = 4,000 feet

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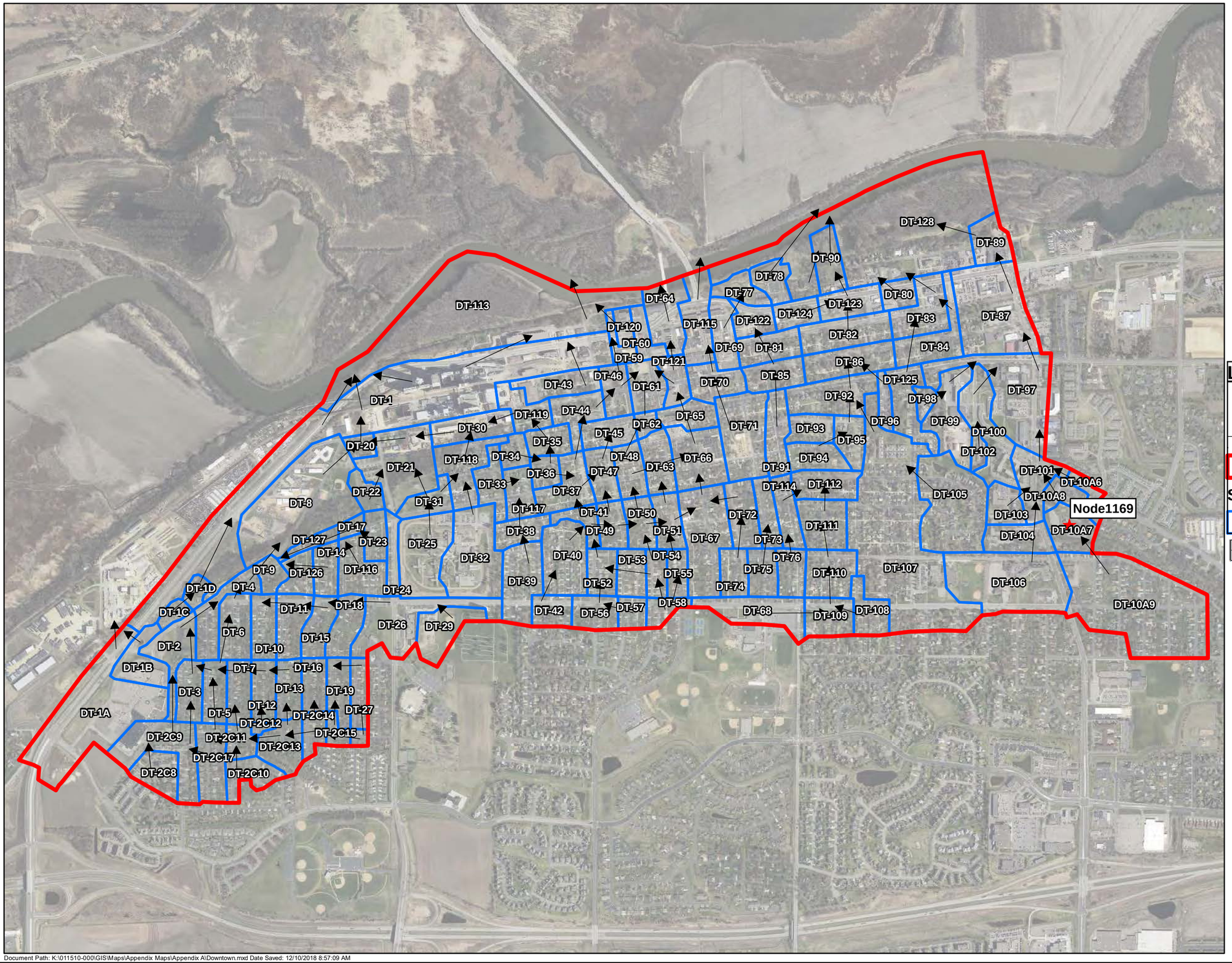
SHAKOPEE

# Stormwater Modeling Report
## Shakopee Subwatershed
### Figure 3: Downtown Subwatershed Map For Appendix A



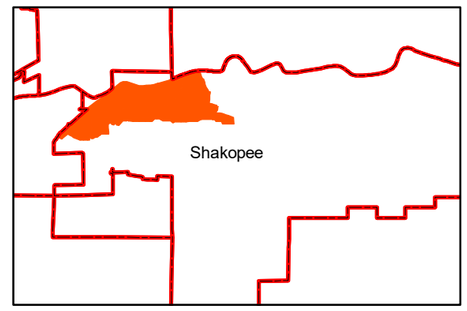

## Legend

- Flood Priority Areas
- Flow Arrows
- Downtown XPSWMM Model Boundaries

**Subwatersheds**

- DT

| Flood Priority Area | Desciption |
|---|---|
| Node1169 | Flooding at parking lot and White Pines Apartments |




N

0 1,250 Feet

1 inch = 1,250 feet

wsb

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SHAKOPEE

**Stormwater Modeling Report**
**Shakopee Subwatershed**

**Figure 4: Eagle Creek and Rice Lake Subwatershed Map For Appendix A**

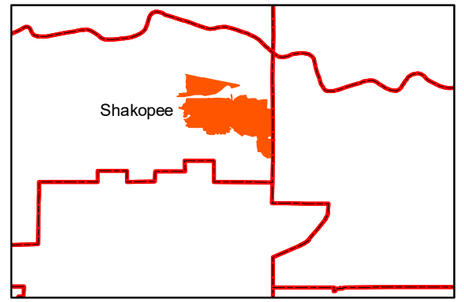
RL-1A
RL-7
RL-3
RL-2
RL-1
RL-1
EC-24
EC-4
EC-9
EC-3
RL-4
EC-1
EC-7
EC-8
RL-5
EC-11
RL-6
EC-10
EC-17
EC-16A
EC-16
EC-1B
EC-1C
EC-20
EC-23
EC-21

**Legend**

- Flow Arrows
- Eagle Creek and Rice Lake XPSWMM Model Boundaries

**Subwatersheds**

- EC
- RL




N

0 1,250 Feet

1 inch = 1,250 feet

wsb

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SHAKOPEE

# Stormwater Modeling Report
## Shakopee Subwatershed
## Figure 5: Upper Valley Subwatershed Map For Appendix A

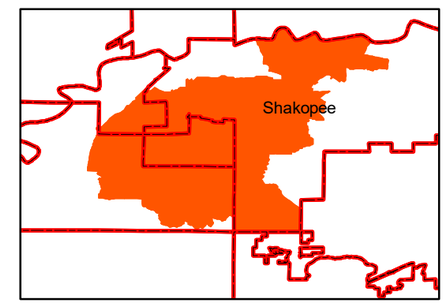
**Legend**

- Flood Priority Areas
- Flow Arrows
- Upper Valley XPSWMM Model Boundaries

**Subwatersheds**

- LV
- MP
- MR
- SC

| Flood Priority Area | Desciption |
|---|---|
| MPG3-H3 | Flooding at backyards on Westchester Ave and Hawthorne Ct |
| MPH-4C | Flooding at Monnens Ave |
| MPH-5C2A | Flooding at walking trail |
| MPH-5C2A OCS | Flooding at Fuller St |
| MPH-5C2B | Flooding at walking trail |
| MPH-6B1 | Flooding at walking trail and backyards on Larkspur Ct and Dakota St |
| MPH-7B12 | Flooding at walking trail and backyards on Sunflower Ct and Prairie Ln |




N

0 3,500 Feet

1 inch = 3,500 feet

wsb

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**Appendix B**

Maximum Node Depth (Flooding)/Catch Basin Inlet Capacity Results

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***P-03*** | _12x4BoxDI | 830.0 | 19.3 | 1 | 3 | 823.4 | - | 0.0 | 823.4 | - | 0.0 | 823.4 | - | 0.0 | 823.4 | - | 0.0 |
| 2 | 1 | 971.6 | 1.5 | 7 | 21 | 958.6 | - | 0.0 | 960.2 | - | 0.0 | 968.7 | - | 0.0 | 959.6 | - | 0.0 |
| 2 | 10 | 969.8 | 1.5 | 7 | 21 | 964.5 | - | 0.0 | 964.5 | - | 0.0 | 968.6 | - | 0.0 | 964.5 | - | 0.0 |
| Tewapa-Reuse-2 | 101-3 | 930.0 | 2.0 | 3 | 9 | 928.0 | - | 0.0 | 928.7 | - | 0.0 | 931.2 | 1.2 | 0.0 | 927.8 | - | 0.0 |
| ***IB-4*** | 102-1 | 822.2 | 2.2 | 1 | 3 | 815.7 | - | 0.0 | 815.9 | - | 0.0 | 816.8 | - | 0.0 | 815.9 | - | 0.0 |
| ***104P*** | 103-1 | 823.0 | 0.9 | 1 | 3 | 817.2 | - | 0.0 | 817.4 | - | 0.0 | 818.3 | - | 0.0 | 817.4 | - | 0.0 |
| ***10443*** | 105-3 | 934.0 | 4.1 | 1 | 3 | 928.9 | - | 0.0 | 931.1 | - | 0.0 | 934.0 | - | 0.0 | 928.6 | - | 0.0 |
| 102-CC | 105-1 | 823.5 | 0.4 | 3 | 9 | 817.3 | - | 0.0 | 819.1 | - | 0.0 | 822.8 | - | 0.0 | 816.6 | - | 0.0 |
| ***106P*** | 105-2 | 822.0 | 2.4 | 1 | 3 | 818.0 | - | 0.0 | 818.2 | - | 0.0 | 819.0 | - | 0.0 | 818.2 | - | 0.0 |
| ***108P*** | 107-2 | 822.0 | 2.1 | 1 | 3 | 818.9 | - | 0.0 | 819.0 | - | 0.0 | 819.5 | - | 0.0 | 819.0 | - | 0.0 |
| 11333 | 112-3 | 972.0 | 1.3 | 3 | 9 | 966.2 | - | 0.0 | 966.5 | - | 0.0 | 967.6 | - | 0.0 | 966.1 | - | 0.0 |
| P-1 | 112-1 | 820.5 | 7.6 | 2 | 6 | 816.2 | - | 0.0 | 816.5 | - | 0.0 | 817.7 | - | 0.0 | 816.2 | - | 0.0 |
| PP-09 | 115-A | 994.0 | 0.4 | 2 | 6 | 990.0 | - | 0.0 | 990.0 | - | 0.0 | 990.0 | - | 0.0 | 990.0 | - | 0.0 |
| PP-09 | 115-B | 994.0 | 0.4 | 2 | 6 | 988.6 | - | 0.0 | 988.6 | - | 0.0 | 988.6 | - | 0.0 | 988.6 | - | 0.0 |
| 19 | 18 | 818.3 | 0.2 | 2 | 6 | 814.0 | - | 0.0 | 814.4 | - | 0.0 | 816.0 | - | 0.0 | 813.4 | - | 0.0 |
| 113-2 | 115 | 825.7 | 0.6 | 2 | 6 | 818.5 | - | 0.0 | 819.9 | - | 0.0 | 823.4 | - | 0.0 | 818.3 | - | 0.0 |
| 134 | 116 | 826.5 | 0.4 | 2 | 6 | 819.0 | - | 0.0 | 821.6 | - | 0.0 | 824.4 | - | 0.0 | 818.8 | - | 0.0 |
| 120-1 | 118 | 829.5 | 0.5 | 4 | 12 | 824.1 | - | 0.0 | 824.4 | - | 0.0 | 828.9 | - | 0.0 | 823.7 | - | 0.0 |
| ***TW-BIO1*** | 120-3 | 976.5 | 4.8 | 1 | 3 | 972.6 | - | 0.0 | 973.7 | - | 0.0 | 977.2 | 0.7 | 0.0 | 972.6 | - | 0.0 |
| ***116-1*** | 121-1 | 831.3 | 0.7 | 1 | 3 | 823.2 | - | 0.0 | 823.6 | - | 0.0 | 828.3 | - | 0.0 | 822.9 | - | 0.0 |
| ***120*** | 122-1 | 830.0 | 0.3 | 1 | 3 | 823.3 | - | 0.0 | 823.7 | - | 0.0 | 828.3 | - | 0.0 | 823.3 | - | 0.0 |
| 121 | 123 | 828.4 | 0.6 | 2 | 6 | 823.0 | - | 0.0 | 824.1 | - | 0.0 | 827.4 | - | 0.0 | 822.9 | - | 0.0 |
| TW-127 | 125 | 979.5 | 2.7 | 3 | 9 | 975.1 | - | 0.0 | 976.5 | - | 0.0 | 979.0 | - | 0.0 | 975.2 | - | 0.0 |
| TW-127 | 126-3 | 979.6 | 2.7 | 3 | 9 | 975.4 | - | 0.0 | 977.0 | - | 0.0 | 979.8 | 0.2 | 0.0 | 975.5 | - | 0.0 |
| TW-127 | 128-3 | 979.5 | 2.7 | 3 | 9 | 976.4 | - | 0.0 | 977.8 | - | 0.0 | 979.9 | 0.4 | 0.0 | 975.6 | - | 0.0 |
| TW-103 | 131-3 | 986.5 | 23.3 | 4 | 12 | 986.5 | - | 0.0 | 986.5 | - | 0.0 | 986.6 | 0.1 | 0.0 | 986.5 | - | 0.0 |
| P-1 | 132 | 820.0 | 7.6 | 2 | 6 | 816.1 | - | 0.0 | 816.1 | - | 0.0 | 817.8 | - | 0.0 | 816.1 | - | 0.0 |
| TW-103 | 132-3 | 997.0 | 23.3 | 4 | 12 | 988.9 | - | 0.0 | 989.1 | - | 0.0 | 989.6 | - | 0.0 | 989.0 | - | 0.0 |
| ***P-1*** | 132-1 | 839.3 | 7.6 | 1 | 3 | 835.5 | - | 0.0 | 835.6 | - | 0.0 | 836.4 | - | 0.0 | 835.4 | - | 0.0 |
| 130 | 134F | 838.2 | 1.4 | 2 | 6 | 832.7 | - | 0.0 | 832.7 | - | 0.0 | 835.2 | - | 0.0 | 832.7 | - | 0.0 |
| ***136*** | 135 | 823.5 | 1.6 | 1 | 3 | 819.0 | - | 0.0 | 819.2 | - | 0.0 | 822.3 | - | 0.0 | 819.2 | - | 0.0 |
| ***138*** | 137 | 824.0 | 1.7 | 1 | 3 | 819.9 | - | 0.0 | 820.2 | - | 0.0 | 822.6 | - | 0.0 | 820.2 | - | 0.0 |
| ***140*** | 139 | 825.0 | 3.3 | 1 | 3 | 821.0 | - | 0.0 | 821.2 | - | 0.0 | 822.9 | - | 0.0 | 821.2 | - | 0.0 |
| Tewapa-Reuse-2 | 139-2 | 929.0 | 2.0 | 3 | 9 | 925.8 | - | 0.0 | 925.8 | - | 0.0 | 927.0 | - | 0.0 | 925.8 | - | 0.0 |
| 162 | 161 | 824.5 | 0.4 | 4 | 12 | 823.7 | - | 0.0 | 824.5 | - | 0.0 | 825.3 | 0.8 | 0.0 | 824.9 | 0.4 | 0.0 |
| 162 | 164 | 823.8 | 0.4 | 4 | 12 | 823.7 | - | 0.0 | 824.5 | 0.7 | 0.0 | 825.3 | 1.5 | 0.0 | 824.9 | 1.1 | 0.0 |
| 167 | 171 | 834.0 | 0.7 | 3 | 9 | 823.8 | - | 0.0 | 827.5 | - | 0.0 | 830.6 | - | 0.0 | 824.9 | - | 0.0 |
| 1-BR-03 | 1-BR-02 | 831.6 | 1.5 | 2 | 6 | 823.8 | - | 0.0 | 825.0 | - | 0.0 | 832.8 | 1.2 | 0.0 | 823.6 | - | 0.0 |
| ***1-BR-P03*** | 1-BR-08 | 837.7 | 12.9 | 1 | 3 | 834.6 | - | 0.0 | 835.2 | - | 0.0 | 836.9 | - | 0.0 | 834.4 | - | 0.0 |
| ***1-BR-P07*** | 1-BR-09 | 874.0 | 53.9 | 1 | 3 | 875.5 | 1.5 | 0.0 | 876.3 | 2.3 | 0.0 | 877.7 | 3.7 | 0.0 | 875.8 | 1.8 | 0.0 |
| 1-DC-P11FB | 1-DC-10A | 816.0 | 12.4 | 2 | 6 | 814.3 | - | 0.0 | 814.9 | - | 0.0 | 816.5 | 0.5 | 0.0 | 814.4 | - | 0.0 |
| 1-DC-P11FB | 1-DC-10B | 816.0 | 12.4 | 2 | 6 | 812.9 | - | 0.0 | 814.9 | - | 0.0 | 816.5 | 0.5 | 0.0 | 814.4 | - | 0.0 |
| 1-DC-P12FB | 1-DC-11A | 818.0 | 17.5 | 3 | 9 | 815.6 | - | 0.0 | 815.6 | - | 0.0 | 817.1 | - | 0.0 | 815.6 | - | 0.0 |
| 1-DC-P12FB | 1-DC-11B | 818.0 | 17.5 | 3 | 9 | 814.5 | - | 0.0 | 815.4 | - | 0.0 | 816.7 | - | 0.0 | 815.0 | - | 0.0 |
| P-08 | 1-DC-12 | 813.5 | 143.3 | 2 | 6 | 814.3 | 0.7 | 0.0 | 814.9 | 1.4 | 0.0 | 816.5 | 3.0 | 0.0 | 814.4 | 0.9 | 0.0 |
| P-08 | 1-DC-13 | 813.4 | 143.3 | 2 | 6 | 814.3 | 0.8 | 0.0 | 814.9 | 1.5 | 0.0 | 816.5 | 3.1 | 0.0 | 814.4 | 1.0 | 0.0 |
| 1-DC-P12FB | 1-DC-14 | 838.0 | 17.5 | 3 | 9 | 838.4 | 0.4 | 0.0 | 838.4 | 0.4 | 0.0 | 838.5 | 0.5 | 0.0 | 838.4 | 0.4 | 0.0 |
| 1-EV-1A | 1-EV-1 | 820.0 | 2.9 | 2 | 6 | 810.5 | - | 0.0 | 811.0 | - | 0.0 | 813.4 | - | 0.0 | 810.7 | - | 0.0 |
| 1-EV-104 | 1-EV-100 | 828.0 | 6.2 | 3 | 9 | 818.6 | - | 0.0 | 820.0 | - | 0.0 | 826.5 | - | 0.0 | 819.3 | - | 0.0 |
| 1-PLD-P01 | 1-EV-101 | 802.9 | 96.2 | 2 | 6 | 804.2 | 1.3 | 0.0 | 804.8 | 1.9 | 0.0 | 805.6 | 2.7 | 0.0 | 804.8 | 1.9 | 0.0 |
| 1-EV-104 | 1-EV-102 | 829.0 | 6.2 | 3 | 9 | 820.2 | - | 0.0 | 822.2 | - | 0.0 | 827.4 | - | 0.0 | 821.1 | - | 0.0 |
| 1-PLD-P01 | 1-EV-103 | 804.0 | 96.2 | 2 | 6 | 805.8 | 1.8 | 0.0 | 806.6 | 2.6 | 0.0 | 807.9 | 3.9 | 0.0 | 806.6 | 2.6 | 0.0 |
| 1-EV-P10 | 1-EV-110 | 811.0 | 7.2 | 2 | 6 | 807.3 | - | 0.0 | 807.7 | - | 0.0 | 811.8 | 0.8 | 0.0 | 808.5 | - | 0.0 |
| 1-EV-20 | 1-EV-26 | 812.7 | 2.5 | 3 | 9 | 807.8 | - | 0.0 | 809.1 | - | 0.0 | 811.8 | - | 0.0 | 809.2 | - | 0.0 |
| 1-EV-P13 | 1-EV-29 | 814.0 | 21.6 | 3 | 9 | 807.9 | - | 0.0 | 809.1 | - | 0.0 | 811.8 | - | 0.0 | 809.2 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 1-EV-P13 | 1-EV-31 | 816.0 | 21.6 | 3 | 9 | 809.6 | - | 0.0 | 810.5 | - | 0.0 | 814.4 | - | 0.0 | 809.3 | - | 0.0 |
| ***1-EV-32P*** | 1-EV-32 | 814.5 | 2.0 | 1 | 3 | 810.3 | - | 0.0 | 811.2 | - | 0.0 | 815.1 | 0.6 | 0.0 | 810.0 | - | 0.0 |
| 1-EV-40 | 1-EV-41 | 818.0 | 1.3 | 3 | 9 | 812.0 | - | 0.0 | 812.4 | - | 0.0 | 817.8 | - | 0.0 | 811.8 | - | 0.0 |
| 1-EV-40 | 1-EV-42 | 819.0 | 1.3 | 3 | 9 | 812.3 | - | 0.0 | 813.0 | - | 0.0 | 818.3 | - | 0.0 | 812.1 | - | 0.0 |
| 1-EV-P01 | 1-EV-50 | 815.6 | 13.2 | 4 | 12 | 808.8 | - | 0.0 | 810.7 | - | 0.0 | 812.5 | - | 0.0 | 809.8 | - | 0.0 |
| 1-EV-52 | 1-EV-53 | 821.0 | 5.9 | 2 | 6 | 810.8 | - | 0.0 | 813.0 | - | 0.0 | 816.9 | - | 0.0 | 811.8 | - | 0.0 |
| 1-EV-54 | 1-EV-55 | 828.0 | 3.6 | 3 | 9 | 814.8 | - | 0.0 | 816.5 | - | 0.0 | 823.1 | - | 0.0 | 815.6 | - | 0.0 |
| 1-EV-56 | 1-EV-57 | 830.0 | 0.7 | 3 | 9 | 816.7 | - | 0.0 | 818.5 | - | 0.0 | 827.6 | - | 0.0 | 817.3 | - | 0.0 |
| 1-EV-56 | 1-EV-60 | 835.1 | 0.7 | 3 | 9 | 822.8 | - | 0.0 | 823.5 | - | 0.0 | 830.1 | - | 0.0 | 822.9 | - | 0.0 |
| 1-EV-62 | 1-EV-64 | 856.0 | 1.8 | 3 | 9 | 847.1 | - | 0.0 | 847.3 | - | 0.0 | 851.9 | - | 0.0 | 847.2 | - | 0.0 |
| 1-EV-62 | 1-EV-65 | 863.0 | 1.8 | 3 | 9 | 854.7 | - | 0.0 | 855.0 | - | 0.0 | 860.3 | - | 0.0 | 854.8 | - | 0.0 |
| CB143 | 1-EV-68 | 875.0 | 12.6 | 3 | 9 | 867.8 | - | 0.0 | 867.8 | - | 0.0 | 867.8 | - | 0.0 | 867.8 | - | 0.0 |
| 1-EV-P11 | 1-EV-77 | 852.3 | 7.2 | 6 | 18 | 848.4 | - | 0.0 | 849.3 | - | 0.0 | 850.6 | - | 0.0 | 847.8 | - | 0.0 |
| 1-EV-P11 | 1-EV-78 | 857.0 | 7.2 | 6 | 18 | 850.6 | - | 0.0 | 851.7 | - | 0.0 | 856.0 | - | 0.0 | 850.4 | - | 0.0 |
| 1-EV-P11 | 1-EV-79 | 862.0 | 7.2 | 6 | 18 | 852.4 | - | 0.0 | 853.3 | - | 0.0 | 859.3 | - | 0.0 | 852.1 | - | 0.0 |
| 1-EV-81 | 1-EV-80 | 874.0 | 2.2 | 2 | 6 | 864.8 | - | 0.0 | 865.2 | - | 0.0 | 873.0 | - | 0.0 | 864.7 | - | 0.0 |
| 1-EV-P11 | 1-EV-90 | 846.9 | 7.2 | 6 | 18 | 847.5 | 0.6 | 0.0 | 848.1 | 1.2 | 0.0 | 848.5 | 1.6 | 0.0 | 847.4 | 0.5 | 0.0 |
| 20172 | 1-PLD-01 | 793.5 | 126.3 | 7 | 21 | 794.7 | 1.2 | 0.0 | 795.3 | 1.8 | 0.0 | 798.6 | 5.1 | 0.0 | 795.4 | 1.9 | 0.0 |
| 20172 | 1-PLD-02 | 791.5 | 126.3 | 7 | 21 | 793.1 | 1.6 | 0.0 | 794.1 | 2.6 | 0.0 | 798.6 | 7.1 | 0.0 | 794.2 | 2.7 | 0.0 |
| 17064 | 1-PLD-04 | 801.0 | 18.4 | 2 | 6 | 801.3 | 0.3 | 0.0 | 801.5 | 0.5 | 0.0 | 801.9 | 0.9 | 0.0 | 801.7 | 0.7 | 0.0 |
| ***1-PLD-P03*** | 1-PLD-10 | 818.5 | 38.4 | 1 | 3 | 819.5 | 1.0 | 0.0 | 819.8 | 1.3 | 0.0 | 820.7 | 2.2 | 0.0 | 820.1 | 1.6 | 0.0 |
| 20172 | 1-PLD-11 | 786.7 | 126.3 | 7 | 21 | 788.9 | 2.2 | 0.0 | 789.9 | 3.2 | 0.0 | 798.5 | 11.8 | 0.0 | 789.9 | 3.2 | 0.0 |
| 2-DC-08 | 2-DC-01 | 914.0 | 241.1 | 50 | 150 | 914.3 | 0.3 | 0.0 | 914.4 | 0.4 | 0.0 | 914.6 | 0.6 | 0.0 | 914.3 | 0.3 | 0.0 |
| 2-DC-08 | 2-DC-02 | 900.8 | 241.1 | 50 | 150 | 901.1 | 0.3 | 0.0 | 901.4 | 0.7 | 0.0 | 902.0 | 1.3 | 0.0 | 901.3 | 0.5 | 0.0 |
| 2-DC-08 | 2-DC-03 | 887.4 | 241.1 | 50 | 150 | 888.2 | 0.8 | 0.0 | 888.5 | 1.2 | 0.0 | 889.1 | 1.8 | 0.0 | 888.3 | 0.9 | 0.0 |
| 2-DC-08 | 2-DC-04-1 | 915.9 | 241.1 | 50 | 150 | 916.6 | 0.7 | 0.0 | 917.0 | 1.1 | 0.0 | 917.6 | 1.7 | 0.0 | 916.8 | 0.9 | 0.0 |
| 2-DC-08 | 2-DC-04C | 906.2 | 241.1 | 50 | 150 | 907.0 | 0.8 | 0.0 | 907.3 | 1.1 | 0.0 | 908.0 | 1.8 | 0.0 | 907.0 | 0.8 | 0.0 |
| 2-DC-08 | 2-DC-05 | 903.5 | 241.1 | 50 | 150 | 904.2 | 0.6 | 0.0 | 904.4 | 0.9 | 0.0 | 904.8 | 1.2 | 0.0 | 904.2 | 0.7 | 0.0 |
| 2-DC-08 | 2-DC-07 | 892.3 | 241.1 | 50 | 150 | 893.6 | 1.3 | 0.0 | 894.1 | 1.8 | 0.0 | 895.0 | 2.7 | 0.0 | 893.7 | 1.4 | 0.0 |
| 2-DC-08 | 2-DC-08B | 861.6 | 241.1 | 50 | 150 | 863.2 | 1.6 | 0.0 | 864.0 | 2.4 | 0.0 | 865.2 | 3.6 | 0.0 | 863.5 | 1.9 | 0.0 |
| ***2-DC-P11*** | 2-DC-10 | 851.0 | 62.4 | 1 | 3 | 853.2 | 2.2 | 0.0 | 853.4 | 2.4 | 0.0 | 853.9 | 2.9 | 0.0 | 853.4 | 2.4 | 0.0 |
| ***2-DC-P04*** | 2-DC-13 | 873.0 | 108.8 | 1 | 3 | 873.3 | 0.3 | 0.0 | 873.6 | 0.6 | 0.0 | 874.3 | 1.3 | 0.0 | 873.4 | 0.4 | 0.0 |
| ***2-DC-P14*** | 2-DC-15 | 909.0 | 45.6 | 1 | 3 | 909.9 | 0.9 | 0.0 | 910.4 | 1.4 | 0.0 | 910.9 | 1.9 | 0.0 | 910.3 | 1.3 | 0.0 |
| 2-DC-08 | 2-DC-16 | 922.7 | 241.1 | 50 | 150 | 925.1 | 2.4 | 0.0 | 925.9 | 3.2 | 0.0 | 927.2 | 4.5 | 0.0 | 925.4 | 2.7 | 0.0 |
| 2-DC-08 | 2-DC-16B | 921.6 | 241.1 | 50 | 150 | 923.0 | 1.4 | 0.0 | 923.5 | 1.9 | 0.0 | 924.6 | 3.0 | 0.0 | 923.2 | 1.6 | 0.0 |
| 2-DC-08 | 2-DC-16C | 890.4 | 241.1 | 50 | 150 | 890.9 | 0.4 | 0.0 | 891.1 | 0.7 | 0.0 | 891.5 | 1.0 | 0.0 | 891.0 | 0.5 | 0.0 |
| 2-DC-08 | 2-DC-4B | 908.5 | 241.1 | 50 | 150 | 910.0 | 1.4 | 0.0 | 910.5 | 1.9 | 0.0 | 911.3 | 2.7 | 0.0 | 910.1 | 1.6 | 0.0 |
| 2 | 3 | 970.3 | 1.5 | 7 | 21 | 958.6 | - | 0.0 | 959.9 | - | 0.0 | 968.0 | - | 0.0 | 959.6 | - | 0.0 |
| 43 | 8 | 968.5 | 0.2 | 2 | 6 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| 3C | 3B | 969.9 | 0.2 | 3 | 9 | 966.4 | - | 0.0 | 966.6 | - | 0.0 | 968.9 | - | 0.0 | 966.0 | - | 0.0 |
| 3-DP-05 | 3-DP-02 | 936.2 | 2.7 | 5 | 15 | 931.0 | - | 0.0 | 931.4 | - | 0.0 | 933.1 | - | 0.0 | 930.6 | - | 0.0 |
| 3-DP-05 | 3-DP-03 | 936.0 | 2.7 | 5 | 15 | 930.1 | - | 0.0 | 930.4 | - | 0.0 | 931.2 | - | 0.0 | 929.8 | - | 0.0 |
| 3-DP-05 | 3-DP-04 | 932.9 | 2.7 | 5 | 15 | 929.0 | - | 0.0 | 929.2 | - | 0.0 | 930.0 | - | 0.0 | 928.7 | - | 0.0 |
| 3-DP-08 | 3-DP-06 | 931.0 | 0.8 | 2 | 6 | 921.5 | - | 0.0 | 922.2 | - | 0.0 | 926.7 | - | 0.0 | 923.0 | - | 0.0 |
| 3-DP-08 | 3-DP-07 | 929.0 | 0.8 | 2 | 6 | 921.5 | - | 0.0 | 922.2 | - | 0.0 | 926.0 | - | 0.0 | 923.0 | - | 0.0 |
| 3-DP-09 | 3-DP-10 | 925.3 | 1.0 | 4 | 12 | 921.5 | - | 0.0 | 922.2 | - | 0.0 | 923.9 | - | 0.0 | 923.0 | - | 0.0 |
| ***3-DP-P01*** | 3-DP-11 | 925.9 | 52.7 | 1 | 3 | 921.5 | - | 0.0 | 922.2 | - | 0.0 | 923.7 | - | 0.0 | 923.0 | - | 0.0 |
| 3-PUBW-P02 | 3-PUBW-01 | 920.0 | 1.1 | 2 | 6 | 917.2 | - | 0.0 | 917.8 | - | 0.0 | 919.0 | - | 0.0 | 917.0 | - | 0.0 |
| 3-PUBW-04 | 3-PUBW-03 | 931.0 | 1.6 | 2 | 6 | 923.3 | - | 0.0 | 923.6 | - | 0.0 | 929.2 | - | 0.0 | 922.7 | - | 0.0 |
| 3-PUBW-P02 | 3-PUBW-05 | 926.0 | 1.1 | 2 | 6 | 917.6 | - | 0.0 | 918.5 | - | 0.0 | 921.0 | - | 0.0 | 917.2 | - | 0.0 |
| 3-PUBW-06 | 3-PUBW-08 | 928.0 | 1.0 | 6 | 18 | 917.7 | - | 0.0 | 918.5 | - | 0.0 | 921.1 | - | 0.0 | 917.2 | - | 0.0 |
| 3-PUBW-06 | 3-PUBW-09 | 928.0 | 1.0 | 6 | 18 | 917.7 | - | 0.0 | 918.5 | - | 0.0 | 921.1 | - | 0.0 | 917.2 | - | 0.0 |
| 3-PUBW-06 | 3-PUBW-10 | 929.6 | 1.0 | 6 | 18 | 926.0 | - | 0.0 | 926.1 | - | 0.0 | 926.7 | - | 0.0 | 925.7 | - | 0.0 |
| 3-PUBW-15 | 3-PUBW-13 | 930.0 | 0.5 | 2 | 6 | 923.3 | - | 0.0 | 926.0 | - | 0.0 | 930.2 | 0.2 | 0.0 | 923.0 | - | 0.0 |
| 3-PUBW-16 | 3-PUBW-17 | 925.4 | 0.4 | 2 | 6 | 921.5 | - | 0.0 | 922.2 | - | 0.0 | 924.6 | - | 0.0 | 923.0 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***SR-02*** | 50-4 | 984.0 | 13.8 | 1 | 3 | 984.0 | - | 0.0 | 984.0 | - | 0.0 | 984.0 | - | 0.0 | 984.0 | - | 0.0 |
| CB-104 | 51 | 974.0 | 0.9 | 3 | 9 | 971.6 | - | 0.0 | 971.6 | - | 0.0 | 972.3 | - | 0.0 | 971.6 | - | 0.0 |
| 35 | 53 | 819.4 | 0.5 | 2 | 6 | 814.6 | - | 0.0 | 815.9 | - | 0.0 | 817.8 | - | 0.0 | 813.5 | - | 0.0 |
| ***92A*** | 92 | 822.1 | 1.1 | 1 | 3 | 818.1 | - | 0.0 | 818.3 | - | 0.0 | 820.7 | - | 0.0 | 818.0 | - | 0.0 |
| 206 | 203 | 980.6 | 0.3 | 2 | 6 | 968.3 | - | 0.0 | 968.3 | - | 0.0 | 968.3 | - | 0.0 | 968.3 | - | 0.0 |
| 204 | 213 | 993.1 | 0.1 | 3 | 9 | 987.1 | - | 0.0 | 987.1 | - | 0.0 | 987.1 | - | 0.0 | 987.1 | - | 0.0 |
| P-34 | 226 | 848.5 | 127.3 | 253 | 759 | 839.5 | - | 0.0 | 840.3 | - | 0.0 | 840.3 | - | 0.0 | 840.2 | - | 0.0 |
| 220 | 227 | 1021.5 | 0.2 | 2 | 6 | 1015.8 | - | 0.0 | 1015.8 | - | 0.0 | 1015.8 | - | 0.0 | 1015.8 | - | 0.0 |
| P-34 | 258 | 825.8 | 127.3 | 253 | 759 | 821.2 | - | 0.0 | 821.2 | - | 0.0 | 826.3 | 0.5 | 0.0 | 821.2 | - | 0.0 |
| P-34 | 272 | 836.5 | 127.3 | 253 | 759 | 820.6 | - | 0.0 | 820.8 | - | 0.0 | 826.3 | - | 0.0 | 820.6 | - | 0.0 |
| P-34 | 275 | 827.3 | 127.3 | 253 | 759 | 819.5 | - | 0.0 | 820.3 | - | 0.0 | 826.3 | - | 0.0 | 820.4 | - | 0.0 |
| P-34 | 291 | 829.0 | 127.3 | 253 | 759 | 825.0 | - | 0.0 | 825.0 | - | 0.0 | 826.3 | - | 0.0 | 825.0 | - | 0.0 |
| P-34 | 292 | 829.6 | 127.3 | 253 | 759 | 825.6 | - | 0.0 | 825.6 | - | 0.0 | 826.3 | - | 0.0 | 825.6 | - | 0.0 |
| ***EP-S8*** | 300 | 969.6 | 1.1 | 1 | 3 | 958.6 | - | 0.0 | 959.8 | - | 0.0 | 965.3 | - | 0.0 | 959.6 | - | 0.0 |
| 302 | 303 | 966.8 | 0.2 | 3 | 9 | 966.7 | - | 0.0 | 966.8 | - | 0.0 | 966.9 | - | 0.0 | 966.8 | - | 0.0 |
| 306 | 305 | 969.3 | 0.2 | 2 | 6 | 969.3 | - | 0.0 | 969.4 | - | 0.0 | 969.5 | 0.2 | 0.0 | 969.4 | 0.1 | 0.0 |
| 308-309-310 | 308 | 965.2 | 0.3 | 5 | 15 | 959.6 | - | 0.0 | 959.6 | - | 0.0 | 959.6 | - | 0.0 | 959.6 | - | 0.0 |
| 308-309-310 | 310 | 965.2 | 0.3 | 5 | 15 | 960.2 | - | 0.0 | 960.2 | - | 0.0 | 960.2 | - | 0.0 | 960.2 | - | 0.0 |
| 315-316-319 | 314 | 965.9 | 0.5 | 6 | 18 | 959.9 | - | 0.0 | 959.9 | - | 0.0 | 959.9 | - | 0.0 | 959.9 | - | 0.0 |
| 315-316-319 | 316 | 965.1 | 0.5 | 6 | 18 | 960.7 | - | 0.0 | 960.7 | - | 0.0 | 960.7 | - | 0.0 | 960.7 | - | 0.0 |
| 315-316-319 | 319 | 965.1 | 0.5 | 6 | 18 | 960.7 | - | 0.0 | 960.7 | - | 0.0 | 960.7 | - | 0.0 | 960.7 | - | 0.0 |
| 313 | 322 | 967.3 | 0.1 | 3 | 9 | 963.1 | - | 0.0 | 963.1 | - | 0.0 | 963.1 | - | 0.0 | 963.1 | - | 0.0 |
| 325 | 324 | 970.1 | 0.1 | 2 | 6 | 969.3 | - | 0.0 | 969.4 | - | 0.0 | 969.5 | - | 0.0 | 969.4 | - | 0.0 |
| 408-409-410 | 408 | 964.8 | 0.3 | 7 | 21 | 959.3 | - | 0.0 | 959.3 | - | 0.0 | 959.3 | - | 0.0 | 959.3 | - | 0.0 |
| 408-409-410 | 410 | 964.8 | 0.3 | 7 | 21 | 959.6 | - | 0.0 | 959.6 | - | 0.0 | 959.6 | - | 0.0 | 959.6 | - | 0.0 |
| 408-409-410 | 411 | 965.4 | 0.3 | 7 | 21 | 961.4 | - | 0.0 | 961.4 | - | 0.0 | 961.4 | - | 0.0 | 961.4 | - | 0.0 |
| 408-409-410 | 412 | 965.4 | 0.3 | 7 | 21 | 959.4 | - | 0.0 | 959.4 | - | 0.0 | 959.4 | - | 0.0 | 959.4 | - | 0.0 |
| 413-414-415 | 414 | 964.5 | 0.5 | 5 | 15 | 960.5 | - | 0.0 | 960.5 | - | 0.0 | 960.5 | - | 0.0 | 960.5 | - | 0.0 |
| 413-414-415 | 415 | 964.5 | 0.5 | 5 | 15 | 960.5 | - | 0.0 | 960.5 | - | 0.0 | 960.5 | - | 0.0 | 960.5 | - | 0.0 |
| 502-503 | 503 | 963.6 | 0.4 | 3 | 9 | 957.4 | - | 0.0 | 957.4 | - | 0.0 | 957.4 | - | 0.0 | 957.4 | - | 0.0 |
| ***511*** | 527 | 963.6 | 0.6 | 1 | 3 | 958.0 | - | 0.0 | 958.0 | - | 0.0 | 958.0 | - | 0.0 | 958.0 | - | 0.0 |
| 511 | 529 | 967.4 | 0.6 | 2 | 6 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| MH-363 | 609 | 973.0 | 0.5 | 4 | 12 | 968.1 | - | 0.0 | 968.1 | - | 0.0 | 968.1 | - | 0.0 | 968.1 | - | 0.0 |
| 614 | 613 | 975.4 | 0.3 | 3 | 9 | 969.7 | - | 0.0 | 969.7 | - | 0.0 | 969.7 | - | 0.0 | 969.7 | - | 0.0 |
| MH-255 | 621A | 976.0 | 0.3 | 10 | 30 | 974.9 | - | 0.0 | 975.9 | - | 0.0 | 976.5 | 0.5 | 0.0 | 975.2 | - | 0.0 |
| MH-255 | 624 | 976.5 | 0.3 | 10 | 30 | 974.9 | - | 0.0 | 975.9 | - | 0.0 | 976.5 | - | 0.0 | 975.2 | - | 0.0 |
| 636A | 626 | 978.3 | 0.1 | 3 | 9 | 976.7 | - | 0.0 | 976.9 | - | 0.0 | 977.2 | - | 0.0 | 977.1 | - | 0.0 |
| 634-635 | 627 | 977.2 | 0.2 | 5 | 15 | 976.7 | - | 0.0 | 976.9 | - | 0.0 | 977.2 | - | 0.0 | 977.1 | - | 0.0 |
| 629-630-631-632-633 | 629 | 976.3 | 1.1 | 3 | 9 | 976.7 | 0.4 | 0.0 | 976.9 | 0.6 | 0.0 | 977.2 | 0.9 | 0.0 | 977.1 | 0.8 | 0.0 |
| ***CH-21*** | 646A | 980.0 | 0.3 | 1 | 3 | 969.1 | - | 0.0 | 969.1 | - | 0.0 | 969.1 | - | 0.0 | 969.1 | - | 0.0 |
| 642 | 647A | 978.5 | 0.1 | 3 | 9 | 969.5 | - | 0.0 | 969.5 | - | 0.0 | 969.5 | - | 0.0 | 969.5 | - | 0.0 |
| 642 | 648A | 978.6 | 0.1 | 3 | 9 | 969.8 | - | 0.0 | 969.8 | - | 0.0 | 969.8 | - | 0.0 | 969.8 | - | 0.0 |
| 695 | 671 | 986.2 | 0.4 | 4 | 12 | 980.4 | - | 0.0 | 980.5 | - | 0.0 | 980.8 | - | 0.0 | 980.4 | - | 0.0 |
| 674 | 675 | 994.5 | 0.8 | 3 | 9 | 990.5 | - | 0.0 | 990.5 | - | 0.0 | 990.5 | - | 0.0 | 990.5 | - | 0.0 |
| PG-12 | 680 | 975.0 | 0.1 | 3 | 9 | 974.6 | - | 0.0 | 974.9 | - | 0.0 | 975.3 | 0.3 | 0.0 | 975.2 | 0.2 | 0.0 |
| 688 | 689 | 980.0 | 0.4 | 8 | 24 | 975.3 | - | 0.0 | 976.6 | - | 0.0 | 978.5 | - | 0.0 | 975.2 | - | 0.0 |
| 688 | 690 | 982.0 | 0.4 | 8 | 24 | 975.4 | - | 0.0 | 976.9 | - | 0.0 | 979.4 | - | 0.0 | 975.2 | - | 0.0 |
| 688 | 691 | 982.0 | 0.4 | 8 | 24 | 975.5 | - | 0.0 | 977.0 | - | 0.0 | 979.7 | - | 0.0 | 975.2 | - | 0.0 |
| 688 | 692 | 985.0 | 0.4 | 8 | 24 | 975.5 | - | 0.0 | 977.1 | - | 0.0 | 980.2 | - | 0.0 | 975.2 | - | 0.0 |
| 688 | 693 | 985.0 | 0.4 | 8 | 24 | 975.6 | - | 0.0 | 977.2 | - | 0.0 | 980.5 | - | 0.0 | 975.2 | - | 0.0 |
| 695 | 694 | 986.0 | 0.4 | 4 | 12 | 975.6 | - | 0.0 | 977.3 | - | 0.0 | 980.7 | - | 0.0 | 975.2 | - | 0.0 |
| PG-07 | 697 | 974.0 | 0.1 | 3 | 9 | 974.6 | 0.6 | 0.0 | 974.9 | 0.9 | 0.0 | 975.3 | 1.3 | 0.0 | 975.2 | 1.2 | 0.0 |
| 45 | 700 | 963.2 | 0.5 | 3 | 9 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 961.0 | - | 0.0 | 959.6 | - | 0.0 |
| PP-06 | 702A | 970.0 | 2.9 | 6 | 18 | 963.0 | - | 0.0 | 963.0 | - | 0.0 | 963.0 | - | 0.0 | 963.0 | - | 0.0 |
| PP-06 | 702B | 970.0 | 2.9 | 6 | 18 | 963.9 | - | 0.0 | 963.9 | - | 0.0 | 963.9 | - | 0.0 | 963.9 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| DL-703 | 704 | 968.6 | 0.8 | 2 | 6 | 958.6 | - | 0.0 | 960.2 | - | 0.0 | 966.0 | - | 0.0 | 959.6 | - | 0.0 |
| PP-06 | 705A | 970.0 | 2.9 | 6 | 18 | 964.0 | - | 0.0 | 964.0 | - | 0.0 | 964.0 | - | 0.0 | 964.0 | - | 0.0 |
| PP-06 | 705B | 970.0 | 2.9 | 6 | 18 | 964.0 | - | 0.0 | 964.0 | - | 0.0 | 964.0 | - | 0.0 | 964.0 | - | 0.0 |
| 719 | 708A | 968.4 | 0.7 | 2 | 6 | 960.2 | - | 0.0 | 961.1 | - | 0.0 | 966.9 | - | 0.0 | 959.6 | - | 0.0 |
| 709 | 710Z | 969.7 | 0.8 | 8 | 24 | 963.7 | - | 0.0 | 963.9 | - | 0.0 | 966.7 | - | 0.0 | 963.2 | - | 0.0 |
| 709 | 711Z | 969.9 | 0.8 | 8 | 24 | 963.5 | - | 0.0 | 963.7 | - | 0.0 | 966.8 | - | 0.0 | 963.0 | - | 0.0 |
| 717Z | 712A | 968.3 | 0.4 | 2 | 6 | 960.8 | - | 0.0 | 961.4 | - | 0.0 | 966.9 | - | 0.0 | 959.9 | - | 0.0 |
| 718 | 713Z | 969.5 | 0.1 | 2 | 6 | 963.1 | - | 0.0 | 963.3 | - | 0.0 | 967.6 | - | 0.0 | 962.7 | - | 0.0 |
| LS-25 | 735 | 964.9 | 2.2 | 4 | 12 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| PP-10 | 736 | 965.8 | 3.0 | 3 | 9 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| PP-03 | 760 | 958.0 | 1.8 | 5 | 15 | 958.6 | 0.6 | 0.0 | 959.0 | 1.0 | 0.0 | 960.0 | 2.0 | 0.0 | 959.6 | 1.6 | 0.0 |
| P-34 | 765 | 832.7 | 127.3 | 253 | 759 | 822.1 | - | 0.0 | 822.1 | - | 0.0 | 826.3 | - | 0.0 | 822.1 | - | 0.0 |
| P-34 | 768 | 825.0 | 127.3 | 253 | 759 | 821.0 | - | 0.0 | 821.0 | - | 0.0 | 826.3 | 1.3 | 0.0 | 821.0 | - | 0.0 |
| DP-23 | 902 | 962.3 | 0.4 | 2 | 6 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| 302 | 903 | 968.8 | 0.2 | 3 | 9 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| 304 | 904 | 968.0 | 0.4 | 2 | 6 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| MysticLake | 909 | 970.5 | 201.2 | 2 | 6 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| WinterberryLn | 932 | 821.0 | 58.4 | 169 | 507 | 816.4 | - | 0.0 | 818.2 | - | 0.0 | 823.6 | 2.6 | 0.0 | 819.1 | - | 0.0 |
| WinterberryLn | 933 | 826.7 | 58.4 | 169 | 507 | 815.6 | - | 0.0 | 817.5 | - | 0.0 | 822.6 | - | 0.0 | 819.1 | - | 0.0 |
| WhitetailDR | 1515 | 820.0 | 4.9 | 6 | 18 | 815.1 | - | 0.0 | 817.5 | - | 0.0 | 821.3 | 1.3 | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 1713 | 820.3 | 58.4 | 169 | 507 | 811.6 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | 1.1 | 0.0 | 819.0 | - | 0.0 |
| WhitetailDR | 1714 | 820.2 | 4.9 | 6 | 18 | 811.3 | - | 0.0 | 817.5 | - | 0.0 | 821.3 | 1.2 | 0.0 | 819.0 | - | 0.0 |
| WhitetailDR | 1715 | 819.7 | 4.9 | 6 | 18 | 811.3 | - | 0.0 | 817.5 | - | 0.0 | 821.3 | 1.6 | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 1716 | 829.9 | 58.4 | 169 | 507 | 824.6 | - | 0.0 | 824.6 | - | 0.0 | 824.6 | - | 0.0 | 824.6 | - | 0.0 |
| WhitetailDR | 1718 | 817.5 | 4.9 | 6 | 18 | 810.9 | - | 0.0 | 817.5 | - | 0.0 | 821.3 | 3.8 | 0.0 | 819.0 | 1.5 | 0.0 |
| P-34 | 4184 | 849.8 | 127.3 | 253 | 759 | 845.8 | - | 0.0 | 845.8 | - | 0.0 | 845.8 | - | 0.0 | 845.8 | - | 0.0 |
| P-34 | 4185 | 844.8 | 127.3 | 253 | 759 | 840.8 | - | 0.0 | 840.8 | - | 0.0 | 840.8 | - | 0.0 | 840.8 | - | 0.0 |
| P-34 | 4187 | 843.4 | 127.3 | 253 | 759 | 839.4 | - | 0.0 | 839.4 | - | 0.0 | 839.4 | - | 0.0 | 839.4 | - | 0.0 |
| P-34 | 4190 | 838.3 | 127.3 | 253 | 759 | 834.3 | - | 0.0 | 834.3 | - | 0.0 | 834.3 | - | 0.0 | 834.3 | - | 0.0 |
| P-34 | 4193 | 836.9 | 127.3 | 253 | 759 | 832.9 | - | 0.0 | 832.9 | - | 0.0 | 832.9 | - | 0.0 | 832.9 | - | 0.0 |
| P-34 | 4199 | 840.7 | 127.3 | 253 | 759 | 836.7 | - | 0.0 | 836.7 | - | 0.0 | 836.7 | - | 0.0 | 836.7 | - | 0.0 |
| P-34 | 4202 | 837.5 | 127.3 | 253 | 759 | 833.5 | - | 0.0 | 833.5 | - | 0.0 | 833.5 | - | 0.0 | 833.5 | - | 0.0 |
| P-34 | 4228 | 825.1 | 127.3 | 253 | 759 | 821.1 | - | 0.0 | 821.1 | - | 0.0 | 826.3 | 1.2 | 0.0 | 821.1 | - | 0.0 |
| P-34 | 4229 | 840.5 | 127.3 | 253 | 759 | 836.5 | - | 0.0 | 836.5 | - | 0.0 | 836.5 | - | 0.0 | 836.5 | - | 0.0 |
| P-34 | 4313 | 832.1 | 127.3 | 253 | 759 | 828.1 | - | 0.0 | 828.1 | - | 0.0 | 828.1 | - | 0.0 | 828.1 | - | 0.0 |
| WinterberryLn | 4996 | 823.8 | 58.4 | 169 | 507 | 819.8 | - | 0.0 | 819.8 | - | 0.0 | 821.4 | - | 0.0 | 819.8 | - | 0.0 |
| WinterberryLn | 4999 | 821.0 | 58.4 | 169 | 507 | 817.0 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | 0.5 | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 5001 | 829.7 | 58.4 | 169 | 507 | 825.7 | - | 0.0 | 825.7 | - | 0.0 | 825.7 | - | 0.0 | 825.7 | - | 0.0 |
| WinterberryLn | 5002 | 831.8 | 58.4 | 169 | 507 | 827.8 | - | 0.0 | 827.8 | - | 0.0 | 827.8 | - | 0.0 | 827.8 | - | 0.0 |
| WinterberryLn | 5004 | 827.1 | 58.4 | 169 | 507 | 820.1 | - | 0.0 | 820.1 | - | 0.0 | 821.4 | - | 0.0 | 820.1 | - | 0.0 |
| P-34 | 5163 | 849.1 | 127.3 | 253 | 759 | 843.5 | - | 0.0 | 844.8 | - | 0.0 | 845.0 | - | 0.0 | 844.7 | - | 0.0 |
| WinterberryLn | 5182 | 827.5 | 58.4 | 169 | 507 | 818.7 | - | 0.0 | 818.7 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 5420 | 836.7 | 58.4 | 169 | 507 | 832.7 | - | 0.0 | 832.7 | - | 0.0 | 832.7 | - | 0.0 | 832.7 | - | 0.0 |
| WinterberryLn | 5425 | 838.6 | 58.4 | 169 | 507 | 834.6 | - | 0.0 | 834.6 | - | 0.0 | 834.6 | - | 0.0 | 834.6 | - | 0.0 |
| WinterberryLn | 5427 | 828.5 | 58.4 | 169 | 507 | 824.5 | - | 0.0 | 824.5 | - | 0.0 | 824.5 | - | 0.0 | 824.5 | - | 0.0 |
| WinterberryLn | 5429 | 833.0 | 58.4 | 169 | 507 | 827.6 | - | 0.0 | 827.6 | - | 0.0 | 827.6 | - | 0.0 | 827.6 | - | 0.0 |
| WinterberryLn | 5430 | 830.6 | 58.4 | 169 | 507 | 824.9 | - | 0.0 | 824.9 | - | 0.0 | 824.9 | - | 0.0 | 824.9 | - | 0.0 |
| WhitetailDR | 5431 | 824.5 | 4.9 | 6 | 18 | 810.3 | - | 0.0 | 817.5 | - | 0.0 | 821.3 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 5434 | 820.0 | 58.4 | 169 | 507 | 816.0 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | 1.5 | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 5436 | 828.7 | 58.4 | 169 | 507 | 824.0 | - | 0.0 | 824.0 | - | 0.0 | 824.0 | - | 0.0 | 824.0 | - | 0.0 |
| WinterberryLn | 5437 | 825.4 | 58.4 | 169 | 507 | 814.5 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 10694 | 827.1 | 58.4 | 169 | 507 | 821.8 | - | 0.0 | 821.8 | - | 0.0 | 821.8 | - | 0.0 | 821.8 | - | 0.0 |
| WinterberryLn | 10695 | 816.2 | 58.4 | 169 | 507 | 812.2 | - | 0.0 | 817.5 | 1.3 | 0.0 | 821.4 | 5.2 | 0.0 | 819.0 | 2.9 | 0.0 |
| WinterberryLn | 10696 | 816.7 | 58.4 | 169 | 507 | 812.7 | - | 0.0 | 817.5 | 0.8 | 0.0 | 821.4 | 4.7 | 0.0 | 819.0 | 2.4 | 0.0 |
| P-34 | 10831 | 848.2 | 127.3 | 253 | 759 | 843.9 | - | 0.0 | 848.2 | - | 0.0 | 849.7 | 1.6 | 0.0 | 847.1 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| P-34 | 10832 | 848.2 | 127.3 | 253 | 759 | 844.0 | - | 0.0 | 848.8 | 0.6 | 0.0 | 850.5 | 2.3 | 0.0 | 847.5 | - | 0.0 |
| P-34 | 10833 | 848.1 | 127.3 | 253 | 759 | 844.1 | - | 0.0 | 849.8 | 1.7 | 0.0 | 851.9 | 3.8 | 0.0 | 848.3 | 0.2 | 0.0 |
| P-34 | 10834 | 848.9 | 127.3 | 253 | 759 | 844.9 | - | 0.0 | 850.6 | 1.7 | 0.0 | 853.3 | 4.4 | 0.0 | 848.9 | - | 0.0 |
| P-34 | 13821 | 847.3 | 127.3 | 253 | 759 | 844.2 | - | 0.0 | 844.2 | - | 0.0 | 844.2 | - | 0.0 | 844.2 | - | 0.0 |
| P-34 | 13823 | 846.9 | 127.3 | 253 | 759 | 844.2 | - | 0.0 | 844.2 | - | 0.0 | 844.2 | - | 0.0 | 844.2 | - | 0.0 |
| P-34 | 13824 | 847.3 | 127.3 | 253 | 759 | 843.7 | - | 0.0 | 843.7 | - | 0.0 | 843.7 | - | 0.0 | 843.7 | - | 0.0 |
| P-34 | 13825 | 847.1 | 127.3 | 253 | 759 | 843.6 | - | 0.0 | 843.6 | - | 0.0 | 843.6 | - | 0.0 | 843.6 | - | 0.0 |
| WinterberryLn | 20388 | 827.8 | 58.4 | 169 | 507 | 818.5 | - | 0.0 | 818.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20398 | 842.1 | 58.4 | 169 | 507 | 838.1 | - | 0.0 | 838.1 | - | 0.0 | 838.1 | - | 0.0 | 838.1 | - | 0.0 |
| WinterberryLn | 20400 | 834.8 | 58.4 | 169 | 507 | 830.8 | - | 0.0 | 830.8 | - | 0.0 | 830.8 | - | 0.0 | 830.8 | - | 0.0 |
| WinterberryLn | 20402 | 831.8 | 58.4 | 169 | 507 | 825.3 | - | 0.0 | 825.3 | - | 0.0 | 825.3 | - | 0.0 | 825.3 | - | 0.0 |
| WinterberryLn | 20403 | 832.1 | 58.4 | 169 | 507 | 825.2 | - | 0.0 | 825.2 | - | 0.0 | 825.2 | - | 0.0 | 825.2 | - | 0.0 |
| WinterberryLn | 20404 | 832.7 | 58.4 | 169 | 507 | 825.4 | - | 0.0 | 825.4 | - | 0.0 | 825.4 | - | 0.0 | 825.4 | - | 0.0 |
| WinterberryLn | 20408 | 845.7 | 58.4 | 169 | 507 | 841.7 | - | 0.0 | 841.7 | - | 0.0 | 841.7 | - | 0.0 | 841.7 | - | 0.0 |
| WinterberryLn | 20410 | 833.2 | 58.4 | 169 | 507 | 829.2 | - | 0.0 | 829.2 | - | 0.0 | 829.2 | - | 0.0 | 829.2 | - | 0.0 |
| WinterberryLn | 20411 | 832.3 | 58.4 | 169 | 507 | 828.3 | - | 0.0 | 828.3 | - | 0.0 | 828.3 | - | 0.0 | 828.3 | - | 0.0 |
| WinterberryLn | 20412 | 824.5 | 58.4 | 169 | 507 | 820.5 | - | 0.0 | 820.5 | - | 0.0 | 821.4 | - | 0.0 | 820.5 | - | 0.0 |
| WinterberryLn | 20414 | 827.6 | 58.4 | 169 | 507 | 818.7 | - | 0.0 | 818.7 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20415 | 826.3 | 58.4 | 169 | 507 | 819.5 | - | 0.0 | 819.5 | - | 0.0 | 821.4 | - | 0.0 | 819.5 | - | 0.0 |
| WinterberryLn | 20416 | 826.2 | 58.4 | 169 | 507 | 819.3 | - | 0.0 | 819.3 | - | 0.0 | 821.4 | - | 0.0 | 819.3 | - | 0.0 |
| WinterberryLn | 20417 | 826.4 | 58.4 | 169 | 507 | 819.9 | - | 0.0 | 819.9 | - | 0.0 | 821.4 | - | 0.0 | 819.9 | - | 0.0 |
| WinterberryLn | 20418 | 826.7 | 58.4 | 169 | 507 | 818.9 | - | 0.0 | 818.9 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| P-34 | 20701 | 835.5 | 127.3 | 253 | 759 | 831.5 | - | 0.0 | 831.5 | - | 0.0 | 831.5 | - | 0.0 | 831.5 | - | 0.0 |
| P-34 | 20702 | 836.3 | 127.3 | 253 | 759 | 820.4 | - | 0.0 | 820.6 | - | 0.0 | 826.3 | - | 0.0 | 820.5 | - | 0.0 |
| P-34 | 20703 | 837.7 | 127.3 | 253 | 759 | 833.0 | - | 0.0 | 833.0 | - | 0.0 | 833.0 | - | 0.0 | 833.0 | - | 0.0 |
| P-34 | 20704 | 840.8 | 127.3 | 253 | 759 | 835.8 | - | 0.0 | 835.8 | - | 0.0 | 835.8 | - | 0.0 | 835.8 | - | 0.0 |
| P-34 | 20705 | 841.8 | 127.3 | 253 | 759 | 837.4 | - | 0.0 | 837.4 | - | 0.0 | 837.4 | - | 0.0 | 837.4 | - | 0.0 |
| P-34 | 20706 | 842.5 | 127.3 | 253 | 759 | 837.6 | - | 0.0 | 837.6 | - | 0.0 | 837.6 | - | 0.0 | 837.6 | - | 0.0 |
| P-34 | 20707 | 844.8 | 127.3 | 253 | 759 | 839.9 | - | 0.0 | 839.9 | - | 0.0 | 839.9 | - | 0.0 | 839.9 | - | 0.0 |
| P-34 | 20708 | 844.0 | 127.3 | 253 | 759 | 840.0 | - | 0.0 | 840.0 | - | 0.0 | 840.0 | - | 0.0 | 840.0 | - | 0.0 |
| P-34 | 20709 | 844.1 | 127.3 | 253 | 759 | 840.1 | - | 0.0 | 840.1 | - | 0.0 | 840.1 | - | 0.0 | 840.1 | - | 0.0 |
| P-34 | 20710 | 845.7 | 127.3 | 253 | 759 | 841.7 | - | 0.0 | 841.7 | - | 0.0 | 841.7 | - | 0.0 | 841.7 | - | 0.0 |
| P-34 | 20711 | 848.6 | 127.3 | 253 | 759 | 844.6 | - | 0.0 | 844.6 | - | 0.0 | 844.6 | - | 0.0 | 844.6 | - | 0.0 |
| P-34 | 20714 | 847.5 | 127.3 | 253 | 759 | 843.5 | - | 0.0 | 843.5 | - | 0.0 | 843.5 | - | 0.0 | 843.5 | - | 0.0 |
| P-34 | 20715 | 843.6 | 127.3 | 253 | 759 | 839.6 | - | 0.0 | 840.3 | - | 0.0 | 840.3 | - | 0.0 | 840.2 | - | 0.0 |
| P-34 | 20716 | 842.4 | 127.3 | 253 | 759 | 838.4 | - | 0.0 | 838.4 | - | 0.0 | 838.4 | - | 0.0 | 838.4 | - | 0.0 |
| P-34 | 20717 | 842.2 | 127.3 | 253 | 759 | 836.2 | - | 0.0 | 836.7 | - | 0.0 | 836.7 | - | 0.0 | 836.6 | - | 0.0 |
| P-34 | 20718 | 848.8 | 127.3 | 253 | 759 | 844.8 | - | 0.0 | 844.8 | - | 0.0 | 844.8 | - | 0.0 | 844.8 | - | 0.0 |
| P-34 | 20719 | 848.1 | 127.3 | 253 | 759 | 844.1 | - | 0.0 | 844.1 | - | 0.0 | 844.1 | - | 0.0 | 844.1 | - | 0.0 |
| P-34 | 20720 | 849.0 | 127.3 | 253 | 759 | 845.0 | - | 0.0 | 845.0 | - | 0.0 | 845.0 | - | 0.0 | 845.0 | - | 0.0 |
| P-34 | 20721 | 851.2 | 127.3 | 253 | 759 | 847.2 | - | 0.0 | 847.2 | - | 0.0 | 847.2 | - | 0.0 | 847.2 | - | 0.0 |
| P-34 | 20722 | 849.7 | 127.3 | 253 | 759 | 845.7 | - | 0.0 | 845.7 | - | 0.0 | 845.7 | - | 0.0 | 845.7 | - | 0.0 |
| P-34 | 20723 | 849.8 | 127.3 | 253 | 759 | 845.8 | - | 0.0 | 845.8 | - | 0.0 | 845.8 | - | 0.0 | 845.8 | - | 0.0 |
| P-34 | 20726 | 831.9 | 127.3 | 253 | 759 | 827.4 | - | 0.0 | 827.5 | - | 0.0 | 827.8 | - | 0.0 | 827.2 | - | 0.0 |
| P-34 | 20727 | 832.2 | 127.3 | 253 | 759 | 825.7 | - | 0.0 | 825.7 | - | 0.0 | 826.3 | - | 0.0 | 825.7 | - | 0.0 |
| P-34 | 20729 | 835.9 | 127.3 | 253 | 759 | 831.9 | - | 0.0 | 831.9 | - | 0.0 | 831.9 | - | 0.0 | 831.9 | - | 0.0 |
| P-34 | 20730 | 836.1 | 127.3 | 253 | 759 | 830.9 | - | 0.0 | 830.9 | - | 0.0 | 830.9 | - | 0.0 | 830.9 | - | 0.0 |
| P-34 | 20731 | 836.2 | 127.3 | 253 | 759 | 830.8 | - | 0.0 | 831.5 | - | 0.0 | 831.6 | - | 0.0 | 831.5 | - | 0.0 |
| P-34 | 20732 | 837.0 | 127.3 | 253 | 759 | 830.9 | - | 0.0 | 831.8 | - | 0.0 | 831.9 | - | 0.0 | 831.7 | - | 0.0 |
| P-34 | 20733 | 836.6 | 127.3 | 253 | 759 | 830.9 | - | 0.0 | 831.8 | - | 0.0 | 831.9 | - | 0.0 | 831.7 | - | 0.0 |
| P-34 | 20734 | 836.2 | 127.3 | 253 | 759 | 831.0 | - | 0.0 | 831.8 | - | 0.0 | 831.9 | - | 0.0 | 831.7 | - | 0.0 |
| P-34 | 20735 | 836.0 | 127.3 | 253 | 759 | 831.1 | - | 0.0 | 831.8 | - | 0.0 | 831.9 | - | 0.0 | 831.7 | - | 0.0 |
| P-34 | 20736 | 836.6 | 127.3 | 253 | 759 | 831.2 | - | 0.0 | 831.8 | - | 0.0 | 831.9 | - | 0.0 | 831.7 | - | 0.0 |
| P-34 | 20737 | 849.2 | 127.3 | 253 | 759 | 845.2 | - | 0.0 | 845.2 | - | 0.0 | 845.2 | - | 0.0 | 845.2 | - | 0.0 |
| P-34 | 20738 | 839.1 | 127.3 | 253 | 759 | 835.1 | - | 0.0 | 835.1 | - | 0.0 | 835.1 | - | 0.0 | 835.1 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| P-34 | 20739 | 840.7 | 127.3 | 253 | 759 | 834.9 | - | 0.0 | 834.9 | - | 0.0 | 834.9 | - | 0.0 | 834.9 | - | 0.0 |
| P-34 | 20740 | 839.6 | 127.3 | 253 | 759 | 833.8 | - | 0.0 | 833.8 | - | 0.0 | 833.8 | - | 0.0 | 833.8 | - | 0.0 |
| P-34 | 20741 | 840.3 | 127.3 | 253 | 759 | 833.2 | - | 0.0 | 833.2 | - | 0.0 | 833.2 | - | 0.0 | 833.2 | - | 0.0 |
| P-34 | 20742 | 838.8 | 127.3 | 253 | 759 | 832.9 | - | 0.0 | 832.9 | - | 0.0 | 832.9 | - | 0.0 | 832.9 | - | 0.0 |
| P-34 | 20743 | 838.3 | 127.3 | 253 | 759 | 832.5 | - | 0.0 | 832.5 | - | 0.0 | 832.5 | - | 0.0 | 832.5 | - | 0.0 |
| P-34 | 20744 | 825.5 | 127.3 | 253 | 759 | 821.5 | - | 0.0 | 821.5 | - | 0.0 | 826.3 | 0.9 | 0.0 | 821.5 | - | 0.0 |
| P-34 | 20745 | 825.2 | 127.3 | 253 | 759 | 821.2 | - | 0.0 | 821.2 | - | 0.0 | 826.3 | 1.2 | 0.0 | 821.2 | - | 0.0 |
| P-34 | 20746 | 829.6 | 127.3 | 253 | 759 | 820.9 | - | 0.0 | 821.1 | - | 0.0 | 826.3 | - | 0.0 | 820.9 | - | 0.0 |
| P-34 | 20748 | 831.5 | 127.3 | 253 | 759 | 827.5 | - | 0.0 | 827.5 | - | 0.0 | 827.5 | - | 0.0 | 827.5 | - | 0.0 |
| P-34 | 20749 | 832.6 | 127.3 | 253 | 759 | 826.4 | - | 0.0 | 826.4 | - | 0.0 | 826.4 | - | 0.0 | 826.4 | - | 0.0 |
| P-34 | 20751 | 834.4 | 127.3 | 253 | 759 | 825.5 | - | 0.0 | 825.5 | - | 0.0 | 826.3 | - | 0.0 | 825.5 | - | 0.0 |
| P-34 | 20752 | 834.0 | 127.3 | 253 | 759 | 825.2 | - | 0.0 | 825.2 | - | 0.0 | 826.3 | - | 0.0 | 825.2 | - | 0.0 |
| P-34 | 20753 | 835.1 | 127.3 | 253 | 759 | 825.0 | - | 0.0 | 825.0 | - | 0.0 | 826.3 | - | 0.0 | 825.0 | - | 0.0 |
| P-34 | 20754 | 837.0 | 127.3 | 253 | 759 | 824.4 | - | 0.0 | 824.4 | - | 0.0 | 826.3 | - | 0.0 | 824.4 | - | 0.0 |
| P-34 | 20755 | 832.0 | 127.3 | 253 | 759 | 823.4 | - | 0.0 | 823.4 | - | 0.0 | 826.3 | - | 0.0 | 823.4 | - | 0.0 |
| P-34 | 20756 | 839.5 | 127.3 | 253 | 759 | 835.5 | - | 0.0 | 835.5 | - | 0.0 | 835.5 | - | 0.0 | 835.5 | - | 0.0 |
| P-34 | 20757 | 829.6 | 127.3 | 253 | 759 | 822.6 | - | 0.0 | 822.6 | - | 0.0 | 826.3 | - | 0.0 | 822.6 | - | 0.0 |
| P-34 | 20758 | 830.1 | 127.3 | 253 | 759 | 822.2 | - | 0.0 | 822.2 | - | 0.0 | 826.3 | - | 0.0 | 822.2 | - | 0.0 |
| P-34 | 20759 | 828.3 | 127.3 | 253 | 759 | 821.1 | - | 0.0 | 821.1 | - | 0.0 | 826.3 | - | 0.0 | 821.1 | - | 0.0 |
| P-34 | 20760 | 828.7 | 127.3 | 253 | 759 | 821.1 | - | 0.0 | 821.1 | - | 0.0 | 826.3 | - | 0.0 | 821.1 | - | 0.0 |
| P-34 | 20761 | 845.8 | 127.3 | 253 | 759 | 841.8 | - | 0.0 | 841.8 | - | 0.0 | 841.8 | - | 0.0 | 841.8 | - | 0.0 |
| P-34 | 20762 | 829.6 | 127.3 | 253 | 759 | 825.6 | - | 0.0 | 825.6 | - | 0.0 | 826.3 | - | 0.0 | 825.6 | - | 0.0 |
| P-34 | 20763 | 828.6 | 127.3 | 253 | 759 | 824.6 | - | 0.0 | 824.6 | - | 0.0 | 826.3 | - | 0.0 | 824.6 | - | 0.0 |
| P-34 | 20764 | 827.0 | 127.3 | 253 | 759 | 823.0 | - | 0.0 | 823.0 | - | 0.0 | 826.3 | - | 0.0 | 823.0 | - | 0.0 |
| P-34 | 20765 | 826.7 | 127.3 | 253 | 759 | 822.7 | - | 0.0 | 822.7 | - | 0.0 | 826.3 | - | 0.0 | 822.7 | - | 0.0 |
| P-34 | 20766 | 826.4 | 127.3 | 253 | 759 | 822.4 | - | 0.0 | 822.4 | - | 0.0 | 826.3 | - | 0.0 | 822.4 | - | 0.0 |
| P-34 | 20767 | 830.9 | 127.3 | 253 | 759 | 821.8 | - | 0.0 | 821.8 | - | 0.0 | 826.3 | - | 0.0 | 821.8 | - | 0.0 |
| P-34 | 20768 | 830.8 | 127.3 | 253 | 759 | 821.8 | - | 0.0 | 821.8 | - | 0.0 | 826.3 | - | 0.0 | 821.8 | - | 0.0 |
| P-34 | 20769 | 832.1 | 127.3 | 253 | 759 | 828.1 | - | 0.0 | 828.1 | - | 0.0 | 828.1 | - | 0.0 | 828.1 | - | 0.0 |
| P-34 | 20770 | 834.4 | 127.3 | 253 | 759 | 820.8 | - | 0.0 | 820.8 | - | 0.0 | 826.3 | - | 0.0 | 820.8 | - | 0.0 |
| P-34 | 20771 | 830.3 | 127.3 | 253 | 759 | 822.2 | - | 0.0 | 822.2 | - | 0.0 | 826.3 | - | 0.0 | 822.2 | - | 0.0 |
| P-34 | 20772 | 830.8 | 127.3 | 253 | 759 | 820.5 | - | 0.0 | 820.5 | - | 0.0 | 826.3 | - | 0.0 | 820.5 | - | 0.0 |
| P-34 | 20773 | 834.7 | 127.3 | 253 | 759 | 830.7 | - | 0.0 | 830.7 | - | 0.0 | 830.7 | - | 0.0 | 830.7 | - | 0.0 |
| P-34 | 20774 | 838.9 | 127.3 | 253 | 759 | 827.8 | - | 0.0 | 827.8 | - | 0.0 | 827.8 | - | 0.0 | 827.8 | - | 0.0 |
| P-34 | 20775 | 841.2 | 127.3 | 253 | 759 | 834.7 | - | 0.0 | 834.7 | - | 0.0 | 834.7 | - | 0.0 | 834.7 | - | 0.0 |
| P-34 | 20776 | 841.2 | 127.3 | 253 | 759 | 834.6 | - | 0.0 | 834.6 | - | 0.0 | 834.6 | - | 0.0 | 834.6 | - | 0.0 |
| P-34 | 20777 | 841.5 | 127.3 | 253 | 759 | 834.6 | - | 0.0 | 834.6 | - | 0.0 | 834.6 | - | 0.0 | 834.6 | - | 0.0 |
| P-34 | 20778 | 841.6 | 127.3 | 253 | 759 | 834.5 | - | 0.0 | 834.5 | - | 0.0 | 834.5 | - | 0.0 | 834.5 | - | 0.0 |
| P-34 | 20779 | 841.0 | 127.3 | 253 | 759 | 837.0 | - | 0.0 | 837.0 | - | 0.0 | 837.0 | - | 0.0 | 837.0 | - | 0.0 |
| P-34 | 20780 | 840.3 | 127.3 | 253 | 759 | 834.9 | - | 0.0 | 834.9 | - | 0.0 | 834.9 | - | 0.0 | 834.9 | - | 0.0 |
| P-34 | 20781 | 840.3 | 127.3 | 253 | 759 | 835.0 | - | 0.0 | 835.0 | - | 0.0 | 835.0 | - | 0.0 | 835.0 | - | 0.0 |
| P-34 | 20782 | 839.7 | 127.3 | 253 | 759 | 835.7 | - | 0.0 | 835.7 | - | 0.0 | 835.7 | - | 0.0 | 835.7 | - | 0.0 |
| P-34 | 20783 | 842.1 | 127.3 | 253 | 759 | 837.9 | - | 0.0 | 837.9 | - | 0.0 | 837.9 | - | 0.0 | 837.9 | - | 0.0 |
| P-34 | 20784 | 842.2 | 127.3 | 253 | 759 | 838.2 | - | 0.0 | 838.2 | - | 0.0 | 838.2 | - | 0.0 | 838.2 | - | 0.0 |
| P-34 | 20786 | 826.7 | 127.3 | 253 | 759 | 822.7 | - | 0.0 | 822.7 | - | 0.0 | 826.3 | - | 0.0 | 822.7 | - | 0.0 |
| P-34 | 20787 | 829.0 | 127.3 | 253 | 759 | 822.6 | - | 0.0 | 822.6 | - | 0.0 | 826.3 | - | 0.0 | 822.6 | - | 0.0 |
| P-34 | 20790 | 845.4 | 127.3 | 253 | 759 | 841.4 | - | 0.0 | 841.4 | - | 0.0 | 841.4 | - | 0.0 | 841.4 | - | 0.0 |
| P-34 | 20791 | 844.7 | 127.3 | 253 | 759 | 840.7 | - | 0.0 | 840.7 | - | 0.0 | 840.7 | - | 0.0 | 840.7 | - | 0.0 |
| P-34 | 20792 | 845.0 | 127.3 | 253 | 759 | 840.1 | - | 0.0 | 840.1 | - | 0.0 | 840.1 | - | 0.0 | 840.1 | - | 0.0 |
| P-34 | 20793 | 844.8 | 127.3 | 253 | 759 | 839.5 | - | 0.0 | 839.5 | - | 0.0 | 839.5 | - | 0.0 | 839.5 | - | 0.0 |
| P-34 | 20794 | 841.7 | 127.3 | 253 | 759 | 837.7 | - | 0.0 | 837.7 | - | 0.0 | 837.7 | - | 0.0 | 837.7 | - | 0.0 |
| WinterberryLn | 20795 | 825.2 | 58.4 | 169 | 507 | 815.0 | - | 0.0 | 817.5 | - | 0.0 | 821.7 | - | 0.0 | 819.1 | - | 0.0 |
| WinterberryLn | 20796 | 825.0 | 58.4 | 169 | 507 | 814.9 | - | 0.0 | 817.5 | - | 0.0 | 821.5 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20797 | 825.0 | 58.4 | 169 | 507 | 814.8 | - | 0.0 | 817.5 | - | 0.0 | 821.5 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20798 | 825.1 | 58.4 | 169 | 507 | 814.7 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| WinterberryLn | 20799 | 825.5 | 58.4 | 169 | 507 | 814.5 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20800 | 824.3 | 58.4 | 169 | 507 | 820.3 | - | 0.0 | 820.3 | - | 0.0 | 821.4 | - | 0.0 | 820.3 | - | 0.0 |
| WinterberryLn | 20801 | 823.9 | 58.4 | 169 | 507 | 819.6 | - | 0.0 | 819.6 | - | 0.0 | 821.4 | - | 0.0 | 819.6 | - | 0.0 |
| WinterberryLn | 20802 | 824.7 | 58.4 | 169 | 507 | 819.4 | - | 0.0 | 819.4 | - | 0.0 | 821.4 | - | 0.0 | 819.4 | - | 0.0 |
| WinterberryLn | 20806 | 826.7 | 58.4 | 169 | 507 | 816.8 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20807 | 827.6 | 58.4 | 169 | 507 | 814.2 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20808 | 829.1 | 58.4 | 169 | 507 | 825.1 | - | 0.0 | 825.1 | - | 0.0 | 825.1 | - | 0.0 | 825.1 | - | 0.0 |
| WinterberryLn | 20809 | 828.0 | 58.4 | 169 | 507 | 824.0 | - | 0.0 | 824.0 | - | 0.0 | 824.0 | - | 0.0 | 824.0 | - | 0.0 |
| WinterberryLn | 20810 | 827.2 | 58.4 | 169 | 507 | 823.2 | - | 0.0 | 823.2 | - | 0.0 | 823.2 | - | 0.0 | 823.2 | - | 0.0 |
| WinterberryLn | 20811 | 826.9 | 58.4 | 169 | 507 | 822.9 | - | 0.0 | 822.9 | - | 0.0 | 822.9 | - | 0.0 | 822.9 | - | 0.0 |
| WinterberryLn | 20812 | 825.3 | 58.4 | 169 | 507 | 821.3 | - | 0.0 | 821.3 | - | 0.0 | 821.5 | - | 0.0 | 821.3 | - | 0.0 |
| WinterberryLn | 20815 | 830.0 | 58.4 | 169 | 507 | 826.0 | - | 0.0 | 826.0 | - | 0.0 | 826.0 | - | 0.0 | 826.0 | - | 0.0 |
| WinterberryLn | 20817 | 828.2 | 58.4 | 169 | 507 | 824.2 | - | 0.0 | 824.2 | - | 0.0 | 824.2 | - | 0.0 | 824.2 | - | 0.0 |
| WinterberryLn | 20818 | 828.1 | 58.4 | 169 | 507 | 821.5 | - | 0.0 | 821.5 | - | 0.0 | 821.5 | - | 0.0 | 821.5 | - | 0.0 |
| WinterberryLn | 20819 | 825.7 | 58.4 | 169 | 507 | 818.3 | - | 0.0 | 818.3 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20820 | 825.8 | 58.4 | 169 | 507 | 818.4 | - | 0.0 | 818.4 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20821 | 826.2 | 58.4 | 169 | 507 | 822.2 | - | 0.0 | 822.2 | - | 0.0 | 822.2 | - | 0.0 | 822.2 | - | 0.0 |
| WinterberryLn | 20822 | 826.0 | 58.4 | 169 | 507 | 822.0 | - | 0.0 | 822.0 | - | 0.0 | 822.0 | - | 0.0 | 822.0 | - | 0.0 |
| WinterberryLn | 20823 | 826.7 | 58.4 | 169 | 507 | 821.9 | - | 0.0 | 821.9 | - | 0.0 | 821.9 | - | 0.0 | 821.9 | - | 0.0 |
| WinterberryLn | 20824 | 824.7 | 58.4 | 169 | 507 | 818.6 | - | 0.0 | 818.6 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20825 | 824.3 | 58.4 | 169 | 507 | 818.9 | - | 0.0 | 818.9 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20826 | 824.8 | 58.4 | 169 | 507 | 819.2 | - | 0.0 | 819.2 | - | 0.0 | 821.4 | - | 0.0 | 819.2 | - | 0.0 |
| WinterberryLn | 20827 | 824.7 | 58.4 | 169 | 507 | 819.6 | - | 0.0 | 819.6 | - | 0.0 | 821.4 | - | 0.0 | 819.6 | - | 0.0 |
| WinterberryLn | 20828 | 824.1 | 58.4 | 169 | 507 | 820.1 | - | 0.0 | 820.1 | - | 0.0 | 821.4 | - | 0.0 | 820.1 | - | 0.0 |
| WinterberryLn | 20829 | 824.0 | 58.4 | 169 | 507 | 815.1 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| PLOC-H4b | 20830 | 824.7 | 19.4 | 6 | 18 | 815.2 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20831 | 821.8 | 58.4 | 169 | 507 | 815.9 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20832 | 826.7 | 58.4 | 169 | 507 | 822.7 | - | 0.0 | 822.7 | - | 0.0 | 822.7 | - | 0.0 | 822.7 | - | 0.0 |
| WinterberryLn | 20833 | 821.2 | 58.4 | 169 | 507 | 814.9 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | 0.2 | 0.0 | 819.0 | - | 0.0 |
| WinterberryLn | 20834 | 821.5 | 58.4 | 169 | 507 | 814.5 | - | 0.0 | 817.5 | - | 0.0 | 821.4 | - | 0.0 | 819.0 | - | 0.0 |
| 2 | 720A | 970.9 | 1.5 | 7 | 21 | 962.1 | - | 0.0 | 962.4 | - | 0.0 | 967.0 | - | 0.0 | 961.5 | - | 0.0 |
| ***MH-168*** | 721A | 971.8 | 2.7 | 1 | 3 | 962.3 | - | 0.0 | 962.6 | - | 0.0 | 966.9 | - | 0.0 | 961.7 | - | 0.0 |
| 83-P01 | 83-J01 | 818.0 | 61.3 | 90 | 270 | 807.3 | - | 0.0 | 811.6 | - | 0.0 | 817.2 | - | 0.0 | 815.8 | - | 0.0 |
| ***#N/A*** | 97 (storm | 980.5 | #N/A | 1 | 3 | 977.4 | - | 0.0 | 977.9 | - | 0.0 | 980.8 | 0.2 | 0.0 | 977.3 | - | 0.0 |
| ***P-07*** | A-7 | 816.3 | 0.7 | 1 | 3 | 813.3 | - | 0.0 | 813.7 | - | 0.0 | 815.3 | - | 0.0 | 813.6 | - | 0.0 |
| WetlandNE | BE- | 997.4 | 26.3 | 4 | 12 | 993.2 | - | 0.0 | 993.2 | - | 0.0 | 993.5 | - | 0.0 | 993.1 | - | 0.0 |
| BE-06 | BE-07 | 985.0 | 0.8 | 6 | 18 | 982.8 | - | 0.0 | 983.6 | - | 0.0 | 984.8 | - | 0.0 | 983.4 | - | 0.0 |
| MayzopyaRG | BE-10 | 986.2 | 0.1 | 2 | 6 | 982.7 | - | 0.0 | 984.2 | - | 0.0 | 985.3 | - | 0.0 | 983.4 | - | 0.0 |
| MayzopyaRG | BE-11 | 984.5 | 0.1 | 2 | 6 | 982.7 | - | 0.0 | 984.2 | - | 0.0 | 985.3 | 0.8 | 0.0 | 983.4 | - | 0.0 |
| BE-18 | BE-19 | 991.0 | 0.2 | 2 | 6 | 986.6 | - | 0.0 | 989.0 | - | 0.0 | 990.2 | - | 0.0 | 986.3 | - | 0.0 |
| EP-140 | BE-22 | 992.0 | 0.6 | 6 | 18 | 989.5 | - | 0.0 | 992.3 | 0.3 | 0.0 | 993.5 | 1.5 | 0.0 | 988.9 | - | 0.0 |
| EP-140 | BE-23 | 999.0 | 0.6 | 6 | 18 | 994.5 | - | 0.0 | 995.0 | - | 0.0 | 997.9 | - | 0.0 | 994.2 | - | 0.0 |
| EP-140 | BE-24 | 1004.8 | 0.6 | 6 | 18 | 999.2 | - | 0.0 | 999.3 | - | 0.0 | 1001.9 | - | 0.0 | 999.0 | - | 0.0 |
| BE-25 | BE-26 | 1003.5 | 1.6 | 3 | 9 | 1000.3 | - | 0.0 | 1000.8 | - | 0.0 | 1003.8 | 0.3 | 0.0 | 1000.1 | - | 0.0 |
| BE-25 | BE-27 | 1004.5 | 1.6 | 3 | 9 | 1000.8 | - | 0.0 | 1001.1 | - | 0.0 | 1004.3 | - | 0.0 | 1000.5 | - | 0.0 |
| BE-41 | BE-28 | 1008.5 | 0.9 | 6 | 18 | 1002.6 | - | 0.0 | 1002.8 | - | 0.0 | 1007.3 | - | 0.0 | 1002.3 | - | 0.0 |
| BE-41 | BE-29 | 1010.3 | 0.9 | 6 | 18 | 1004.3 | - | 0.0 | 1004.5 | - | 0.0 | 1009.2 | - | 0.0 | 1004.0 | - | 0.0 |
| BE-41 | BE-30 | 1011.5 | 0.9 | 6 | 18 | 1005.2 | - | 0.0 | 1005.7 | - | 0.0 | 1010.6 | - | 0.0 | 1004.9 | - | 0.0 |
| BE-06 | BE-32 | 986.3 | 0.8 | 6 | 18 | 982.8 | - | 0.0 | 984.3 | - | 0.0 | 985.7 | - | 0.0 | 983.4 | - | 0.0 |
| BE-06 | BE-34 | 988.9 | 0.8 | 6 | 18 | 983.8 | - | 0.0 | 985.8 | - | 0.0 | 987.4 | - | 0.0 | 983.4 | - | 0.0 |
| BE-36 | BE-35 | 989.0 | 4.4 | 7 | 21 | 985.0 | - | 0.0 | 986.2 | - | 0.0 | 988.1 | - | 0.0 | 984.6 | - | 0.0 |
| BE-36 | BE-37 | 989.3 | 4.4 | 7 | 21 | 985.6 | - | 0.0 | 986.8 | - | 0.0 | 989.2 | - | 0.0 | 984.9 | - | 0.0 |
| BE-36 | BE-38 | 989.3 | 4.4 | 7 | 21 | 985.6 | - | 0.0 | 987.0 | - | 0.0 | 989.4 | 0.1 | 0.0 | 984.9 | - | 0.0 |
| BE-36 | BE-39 | 993.0 | 4.4 | 7 | 21 | 987.8 | - | 0.0 | 991.6 | - | 0.0 | 992.4 | - | 0.0 | 987.3 | - | 0.0 |
| ***EP-139*** | BE-40 | 1000.8 | 0.3 | 1 | 3 | 994.6 | - | 0.0 | 999.6 | - | 0.0 | 1000.3 | - | 0.0 | 994.3 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| BE-41 | BE-42 | 1009.0 | 0.9 | 6 | 18 | 1004.1 | - | 0.0 | 1007.3 | - | 0.0 | 1008.1 | - | 0.0 | 1003.9 | - | 0.0 |
| BE-41 | BE--43 | 1010.0 | 0.9 | 6 | 18 | 1006.5 | - | 0.0 | 1009.1 | - | 0.0 | 1010.1 | - | 0.0 | 1005.5 | - | 0.0 |
| BE-44 | BE45 | 1014.3 | 0.9 | 3 | 9 | 1008.3 | - | 0.0 | 1012.1 | - | 0.0 | 1013.4 | - | 0.0 | 1008.1 | - | 0.0 |
| 4-BE-P07 | BE-48 | 998.0 | 16.4 | 2 | 6 | 995.3 | - | 0.0 | 995.7 | - | 0.0 | 995.9 | - | 0.0 | 995.4 | - | 0.0 |
| BE-50 | BE-49 | 1003.1 | 1.4 | 5 | 15 | 998.7 | - | 0.0 | 999.4 | - | 0.0 | 1000.7 | - | 0.0 | 998.1 | - | 0.0 |
| BE-50 | BE-51 | 1006.8 | 1.4 | 5 | 15 | 1002.1 | - | 0.0 | 1004.7 | - | 0.0 | 1005.8 | - | 0.0 | 1001.6 | - | 0.0 |
| BE-50 | BE-52 | 1007.3 | 1.4 | 5 | 15 | 1002.7 | - | 0.0 | 1005.3 | - | 0.0 | 1006.5 | - | 0.0 | 1002.2 | - | 0.0 |
| 4-BE-P07 | BE-55 | 997.4 | 16.4 | 2 | 6 | 989.2 | - | 0.0 | 990.3 | - | 0.0 | 993.4 | - | 0.0 | 987.9 | - | 0.0 |
| BE-61 | BE-56 | 998.9 | 1.1 | 3 | 9 | 993.7 | - | 0.0 | 993.9 | - | 0.0 | 997.9 | - | 0.0 | 993.4 | - | 0.0 |
| BE-61 | BE-59 | 999.0 | 1.1 | 3 | 9 | 992.0 | - | 0.0 | 994.5 | - | 0.0 | 997.7 | - | 0.0 | 990.9 | - | 0.0 |
| ***BE62*** | BE64 | 1012.0 | 3.4 | 1 | 3 | 1000.0 | - | 0.0 | 1003.4 | - | 0.0 | 1006.4 | - | 0.0 | 999.8 | - | 0.0 |
| ***4-BE-CB536*** | BE-65 | 1010.5 | 1.9 | 1 | 3 | 1004.4 | - | 0.0 | 1008.1 | - | 0.0 | 1010.1 | - | 0.0 | 1004.2 | - | 0.0 |
| 4-BE-P16 | BE-66 | 992.7 | 2.3 | 2 | 6 | 986.9 | - | 0.0 | 987.2 | - | 0.0 | 988.5 | - | 0.0 | 986.9 | - | 0.0 |
| 4-BE-P16 | BE-67 | 997.9 | 2.3 | 2 | 6 | 990.6 | - | 0.0 | 990.6 | - | 0.0 | 991.4 | - | 0.0 | 990.6 | - | 0.0 |
| WetlandNE | BE-68 | 996.9 | 26.3 | 4 | 12 | 992.0 | - | 0.0 | 992.0 | - | 0.0 | 992.5 | - | 0.0 | 992.0 | - | 0.0 |
| WetlandNE | BE-69 | 996.0 | 26.3 | 4 | 12 | 992.9 | - | 0.0 | 992.9 | - | 0.0 | 993.2 | - | 0.0 | 992.9 | - | 0.0 |
| WetlandNE | BE-70 | 996.0 | 26.3 | 4 | 12 | 993.1 | - | 0.0 | 993.1 | - | 0.0 | 993.2 | - | 0.0 | 993.1 | - | 0.0 |
| ***BE-91*** | BE-73 | 1007.0 | 0.2 | 1 | 3 | 1000.7 | - | 0.0 | 1002.7 | - | 0.0 | 1004.3 | - | 0.0 | 999.5 | - | 0.0 |
| ***BE-76*** | BE-75 | 1005.3 | 0.7 | 1 | 3 | 1000.3 | - | 0.0 | 1001.6 | - | 0.0 | 1003.9 | - | 0.0 | 999.0 | - | 0.0 |
| 4-BE-P03 | BE79A | 1001.0 | 0.6 | 2 | 6 | 998.2 | - | 0.0 | 998.2 | - | 0.0 | 998.2 | - | 0.0 | 998.2 | - | 0.0 |
| BE-81 | BE-82 | 994.7 | 2.1 | 8 | 24 | 989.5 | - | 0.0 | 990.4 | - | 0.0 | 992.0 | - | 0.0 | 987.5 | - | 0.0 |
| BE-81 | BE-83 | 994.4 | 2.1 | 8 | 24 | 989.5 | - | 0.0 | 990.4 | - | 0.0 | 992.0 | - | 0.0 | 987.9 | - | 0.0 |
| BE-81 | BE-84 | 996.0 | 2.1 | 8 | 24 | 992.9 | - | 0.0 | 994.0 | - | 0.0 | 995.0 | - | 0.0 | 991.9 | - | 0.0 |
| BE-81 | BE-85 | 996.4 | 2.1 | 8 | 24 | 993.6 | - | 0.0 | 995.4 | - | 0.0 | 997.0 | 0.6 | 0.0 | 992.2 | - | 0.0 |
| BE-81 | BE-87 | 998.0 | 2.1 | 8 | 24 | 994.5 | - | 0.0 | 995.5 | - | 0.0 | 997.6 | - | 0.0 | 994.3 | - | 0.0 |
| ***TW-99*** | BE-88 | 999.0 | 4.3 | 1 | 3 | 995.0 | - | 0.0 | 995.5 | - | 0.0 | 998.0 | - | 0.0 | 994.6 | - | 0.0 |
| BE-81 | BE-89 | 1001.5 | 2.1 | 8 | 24 | 996.9 | - | 0.0 | 997.0 | - | 0.0 | 998.7 | - | 0.0 | 996.7 | - | 0.0 |
| D-02 | CB-129 | 988.0 | 23.3 | 29 | 87 | 978.0 | - | 0.0 | 982.4 | - | 0.0 | 983.8 | - | 0.0 | 977.3 | - | 0.0 |
| CB143 | CB144 | 870.4 | 12.6 | 3 | 9 | 865.8 | - | 0.0 | 866.6 | - | 0.0 | 870.2 | - | 0.0 | 866.1 | - | 0.0 |
| 636 | CB347 | 974.6 | 0.1 | 5 | 15 | 971.0 | - | 0.0 | 971.2 | - | 0.0 | 972.7 | - | 0.0 | 970.0 | - | 0.0 |
| CB56 | CB366 | 1004.3 | 1.3 | 3 | 9 | 996.7 | - | 0.0 | 1001.0 | - | 0.0 | 1003.4 | - | 0.0 | 996.0 | - | 0.0 |
| CB368 | CB369 | 1014.0 | 1.6 | 2 | 6 | 1008.8 | - | 0.0 | 1012.0 | - | 0.0 | 1012.5 | - | 0.0 | 1008.2 | - | 0.0 |
| CB374 | CB372 | 1008.8 | 1.3 | 2 | 6 | 1003.0 | - | 0.0 | 1007.2 | - | 0.0 | 1008.7 | - | 0.0 | 1002.4 | - | 0.0 |
| CB367 | CB375 | 1002.7 | 1.1 | 3 | 9 | 987.7 | - | 0.0 | 996.0 | - | 0.0 | 1000.2 | - | 0.0 | 985.9 | - | 0.0 |
| ***3-BV-P01*** | CB377 | 1002.0 | 4.8 | 1 | 3 | 996.4 | - | 0.0 | 998.1 | - | 0.0 | 1000.5 | - | 0.0 | 995.3 | - | 0.0 |
| MH222 | CB396 | 957.0 | 3.0 | 4 | 12 | 950.3 | - | 0.0 | 953.9 | - | 0.0 | 956.8 | - | 0.0 | 949.1 | - | 0.0 |
| CB410 | CB416 | 936.0 | 1.0 | 4 | 12 | 928.4 | - | 0.0 | 928.8 | - | 0.0 | 931.2 | - | 0.0 | 928.5 | - | 0.0 |
| CB410 | CB417 | 933.4 | 1.0 | 4 | 12 | 929.0 | - | 0.0 | 929.3 | - | 0.0 | 931.3 | - | 0.0 | 929.0 | - | 0.0 |
| CB410 | CB418 | 935.0 | 1.0 | 4 | 12 | 929.6 | - | 0.0 | 929.8 | - | 0.0 | 931.3 | - | 0.0 | 929.5 | - | 0.0 |
| GC-27 | CH-01 | 957.6 | 2.3 | 7 | 21 | 948.3 | - | 0.0 | 948.3 | - | 0.0 | 950.0 | - | 0.0 | 948.3 | - | 0.0 |
| GC-27 | CH-02 | 959.5 | 2.3 | 7 | 21 | 948.3 | - | 0.0 | 948.7 | - | 0.0 | 950.1 | - | 0.0 | 947.8 | - | 0.0 |
| CH-13 | CH-03 | 963.5 | 0.1 | 3 | 9 | 949.0 | - | 0.0 | 949.4 | - | 0.0 | 951.7 | - | 0.0 | 948.2 | - | 0.0 |
| EP-01 | CH-07 | 957.7 | 24.6 | 9 | 27 | 948.7 | - | 0.0 | 948.7 | - | 0.0 | 950.0 | - | 0.0 | 948.7 | - | 0.0 |
| GC-27 | CH-08 | 959.2 | 2.3 | 7 | 21 | 949.2 | - | 0.0 | 949.6 | - | 0.0 | 951.1 | - | 0.0 | 948.6 | - | 0.0 |
| CH-11 | CH-09 | 975.7 | 0.8 | 3 | 9 | 950.3 | - | 0.0 | 950.8 | - | 0.0 | 952.4 | - | 0.0 | 949.1 | - | 0.0 |
| CH-11 | CH-10 | 976.8 | 0.8 | 3 | 9 | 961.6 | - | 0.0 | 961.7 | - | 0.0 | 961.8 | - | 0.0 | 961.4 | - | 0.0 |
| ML-05 | CH-14 | 958.3 | 0.1 | 2 | 6 | 951.5 | - | 0.0 | 951.8 | - | 0.0 | 953.2 | - | 0.0 | 951.1 | - | 0.0 |
| CH-15 | CH-16 | 958.9 | 0.2 | 4 | 12 | 952.5 | - | 0.0 | 952.8 | - | 0.0 | 953.7 | - | 0.0 | 952.0 | - | 0.0 |
| CH-41 | CH-42 | 971.2 | 1.7 | 2 | 6 | 954.6 | - | 0.0 | 955.0 | - | 0.0 | 959.0 | - | 0.0 | 953.7 | - | 0.0 |
| CH-43 | CH-44 | 977.2 | 0.6 | 5 | 15 | 968.1 | - | 0.0 | 968.3 | - | 0.0 | 968.9 | - | 0.0 | 967.2 | - | 0.0 |
| CH-43 | CH-45 | 977.9 | 0.6 | 5 | 15 | 968.4 | - | 0.0 | 968.6 | - | 0.0 | 969.3 | - | 0.0 | 967.4 | - | 0.0 |
| CH-43 | CH-46 | 979.3 | 0.6 | 5 | 15 | 968.7 | - | 0.0 | 969.0 | - | 0.0 | 969.9 | - | 0.0 | 967.8 | - | 0.0 |
| CH-43 | CH-47 | 979.3 | 0.6 | 5 | 15 | 969.1 | - | 0.0 | 969.4 | - | 0.0 | 970.3 | - | 0.0 | 968.3 | - | 0.0 |
| CR-103 | CR-104 | 991.6 | 0.4 | 2 | 6 | 987.8 | - | 0.0 | 987.9 | - | 0.0 | 990.3 | - | 0.0 | 987.6 | - | 0.0 |
| ***CR-108*** | CR-109 | 992.9 | 0.4 | 1 | 3 | 989.1 | - | 0.0 | 989.1 | - | 0.0 | 991.5 | - | 0.0 | 988.9 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| CR-110 | CR-111 | 995.5 | 0.3 | 3 | 9 | 991.6 | - | 0.0 | 991.6 | - | 0.0 | 991.6 | - | 0.0 | 991.6 | - | 0.0 |
| CR-112 | CR-114 | 994.3 | 0.4 | 3 | 9 | 991.0 | - | 0.0 | 991.4 | - | 0.0 | 994.2 | - | 0.0 | 990.2 | - | 0.0 |
| CR-113 | CR-116 | 994.9 | 0.3 | 3 | 9 | 991.4 | - | 0.0 | 991.9 | - | 0.0 | 994.9 | - | 0.0 | 991.1 | - | 0.0 |
| CR-113 | CR-117 | 995.8 | 0.3 | 3 | 9 | 991.9 | - | 0.0 | 992.0 | - | 0.0 | 995.1 | - | 0.0 | 991.6 | - | 0.0 |
| CR-115 | CR-120 | 996.2 | 0.3 | 2 | 6 | 992.9 | - | 0.0 | 993.8 | - | 0.0 | 996.3 | - | 0.0 | 992.1 | - | 0.0 |
| CR-122 | CR-121 | 996.9 | 0.2 | 4 | 12 | 992.9 | - | 0.0 | 993.8 | - | 0.0 | 996.3 | - | 0.0 | 992.2 | - | 0.0 |
| CR-119 | CR-124 | 996.9 | 0.2 | 2 | 6 | 994.0 | - | 0.0 | 994.4 | - | 0.0 | 996.9 | - | 0.0 | 993.6 | - | 0.0 |
| CR-122 | CR-125 | 997.5 | 0.2 | 4 | 12 | 994.2 | - | 0.0 | 994.4 | - | 0.0 | 997.1 | - | 0.0 | 993.8 | - | 0.0 |
| CSAH82 | CR-75A | 976.5 | 2.0 | 3 | 9 | 970.5 | - | 0.0 | 971.3 | - | 0.0 | 973.4 | - | 0.0 | 970.1 | - | 0.0 |
| CSAH82 | CR-79 | 980.0 | 2.0 | 3 | 9 | 971.2 | - | 0.0 | 971.8 | - | 0.0 | 973.4 | - | 0.0 | 970.1 | - | 0.0 |
| ***CR-95*** | CR-96 | 990.8 | 0.3 | 1 | 3 | 986.2 | - | 0.0 | 986.2 | - | 0.0 | 986.9 | - | 0.0 | 986.1 | - | 0.0 |
| CR-97 | CR-96B | 991.4 | 0.1 | 4 | 12 | 986.9 | - | 0.0 | 986.9 | - | 0.0 | 987.0 | - | 0.0 | 986.7 | - | 0.0 |
| CR-97 | CR-98 | 992.9 | 0.1 | 4 | 12 | 987.7 | - | 0.0 | 987.7 | - | 0.0 | 987.7 | - | 0.0 | 987.7 | - | 0.0 |
| CB321 | DP-01 | 956.5 | 0.6 | 4 | 12 | 951.1 | - | 0.0 | 951.5 | - | 0.0 | 952.3 | - | 0.0 | 950.1 | - | 0.0 |
| CB321 | DP-02 | 958.5 | 0.6 | 4 | 12 | 949.0 | - | 0.0 | 949.0 | - | 0.0 | 953.1 | - | 0.0 | 949.0 | - | 0.0 |
| DP-05 | DP-06 | 964.7 | 0.2 | 2 | 6 | 956.5 | - | 0.0 | 961.1 | - | 0.0 | 962.5 | - | 0.0 | 962.3 | - | 0.0 |
| EP-118 | DP-07 | 965.6 | 0.4 | 3 | 9 | 959.3 | - | 0.0 | 961.1 | - | 0.0 | 962.5 | - | 0.0 | 962.3 | - | 0.0 |
| DP-15 | DP-16 | 967.5 | 0.1 | 4 | 12 | 962.1 | - | 0.0 | 962.4 | - | 0.0 | 963.0 | - | 0.0 | 962.9 | - | 0.0 |
| ***DP-28*** | DP-17 | 968.5 | 0.2 | 1 | 3 | 963.9 | - | 0.0 | 964.3 | - | 0.0 | 965.2 | - | 0.0 | 962.9 | - | 0.0 |
| DP-20 | DP-18 | 961.5 | 0.3 | 4 | 12 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| DP-22 | DP-19 | 961.5 | 0.6 | 6 | 18 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| DP-20 | DP-27 | 961.4 | 0.3 | 4 | 12 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| DS-02 | DS-01 | 966.5 | 0.7 | 2 | 6 | 959.1 | - | 0.0 | 959.3 | - | 0.0 | 959.9 | - | 0.0 | 958.7 | - | 0.0 |
| DS-12 | DS-13 | 969.0 | 0.5 | 3 | 9 | 964.5 | - | 0.0 | 968.3 | - | 0.0 | 968.5 | - | 0.0 | 963.5 | - | 0.0 |
| DS-12 | DS-14 | 970.1 | 0.5 | 3 | 9 | 965.0 | - | 0.0 | 969.0 | - | 0.0 | 969.3 | - | 0.0 | 964.3 | - | 0.0 |
| DS-19 | DS-17 | 964.7 | 0.5 | 3 | 9 | 960.3 | - | 0.0 | 961.1 | - | 0.0 | 962.8 | - | 0.0 | 958.4 | - | 0.0 |
| DS-20 | DS-21 | 967.6 | 0.3 | 2 | 6 | 963.4 | - | 0.0 | 963.8 | - | 0.0 | 965.6 | - | 0.0 | 961.9 | - | 0.0 |
| DS-32 | DS-22 | 968.0 | 3.0 | 3 | 9 | 964.5 | - | 0.0 | 965.2 | - | 0.0 | 966.8 | - | 0.0 | 962.3 | - | 0.0 |
| DS-24 | DS-23 | 968.2 | 1.5 | 3 | 9 | 965.4 | - | 0.0 | 966.6 | - | 0.0 | 967.7 | - | 0.0 | 962.3 | - | 0.0 |
| DS-24 | DS-25 | 969.7 | 1.5 | 3 | 9 | 965.9 | - | 0.0 | 966.8 | - | 0.0 | 968.2 | - | 0.0 | 962.4 | - | 0.0 |
| DS-27 | DS-26 | 971.5 | 0.9 | 2 | 6 | 967.6 | - | 0.0 | 968.9 | - | 0.0 | 969.9 | - | 0.0 | 963.7 | - | 0.0 |
| DS-29 | DS-28 | 971.4 | 1.3 | 3 | 9 | 969.2 | - | 0.0 | 969.8 | - | 0.0 | 970.5 | - | 0.0 | 967.3 | - | 0.0 |
| DS-29 | DS-30 | 970.8 | 1.3 | 3 | 9 | 970.8 | - | 0.0 | 971.0 | 0.2 | 0.0 | 971.4 | 0.6 | 0.0 | 967.3 | - | 0.0 |
| WetlandnC | DSF-04 | 971.8 | 18.4 | 2 | 6 | 961.8 | - | 0.0 | 961.9 | - | 0.0 | 962.2 | - | 0.0 | 961.8 | - | 0.0 |
| WetlandnC | DSF-05 | 979.2 | 18.4 | 2 | 6 | 971.7 | - | 0.0 | 971.7 | - | 0.0 | 971.9 | - | 0.0 | 971.7 | - | 0.0 |
| EP-01 | EP-01A | 952.0 | 24.6 | 9 | 27 | 947.2 | - | 0.0 | 948.0 | - | 0.0 | 950.0 | - | 0.0 | 947.4 | - | 0.0 |
| EP-01 | EP-01B | 952.0 | 24.6 | 9 | 27 | 947.1 | - | 0.0 | 948.0 | - | 0.0 | 950.0 | - | 0.0 | 947.4 | - | 0.0 |
| EP-01 | EP-01C | 952.0 | 24.6 | 9 | 27 | 947.1 | - | 0.0 | 948.0 | - | 0.0 | 950.0 | - | 0.0 | 947.4 | - | 0.0 |
| EP-01 | EP-01D | 952.0 | 24.6 | 9 | 27 | 947.4 | - | 0.0 | 948.0 | - | 0.0 | 950.0 | - | 0.0 | 947.4 | - | 0.0 |
| LS-15 | EP-100 | 975.0 | 1.2 | 4 | 12 | 967.2 | - | 0.0 | 967.3 | - | 0.0 | 967.5 | - | 0.0 | 967.1 | - | 0.0 |
| LS-15 | EP-101 | 969.3 | 1.2 | 4 | 12 | 963.9 | - | 0.0 | 964.4 | - | 0.0 | 965.7 | - | 0.0 | 963.6 | - | 0.0 |
| ***P-31*** | EP-103 | 976.0 | 0.8 | 1 | 3 | 968.0 | - | 0.0 | 968.2 | - | 0.0 | 968.6 | - | 0.0 | 967.7 | - | 0.0 |
| ***#N/A*** | EP-110 | 962.2 | #N/A | 1 | 3 | 956.5 | - | 0.0 | 961.1 | - | 0.0 | 962.5 | 0.3 | 0.0 | 962.3 | 0.2 | 0.0 |
| EP-111 | EP-112 | 960.0 | 0.2 | 3 | 9 | 959.7 | - | 0.0 | 959.8 | - | 0.0 | 960.0 | - | 0.0 | 959.9 | - | 0.0 |
| EP-119 | EP-120 | 971.1 | 2.2 | 2 | 6 | 966.7 | - | 0.0 | 966.7 | - | 0.0 | 966.7 | - | 0.0 | 966.7 | - | 0.0 |
| EP-125 | EP-123 | 964.6 | 0.5 | 4 | 12 | 953.4 | - | 0.0 | 953.4 | - | 0.0 | 953.4 | - | 0.0 | 953.4 | - | 0.0 |
| DP-11 | EP-130 | 964.0 | 1.6 | 4 | 12 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 |
| DP-11 | EP-131 | 964.0 | 1.6 | 4 | 12 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 |
| Proposed | EP-132 | 964.1 | 2.9 | 6 | 18 | 963.7 | - | 0.0 | 964.2 | 0.2 | 0.0 | 964.6 | 0.5 | 0.0 | 964.4 | 0.3 | 0.0 |
| Proposed | EP-135 | 962.5 | 2.9 | 6 | 18 | 963.6 | 1.1 | 0.0 | 964.1 | 1.6 | 0.0 | 964.6 | 2.1 | 0.0 | 964.4 | 1.9 | 0.0 |
| EP-107 | EP-136 | 963.7 | 0.8 | 5 | 15 | 963.6 | - | 0.0 | 964.1 | 0.4 | 0.0 | 964.6 | 0.9 | 0.0 | 964.4 | 0.6 | 0.0 |
| BE-36 | EP-143 | 990.0 | 4.4 | 7 | 21 | 985.0 | - | 0.0 | 986.2 | - | 0.0 | 988.1 | - | 0.0 | 984.6 | - | 0.0 |
| BE-06 | EP-144 | 985.8 | 0.8 | 6 | 18 | 983.1 | - | 0.0 | 984.8 | - | 0.0 | 986.1 | 0.3 | 0.0 | 983.4 | - | 0.0 |
| EP-146 | EP-147 | 963.0 | 1.0 | 2 | 6 | 947.8 | - | 0.0 | 948.0 | - | 0.0 | 950.0 | - | 0.0 | 947.6 | - | 0.0 |
| EP-01 | EP-148 | 957.2 | 24.6 | 9 | 27 | 947.1 | - | 0.0 | 948.0 | - | 0.0 | 950.0 | - | 0.0 | 947.4 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subwatershed** | **Node Name** | **Rim Invert** | **Subwatershed Area (ac)** | **Number of Catch Basins** | **Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin)** | **Max Water Elevation (ft)** | **Maximum Depth Above Manhole (ft)** | **Max Runoff Per Catch Basin (cfs)** | **Max Water Elevation (ft)2** | **Maximum Depth Above Manhole (ft)3** | **Max Runoff Per Catch Basin (cfs)2** | **Max Water Elevation (ft)5** | **Maximum Depth Above Manhole (ft)6** | **Max Runoff Per Catch Basin (cfs)3** | **Max Water Elevation (ft)5** | **Maximum Depth Above Manhole (ft)6** | **Max Runoff Per Catch Basin (cfs)** |
| EP-17 | EP-18 | 960.7 | 1.0 | 3 | 9 | 961.1 | 0.4 | 0.0 | 961.4 | 0.7 | 0.0 | 961.8 | 1.1 | 0.0 | 961.7 | 0.9 | 0.0 |
| EP-19 | EP-20 | 963.2 | 0.8 | 4 | 12 | 961.1 | - | 0.0 | 961.4 | - | 0.0 | 962.0 | - | 0.0 | 961.7 | - | 0.0 |
| EP-19 | EP-21 | 961.8 | 0.8 | 4 | 12 | 961.1 | - | 0.0 | 961.4 | - | 0.0 | 962.0 | 0.2 | 0.0 | 961.7 | - | 0.0 |
| ***EP-15*** | EP-22 | 968.1 | 0.5 | 1 | 3 | 961.1 | - | 0.0 | 961.4 | - | 0.0 | 961.8 | - | 0.0 | 961.7 | - | 0.0 |
| EP-17 | EP-29 | 962.0 | 1.0 | 3 | 9 | 961.1 | - | 0.0 | 961.4 | - | 0.0 | 962.0 | - | 0.0 | 961.7 | - | 0.0 |
| 636 | EP-41 | 974.6 | 0.1 | 5 | 15 | 970.5 | - | 0.0 | 970.7 | - | 0.0 | 972.1 | - | 0.0 | 969.8 | - | 0.0 |
| 709 | EP-42 | 970.3 | 0.8 | 8 | 24 | 964.1 | - | 0.0 | 964.3 | - | 0.0 | 966.4 | - | 0.0 | 963.7 | - | 0.0 |
| P-34 | EP-449 | 838.5 | 127.3 | 253 | 759 | 833.1 | - | 0.0 | 833.7 | - | 0.0 | 833.8 | - | 0.0 | 833.7 | - | 0.0 |
| P-34 | EP-450 | 833.9 | 127.3 | 253 | 759 | 828.5 | - | 0.0 | 828.5 | - | 0.0 | 828.5 | - | 0.0 | 828.5 | - | 0.0 |
| P-34 | EP-451 | 824.5 | 127.3 | 253 | 759 | 817.5 | - | 0.0 | 820.3 | - | 0.0 | 826.3 | 1.8 | 0.0 | 820.4 | - | 0.0 |
| 83-P01 | EP-460 | 829.3 | 61.3 | 90 | 270 | 825.3 | - | 0.0 | 825.3 | - | 0.0 | 825.3 | - | 0.0 | 825.3 | - | 0.0 |
| 83-P01 | EP-463 | 828.9 | 61.3 | 90 | 270 | 823.9 | - | 0.0 | 823.9 | - | 0.0 | 823.9 | - | 0.0 | 823.9 | - | 0.0 |
| PLOC-H4b | EP-465 | 825.8 | 19.4 | 6 | 18 | 821.8 | - | 0.0 | 821.8 | - | 0.0 | 821.8 | - | 0.0 | 821.8 | - | 0.0 |
| 83-P01 | EP-472 | 850.7 | 61.3 | 90 | 270 | 846.7 | - | 0.0 | 846.7 | - | 0.0 | 846.7 | - | 0.0 | 846.7 | - | 0.0 |
| 83-P01 | EP-473 | 848.9 | 61.3 | 90 | 270 | 844.9 | - | 0.0 | 844.9 | - | 0.0 | 844.9 | - | 0.0 | 844.9 | - | 0.0 |
| P-34 | EP-477 | 832.8 | 127.3 | 253 | 759 | 826.1 | - | 0.0 | 826.1 | - | 0.0 | 826.3 | - | 0.0 | 826.1 | - | 0.0 |
| WinterberryLn | EP-478 | 821.2 | 58.4 | 169 | 507 | 816.7 | - | 0.0 | 818.8 | - | 0.0 | 824.1 | 2.9 | 0.0 | 819.1 | - | 0.0 |
| WinterberryLn | EP-479 | 823.2 | 58.4 | 169 | 507 | 816.5 | - | 0.0 | 818.5 | - | 0.0 | 823.8 | 0.6 | 0.0 | 819.1 | - | 0.0 |
| P-34 | EP-480 | 823.1 | 127.3 | 253 | 759 | 817.3 | - | 0.0 | 819.9 | - | 0.0 | 825.5 | 2.4 | 0.0 | 820.0 | - | 0.0 |
| 83-P01 | EP-482 | 825.1 | 61.3 | 90 | 270 | 808.2 | - | 0.0 | 817.5 | - | 0.0 | 821.3 | - | 0.0 | 819.0 | - | 0.0 |
| 83-P01 | EP-483 | 816.5 | 61.3 | 90 | 270 | 810.0 | - | 0.0 | 811.6 | - | 0.0 | 817.2 | 0.7 | 0.0 | 815.8 | - | 0.0 |
| PP-03 | EP-57 | 958.0 | 1.8 | 5 | 15 | 958.6 | 0.6 | 0.0 | 959.0 | 1.0 | 0.0 | 960.0 | 2.0 | 0.0 | 959.6 | 1.6 | 0.0 |
| PP-03 | EP-76 | 958.0 | 1.8 | 5 | 15 | 958.6 | 0.6 | 0.0 | 959.0 | 1.0 | 0.0 | 960.0 | 2.0 | 0.0 | 959.6 | 1.6 | 0.0 |
| PP-03 | EP-80 | 958.0 | 1.8 | 5 | 15 | 958.6 | 0.6 | 0.0 | 959.0 | 1.0 | 0.0 | 960.0 | 2.0 | 0.0 | 959.6 | 1.6 | 0.0 |
| ***D-01*** | EP-81 | 973.5 | 8.5 | 1 | 3 | 971.8 | - | 0.0 | 972.4 | - | 0.0 | 973.4 | - | 0.0 | 971.7 | - | 0.0 |
| EP-85 | EP-84 | 819.8 | 1.9 | 2 | 6 | 816.4 | - | 0.0 | 817.9 | - | 0.0 | 819.6 | - | 0.0 | 815.8 | - | 0.0 |
| ***TO-P05*** | EP-87 | 819.5 | 14.6 | 1 | 3 | 818.9 | - | 0.0 | 819.8 | 0.3 | 0.0 | 821.1 | 1.6 | 0.0 | 817.0 | - | 0.0 |
| ***Tintaocanku-P01*** | EP-88 | 815.0 | 4.0 | 1 | 3 | 812.5 | - | 0.0 | 813.1 | - | 0.0 | 815.3 | 0.3 | 0.0 | 813.1 | - | 0.0 |
| TO-P2 | EP-89 | 813.5 | 3.4 | 2 | 6 | 811.9 | - | 0.0 | 813.1 | - | 0.0 | 815.0 | 1.5 | 0.0 | 813.1 | - | 0.0 |
| ***T0-P1*** | EP-90 | 813.5 | 2.5 | 1 | 3 | 811.9 | - | 0.0 | 813.1 | - | 0.0 | 815.0 | 1.5 | 0.0 | 813.1 | - | 0.0 |
| TO-111 | EP-91 | 814.7 | 0.6 | 3 | 9 | 812.3 | - | 0.0 | 814.0 | - | 0.0 | 815.0 | 0.3 | 0.0 | 813.1 | - | 0.0 |
| ***#N/A*** | EP-92 | 963.0 | #N/A | 1 | 3 | 958.0 | - | 0.0 | 958.0 | - | 0.0 | 958.0 | - | 0.0 | 958.0 | - | 0.0 |
| GC-11 | GC-10 | 954.5 | 1.6 | 2 | 6 | 947.4 | - | 0.0 | 948.7 | - | 0.0 | 952.2 | - | 0.0 | 947.4 | - | 0.0 |
| GC-18 | GC-13 | 959.1 | 5.5 | 4 | 12 | 948.2 | - | 0.0 | 950.2 | - | 0.0 | 953.8 | - | 0.0 | 947.9 | - | 0.0 |
| GC-12 | GC-14 | 951.7 | 1.9 | 2 | 6 | 948.6 | - | 0.0 | 950.4 | - | 0.0 | 952.9 | 1.2 | 0.0 | 947.9 | - | 0.0 |
| GC-17 | GC-15 | 956.5 | 2.9 | 4 | 12 | 950.5 | - | 0.0 | 952.1 | - | 0.0 | 953.8 | - | 0.0 | 948.6 | - | 0.0 |
| GC-17 | GC-16 | 954.0 | 2.9 | 4 | 12 | 951.9 | - | 0.0 | 953.3 | - | 0.0 | 954.5 | 0.5 | 0.0 | 949.4 | - | 0.0 |
| GC-18 | GC-19 | 961.0 | 5.5 | 4 | 12 | 954.6 | - | 0.0 | 954.9 | - | 0.0 | 959.5 | - | 0.0 | 954.5 | - | 0.0 |
| GC-18 | GC-20 | 964.0 | 5.5 | 4 | 12 | 956.4 | - | 0.0 | 956.8 | - | 0.0 | 962.8 | - | 0.0 | 956.3 | - | 0.0 |
| GC-17 | GC-22 | 954.0 | 2.9 | 4 | 12 | 952.0 | - | 0.0 | 953.1 | - | 0.0 | 953.7 | - | 0.0 | 949.4 | - | 0.0 |
| GC-23 | GC-24 | 959.9 | 2.0 | 2 | 6 | 957.1 | - | 0.0 | 959.0 | - | 0.0 | 959.3 | - | 0.0 | 954.2 | - | 0.0 |
| GC-27 | GC-26 | 960.6 | 2.3 | 7 | 21 | 948.8 | - | 0.0 | 949.1 | - | 0.0 | 950.2 | - | 0.0 | 948.1 | - | 0.0 |
| GC-27 | GC-29 | 957.6 | 2.3 | 7 | 21 | 948.7 | - | 0.0 | 949.3 | - | 0.0 | 951.2 | - | 0.0 | 948.3 | - | 0.0 |
| GC-27 | GC-30 | 959.8 | 2.3 | 7 | 21 | 949.9 | - | 0.0 | 951.0 | - | 0.0 | 952.8 | - | 0.0 | 948.9 | - | 0.0 |
| GC-28 | GC-31 | 962.7 | 1.2 | 2 | 6 | 951.8 | - | 0.0 | 953.3 | - | 0.0 | 955.1 | - | 0.0 | 950.5 | - | 0.0 |
| J-04 | J-05 | 987.2 | 0.2 | 2 | 6 | 984.9 | - | 0.0 | 985.4 | - | 0.0 | 987.4 | 0.2 | 0.0 | 984.5 | - | 0.0 |
| J-07 | J-06 | 987.0 | 0.8 | 3 | 9 | 984.0 | - | 0.0 | 985.0 | - | 0.0 | 987.1 | 0.1 | 0.0 | 983.4 | - | 0.0 |
| J-07 | J-09 | 988.7 | 0.8 | 3 | 9 | 984.3 | - | 0.0 | 985.0 | - | 0.0 | 988.0 | - | 0.0 | 984.1 | - | 0.0 |
| J-10 | J-11 | 989.2 | 0.1 | 2 | 6 | 984.7 | - | 0.0 | 985.1 | - | 0.0 | 988.6 | - | 0.0 | 984.4 | - | 0.0 |
| 20172 | J1288 | 802.5 | 126.3 | 7 | 21 | 802.5 | - | 0.0 | 802.6 | - | 0.0 | 802.9 | 0.4 | 0.0 | 802.6 | 0.1 | 0.0 |
| 1-EV-P05 | J1292 | 810.5 | 39.3 | 2 | 6 | 806.3 | - | 0.0 | 806.6 | - | 0.0 | 810.0 | - | 0.0 | 806.3 | - | 0.0 |
| 1-EV-P06 | J1293 | 810.0 | 5.5 | 2 | 6 | 805.1 | - | 0.0 | 805.4 | - | 0.0 | 806.6 | - | 0.0 | 805.3 | - | 0.0 |
| 1-EV-P05 | J1295 | 810.5 | 39.3 | 2 | 6 | 805.6 | - | 0.0 | 805.7 | - | 0.0 | 806.0 | - | 0.0 | 805.6 | - | 0.0 |
| 1-EV-P06 | J1296 | 810.0 | 5.5 | 2 | 6 | 805.1 | - | 0.0 | 805.4 | - | 0.0 | 806.3 | - | 0.0 | 805.3 | - | 0.0 |
| 1-EV-P11 | J1297 | 835.0 | 7.2 | 6 | 18 | 827.2 | - | 0.0 | 827.8 | - | 0.0 | 831.6 | - | 0.0 | 827.3 | - | 0.0 |

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[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 1-EV-P11 | J1298 | 856.0 | 7.2 | 6 | 18 | 856.8 | 0.8 | 0.0 | 857.5 | 1.5 | 0.0 | 858.9 | 2.9 | 0.0 | 856.9 | 0.9 | 0.0 |
| 3-DP-P06 | J1339 | 931.5 | 3.5 | 2 | 6 | 927.9 | - | 0.0 | 928.8 | - | 0.0 | 930.4 | - | 0.0 | 928.5 | - | 0.0 |
| 2-DC-08 | J1347 | 917.1 | 241.1 | 50 | 150 | 917.7 | 0.7 | 0.0 | 918.3 | 1.3 | 0.0 | 919.3 | 2.2 | 0.0 | 918.1 | 1.1 | 0.0 |
| P-01 | J1371 | 849.0 | 16.3 | 2 | 6 | 837.1 | - | 0.0 | 838.9 | - | 0.0 | 840.3 | - | 0.0 | 838.5 | - | 0.0 |
| 1-EV-P10 | J1377 | 813.0 | 7.2 | 2 | 6 | 813.4 | 0.4 | 0.0 | 813.7 | 0.7 | 0.0 | 814.2 | 1.2 | 0.0 | 813.4 | 0.4 | 0.0 |
| ***P-02*** | J1398 | 833.0 | 66.3 | 1 | 3 | 832.6 | - | 0.0 | 832.6 | - | 0.0 | 832.6 | - | 0.0 | 832.6 | - | 0.0 |
| P-01 | J1401 | 833.0 | 16.3 | 2 | 6 | 834.1 | 1.1 | 0.0 | 834.4 | 1.4 | 0.0 | 834.6 | 1.6 | 0.0 | 834.3 | 1.3 | 0.0 |
| ***P06*** | J63 | 835.0 | 25.3 | 1 | 3 | 830.8 | - | 0.0 | 830.8 | - | 0.0 | 832.5 | - | 0.0 | 830.8 | - | 0.0 |
| P-06 | 43256 | 816.0 | 5.2 | 4 | 12 | 813.7 | - | 0.0 | 814.2 | - | 0.0 | 815.3 | - | 0.0 | 813.7 | - | 0.0 |
| P-06 | 43257 | 816.0 | 5.2 | 4 | 12 | 813.7 | - | 0.0 | 814.2 | - | 0.0 | 815.3 | - | 0.0 | 813.7 | - | 0.0 |
| P-06 | 43258 | 816.0 | 5.2 | 4 | 12 | 813.6 | - | 0.0 | 813.8 | - | 0.0 | 815.3 | - | 0.0 | 813.6 | - | 0.0 |
| P-06 | 43259 | 815.0 | 5.2 | 4 | 12 | 813.6 | - | 0.0 | 813.9 | - | 0.0 | 815.3 | 0.3 | 0.0 | 813.6 | - | 0.0 |
| WetlandnO | JurrisonOu | 924.0 | 162.4 | 2 | 6 | 924.4 | 0.4 | 0.0 | 924.6 | 0.6 | 0.0 | 924.9 | 0.9 | 0.0 | 924.7 | 0.7 | 0.0 |
| Proposed | LS-02 | 963.3 | 2.9 | 6 | 18 | 963.6 | 0.3 | 0.0 | 964.1 | 0.8 | 0.0 | 964.6 | 1.3 | 0.0 | 964.4 | 1.0 | 0.0 |
| Proposed | LS-03 | 963.4 | 2.9 | 6 | 18 | 963.6 | 0.2 | 0.0 | 964.1 | 0.7 | 0.0 | 964.6 | 1.2 | 0.0 | 964.4 | 1.0 | 0.0 |
| LS-01 | LS-04 | 963.3 | 0.4 | 3 | 9 | 963.6 | 0.3 | 0.0 | 964.1 | 0.8 | 0.0 | 964.6 | 1.3 | 0.0 | 964.4 | 1.1 | 0.0 |
| LS-01 | LS-05 | 963.9 | 0.4 | 3 | 9 | 963.6 | - | 0.0 | 964.1 | 0.2 | 0.0 | 964.6 | 0.6 | 0.0 | 964.4 | 0.4 | 0.0 |
| Proposed | LS-06 | 966.2 | 2.9 | 6 | 18 | 963.6 | - | 0.0 | 965.1 | - | 0.0 | 966.3 | - | 0.0 | 964.4 | - | 0.0 |
| LS-11 | LS-09 | 975.0 | 2.3 | 2 | 6 | 970.6 | - | 0.0 | 973.7 | - | 0.0 | 974.6 | - | 0.0 | 969.6 | - | 0.0 |
| EP-107 | LS-12 | 967.3 | 0.8 | 5 | 15 | 962.1 | - | 0.0 | 962.4 | - | 0.0 | 963.0 | - | 0.0 | 962.9 | - | 0.0 |
| LS-15 | LS-16 | 966.4 | 1.2 | 4 | 12 | 965.7 | - | 0.0 | 966.0 | - | 0.0 | 966.6 | 0.2 | 0.0 | 962.9 | - | 0.0 |
| P-30 | LS-17 | 973.5 | 3.1 | 4 | 12 | 968.1 | - | 0.0 | 969.2 | - | 0.0 | 971.1 | - | 0.0 | 966.9 | - | 0.0 |
| P-30 | LS-18 | 973.5 | 3.1 | 4 | 12 | 969.1 | - | 0.0 | 970.5 | - | 0.0 | 972.9 | - | 0.0 | 967.6 | - | 0.0 |
| P-30 | LS-19 | 972.6 | 3.1 | 4 | 12 | 969.1 | - | 0.0 | 970.8 | - | 0.0 | 973.0 | 0.4 | 0.0 | 967.9 | - | 0.0 |
| P-30 | LS-20 | 975.0 | 3.1 | 4 | 12 | 972.2 | - | 0.0 | 974.9 | - | 0.0 | 975.4 | 0.4 | 0.0 | 970.3 | - | 0.0 |
| LS-25 | LS-24 | 965.0 | 2.2 | 4 | 12 | 959.4 | - | 0.0 | 960.8 | - | 0.0 | 962.2 | - | 0.0 | 959.6 | - | 0.0 |
| LS-25 | LS-26 | 964.0 | 2.2 | 4 | 12 | 958.6 | - | 0.0 | 959.2 | - | 0.0 | 961.2 | - | 0.0 | 959.6 | - | 0.0 |
| ***#N/A*** | MH-02 | 946.7 | #N/A | 1 | 3 | 942.9 | - | 0.0 | 943.1 | - | 0.0 | 946.5 | - | 0.0 | 942.5 | - | 0.0 |
| MH-42 | MH-08 | 936.7 | 0.8 | 7 | 21 | 932.8 | - | 0.0 | 935.9 | - | 0.0 | 936.4 | - | 0.0 | 932.3 | - | 0.0 |
| MH-42 | MH-09 | 936.7 | 0.8 | 7 | 21 | 932.8 | - | 0.0 | 935.8 | - | 0.0 | 936.5 | - | 0.0 | 932.2 | - | 0.0 |
| CB-104 | MH-101 | 978.4 | 0.9 | 3 | 9 | 973.0 | - | 0.0 | 973.4 | - | 0.0 | 975.1 | - | 0.0 | 972.6 | - | 0.0 |
| CB-110 | MH-109 | 977.3 | 0.5 | 5 | 15 | 972.8 | - | 0.0 | 973.4 | - | 0.0 | 973.9 | - | 0.0 | 972.0 | - | 0.0 |
| MH-42 | MH-11 | 933.1 | 0.8 | 7 | 21 | 931.2 | - | 0.0 | 932.6 | - | 0.0 | 933.1 | - | 0.0 | 931.2 | - | 0.0 |
| CB-116 | MH-120 | 984.6 | 0.2 | 2 | 6 | 976.2 | - | 0.0 | 979.2 | - | 0.0 | 981.4 | - | 0.0 | 975.4 | - | 0.0 |
| 1-EV-P03 | MH124 | 809.0 | 21.9 | 2 | 6 | 807.0 | - | 0.0 | 808.8 | - | 0.0 | 811.8 | 2.8 | 0.0 | 809.0 | - | 0.0 |
| 1-EV-P03 | MH125 | 809.0 | 21.9 | 2 | 6 | 807.0 | - | 0.0 | 808.8 | - | 0.0 | 811.8 | 2.8 | 0.0 | 809.0 | - | 0.0 |
| 1-EV-P01 | MH126 | 809.0 | 13.2 | 4 | 12 | 807.0 | - | 0.0 | 809.1 | 0.1 | 0.0 | 811.8 | 2.8 | 0.0 | 809.2 | 0.2 | 0.0 |
| 1-EV-P01 | MH127 | 809.0 | 13.2 | 4 | 12 | 807.0 | - | 0.0 | 809.1 | 0.1 | 0.0 | 811.8 | 2.8 | 0.0 | 809.2 | 0.2 | 0.0 |
| 1-EV-P01 | MH128 | 809.0 | 13.2 | 4 | 12 | 807.0 | - | 0.0 | 809.1 | 0.1 | 0.0 | 811.8 | 2.8 | 0.0 | 809.2 | 0.2 | 0.0 |
| ***1-EV-P02*** | MH129 | 812.0 | 0.8 | 1 | 3 | 808.5 | - | 0.0 | 808.8 | - | 0.0 | 811.8 | - | 0.0 | 809.2 | - | 0.0 |
| ***#N/A*** | MH-13 | 958.6 | #N/A | 1 | 3 | 955.0 | - | 0.0 | 955.8 | - | 0.0 | 956.8 | - | 0.0 | 954.4 | - | 0.0 |
| 2 | MH-166 | 969.5 | 1.5 | 7 | 21 | 960.0 | - | 0.0 | 960.2 | - | 0.0 | 968.6 | - | 0.0 | 960.0 | - | 0.0 |
| ***#N/A*** | MH-17 | 965.3 | #N/A | 1 | 3 | 960.2 | - | 0.0 | 960.2 | - | 0.0 | 960.2 | - | 0.0 | 960.2 | - | 0.0 |
| ***#N/A*** | MH-19 | 967.0 | #N/A | 1 | 3 | 960.3 | - | 0.0 | 960.3 | - | 0.0 | 960.3 | - | 0.0 | 960.3 | - | 0.0 |
| ***#N/A*** | MH-20 | 972.0 | #N/A | 1 | 3 | 964.9 | - | 0.0 | 964.9 | - | 0.0 | 964.9 | - | 0.0 | 964.9 | - | 0.0 |
| CB56 | MH218 | 1003.0 | 1.3 | 3 | 9 | 999.2 | - | 0.0 | 1002.7 | - | 0.0 | 1004.2 | 1.2 | 0.0 | 997.9 | - | 0.0 |
| CB379 | MH220 | 1002.0 | 1.4 | 2 | 6 | 986.9 | - | 0.0 | 994.9 | - | 0.0 | 999.5 | - | 0.0 | 985.2 | - | 0.0 |
| CSAH82 | MH-220 | 974.0 | 2.0 | 3 | 9 | 970.3 | - | 0.0 | 971.0 | - | 0.0 | 972.8 | - | 0.0 | 970.0 | - | 0.0 |
| MH222 | MH221 | 960.0 | 3.0 | 4 | 12 | 953.5 | - | 0.0 | 955.0 | - | 0.0 | 959.7 | - | 0.0 | 953.3 | - | 0.0 |
| 3-DC-P11 | MH223 | 960.0 | 4.0 | 2 | 6 | 947.2 | - | 0.0 | 949.3 | - | 0.0 | 951.7 | - | 0.0 | 947.6 | - | 0.0 |
| CB412 | MH224 | 949.0 | 0.9 | 3 | 9 | 943.4 | - | 0.0 | 943.6 | - | 0.0 | 947.7 | - | 0.0 | 943.1 | - | 0.0 |
| 3-DP-P06 | MH225 | 937.0 | 3.5 | 2 | 6 | 929.5 | - | 0.0 | 931.1 | - | 0.0 | 932.4 | - | 0.0 | 928.5 | - | 0.0 |
| MH-42 | MH-25 | 933.1 | 0.8 | 7 | 21 | 931.2 | - | 0.0 | 932.6 | - | 0.0 | 933.0 | - | 0.0 | 931.2 | - | 0.0 |
| MH-255 | MH-250 | 977.0 | 0.3 | 10 | 30 | 974.7 | - | 0.0 | 975.3 | - | 0.0 | 975.7 | - | 0.0 | 975.2 | - | 0.0 |
| MH-255 | MH-252 | 977.0 | 0.3 | 10 | 30 | 974.6 | - | 0.0 | 975.1 | - | 0.0 | 975.5 | - | 0.0 | 975.2 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| MH-255 | MH-254 | 976.0 | 0.3 | 10 | 30 | 974.6 | - | 0.0 | 974.9 | - | 0.0 | 975.3 | - | 0.0 | 975.2 | - | 0.0 |
| X-24 | MH-27 | 929.5 | 0.3 | 2 | 6 | 930.8 | 1.3 | 0.0 | 931.0 | 1.5 | 0.0 | 931.4 | 1.9 | 0.0 | 931.2 | 1.7 | 0.0 |
| 4-BE-P12 | MH287 | 1006.4 | 3.1 | 4 | 12 | 995.3 | - | 0.0 | 998.5 | - | 0.0 | 1001.5 | - | 0.0 | 995.1 | - | 0.0 |
| 1-BR-P09 | MH-29 | 930.1 | 17.3 | 6 | 18 | 930.8 | 0.7 | 0.0 | 931.0 | 1.0 | 0.0 | 931.4 | 1.3 | 0.0 | 931.2 | 1.2 | 0.0 |
| 1-BR-P09 | MH-31 | 929.0 | 17.3 | 6 | 18 | 923.4 | - | 0.0 | 923.4 | - | 0.0 | 923.4 | - | 0.0 | 923.4 | - | 0.0 |
| ***#N/A*** | MH-322-3 | 995.0 | #N/A | 1 | 3 | 989.4 | - | 0.0 | 990.3 | - | 0.0 | 991.9 | - | 0.0 | 986.7 | - | 0.0 |
| 1-BR-P09 | MH-34 | 929.2 | 17.3 | 6 | 18 | 923.4 | - | 0.0 | 923.4 | - | 0.0 | 923.4 | - | 0.0 | 923.4 | - | 0.0 |
| 619 | MH-357 | 976.8 | 0.2 | 2 | 6 | 974.6 | - | 0.0 | 974.9 | - | 0.0 | 975.3 | - | 0.0 | 975.2 | - | 0.0 |
| 3-DC-P11 | MH39 | 953.0 | 4.0 | 2 | 6 | 946.4 | - | 0.0 | 947.8 | - | 0.0 | 949.5 | - | 0.0 | 947.6 | - | 0.0 |
| 1-BR-P09 | MH-39 | 930.8 | 17.3 | 6 | 18 | 930.8 | - | 0.0 | 931.0 | 0.2 | 0.0 | 931.4 | 0.6 | 0.0 | 931.2 | 0.4 | 0.0 |
| MH-42 | MH-40 | 930.8 | 0.8 | 7 | 21 | 930.8 | - | 0.0 | 931.0 | 0.2 | 0.0 | 931.4 | 0.6 | 0.0 | 931.2 | 0.4 | 0.0 |
| MH-42 | MH-41 | 930.6 | 0.8 | 7 | 21 | 930.8 | 0.2 | 0.0 | 931.0 | 0.4 | 0.0 | 931.4 | 0.8 | 0.0 | 931.2 | 0.6 | 0.0 |
| MH-420 | MH-417 | 972.1 | 0.5 | 4 | 12 | 966.9 | - | 0.0 | 966.9 | - | 0.0 | 966.9 | - | 0.0 | 966.9 | - | 0.0 |
| MysticLake | MH-460 | 961.0 | 201.2 | 2 | 6 | 958.8 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| PP-10 | MH-471 | 960.0 | 3.0 | 3 | 9 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| PP-10 | MH-472 | 960.0 | 3.0 | 3 | 9 | 958.6 | - | 0.0 | 959.0 | - | 0.0 | 960.0 | - | 0.0 | 959.6 | - | 0.0 |
| ML-02 | ML-01 | 962.9 | 1.0 | 4 | 12 | 952.5 | - | 0.0 | 954.4 | - | 0.0 | 956.6 | - | 0.0 | 950.9 | - | 0.0 |
| ML-02 | ML-06 | 963.8 | 1.0 | 4 | 12 | 953.3 | - | 0.0 | 955.7 | - | 0.0 | 957.9 | - | 0.0 | 951.4 | - | 0.0 |
| ML-07 | ML-08 | 968.2 | 1.2 | 3 | 9 | 954.3 | - | 0.0 | 957.2 | - | 0.0 | 958.9 | - | 0.0 | 953.8 | - | 0.0 |
| ML-07 | ML-09 | 968.0 | 1.2 | 3 | 9 | 956.4 | - | 0.0 | 957.6 | - | 0.0 | 959.4 | - | 0.0 | 955.9 | - | 0.0 |
| ML-12 | ML-10 | 970.9 | 0.2 | 2 | 6 | 957.9 | - | 0.0 | 958.1 | - | 0.0 | 959.4 | - | 0.0 | 958.0 | - | 0.0 |
| ML-15 | ML-16 | 964.7 | 1.1 | 2 | 6 | 960.0 | - | 0.0 | 960.8 | - | 0.0 | 962.2 | - | 0.0 | 958.4 | - | 0.0 |
| DS-02B | Node7 | 965.0 | 73.2 | 3 | 9 | 962.4 | - | 0.0 | 962.6 | - | 0.0 | 963.2 | - | 0.0 | 962.8 | - | 0.0 |
| DS-02B | Node8 | 965.0 | 73.2 | 3 | 9 | 962.2 | - | 0.0 | 962.2 | - | 0.0 | 962.3 | - | 0.0 | 962.3 | - | 0.0 |
| DS-02B | Node9 | 965.0 | 73.2 | 3 | 9 | 958.7 | - | 0.0 | 958.8 | - | 0.0 | 958.9 | - | 0.0 | 958.8 | - | 0.0 |
| CB-151 | Out-15 | 973.5 | 0.4 | 2 | 6 | 967.2 | - | 0.0 | 967.5 | - | 0.0 | 968.6 | - | 0.0 | 966.9 | - | 0.0 |
| ***WETLANDnB1*** | Out-51 | 960.3 | 4.3 | 1 | 3 | 950.3 | - | 0.0 | 950.3 | - | 0.0 | 950.3 | - | 0.0 | 950.3 | - | 0.0 |
| ***#N/A*** | P1-OCS | 819.0 | #N/A | 1 | 3 | 816.1 | - | 0.0 | 816.1 | - | 0.0 | 817.3 | - | 0.0 | 816.1 | - | 0.0 |
| 709 | PG-01 | 971.5 | 0.8 | 8 | 24 | 964.5 | - | 0.0 | 964.6 | - | 0.0 | 966.4 | - | 0.0 | 964.1 | - | 0.0 |
| 709 | PG-04 | 971.5 | 0.8 | 8 | 24 | 964.5 | - | 0.0 | 964.6 | - | 0.0 | 966.5 | - | 0.0 | 964.1 | - | 0.0 |
| MH-365 | PG-06 | 975.0 | 0.2 | 2 | 6 | 974.6 | - | 0.0 | 974.9 | - | 0.0 | 975.3 | 0.3 | 0.0 | 975.2 | 0.2 | 0.0 |
| TW-103 | RAVINE-WES | 974.0 | 23.3 | 4 | 12 | 974.3 | 0.3 | 0.0 | 974.3 | 0.3 | 0.0 | 974.4 | 0.4 | 0.0 | 974.1 | 0.1 | 0.0 |
| ***RVRPond*** | RV-01 | 962.0 | 27.0 | 1 | 3 | 955.2 | - | 0.0 | 955.6 | - | 0.0 | 957.5 | - | 0.0 | 955.3 | - | 0.0 |
| T-04 | T-03 | 820.7 | 0.7 | 2 | 6 | 817.0 | - | 0.0 | 817.6 | - | 0.0 | 820.5 | - | 0.0 | 816.5 | - | 0.0 |
| T-09 | T-08 | 820.4 | 0.6 | 3 | 9 | 816.0 | - | 0.0 | 816.3 | - | 0.0 | 818.1 | - | 0.0 | 815.0 | - | 0.0 |
| T-09 | T-11 | 818.7 | 0.6 | 3 | 9 | 814.4 | - | 0.0 | 814.8 | - | 0.0 | 815.6 | - | 0.0 | 813.6 | - | 0.0 |
| EP-125 | TM-01 | 964.2 | 0.5 | 4 | 12 | 949.8 | - | 0.0 | 949.8 | - | 0.0 | 950.0 | - | 0.0 | 949.8 | - | 0.0 |
| ***TM-21*** | TM-22 | 964.0 | 0.9 | 1 | 3 | 959.1 | - | 0.0 | 959.7 | - | 0.0 | 961.1 | - | 0.0 | 957.8 | - | 0.0 |
| PP-03 | TM-26 | 970.5 | 1.8 | 5 | 15 | 964.5 | - | 0.0 | 964.5 | - | 0.0 | 964.5 | - | 0.0 | 964.5 | - | 0.0 |
| TO-111 | TO-113 | 819.1 | 0.6 | 3 | 9 | 814.1 | - | 0.0 | 817.3 | - | 0.0 | 818.7 | - | 0.0 | 813.7 | - | 0.0 |
| TO-P2 | TO-130 | 814.0 | 3.4 | 2 | 6 | 814.7 | 0.7 | 0.0 | 815.0 | 1.0 | 0.0 | 815.2 | 1.2 | 0.0 | 814.5 | 0.5 | 0.0 |
| ***WetlandND*** | X-02 | 987.5 | 6.0 | 1 | 3 | 981.2 | - | 0.0 | 981.6 | - | 0.0 | 983.8 | - | 0.0 | 981.2 | - | 0.0 |
| Tewapa-Reuse-2 | ARCTIC-LAK | 931.0 | 2.0 | 3 | 9 | 920.0 | - | 0.0 | 920.0 | - | 0.0 | 920.0 | - | 0.0 | 920.0 | - | 0.0 |
| Tewapa-Reuse-2 | ARCTIC-L1 | 929.0 | 2.0 | 3 | 9 | 922.0 | - | 0.0 | 922.0 | - | 0.0 | 922.0 | - | 0.0 | 922.0 | - | 0.0 |
| ***#N/A*** | BIO-2 | 970.5 | #N/A | 1 | 3 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 |
| ***#N/A*** | BIO-3 | 970.5 | #N/A | 1 | 3 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 |
| ***#N/A*** | BIO-4 | 966.5 | #N/A | 1 | 3 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 |
| ***#N/A*** | CSAH-82-1 | 993.0 | #N/A | 1 | 3 | 992.2 | - | 0.0 | 992.4 | - | 0.0 | 992.5 | - | 0.0 | 992.1 | - | 0.0 |
| EP-107 | EP-104 | 976.0 | 0.8 | 5 | 15 | 963.5 | - | 0.0 | 963.7 | - | 0.0 | 964.0 | - | 0.0 | 963.2 | - | 0.0 |
| 20172 | J1278 | 779.0 | 126.3 | 7 | 21 | 760.0 | - | 0.0 | 760.0 | - | 0.0 | 760.0 | - | 0.0 | 760.0 | - | 0.0 |
| MP6-A | Lake ODow | 965.0 | 600.7 | 23 | 69 | 957.1 | - | 0.0 | 957.2 | - | 0.0 | 957.3 | - | 0.0 | 957.2 | - | 0.0 |
| ***3-ML-P12*** | MH-449 | 966.4 | 22.8 | 1 | 3 | 963.4 | - | 0.0 | 963.4 | - | 0.0 | 963.4 | - | 0.0 | 963.4 | - | 0.0 |
| ***#N/A*** | Out-08 | 976.0 | #N/A | 1 | 3 | 974.0 | - | 0.0 | 974.0 | - | 0.0 | 974.0 | - | 0.0 | 974.0 | - | 0.0 |
| ***4-CSAH42-P01*** | Out-41 | 963.0 | 23.5 | 1 | 3 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 | 960.0 | - | 0.0 |
| ***#N/A*** | Out-48 | 963.0 | #N/A | 1 | 3 | 957.7 | - | 0.0 | 957.7 | - | 0.0 | 957.7 | - | 0.0 | 957.7 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 20172 | 1-CSAH16-P | 791.0 | 126.3 | 7 | 21 | 770.2 | - | 0.0 | 779.6 | - | 0.0 | 798.5 | 7.5 | 0.0 | 781.2 | - | 0.0 |
| 1-DC-P11FB | 1-DC-P11 | 817.0 | 12.4 | 2 | 6 | 812.4 | - | 0.0 | 814.9 | - | 0.0 | 816.5 | - | 0.0 | 814.3 | - | 0.0 |
| 1-DC-P12FB | 1-DC-P12 | 817.0 | 17.5 | 3 | 9 | 813.0 | - | 0.0 | 814.0 | - | 0.0 | 816.5 | - | 0.0 | 815.0 | - | 0.0 |
| ***1-PLD-P03*** | 1-PLD-P02 | 816.0 | 38.4 | 1 | 3 | 811.4 | - | 0.0 | 812.8 | - | 0.0 | 818.9 | 2.9 | 0.0 | 814.2 | - | 0.0 |
| 2-DC-08 | 2-DC-09 | 857.8 | 241.1 | 50 | 150 | 857.0 | - | 0.0 | 858.8 | 1.0 | 0.0 | 863.6 | 5.8 | 0.0 | 858.3 | 0.6 | 0.0 |
| PLOC H4a | 2-Outlet | 853.0 | 75.4 | 3 | 9 | 849.5 | - | 0.0 | 852.0 | - | 0.0 | 863.6 | 10.6 | 0.0 | 850.1 | - | 0.0 |
| ***4-BE-P08*** | 4-BE-P09 | 974.0 | 18.6 | 1 | 3 | 974.1 | - | 0.0 | 974.3 | 0.3 | 0.0 | 976.7 | 2.7 | 0.0 | 974.2 | 0.2 | 0.0 |
| ***Haasalake*** | 4-DC-P011 | 912.0 | 107.0 | 1 | 3 | 895.0 | - | 0.0 | 895.0 | - | 0.0 | 899.8 | - | 0.0 | 895.0 | - | 0.0 |
| ***3-DC-P09*** | CB396P | 959.0 | 16.6 | 1 | 3 | 952.8 | - | 0.0 | 954.0 | - | 0.0 | 956.9 | - | 0.0 | 952.8 | - | 0.0 |
| ***#N/A*** | HowardLake | 972.0 | #N/A | 1 | 3 | 958.3 | - | 0.0 | 958.5 | - | 0.0 | 958.9 | - | 0.0 | 958.7 | - | 0.0 |
| ***LS-23*** | LS-22 | 967.0 | 1.4 | 1 | 3 | 960.6 | - | 0.0 | 961.5 | - | 0.0 | 962.2 | - | 0.0 | 959.6 | - | 0.0 |
| 3-DC-P11 | MH222P | 959.0 | 4.0 | 2 | 6 | 953.8 | - | 0.0 | 956.4 | - | 0.0 | 958.6 | - | 0.0 | 953.8 | - | 0.0 |
| CB-104 | SR-04 | 976.0 | 0.9 | 3 | 9 | 972.0 | - | 0.0 | 972.0 | - | 0.0 | 972.3 | - | 0.0 | 972.0 | - | 0.0 |
| EP-01 | EP-01 Outflow | 952.0 | 24.6 | 9 | 27 | 947.1 | - | 0.0 | 948.0 | - | 0.0 | 950.0 | - | 0.0 | 947.4 | - | 0.0 |
| EP-01 | EP-01 Inflow | 953.0 | 24.6 | 9 | 27 | 950.8 | - | 0.0 | 950.8 | - | 0.0 | 950.8 | - | 0.0 | 950.8 | - | 0.0 |
| ***41778*** | 39939 | 704.1 | 29.0 | 1 | 3 | 706.7 | 2.7 | 0.0 | 707.9 | 3.9 | 0.0 | 710.4 | 6.3 | 0.0 | 708.0 | 3.9 | 0.0 |
| ***41778*** | 39890 | 711.8 | 29.0 | 1 | 3 | 707.0 | - | 0.0 | 708.5 | - | 0.0 | 712.5 | 0.7 | 0.0 | 708.6 | - | 0.0 |
| ***41778*** | 39361 | 717.6 | 29.0 | 1 | 3 | 719.9 | 2.3 | 0.0 | 720.5 | 2.9 | 0.0 | 721.8 | 4.2 | 0.0 | 720.5 | 2.9 | 0.0 |
| ***41778*** | 38490 | 717.9 | 29.0 | 1 | 3 | 720.6 | 2.7 | 0.0 | 721.9 | 4.0 | 0.0 | 723.7 | 5.8 | 0.0 | 721.9 | 4.0 | 0.0 |
| 37418 | 37354 | 735.0 | 43.0 | 2 | 6 | 737.2 | 2.2 | 0.0 | 738.6 | 3.6 | 0.0 | 741.0 | 6.0 | 0.0 | 738.7 | 3.7 | 0.0 |
| 37418 | 37030 | 738.5 | 43.0 | 2 | 6 | 739.9 | 1.4 | 0.0 | 740.5 | 2.0 | 0.0 | 742.2 | 3.7 | 0.0 | 740.9 | 2.5 | 0.0 |
| 37418 | 34256 | 741.3 | 43.0 | 2 | 6 | 745.2 | 3.9 | 0.0 | 745.7 | 4.4 | 0.0 | 747.2 | 5.9 | 0.0 | 746.1 | 4.9 | 0.0 |
| 37418 | 37452 | 750.0 | 43.0 | 2 | 6 | 729.6 | - | 0.0 | 731.3 | - | 0.0 | 734.3 | - | 0.0 | 731.4 | - | 0.0 |
| 37418 | 37418 | 731.4 | 43.0 | 2 | 6 | 733.2 | 1.7 | 0.0 | 734.5 | 3.0 | 0.0 | 736.9 | 5.5 | 0.0 | 734.6 | 3.1 | 0.0 |
| ***34019*** | 33893 | 760.0 | 21.0 | 1 | 3 | 746.8 | - | 0.0 | 747.1 | - | 0.0 | 747.8 | - | 0.0 | 747.2 | - | 0.0 |
| ***22554*** | 21800 | 754.3 | 18.0 | 1 | 3 | 754.0 | - | 0.0 | 755.4 | 1.1 | 0.0 | 756.6 | 2.3 | 0.0 | 755.7 | 1.4 | 0.0 |
| ***22554*** | 21841 | 751.2 | 18.0 | 1 | 3 | 753.9 | 2.8 | 0.0 | 754.9 | 3.7 | 0.0 | 755.8 | 4.6 | 0.0 | 755.1 | 3.9 | 0.0 |
| ***22554*** | 21238 | 753.4 | 18.0 | 1 | 3 | 754.0 | 0.6 | 0.0 | 755.5 | 2.1 | 0.0 | 756.6 | 3.2 | 0.0 | 755.7 | 2.3 | 0.0 |
| 21061 | 20347 | 760.8 | 6.4 | 2 | 6 | 762.0 | 1.2 | 0.0 | 762.6 | 1.8 | 0.0 | 763.6 | 2.8 | 0.0 | 762.6 | 1.8 | 0.0 |
| ***PIKE LAKE*** | 11921 | 824.6 | 194.6 | 1 | 3 | 825.2 | 0.6 | 0.0 | 825.7 | 1.0 | 0.0 | 826.2 | 1.6 | 0.0 | 825.2 | 0.6 | 0.0 |
| ***PIKE LAKE*** | 11898 | 830.7 | 194.6 | 1 | 3 | 826.4 | - | 0.0 | 827.2 | - | 0.0 | 828.9 | - | 0.0 | 826.4 | - | 0.0 |
| ***PIKE LAKE*** | 11718 | 827.2 | 194.6 | 1 | 3 | 827.8 | 0.6 | 0.0 | 828.2 | 1.0 | 0.0 | 829.1 | 1.9 | 0.0 | 827.8 | 0.6 | 0.0 |
| ***PIKE LAKE*** | 11693 | 832.1 | 194.6 | 1 | 3 | 828.5 | - | 0.0 | 829.3 | - | 0.0 | 830.5 | - | 0.0 | 828.5 | - | 0.0 |
| ***11663*** | 11300 | 834.1 | 29.9 | 1 | 3 | 834.8 | 0.8 | 0.0 | 835.4 | 1.3 | 0.0 | 836.0 | 1.9 | 0.0 | 834.8 | 0.8 | 0.0 |
| ***11663*** | 11270 | 840.5 | 29.9 | 1 | 3 | 835.5 | - | 0.0 | 836.5 | - | 0.0 | 837.9 | - | 0.0 | 835.6 | - | 0.0 |
| ***11663*** | 10543 | 840.4 | 29.9 | 1 | 3 | 841.2 | 0.7 | 0.0 | 841.8 | 1.3 | 0.0 | 842.7 | 2.3 | 0.0 | 841.2 | 0.8 | 0.0 |
| ***11663*** | 10504 | 849.9 | 29.9 | 1 | 3 | 843.0 | - | 0.0 | 843.6 | - | 0.0 | 844.4 | - | 0.0 | 843.0 | - | 0.0 |
| ***11663*** | 10032 | 849.6 | 29.9 | 1 | 3 | 850.7 | 1.0 | 0.0 | 851.5 | 1.9 | 0.0 | 852.6 | 3.0 | 0.0 | 850.7 | 1.0 | 0.0 |
| ***11663*** | 9868 | 850.8 | 29.9 | 1 | 3 | 852.1 | 1.3 | 0.0 | 853.0 | 2.2 | 0.0 | 854.7 | 3.9 | 0.0 | 852.1 | 1.3 | 0.0 |
| ***9300*** | 7905 | 859.9 | 39.8 | 1 | 3 | 863.8 | 3.9 | 0.0 | 864.4 | 4.5 | 0.0 | 866.3 | 6.4 | 0.0 | 865.5 | 5.6 | 0.0 |
| ***UPPJEFFERS*** | 3273 | 897.2 | 204.0 | 1 | 3 | 891.5 | - | 0.0 | 894.4 | - | 0.0 | 897.9 | 0.7 | 0.0 | 894.4 | - | 0.0 |
| ***UPPJEFFERS*** | 2307 | 886.1 | 204.0 | 1 | 3 | 891.5 | 5.4 | 0.0 | 894.4 | 8.3 | 0.0 | 897.9 | 11.8 | 0.0 | 894.4 | 8.3 | 0.0 |
| ***LWRJEFFERS*** | 7820 | 875.0 | 57.6 | 1 | 3 | 863.8 | - | 0.0 | 864.4 | - | 0.0 | 866.3 | - | 0.0 | 865.5 | - | 0.0 |
| 37418 | 35642 | 741.0 | 43.0 | 2 | 6 | 743.2 | 2.2 | 0.0 | 743.9 | 2.9 | 0.0 | 746.3 | 5.3 | 0.0 | 744.5 | 3.5 | 0.0 |
| ***#N/A*** | JP2 | 929.0 | #N/A | 1 | 3 | 925.3 | - | 0.0 | 928.2 | - | 0.0 | 930.8 | 1.8 | 0.0 | 925.0 | - | 0.0 |
| BLB4D | BLB4D_1 | 1000.0 | 63.0 | 23 | 69 | 980.4 | - | 0.0 | 980.7 | - | 0.0 | 981.9 | - | 0.0 | 980.7 | - | 0.0 |
| BLB4C | BLB4C_1 | 990.0 | 20.3 | 9 | 27 | 970.3 | - | 0.0 | 970.6 | - | 0.0 | 972.2 | - | 0.0 | 970.3 | - | 0.0 |
| BLB8A | BLB8B_1 | 954.0 | 58.5 | 3 | 9 | 954.2 | 0.2 | 0.0 | 954.3 | 0.3 | 0.0 | 954.4 | 0.4 | 0.0 | 954.2 | 0.2 | 0.0 |
| BLB8C | BLB8C_1 | 980.0 | 13.5 | 13 | 39 | 962.4 | - | 0.0 | 962.6 | - | 0.0 | 962.9 | - | 0.0 | 962.5 | - | 0.0 |
| ***BLB8B*** | BLB8B_2 | 980.0 | 9.0 | 1 | 3 | 956.3 | - | 0.0 | 956.5 | - | 0.0 | 956.7 | - | 0.0 | 956.4 | - | 0.0 |
| ***BLB3C*** | BLB3C_1 | 920.0 | 29.8 | 1 | 3 | 895.1 | - | 0.0 | 895.5 | - | 0.0 | 899.6 | - | 0.0 | 895.3 | - | 0.0 |
| BLB2B | RC_CR-6P | 754.7 | 8.1 | 12 | 36 | 749.3 | - | 0.0 | 750.7 | - | 0.0 | 752.4 | - | 0.0 | 751.4 | - | 0.0 |
| BLB2Q | BLB2Q_1 | 770.0 | 22.3 | 31 | 93 | 753.9 | - | 0.0 | 755.4 | - | 0.0 | 756.6 | - | 0.0 | 755.7 | - | 0.0 |
| BLB4A | BLB4A_1 | 916.0 | 20.2 | 9 | 27 | 916.3 | 0.3 | 0.0 | 916.4 | 0.4 | 0.0 | 916.6 | 0.6 | 0.0 | 916.3 | 0.3 | 0.0 |
| ***BLB2P*** | BLB2P_1 | 770.0 | 60.5 | 1 | 3 | 755.0 | - | 0.0 | 755.6 | - | 0.0 | 759.1 | - | 0.0 | 756.1 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***BLB2o*** | BLB2O_1 | 770.0 | 17.7 | 1 | 3 | 756.6 | - | 0.0 | 756.6 | - | 0.0 | 757.4 | - | 0.0 | 756.6 | - | 0.0 |
| BLB2D | BLB2D_1 | 770.0 | 33.0 | 34 | 102 | 752.5 | - | 0.0 | 753.0 | - | 0.0 | 754.9 | - | 0.0 | 753.0 | - | 0.0 |
| BLB2C | BLB2C_1 | 770.0 | 7.9 | 11 | 33 | 753.2 | - | 0.0 | 753.4 | - | 0.0 | 754.8 | - | 0.0 | 753.2 | - | 0.0 |
| BLA11B | BLB11B_1 | 760.0 | 33.7 | 51 | 153 | 746.1 | - | 0.0 | 748.0 | - | 0.0 | 748.8 | - | 0.0 | 747.5 | - | 0.0 |
| ***BLA9B1*** | HWY_DITCH | 744.1 | 3.6 | 1 | 3 | 747.5 | 3.4 | 0.0 | 749.2 | 5.1 | 0.0 | 751.7 | 7.6 | 0.0 | 748.8 | 4.7 | 0.0 |
| BLE1I | BLE1I_IN | 800.0 | 37.0 | 30 | 90 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| BLE1E | BLE1E_IN | 750.0 | 27.5 | 19 | 57 | 733.0 | - | 0.0 | 733.0 | - | 0.0 | 733.0 | - | 0.0 | 733.0 | - | 0.0 |
| BLE1F | BLE1F_IN | 800.0 | 13.9 | 3 | 9 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| ***BLE1G*** | BLE1G_IN | 800.0 | 3.7 | 1 | 3 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| BLE1H | BLE1H_IN | 800.0 | 32.3 | 14 | 42 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| ***BLE1K*** | BLE1K_IN | 800.0 | 2.0 | 1 | 3 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| BLE1J | BLE1J_IN | 800.0 | 4.3 | 6 | 18 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| BLB1C | BLB1C_IN | 800.0 | 19.7 | 12 | 36 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| BLB1B | BLB1B_IN | 800.0 | 25.5 | 2 | 6 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| BLB1D | BLB1D_IN | 800.0 | 38.0 | 62 | 186 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| BLB6A | BLB6A_IN | 800.0 | 9.1 | 2 | 6 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 | 0.0 | - | 0.0 |
| BLB2D | BLB6A_1 | 820.0 | 33.0 | 34 | 102 | 805.0 | - | 0.0 | 805.0 | - | 0.0 | 805.0 | - | 0.0 | 805.0 | - | 0.0 |
| BLB2D | BLB6A_2 | 820.0 | 33.0 | 34 | 102 | 805.0 | - | 0.0 | 805.0 | - | 0.0 | 805.0 | - | 0.0 | 805.0 | - | 0.0 |
| ***BLB7C*** | BLB7C_1 | 850.0 | 23.7 | 1 | 3 | 827.2 | - | 0.0 | 827.4 | - | 0.0 | 827.6 | - | 0.0 | 827.4 | - | 0.0 |
| ***BLB7B*** | BLB7B_1 | 830.0 | 32.5 | 1 | 3 | 812.5 | - | 0.0 | 813.4 | - | 0.0 | 816.7 | - | 0.0 | 815.2 | - | 0.0 |
| ***BLB6B*** | BLB6B_1 | 820.0 | 14.2 | 1 | 3 | 805.2 | - | 0.0 | 805.3 | - | 0.0 | 805.6 | - | 0.0 | 805.4 | - | 0.0 |
| ***BLB6C*** | BLB6C_1 | 820.0 | 108.2 | 1 | 3 | 804.5 | - | 0.0 | 805.0 | - | 0.0 | 805.6 | - | 0.0 | 805.0 | - | 0.0 |
| ***#N/A*** | Prior Lake | 910.0 | #N/A | 1 | 3 | 890.7 | - | 0.0 | 890.7 | - | 0.0 | 890.7 | - | 0.0 | 890.7 | - | 0.0 |
| ***UPPJEFFERS*** | 3456 | 902.0 | 204.0 | 1 | 3 | 891.5 | - | 0.0 | 894.4 | - | 0.0 | 897.9 | - | 0.0 | 894.4 | - | 0.0 |
| ***9300*** | 8308 | 858.6 | 39.8 | 1 | 3 | 863.8 | 5.2 | 0.0 | 864.4 | 5.8 | 0.0 | 866.3 | 7.7 | 0.0 | 865.5 | 6.9 | 0.0 |
| ***9300*** | 8376 | 857.5 | 39.8 | 1 | 3 | 863.8 | 6.3 | 0.0 | 864.4 | 6.9 | 0.0 | 866.3 | 8.8 | 0.0 | 865.5 | 8.0 | 0.0 |
| ***9300*** | 9131 | 870.0 | 39.8 | 1 | 3 | 863.8 | - | 0.0 | 864.4 | - | 0.0 | 866.3 | - | 0.0 | 865.5 | - | 0.0 |
| ***9300*** | 9150 | 856.1 | 39.8 | 1 | 3 | 856.8 | 0.8 | 0.0 | 857.7 | 1.7 | 0.0 | 860.8 | 4.7 | 0.0 | 856.6 | 0.5 | 0.0 |
| ***22554*** | 22595 | 750.9 | 18.0 | 1 | 3 | 752.1 | 1.1 | 0.0 | 752.6 | 1.6 | 0.0 | 753.6 | 2.6 | 0.0 | 752.7 | 1.8 | 0.0 |
| ***25299*** | 24092 | 746.5 | 9.5 | 1 | 3 | 749.6 | 3.2 | 0.0 | 751.1 | 4.6 | 0.0 | 752.4 | 5.9 | 0.0 | 751.4 | 5.0 | 0.0 |
| ***25557*** | 25557 | 744.0 | 10.5 | 1 | 3 | 747.2 | 3.2 | 0.0 | 748.5 | 4.5 | 0.0 | 750.4 | 6.4 | 0.0 | 749.7 | 5.7 | 0.0 |
| ***PL14*** | 9580 | 880.0 | 152.0 | 1 | 3 | 854.2 | - | 0.0 | 854.8 | - | 0.0 | 855.5 | - | 0.0 | 854.1 | - | 0.0 |
| ***25557*** | DL_bypass | 760.0 | 10.5 | 1 | 3 | 747.2 | - | 0.0 | 748.5 | - | 0.0 | 750.4 | - | 0.0 | 749.7 | - | 0.0 |
| BLE2C | BLE2C_1 | 810.0 | 55.9 | 66 | 198 | 796.2 | - | 0.0 | 798.5 | - | 0.0 | 802.9 | - | 0.0 | 798.6 | - | 0.0 |
| BLE2C | BLE2C_2 | 820.0 | 55.9 | 66 | 198 | 796.2 | - | 0.0 | 798.5 | - | 0.0 | 802.9 | - | 0.0 | 798.6 | - | 0.0 |
| ***38418*** | 38430 | 723.9 | 25.5 | 1 | 3 | 726.7 | 2.8 | 0.0 | 728.5 | 4.6 | 0.0 | 731.0 | 7.1 | 0.0 | 728.5 | 4.7 | 0.0 |
| ***9300*** | Node330 | 869.3 | 39.8 | 1 | 3 | 865.0 | - | 0.0 | 865.0 | - | 0.0 | 865.0 | - | 0.0 | 865.0 | - | 0.0 |
| ***PL14*** | 5924 | 880.0 | 152.0 | 1 | 3 | 866.1 | - | 0.0 | 866.8 | - | 0.0 | 869.3 | - | 0.0 | 866.8 | - | 0.0 |
| ***PL14*** | 5925 | 880.0 | 152.0 | 1 | 3 | 865.7 | - | 0.0 | 866.0 | - | 0.0 | 866.1 | - | 0.0 | 866.1 | - | 0.0 |
| ***PL14*** | 5926 | 880.0 | 152.0 | 1 | 3 | 860.5 | - | 0.0 | 860.7 | - | 0.0 | 860.8 | - | 0.0 | 860.7 | - | 0.0 |
| ***34019*** | Node336 | 741.6 | 21.0 | 1 | 3 | 745.3 | 3.8 | 0.0 | 745.9 | 4.3 | 0.0 | 747.7 | 6.1 | 0.0 | 746.4 | 4.8 | 0.0 |
| 37418 | Node337 | 745.0 | 43.0 | 2 | 6 | 726.6 | - | 0.0 | 728.4 | - | 0.0 | 730.9 | - | 0.0 | 728.5 | - | 0.0 |
| 37418 | Node338 | 727.6 | 43.0 | 2 | 6 | 729.6 | 2.0 | 0.0 | 731.3 | 3.7 | 0.0 | 734.2 | 6.6 | 0.0 | 731.4 | 3.7 | 0.0 |
| ***9300*** | Node340 | 859.6 | 39.8 | 1 | 3 | 863.8 | 4.2 | 0.0 | 864.4 | 4.8 | 0.0 | 866.3 | 6.7 | 0.0 | 865.5 | 5.9 | 0.0 |
| 37418 | Node345 | 726.0 | 43.0 | 2 | 6 | 728.1 | 2.1 | 0.0 | 729.5 | 3.5 | 0.0 | 732.2 | 6.2 | 0.0 | 729.6 | 3.6 | 0.0 |
| ***41778*** | Node346 | 710.6 | 29.0 | 1 | 3 | 712.9 | 2.3 | 0.0 | 714.1 | 3.5 | 0.0 | 716.1 | 5.5 | 0.0 | 714.2 | 3.6 | 0.0 |
| ***41778*** | Node347 | 709.1 | 29.0 | 1 | 3 | 711.2 | 2.1 | 0.0 | 712.4 | 3.3 | 0.0 | 715.1 | 6.0 | 0.0 | 712.5 | 3.3 | 0.0 |
| ***41778*** | Node348 | 707.6 | 29.0 | 1 | 3 | 709.3 | 1.7 | 0.0 | 710.3 | 2.7 | 0.0 | 712.8 | 5.1 | 0.0 | 710.4 | 2.7 | 0.0 |
| BLB5C | BLB5C1 | 800.0 | 86.5 | 45 | 135 | 785.0 | - | 0.0 | 786.3 | - | 0.0 | 790.0 | - | 0.0 | 785.1 | - | 0.0 |
| BLB5C | BLB5C1B | 830.0 | 86.5 | 45 | 135 | 786.0 | - | 0.0 | 786.0 | - | 0.0 | 790.0 | - | 0.0 | 786.0 | - | 0.0 |
| BLB5C | BLB5C1A | 820.0 | 86.5 | 45 | 135 | 779.0 | - | 0.0 | 779.0 | - | 0.0 | 790.0 | - | 0.0 | 779.0 | - | 0.0 |
| BLB5C | BLB5C4 | 830.0 | 86.5 | 45 | 135 | 790.0 | - | 0.0 | 790.0 | - | 0.0 | 790.0 | - | 0.0 | 790.0 | - | 0.0 |
| BLB5C | BLB5C1C | 800.0 | 86.5 | 45 | 135 | 778.0 | - | 0.0 | 778.0 | - | 0.0 | 790.0 | - | 0.0 | 778.0 | - | 0.0 |
| BLB5C | BLB8A.1 | 844.0 | 86.5 | 45 | 135 | 844.5 | 0.5 | 0.0 | 845.6 | 1.6 | 0.0 | 846.8 | 2.8 | 0.0 | 844.0 | - | 0.0 |
| BLB5C | BLB5C1.1 | 790.0 | 86.5 | 45 | 135 | 777.8 | - | 0.0 | 778.7 | - | 0.0 | 780.0 | - | 0.0 | 777.8 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 20172 | BLB5C1.2 | 780.0 | 126.3 | 7 | 21 | 770.9 | - | 0.0 | 771.8 | - | 0.0 | 772.1 | - | 0.0 | 770.9 | - | 0.0 |
| BLB5C | BLB5C4.1 | 830.0 | 86.5 | 45 | 135 | 787.9 | - | 0.0 | 787.9 | - | 0.0 | 790.0 | - | 0.0 | 787.9 | - | 0.0 |
| BLB5C | BLB5C1A.1 | 820.0 | 86.5 | 45 | 135 | 786.0 | - | 0.0 | 786.3 | - | 0.0 | 790.0 | - | 0.0 | 786.0 | - | 0.0 |
| BLB5C | BLB5C1C.1 | 820.0 | 86.5 | 45 | 135 | 786.0 | - | 0.0 | 786.3 | - | 0.0 | 790.0 | - | 0.0 | 786.0 | - | 0.0 |
| BLB5C | BLB5C1D | 830.0 | 86.5 | 45 | 135 | 786.0 | - | 0.0 | 786.0 | - | 0.0 | 790.0 | - | 0.0 | 786.0 | - | 0.0 |
| BLB2R | BLB5C1E | 767.0 | 23.9 | 13 | 39 | 767.4 | 0.4 | 0.0 | 767.9 | 0.9 | 0.0 | 768.6 | 1.6 | 0.0 | 767.8 | 0.8 | 0.0 |
| ***PL8*** | PL6a | 920.0 | 93.7 | 1 | 3 | 901.2 | - | 0.0 | 902.2 | - | 0.0 | 907.5 | - | 0.0 | 902.2 | - | 0.0 |
| ***PL8*** | PL7b | 900.0 | 93.7 | 1 | 3 | 878.8 | - | 0.0 | 883.8 | - | 0.0 | 898.3 | - | 0.0 | 877.1 | - | 0.0 |
| ***PL7*** | PL7a | 872.0 | 55.9 | 1 | 3 | 872.7 | 0.7 | 0.0 | 872.8 | 0.8 | 0.0 | 873.0 | 1.0 | 0.0 | 872.6 | 0.6 | 0.0 |
| ***PL8*** | PL8a | 910.0 | 93.7 | 1 | 3 | 900.3 | - | 0.0 | 900.9 | - | 0.0 | 902.9 | - | 0.0 | 901.1 | - | 0.0 |
| ***PL4*** | PL4a | 979.0 | 97.8 | 1 | 3 | 979.5 | 0.5 | 0.0 | 980.1 | 1.1 | 0.0 | 980.7 | 1.7 | 0.0 | 979.8 | 0.8 | 0.0 |
| ***BLE2B*** | OCS102a | 800.0 | 248.3 | 1 | 3 | 790.4 | - | 0.0 | 790.5 | - | 0.0 | 790.8 | - | 0.0 | 790.6 | - | 0.0 |
| ***BLE2B*** | BLB2Ba | 800.0 | 248.3 | 1 | 3 | 790.6 | - | 0.0 | 791.8 | - | 0.0 | 795.2 | - | 0.0 | 792.2 | - | 0.0 |
| Deans Lake | OCS102b | 800.0 | 450.3 | 2 | 6 | 779.6 | - | 0.0 | 779.8 | - | 0.0 | 780.0 | - | 0.0 | 779.8 | - | 0.0 |
| BLB5C | CS290ABa | 800.0 | 86.5 | 45 | 135 | 785.0 | - | 0.0 | 786.1 | - | 0.0 | 789.9 | - | 0.0 | 785.0 | - | 0.0 |
| BLB5C | CS290ABb | 800.0 | 86.5 | 45 | 135 | 784.1 | - | 0.0 | 785.8 | - | 0.0 | 789.8 | - | 0.0 | 784.1 | - | 0.0 |
| ***UPPJEFFERS*** | 2307.1 | 883.6 | 204.0 | 1 | 3 | 891.5 | 7.9 | 0.0 | 894.4 | 10.8 | 0.0 | 897.9 | 14.3 | 0.0 | 894.4 | 10.8 | 0.0 |
| ***UPPJEFFERS*** | 3456.1 | 877.9 | 204.0 | 1 | 3 | 877.9 | - | 0.0 | 877.9 | - | 0.0 | 878.5 | 0.5 | 0.0 | 877.9 | - | 0.0 |
| ***UPPJEFFERS*** | UPPJEFFERS.1 | 876.7 | 204.0 | 1 | 3 | 876.8 | 0.1 | 0.0 | 877.2 | 0.5 | 0.0 | 878.0 | 1.3 | 0.0 | 877.2 | 0.5 | 0.0 |
| ***9300*** | 7905.1 | 859.7 | 39.8 | 1 | 3 | 863.8 | 4.1 | 0.0 | 864.4 | 4.8 | 0.0 | 866.3 | 6.6 | 0.0 | 865.5 | 5.9 | 0.0 |
| ***9300*** | 7905.1.1 | 859.6 | 39.8 | 1 | 3 | 863.8 | 4.2 | 0.0 | 864.4 | 4.8 | 0.0 | 866.3 | 6.7 | 0.0 | 865.5 | 5.9 | 0.0 |
| ***11663*** | 11300.1 | 829.9 | 29.9 | 1 | 3 | 830.5 | 0.5 | 0.0 | 830.9 | 1.0 | 0.0 | 831.5 | 1.6 | 0.0 | 830.5 | 0.6 | 0.0 |
| ***PIKE LAKE*** | 11921.1 | 821.9 | 194.6 | 1 | 3 | 822.8 | 0.9 | 0.0 | 823.6 | 1.7 | 0.0 | 824.5 | 2.6 | 0.0 | 822.8 | 1.0 | 0.0 |
| BLB2J | 20347.1 | 755.1 | 11.4 | 13 | 39 | 757.9 | 2.8 | 0.0 | 759.2 | 4.1 | 0.0 | 761.2 | 6.1 | 0.0 | 759.2 | 4.1 | 0.0 |
| ***23907*** | 23907.1 | 800.0 | 3.2 | 1 | 3 | 749.6 | - | 0.0 | 751.1 | - | 0.0 | 752.4 | - | 0.0 | 751.4 | - | 0.0 |
| ***25299*** | 25299.1 | 800.0 | 9.5 | 1 | 3 | 747.2 | - | 0.0 | 748.5 | - | 0.0 | 750.4 | - | 0.0 | 749.7 | - | 0.0 |
| ***34019*** | Node336.1 | 741.6 | 21.0 | 1 | 3 | 745.3 | 3.8 | 0.0 | 745.9 | 4.3 | 0.0 | 747.7 | 6.1 | 0.0 | 746.4 | 4.8 | 0.0 |
| ***34019*** | Node410 | 741.6 | 21.0 | 1 | 3 | 745.3 | 3.7 | 0.0 | 745.9 | 4.3 | 0.0 | 747.7 | 6.1 | 0.0 | 746.4 | 4.7 | 0.0 |
| 37418 | 36926.1 | 740.0 | 43.0 | 2 | 6 | 742.5 | 2.5 | 0.0 | 743.2 | 3.2 | 0.0 | 744.7 | 4.7 | 0.0 | 743.4 | 3.4 | 0.0 |
| 37418 | 36926.1.1 | 750.0 | 43.0 | 2 | 6 | 741.2 | - | 0.0 | 741.9 | - | 0.0 | 743.6 | - | 0.0 | 742.1 | - | 0.0 |
| 37418 | 37030.1 | 736.6 | 43.0 | 2 | 6 | 738.3 | 1.7 | 0.0 | 739.7 | 3.1 | 0.0 | 742.2 | 5.6 | 0.0 | 739.7 | 3.1 | 0.0 |
| BLA9A1 | Node415 | 744.8 | 405.0 | 67 | 201 | 747.5 | 2.7 | 0.0 | 749.2 | 4.3 | 0.0 | 751.5 | 6.7 | 0.0 | 748.8 | 3.9 | 0.0 |
| BLA6A | Node416 | 755.0 | 28.7 | 6 | 18 | 741.8 | - | 0.0 | 742.7 | - | 0.0 | 746.7 | - | 0.0 | 742.6 | - | 0.0 |
| 37418 | Node418 | 739.6 | 43.0 | 2 | 6 | 741.1 | 1.6 | 0.0 | 741.8 | 2.3 | 0.0 | 743.4 | 3.8 | 0.0 | 742.0 | 2.4 | 0.0 |
| 37418 | 37354.1 | 750.0 | 43.0 | 2 | 6 | 737.0 | - | 0.0 | 738.3 | - | 0.0 | 740.5 | - | 0.0 | 738.4 | - | 0.0 |
| 37418 | 37354.1.1 | 750.0 | 43.0 | 2 | 6 | 736.6 | - | 0.0 | 737.8 | - | 0.0 | 739.7 | - | 0.0 | 737.9 | - | 0.0 |
| 37418 | Node421 | 734.8 | 43.0 | 2 | 6 | 736.9 | 2.1 | 0.0 | 738.2 | 3.4 | 0.0 | 740.3 | 5.5 | 0.0 | 738.3 | 3.5 | 0.0 |
| 37418 | Node422 | 734.9 | 43.0 | 2 | 6 | 736.5 | 1.6 | 0.0 | 737.5 | 2.6 | 0.0 | 739.4 | 4.5 | 0.0 | 737.5 | 2.6 | 0.0 |
| 37418 | Node423 | 730.8 | 43.0 | 2 | 6 | 732.8 | 2.0 | 0.0 | 733.7 | 2.9 | 0.0 | 735.9 | 5.1 | 0.0 | 733.7 | 3.0 | 0.0 |
| 37418 | Node424 | 730.1 | 43.0 | 2 | 6 | 733.0 | 2.9 | 0.0 | 734.1 | 4.0 | 0.0 | 736.5 | 6.4 | 0.0 | 734.2 | 4.1 | 0.0 |
| 37418 | 37418.1 | 750.0 | 43.0 | 2 | 6 | 733.0 | - | 0.0 | 734.3 | - | 0.0 | 736.7 | - | 0.0 | 734.4 | - | 0.0 |
| 37418 | Node424.1 | 750.0 | 43.0 | 2 | 6 | 732.8 | - | 0.0 | 733.8 | - | 0.0 | 736.1 | - | 0.0 | 733.9 | - | 0.0 |
| 37418 | Node338.1 | 726.6 | 43.0 | 2 | 6 | 729.1 | 2.5 | 0.0 | 730.8 | 4.2 | 0.0 | 733.7 | 7.1 | 0.0 | 730.8 | 4.2 | 0.0 |
| ***38418*** | 38430.1 | 723.4 | 25.5 | 1 | 3 | 725.3 | 1.9 | 0.0 | 726.7 | 3.3 | 0.0 | 728.1 | 4.7 | 0.0 | 726.7 | 3.3 | 0.0 |
| ***41778*** | 4.1 | 715.2 | 29.0 | 1 | 3 | 716.6 | 1.4 | 0.0 | 718.3 | 3.1 | 0.0 | 719.4 | 4.2 | 0.0 | 718.4 | 3.2 | 0.0 |
| ***41778*** | 4.1.1 | 714.3 | 29.0 | 1 | 3 | 716.6 | 2.3 | 0.0 | 718.3 | 4.0 | 0.0 | 719.4 | 5.1 | 0.0 | 718.3 | 4.0 | 0.0 |
| BLB2B | RC_CR-6P.1 | 754.7 | 8.1 | 12 | 36 | 749.3 | - | 0.0 | 750.7 | - | 0.0 | 753.2 | - | 0.0 | 751.4 | - | 0.0 |
| BLB2B | RC_CR-6AP.2 | 754.0 | 8.1 | 12 | 36 | 749.6 | - | 0.0 | 751.0 | - | 0.0 | 754.0 | - | 0.0 | 751.4 | - | 0.0 |
| BLB2B | RC_CR-6AP.1 | 754.0 | 8.1 | 12 | 36 | 749.3 | - | 0.0 | 750.7 | - | 0.0 | 754.0 | - | 0.0 | 751.4 | - | 0.0 |
| BLB2G | RC_300P.1 | 755.5 | 54.6 | 49 | 147 | 751.7 | - | 0.0 | 752.7 | - | 0.0 | 755.3 | - | 0.0 | 753.0 | - | 0.0 |
| 23711 | RC_300P.2 | 755.5 | 35.4 | 32 | 96 | 751.7 | - | 0.0 | 752.6 | - | 0.0 | 753.6 | - | 0.0 | 752.7 | - | 0.0 |
| ***22554*** | RC_100P.1 | 760.0 | 18.0 | 1 | 3 | 754.3 | - | 0.0 | 755.3 | - | 0.0 | 756.6 | - | 0.0 | 755.7 | - | 0.0 |
| ***22554*** | RC_100P.2 | 760.0 | 18.0 | 1 | 3 | 754.1 | - | 0.0 | 755.5 | - | 0.0 | 756.6 | - | 0.0 | 755.7 | - | 0.0 |
| BLA1-A | BLA1-A Outfall | 706.0 | 861.4 | 7 | 21 | 698.3 | - | 0.0 | 698.6 | - | 0.0 | 699.3 | - | 0.0 | 698.7 | - | 0.0 |
| ***BLE1BCD*** | BLE1BCD | 812.0 | 13.4 | 1 | 3 | 800.0 | - | 0.0 | 800.0 | - | 0.0 | 800.0 | - | 0.0 | 800.0 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 2-DC-08 | BLD15A | 928.0 | 241.1 | 50 | 150 | 924.0 | - | 0.0 | 924.0 | - | 0.0 | 924.0 | - | 0.0 | 924.0 | - | 0.0 |
| BLD14C-2 | BLD14C-2 | 992.0 | 1.5 | 6 | 18 | 988.0 | - | 0.0 | 988.0 | - | 0.0 | 988.0 | - | 0.0 | 988.0 | - | 0.0 |
| ***BLD16B*** | BLD16B | 980.0 | 0.2 | 1 | 3 | 980.0 | - | 0.0 | 980.0 | - | 0.0 | 980.0 | - | 0.0 | 980.0 | - | 0.0 |
| BLB4B-3 | BLB4B-3 | 1012.0 | 1.3 | 4 | 12 | 1008.0 | - | 0.0 | 1008.0 | - | 0.0 | 1008.0 | - | 0.0 | 1008.0 | - | 0.0 |
| ***BLB4F*** | BLB4F | 972.0 | 6.0 | 1 | 3 | 972.0 | - | 0.0 | 972.0 | - | 0.0 | 972.0 | - | 0.0 | 972.0 | - | 0.0 |
| ***2-DC-P04*** | Node1723 | 846.0 | 108.8 | 1 | 3 | 847.8 | 1.8 | 0.0 | 848.3 | 2.3 | 0.0 | 848.7 | 2.7 | 0.0 | 848.2 | 2.2 | 0.0 |
| ***2-DC-P04*** | Node1724 | 846.0 | 108.8 | 1 | 3 | 843.9 | - | 0.0 | 845.7 | - | 0.0 | 848.5 | 2.5 | 0.0 | 845.2 | - | 0.0 |
| BLE2A | H6 | 820.0 | 120.6 | 12 | 36 | 813.5 | - | 0.0 | 813.5 | - | 0.0 | 815.3 | - | 0.0 | 815.1 | - | 0.0 |
| BLE2A | H7 | 842.0 | 120.6 | 12 | 36 | 837.9 | - | 0.0 | 837.9 | - | 0.0 | 837.9 | - | 0.0 | 837.9 | - | 0.0 |
| ***#N/A*** | EC-BLB2M-2 | 0.0 | #N/A | 1 | 3 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| ***#N/A*** | EC-16 | 0.0 | #N/A | 1 | 3 | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A | #N/A |
| ***7*** | 7 | 969.7 | 0.1 | 1 | 3 | 958.6 | - | 0.6 | 959.0 | - | 0.9 | 961.5 | - | 1.5 | 959.6 | - | 0.1 |
| 102-CC | 102-CC | 821.0 | 0.4 | 3 | 9 | 815.6 | - | 0.3 | 816.8 | - | 0.6 | 818.8 | - | 1.3 | 814.3 | - | 0.1 |
| 103-CC | 103-CC | 821.0 | 0.4 | 2 | 6 | 815.6 | - | 0.3 | 816.8 | - | 0.7 | 819.1 | - | 1.6 | 814.3 | - | 0.1 |
| ***#N/A*** | 104-3 | 931.0 | #N/A | 1 | 3 | 928.5 | - | 0.8 | 930.0 | - | 3.1 | 932.3 | 1.3 | 11.6 | 928.3 | - | 0.9 |
| ***104-CC*** | 104-CC | 819.0 | 3.8 | 1 | 3 | 816.2 | - | 0.5 | 816.9 | - | 2.8 | 819.6 | 0.6 | 12.8 | 816.2 | - | 0.6 |
| ***#N/A*** | 106-3 | 932.3 | #N/A | 1 | 3 | 929.3 | - | 0.6 | 931.3 | - | 2.5 | 933.7 | 1.4 | 9.9 | 929.3 | - | 0.6 |
| 102-CC | 106-1 | 823.7 | 0.4 | 3 | 9 | 818.2 | - | 0.3 | 819.8 | - | 0.6 | 823.7 | - | 1.2 | 817.0 | - | 0.0 |
| 103-CC | 107-1 | 823.5 | 0.4 | 2 | 6 | 818.2 | - | 0.3 | 819.9 | - | 1.2 | 823.9 | 0.5 | 4.8 | 818.2 | - | 0.2 |
| 107-108 | 107-108 | 949.0 | 0.3 | 2 | 6 | 943.1 | - | 0.3 | 943.3 | - | 0.5 | 943.8 | - | 1.2 | 943.0 | - | 0.1 |
| 106-1 | 108-1 | 826.0 | 0.4 | 3 | 9 | 820.1 | - | 0.1 | 821.4 | - | 0.2 | 826.0 | - | 0.3 | 819.3 | - | 0.0 |
| ***#N/A*** | 109-3 | 955.0 | #N/A | 1 | 3 | 949.7 | - | 0.2 | 950.0 | - | 0.5 | 952.2 | - | 1.2 | 949.6 | - | 0.1 |
| 106-1 | 109-1 | 827.0 | 0.4 | 3 | 9 | 821.7 | - | 0.6 | 822.1 | - | 0.9 | 826.1 | - | 1.5 | 820.8 | - | 0.1 |
| ***#N/A*** | 110-3 | 955.0 | #N/A | 1 | 3 | 950.3 | - | 0.9 | 950.6 | - | 1.9 | 952.5 | - | 4.5 | 950.0 | - | 0.2 |
| 109-1 | 110-1 | 827.0 | 0.4 | 2 | 6 | 821.8 | - | 1.0 | 822.4 | - | 1.4 | 826.2 | - | 2.6 | 820.9 | - | 0.1 |
| ***#N/A*** | 111-3 | 962.3 | #N/A | 1 | 3 | 958.4 | - | 0.4 | 958.6 | - | 0.8 | 959.1 | - | 1.9 | 958.3 | - | 0.1 |
| ***111-1*** | 111-1 | 828.0 | 0.7 | 1 | 3 | 823.0 | - | 2.9 | 823.3 | - | 4.2 | 827.0 | - | 7.4 | 822.6 | - | 0.3 |
| ***#N/A*** | 113-3 | 971.7 | #N/A | 1 | 3 | 966.9 | - | 0.5 | 967.7 | - | 1.0 | 969.7 | - | 2.4 | 966.8 | - | 0.1 |
| 107-1 | 113-1 | 826.0 | 2.8 | 2 | 6 | 820.5 | - | 0.1 | 821.4 | - | 0.2 | 826.0 | - | 0.6 | 820.4 | - | 0.0 |
| 113-2 | 113-2 | 824.3 | 0.6 | 2 | 6 | 817.8 | - | 0.3 | 818.5 | - | 1.1 | 822.6 | - | 3.7 | 817.6 | - | 0.1 |
| 114-115 | 114-115 | 973.0 | 1.5 | 2 | 6 | 967.6 | - | 0.6 | 968.3 | - | 1.4 | 971.5 | - | 3.9 | 967.4 | - | 0.2 |
| 114 | 115-1 | 827.9 | 0.1 | 3 | 9 | 822.1 | - | 0.0 | 823.4 | - | 0.0 | 827.9 | - | 0.1 | 821.3 | - | 0.0 |
| ***14*** | 14 | 817.5 | 0.2 | 1 | 3 | 814.3 | - | 0.9 | 814.7 | - | 1.3 | 817.1 | - | 2.4 | 813.7 | - | 0.1 |
| ***15*** | 15 | 817.9 | 0.1 | 1 | 3 | 814.3 | - | 0.4 | 814.7 | - | 0.6 | 817.0 | - | 1.0 | 813.7 | - | 0.0 |
| ***16*** | 16 | 817.9 | 0.1 | 1 | 3 | 814.3 | - | 0.4 | 814.6 | - | 0.6 | 816.9 | - | 1.1 | 813.7 | - | 0.0 |
| ***17*** | 17 | 817.6 | 0.3 | 1 | 3 | 814.2 | - | 1.2 | 814.6 | - | 1.8 | 816.7 | - | 3.3 | 813.6 | - | 0.1 |
| 19 | 19 | 817.9 | 0.2 | 2 | 6 | 813.9 | - | 0.4 | 814.2 | - | 0.6 | 815.2 | - | 1.0 | 813.2 | - | 0.0 |
| 108-1 | 114 | 827.0 | 0.1 | 3 | 9 | 821.2 | - | 0.2 | 822.5 | - | 0.3 | 827.1 | 0.1 | 0.6 | 820.3 | - | 0.0 |
| ***#N/A*** | 116-3 | 983.0 | #N/A | 1 | 3 | 971.3 | - | 1.0 | 971.6 | - | 2.4 | 975.6 | - | 6.8 | 971.2 | - | 0.4 |
| 116-1 | 116-1 | 828.0 | 0.7 | 4 | 12 | 822.3 | - | 0.4 | 823.5 | - | 0.7 | 828.1 | - | 1.6 | 821.4 | - | 0.1 |
| 117 | 117 | 823.0 | 0.4 | 2 | 6 | 819.7 | - | 0.4 | 821.7 | - | 0.8 | 822.8 | - | 1.8 | 819.5 | - | 0.1 |
| 11773 | 117-3 | 977.0 | 0.6 | 2 | 6 | 972.1 | - | 0.2 | 972.6 | - | 0.5 | 976.5 | - | 1.5 | 972.0 | - | 0.1 |
| 116-1 | 117-1 | 828.4 | 0.7 | 4 | 12 | 823.1 | - | 0.2 | 823.6 | - | 0.3 | 828.3 | - | 0.5 | 822.7 | - | 0.0 |
| 11333 | 118-3 | 976.4 | 1.3 | 3 | 9 | 972.8 | - | 0.4 | 973.0 | - | 0.8 | 976.6 | 0.3 | 1.8 | 972.6 | - | 0.1 |
| ***119*** | 119 | 827.0 | 0.3 | 1 | 3 | 822.3 | - | 0.1 | 823.0 | - | 0.5 | 825.9 | - | 1.8 | 822.1 | - | 0.1 |
| 11773 | 119-3 | 978.0 | 0.6 | 2 | 6 | 972.5 | - | 0.1 | 973.4 | - | 0.3 | 976.8 | - | 0.9 | 972.6 | - | 0.0 |
| ***119-1*** | 119-1 | 829.6 | 0.3 | 1 | 3 | 824.4 | - | 0.3 | 824.5 | - | 0.8 | 829.0 | - | 2.1 | 824.3 | - | 0.1 |
| 120 | 120 | 827.0 | 0.3 | 2 | 6 | 822.7 | - | 0.1 | 823.0 | - | 0.3 | 826.1 | - | 1.0 | 822.7 | - | 0.0 |
| 120-1 | 120-1 | 829.5 | 0.5 | 4 | 12 | 824.9 | - | 0.6 | 825.2 | - | 0.8 | 829.1 | - | 1.5 | 824.2 | - | 0.1 |
| 121 | 121 | 829.0 | 0.6 | 2 | 6 | 822.7 | - | 0.1 | 823.8 | - | 0.5 | 827.4 | - | 1.6 | 822.6 | - | 0.1 |
| ***12113*** | 121-3 | 979.0 | 0.2 | 1 | 3 | 973.0 | - | 0.1 | 973.8 | - | 0.4 | 977.3 | - | 1.0 | 973.0 | - | 0.1 |
| 120 | 122 | 827.6 | 0.3 | 2 | 6 | 824.1 | - | 0.1 | 824.2 | - | 0.4 | 827.7 | - | 1.4 | 824.1 | - | 0.0 |
| 12223 | 122-3 | 980.0 | 1.1 | 2 | 6 | 973.8 | - | 0.2 | 974.5 | - | 0.4 | 978.0 | - | 1.2 | 973.8 | - | 0.1 |
| 12223 | 123-3 | 981.0 | 1.1 | 2 | 6 | 974.4 | - | 0.2 | 975.3 | - | 0.5 | 978.2 | - | 1.4 | 974.4 | - | 0.1 |
| ***124*** | 124 | 827.1 | 1.1 | 1 | 3 | 824.0 | - | 0.4 | 824.6 | - | 1.6 | 827.5 | 0.4 | 5.7 | 823.9 | - | 0.2 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***11883*** | 124-3 | 981.0 | 0.6 | 1 | 3 | 976.2 | - | 0.5 | 976.3 | - | 0.9 | 978.4 | - | 2.3 | 976.1 | - | 0.1 |
| 120-1 | 124-1 | 829.9 | 0.5 | 4 | 12 | 824.1 | - | 0.3 | 824.2 | - | 0.5 | 828.7 | - | 0.9 | 823.8 | - | 0.0 |
| ***125125*** | 125-1 | 828.8 | 1.0 | 1 | 3 | 822.4 | - | 0.4 | 823.7 | - | 0.7 | 828.2 | - | 1.4 | 821.6 | - | 0.1 |
| 113-1 | 126 | 829.0 | 0.1 | 2 | 6 | 823.5 | - | 0.1 | 823.7 | - | 0.2 | 828.2 | - | 0.6 | 823.4 | - | 0.0 |
| 116-1 | 127 | 830.0 | 0.7 | 4 | 12 | 822.9 | - | 0.3 | 823.9 | - | 0.5 | 829.0 | - | 1.0 | 822.4 | - | 0.0 |
| 128 | 128 | 834.3 | 0.2 | 3 | 9 | 828.2 | - | 0.1 | 828.5 | - | 0.2 | 833.5 | - | 0.5 | 827.9 | - | 0.0 |
| 126 | 129 | 835.0 | 0.1 | 2 | 6 | 828.3 | - | 0.3 | 828.6 | - | 0.7 | 833.4 | - | 2.0 | 828.2 | - | 0.1 |
| 128 | 130 | 835.9 | 0.2 | 3 | 9 | 831.0 | - | 0.6 | 831.3 | - | 1.3 | 835.2 | - | 3.2 | 830.6 | - | 0.2 |
| 128 | 131 | 837.9 | 0.2 | 3 | 9 | 834.3 | - | 0.6 | 834.4 | - | 0.9 | 836.3 | - | 1.6 | 834.1 | - | 0.1 |
| ***133-1*** | 133-1 | 843.5 | 0.2 | 1 | 3 | 839.3 | - | 0.8 | 839.3 | - | 1.2 | 839.4 | - | 2.0 | 839.1 | - | 0.1 |
| 134 | 134 | 825.0 | 0.4 | 2 | 6 | 818.7 | - | 0.4 | 818.9 | - | 0.8 | 822.6 | - | 1.9 | 818.5 | - | 0.1 |
| 152 | 152 | 822.0 | 0.9 | 2 | 6 | 816.1 | - | 0.4 | 816.3 | - | 1.1 | 817.4 | - | 3.1 | 816.1 | - | 0.1 |
| 153 | 153 | 822.0 | 1.3 | 3 | 9 | 816.2 | - | 0.4 | 816.4 | - | 1.1 | 817.4 | - | 3.0 | 816.2 | - | 0.1 |
| 153 | 154 | 823.0 | 1.3 | 3 | 9 | 818.2 | - | 0.0 | 818.5 | - | 0.1 | 820.0 | - | 0.7 | 818.0 | - | 0.0 |
| ***155*** | 155 | 823.0 | 0.4 | 1 | 3 | 818.8 | - | 0.4 | 819.0 | - | 1.1 | 820.7 | - | 3.2 | 818.6 | - | 0.1 |
| 154 | 156 | 823.8 | 1.2 | 2 | 6 | 820.1 | - | 0.2 | 820.3 | - | 0.3 | 821.1 | - | 0.6 | 820.0 | - | 0.0 |
| ***155*** | 157 | 823.8 | 0.4 | 1 | 3 | 820.5 | - | 0.4 | 820.7 | - | 1.1 | 821.7 | - | 3.0 | 820.4 | - | 0.1 |
| ***159*** | 159 | 823.0 | 0.5 | 1 | 3 | 823.7 | 0.7 | 0.4 | 824.5 | 1.5 | 1.2 | 825.2 | 2.2 | 3.3 | 824.9 | 1.9 | 0.1 |
| ***160*** | 160 | 823.0 | 0.5 | 1 | 3 | 823.7 | 0.7 | 0.5 | 824.5 | 1.5 | 1.2 | 825.2 | 2.2 | 3.5 | 824.9 | 1.9 | 0.1 |
| 162 | 162 | 825.0 | 0.4 | 4 | 12 | 823.7 | - | 0.1 | 824.5 | - | 0.3 | 825.3 | 0.3 | 0.7 | 824.9 | - | 0.0 |
| ***163*** | 163 | 823.8 | 0.4 | 1 | 3 | 823.7 | - | 0.3 | 824.5 | 0.7 | 0.9 | 825.3 | 1.5 | 2.5 | 824.9 | 1.1 | 0.1 |
| 162 | 165 | 826.0 | 0.4 | 4 | 12 | 823.7 | - | 0.1 | 824.7 | - | 0.4 | 825.3 | - | 1.1 | 824.9 | - | 0.0 |
| ***166*** | 166 | 826.0 | 0.6 | 1 | 3 | 823.7 | - | 0.6 | 824.8 | - | 1.6 | 825.2 | - | 4.6 | 824.9 | - | 0.2 |
| 167 | 167 | 828.0 | 0.7 | 3 | 9 | 823.7 | - | 0.2 | 826.7 | - | 0.6 | 827.2 | - | 1.7 | 824.9 | - | 0.1 |
| 168 | 168 | 828.0 | 0.7 | 2 | 6 | 823.7 | - | 0.3 | 826.8 | - | 0.8 | 827.2 | - | 2.4 | 824.9 | - | 0.1 |
| 169 | 169 | 832.0 | 0.7 | 2 | 6 | 823.7 | - | 0.3 | 827.5 | - | 0.8 | 829.1 | - | 2.4 | 824.9 | - | 0.1 |
| 168 | 170 | 830.0 | 0.7 | 2 | 6 | 825.6 | - | 0.3 | 827.6 | - | 0.7 | 829.0 | - | 2.0 | 825.4 | - | 0.1 |
| 172 | 172 | 831.0 | 0.6 | 2 | 6 | 827.1 | - | 0.3 | 828.0 | - | 0.7 | 830.3 | - | 2.1 | 827.0 | - | 0.1 |
| ***172*** | 173 | 832.0 | 0.6 | 1 | 3 | 827.5 | - | 0.5 | 828.1 | - | 1.2 | 830.8 | - | 3.5 | 827.4 | - | 0.1 |
| ***175*** | 174 | 831.5 | 1.6 | 1 | 3 | 828.2 | - | 0.3 | 828.3 | - | 0.5 | 830.2 | - | 0.9 | 828.2 | - | 0.0 |
| ***1-BR-01*** | 1-BR-01 | 830.0 | 1.6 | 1 | 3 | 822.3 | - | 0.7 | 825.0 | - | 2.1 | 831.5 | 1.5 | 6.9 | 823.4 | - | 0.3 |
| 1-BR-03 | 1-BR-03 | 834.0 | 1.5 | 2 | 6 | 827.6 | - | 0.7 | 828.2 | - | 1.5 | 834.2 | 0.2 | 3.8 | 827.4 | - | 0.2 |
| ***1-BR-04*** | 1-BR-04 | 837.0 | 2.8 | 1 | 3 | 830.7 | - | 1.0 | 831.0 | - | 3.6 | 836.0 | - | 12.9 | 830.6 | - | 0.6 |
| ***1-BR-05*** | 1-BR-05 | 835.5 | 7.2 | 1 | 3 | 830.9 | - | 2.4 | 831.5 | - | 7.8 | 834.2 | - | 25.6 | 830.7 | - | 1.6 |
| ***1-EV-02*** | 1-EV-02 | 823.0 | 2.5 | 1 | 3 | 811.1 | - | 0.0 | 811.4 | - | 0.6 | 814.1 | - | 5.2 | 811.2 | - | 0.2 |
| ***1-EV-04*** | 1-EV-04 | 823.0 | 2.1 | 1 | 3 | 816.6 | - | 0.0 | 816.7 | - | 0.4 | 817.2 | - | 4.0 | 816.7 | - | 0.2 |
| 1-EV-104 | 1-EV-104 | 828.5 | 6.2 | 3 | 9 | 821.2 | - | 1.3 | 823.5 | - | 3.4 | 829.3 | 0.8 | 9.9 | 822.2 | - | 0.5 |
| 1-EV-1A | 1-EV-1A | 821.0 | 2.9 | 2 | 6 | 812.2 | - | 0.1 | 812.5 | - | 0.8 | 817.5 | - | 4.2 | 812.3 | - | 0.2 |
| 1-EV-20 | 1-EV-20 | 815.0 | 2.5 | 3 | 9 | 807.6 | - | 0.4 | 809.1 | - | 1.1 | 811.8 | - | 3.6 | 809.2 | - | 0.2 |
| 1-EV-20 | 1-EV-22 | 815.0 | 2.5 | 3 | 9 | 809.5 | - | 0.2 | 809.7 | - | 0.5 | 811.8 | - | 1.5 | 809.4 | - | 0.1 |
| ***1-EV-34*** | 1-EV-34 | 816.0 | 2.1 | 1 | 3 | 811.2 | - | 1.2 | 811.9 | - | 3.4 | 816.3 | 0.3 | 10.0 | 811.0 | - | 0.5 |
| ***1-EV-20*** | 1-EV-36 | 819.0 | 2.5 | 1 | 3 | 814.5 | - | 2.1 | 814.9 | - | 5.9 | 818.7 | - | 17.8 | 814.4 | - | 0.9 |
| 1-EV-P13 | 1-EV-40 | 816.0 | 21.6 | 3 | 9 | 809.9 | - | 0.3 | 810.9 | - | 0.7 | 815.8 | - | 2.2 | 809.7 | - | 0.1 |
| 1-EV-40 | 1-EV-42A | 819.0 | 1.3 | 3 | 9 | 812.6 | - | 0.2 | 813.3 | - | 0.7 | 818.8 | - | 2.1 | 812.3 | - | 0.1 |
| 1-EV-44 | 1-EV-44 | 820.0 | 1.4 | 2 | 6 | 814.1 | - | 0.4 | 814.9 | - | 1.3 | 820.2 | 0.2 | 3.9 | 813.8 | - | 0.2 |
| ***1-EV-46*** | 1-EV-46 | 822.0 | 2.1 | 1 | 3 | 816.8 | - | 1.2 | 817.3 | - | 3.5 | 821.7 | - | 10.9 | 816.6 | - | 0.5 |
| 1-EV-52 | 1-EV-52 | 818.1 | 5.9 | 2 | 6 | 809.9 | - | 0.5 | 811.9 | - | 2.3 | 814.6 | - | 9.6 | 810.8 | - | 0.5 |
| 1-EV-54 | 1-EV-54 | 826.0 | 3.6 | 3 | 9 | 812.7 | - | 0.4 | 814.5 | - | 1.4 | 820.4 | - | 4.7 | 813.5 | - | 0.3 |
| 1-EV-54 | 1-EV-56 | 831.0 | 3.6 | 3 | 9 | 816.3 | - | 0.2 | 818.2 | - | 0.5 | 825.8 | - | 1.5 | 817.2 | - | 0.1 |
| 1-EV-56 | 1-EV-62 | 850.1 | 0.7 | 3 | 9 | 841.6 | - | 0.4 | 841.8 | - | 1.1 | 845.4 | - | 3.3 | 841.6 | - | 0.2 |
| 1-EV-67 | 1-EV-67 | 870.0 | 0.7 | 2 | 6 | 863.9 | - | 0.3 | 864.1 | - | 0.7 | 866.6 | - | 2.3 | 864.0 | - | 0.1 |
| 1-EV-81 | 1-EV-81 | 874.0 | 2.2 | 2 | 6 | 867.6 | - | 0.2 | 867.9 | - | 1.1 | 873.0 | - | 4.2 | 867.6 | - | 0.2 |
| ***1-EV-83*** | 1-EV-83 | 874.0 | 6.5 | 1 | 3 | 867.3 | - | 3.1 | 869.0 | - | 9.5 | 875.0 | 1.0 | 29.8 | 867.0 | - | 1.5 |
| ***1-EV-85*** | 1-EV-85 | 875.0 | 2.0 | 1 | 3 | 868.3 | - | 0.8 | 869.2 | - | 2.7 | 875.2 | 0.2 | 8.6 | 868.2 | - | 0.4 |
| ***1-EV-87*** | 1-EV-87 | 875.0 | 1.7 | 1 | 3 | 869.4 | - | 0.9 | 869.7 | - | 2.6 | 875.3 | 0.3 | 8.0 | 869.2 | - | 0.4 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 17064 | 1-PLD-06 | 805.4 | 18.4 | 2 | 6 | 806.4 | 1.0 | 0.3 | 806.9 | 1.5 | 1.2 | 807.5 | 2.1 | 5.5 | 807.2 | 1.8 | 0.6 |
| 2 | 2 | 968.6 | 1.5 | 7 | 21 | 958.6 | - | 0.8 | 960.1 | - | 1.2 | 968.6 | - | 2.2 | 959.6 | - | 0.1 |
| ***20*** | 20 | 818.2 | 0.0 | 1 | 3 | 813.8 | - | 0.0 | 814.1 | - | 0.1 | 815.0 | - | 0.2 | 813.1 | - | 0.0 |
| ***21*** | 21 | 818.5 | 0.0 | 1 | 3 | 813.7 | - | 0.0 | 814.0 | - | 0.1 | 815.0 | - | 0.2 | 813.1 | - | 0.0 |
| ***22*** | 22 | 818.1 | 0.2 | 1 | 3 | 813.5 | - | 0.8 | 813.7 | - | 1.2 | 815.0 | - | 2.2 | 813.1 | - | 0.1 |
| ***23*** | 23 | 818.7 | 0.2 | 1 | 3 | 814.0 | - | 0.4 | 814.4 | - | 0.7 | 816.1 | - | 1.6 | 813.6 | - | 0.1 |
| ***24*** | 24 | 817.8 | 0.4 | 1 | 3 | 813.4 | - | 1.5 | 813.7 | - | 2.2 | 815.0 | - | 4.0 | 813.1 | - | 0.2 |
| ***25*** | 25 | 818.1 | 0.2 | 1 | 3 | 813.4 | - | 0.1 | 813.7 | - | 0.4 | 815.0 | - | 1.3 | 813.1 | - | 0.0 |
| ***26*** | 26 | 818.1 | 0.2 | 1 | 3 | 813.3 | - | 0.1 | 813.6 | - | 0.3 | 815.0 | - | 1.0 | 813.1 | - | 0.0 |
| ***27*** | 27 | 817.8 | 0.5 | 1 | 3 | 813.3 | - | 2.2 | 813.6 | - | 3.3 | 815.0 | - | 6.0 | 813.1 | - | 0.3 |
| ***28*** | 28 | 818.7 | 0.2 | 1 | 3 | 815.0 | - | 0.6 | 815.2 | - | 1.0 | 818.4 | - | 1.8 | 814.8 | - | 0.1 |
| 30A | 29 | 818.7 | 0.2 | 2 | 6 | 814.8 | - | 0.5 | 815.0 | - | 0.7 | 818.2 | - | 1.3 | 814.5 | - | 0.1 |
| 2-DC-08 | 2-DC-08 | 871.4 | 241.1 | 50 | 150 | 872.4 | 1.0 | 0.7 | 872.9 | 1.5 | 2.2 | 873.9 | 2.5 | 7.2 | 872.6 | 1.2 | 0.9 |
| 34 | 30A | 817.7 | 0.6 | 3 | 9 | 814.0 | - | 0.3 | 814.8 | - | 0.4 | 817.1 | - | 0.8 | 813.6 | - | 0.0 |
| 31 | 30B | 817.7 | 0.3 | 3 | 9 | 814.0 | - | 0.2 | 814.8 | - | 0.3 | 817.1 | - | 0.5 | 813.8 | - | 0.0 |
| 4 | 4 | 970.7 | 0.3 | 3 | 9 | 958.6 | - | 0.5 | 959.6 | - | 0.7 | 967.2 | - | 1.2 | 959.6 | - | 0.1 |
| 4 | 5 | 972.2 | 0.3 | 3 | 9 | 958.6 | - | 0.1 | 959.1 | - | 0.1 | 965.9 | - | 0.3 | 959.6 | - | 0.0 |
| ***6*** | 6 | 971.9 | 0.1 | 1 | 3 | 958.6 | - | 0.3 | 959.0 | - | 0.4 | 963.2 | - | 0.8 | 959.6 | - | 0.0 |
| 31 | 31 | 816.9 | 0.3 | 3 | 9 | 813.7 | - | 0.3 | 814.6 | - | 0.5 | 816.3 | - | 1.0 | 813.1 | - | 0.0 |
| ***32*** | 32 | 817.2 | 0.4 | 1 | 3 | 813.7 | - | 0.2 | 814.6 | - | 0.7 | 816.2 | - | 2.4 | 813.1 | - | 0.1 |
| ***33*** | 33 | 817.2 | 0.4 | 1 | 3 | 813.7 | - | 0.2 | 814.5 | - | 0.7 | 816.0 | - | 2.4 | 813.1 | - | 0.1 |
| 34 | 34 | 817.0 | 0.6 | 3 | 9 | 813.7 | - | 0.8 | 814.5 | - | 1.1 | 815.7 | - | 2.1 | 813.1 | - | 0.1 |
| 35 | 35 | 817.7 | 0.5 | 2 | 6 | 814.2 | - | 1.0 | 815.3 | - | 1.6 | 816.9 | - | 2.9 | 813.2 | - | 0.1 |
| ***36*** | 36 | 818.0 | 0.2 | 1 | 3 | 814.3 | - | 0.7 | 815.3 | - | 1.1 | 817.0 | - | 2.0 | 814.1 | - | 0.1 |
| ***36.5**** | 37 | 819.6 | 0.4 | 1 | 3 | 815.1 | - | 0.5 | 816.3 | - | 0.9 | 818.3 | - | 2.1 | 814.5 | - | 0.1 |
| 38 | 38 | 820.0 | 0.3 | 2 | 6 | 816.6 | - | 0.5 | 817.7 | - | 0.8 | 819.4 | - | 1.5 | 815.7 | - | 0.1 |
| 39 | 39 | 819.7 | 0.4 | 2 | 6 | 816.8 | - | 0.7 | 818.4 | - | 1.1 | 820.1 | 0.4 | 2.1 | 815.8 | - | 0.1 |
| ***3A*** | 3A | 970.0 | 0.3 | 1 | 3 | 966.6 | - | 1.5 | 966.8 | - | 2.2 | 969.3 | - | 3.8 | 966.1 | - | 0.2 |
| 3C | 3C | 970.0 | 0.2 | 3 | 9 | 966.3 | - | 0.3 | 966.4 | - | 0.4 | 968.6 | - | 0.7 | 965.8 | - | 0.0 |
| ***3D*** | 3D | 970.3 | 0.3 | 1 | 3 | 966.8 | - | 1.4 | 966.9 | - | 2.0 | 968.2 | - | 3.6 | 966.4 | - | 0.2 |
| 3-DP-05 | 3-DP-01 | 938.8 | 2.7 | 5 | 15 | 933.3 | - | 0.7 | 933.6 | - | 1.4 | 937.7 | - | 3.2 | 933.0 | - | 0.2 |
| 3-DP-05 | 3-DP-05 | 934.0 | 2.7 | 5 | 15 | 921.5 | - | 0.9 | 922.2 | - | 1.6 | 927.5 | - | 3.6 | 923.0 | - | 0.2 |
| 3-DP-09 | 3-DP-08 | 929.0 | 1.0 | 4 | 12 | 921.5 | - | 0.7 | 922.2 | - | 1.0 | 925.3 | - | 2.0 | 923.0 | - | 0.1 |
| 3-DP-09 | 3-DP-09 | 927.0 | 1.0 | 4 | 12 | 921.5 | - | 0.6 | 922.2 | - | 1.1 | 924.4 | - | 2.3 | 923.0 | - | 0.1 |
| 3-DP-09 | 3-DP-12 | 929.0 | 1.0 | 4 | 12 | 923.4 | - | 0.4 | 923.8 | - | 0.8 | 928.0 | - | 2.1 | 923.2 | - | 0.1 |
| ***3-DP-12*** | 3-DP-13 | 932.0 | 1.4 | 1 | 3 | 926.0 | - | 1.8 | 926.4 | - | 4.8 | 930.7 | - | 14.0 | 925.8 | - | 0.7 |
| ***3-PUBW-02*** | 3-PUBW-02 | 926.0 | 0.8 | 1 | 3 | 918.2 | - | 3.3 | 919.0 | - | 4.8 | 922.5 | - | 8.5 | 917.3 | - | 0.4 |
| 3-PUBW-04 | 3-PUBW-04 | 931.0 | 1.6 | 2 | 6 | 926.4 | - | 2.4 | 926.5 | - | 3.7 | 931.0 | - | 6.8 | 926.0 | - | 0.4 |
| 3-PUBW-06 | 3-PUBW-06 | 932.0 | 1.0 | 6 | 18 | 917.6 | - | 0.7 | 918.5 | - | 1.0 | 921.0 | - | 1.8 | 917.2 | - | 0.1 |
| 3-PUBW-06 | 3-PUBW-07 | 932.0 | 1.0 | 6 | 18 | 926.3 | - | 0.6 | 927.0 | - | 0.9 | 930.6 | - | 1.5 | 925.8 | - | 0.1 |
| 3-PUBW-06 | 3-PUBW-11 | 931.0 | 1.0 | 6 | 18 | 926.7 | - | 0.4 | 926.9 | - | 0.5 | 928.0 | - | 1.0 | 926.2 | - | 0.0 |
| ***3-PUBW-12*** | 3-PUBW-12 | 932.0 | 1.6 | 1 | 3 | 924.3 | - | 6.3 | 927.3 | - | 9.4 | 931.3 | - | 16.9 | 923.5 | - | 0.8 |
| ***3-PUBW-14*** | 3-PUBW-14 | 928.2 | 0.2 | 1 | 3 | 922.2 | - | 0.9 | 924.6 | - | 1.3 | 927.8 | - | 2.4 | 923.0 | - | 0.1 |
| 3-PUBW-15 | 3-PUBW-15 | 934.0 | 0.5 | 2 | 6 | 928.1 | - | 1.2 | 928.2 | - | 1.7 | 932.2 | - | 3.0 | 927.7 | - | 0.1 |
| 3-PUBW-16 | 3-PUBW-16 | 925.4 | 0.4 | 2 | 6 | 921.6 | - | 0.9 | 923.2 | - | 1.3 | 925.6 | 0.2 | 2.3 | 923.0 | - | 0.1 |
| ***3-PUBW-18*** | 3-PUBW-18 | 923.5 | 1.5 | 1 | 3 | 919.8 | - | 3.1 | 920.0 | - | 5.3 | 921.0 | - | 10.9 | 919.7 | - | 0.6 |
| ***P-10*** | 40 | 821.0 | 13.0 | 1 | 3 | 816.9 | - | 2.6 | 819.1 | - | 5.5 | 821.6 | 0.6 | 13.6 | 815.9 | - | 0.7 |
| ***41*** | 41 | 820.6 | 0.3 | 1 | 3 | 816.7 | - | 0.6 | 818.0 | - | 1.2 | 820.6 | - | 2.8 | 816.0 | - | 0.1 |
| 42 | 42 | 820.5 | 2.0 | 2 | 6 | 817.2 | - | 1.1 | 818.7 | - | 2.4 | 821.6 | 1.1 | 5.9 | 816.8 | - | 0.3 |
| DP-20 | 43 | 962.6 | 0.3 | 4 | 12 | 958.6 | - | 0.2 | 959.0 | - | 0.3 | 960.0 | - | 0.5 | 959.6 | - | 0.0 |
| ***#N/A*** | 43-1 | 821.6 | #N/A | 1 | 3 | 817.6 | - | 0.7 | 818.8 | - | 1.4 | 821.9 | 0.3 | 3.2 | 817.1 | - | 0.1 |
| DP-22 | 44 | 962.3 | 0.6 | 6 | 18 | 958.6 | - | 0.1 | 959.0 | - | 0.3 | 960.0 | - | 0.6 | 959.6 | - | 0.0 |
| 42 | 44-1 | 823.0 | 2.0 | 2 | 6 | 818.0 | - | 0.8 | 819.1 | - | 1.6 | 822.1 | - | 3.9 | 817.8 | - | 0.2 |
| 45 | 45 | 963.1 | 0.5 | 3 | 9 | 958.6 | - | 0.7 | 959.0 | - | 1.0 | 960.0 | - | 1.7 | 959.6 | - | 0.1 |
| 4351 | 45-1 | 822.6 | 0.4 | 2 | 6 | 817.7 | - | 0.4 | 819.2 | - | 0.7 | 822.8 | 0.1 | 1.7 | 817.1 | - | 0.1 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 38 | 46 | 823.6 | 0.3 | 2 | 6 | 817.7 | - | 0.2 | 819.3 | - | 0.3 | 822.9 | - | 0.5 | 817.1 | - | 0.0 |
| 39 | 47 | 823.0 | 0.4 | 2 | 6 | 817.7 | - | 0.2 | 819.4 | - | 0.4 | 823.0 | - | 0.7 | 817.1 | - | 0.0 |
| 44S1 | 48 | 822.6 | 1.3 | 2 | 6 | 817.8 | - | 0.8 | 819.5 | - | 1.6 | 823.0 | 0.4 | 4.0 | 817.1 | - | 0.2 |
| 45S1 | 49 | 824.5 | 0.4 | 2 | 6 | 818.7 | - | 0.5 | 819.4 | - | 1.0 | 824.3 | - | 2.4 | 818.4 | - | 0.1 |
| ***4A*** | 4A | 970.9 | 0.2 | 1 | 3 | 967.4 | - | 1.0 | 967.6 | - | 1.5 | 967.9 | - | 2.7 | 967.1 | - | 0.1 |
| 48 | 50 | 824.5 | 1.3 | 2 | 6 | 819.4 | - | 0.6 | 819.5 | - | 1.0 | 824.5 | - | 2.2 | 819.2 | - | 0.1 |
| 302 | 302 | 966.5 | 0.2 | 3 | 9 | 966.7 | 0.1 | 0.2 | 966.7 | 0.2 | 0.3 | 966.9 | 0.3 | 0.5 | 966.8 | 0.3 | 0.0 |
| 325 | 325 | 969.6 | 0.1 | 2 | 6 | 969.3 | - | 0.1 | 969.4 | - | 0.2 | 969.5 | - | 0.3 | 969.4 | - | 0.0 |
| ***326*** | 326 | 969.3 | 0.1 | 1 | 3 | 969.3 | - | 0.4 | 969.4 | - | 0.5 | 969.5 | 0.2 | 0.9 | 969.4 | 0.1 | 0.0 |
| ***5A*** | 5A | 971.9 | 0.2 | 1 | 3 | 968.4 | - | 1.0 | 968.5 | - | 1.5 | 968.8 | - | 2.7 | 968.0 | - | 0.1 |
| ***5B*** | 5B | 972.0 | 0.1 | 1 | 3 | 968.1 | - | 0.2 | 968.2 | - | 0.4 | 968.4 | - | 0.6 | 967.8 | - | 0.0 |
| ***5C*** | 5C | 972.5 | 0.8 | 1 | 3 | 969.4 | - | 3.5 | 969.7 | - | 5.1 | 970.7 | - | 9.0 | 968.7 | - | 0.4 |
| ***618*** | 618 | 974.5 | 0.2 | 1 | 3 | 974.6 | 0.1 | 0.2 | 974.9 | 0.4 | 0.6 | 975.3 | 0.8 | 1.5 | 975.2 | 0.7 | 0.1 |
| 619 | 619 | 974.5 | 0.2 | 2 | 6 | 974.6 | 0.1 | 0.5 | 974.9 | 0.4 | 0.7 | 975.3 | 0.8 | 1.2 | 975.2 | 0.7 | 0.0 |
| 636A | 625B | 977.8 | 0.1 | 3 | 9 | 976.7 | - | 0.3 | 976.9 | - | 0.4 | 977.2 | - | 0.6 | 977.1 | - | 0.0 |
| 629-630-631-632-633 | 628 | 976.5 | 1.1 | 3 | 9 | 976.7 | 0.2 | 0.6 | 976.9 | 0.4 | 0.8 | 977.2 | 0.7 | 1.5 | 977.1 | 0.6 | 0.1 |
| ***632*** | 632 | 975.5 | 0.1 | 1 | 3 | 975.8 | 0.3 | 0.5 | 976.0 | 0.5 | 0.8 | 976.1 | 0.6 | 1.3 | 976.1 | 0.5 | 0.1 |
| 634-635 | 634-635 | 976.0 | 0.2 | 5 | 15 | 975.8 | - | 0.1 | 976.0 | - | 0.2 | 976.1 | 0.2 | 0.3 | 976.1 | - | 0.0 |
| 636 | 634A | 975.5 | 0.1 | 5 | 15 | 970.1 | - | 0.2 | 970.4 | - | 0.3 | 971.6 | - | 0.5 | 969.1 | - | 0.0 |
| 636 | 635 | 974.9 | 0.1 | 5 | 15 | 969.9 | - | 0.1 | 970.1 | - | 0.1 | 971.3 | - | 0.3 | 968.8 | - | 0.0 |
| 636 | 636 | 974.5 | 0.1 | 5 | 15 | 971.3 | - | 0.1 | 971.3 | - | 0.1 | 971.4 | - | 0.2 | 971.1 | - | 0.0 |
| 636A | 636A | 977.5 | 0.1 | 3 | 9 | 976.7 | - | 0.1 | 976.9 | - | 0.2 | 977.2 | - | 0.4 | 977.1 | - | 0.0 |
| ***637*** | 637 | 977.5 | 0.1 | 1 | 3 | 976.7 | - | 0.4 | 976.9 | - | 0.6 | 977.2 | - | 1.0 | 977.1 | - | 0.0 |
| ***653*** | 653 | 974.0 | 0.1 | 1 | 3 | 974.6 | 0.6 | 0.4 | 974.9 | 0.9 | 0.5 | 975.3 | 1.3 | 1.0 | 975.2 | 1.2 | 0.0 |
| 634-635 | 656A | 976.4 | 0.2 | 5 | 15 | 976.5 | - | 0.0 | 976.5 | 0.1 | 0.1 | 976.6 | 0.2 | 0.1 | 976.6 | 0.2 | 0.0 |
| ***635*** | 659A | 976.4 | 0.2 | 1 | 3 | 976.5 | - | 0.2 | 976.5 | - | 0.4 | 976.6 | 0.2 | 0.9 | 976.6 | 0.1 | 0.0 |
| ***672*** | 672 | 992.5 | 0.1 | 1 | 3 | 981.1 | - | 0.0 | 981.2 | - | 0.2 | 981.4 | - | 0.7 | 981.1 | - | 0.0 |
| MH-255 | 688 | 980.0 | 0.3 | 10 | 30 | 975.2 | - | 0.2 | 976.4 | - | 0.3 | 977.8 | - | 0.5 | 975.2 | - | 0.0 |
| 695 | 695 | 986.0 | 0.4 | 4 | 12 | 975.6 | - | 0.5 | 977.3 | - | 0.7 | 980.8 | - | 1.2 | 975.2 | - | 0.1 |
| ***6A*** | 6A | 971.7 | 0.2 | 1 | 3 | 968.2 | - | 1.0 | 968.3 | - | 1.4 | 968.6 | - | 2.5 | 967.8 | - | 0.1 |
| ***6B*** | 6B | 971.6 | 0.1 | 1 | 3 | 968.0 | - | 0.3 | 968.1 | - | 0.4 | 968.4 | - | 0.8 | 967.7 | - | 0.0 |
| ***6C*** | 6C | 971.9 | 1.0 | 1 | 3 | 969.4 | - | 4.5 | 970.2 | - | 6.5 | 972.0 | - | 11.6 | 968.3 | - | 0.5 |
| 45 | 701 | 963.4 | 0.5 | 3 | 9 | 958.6 | - | 0.5 | 959.0 | - | 0.8 | 962.4 | - | 1.4 | 959.6 | - | 0.1 |
| 709 | 709 | 968.9 | 0.8 | 8 | 24 | 964.0 | - | 0.2 | 964.2 | - | 0.4 | 966.6 | - | 0.9 | 963.7 | - | 0.0 |
| 712 | 712 | 968.0 | 0.2 | 2 | 6 | 962.4 | - | 0.1 | 962.5 | - | 0.3 | 967.3 | - | 0.6 | 962.2 | - | 0.0 |
| ***715Z*** | 715Z | 969.9 | 0.3 | 1 | 3 | 964.4 | - | 0.3 | 964.5 | - | 0.7 | 968.4 | - | 2.0 | 964.3 | - | 0.1 |
| ***716Z*** | 716Z | 971.0 | 0.3 | 1 | 3 | 964.2 | - | 1.3 | 964.3 | - | 2.0 | 968.2 | - | 3.6 | 963.9 | - | 0.1 |
| ***717*** | 717 | 968.3 | 0.7 | 1 | 3 | 961.6 | - | 2.9 | 961.9 | - | 4.4 | 967.0 | - | 8.0 | 961.2 | - | 0.3 |
| 718 | 718 | 967.9 | 0.1 | 2 | 6 | 963.7 | - | 0.2 | 964.0 | - | 0.3 | 967.6 | - | 0.6 | 963.2 | - | 0.0 |
| 719 | 719 | 968.0 | 0.7 | 2 | 6 | 964.0 | - | 0.7 | 964.2 | - | 1.4 | 967.7 | - | 3.2 | 963.7 | - | 0.1 |
| ***720*** | 720 | 969.0 | 0.2 | 1 | 3 | 963.9 | - | 0.8 | 964.1 | - | 1.2 | 967.8 | - | 2.2 | 963.7 | - | 0.1 |
| ***721*** | 721 | 974.5 | 0.4 | 1 | 3 | 970.4 | - | 1.3 | 970.5 | - | 2.1 | 970.7 | - | 4.2 | 970.2 | - | 0.2 |
| ***722*** | 722 | 974.7 | 0.2 | 1 | 3 | 971.0 | - | 0.8 | 971.2 | - | 1.2 | 971.4 | - | 2.3 | 970.8 | - | 0.1 |
| WetlandnB2 | 734 | 964.2 | 7.9 | 2 | 6 | 958.6 | - | 0.0 | 959.0 | - | 0.2 | 960.0 | - | 0.6 | 959.6 | - | 0.0 |
| 12993 | 6000 | 984.0 | 0.5 | 2 | 6 | 979.1 | - | 0.3 | 979.3 | - | 0.5 | 982.2 | - | 1.1 | 978.8 | - | 0.0 |
| ***125125*** | 125125 | 827.1 | 1.0 | 1 | 3 | 824.3 | - | 0.4 | 824.7 | - | 1.5 | 827.6 | 0.5 | 5.4 | 824.2 | - | 0.2 |
| ***133133*** | 133133 | 822.7 | 0.3 | 1 | 3 | 818.6 | - | 0.5 | 818.8 | - | 1.0 | 821.9 | - | 2.4 | 818.4 | - | 0.1 |
| 717Z | 717Z | 970.0 | 0.4 | 2 | 6 | 963.6 | - | 0.5 | 963.9 | - | 0.9 | 967.5 | - | 1.8 | 963.1 | - | 0.1 |
| ***7A*** | 7A | 969.5 | 0.2 | 1 | 3 | 966.0 | - | 1.0 | 966.2 | - | 1.4 | 966.6 | - | 2.6 | 965.6 | - | 0.1 |
| ***7B*** | 7B | 969.5 | 0.1 | 1 | 3 | 965.9 | - | 0.6 | 966.0 | - | 0.9 | 966.3 | - | 1.5 | 965.5 | - | 0.1 |
| ***7C*** | 7C | 969.7 | 1.1 | 1 | 3 | 967.3 | - | 4.9 | 968.3 | - | 7.1 | 969.8 | - | 12.6 | 966.1 | - | 0.5 |
| ***BE-01*** | BE-01 | 991.5 | 1.7 | 1 | 3 | 985.1 | - | 2.2 | 985.5 | - | 4.4 | 990.0 | - | 10.6 | 984.7 | - | 0.6 |
| BE-02 | BE-02 | 993.5 | 0.6 | 2 | 6 | 987.9 | - | 0.6 | 990.8 | - | 1.1 | 993.5 | - | 2.5 | 987.5 | - | 0.1 |
| BE-02 | BE-03 | 995.0 | 0.6 | 2 | 6 | 989.1 | - | 0.7 | 993.8 | - | 1.4 | 995.5 | 0.5 | 3.3 | 988.6 | - | 0.2 |
| ***BE-03*** | BE-04 | 997.0 | 1.1 | 1 | 3 | 989.8 | - | 3.5 | 995.0 | - | 7.2 | 997.0 | - | 17.4 | 989.5 | - | 1.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subwatershed** | **Node Name** | **Rim Invert** | **Subwatershed Area (ac)** | **Number of Catch Basins** | **Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin)** | **Max Water Elevation (ft)** | **Maximum Depth Above Manhole (ft)** | **Max Runoff Per Catch Basin (cfs)** | **Max Water Elevation (ft)2** | **Maximum Depth Above Manhole (ft)3** | **Max Runoff Per Catch Basin (cfs)2** | **Max Water Elevation (ft)5** | **Maximum Depth Above Manhole (ft)6** | **Max Runoff Per Catch Basin (cfs)3** | **Max Water Elevation (ft)5** | **Maximum Depth Above Manhole (ft)6** | **Max Runoff Per Catch Basin (cfs)** |
| ***BE-05*** | BE-05 | 982.0 | 0.4 | 1 | 3 | 982.8 | 0.8 | 1.8 | 983.6 | 1.6 | 2.6 | 984.6 | 2.6 | 4.6 | 983.5 | 1.5 | 0.2 |
| BE-06 | BE-06 | 984.0 | 0.8 | 6 | 18 | 982.8 | - | 0.6 | 983.6 | - | 0.9 | 984.6 | 0.6 | 1.5 | 983.5 | - | 0.1 |
| ***BE-08*** | BE-08 | 985.6 | 1.7 | 1 | 3 | 982.8 | - | 1.3 | 983.6 | - | 3.2 | 984.8 | - | 8.9 | 983.4 | - | 0.5 |
| ***BE-09*** | BE-09 | 980.3 | 0.2 | 1 | 3 | 982.4 | 2.2 | 0.5 | 982.9 | 2.7 | 0.9 | 984.0 | 3.8 | 1.7 | 983.4 | 3.2 | 0.1 |
| BE-18 | BE-18 | 991.0 | 0.2 | 2 | 6 | 984.8 | - | 0.3 | 987.2 | - | 0.6 | 988.5 | - | 1.1 | 984.3 | - | 0.0 |
| EP-137 | BE-20 | 995.0 | 0.2 | 3 | 9 | 988.6 | - | 0.3 | 991.0 | - | 0.6 | 992.5 | - | 1.5 | 988.0 | - | 0.1 |
| ***BE-21*** | BE-21 | 995.0 | 0.6 | 1 | 3 | 989.1 | - | 0.6 | 991.8 | - | 1.4 | 993.1 | - | 3.6 | 988.5 | - | 0.2 |
| EP-140 | BE-25 | 1005.0 | 0.6 | 6 | 18 | 1000.0 | - | 0.4 | 1000.7 | - | 0.7 | 1003.6 | - | 1.6 | 999.4 | - | 0.1 |
| ***BE-31*** | BE-31 | 1012.3 | 1.0 | 1 | 3 | 1007.0 | - | 1.9 | 1007.4 | - | 3.4 | 1011.9 | - | 7.4 | 1006.7 | - | 0.4 |
| ***BE-33*** | BE-33 | 988.0 | 1.5 | 1 | 3 | 983.5 | - | 0.6 | 985.3 | - | 2.0 | 986.7 | - | 6.4 | 983.4 | - | 0.3 |
| BE-36 | BE-36 | 988.4 | 4.4 | 7 | 21 | 985.5 | - | 0.6 | 986.6 | - | 1.2 | 989.0 | 0.6 | 3.0 | 984.9 | - | 0.2 |
| BE-41 | BE-41 | 1005.5 | 0.9 | 6 | 18 | 999.6 | - | 0.3 | 1004.3 | - | 0.6 | 1004.9 | - | 1.3 | 999.2 | - | 0.1 |
| BE-44 | BE-44 | 1012.1 | 0.9 | 3 | 9 | 1007.0 | - | 0.5 | 1010.8 | - | 0.9 | 1011.5 | - | 2.1 | 1005.9 | - | 0.1 |
| BE-44 | BE-46 | 1016.3 | 0.9 | 3 | 9 | 1010.1 | - | 0.5 | 1012.9 | - | 1.1 | 1015.2 | - | 2.5 | 1009.9 | - | 0.1 |
| BE-50 | BE-50 | 1003.5 | 1.4 | 5 | 15 | 1000.4 | - | 0.5 | 1002.7 | - | 1.1 | 1003.7 | 0.2 | 2.5 | 998.7 | - | 0.1 |
| BE-50 | BE-53 | 1007.6 | 1.4 | 5 | 15 | 1003.3 | - | 0.3 | 1005.9 | - | 0.7 | 1007.0 | - | 1.6 | 1002.6 | - | 0.1 |
| ***BE-54*** | BE-54 | 1009.8 | 3.2 | 1 | 3 | 1006.1 | - | 4.2 | 1008.2 | - | 8.3 | 1008.4 | - | 19.6 | 1004.4 | - | 1.1 |
| BE-61 | BE57 | 998.9 | 1.1 | 3 | 9 | 994.4 | - | 0.4 | 994.9 | - | 0.8 | 998.8 | - | 1.8 | 994.0 | - | 0.1 |
| ***BE-58*** | BE-58 | 1018.4 | 1.6 | 1 | 3 | 1012.4 | - | 2.5 | 1012.5 | - | 5.0 | 1012.8 | - | 11.8 | 1012.2 | - | 0.6 |
| 4-BE-P12 | BE-60 | 1000.6 | 3.1 | 4 | 12 | 993.1 | - | 1.3 | 996.2 | - | 2.7 | 999.4 | - | 6.6 | 991.5 | - | 0.4 |
| 4-BE-P12 | BE-61 | 997.0 | 3.1 | 4 | 12 | 994.2 | - | 0.4 | 996.7 | - | 0.8 | 998.3 | 1.3 | 1.9 | 992.1 | - | 0.1 |
| ***#N/A*** | BE62 | 997.0 | #N/A | 1 | 3 | 994.6 | - | 3.4 | 996.7 | - | 7.4 | 998.2 | 1.2 | 18.6 | 992.2 | - | 1.1 |
| BE-90 | BE-72 | 1005.8 | 0.4 | 3 | 9 | 996.7 | - | 0.2 | 996.8 | - | 0.5 | 997.1 | - | 1.1 | 996.5 | - | 0.0 |
| ***BE-74*** | BE-74 | 1008.0 | 0.6 | 1 | 3 | 1004.4 | - | 2.7 | 1004.6 | - | 3.9 | 1008.0 | - | 7.0 | 1004.1 | - | 0.3 |
| BE-77 | BE-76 | 1005.3 | 0.1 | 2 | 6 | 1000.3 | - | 0.2 | 1001.5 | - | 0.6 | 1003.8 | - | 2.0 | 998.9 | - | 0.1 |
| BE-77 | BE-77 | 1006.4 | 0.1 | 2 | 6 | 1000.4 | - | 0.2 | 1001.9 | - | 0.3 | 1005.1 | - | 0.6 | 999.0 | - | 0.0 |
| ***BE-78*** | BE-78 | 1005.9 | 0.5 | 1 | 3 | 1000.9 | - | 1.8 | 1002.3 | - | 2.8 | 1005.6 | - | 5.0 | 1000.1 | - | 0.2 |
| 4-BE-P03 | BE-79 | 1006.2 | 0.6 | 2 | 6 | 998.9 | - | 0.2 | 999.6 | - | 0.6 | 1000.9 | - | 1.7 | 998.2 | - | 0.1 |
| ***BE-80*** | BE-80 | 1008.7 | 2.0 | 1 | 3 | 1003.8 | - | 2.0 | 1007.2 | - | 4.7 | 1008.5 | - | 12.5 | 1003.5 | - | 0.6 |
| BE-81 | BE-81 | 995.6 | 2.1 | 8 | 24 | 989.4 | - | 0.8 | 990.4 | - | 1.2 | 992.0 | - | 2.1 | 987.1 | - | 0.1 |
| BE-81 | BE-86 | 1006.0 | 2.1 | 8 | 24 | 1001.2 | - | 0.7 | 1004.9 | - | 1.1 | 1005.3 | - | 1.9 | 1000.2 | - | 0.1 |
| BE-90 | BE-90 | 1004.3 | 0.4 | 3 | 9 | 999.9 | - | 0.5 | 1000.1 | - | 0.8 | 1000.3 | - | 1.5 | 999.7 | - | 0.1 |
| BE-90 | BE-91 | 1006.0 | 0.4 | 3 | 9 | 1000.7 | - | 0.2 | 1002.7 | - | 0.3 | 1003.8 | - | 0.6 | 999.9 | - | 0.0 |
| ***CB-102*** | CB-102 | 981.0 | 0.3 | 1 | 3 | 976.0 | - | 0.4 | 976.2 | - | 0.9 | 978.2 | - | 2.5 | 975.8 | - | 0.1 |
| CB-107 | CB-103 | 981.0 | 0.3 | 2 | 6 | 976.5 | - | 0.2 | 976.6 | - | 0.4 | 978.5 | - | 1.2 | 976.4 | - | 0.0 |
| CB-104 | CB-104 | 977.7 | 0.9 | 3 | 9 | 973.6 | - | 0.5 | 973.9 | - | 0.9 | 977.0 | - | 2.1 | 973.3 | - | 0.1 |
| D-02 | CB-105 | 979.0 | 23.3 | 29 | 87 | 973.6 | - | 0.0 | 974.0 | - | 0.0 | 977.2 | - | 0.0 | 973.4 | - | 0.0 |
| D-02 | CB-106 | 979.0 | 23.3 | 29 | 87 | 973.7 | - | 0.0 | 974.0 | - | 0.0 | 977.4 | - | 0.0 | 973.6 | - | 0.0 |
| CB-107 | CB-107 | 979.0 | 0.3 | 2 | 6 | 973.9 | - | 0.2 | 974.1 | - | 0.4 | 977.5 | - | 1.0 | 973.8 | - | 0.0 |
| CB-110 | CB-110 | 977.0 | 0.5 | 5 | 15 | 973.1 | - | 0.3 | 973.8 | - | 0.5 | 975.5 | - | 1.0 | 972.4 | - | 0.0 |
| CB-110 | CB-111 | 978.0 | 0.5 | 5 | 15 | 973.2 | - | 0.1 | 974.0 | - | 0.2 | 976.0 | - | 0.3 | 972.5 | - | 0.0 |
| ***CB-112*** | CB-112 | 978.0 | 0.1 | 1 | 3 | 973.3 | - | 0.5 | 974.1 | - | 0.8 | 976.3 | - | 1.4 | 972.5 | - | 0.1 |
| CB-113 | CB-113 | 977.0 | 0.4 | 2 | 6 | 973.4 | - | 0.7 | 974.3 | - | 1.2 | 976.9 | - | 2.2 | 972.5 | - | 0.1 |
| CB-110 | CB-114 | 978.0 | 0.5 | 5 | 15 | 973.6 | - | 0.1 | 975.2 | - | 0.2 | 976.4 | - | 0.4 | 972.7 | - | 0.0 |
| CB-113 | CB-115 | 978.0 | 0.4 | 2 | 6 | 974.2 | - | 0.2 | 976.3 | - | 0.4 | 977.6 | - | 0.8 | 973.3 | - | 0.0 |
| CB-116 | CB-116 | 981.0 | 0.2 | 2 | 6 | 975.3 | - | 0.3 | 977.9 | - | 0.5 | 979.8 | - | 1.0 | 974.7 | - | 0.0 |
| ***CB-117*** | CB-117 | 981.0 | 0.1 | 1 | 3 | 976.4 | - | 0.1 | 978.0 | - | 0.2 | 980.0 | - | 0.4 | 976.1 | - | 0.0 |
| CB411 | CB118 | 946.6 | 1.4 | 2 | 6 | 939.4 | - | 3.3 | 942.1 | - | 7.4 | 947.2 | 0.6 | 19.0 | 939.1 | - | 1.3 |
| ***CB-118*** | CB-118 | 981.0 | 0.1 | 1 | 3 | 976.5 | - | 0.1 | 978.1 | - | 0.2 | 980.2 | - | 0.5 | 976.1 | - | 0.0 |
| ***CB-119*** | CB-119 | 981.0 | 0.4 | 1 | 3 | 976.6 | - | 1.0 | 978.2 | - | 1.8 | 980.2 | - | 3.7 | 976.2 | - | 0.1 |
| LS-08 | CB120 | 1012.7 | 3.5 | 2 | 6 | 1010.3 | - | 1.8 | 1013.0 | 0.3 | 3.2 | 1013.5 | 0.8 | 6.9 | 1009.5 | - | 0.3 |
| CB-121 | CB-121 | 985.0 | 0.3 | 2 | 6 | 976.9 | - | 0.4 | 980.7 | - | 0.7 | 983.1 | - | 1.4 | 975.9 | - | 0.1 |
| ***CB-122*** | CB-122 | 986.0 | 0.1 | 1 | 3 | 980.7 | - | 0.1 | 981.0 | - | 0.2 | 983.9 | - | 0.6 | 980.3 | - | 0.0 |
| CB-123 | CB-123 | 986.0 | 0.1 | 2 | 6 | 980.8 | - | 0.0 | 981.2 | - | 0.1 | 984.4 | - | 0.3 | 980.4 | - | 0.0 |
| CB-124 | CB-124 | 985.0 | 0.5 | 2 | 6 | 981.0 | - | 0.6 | 981.4 | - | 1.1 | 984.9 | - | 2.3 | 980.6 | - | 0.1 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| CB-121 | CB-125 | 986.0 | 0.3 | 2 | 6 | 977.3 | - | 0.8 | 981.6 | - | 1.4 | 983.8 | - | 2.8 | 976.4 | - | 0.1 |
| ***CB-126*** | CB-126 | 987.0 | 0.1 | 1 | 3 | 981.6 | - | 0.1 | 981.8 | - | 0.2 | 984.5 | - | 0.5 | 981.2 | - | 0.0 |
| CB-123 | CB-127 | 987.0 | 0.1 | 2 | 6 | 981.8 | - | 0.0 | 982.0 | - | 0.1 | 985.0 | - | 0.2 | 981.4 | - | 0.0 |
| CB-124 | CB-128 | 986.0 | 0.5 | 2 | 6 | 981.9 | - | 0.6 | 982.2 | - | 1.0 | 985.5 | - | 1.9 | 981.6 | - | 0.1 |
| ***CB-130*** | CB-130 | 986.6 | 0.1 | 1 | 3 | 978.4 | - | 1.0 | 982.7 | - | 1.4 | 983.7 | - | 2.5 | 977.8 | - | 0.1 |
| ***CB-131*** | CB-131 | 986.3 | 0.0 | 1 | 3 | 978.5 | - | 0.2 | 982.8 | - | 0.3 | 983.8 | - | 0.5 | 977.9 | - | 0.0 |
| CB-132 | CB-132 | 986.6 | 0.3 | 2 | 6 | 983.1 | - | 0.4 | 984.4 | - | 0.7 | 986.6 | - | 1.4 | 982.6 | - | 0.1 |
| ***CB-133*** | CB-133 | 987.0 | 0.0 | 1 | 3 | 983.2 | - | 0.1 | 984.6 | - | 0.1 | 986.6 | - | 0.2 | 982.6 | - | 0.0 |
| ***CB-134*** | CB-134 | 986.9 | 0.0 | 1 | 3 | 983.2 | - | 0.1 | 984.7 | - | 0.1 | 986.6 | - | 0.2 | 982.7 | - | 0.0 |
| ***CB-135*** | CB-135 | 986.5 | 0.4 | 1 | 3 | 983.3 | - | 1.1 | 984.8 | - | 1.9 | 986.7 | 0.2 | 3.7 | 982.7 | - | 0.2 |
| ***CB-137*** | CB-137 | 985.0 | 0.2 | 1 | 3 | 979.8 | - | 0.5 | 983.4 | - | 0.8 | 984.0 | - | 1.7 | 979.5 | - | 0.1 |
| CB-138 | CB-138 | 985.0 | 0.9 | 2 | 6 | 980.0 | - | 0.2 | 983.5 | - | 0.6 | 984.4 | - | 2.0 | 979.9 | - | 0.1 |
| ***#N/A*** | CB-139 | 983.0 | #N/A | 1 | 3 | 979.0 | - | 1.2 | 983.0 | - | 2.0 | 983.9 | 0.9 | 3.9 | 978.5 | - | 0.2 |
| CB-140 | CB-140 | 984.0 | 0.2 | 2 | 6 | 979.1 | - | 0.1 | 983.0 | - | 0.2 | 984.0 | - | 0.6 | 978.8 | - | 0.0 |
| CB-141 | CB-141 | 984.0 | 0.2 | 2 | 6 | 979.2 | - | 0.1 | 983.1 | - | 0.2 | 984.1 | 0.1 | 0.6 | 978.9 | - | 0.0 |
| ***#N/A*** | CB-142 | 983.0 | #N/A | 1 | 3 | 979.3 | - | 1.5 | 983.2 | 0.2 | 4.5 | 984.4 | 1.4 | 14.7 | 979.0 | - | 0.8 |
| CB143 | CB143 | 872.0 | 12.6 | 3 | 9 | 866.8 | - | 0.2 | 867.3 | - | 1.2 | 872.3 | 0.3 | 6.2 | 866.9 | - | 0.5 |
| ***CB-143*** | CB-143 | 986.0 | 0.2 | 1 | 3 | 981.6 | - | 0.7 | 985.0 | - | 1.2 | 985.5 | - | 2.5 | 981.2 | - | 0.1 |
| CB-140 | CB-144 | 987.0 | 0.2 | 2 | 6 | 981.6 | - | 0.0 | 985.1 | - | 0.1 | 985.6 | - | 0.3 | 981.3 | - | 0.0 |
| CB-141 | CB-145 | 987.0 | 0.2 | 2 | 6 | 981.7 | - | 0.0 | 985.2 | - | 0.1 | 985.6 | - | 0.2 | 981.4 | - | 0.0 |
| CB-138 | CB-146 | 986.0 | 0.9 | 2 | 6 | 981.8 | - | 0.4 | 985.3 | - | 1.0 | 985.6 | - | 2.9 | 981.5 | - | 0.1 |
| CB-148 | CB-148 | 975.0 | 0.5 | 2 | 6 | 970.7 | - | 0.7 | 971.6 | - | 1.2 | 974.6 | - | 2.7 | 970.1 | - | 0.1 |
| ***CB-149*** | CB-149 | 975.0 | 0.0 | 1 | 3 | 970.8 | - | 0.2 | 971.8 | - | 0.3 | 974.9 | - | 0.5 | 970.1 | - | 0.0 |
| ***CB-150*** | CB-150 | 975.0 | 0.1 | 1 | 3 | 970.8 | - | 0.2 | 971.9 | - | 0.3 | 975.0 | - | 0.6 | 970.1 | - | 0.0 |
| CB-151 | CB-151 | 975.0 | 0.4 | 2 | 6 | 970.8 | - | 0.4 | 972.0 | - | 0.8 | 975.2 | 0.2 | 1.7 | 970.1 | - | 0.1 |
| ***CB-152*** | CB-152 | 979.0 | 0.3 | 1 | 3 | 974.0 | - | 0.7 | 974.5 | - | 1.2 | 977.9 | - | 2.5 | 973.7 | - | 0.1 |
| ***CB-155*** | CB-155 | 979.0 | 0.5 | 1 | 3 | 974.3 | - | 0.7 | 974.6 | - | 1.7 | 978.1 | - | 4.3 | 974.1 | - | 0.2 |
| ***CB-156*** | CB-156 | 986.0 | 0.1 | 1 | 3 | 980.7 | - | 0.4 | 980.8 | - | 0.7 | 981.2 | - | 1.4 | 980.5 | - | 0.1 |
| ***CB-157*** | CB-157 | 986.0 | 0.0 | 1 | 3 | 981.0 | - | 0.0 | 981.2 | - | 0.1 | 981.7 | - | 0.4 | 980.8 | - | 0.0 |
| ***CB-158*** | CB-158 | 986.0 | 0.0 | 1 | 3 | 981.1 | - | 0.0 | 981.3 | - | 0.1 | 981.9 | - | 0.3 | 980.9 | - | 0.0 |
| ***CB-159*** | CB-159 | 986.0 | 0.3 | 1 | 3 | 981.3 | - | 0.6 | 981.5 | - | 1.1 | 982.2 | - | 2.5 | 981.1 | - | 0.1 |
| ***CB362*** | CB362 | 1003.1 | 5.0 | 1 | 3 | 1000.0 | - | 6.6 | 1003.1 | - | 11.8 | 1004.5 | 1.3 | 25.2 | 998.0 | - | 1.9 |
| CB367 | CB367 | 1008.0 | 1.1 | 3 | 9 | 992.7 | - | 0.8 | 998.6 | - | 1.5 | 1003.1 | - | 3.3 | 991.9 | - | 0.1 |
| CB368 | CB368 | 1013.0 | 1.6 | 2 | 6 | 1008.6 | - | 2.0 | 1011.9 | - | 3.3 | 1012.5 | - | 6.8 | 1008.0 | - | 0.3 |
| ***CB371*** | CB371 | 1010.0 | 1.5 | 1 | 3 | 1004.3 | - | 2.5 | 1008.6 | - | 4.6 | 1010.2 | 0.2 | 10.0 | 1003.6 | - | 0.6 |
| CB374 | CB374 | 1005.0 | 1.3 | 2 | 6 | 998.3 | - | 1.6 | 1001.9 | - | 2.7 | 1004.7 | - | 5.5 | 997.7 | - | 0.3 |
| ***CB378*** | CB378 | 999.8 | 0.9 | 1 | 3 | 995.2 | - | 2.5 | 997.6 | - | 4.3 | 1000.4 | 0.7 | 8.6 | 993.6 | - | 0.4 |
| CB379 | CB379 | 995.2 | 1.4 | 2 | 6 | 983.8 | - | 1.5 | 989.9 | - | 2.7 | 991.3 | - | 5.7 | 982.5 | - | 0.3 |
| ***CB384*** | CB384 | 973.7 | 2.1 | 1 | 3 | 968.3 | - | 0.0 | 968.5 | - | 0.4 | 968.9 | - | 3.3 | 968.4 | - | 0.2 |
| ***J1247*** | CB388 | 968.9 | 3.2 | 1 | 3 | 962.8 | - | 0.1 | 963.0 | - | 1.0 | 965.2 | - | 6.2 | 962.9 | - | 0.3 |
| CB397 | CB397 | 978.0 | 1.2 | 2 | 6 | 970.9 | - | 0.9 | 971.1 | - | 1.9 | 971.9 | - | 4.6 | 970.5 | - | 0.2 |
| ***CB399*** | CB399 | 962.5 | 1.2 | 1 | 3 | 956.9 | - | 1.7 | 957.1 | - | 3.6 | 960.9 | - | 9.1 | 956.7 | - | 0.4 |
| CB412 | CB401 | 955.6 | 0.9 | 3 | 9 | 950.4 | - | 0.8 | 950.6 | - | 1.3 | 954.3 | - | 2.4 | 950.1 | - | 0.1 |
| ***CB405*** | CB405 | 975.4 | 1.1 | 1 | 3 | 970.5 | - | 2.5 | 970.7 | - | 4.7 | 972.8 | - | 10.3 | 970.3 | - | 0.4 |
| ***CB406*** | CB406 | 963.7 | 1.7 | 1 | 3 | 958.5 | - | 2.8 | 958.9 | - | 5.6 | 963.1 | - | 13.2 | 958.2 | - | 0.6 |
| ***CB409*** | CB409 | 952.0 | 1.5 | 1 | 3 | 946.5 | - | 2.7 | 947.2 | - | 5.4 | 952.0 | - | 12.6 | 946.1 | - | 0.5 |
| CB411 | CB410 | 941.0 | 1.4 | 2 | 6 | 934.0 | - | 1.3 | 938.0 | - | 2.3 | 941.0 | - | 4.7 | 933.6 | - | 0.2 |
| CB410 | CB411 | 941.0 | 1.0 | 4 | 12 | 935.3 | - | 0.6 | 939.2 | - | 1.1 | 942.1 | 1.1 | 2.6 | 934.8 | - | 0.1 |
| CB412 | CB412 | 942.3 | 0.9 | 3 | 9 | 936.5 | - | 0.8 | 940.2 | - | 1.4 | 942.3 | - | 2.8 | 936.2 | - | 0.1 |
| CB56 | CB56 | 1009.6 | 1.3 | 3 | 9 | 996.2 | - | 0.9 | 1000.7 | - | 1.6 | 1003.6 | - | 3.4 | 995.5 | - | 0.2 |
| GC-07 | CE-69 | 974.7 | 9.0 | 2 | 6 | 970.9 | - | 0.2 | 971.3 | - | 0.3 | 973.5 | - | 0.7 | 970.6 | - | 0.0 |
| CH-13 | CH-04 | 961.9 | 0.1 | 3 | 9 | 949.5 | - | 0.8 | 950.0 | - | 1.2 | 952.6 | - | 2.1 | 948.5 | - | 0.1 |
| CH-15 | CH-05 | 961.0 | 0.2 | 4 | 12 | 950.0 | - | 1.3 | 950.7 | - | 1.9 | 955.1 | - | 3.4 | 949.2 | - | 0.2 |
| CH-15 | CH-06 | 961.6 | 0.2 | 4 | 12 | 950.3 | - | 1.2 | 950.9 | - | 1.7 | 955.7 | - | 3.0 | 949.9 | - | 0.2 |
| CH-11 | CH-11 | 975.9 | 0.8 | 3 | 9 | 972.4 | - | 0.9 | 972.5 | - | 1.4 | 972.9 | - | 2.6 | 972.0 | - | 0.1 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***CH-12*** | CH-12 | 958.3 | 0.1 | 1 | 3 | 951.2 | - | 0.0 | 951.5 | - | 0.2 | 953.1 | - | 0.6 | 950.7 | - | 0.0 |
| CH-13 | CH-13 | 958.4 | 0.1 | 3 | 9 | 951.3 | - | 0.0 | 951.7 | - | 0.1 | 953.2 | - | 0.2 | 950.9 | - | 0.0 |
| CH-15 | CH-15 | 958.3 | 0.2 | 4 | 12 | 951.9 | - | 0.0 | 952.2 | - | 0.1 | 953.4 | - | 0.3 | 951.6 | - | 0.0 |
| CH-17 | CH-17 | 965.0 | 0.5 | 2 | 6 | 953.7 | - | 0.9 | 954.7 | - | 1.4 | 957.5 | - | 2.5 | 952.9 | - | 0.1 |
| ***CH-18*** | CH-18 | 962.3 | 0.5 | 1 | 3 | 954.5 | - | 2.3 | 955.2 | - | 3.4 | 957.9 | - | 5.9 | 954.5 | - | 0.3 |
| ***CH-19*** | CH-19 | 958.1 | 0.3 | 1 | 3 | 952.5 | - | 0.1 | 952.8 | - | 0.4 | 953.8 | - | 1.4 | 952.1 | - | 0.0 |
| ***CH-20*** | CH-20 | 958.1 | 0.1 | 1 | 3 | 955.0 | - | 0.0 | 955.0 | - | 0.1 | 955.1 | - | 0.4 | 955.0 | - | 0.0 |
| ***CH-21*** | CH-21 | 969.0 | 0.3 | 1 | 3 | 954.0 | - | 1.2 | 954.1 | - | 1.9 | 954.2 | - | 3.4 | 953.9 | - | 0.1 |
| CH-41 | CH-41 | 957.9 | 1.7 | 2 | 6 | 954.0 | - | 2.1 | 954.4 | - | 3.5 | 957.9 | - | 7.1 | 953.2 | - | 0.4 |
| CH-43 | CH-43 | 976.8 | 0.6 | 5 | 15 | 967.7 | - | 0.3 | 967.9 | - | 0.6 | 968.5 | - | 1.2 | 966.9 | - | 0.1 |
| ***CH-48*** | CH-48 | 975.4 | 0.3 | 1 | 3 | 969.6 | - | 1.5 | 969.8 | - | 2.2 | 970.8 | - | 3.8 | 968.6 | - | 0.2 |
| ***CH-54*** | CH-54 | 976.0 | 1.9 | 1 | 3 | 976.1 | - | 6.8 | 976.3 | 0.3 | 9.9 | 976.9 | 0.9 | 17.5 | 971.5 | - | 0.9 |
| ***#N/A*** | CR-103 | 989.9 | #N/A | 1 | 3 | 986.7 | - | 1.6 | 987.5 | - | 2.4 | 989.8 | - | 4.4 | 985.7 | - | 0.2 |
| CR-105 | CR-105 | 993.6 | 0.3 | 2 | 6 | 988.2 | - | 0.7 | 988.4 | - | 1.0 | 990.7 | - | 1.9 | 987.8 | - | 0.1 |
| ***CR-106*** | CR-106 | 993.5 | 0.2 | 1 | 3 | 989.5 | - | 0.1 | 989.6 | - | 0.3 | 990.8 | - | 1.1 | 989.5 | - | 0.0 |
| CR-105 | CR-107 | 994.0 | 0.3 | 2 | 6 | 989.9 | - | 0.0 | 990.0 | - | 0.1 | 990.8 | - | 0.5 | 989.9 | - | 0.0 |
| CR-103 | CR-108 | 991.2 | 0.4 | 2 | 6 | 987.8 | - | 0.7 | 988.9 | - | 1.1 | 991.4 | 0.2 | 2.1 | 986.9 | - | 0.1 |
| CR-110 | CR-110 | 992.8 | 0.3 | 3 | 9 | 989.4 | - | 0.4 | 989.5 | - | 0.6 | 991.6 | - | 1.0 | 989.1 | - | 0.0 |
| CR-112 | CR-112 | 993.2 | 0.4 | 3 | 9 | 990.1 | - | 0.5 | 990.5 | - | 0.8 | 993.4 | 0.2 | 1.4 | 989.6 | - | 0.1 |
| CR-110 | CR-113 | 995.2 | 0.3 | 3 | 9 | 991.5 | - | 0.4 | 991.6 | - | 0.6 | 993.6 | - | 1.0 | 991.4 | - | 0.0 |
| CR-112 | CR-115 | 994.9 | 0.4 | 3 | 9 | 991.4 | - | 0.4 | 991.8 | - | 0.6 | 994.8 | - | 1.1 | 990.5 | - | 0.0 |
| CR-113 | CR-118 | 995.7 | 0.3 | 3 | 9 | 992.3 | - | 0.5 | 992.4 | - | 0.7 | 995.3 | - | 1.2 | 991.9 | - | 0.0 |
| CR-115 | CR-119 | 996.1 | 0.3 | 2 | 6 | 992.8 | - | 0.4 | 993.8 | - | 0.6 | 996.2 | 0.1 | 1.1 | 992.1 | - | 0.0 |
| CR-122 | CR-122 | 996.4 | 0.2 | 4 | 12 | 992.9 | - | 0.2 | 993.8 | - | 0.3 | 996.4 | - | 0.6 | 992.5 | - | 0.0 |
| CR-119 | CR-123 | 996.7 | 0.2 | 2 | 6 | 994.0 | - | 0.7 | 994.3 | - | 1.0 | 996.8 | 0.2 | 1.9 | 993.4 | - | 0.1 |
| CR-122 | CR-126 | 997.3 | 0.2 | 4 | 12 | 994.4 | - | 0.3 | 994.6 | - | 0.6 | 997.3 | - | 1.1 | 994.0 | - | 0.0 |
| CE-69 | CR-68 | 975.7 | 0.1 | 2 | 6 | 970.5 | - | 0.2 | 971.3 | - | 0.3 | 973.4 | - | 0.5 | 970.1 | - | 0.0 |
| CR-70 | CR-70 | 974.8 | 0.1 | 2 | 6 | 971.1 | - | 0.2 | 971.3 | - | 0.3 | 973.7 | - | 0.5 | 970.7 | - | 0.0 |
| ***CR-71*** | CR-71 | 974.4 | 0.1 | 1 | 3 | 971.2 | - | 0.5 | 971.4 | - | 0.7 | 973.8 | - | 1.2 | 970.8 | - | 0.1 |
| GC-07 | CR-72 | 974.6 | 9.0 | 2 | 6 | 971.2 | - | 0.3 | 971.4 | - | 0.5 | 973.9 | - | 0.9 | 971.0 | - | 0.0 |
| CR-70 | CR-73 | 975.7 | 0.1 | 2 | 6 | 971.6 | - | 0.2 | 971.8 | - | 0.3 | 973.4 | - | 0.4 | 971.3 | - | 0.0 |
| ***CR-72*** | CR-74 | 975.2 | 0.2 | 1 | 3 | 971.8 | - | 0.8 | 971.9 | - | 1.2 | 973.4 | - | 2.3 | 971.6 | - | 0.1 |
| CR-68 | CR-76 | 976.8 | 0.1 | 2 | 6 | 972.1 | - | 0.0 | 972.3 | - | 0.1 | 973.4 | - | 0.2 | 971.7 | - | 0.0 |
| ***CR-73*** | CR-77 | 976.4 | 0.1 | 1 | 3 | 972.3 | - | 0.6 | 972.5 | - | 0.9 | 973.4 | - | 1.7 | 971.9 | - | 0.1 |
| ***CR-74*** | CR-78 | 975.4 | 0.2 | 1 | 3 | 972.3 | - | 0.8 | 972.6 | - | 1.3 | 973.4 | - | 2.5 | 972.1 | - | 0.1 |
| CR-77 | CR-80 | 978.7 | 0.2 | 2 | 6 | 972.2 | - | 0.7 | 972.8 | - | 1.1 | 974.4 | - | 2.0 | 970.8 | - | 0.1 |
| CR-77 | CR-81 | 977.3 | 0.2 | 2 | 6 | 972.8 | - | 0.5 | 973.1 | - | 0.8 | 975.2 | - | 1.4 | 972.3 | - | 0.1 |
| CR-83 | CR-82 | 977.5 | 0.3 | 3 | 9 | 972.9 | - | 0.0 | 973.2 | - | 0.1 | 975.4 | - | 0.4 | 972.4 | - | 0.0 |
| CR-78 | CR-83 | 975.8 | 0.2 | 3 | 9 | 972.9 | - | 0.4 | 973.3 | - | 0.6 | 975.6 | - | 1.2 | 972.5 | - | 0.1 |
| CR-81 | CR-84 | 982.2 | 0.3 | 3 | 9 | 974.8 | - | 0.1 | 975.3 | - | 0.1 | 976.6 | - | 0.3 | 973.7 | - | 0.0 |
| CR-81 | CR-85 | 980.8 | 0.3 | 3 | 9 | 975.7 | - | 0.2 | 975.8 | - | 0.4 | 976.8 | - | 0.7 | 975.2 | - | 0.0 |
| CR-83 | CR-86 | 979.3 | 0.3 | 3 | 9 | 975.7 | - | 0.3 | 975.9 | - | 0.4 | 977.0 | - | 0.8 | 975.4 | - | 0.0 |
| CR-87 | CR-87 | 985.0 | 0.2 | 2 | 6 | 978.5 | - | 0.2 | 978.9 | - | 0.5 | 980.0 | - | 1.1 | 977.4 | - | 0.0 |
| ***CR-87*** | CR-88 | 984.2 | 0.2 | 1 | 3 | 979.5 | - | 0.9 | 979.8 | - | 1.4 | 980.6 | - | 2.6 | 979.0 | - | 0.1 |
| CR-82 | CR-89 | 984.2 | 0.2 | 3 | 9 | 979.6 | - | 0.1 | 979.9 | - | 0.2 | 980.8 | - | 0.5 | 979.1 | - | 0.0 |
| CR-86 | CR-90 | 983.0 | 0.2 | 2 | 6 | 979.7 | - | 0.5 | 979.9 | - | 0.8 | 981.0 | - | 1.5 | 979.2 | - | 0.1 |
| CR-87 | CR-91 | 987.9 | 0.2 | 2 | 6 | 982.8 | - | 0.4 | 983.2 | - | 0.7 | 984.2 | - | 1.3 | 981.8 | - | 0.1 |
| ***CR-92*** | CR-92 | 988.5 | 0.2 | 1 | 3 | 983.4 | - | 0.8 | 983.5 | - | 1.2 | 984.5 | - | 2.1 | 983.2 | - | 0.1 |
| ***CR-93*** | CR-93 | 988.7 | 0.2 | 1 | 3 | 984.9 | - | 0.6 | 984.9 | - | 1.0 | 985.0 | - | 2.0 | 984.8 | - | 0.1 |
| CR-94 | CR-94 | 988.5 | 0.2 | 3 | 9 | 984.4 | - | 0.2 | 984.9 | - | 0.4 | 985.7 | - | 0.7 | 983.3 | - | 0.0 |
| CR-94 | CR-95 | 988.8 | 0.2 | 3 | 9 | 985.1 | - | 0.4 | 985.7 | - | 0.6 | 986.9 | - | 1.0 | 984.0 | - | 0.0 |
| CR-97 | CR-97 | 992.7 | 0.1 | 4 | 12 | 987.5 | - | 0.2 | 987.5 | - | 0.2 | 987.7 | - | 0.4 | 987.3 | - | 0.0 |
| DP-22 | DL-702 | 963.7 | 0.6 | 6 | 18 | 958.6 | - | 0.7 | 959.0 | - | 1.1 | 963.8 | - | 1.9 | 959.6 | - | 0.1 |
| DL-702 | DL-703 | 968.1 | 1.1 | 2 | 6 | 958.6 | - | 1.7 | 959.8 | - | 2.5 | 965.3 | - | 4.4 | 959.6 | - | 0.2 |
| DL-703 | DL-705 | 968.9 | 0.8 | 2 | 6 | 958.7 | - | 1.5 | 960.6 | - | 2.2 | 966.5 | - | 3.9 | 959.6 | - | 0.2 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***DL-711*** | DL-711 | 968.2 | 0.7 | 1 | 3 | 964.7 | - | 2.9 | 965.2 | - | 4.2 | 968.2 | - | 7.4 | 964.0 | - | 0.3 |
| ***DL-713*** | DL-713 | 968.1 | 0.5 | 1 | 3 | 964.4 | - | 2.1 | 964.6 | - | 3.0 | 967.3 | - | 5.4 | 963.9 | - | 0.2 |
| EP-107 | DP-13 | 959.9 | 0.8 | 5 | 15 | 962.1 | 2.2 | 0.0 | 962.4 | 2.5 | 0.1 | 963.0 | 3.1 | 0.2 | 962.9 | 3.0 | 0.0 |
| DP-15 | DP-15 | 966.3 | 0.1 | 4 | 12 | 962.1 | - | 0.1 | 962.4 | - | 0.2 | 963.0 | - | 0.3 | 962.9 | - | 0.0 |
| DP-20 | DP-20 | 960.9 | 0.3 | 4 | 12 | 958.6 | - | 0.4 | 959.0 | - | 0.5 | 960.0 | - | 1.0 | 959.6 | - | 0.0 |
| DP-22 | DP-22 | 960.2 | 0.6 | 6 | 18 | 958.6 | - | 0.2 | 959.0 | - | 0.4 | 960.0 | - | 1.0 | 959.6 | - | 0.0 |
| DP-23 | DP-23 | 960.0 | 0.4 | 2 | 6 | 958.6 | - | 0.7 | 959.0 | - | 1.1 | 960.0 | - | 2.1 | 959.6 | - | 0.1 |
| WetlandnB2 | DP-28 | 961.5 | 7.9 | 2 | 6 | 958.6 | - | 0.4 | 959.0 | - | 0.6 | 960.0 | - | 1.1 | 959.6 | - | 0.0 |
| DS-02 | DS-02 | 969.0 | 0.7 | 2 | 6 | 963.8 | - | 1.6 | 964.0 | - | 2.3 | 964.4 | - | 4.0 | 963.5 | - | 0.2 |
| ***GC-08*** | DS-03 | 969.2 | 2.8 | 1 | 3 | 965.5 | - | 1.7 | 965.6 | - | 2.5 | 965.6 | - | 4.4 | 965.2 | - | 0.2 |
| ***DS-04*** | DS-04 | 969.5 | 2.0 | 1 | 3 | 968.4 | - | 6.9 | 969.6 | - | 10.1 | 970.0 | 0.5 | 17.9 | 966.0 | - | 0.9 |
| ***DS-05*** | DS-05 | 966.1 | 0.5 | 1 | 3 | 962.3 | - | 1.3 | 962.3 | - | 2.4 | 962.5 | - | 5.0 | 962.2 | - | 0.2 |
| ***DS-06*** | DS-06 | 967.4 | 0.3 | 1 | 3 | 963.3 | - | 1.4 | 963.4 | - | 2.1 | 963.6 | - | 3.7 | 963.1 | - | 0.2 |
| ***DS-07*** | DS-07 | 959.5 | 0.8 | 1 | 3 | 958.3 | - | 3.3 | 959.0 | - | 4.8 | 960.5 | 1.0 | 8.4 | 959.0 | - | 0.4 |
| ***DS-08*** | DS-08 | 960.0 | 0.3 | 1 | 3 | 958.3 | - | 1.2 | 959.0 | - | 1.7 | 960.5 | 0.5 | 3.1 | 959.0 | - | 0.1 |
| DS-09 | DS-09 | 960.8 | 0.3 | 2 | 6 | 958.5 | - | 0.7 | 959.3 | - | 1.0 | 960.9 | - | 1.7 | 959.0 | - | 0.1 |
| ***DS-10*** | DS-10 | 962.0 | 1.7 | 1 | 3 | 958.7 | - | 5.1 | 959.8 | - | 7.5 | 962.1 | 0.1 | 13.3 | 959.0 | - | 0.8 |
| DS-09 | DS-11 | 963.1 | 0.3 | 2 | 6 | 959.8 | - | 0.5 | 961.4 | - | 0.9 | 963.1 | - | 1.9 | 959.0 | - | 0.1 |
| DS-12 | DS-12 | 967.5 | 0.5 | 3 | 9 | 963.9 | - | 0.7 | 967.5 | - | 1.1 | 967.7 | 0.2 | 1.9 | 963.2 | - | 0.1 |
| ***DS-15*** | DS-15 | 970.2 | 0.8 | 1 | 3 | 966.6 | - | 3.2 | 970.3 | - | 4.7 | 970.5 | 0.3 | 8.4 | 966.2 | - | 0.4 |
| DS-19 | DS-18 | 964.8 | 0.5 | 3 | 9 | 960.6 | - | 1.1 | 961.7 | - | 1.5 | 963.7 | - | 2.7 | 958.5 | - | 0.1 |
| DS-19 | DS-19 | 965.5 | 0.5 | 3 | 9 | 960.8 | - | 0.7 | 962.1 | - | 1.0 | 964.2 | - | 1.8 | 959.1 | - | 0.1 |
| DS-20 | DS-20 | 967.0 | 0.3 | 2 | 6 | 961.8 | - | 0.7 | 962.6 | - | 1.0 | 964.7 | - | 1.8 | 961.2 | - | 0.1 |
| DS-24 | DS-24 | 969.3 | 1.5 | 3 | 9 | 967.0 | - | 1.8 | 969.3 | - | 2.6 | 969.8 | 0.5 | 4.6 | 964.9 | - | 0.2 |
| DS-27 | DS-27 | 970.8 | 0.9 | 2 | 6 | 968.2 | - | 1.8 | 969.9 | - | 2.7 | 971.0 | 0.2 | 4.8 | 967.4 | - | 0.2 |
| DS-29 | DS-29 | 971.1 | 1.3 | 3 | 9 | 970.7 | - | 1.8 | 970.9 | - | 2.6 | 971.3 | 0.3 | 4.6 | 967.3 | - | 0.2 |
| ***DS-31*** | DS-31 | 971.7 | 0.5 | 1 | 3 | 971.6 | - | 2.2 | 971.7 | - | 3.3 | 971.9 | 0.2 | 6.1 | 967.9 | - | 0.3 |
| DS-32 | DS-32 | 965.0 | 3.0 | 3 | 9 | 960.6 | - | 1.3 | 962.6 | - | 2.6 | 965.5 | 0.5 | 6.2 | 960.1 | - | 0.3 |
| ***EP-102*** | EP-102 | 967.9 | 0.4 | 1 | 3 | 963.9 | - | 1.9 | 964.4 | - | 2.7 | 965.6 | - | 4.8 | 962.9 | - | 0.2 |
| ***EP-106*** | EP-106 | 963.0 | 0.0 | 1 | 3 | 958.2 | - | 0.1 | 958.2 | - | 0.1 | 958.2 | - | 0.2 | 958.2 | - | 0.0 |
| ***EP-109*** | EP-109 | 963.0 | 0.1 | 1 | 3 | 957.6 | - | 0.4 | 961.1 | - | 0.7 | 962.6 | - | 1.6 | 962.3 | - | 0.1 |
| EP-111 | EP-111 | 959.7 | 0.2 | 3 | 9 | 959.7 | - | 0.0 | 959.8 | - | 0.1 | 959.9 | 0.3 | 0.4 | 959.9 | 0.2 | 0.0 |
| EP-117 | EP-117 | 964.2 | 0.2 | 2 | 6 | 954.6 | - | 0.0 | 954.6 | - | 0.2 | 954.6 | - | 0.7 | 954.6 | - | 0.0 |
| ***EP-122*** | EP-122 | 962.5 | 0.0 | 1 | 3 | 957.0 | - | 0.1 | 961.1 | - | 0.2 | 962.5 | - | 0.3 | 962.3 | - | 0.0 |
| EP-150 | EP-127 | 965.5 | 0.1 | 4 | 12 | 961.1 | - | 0.4 | 961.4 | - | 0.6 | 961.9 | - | 1.0 | 961.7 | - | 0.1 |
| ***EP-13*** | EP-13 | 961.5 | 0.2 | 1 | 3 | 961.1 | - | 0.1 | 961.4 | - | 0.4 | 961.8 | 0.3 | 1.3 | 961.7 | 0.1 | 0.0 |
| EP-137 | EP-137 | 990.0 | 0.2 | 3 | 9 | 985.0 | - | 0.2 | 986.2 | - | 0.3 | 988.0 | - | 0.6 | 984.6 | - | 0.0 |
| EP-138 | EP-138 | 981.0 | 0.6 | 3 | 9 | 982.4 | 1.4 | 0.9 | 982.9 | 1.9 | 1.3 | 984.0 | 3.0 | 2.3 | 983.4 | 2.4 | 0.1 |
| BE-36 | EP-139 | 997.0 | 4.4 | 7 | 21 | 991.6 | - | 0.1 | 992.4 | - | 0.1 | 993.8 | - | 0.3 | 991.6 | - | 0.0 |
| ***EP-14*** | EP-14 | 961.9 | 0.6 | 1 | 3 | 961.1 | - | 2.5 | 961.4 | - | 3.6 | 961.8 | - | 6.4 | 961.7 | - | 0.3 |
| EP-140 | EP-140 | 995.0 | 0.6 | 6 | 18 | 989.5 | - | 0.1 | 992.3 | - | 0.2 | 993.6 | - | 0.6 | 989.1 | - | 0.0 |
| ***EP-141*** | EP-141 | 984.0 | 0.5 | 1 | 3 | 982.8 | - | 2.3 | 983.6 | - | 3.4 | 984.6 | 0.6 | 6.1 | 983.5 | - | 0.3 |
| ***EP-142*** | EP-142 | 992.0 | 0.1 | 1 | 3 | 989.8 | - | 0.1 | 989.9 | - | 0.2 | 989.9 | - | 0.5 | 989.8 | - | 0.0 |
| EP-01 | EP-145 | 961.2 | 24.6 | 9 | 27 | 957.3 | - | 0.0 | 957.3 | - | 0.0 | 957.4 | - | 0.1 | 957.2 | - | 0.0 |
| EP-146 | EP-146 | 961.2 | 1.0 | 2 | 6 | 956.3 | - | 1.1 | 956.4 | - | 1.8 | 956.5 | - | 3.5 | 956.1 | - | 0.2 |
| EP-24 | EP-15 | 961.2 | 0.5 | 2 | 6 | 961.1 | - | 1.2 | 961.4 | 0.2 | 1.7 | 961.8 | 0.6 | 3.0 | 961.7 | 0.4 | 0.1 |
| EP-150 | EP-150 | 959.5 | 0.1 | 4 | 12 | 961.1 | 1.6 | 0.1 | 961.4 | 1.9 | 0.1 | 961.8 | 2.3 | 0.3 | 961.7 | 2.2 | 0.0 |
| EP-16 | EP-16 | 961.5 | 0.3 | 2 | 6 | 961.1 | - | 0.7 | 961.4 | - | 1.0 | 961.8 | 0.4 | 1.8 | 961.7 | 0.2 | 0.1 |
| EP-17 | EP-17 | 960.3 | 1.0 | 3 | 9 | 961.1 | 0.8 | 1.4 | 961.4 | 1.1 | 2.1 | 961.8 | 1.6 | 3.7 | 961.7 | 1.4 | 0.2 |
| EP-19 | EP-19 | 961.9 | 0.8 | 4 | 12 | 961.1 | - | 1.7 | 961.4 | - | 2.5 | 962.0 | 0.1 | 4.5 | 961.7 | - | 0.2 |
| ***EP-23*** | EP-23 | 960.3 | 0.4 | 1 | 3 | 961.1 | 0.8 | 1.2 | 961.4 | 1.1 | 1.7 | 961.8 | 1.5 | 3.1 | 961.7 | 1.4 | 0.2 |
| EP-24 | EP-24 | 960.3 | 0.5 | 2 | 6 | 961.1 | 0.8 | 1.2 | 961.4 | 1.1 | 1.7 | 961.8 | 1.5 | 3.0 | 961.7 | 1.4 | 0.1 |
| EP-16 | EP-28 | 962.0 | 0.3 | 2 | 6 | 961.1 | - | 0.8 | 961.4 | - | 1.2 | 962.1 | - | 2.2 | 961.7 | - | 0.1 |
| DP-22 | EP-58 | 966.2 | 0.6 | 6 | 18 | 961.3 | - | 0.3 | 961.4 | - | 0.5 | 961.7 | - | 1.3 | 961.1 | - | 0.1 |
| ***EP-82*** | EP-82 | 818.8 | 0.8 | 1 | 3 | 815.8 | - | 1.3 | 817.5 | - | 2.6 | 819.2 | 0.4 | 6.3 | 815.0 | - | 0.3 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***EP-82*** | EP-83 | 818.8 | 0.8 | 1 | 3 | 815.8 | - | 1.1 | 817.3 | - | 2.3 | 819.1 | 0.3 | 5.6 | 814.5 | - | 0.2 |
| EP-85 | EP-85 | 819.1 | 1.9 | 2 | 6 | 816.8 | - | 1.0 | 818.5 | - | 2.3 | 820.2 | 1.0 | 6.0 | 816.1 | - | 0.3 |
| ***EP-86*** | EP-86 | 825.0 | 2.7 | 1 | 3 | 817.1 | - | 2.5 | 818.7 | - | 5.7 | 820.7 | - | 15.0 | 816.3 | - | 0.8 |
| DP-04 | EP-94 | 962.5 | 0.2 | 2 | 6 | 952.2 | - | 0.1 | 952.8 | - | 0.3 | 954.1 | - | 0.6 | 950.8 | - | 0.0 |
| ***EP-95*** | EP-95 | 965.8 | 0.3 | 1 | 3 | 951.9 | - | 0.8 | 952.3 | - | 1.5 | 953.1 | - | 3.2 | 950.7 | - | 0.1 |
| EP-98 | EP-96 | 984.0 | 1.2 | 2 | 6 | 980.3 | - | 0.6 | 981.5 | - | 0.9 | 983.4 | - | 1.7 | 980.1 | - | 0.1 |
| LS-21 | EP-97 | 982.7 | 0.1 | 2 | 6 | 979.2 | - | 1.4 | 981.3 | - | 2.3 | 982.9 | 0.2 | 4.5 | 978.9 | - | 0.2 |
| EP-98 | EP-98 | 977.5 | 1.2 | 2 | 6 | 974.0 | - | 0.5 | 977.6 | 0.1 | 1.3 | 978.2 | 0.7 | 3.3 | 973.6 | - | 0.2 |
| ***EP-99*** | EP-99 | 974.9 | 0.9 | 1 | 3 | 971.2 | - | 0.2 | 971.4 | - | 0.9 | 972.1 | - | 3.6 | 971.2 | - | 0.2 |
| ***F*** | F | 970.4 | 6.6 | 1 | 3 | 971.0 | 0.6 | 4.3 | 971.0 | 0.6 | 10.9 | 971.5 | 1.1 | 30.9 | 971.0 | 0.6 | 1.8 |
| GC-11 | GC-11 | 961.0 | 1.6 | 2 | 6 | 959.5 | - | 0.3 | 959.5 | - | 1.0 | 960.5 | - | 3.5 | 959.5 | - | 0.2 |
| GC-12 | GC-12 | 958.0 | 1.9 | 2 | 6 | 948.2 | - | 0.4 | 950.0 | - | 1.2 | 953.6 | - | 4.4 | 947.7 | - | 0.2 |
| GC-17 | GC-17 | 954.7 | 2.9 | 4 | 12 | 952.9 | - | 0.9 | 954.2 | - | 1.9 | 955.4 | 0.7 | 4.4 | 949.9 | - | 0.2 |
| GC-18 | GC-18 | 957.0 | 5.5 | 4 | 12 | 952.0 | - | 0.4 | 952.6 | - | 1.4 | 957.7 | 0.7 | 5.1 | 951.9 | - | 0.3 |
| ***GC-21*** | GC-21 | 964.5 | 2.8 | 1 | 3 | 958.1 | - | 1.0 | 958.4 | - | 3.5 | 964.7 | 0.2 | 11.8 | 958.0 | - | 0.6 |
| GC-23 | GC-23 | 955.1 | 2.0 | 2 | 6 | 954.3 | - | 1.7 | 955.4 | 0.3 | 3.2 | 956.2 | 1.1 | 7.2 | 949.9 | - | 0.4 |
| ***GC-25*** | GC-25 | 960.5 | 4.1 | 1 | 3 | 959.1 | - | 5.0 | 960.6 | 0.1 | 10.3 | 961.5 | 1.1 | 24.7 | 955.0 | - | 1.4 |
| GC-27 | GC-27 | 956.3 | 2.3 | 7 | 21 | 951.4 | - | 1.1 | 951.6 | - | 1.6 | 952.4 | - | 3.0 | 951.0 | - | 0.2 |
| GC-28 | GC-28 | 958.1 | 1.2 | 2 | 6 | 954.6 | - | 2.5 | 954.9 | - | 3.6 | 958.2 | - | 6.4 | 954.0 | - | 0.3 |
| ***GC-32*** | GC-32 | 963.8 | 3.9 | 1 | 3 | 957.9 | - | 9.9 | 958.2 | - | 16.5 | 963.0 | - | 32.5 | 957.3 | - | 1.7 |
| J-03 | J-02 | 990.6 | 0.2 | 2 | 6 | 987.1 | - | 0.4 | 987.2 | - | 0.7 | 989.6 | - | 1.4 | 986.9 | - | 0.1 |
| J-03 | J-03 | 988.2 | 0.2 | 2 | 6 | 985.8 | - | 0.3 | 986.1 | - | 0.5 | 988.3 | - | 0.9 | 985.5 | - | 0.0 |
| J-04 | J-04 | 987.7 | 0.2 | 2 | 6 | 985.4 | - | 0.4 | 985.6 | - | 0.6 | 987.7 | - | 1.1 | 984.9 | - | 0.0 |
| J-07 | J-07 | 987.0 | 0.8 | 3 | 9 | 983.6 | - | 1.2 | 984.9 | - | 1.7 | 987.1 | - | 3.0 | 983.4 | - | 0.1 |
| J-10 | J-10 | 989.5 | 0.1 | 2 | 6 | 984.9 | - | 0.1 | 985.2 | - | 0.2 | 989.0 | - | 0.6 | 984.5 | - | 0.0 |
| ***J-12*** | J-12 | 989.5 | 0.3 | 1 | 3 | 985.0 | - | 0.6 | 985.2 | - | 1.1 | 989.4 | - | 2.4 | 984.8 | - | 0.1 |
| MH222 | J1247 | 963.0 | 3.0 | 4 | 12 | 957.9 | - | 1.0 | 958.1 | - | 2.0 | 963.0 | - | 4.8 | 957.7 | - | 0.3 |
| ***J-13*** | J-13 | 989.5 | 0.2 | 1 | 3 | 985.0 | - | 0.4 | 985.2 | - | 0.8 | 989.2 | - | 1.7 | 984.8 | - | 0.1 |
| LS-01 | LS-01 | 963.4 | 0.4 | 3 | 9 | 963.6 | 0.2 | 0.5 | 964.1 | 0.7 | 0.8 | 964.6 | 1.2 | 1.5 | 964.4 | 1.0 | 0.1 |
| ***LS-07*** | LS-07 | 973.0 | 0.3 | 1 | 3 | 966.1 | - | 0.1 | 966.8 | - | 0.4 | 969.2 | - | 1.5 | 966.0 | - | 0.1 |
| LS-08 | LS-08 | 977.0 | 3.5 | 2 | 6 | 968.9 | - | 0.3 | 971.0 | - | 1.4 | 975.4 | - | 5.5 | 967.8 | - | 0.3 |
| ***LS-10*** | LS-10 | 988.0 | 2.1 | 1 | 3 | 982.8 | - | 3.4 | 983.0 | - | 6.0 | 987.1 | - | 13.2 | 982.6 | - | 0.8 |
| DP-15 | LS-13 | 966.8 | 0.1 | 4 | 12 | 962.2 | - | 0.1 | 962.4 | - | 0.2 | 963.0 | - | 0.3 | 962.9 | - | 0.0 |
| DP-15 | LS-14 | 966.9 | 0.1 | 4 | 12 | 963.1 | - | 0.1 | 963.2 | - | 0.2 | 963.3 | - | 0.3 | 963.0 | - | 0.0 |
| LS-15 | LS-15 | 966.1 | 1.2 | 4 | 12 | 964.8 | - | 1.2 | 965.1 | - | 1.8 | 965.5 | - | 3.2 | 962.9 | - | 0.2 |
| LS-21 | LS-21 | 979.0 | 0.1 | 2 | 6 | 974.0 | - | 0.1 | 977.5 | - | 0.2 | 978.0 | - | 0.4 | 972.5 | - | 0.0 |
| ***LS-23*** | LS-23 | 961.0 | 1.4 | 1 | 3 | 960.6 | - | 4.1 | 961.4 | 0.4 | 6.4 | 962.2 | 1.2 | 12.1 | 959.6 | - | 0.6 |
| LS-25 | LS-25 | 963.0 | 2.2 | 4 | 12 | 959.4 | - | 1.4 | 960.7 | - | 2.3 | 962.2 | - | 4.5 | 959.6 | - | 0.2 |
| EP-19 | MH-168 | 968.8 | 0.8 | 4 | 12 | 958.6 | - | 2.0 | 960.3 | - | 2.9 | 968.8 | - | 5.2 | 959.6 | - | 0.3 |
| CB367 | MH219 | 1014.0 | 1.1 | 3 | 9 | 994.6 | - | 0.9 | 1000.2 | - | 1.6 | 1003.8 | - | 3.3 | 993.9 | - | 0.2 |
| MH222 | MH222 | 957.0 | 3.0 | 4 | 12 | 952.0 | - | 0.4 | 956.4 | - | 1.1 | 958.7 | 1.7 | 3.5 | 950.3 | - | 0.2 |
| PG-12 | MH-255 | 975.0 | 0.1 | 3 | 9 | 974.6 | - | 0.4 | 974.9 | - | 0.6 | 975.3 | 0.3 | 1.1 | 975.2 | 0.2 | 0.0 |
| ***#N/A*** | MH-331-3 | 992.2 | #N/A | 1 | 3 | 992.4 | 0.2 | 4.4 | 992.6 | 0.4 | 6.5 | 992.7 | 0.5 | 11.4 | 987.8 | - | 0.5 |
| ***#N/A*** | MH-332-3 | 992.0 | #N/A | 1 | 3 | 991.6 | - | 0.7 | 992.0 | - | 1.6 | 992.2 | 0.3 | 4.2 | 987.3 | - | 0.2 |
| ***#N/A*** | MH-333-3 | 988.0 | #N/A | 1 | 3 | 988.0 | - | 0.3 | 988.1 | 0.1 | 0.6 | 988.2 | 0.3 | 1.5 | 983.9 | - | 0.1 |
| ***634A*** | MH-338 | 975.4 | 0.2 | 1 | 3 | 971.8 | - | 1.1 | 972.2 | - | 1.7 | 973.7 | - | 3.0 | 970.5 | - | 0.1 |
| 614 | MH-355 | 977.2 | 0.3 | 3 | 9 | 970.8 | - | 0.3 | 970.8 | - | 0.5 | 970.8 | - | 0.9 | 970.8 | - | 0.0 |
| MH-363 | MH-362 | 973.7 | 0.5 | 4 | 12 | 967.7 | - | 1.0 | 967.7 | - | 1.5 | 967.7 | - | 2.6 | 967.7 | - | 0.1 |
| ***MH42*** | MH42 | 1001.0 | 1.7 | 1 | 3 | 996.6 | - | 1.9 | 1000.0 | - | 3.9 | 1000.2 | - | 9.7 | 995.9 | - | 0.5 |
| MH-42 | MH-42 | 930.6 | 0.8 | 7 | 21 | 930.8 | 0.2 | 0.4 | 931.0 | 0.4 | 0.6 | 931.4 | 0.8 | 1.1 | 931.2 | 0.6 | 0.0 |
| MH-420 | MH-420 | 969.5 | 0.5 | 4 | 12 | 963.3 | - | 0.3 | 963.4 | - | 0.6 | 966.9 | - | 1.2 | 962.9 | - | 0.0 |
| MH-468 | MH-467 | 976.5 | 0.3 | 2 | 6 | 972.8 | - | 0.7 | 972.8 | - | 1.0 | 973.0 | - | 1.8 | 972.6 | - | 0.1 |
| MH-469 | MH-468 | 966.0 | 0.6 | 4 | 12 | 965.8 | - | 0.3 | 966.1 | - | 0.4 | 966.4 | 0.4 | 0.7 | 966.3 | 0.3 | 0.0 |
| MH-469 | MH-469 | 965.0 | 0.6 | 4 | 12 | 965.8 | 0.8 | 0.5 | 966.1 | 1.1 | 0.8 | 966.4 | 1.4 | 1.4 | 966.3 | 1.3 | 0.1 |
| ML-02 | ML-02 | 962.3 | 1.0 | 4 | 12 | 958.2 | - | 0.8 | 958.8 | - | 1.3 | 960.6 | - | 2.4 | 957.5 | - | 0.1 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ML-02 | ML-03 | 963.8 | 1.0 | 4 | 12 | 960.1 | - | 0.2 | 960.1 | - | 0.3 | 961.2 | - | 0.4 | 959.8 | - | 0.0 |
| ***ML-04*** | ML-04 | 970.8 | 0.1 | 1 | 3 | 964.0 | - | 0.5 | 964.1 | - | 0.7 | 964.2 | - | 1.2 | 963.9 | - | 0.0 |
| ML-05 | ML-05 | 970.8 | 0.1 | 2 | 6 | 967.0 | - | 0.3 | 967.1 | - | 0.4 | 967.2 | - | 0.7 | 966.9 | - | 0.0 |
| ML-07 | ML-07 | 966.2 | 1.2 | 3 | 9 | 953.6 | - | 1.2 | 956.4 | - | 2.0 | 958.5 | - | 3.8 | 951.7 | - | 0.2 |
| ***ML-11*** | ML-11 | 967.6 | 0.2 | 1 | 3 | 957.6 | - | 0.6 | 958.2 | - | 1.0 | 959.7 | - | 2.0 | 956.8 | - | 0.1 |
| ML-12 | ML-12 | 967.6 | 0.2 | 2 | 6 | 957.6 | - | 0.2 | 958.2 | - | 0.4 | 959.7 | - | 0.9 | 956.8 | - | 0.0 |
| ***ML-13*** | ML-13 | 965.1 | 0.2 | 1 | 3 | 958.5 | - | 0.8 | 958.9 | - | 1.3 | 960.2 | - | 2.3 | 957.6 | - | 0.1 |
| ***ML-14*** | ML-14 | 963.6 | 0.4 | 1 | 3 | 959.1 | - | 1.8 | 959.5 | - | 2.7 | 960.4 | - | 4.7 | 958.2 | - | 0.2 |
| ML-15 | ML-15 | 963.6 | 1.1 | 2 | 6 | 959.7 | - | 1.6 | 960.4 | - | 2.6 | 961.5 | - | 5.2 | 958.3 | - | 0.2 |
| 709 | PG-02 | 972.8 | 0.8 | 8 | 24 | 966.9 | - | 0.1 | 967.1 | - | 0.1 | 968.0 | - | 0.2 | 966.6 | - | 0.0 |
| 709 | PG-03 | 972.9 | 0.8 | 8 | 24 | 967.4 | - | 0.2 | 967.7 | - | 0.3 | 969.1 | - | 0.5 | 966.8 | - | 0.0 |
| PG-07 | PG-07 | 974.0 | 0.1 | 3 | 9 | 974.6 | 0.6 | 0.2 | 974.9 | 0.9 | 0.3 | 975.3 | 1.3 | 0.5 | 975.2 | 1.2 | 0.0 |
| PG-07 | PG-08 | 973.5 | 0.1 | 3 | 9 | 974.6 | 1.1 | 0.8 | 974.9 | 1.4 | 1.2 | 975.3 | 1.8 | 2.1 | 975.2 | 1.6 | 0.1 |
| PG-12 | PG-12 | 974.0 | 0.1 | 3 | 9 | 974.6 | 0.6 | 0.1 | 974.9 | 0.9 | 0.1 | 975.3 | 1.3 | 0.2 | 975.2 | 1.2 | 0.0 |
| MH-255 | PG-17 | 975.7 | 0.3 | 10 | 30 | 974.6 | - | 0.2 | 975.1 | - | 0.3 | 975.8 | - | 0.5 | 975.2 | - | 0.0 |
| MH-255 | PG-19 | 975.1 | 0.3 | 10 | 30 | 974.7 | - | 0.2 | 975.2 | - | 0.3 | 975.6 | 0.4 | 0.5 | 975.2 | - | 0.0 |
| MH-255 | PG-23 | 979.2 | 0.3 | 10 | 30 | 975.3 | - | 0.2 | 976.7 | - | 0.3 | 978.9 | - | 0.5 | 975.2 | - | 0.0 |
| 688 | PG-30 | 985.1 | 0.4 | 8 | 24 | 975.6 | - | 0.2 | 977.3 | - | 0.3 | 980.8 | - | 0.5 | 975.2 | - | 0.0 |
| 695 | PG-32 | 984.8 | 0.4 | 4 | 12 | 975.7 | - | 0.4 | 977.5 | - | 0.6 | 981.4 | - | 1.1 | 975.2 | - | 0.1 |
| 688 | PG-35 | 981.8 | 0.4 | 8 | 24 | 975.6 | - | 0.2 | 977.2 | - | 0.3 | 980.3 | - | 0.6 | 975.2 | - | 0.0 |
| ***ST-01*** | ST-01 | 819.5 | 2.3 | 1 | 3 | 815.6 | - | 2.7 | 816.9 | - | 5.7 | 819.6 | - | 13.8 | 814.3 | - | 0.8 |
| ***T-01*** | T-01 | 821.6 | 0.4 | 1 | 3 | 818.4 | - | 1.8 | 818.6 | - | 2.6 | 821.7 | - | 4.6 | 817.8 | - | 0.2 |
| ***T-02*** | T-02 | 821.9 | 0.4 | 1 | 3 | 818.2 | - | 1.8 | 818.4 | - | 2.7 | 821.6 | - | 4.7 | 817.6 | - | 0.2 |
| T-04 | T-04 | 819.6 | 0.7 | 2 | 6 | 816.5 | - | 1.5 | 817.0 | - | 2.2 | 819.4 | - | 3.9 | 815.5 | - | 0.2 |
| ***T-05*** | T-05 | 819.9 | 0.2 | 1 | 3 | 816.7 | - | 1.0 | 817.4 | - | 1.5 | 819.6 | - | 2.6 | 815.6 | - | 0.1 |
| ***T-06*** | T-06 | 819.9 | 0.2 | 1 | 3 | 816.8 | - | 0.9 | 817.6 | - | 1.3 | 819.7 | - | 2.3 | 815.7 | - | 0.1 |
| ***T-07*** | T-07 | 819.6 | 0.4 | 1 | 3 | 816.8 | - | 1.7 | 817.7 | - | 2.5 | 819.7 | 0.2 | 4.4 | 815.8 | - | 0.2 |
| T-09 | T-09 | 818.1 | 0.6 | 3 | 9 | 815.0 | - | 0.9 | 815.4 | - | 1.3 | 816.9 | - | 2.3 | 814.3 | - | 0.1 |
| ***T-10*** | T-10 | 818.1 | 0.4 | 1 | 3 | 815.0 | - | 1.8 | 815.6 | - | 2.6 | 817.4 | - | 4.6 | 814.5 | - | 0.2 |
| ***T-12*** | T-12 | 817.2 | 0.4 | 1 | 3 | 814.5 | - | 1.8 | 815.2 | - | 2.7 | 816.9 | - | 4.7 | 813.6 | - | 0.2 |
| ***T-13*** | T-13 | 817.5 | 0.2 | 1 | 3 | 814.5 | - | 0.7 | 815.3 | - | 1.1 | 817.0 | - | 1.9 | 813.6 | - | 0.1 |
| ***T-14*** | T-14 | 817.5 | 0.2 | 1 | 3 | 814.6 | - | 0.7 | 815.4 | - | 1.1 | 817.2 | - | 1.9 | 813.6 | - | 0.1 |
| ***T-15*** | T-15 | 817.2 | 0.2 | 1 | 3 | 814.6 | - | 1.0 | 815.4 | - | 1.5 | 817.2 | - | 2.6 | 813.6 | - | 0.1 |
| ***TM-19*** | TM-19 | 965.4 | 1.0 | 1 | 3 | 954.1 | - | 4.3 | 954.4 | - | 6.3 | 955.5 | - | 11.2 | 953.7 | - | 0.5 |
| ***TM-20*** | TM-20 | 967.5 | 0.8 | 1 | 3 | 962.6 | - | 3.4 | 962.8 | - | 5.0 | 963.7 | - | 8.8 | 962.2 | - | 0.4 |
| ***#N/A*** | TM-21 | 963.8 | #N/A | 1 | 3 | 959.0 | - | 3.7 | 959.7 | - | 5.4 | 960.8 | - | 9.6 | 957.7 | - | 0.4 |
| TM-23 | TM-23 | 963.6 | 0.7 | 2 | 6 | 959.2 | - | 1.6 | 959.9 | - | 2.4 | 961.5 | - | 4.2 | 957.9 | - | 0.2 |
| TM-23 | TM-24 | 965.8 | 0.7 | 2 | 6 | 960.2 | - | 0.7 | 960.2 | - | 1.0 | 961.8 | - | 1.8 | 959.9 | - | 0.1 |
| ***TM-24*** | TM-25 | 968.3 | 0.3 | 1 | 3 | 962.7 | - | 0.4 | 962.7 | - | 0.6 | 962.8 | - | 1.1 | 962.6 | - | 0.0 |
| TO-111 | TO-111 | 815.0 | 0.6 | 3 | 9 | 812.2 | - | 0.6 | 813.3 | - | 0.9 | 815.0 | - | 1.9 | 813.1 | - | 0.1 |
| ***TO-112*** | TO-112 | 813.7 | 1.1 | 1 | 3 | 812.2 | - | 1.3 | 813.6 | - | 2.9 | 815.0 | 1.3 | 7.5 | 813.1 | - | 0.4 |
| ***TO-114*** | TO-114 | 819.3 | 0.7 | 1 | 3 | 815.4 | - | 0.4 | 817.5 | - | 1.3 | 819.4 | 0.2 | 4.0 | 815.2 | - | 0.2 |
| ***TO-115*** | TO-115 | 819.3 | 0.2 | 1 | 3 | 815.6 | - | 0.5 | 817.5 | - | 0.9 | 819.5 | 0.2 | 2.1 | 815.4 | - | 0.1 |
| TO-116 | TO-116 | 819.0 | 0.4 | 2 | 6 | 814.8 | - | 0.3 | 818.2 | - | 0.6 | 819.4 | 0.4 | 1.6 | 814.4 | - | 0.1 |
| ***TO-117*** | TO-117 | 819.0 | 0.4 | 1 | 3 | 814.8 | - | 0.5 | 818.3 | - | 1.2 | 819.5 | 0.5 | 3.1 | 814.4 | - | 0.1 |
| TO-116 | TO-118 | 819.5 | 0.4 | 2 | 6 | 816.4 | - | 0.5 | 819.7 | 0.2 | 1.1 | 819.9 | 0.4 | 2.9 | 816.1 | - | 0.1 |
| ***TO-119*** | TO-119 | 819.6 | 1.0 | 1 | 3 | 816.6 | - | 1.1 | 819.8 | 0.2 | 2.5 | 820.0 | 0.4 | 6.4 | 816.3 | - | 0.3 |
| TO-131 | TO-131 | 822.0 | 0.6 | 3 | 9 | 815.4 | - | 0.3 | 816.2 | - | 0.7 | 817.5 | - | 1.7 | 815.0 | - | 0.1 |
| TO-132 | TO-132 | 820.0 | 0.9 | 3 | 9 | 815.7 | - | 0.4 | 817.2 | - | 0.9 | 819.3 | - | 2.2 | 815.2 | - | 0.1 |
| TO-131 | TO-134 | 820.0 | 0.6 | 3 | 9 | 816.3 | - | 0.3 | 817.1 | - | 0.6 | 820.0 | - | 1.4 | 816.1 | - | 0.1 |
| TO-132 | TO-135 | 820.0 | 0.9 | 3 | 9 | 816.7 | - | 0.4 | 817.5 | - | 0.9 | 820.4 | 0.3 | 2.3 | 816.4 | - | 0.1 |
| TO-131 | TO-136 | 820.0 | 0.6 | 3 | 9 | 815.8 | - | 0.2 | 817.5 | - | 0.4 | 819.8 | - | 0.9 | 815.4 | - | 0.0 |
| TO-132 | TO-137 | 820.0 | 0.9 | 3 | 9 | 816.8 | - | 0.3 | 817.5 | - | 0.5 | 820.2 | 0.2 | 1.3 | 816.6 | - | 0.1 |
| ***TO-138*** | TO-138 | 820.6 | 0.7 | 1 | 3 | 817.3 | - | 0.8 | 818.5 | - | 1.8 | 820.8 | 0.2 | 4.5 | 816.9 | - | 0.2 |
| ***TO-139*** | TO-139 | 820.6 | 1.4 | 1 | 3 | 817.7 | - | 1.8 | 818.8 | - | 3.8 | 821.0 | 0.5 | 9.3 | 817.4 | - | 0.5 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| X-15 | X-15 | 959.0 | 0.9 | 2 | 6 | 955.3 | - | 1.3 | 956.8 | - | 2.2 | 958.6 | - | 4.5 | 954.6 | - | 0.2 |
| ***X-18*** | X-16 | 959.0 | 0.3 | 1 | 3 | 954.0 | - | 0.5 | 954.2 | - | 0.8 | 954.3 | - | 1.4 | 953.8 | - | 0.1 |
| ***X-19*** | X-17 | 947.0 | 0.6 | 1 | 3 | 943.3 | - | 1.3 | 943.5 | - | 2.2 | 946.7 | - | 4.4 | 942.9 | - | 0.2 |
| X-20 | X-18 | 947.0 | 0.3 | 2 | 6 | 942.2 | - | 0.7 | 942.6 | - | 1.0 | 946.2 | - | 1.8 | 941.9 | - | 0.1 |
| ***X-21*** | X-19 | 937.0 | 0.2 | 1 | 3 | 933.0 | - | 1.4 | 936.0 | - | 2.6 | 936.2 | - | 5.5 | 932.5 | - | 0.2 |
| X-22 | X-20 | 938.0 | 0.2 | 2 | 6 | 932.7 | - | 0.6 | 935.7 | - | 0.9 | 936.6 | - | 1.6 | 931.9 | - | 0.1 |
| X-23 | X-21 | 933.0 | 0.3 | 2 | 6 | 931.2 | - | 0.4 | 932.7 | - | 0.7 | 933.0 | - | 1.2 | 931.2 | - | 0.1 |
| X-24 | X-22 | 934.0 | 0.3 | 2 | 6 | 931.2 | - | 0.4 | 932.5 | - | 0.6 | 933.1 | - | 1.1 | 931.2 | - | 0.0 |
| X-23 | X-23 | 931.0 | 0.3 | 2 | 6 | 930.8 | - | 0.6 | 931.0 | - | 0.9 | 931.7 | 0.7 | 1.7 | 931.2 | 0.2 | 0.1 |
| ***JP1*** | O17 | 996.0 | 77.6 | 1 | 3 | 993.8 | - | 4.3 | 994.6 | - | 11.4 | 994.8 | - | 33.5 | 993.6 | - | 1.6 |
| ***104P*** | 104P | 822.0 | 0.9 | 1 | 3 | 818.7 | - | 0.0 | 819.0 | - | 0.1 | 819.2 | - | 1.1 | 819.0 | - | 0.0 |
| ***106P*** | 106P | 822.0 | 2.4 | 1 | 3 | 818.2 | - | 0.0 | 818.5 | - | 0.2 | 819.2 | - | 3.1 | 818.5 | - | 0.1 |
| ***108P*** | 108P | 822.0 | 2.1 | 1 | 3 | 818.8 | - | 0.0 | 819.1 | - | 0.2 | 819.8 | - | 2.7 | 819.1 | - | 0.1 |
| ***136*** | 136 | 824.0 | 1.6 | 1 | 3 | 821.1 | - | 0.0 | 821.4 | - | 0.1 | 822.2 | - | 2.1 | 821.4 | - | 0.1 |
| ***138*** | 138 | 824.0 | 1.7 | 1 | 3 | 821.2 | - | 0.0 | 821.4 | - | 0.1 | 822.7 | - | 2.1 | 821.4 | - | 0.1 |
| ***140*** | 140 | 824.0 | 3.3 | 1 | 3 | 821.3 | - | 0.0 | 821.5 | - | 0.2 | 823.1 | - | 3.7 | 821.5 | - | 0.2 |
| ***158*** | 158 | 824.0 | 2.7 | 1 | 3 | 820.2 | - | 0.0 | 820.3 | - | 0.0 | 820.9 | - | 0.2 | 820.0 | - | 0.0 |
| ***175*** | 175 | 831.0 | 1.6 | 1 | 3 | 828.3 | - | 0.0 | 828.5 | - | 0.3 | 830.3 | - | 3.0 | 828.4 | - | 0.1 |
| ***1-BR-P01*** | 1-BR-P01 | 834.0 | 13.8 | 1 | 3 | 822.3 | - | 0.9 | 825.0 | - | 5.6 | 832.8 | - | 29.1 | 823.4 | - | 1.9 |
| ***1-BR-P02*** | 1-BR-P02 | 835.0 | 9.5 | 1 | 3 | 824.9 | - | 1.1 | 827.0 | - | 5.5 | 833.0 | - | 24.3 | 825.9 | - | 1.5 |
| ***1-BR-P03*** | 1-BR-P03 | 837.0 | 12.9 | 1 | 3 | 829.8 | - | 4.9 | 831.9 | - | 14.0 | 836.9 | - | 43.5 | 830.6 | - | 3.6 |
| ***1-BR-P04*** | 1-BR-P04 | 840.0 | 10.4 | 1 | 3 | 835.1 | - | 5.0 | 835.7 | - | 13.7 | 836.9 | - | 40.6 | 835.0 | - | 2.5 |
| ***1-BR-P05*** | 1-BR-P05 | 845.3 | 8.1 | 1 | 3 | 831.7 | - | 1.5 | 832.7 | - | 5.8 | 834.8 | - | 21.9 | 831.5 | - | 1.5 |
| ***1-BR-P06*** | 1-BR-P06 | 837.0 | 9.9 | 1 | 3 | 831.9 | - | 3.2 | 832.9 | - | 10.6 | 836.0 | - | 34.9 | 831.7 | - | 2.2 |
| ***1-BR-P07*** | 1-BR-P07 | 839.0 | 53.9 | 1 | 3 | 834.2 | - | 3.0 | 836.4 | - | 15.3 | 840.5 | 1.5 | 72.4 | 834.9 | - | 7.2 |
| ***1-BR-P08*** | 1-BR-P08 | 902.0 | 62.6 | 1 | 3 | 879.4 | - | 12.7 | 881.6 | - | 38.5 | 882.7 | - | 128.5 | 881.2 | - | 13.0 |
| 1-BR-P09 | 1-BR-P09 | 904.0 | 17.3 | 6 | 18 | 903.0 | - | 2.2 | 903.3 | - | 5.3 | 903.7 | - | 14.7 | 903.1 | - | 0.8 |
| ***1-DC-P05*** | 1-DC-P05 | 878.5 | 4.7 | 1 | 3 | 864.2 | - | 1.0 | 865.4 | - | 4.1 | 867.6 | - | 15.0 | 866.8 | - | 0.9 |
| ***1-DC-P06*** | 1-DC-P06 | 890.0 | 2.4 | 1 | 3 | 883.7 | - | 0.6 | 884.3 | - | 3.1 | 885.5 | - | 12.0 | 885.1 | - | 0.5 |
| ***1-DC-P07*** | 1-DC-P07 | 890.0 | 21.1 | 1 | 3 | 882.5 | - | 3.2 | 883.1 | - | 14.5 | 884.8 | - | 60.4 | 883.1 | - | 3.6 |
| ***1-DC-P08*** | 1-DC-P08 | 882.0 | 27.9 | 1 | 3 | 882.4 | 0.4 | 2.6 | 883.0 | 1.0 | 11.1 | 884.7 | 2.7 | 46.5 | 883.0 | 1.0 | 4.4 |
| ***1-DC-P09*** | 1-DC-P09 | 905.8 | 27.0 | 1 | 3 | 904.5 | - | 9.1 | 905.9 | 0.1 | 28.0 | 906.5 | 0.8 | 92.3 | 905.9 | 0.2 | 6.0 |
| 1-DC-P11FB | 1-DC-P11FB | 817.0 | 12.4 | 2 | 6 | 814.1 | - | 10.3 | 814.9 | - | 17.9 | 816.5 | - | 37.0 | 814.4 | - | 2.5 |
| 1-DC-P12FB | 1-DC-P12FB | 818.0 | 17.5 | 3 | 9 | 815.2 | - | 13.6 | 815.6 | - | 21.9 | 817.2 | - | 42.1 | 815.2 | - | 2.6 |
| ***1-EV-32P*** | 1-EV-32P | 816.0 | 2.0 | 1 | 3 | 811.0 | - | 1.2 | 811.4 | - | 3.3 | 815.3 | - | 9.7 | 810.9 | - | 0.5 |
| 1-EV-P01 | 1-EV-P01 | 810.0 | 13.2 | 4 | 12 | 807.0 | - | 1.1 | 809.1 | - | 3.2 | 811.8 | 1.8 | 10.0 | 809.2 | - | 0.8 |
| ***1-EV-P02*** | 1-EV-P02 | 812.4 | 0.8 | 1 | 3 | 808.0 | - | 0.0 | 808.8 | - | 0.1 | 811.8 | - | 2.2 | 809.2 | - | 0.1 |
| 1-EV-P03 | 1-EV-P03 | 811.0 | 21.9 | 2 | 6 | 807.0 | - | 1.3 | 808.8 | - | 5.4 | 811.8 | 0.8 | 21.5 | 809.0 | - | 1.8 |
| ***1-EV-P04*** | 1-EV-P04 | 818.0 | 1.9 | 1 | 3 | 806.1 | - | 0.6 | 807.4 | - | 2.7 | 809.4 | - | 9.6 | 807.5 | - | 0.4 |
| 1-EV-P05 | 1-EV-P05 | 810.5 | 39.3 | 2 | 6 | 806.3 | - | 3.3 | 806.6 | - | 11.8 | 810.0 | - | 45.6 | 806.3 | - | 3.4 |
| 1-EV-P06 | 1-EV-P06 | 810.0 | 5.5 | 2 | 6 | 805.1 | - | 1.3 | 805.4 | - | 3.9 | 806.7 | - | 12.3 | 805.3 | - | 0.6 |
| ***1-EV-P07*** | 1-EV-P07 | 818.0 | 2.7 | 1 | 3 | 806.8 | - | 0.4 | 808.1 | - | 1.9 | 811.8 | - | 7.9 | 808.1 | - | 0.5 |
| ***1-EV-P08*** | 1-EV-P08 | 808.5 | 3.9 | 1 | 3 | 807.0 | - | 1.2 | 807.6 | - | 4.1 | 811.8 | 3.3 | 14.7 | 808.5 | - | 0.8 |
| ***1-EV-P08A*** | 1-EV-P08A | 810.0 | 1.4 | 1 | 3 | 807.7 | - | 0.9 | 808.1 | - | 2.5 | 811.8 | 1.8 | 7.5 | 808.1 | - | 0.4 |
| 1-EV-P10 | 1-EV-P10 | 810.0 | 7.2 | 2 | 6 | 807.3 | - | 1.1 | 807.8 | - | 3.7 | 811.8 | 1.8 | 13.1 | 808.5 | - | 0.7 |
| 1-EV-P11 | 1-EV-P11 | 835.0 | 7.2 | 6 | 18 | 827.3 | - | 0.5 | 828.1 | - | 1.3 | 832.0 | - | 3.9 | 827.4 | - | 0.3 |
| ***1-EV-P12*** | 1-EV-P12 | 856.3 | 40.7 | 1 | 3 | 856.9 | 0.6 | 7.7 | 857.6 | 1.3 | 25.5 | 858.9 | 2.7 | 88.8 | 857.0 | 0.7 | 8.0 |
| 1-EV-P13 | 1-EV-P13 | 820.0 | 21.6 | 3 | 9 | 808.7 | - | 0.3 | 809.2 | - | 1.3 | 811.9 | - | 7.1 | 809.2 | - | 0.7 |
| ***1-NR-P01*** | 1-NR-P01 | 854.0 | 34.3 | 1 | 3 | 844.4 | - | 7.5 | 845.2 | - | 23.6 | 847.5 | - | 81.3 | 844.2 | - | 6.8 |
| ***1-NR-P02*** | 1-NR-P02 | 861.0 | 14.4 | 1 | 3 | 855.6 | - | 7.7 | 855.9 | - | 18.8 | 856.7 | - | 51.4 | 855.4 | - | 3.9 |
| ***1-NR-P03*** | 1-NR-P03 | 889.5 | 9.0 | 1 | 3 | 887.3 | - | 0.4 | 887.8 | - | 3.1 | 889.6 | 0.1 | 17.2 | 889.2 | - | 1.1 |
| ***1-NR-P04*** | 1-NR-P04 | 898.0 | 5.7 | 1 | 3 | 890.6 | - | 0.9 | 891.6 | - | 4.9 | 896.2 | - | 20.3 | 892.9 | - | 1.0 |
| ***1-NR-P05*** | 1-NR-P05 | 900.5 | 2.1 | 1 | 3 | 894.2 | - | 0.1 | 894.5 | - | 1.2 | 895.5 | - | 7.1 | 895.2 | - | 0.3 |
| ***1-NR-P06*** | 1-NR-P06 | 899.5 | 5.2 | 1 | 3 | 894.1 | - | 0.3 | 894.4 | - | 2.7 | 895.4 | - | 15.4 | 895.0 | - | 0.7 |
| ***1-NR-P07*** | 1-NR-P07 | 895.0 | 6.9 | 1 | 3 | 891.5 | - | 3.9 | 892.8 | - | 10.6 | 893.2 | - | 31.8 | 893.0 | - | 1.6 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 1-PLD-P01 | 1-PLD-P01 | 807.0 | 96.2 | 2 | 6 | 795.6 | - | 2.6 | 797.0 | - | 10.2 | 799.5 | - | 48.6 | 797.0 | - | 5.1 |
| ***1-PLD-P03*** | 1-PLD-P03 | 819.0 | 38.4 | 1 | 3 | 811.8 | - | 4.8 | 813.1 | - | 15.7 | 818.9 | - | 57.5 | 814.7 | - | 6.6 |
| 1-PLD-P04 | 1-PLD-P04 | 806.0 | 31.2 | 4 | 12 | 803.4 | - | 0.1 | 804.4 | - | 0.9 | 806.1 | - | 6.7 | 804.5 | - | 0.6 |
| ***1-PLD-P05*** | 1-PLD-P05 | 823.0 | 44.9 | 1 | 3 | 820.0 | - | 4.6 | 820.6 | - | 14.2 | 822.5 | - | 56.5 | 821.1 | - | 7.0 |
| ***2-CSAH-P03*** | 2-CSAH-P03 | 843.0 | 60.1 | 1 | 3 | 841.2 | - | 10.0 | 841.5 | - | 25.1 | 842.1 | - | 73.5 | 841.3 | - | 12.6 |
| ***2-DC-P01*** | 2-DC-P01 | 905.5 | 35.9 | 1 | 3 | 903.3 | - | 17.0 | 903.7 | - | 45.4 | 905.0 | - | 134.6 | 904.5 | - | 9.1 |
| ***2-DC-P02*** | 2-DC-P02 | 925.8 | 26.8 | 1 | 3 | 926.4 | 0.6 | 9.2 | 926.9 | 1.1 | 25.6 | 927.6 | 1.9 | 79.9 | 926.4 | 0.6 | 6.3 |
| ***2-DC-P03*** | 2-DC-P03 | 916.0 | 23.0 | 1 | 3 | 909.8 | - | 4.2 | 911.1 | - | 15.1 | 912.4 | - | 55.2 | 911.7 | - | 4.4 |
| ***2-DC-P04*** | 2-DC-P04 | 853.0 | 108.8 | 1 | 3 | 843.7 | - | 17.4 | 845.5 | - | 53.5 | 848.1 | - | 181.9 | 845.0 | - | 21.4 |
| ***2-DC-P05*** | 2-DC-P05 | 904.0 | 14.1 | 1 | 3 | 901.2 | - | 2.7 | 902.2 | - | 12.7 | 902.7 | - | 51.0 | 902.2 | - | 2.5 |
| ***2-DC-P06*** | 2-DC-P06 | 924.0 | 206.7 | 1 | 3 | 925.7 | 1.7 | 39.4 | 926.3 | 2.3 | 109.5 | 927.7 | 3.7 | 345.1 | 925.9 | 1.9 | 44.1 |
| 2-DC-P07 | 2-DC-P07 | 988.0 | 5.9 | 6 | 18 | 986.4 | - | 0.3 | 986.8 | - | 0.9 | 988.0 | - | 3.1 | 986.4 | - | 0.2 |
| ***2-DC-P08*** | 2-DC-P08 | 979.0 | 7.8 | 1 | 3 | 975.7 | - | 2.1 | 978.9 | - | 7.0 | 979.3 | 0.3 | 23.3 | 979.1 | - | 1.6 |
| 2-DC-P09 | 2-DC-P09 | 930.5 | 29.9 | 15 | 45 | 926.0 | - | 0.5 | 927.5 | - | 1.8 | 932.1 | 1.6 | 6.4 | 926.2 | - | 0.4 |
| ***2-DC-P10*** | 2-DC-P10 | 924.0 | 33.6 | 1 | 3 | 919.4 | - | 6.6 | 920.1 | - | 32.1 | 921.4 | - | 126.1 | 919.6 | - | 6.0 |
| ***2-DC-P11*** | 2-DC-P11 | 854.0 | 62.4 | 1 | 3 | 847.9 | - | 14.7 | 848.6 | - | 44.9 | 849.3 | - | 147.0 | 848.5 | - | 13.3 |
| ***2-DC-P14*** | 2-DC-P14 | 903.0 | 45.6 | 1 | 3 | 903.3 | 0.3 | 10.7 | 903.6 | 0.6 | 34.8 | 904.2 | 1.2 | 117.2 | 903.4 | 0.4 | 9.4 |
| ***3-BV-P01*** | 3-BV-P01 | 1001.0 | 4.8 | 1 | 3 | 997.2 | - | 7.8 | 999.1 | - | 14.1 | 1000.8 | - | 30.0 | 995.6 | - | 1.9 |
| ***3-DC-P01*** | 3-DC-P01 | 932.2 | 24.6 | 1 | 3 | 919.6 | - | 18.4 | 920.3 | - | 44.5 | 921.6 | - | 120.8 | 919.9 | - | 7.0 |
| ***3-DC-P03*** | 3-DC-P03 | 927.0 | 81.9 | 1 | 3 | 909.9 | - | 24.6 | 910.8 | - | 78.3 | 912.2 | - | 262.4 | 910.6 | - | 17.7 |
| ***3-DC-P04*** | 3-DC-P04 | 920.5 | 33.0 | 1 | 3 | 918.1 | - | 7.4 | 919.3 | - | 30.5 | 920.6 | - | 118.9 | 920.1 | - | 6.1 |
| ***3-DC-P05*** | 3-DC-P05 | 933.5 | 17.5 | 1 | 3 | 926.3 | - | 2.8 | 927.3 | - | 11.9 | 929.0 | - | 46.7 | 928.5 | - | 3.1 |
| ***3-DC-P09*** | 3-DC-P09 | 954.0 | 16.6 | 1 | 3 | 945.2 | - | 0.7 | 946.2 | - | 6.2 | 948.3 | - | 37.5 | 947.6 | - | 2.0 |
| 3-DC-P11 | 3-DC-P11 | 949.5 | 4.0 | 2 | 6 | 946.4 | - | 1.5 | 947.9 | - | 3.6 | 949.7 | 0.2 | 9.8 | 947.6 | - | 0.6 |
| ***3-DC-P13*** | 3-DC-P13 | 958.0 | 9.1 | 1 | 3 | 953.2 | - | 5.0 | 953.4 | - | 13.6 | 954.1 | - | 40.4 | 953.8 | - | 2.3 |
| ***3-DP-P01*** | 3-DP-P01 | 925.5 | 52.7 | 1 | 3 | 921.5 | - | 17.7 | 922.2 | - | 49.9 | 923.8 | - | 153.6 | 923.0 | - | 12.3 |
| ***3-DP-P02*** | 3-DP-P02 | 924.0 | 1.7 | 1 | 3 | 921.5 | - | 2.0 | 922.2 | - | 4.6 | 924.0 | - | 12.2 | 923.0 | - | 0.5 |
| ***3-DP-P03*** | 3-DP-P03 | 924.0 | 1.0 | 1 | 3 | 920.4 | - | 2.2 | 922.1 | - | 4.1 | 923.5 | - | 8.8 | 923.0 | - | 0.4 |
| ***3-DP-P04*** | 3-DP-P04 | 932.0 | 17.8 | 1 | 3 | 921.0 | - | 1.7 | 921.8 | - | 8.1 | 923.5 | - | 35.9 | 923.0 | - | 2.7 |
| ***3-DP-P05*** | 3-DP-P05 | 934.5 | 3.7 | 1 | 3 | 930.2 | - | 0.8 | 930.5 | - | 3.1 | 931.4 | - | 11.7 | 930.2 | - | 0.7 |
| 3-DP-P06 | 3-DP-P06 | 933.5 | 3.5 | 2 | 6 | 927.9 | - | 2.6 | 928.8 | - | 5.2 | 930.6 | - | 12.3 | 928.5 | - | 0.6 |
| ***3-GC-30*** | 3-GC-30 | 950.0 | 2.2 | 1 | 3 | 947.6 | - | 1.7 | 948.0 | - | 4.4 | 948.9 | - | 12.6 | 948.6 | - | 0.6 |
| ***3-ML-P12*** | 3-ML-P12 | 1001.0 | 22.8 | 1 | 3 | 1000.2 | - | 10.7 | 1002.0 | 1.0 | 26.6 | 1010.4 | 9.4 | 75.7 | 1000.4 | - | 6.0 |
| ***3-OD-P01*** | 3-OD-P01 | 934.0 | 63.6 | 1 | 3 | 929.0 | - | 9.4 | 929.4 | - | 33.0 | 931.6 | - | 121.3 | 929.0 | - | 11.7 |
| ***3-PUBW-P01*** | 3-PUBW-P01 | 923.0 | 1.5 | 1 | 3 | 916.9 | - | 1.0 | 917.1 | - | 2.4 | 917.5 | - | 6.3 | 916.8 | - | 0.4 |
| 3-PUBW-P02 | 3-PUBW-P02 | 923.0 | 1.1 | 2 | 6 | 917.6 | - | 2.2 | 918.5 | - | 3.2 | 921.0 | - | 5.7 | 917.2 | - | 0.3 |
| ***3-PUBW-P03*** | 3-PUBW-P03 | 922.5 | 5.4 | 1 | 3 | 918.2 | - | 6.1 | 918.6 | - | 12.9 | 919.6 | - | 31.7 | 917.9 | - | 1.7 |
| ***4-BE-CB536*** | 4-BE-CB536 | 1011.0 | 1.9 | 1 | 3 | 1008.1 | - | 2.3 | 1008.4 | - | 4.7 | 1010.2 | - | 11.5 | 1007.8 | - | 0.6 |
| 4-BE-P03 | 4-BE-P03 | 1001.0 | 0.6 | 2 | 6 | 997.5 | - | 0.1 | 997.5 | - | 0.4 | 997.6 | - | 1.5 | 997.6 | - | 0.1 |
| ***4-BE-P04*** | 4-BE-P04 | 1006.0 | 0.8 | 1 | 3 | 1001.2 | - | 0.8 | 1001.3 | - | 1.9 | 1001.6 | - | 5.3 | 1001.1 | - | 0.2 |
| ***4-BE-P05*** | 4-BE-P05 | 1007.0 | 7.9 | 1 | 3 | 998.7 | - | 4.0 | 1000.3 | - | 10.7 | 1003.6 | - | 31.2 | 998.4 | - | 2.0 |
| 4-BE-P07 | 4-BE-P07 | 994.0 | 16.4 | 2 | 6 | 986.9 | - | 0.9 | 987.2 | - | 4.9 | 987.5 | - | 22.1 | 987.1 | - | 1.3 |
| ***4-BE-P08*** | 4-BE-P08 | 978.0 | 18.6 | 1 | 3 | 967.3 | - | 20.2 | 970.2 | - | 40.1 | 976.7 | - | 93.3 | 967.1 | - | 6.4 |
| ***4-BE-P10*** | 4-BE-P10 | 988.0 | 1.8 | 1 | 3 | 983.8 | - | 2.0 | 984.4 | - | 4.5 | 986.1 | - | 11.5 | 984.2 | - | 0.6 |
| ***4-BE-P11*** | 4-BE-P11 | 999.5 | 1.3 | 1 | 3 | 995.3 | - | 1.3 | 995.7 | - | 2.9 | 995.9 | - | 7.8 | 995.4 | - | 0.4 |
| 4-BE-P12 | 4-BE-P12 | 998.0 | 3.1 | 4 | 12 | 993.4 | - | 0.5 | 996.7 | - | 1.3 | 999.7 | 1.7 | 3.7 | 993.1 | - | 0.2 |
| ***4-BE-P13*** | 4-BE-P13 | 1008.0 | 2.9 | 1 | 3 | 1005.6 | - | 2.1 | 1006.3 | - | 5.2 | 1007.7 | - | 14.4 | 1006.9 | - | 0.8 |
| 4-BE-P16 | 4-BE-P16 | 995.0 | 2.3 | 2 | 6 | 989.5 | - | 0.4 | 990.4 | - | 1.4 | 992.0 | - | 4.7 | 988.1 | - | 0.2 |
| ***4-BE-P17*** | 4-BE-P17 | 989.5 | 0.8 | 1 | 3 | 977.4 | - | 0.5 | 977.6 | - | 1.3 | 978.6 | - | 4.1 | 977.4 | - | 0.2 |
| ***4-CSAH42-P01*** | 4-CSAH42-P | 930.0 | 23.5 | 1 | 3 | 924.2 | - | 14.0 | 924.9 | - | 32.1 | 926.7 | - | 84.7 | 923.9 | - | 6.8 |
| ***4-CSAH42-P02*** | 4-CSAH421 | 935.0 | 8.4 | 1 | 3 | 931.3 | - | 9.2 | 933.0 | - | 19.6 | 934.4 | - | 48.6 | 933.3 | - | 2.6 |
| ***4-CSAH42-P03*** | 4-CSAH422 | 947.0 | 29.9 | 1 | 3 | 943.6 | - | 20.2 | 944.3 | - | 45.5 | 945.9 | - | 121.0 | 945.3 | - | 8.7 |
| ***4-DC-P02*** | 4-DC-P02 | 925.0 | 57.6 | 1 | 3 | 911.2 | - | 15.0 | 915.1 | - | 37.1 | 923.6 | - | 105.6 | 911.2 | - | 14.0 |
| 83-P01 | 83-P01 | 820.0 | 61.3 | 90 | 270 | 807.3 | - | 0.6 | 811.6 | - | 1.2 | 817.2 | - | 3.1 | 815.8 | - | 0.2 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| 83-P02 | 83-P02 | 816.4 | 63.2 | 3 | 9 | 815.4 | - | 3.7 | 816.8 | 0.4 | 11.0 | 817.4 | 1.0 | 36.3 | 816.9 | 0.5 | 4.3 |
| ***92A*** | 92A | 821.0 | 1.1 | 1 | 3 | 819.3 | - | 0.0 | 819.6 | - | 0.1 | 820.7 | - | 1.6 | 819.6 | - | 0.1 |
| CSAH82 | CSAH82 | 976.0 | 2.0 | 3 | 9 | 970.5 | - | 1.2 | 971.3 | - | 2.2 | 973.4 | - | 4.9 | 970.1 | - | 0.2 |
| ***CSAH82_W01*** | CSAH82_W01 | 967.0 | 13.2 | 1 | 3 | 959.8 | - | 23.3 | 960.0 | - | 44.3 | 960.4 | - | 99.2 | 959.9 | - | 5.0 |
| ***D-01*** | D-01 | 975.0 | 8.5 | 1 | 3 | 975.0 | - | 10.5 | 975.0 | - | 21.2 | 975.0 | - | 50.4 | 975.0 | - | 2.9 |
| D-02 | D-02 | 970.5 | 23.3 | 29 | 87 | 970.6 | - | 0.8 | 970.8 | 0.3 | 1.6 | 971.5 | 1.0 | 3.6 | 970.8 | 0.3 | 0.3 |
| ***DS-01B*** | DS-01B | 969.0 | 5.3 | 1 | 3 | 966.2 | - | 2.7 | 966.6 | - | 7.9 | 967.5 | - | 24.1 | 966.1 | - | 1.3 |
| DS-02B | DS-02B | 969.0 | 73.2 | 3 | 9 | 962.5 | - | 42.1 | 962.8 | - | 75.5 | 963.6 | - | 160.4 | 963.0 | - | 9.5 |
| ***DS-03B*** | DS-03B | 967.8 | 14.2 | 1 | 3 | 966.8 | - | 15.3 | 967.3 | - | 33.0 | 968.0 | 0.2 | 82.2 | 967.8 | - | 4.4 |
| ***E*** | E | 970.2 | 4.7 | 1 | 3 | 971.7 | 1.5 | 4.3 | 971.7 | 1.5 | 9.0 | 971.7 | 1.5 | 22.2 | 971.7 | 1.5 | 1.5 |
| EP-01 | EP-01 | 953.0 | 24.6 | 9 | 27 | 947.1 | - | 3.2 | 948.0 | - | 6.2 | 950.0 | - | 14.4 | 947.4 | - | 1.0 |
| ***EP-02*** | EP-02 | 951.5 | 3.1 | 1 | 3 | 948.9 | - | 4.8 | 949.2 | - | 9.4 | 950.0 | - | 21.6 | 948.9 | - | 1.1 |
| ***FutureVolumeExcludio*** | FutureVolu | 818.0 | 32.7 | 1 | 3 | 811.9 | - | 17.9 | 813.1 | - | 47.2 | 815.0 | - | 141.6 | 813.1 | - | 8.3 |
| ***G*** | G | 970.3 | 7.8 | 1 | 3 | 971.1 | 0.8 | 5.5 | 971.1 | 0.8 | 13.4 | 971.5 | 1.2 | 36.8 | 971.1 | 0.8 | 2.1 |
| ***GC-01*** | GC-01 | 952.0 | 6.1 | 1 | 3 | 948.2 | - | 2.4 | 948.3 | - | 8.2 | 950.0 | - | 26.8 | 948.3 | - | 1.3 |
| ***GC-02*** | GC-02 | 952.0 | 7.4 | 1 | 3 | 947.1 | - | 2.0 | 948.1 | - | 8.0 | 950.0 | - | 29.2 | 947.4 | - | 1.4 |
| ***GC-03*** | GC-03 | 952.0 | 4.6 | 1 | 3 | 947.1 | - | 1.0 | 948.1 | - | 4.6 | 950.0 | - | 17.5 | 947.4 | - | 0.8 |
| ***GC-04*** | GC-04 | 959.0 | 35.1 | 1 | 3 | 956.9 | - | 10.9 | 957.4 | - | 33.7 | 958.6 | - | 108.0 | 956.9 | - | 7.8 |
| ***GC-05*** | GC-05 | 962.0 | 14.0 | 1 | 3 | 958.3 | - | 1.4 | 959.0 | - | 7.0 | 961.2 | - | 31.5 | 959.1 | - | 2.2 |
| ***GC-06*** | GC-06 | 961.0 | 12.1 | 1 | 3 | 958.3 | - | 3.4 | 959.0 | - | 12.4 | 960.5 | - | 45.4 | 959.0 | - | 2.4 |
| GC-07 | GC-07 | 958.8 | 9.0 | 2 | 6 | 958.9 | 0.2 | 3.4 | 959.3 | 0.5 | 7.2 | 960.5 | 1.8 | 17.6 | 959.1 | 0.4 | 1.4 |
| ***GC-08*** | GC-08 | 961.0 | 2.8 | 1 | 3 | 958.4 | - | 0.9 | 958.7 | - | 3.3 | 959.7 | - | 11.6 | 958.7 | - | 0.6 |
| ***H*** | H | 974.0 | 41.8 | 1 | 3 | 971.4 | - | 38.1 | 971.4 | - | 70.9 | 971.5 | - | 156.9 | 971.4 | - | 14.9 |
| ***HaasaLake*** | Haas Lake | 913.0 | 107.0 | 1 | 3 | 906.1 | - | 45.9 | 907.2 | - | 104.6 | 909.5 | - | 277.0 | 906.4 | - | 29.9 |
| ***IB-2*** | IB-2 | 814.9 | 0.5 | 1 | 3 | 815.2 | 0.3 | 0.0 | 815.4 | 0.5 | 0.0 | 815.8 | 0.9 | 0.0 | 815.2 | 0.3 | 0.0 |
| ***IB-3*** | IB-3 | 814.5 | 0.7 | 1 | 3 | 814.8 | 0.3 | 0.0 | 815.0 | 0.5 | 0.0 | 815.5 | 1.0 | 0.4 | 814.8 | 0.3 | 0.0 |
| ***IB-4*** | IB-4 | 816.0 | 2.2 | 1 | 3 | 814.5 | - | 0.0 | 814.7 | - | 0.2 | 815.3 | - | 2.4 | 814.5 | - | 0.1 |
| ***LoadingDock*** | LoadingDoc | 829.8 | 0.1 | 1 | 3 | 826.4 | - | 0.3 | 826.6 | - | 0.6 | 828.6 | - | 1.4 | 826.4 | - | 0.1 |
| MayzopyaRG | MayzopyaRG | 989.0 | 0.1 | 2 | 6 | 982.7 | - | 0.0 | 984.2 | - | 0.1 | 985.3 | - | 0.4 | 983.4 | - | 0.0 |
| MysticLake | MysticLake | 964.0 | 201.2 | 2 | 6 | 958.8 | - | 24.8 | 959.0 | - | 56.7 | 960.0 | - | 152.8 | 959.6 | - | 24.8 |
| ***D-01*** | P_2 | 974.0 | 8.5 | 1 | 3 | 971.8 | - | 0.2 | 972.4 | - | 1.3 | 973.4 | - | 5.8 | 971.7 | - | 0.3 |
| P-01 | P-01 | 878.0 | 16.3 | 2 | 6 | 837.1 | - | 1.5 | 837.5 | - | 6.1 | 837.9 | - | 24.1 | 837.5 | - | 1.5 |
| ***P-02*** | P-02 | 836.0 | 66.3 | 1 | 3 | 830.0 | - | 20.1 | 830.0 | - | 57.9 | 830.0 | - | 197.2 | 830.0 | - | 13.3 |
| ***P-03*** | P-03 | 829.0 | 19.3 | 1 | 3 | 825.5 | - | 9.5 | 825.5 | - | 24.2 | 825.5 | - | 69.7 | 825.5 | - | 5.0 |
| ***P-04*** | P-04 | 813.4 | 24.5 | 1 | 3 | 815.3 | 1.9 | 0.5 | 815.3 | 1.9 | 4.9 | 815.5 | 2.1 | 32.2 | 815.3 | 1.9 | 2.4 |
| ***P-05*** | P-05 | 818.0 | 3.6 | 1 | 3 | 813.7 | - | 3.5 | 813.7 | - | 7.8 | 815.3 | - | 20.1 | 813.7 | - | 1.1 |
| ***P06*** | P06 | 835.0 | 25.3 | 1 | 3 | 830.1 | - | 0.5 | 830.3 | - | 4.4 | 832.6 | - | 27.4 | 830.3 | - | 2.5 |
| P-06 | P-06 | 816.0 | 5.2 | 4 | 12 | 813.8 | - | 0.8 | 814.3 | - | 1.7 | 815.3 | - | 4.9 | 813.7 | - | 0.3 |
| ***P-07*** | P-07 | 816.0 | 0.7 | 1 | 3 | 813.4 | - | 1.1 | 813.8 | - | 2.2 | 815.3 | - | 5.0 | 813.6 | - | 0.3 |
| P-08 | P-08 | 821.0 | 143.3 | 2 | 6 | 814.3 | - | 11.4 | 814.9 | - | 30.7 | 816.5 | - | 94.9 | 814.4 | - | 14.7 |
| ***P-09*** | P-09 | 821.0 | 30.3 | 1 | 3 | 819.6 | - | 10.2 | 820.1 | - | 33.0 | 820.9 | - | 107.4 | 820.2 | - | 6.7 |
| P-1 | P-1 | 819.0 | 7.6 | 2 | 6 | 816.0 | - | 4.3 | 816.0 | - | 7.9 | 817.4 | - | 17.5 | 816.0 | - | 1.3 |
| ***P-10*** | P-10 | 820.0 | 13.0 | 1 | 3 | 815.6 | - | 11.2 | 816.2 | - | 24.2 | 817.1 | - | 61.1 | 815.2 | - | 4.0 |
| ***P-24*** | P-24 | 965.0 | 1.5 | 1 | 3 | 960.7 | - | 0.9 | 961.7 | - | 2.4 | 963.0 | - | 7.1 | 960.6 | - | 0.4 |
| P-30 | P-30 | 979.0 | 3.1 | 4 | 12 | 969.2 | - | 2.3 | 970.6 | - | 3.4 | 973.0 | - | 6.1 | 968.9 | - | 0.4 |
| ***P-31*** | P-31 | 987.0 | 0.8 | 1 | 3 | 982.0 | - | 3.6 | 982.2 | - | 5.3 | 982.5 | - | 9.4 | 981.6 | - | 0.4 |
| P-34 | P-34 | 825.0 | 127.3 | 253 | 759 | 817.5 | - | 0.2 | 820.3 | - | 0.4 | 826.3 | 1.3 | 0.9 | 820.4 | - | 0.1 |
| ***P-38*** | P-38 | 970.0 | 20.0 | 1 | 3 | 962.3 | - | 27.7 | 962.5 | - | 54.5 | 962.9 | - | 125.8 | 962.4 | - | 7.0 |
| PampasCt | PampasCt | 829.0 | 5.5 | 4 | 12 | 828.2 | - | 1.0 | 829.2 | 0.2 | 2.3 | 831.0 | 2.0 | 5.9 | 827.7 | - | 0.4 |
| ***PIKE LAKE*** | Pike Lake | 850.0 | 194.6 | 1 | 3 | 820.5 | - | 92.8 | 821.3 | - | 214.3 | 823.7 | - | 566.7 | 821.7 | - | 54.7 |
| PP-03 | PP-03 | 956.0 | 1.8 | 5 | 15 | 958.6 | 2.6 | 0.6 | 959.0 | 3.0 | 1.1 | 960.0 | 4.0 | 2.6 | 959.6 | 3.6 | 0.1 |
| PP-06 | PP-06 | 970.0 | 2.9 | 6 | 18 | 964.0 | - | 0.7 | 964.0 | - | 1.4 | 964.0 | - | 3.3 | 964.0 | - | 0.2 |
| PP-09 | PP-09 | 995.0 | 0.4 | 2 | 6 | 990.0 | - | 0.5 | 990.0 | - | 0.9 | 990.0 | - | 2.0 | 990.0 | - | 0.1 |
| PP-10 | PP-10 | 964.0 | 3.0 | 3 | 9 | 958.6 | - | 0.8 | 959.0 | - | 1.8 | 960.0 | - | 4.6 | 959.6 | - | 0.3 |
| Proposed | Proposed R | 967.0 | 2.9 | 6 | 18 | 963.6 | - | 0.7 | 964.1 | - | 1.4 | 964.6 | - | 3.4 | 964.4 | - | 0.2 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Subwatershed** | **Node Name** | **Rim Invert** | **Subwatershed Area (ac)** | **Number of Catch Basins** | **Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin)** | **Max Water Elevation (ft)** | **Maximum Depth Above Manhole (ft)** | **Max Runoff Per Catch Basin (cfs)** | **Max Water Elevation (ft)2** | **Maximum Depth Above Manhole (ft)3** | **Max Runoff Per Catch Basin (cfs)2** | **Max Water Elevation (ft)5** | **Maximum Depth Above Manhole (ft)6** | **Max Runoff Per Catch Basin (cfs)3** | **Max Water Elevation (ft)5** | **Maximum Depth Above Manhole (ft)6** | **Max Runoff Per Catch Basin (cfs)** |
| ***RVRPond*** | RV Pond | 962.0 | 27.0 | 1 | 3 | 955.2 | - | 27.4 | 955.6 | - | 54.4 | 957.5 | - | 127.0 | 955.3 | - | 9.3 |
| ***SR-01*** | SR-01 | 976.0 | 42.7 | 1 | 3 | 973.3 | - | 25.8 | 973.7 | - | 54.9 | 974.5 | - | 138.8 | 974.2 | - | 13.0 |
| ***SR-02*** | SR-02 | 975.0 | 13.8 | 1 | 3 | 973.1 | - | 1.2 | 973.4 | - | 6.0 | 974.1 | - | 27.0 | 973.9 | - | 2.1 |
| ***SR-03*** | SR-03 | 987.0 | 4.3 | 1 | 3 | 982.6 | - | 0.5 | 983.0 | - | 2.5 | 984.0 | - | 11.4 | 983.6 | - | 0.7 |
| ***T0-P1*** | T0-P1 | 817.0 | 2.5 | 1 | 3 | 811.9 | - | 1.3 | 813.1 | - | 3.5 | 815.0 | - | 10.7 | 813.1 | - | 0.6 |
| Tewapa-Reuse-2 | Tewapa-Reu | 931.0 | 2.0 | 3 | 9 | 926.0 | - | 0.1 | 926.0 | - | 0.6 | 927.2 | - | 2.2 | 926.0 | - | 0.1 |
| ***Tintaocanku-P01*** | Tintaocank | 817.0 | 4.0 | 1 | 3 | 812.6 | - | 8.0 | 813.5 | - | 13.5 | 815.0 | - | 27.6 | 813.1 | - | 1.5 |
| ***Tintaocanku-P01*** | Tintaoca1 | 812.0 | 4.0 | 1 | 3 | 812.2 | 0.2 | 0.2 | 813.1 | 1.1 | 0.5 | 815.0 | 3.0 | 1.4 | 813.1 | 1.1 | 0.1 |
| ***Tintaotumwe-02*** | Tintaotumw | 820.0 | 22.9 | 1 | 3 | 811.2 | - | 4.4 | 812.1 | - | 17.8 | 814.3 | - | 68.0 | 812.1 | - | 4.2 |
| ***TO_102*** | TO_102 | 816.0 | 8.0 | 1 | 3 | 812.7 | - | 2.9 | 813.3 | - | 8.0 | 815.0 | - | 24.6 | 813.1 | - | 1.9 |
| ***TO-133*** | TO-133 | 821.0 | 13.3 | 1 | 3 | 817.5 | - | 5.7 | 818.6 | - | 16.4 | 821.3 | 0.3 | 49.7 | 817.3 | - | 3.2 |
| ***TO-P05*** | TO-P05 | 821.0 | 14.6 | 1 | 3 | 819.2 | - | 11.1 | 820.2 | - | 27.3 | 821.3 | 0.3 | 75.4 | 817.8 | - | 3.9 |
| TO-P2 | TO-P2 | 817.0 | 3.4 | 2 | 6 | 811.9 | - | 0.7 | 813.1 | - | 2.1 | 815.0 | - | 6.8 | 813.1 | - | 0.4 |
| TW-103 | TW-103 | 949.0 | 23.3 | 4 | 12 | 942.6 | - | 0.4 | 942.8 | - | 1.9 | 945.6 | - | 8.6 | 942.5 | - | 0.9 |
| TW-127 | TW-127 | 980.0 | 2.7 | 3 | 9 | 975.6 | - | 0.2 | 977.4 | - | 0.9 | 980.4 | 0.4 | 3.4 | 975.7 | - | 0.2 |
| ***TW-89*** | TW-89 | 982.8 | 17.8 | 1 | 3 | 978.6 | - | 8.4 | 979.2 | - | 21.9 | 981.4 | - | 62.8 | 978.5 | - | 4.6 |
| ***TW-99*** | TW-99 | 996.0 | 4.3 | 1 | 3 | 994.0 | - | 0.4 | 994.1 | - | 1.7 | 994.4 | - | 7.3 | 994.1 | - | 0.7 |
| ***TW-BIO1*** | TW-BIO1 | 978.5 | 4.8 | 1 | 3 | 974.3 | - | 0.7 | 974.8 | - | 2.8 | 977.3 | - | 10.8 | 974.4 | - | 0.8 |
| ***#N/A*** | TW-BIO2 | 970.5 | #N/A | 1 | 3 | 969.2 | - | 0.4 | 970.0 | - | 1.6 | 970.1 | - | 5.8 | 970.0 | - | 0.3 |
| ***#N/A*** | TW-BIO3 | 970.5 | #N/A | 1 | 3 | 970.0 | - | 1.4 | 970.1 | - | 2.8 | 970.1 | - | 6.5 | 970.0 | - | 0.3 |
| ***TW-BIO4*** | TW-BIO4 | 966.5 | 2.1 | 1 | 3 | 966.0 | - | 0.7 | 966.0 | - | 2.2 | 966.1 | - | 7.7 | 966.0 | - | 0.4 |
| ***UnnamedMLake*** | Unnamed La | 970.0 | 50.8 | 1 | 3 | 970.2 | 0.2 | 42.5 | 970.4 | 0.4 | 97.2 | 970.9 | 0.9 | 254.2 | 970.3 | 0.3 | 15.3 |
| ***WetlandNA*** | Wetland A | 945.0 | 215.1 | 1 | 3 | 945.5 | 0.5 | 61.3 | 945.8 | 0.8 | 197.7 | 947.2 | 2.1 | 648.3 | 945.8 | 0.8 | 46.2 |
| ***WETLANDnB1*** | WETLAND B1 | 958.0 | 4.3 | 1 | 3 | 958.6 | 0.6 | 4.9 | 959.0 | 1.0 | 10.3 | 960.0 | 2.0 | 25.1 | 959.6 | 1.6 | 1.4 |
| WetlandnB2 | Wetland B2 | 964.0 | 7.9 | 2 | 6 | 958.6 | - | 8.6 | 959.0 | - | 13.9 | 960.0 | - | 26.8 | 959.6 | - | 1.7 |
| WetlandnC | Wetland C | 964.0 | 18.4 | 2 | 6 | 959.1 | - | 11.9 | 959.4 | - | 23.2 | 960.4 | - | 53.0 | 958.8 | - | 3.3 |
| ***WetlandND*** | Wetland D | 981.0 | 6.0 | 1 | 3 | 980.1 | - | 2.4 | 980.5 | - | 7.2 | 981.3 | 0.3 | 22.3 | 981.0 | - | 1.4 |
| WetlandNE | Wetland E | 999.0 | 26.3 | 4 | 12 | 993.0 | - | 12.1 | 993.0 | - | 21.4 | 993.2 | - | 45.1 | 993.0 | - | 2.6 |
| ***WetlandnF*** | Wetland F | 970.0 | 6.0 | 1 | 3 | 959.5 | - | 14.7 | 959.5 | - | 23.5 | 960.0 | - | 44.8 | 959.6 | - | 2.7 |
| ***WetlandnH*** | Wetland H | 969.0 | 8.8 | 1 | 3 | 966.9 | - | 6.5 | 967.5 | - | 14.0 | 968.5 | - | 35.0 | 967.6 | - | 2.7 |
| ***WetlandnM*** | Wetland M | 946.0 | 52.0 | 1 | 3 | 945.1 | - | 12.4 | 945.9 | - | 48.7 | 947.2 | 1.1 | 187.5 | 946.1 | - | 9.9 |
| ***WetlandnN*** | Wetland N | 1871.0 | 49.1 | 1 | 3 | 942.8 | - | 20.2 | 945.5 | - | 52.2 | 947.1 | - | 152.1 | 945.2 | - | 12.4 |
| WetlandnO | Wetland O | 1859.8 | 162.4 | 2 | 6 | 926.3 | - | 45.4 | 926.6 | - | 116.8 | 927.3 | - | 331.4 | 926.8 | - | 21.0 |
| WhitetailDR | WhitetailD | 817.0 | 4.9 | 6 | 18 | 810.1 | - | 0.7 | 817.5 | 0.5 | 1.5 | 821.3 | 4.3 | 3.7 | 819.0 | 2.0 | 0.2 |
| WinterberryLn | Winterberr | 820.0 | 58.4 | 169 | 507 | 811.4 | - | 0.1 | 817.5 | - | 0.3 | 821.4 | 1.4 | 0.8 | 819.0 | - | 0.1 |
| ***PL14*** | PL14 | 890.0 | 152.0 | 1 | 3 | 867.1 | - | 48.0 | 869.5 | - | 131.7 | 875.5 | - | 400.5 | 869.2 | - | 35.9 |
| ***PL15*** | PL15 | 878.0 | 30.0 | 1 | 3 | 878.1 | - | 7.3 | 878.2 | 0.2 | 26.4 | 878.6 | 0.6 | 95.5 | 878.1 | 0.1 | 5.9 |
| ***PL2*** | PL2 | 990.0 | 63.1 | 1 | 3 | 980.6 | - | 17.2 | 981.8 | - | 53.1 | 985.1 | - | 177.7 | 980.9 | - | 13.6 |
| ***PL4*** | PL4 | 956.0 | 97.8 | 1 | 3 | 955.0 | - | 22.9 | 956.3 | 0.3 | 73.4 | 957.0 | 1.0 | 248.9 | 956.4 | 0.4 | 20.2 |
| ***PL5*** | PL5 | 870.0 | 52.6 | 1 | 3 | 825.5 | - | 12.5 | 826.2 | - | 43.2 | 828.4 | - | 150.1 | 826.0 | - | 10.6 |
| ***PL6*** | PL6 | 920.0 | 45.6 | 1 | 3 | 902.1 | - | 12.1 | 902.8 | - | 40.1 | 910.4 | - | 134.6 | 902.9 | - | 9.5 |
| ***PL7*** | PL7 | 850.0 | 55.9 | 1 | 3 | 827.0 | - | 13.0 | 827.4 | - | 45.9 | 828.2 | - | 159.8 | 826.9 | - | 11.1 |
| ***PL11*** | PL11 | 850.0 | 62.3 | 1 | 3 | 842.0 | - | 29.5 | 843.7 | - | 78.3 | 847.5 | - | 232.3 | 842.7 | - | 15.7 |
| ***PL12*** | PL13 | 874.0 | 59.4 | 1 | 3 | 873.8 | - | 45.5 | 874.1 | 0.1 | 115.1 | 874.7 | 0.7 | 324.5 | 874.2 | 0.2 | 27.7 |
| ***PL12*** | PL12 | 847.5 | 59.4 | 1 | 3 | 837.9 | - | 24.6 | 840.7 | - | 67.2 | 845.0 | - | 198.7 | 837.7 | - | 14.5 |
| ***PL9*** | PL9 | 938.0 | 65.2 | 1 | 3 | 937.9 | - | 22.0 | 938.2 | 0.2 | 65.5 | 939.0 | 1.0 | 204.9 | 938.3 | 0.3 | 14.9 |
| ***PL8*** | PL8 | 910.0 | 93.7 | 1 | 3 | 879.8 | - | 48.8 | 885.2 | - | 120.8 | 902.3 | - | 334.5 | 879.1 | - | 25.0 |
| ***PL10*** | PL10 | 940.0 | 53.2 | 1 | 3 | 922.8 | - | 52.2 | 923.9 | - | 107.6 | 926.8 | - | 264.6 | 923.6 | - | 17.2 |
| ***38418*** | 38418 | 740.0 | 25.5 | 1 | 3 | 720.6 | - | 72.0 | 721.8 | - | 116.8 | 723.6 | - | 225.7 | 721.9 | - | 11.4 |
| ***34019*** | 34019 | 760.0 | 21.0 | 1 | 3 | 745.2 | - | 30.2 | 745.7 | - | 60.5 | 747.2 | - | 141.9 | 746.1 | - | 7.5 |
| Deans Lake | Deans Lake | 744.0 | 450.3 | 2 | 6 | 747.2 | 3.2 | 62.0 | 748.5 | 4.5 | 149.4 | 750.4 | 6.4 | 416.6 | 749.7 | 5.7 | 56.0 |
| 37418 | 36926 | 740.7 | 43.0 | 2 | 6 | 742.8 | 2.1 | 17.7 | 743.9 | 3.2 | 41.2 | 745.5 | 4.8 | 109.2 | 744.1 | 3.4 | 6.3 |
| 21061 | 21061 | 770.0 | 6.4 | 2 | 6 | 754.6 | - | 2.4 | 755.5 | - | 6.7 | 756.7 | - | 20.1 | 755.8 | - | 0.8 |
| 20172 | 20172 | 782.0 | 126.3 | 7 | 21 | 767.4 | - | 6.2 | 767.9 | - | 16.4 | 768.6 | - | 48.5 | 767.8 | - | 4.4 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***11663*** | 9982 | 859.1 | 29.9 | 1 | 3 | 852.1 | - | 7.5 | 853.0 | - | 28.2 | 854.7 | - | 102.7 | 852.1 | - | 5.8 |
| ***LWRJEFFERS*** | LWRJEFFERS | 863.4 | 57.6 | 1 | 3 | 863.8 | 0.4 | 27.0 | 864.4 | 1.0 | 70.9 | 866.3 | 2.9 | 211.5 | 865.5 | 2.1 | 14.5 |
| ***MIDJEFFERS*** | MIDJEFFERS | 863.5 | 137.2 | 1 | 3 | 863.8 | 0.4 | 88.0 | 864.4 | 1.0 | 195.2 | 866.3 | 2.8 | 503.6 | 865.5 | 2.1 | 41.0 |
| ***UPPJEFFERS*** | UPPJEFFERS | 900.0 | 204.0 | 1 | 3 | 876.9 | - | 77.4 | 877.3 | - | 197.0 | 878.5 | - | 575.2 | 877.3 | - | 51.4 |
| ***JP1*** | JP1 | 938.0 | 77.6 | 1 | 3 | 938.5 | 0.5 | 79.7 | 938.7 | 0.7 | 160.3 | 939.1 | 1.1 | 377.9 | 938.2 | 0.2 | 26.1 |
| ***JP3*** | JP3 | 940.0 | 71.2 | 1 | 3 | 921.0 | - | 41.6 | 921.6 | - | 98.4 | 924.3 | - | 273.4 | 921.1 | - | 19.6 |
| ***JP4*** | JP4 | 920.0 | 138.9 | 1 | 3 | 910.5 | - | 86.1 | 910.9 | - | 189.1 | 912.3 | - | 492.8 | 911.2 | - | 41.1 |
| ***BLC1E*** | BLC1E | 980.0 | 14.8 | 1 | 3 | 960.1 | - | 2.9 | 960.2 | - | 12.4 | 960.7 | - | 48.0 | 960.1 | - | 2.7 |
| ***BLC1C*** | BLC1C | 920.0 | 58.6 | 1 | 3 | 903.2 | - | 10.3 | 903.6 | - | 38.5 | 904.9 | - | 144.4 | 903.5 | - | 10.8 |
| ***BLC1D*** | BLC1D | 960.0 | 18.3 | 1 | 3 | 940.1 | - | 5.5 | 940.3 | - | 20.2 | 941.0 | - | 71.9 | 940.2 | - | 3.7 |
| ***BLC1B*** | BLC1B | 886.0 | 29.4 | 1 | 3 | 883.5 | - | 13.9 | 885.6 | - | 38.4 | 891.3 | 5.3 | 119.5 | 888.8 | 2.8 | 7.1 |
| ***BLB5D*** | BLB5D | 900.0 | 16.2 | 1 | 3 | 886.4 | - | 8.2 | 886.6 | - | 24.0 | 891.3 | - | 79.4 | 888.8 | - | 3.8 |
| ***BLB5E*** | BLB5E | 880.0 | 12.2 | 1 | 3 | 860.0 | - | 5.2 | 860.0 | - | 19.3 | 860.0 | - | 65.6 | 860.0 | - | 2.7 |
| ***BLB4E*** | BLB4E | 1040.0 | 16.0 | 1 | 3 | 1016.1 | - | 3.3 | 1016.2 | - | 13.6 | 1016.7 | - | 50.7 | 1016.2 | - | 3.0 |
| BLB4D | BLB4D | 1000.0 | 63.0 | 23 | 69 | 980.5 | - | 0.5 | 981.3 | - | 1.8 | 983.6 | - | 6.5 | 981.3 | - | 0.5 |
| BLB8C | BLB8C | 980.0 | 13.5 | 13 | 39 | 962.7 | - | 0.5 | 963.8 | - | 1.5 | 966.6 | - | 4.7 | 963.2 | - | 0.2 |
| BLB4C | BLB4C | 990.0 | 20.3 | 9 | 27 | 970.4 | - | 1.6 | 970.8 | - | 4.1 | 972.2 | - | 11.5 | 970.3 | - | 0.6 |
| BLB4B | BLB4B | 960.0 | 37.4 | 23 | 69 | 942.3 | - | 0.5 | 942.7 | - | 1.6 | 945.0 | - | 5.5 | 942.3 | - | 0.3 |
| BLB4A | BLB4A | 940.0 | 20.2 | 9 | 27 | 917.2 | - | 1.9 | 919.1 | - | 4.6 | 924.9 | - | 12.7 | 918.4 | - | 0.6 |
| ***BLB8B*** | BLB8B | 980.0 | 9.0 | 1 | 3 | 956.4 | - | 7.1 | 956.8 | - | 18.5 | 958.0 | - | 52.9 | 956.7 | - | 2.5 |
| BLB8A | BLB8A | 870.0 | 58.5 | 3 | 9 | 850.4 | - | 8.8 | 850.9 | - | 24.8 | 852.1 | - | 74.8 | 847.8 | - | 4.6 |
| ***BLB3B*** | BLB3B | 830.0 | 28.8 | 1 | 3 | 811.0 | - | 26.2 | 811.6 | - | 60.0 | 815.7 | - | 156.8 | 810.7 | - | 8.4 |
| ***BLB3C*** | BLB3C | 910.0 | 29.8 | 1 | 3 | 898.0 | - | 13.6 | 898.4 | - | 42.5 | 899.8 | - | 134.3 | 898.2 | - | 6.8 |
| ***BLB3A*** | BLB3A | 880.0 | 28.8 | 1 | 3 | 812.6 | - | 26.9 | 813.3 | - | 60.6 | 817.6 | - | 164.2 | 812.8 | - | 8.5 |
| BLB2Q | BLB2Q | 810.0 | 22.3 | 31 | 93 | 754.3 | - | 0.8 | 756.3 | - | 1.7 | 758.2 | - | 4.2 | 755.7 | - | 0.2 |
| BLB2R | BLB2R | 800.0 | 23.9 | 13 | 39 | 776.4 | - | 1.6 | 776.9 | - | 3.5 | 779.0 | - | 8.9 | 776.3 | - | 0.6 |
| BLB2K | BLB2K | 770.0 | 74.6 | 24 | 72 | 753.9 | - | 1.4 | 755.4 | - | 3.5 | 756.6 | - | 10.1 | 755.7 | - | 0.8 |
| BLB2L | BLB2L | 770.0 | 25.0 | 28 | 84 | 753.8 | - | 1.1 | 755.1 | - | 2.2 | 756.7 | - | 5.4 | 755.7 | - | 0.3 |
| BLB2M | BLB2M | 770.0 | 18.9 | 28 | 84 | 753.8 | - | 0.7 | 755.1 | - | 1.5 | 756.9 | - | 3.8 | 755.7 | - | 0.2 |
| BLB2N | BLB2N | 770.0 | 21.1 | 41 | 123 | 754.7 | - | 0.4 | 756.7 | - | 1.0 | 761.8 | - | 2.8 | 755.7 | - | 0.1 |
| BLB2G | RC_W7P | 754.6 | 54.6 | 49 | 147 | 752.8 | - | 1.1 | 753.1 | - | 2.2 | 754.0 | - | 5.3 | 753.2 | - | 0.4 |
| BLB2D | BLB2D | 810.0 | 33.0 | 34 | 102 | 752.5 | - | 0.8 | 753.0 | - | 1.9 | 755.0 | - | 5.0 | 753.0 | - | 0.3 |
| BLB2C | BLB2C | 770.0 | 7.9 | 11 | 33 | 753.0 | - | 0.9 | 753.4 | - | 2.1 | 754.8 | - | 5.3 | 753.2 | - | 0.2 |
| ***BLB2P*** | BLB2P | 770.0 | 60.5 | 1 | 3 | 756.0 | - | 34.5 | 759.0 | - | 88.1 | 766.5 | - | 252.5 | 758.1 | - | 15.7 |
| BLA11E | BLA11E | 760.0 | 30.1 | 36 | 108 | 746.3 | - | 0.7 | 747.7 | - | 1.6 | 749.5 | - | 4.1 | 748.7 | - | 0.3 |
| ***BLA11F*** | BLA11F | 760.0 | 13.9 | 1 | 3 | 746.3 | - | 15.3 | 747.7 | - | 32.4 | 749.5 | - | 81.6 | 748.7 | - | 4.4 |
| BLA11D | BLA11D | 760.0 | 26.2 | 18 | 54 | 746.3 | - | 1.0 | 747.7 | - | 2.3 | 749.5 | - | 6.6 | 748.7 | - | 0.4 |
| ***BLA11G*** | BLA11G | 770.0 | 7.5 | 1 | 3 | 748.6 | - | 4.4 | 749.1 | - | 12.7 | 750.3 | - | 39.9 | 748.2 | - | 1.8 |
| ***BLA11C*** | BLA11C | 770.0 | 10.6 | 1 | 3 | 747.3 | - | 4.5 | 747.7 | - | 14.7 | 748.5 | - | 47.3 | 747.8 | - | 2.4 |
| BLA11A | BLA11A | 760.0 | 76.0 | 45 | 135 | 745.6 | - | 1.4 | 746.8 | - | 2.9 | 748.5 | - | 7.0 | 747.5 | - | 0.5 |
| BLA11B | BLA11B | 760.0 | 33.7 | 51 | 153 | 747.1 | - | 0.6 | 750.0 | - | 1.3 | 751.7 | - | 3.4 | 747.5 | - | 0.2 |
| BLA11H | BLA11H | 770.0 | 26.0 | 10 | 30 | 746.4 | - | 1.8 | 746.8 | - | 4.3 | 748.5 | - | 12.1 | 747.5 | - | 0.7 |
| BLA11H | BLA11I | 770.0 | 26.0 | 10 | 30 | 746.7 | - | 1.1 | 747.4 | - | 2.5 | 748.2 | - | 6.8 | 748.0 | - | 0.3 |
| BLE1A | BLE1A | 820.0 | 64.6 | 97 | 291 | 747.5 | - | 1.1 | 749.2 | - | 1.8 | 751.7 | - | 3.6 | 748.8 | - | 0.3 |
| ***BLB2O*** | BLB2O | 770.0 | 17.7 | 1 | 3 | 754.0 | - | 5.4 | 755.5 | - | 18.4 | 758.3 | - | 61.4 | 756.0 | - | 3.7 |
| BLB2B | RC_CR-6AP | 754.6 | 8.1 | 12 | 36 | 749.3 | - | 0.2 | 750.7 | - | 0.7 | 754.0 | - | 2.6 | 751.4 | - | 0.1 |
| ***BLA7*** | BLA7 | 760.0 | 22.5 | 1 | 3 | 740.7 | - | 14.3 | 741.9 | - | 37.4 | 745.1 | - | 107.1 | 741.3 | - | 6.0 |
| ***BLA5*** | BLA5 | 721.0 | 144.6 | 1 | 3 | 721.2 | 0.2 | 166.4 | 721.5 | 0.5 | 303.4 | 722.6 | 1.6 | 654.7 | 721.6 | 0.6 | 54.1 |
| BLA6A | BLA6A | 750.0 | 28.7 | 6 | 18 | 740.6 | - | 7.1 | 741.4 | - | 13.5 | 744.8 | - | 30.2 | 741.4 | - | 1.7 |
| BLA6B | BLA6B | 760.0 | 14.3 | 3 | 9 | 742.3 | - | 12.4 | 743.2 | - | 20.7 | 745.3 | - | 41.0 | 742.0 | - | 2.1 |
| BLA4B | BLA4B | 760.0 | 40.9 | 29 | 87 | 741.5 | - | 3.1 | 744.6 | - | 5.2 | 750.3 | - | 10.1 | 741.5 | - | 0.6 |
| BLA4A | BLA4A | 750.0 | 80.0 | 38 | 114 | 731.7 | - | 4.0 | 733.9 | - | 6.5 | 738.4 | - | 12.6 | 732.4 | - | 0.9 |
| BLA9A1 | BLA9A1 | 960.0 | 405.0 | 67 | 201 | 747.5 | - | 7.4 | 749.2 | - | 12.2 | 751.7 | - | 23.7 | 748.8 | - | 2.5 |
| ***BLA9A2*** | BLA9A2 | 770.0 | 37.3 | 1 | 3 | 758.1 | - | 91.3 | 758.7 | - | 149.5 | 759.4 | - | 291.5 | 756.2 | - | 16.4 |
| BLA9B8 | BLA9B8 | 770.0 | 23.1 | 8 | 24 | 749.4 | - | 7.1 | 750.7 | - | 11.7 | 753.0 | - | 22.7 | 750.1 | - | 1.3 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Blue Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in] | | | 10-Year Storm [4.20-in] | | | 100-Year Storm [7.40-in] | | | 10-Day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| BLA9B7 | BLA9B7 | 760.0 | 31.7 | 8 | 24 | 749.2 | - | 9.4 | 750.4 | - | 15.2 | 753.0 | - | 29.3 | 750.2 | - | 1.7 |
| BLA9B4 | BLA9B4 | 752.0 | 8.0 | 6 | 18 | 752.3 | 0.3 | 4.2 | 752.4 | 0.4 | 6.8 | 752.7 | 0.7 | 13.0 | 752.1 | 0.1 | 0.6 |
| BLA9B3 | BLA9B3 | 780.0 | 4.9 | 8 | 24 | 758.1 | - | 1.9 | 758.3 | - | 3.1 | 758.9 | - | 5.9 | 757.5 | - | 0.3 |
| BLA9B6 | BLA9B6 | 760.0 | 16.3 | 6 | 18 | 749.3 | - | 7.4 | 750.3 | - | 12.1 | 751.9 | - | 23.4 | 750.1 | - | 1.2 |
| BLA9B5 | BLA9B5 | 760.0 | 19.8 | 2 | 6 | 749.3 | - | 31.2 | 750.3 | - | 50.4 | 751.9 | - | 96.9 | 750.0 | - | 4.4 |
| BLA9A4 | BLA9A4 | 953.0 | 13.9 | 2 | 6 | 953.5 | 0.5 | 23.7 | 953.7 | 0.7 | 37.2 | 953.9 | 0.9 | 69.6 | 953.2 | 0.2 | 3.2 |
| BLE1B | BLE1B | 770.0 | 21.9 | 16 | 48 | 749.1 | - | 3.5 | 749.7 | - | 5.5 | 751.7 | - | 10.4 | 748.8 | - | 0.6 |
| BLE1E | BLE1E | 760.0 | 27.5 | 19 | 57 | 747.9 | - | 3.3 | 749.5 | - | 5.4 | 752.5 | - | 10.8 | 748.9 | - | 0.6 |
| ***BLE1G*** | BLE1G | 770.0 | 3.7 | 1 | 3 | 750.5 | - | 6.8 | 751.3 | - | 13.2 | 753.8 | - | 30.5 | 749.9 | - | 1.3 |
| BLE1F | BLE1F | 760.0 | 13.9 | 3 | 9 | 748.2 | - | 9.7 | 749.6 | - | 17.1 | 752.5 | - | 35.7 | 748.9 | - | 1.9 |
| BLE1I | BLE1I | 770.0 | 37.0 | 30 | 90 | 748.9 | - | 2.1 | 749.8 | - | 3.7 | 752.5 | - | 7.7 | 748.9 | - | 0.5 |
| ***BLE1K*** | BLE1K | 770.0 | 2.0 | 1 | 3 | 746.4 | - | 0.5 | 748.4 | - | 2.6 | 751.7 | - | 10.1 | 747.5 | - | 0.4 |
| BLE1J | BLE1J | 770.0 | 4.3 | 6 | 18 | 746.6 | - | 0.5 | 748.4 | - | 1.5 | 752.0 | - | 4.4 | 747.5 | - | 0.2 |
| BLB1D | BLB1D | 760.0 | 38.0 | 62 | 186 | 747.2 | - | 0.6 | 748.4 | - | 1.2 | 750.4 | - | 2.9 | 749.7 | - | 0.2 |
| BLE1H | BLE1H | 770.0 | 32.3 | 14 | 42 | 752.1 | - | 4.6 | 753.3 | - | 8.0 | 756.3 | - | 16.6 | 750.7 | - | 0.9 |
| BLE2A | BLE2A | 800.0 | 120.6 | 12 | 36 | 778.7 | - | 9.0 | 779.3 | - | 19.1 | 781.3 | - | 47.1 | 779.3 | - | 3.2 |
| BLB1C | BLB1C | 770.0 | 19.7 | 12 | 36 | 748.7 | - | 2.6 | 750.2 | - | 4.9 | 752.3 | - | 10.7 | 750.4 | - | 0.6 |
| BLB1B | BLB1B | 760.0 | 25.5 | 2 | 6 | 744.3 | - | 14.7 | 745.5 | - | 28.6 | 750.3 | - | 65.4 | 748.8 | - | 4.4 |
| BLA9B2 | BLA9B2 | 760.0 | 34.7 | 10 | 30 | 748.4 | - | 8.4 | 749.7 | - | 13.5 | 751.8 | - | 25.9 | 749.3 | - | 1.5 |
| BLA9A1 | BLA9B1 | 743.3 | 405.0 | 67 | 201 | 747.5 | 4.2 | 0.2 | 749.2 | 5.9 | 0.3 | 751.7 | 8.4 | 0.5 | 748.8 | 5.5 | 0.0 |
| BLE1C | BLE1C | 757.9 | 39.1 | 6 | 18 | 758.4 | 0.5 | 8.9 | 758.7 | 0.8 | 17.2 | 759.2 | 1.3 | 39.1 | 758.1 | 0.2 | 2.3 |
| BLB2J | BLB2J | 780.0 | 11.4 | 13 | 39 | 758.0 | - | 1.0 | 758.0 | - | 2.3 | 759.6 | - | 5.9 | 758.0 | - | 0.3 |
| BLB5B | BLB5B | 810.0 | 11.2 | 2 | 6 | 790.4 | - | 6.1 | 791.1 | - | 13.0 | 793.8 | - | 32.4 | 790.3 | - | 1.7 |
| BLE1D | BLE1D | 757.9 | 45.5 | 13 | 39 | 758.4 | 0.5 | 3.6 | 758.6 | 0.7 | 7.1 | 759.1 | 1.2 | 16.5 | 758.1 | 0.3 | 1.2 |
| BLB6A | BLB6A | 810.0 | 9.1 | 2 | 6 | 798.8 | - | 1.3 | 800.5 | - | 4.5 | 803.9 | - | 15.5 | 800.4 | - | 0.9 |
| ***BLB6B*** | BLB6B | 820.0 | 14.2 | 1 | 3 | 805.3 | - | 4.6 | 805.8 | - | 16.2 | 807.4 | - | 56.4 | 805.8 | - | 3.0 |
| ***BLB6C*** | BLB6C | 820.0 | 108.2 | 1 | 3 | 804.7 | - | 19.0 | 805.6 | - | 57.4 | 809.1 | - | 191.3 | 805.7 | - | 21.9 |
| ***BLB7B*** | BLB7B | 830.0 | 32.5 | 1 | 3 | 812.5 | - | 4.7 | 813.4 | - | 17.0 | 816.7 | - | 63.5 | 815.2 | - | 5.9 |
| ***BLE2B*** | BLE2B | 810.0 | 248.3 | 1 | 3 | 790.7 | - | 23.3 | 791.8 | - | 76.7 | 795.3 | - | 279.2 | 792.2 | - | 41.1 |
| BLE2C | BLE2C | 810.0 | 55.9 | 66 | 198 | 796.2 | - | 0.1 | 798.5 | - | 0.5 | 802.9 | - | 1.7 | 798.6 | - | 0.2 |
| ***BLB7C*** | BLB7C | 850.0 | 23.7 | 1 | 3 | 827.4 | - | 3.9 | 828.0 | - | 14.2 | 830.3 | - | 51.9 | 828.1 | - | 4.4 |
| ***9300*** | 9300 | 880.0 | 39.8 | 1 | 3 | 856.8 | - | 13.0 | 857.7 | - | 39.4 | 860.8 | - | 129.9 | 856.6 | - | 8.8 |
| 23711 | 23219 | 748.7 | 35.4 | 32 | 96 | 751.7 | 3.0 | 0.0 | 752.6 | 3.9 | 0.0 | 753.5 | 4.9 | 0.0 | 752.7 | 4.0 | 0.0 |
| ***23907*** | 23907 | 770.0 | 3.2 | 1 | 3 | 749.6 | - | 1.2 | 751.1 | - | 4.8 | 752.5 | - | 17.3 | 751.4 | - | 0.7 |
| ***25299*** | 25299 | 760.0 | 9.5 | 1 | 3 | 747.2 | - | 2.4 | 748.5 | - | 10.4 | 750.4 | - | 37.9 | 749.7 | - | 1.8 |
| BLB5C | BLB5C2 | 860.0 | 86.5 | 45 | 135 | 848.2 | - | 1.1 | 849.7 | - | 2.6 | 860.7 | 0.7 | 7.1 | 841.4 | - | 0.5 |
| 37418 | 37030.1.1 | 735.3 | 43.0 | 2 | 6 | 737.9 | 2.6 | 17.7 | 739.3 | 4.0 | 41.2 | 741.8 | 6.5 | 109.2 | 739.4 | 4.1 | 6.3 |
| 23711 | RC_300P | 760.0 | 35.4 | 32 | 96 | 751.7 | - | 0.5 | 752.7 | - | 1.3 | 755.3 | - | 4.0 | 753.0 | - | 0.3 |
| ***22554*** | RC_100P | 760.0 | 18.0 | 1 | 3 | 754.3 | - | 5.9 | 755.3 | - | 21.9 | 756.6 | - | 75.3 | 755.7 | - | 3.7 |
| BLA1-A | BLA1-A | 698.0 | 861.4 | 7 | 21 | 698.6 | 0.6 | 49.8 | 699.0 | 1.0 | 98.3 | 699.7 | 1.7 | 229.9 | 699.0 | 1.0 | 37.0 |
| ***BLA1-B*** | BLA1-B | 720.0 | 66.9 | 1 | 3 | 720.1 | 0.1 | 73.1 | 720.2 | 0.2 | 143.3 | 720.3 | 0.3 | 330.3 | 720.1 | - | 23.3 |
| ***BLA1-C*** | BLA1-C | 730.0 | 22.0 | 1 | 3 | 710.7 | - | 79.9 | 711.1 | - | 121.9 | 712.0 | - | 223.4 | 711.6 | - | 10.4 |
| BL-MP9B1A | BL-MP9B1A | 802.0 | 3.3 | 10 | 30 | 790.8 | - | 0.6 | 791.2 | - | 1.2 | 794.6 | - | 2.8 | 790.4 | - | 0.1 |
| BL-MP9B1B | BL-MP9B1B | 796.0 | 24.2 | 12 | 36 | 789.7 | - | 2.3 | 791.0 | - | 4.9 | 794.6 | - | 12.0 | 789.2 | - | 0.7 |
| BL-BLA9B5 | BL-BLA9B5 | 790.0 | 37.1 | 26 | 78 | 791.7 | 1.7 | 2.4 | 792.5 | 2.5 | 3.9 | 793.3 | 3.3 | 7.5 | 766.1 | - | 0.3 |
| BL-MP9B1 | BL-MP9B1 | 794.0 | 37.2 | 22 | 66 | 787.6 | - | 2.0 | 789.7 | - | 4.1 | 793.7 | - | 10.0 | 787.2 | - | 0.5 |
| ***H5*** | H5 | 820.0 | 9.8 | 1 | 3 | 814.6 | - | 4.2 | 815.4 | - | 15.6 | 816.4 | - | 53.1 | 816.0 | - | 2.1 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

# Downtown
# Appendix B
# Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity
# City of Shakopee

| | | | | | | 2-Year Storm [2.90-in.] | | | 10-Year Storm [4.20-in.] | | | 100-Year Storm [7.40-in.] | | | 10-Day Snowmelt [7.20-in.] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed[1] | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)3 | Maximum Depth Above Manhole (ft)[3] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)4 | Maximum Depth Above Manhole (ft)[4] | Max Runoff Per Catch Basin (cfs)[4] |
| DT-1 | DT-1 | 748.0 | 91.2 | 123 | 369 | 719.3 | - | 1.1 | 719.8 | - | 2.0 | 720.9 | - | 4.1 | 718.7 | - | 0.3 |
| DT-113 | DT-1 Outfall | 735.0 | 0.0 | 11 | 33 | 701.3 | - | 0.0 | 701.8 | - | 0.0 | 702.8 | - | 0.0 | 700.7 | - | 0.0 |
| DT-10 | DT-10 | 809.0 | 6.9 | 5 | 15 | 806.4 | - | 2.6 | 807.4 | - | 5.0 | 807.9 | - | 11.2 | 802.5 | - | 0.5 |
| DT-100 | DT-100 | 758.0 | 13.8 | 13 | 39 | 750.2 | - | 2.3 | 751.7 | - | 4.0 | 754.6 | - | 8.4 | 748.2 | - | 0.5 |
| DT-101 | DT-101 | 763.0 | 9.4 | 10 | 30 | 757.4 | - | 2.9 | 757.5 | - | 4.7 | 757.8 | - | 9.1 | 756.6 | - | 0.4 |
| ***DT-102*** | DT-102 | 760.0 | 2.2 | 1 | 3 | 753.2 | - | 6.4 | 754.2 | - | 10.5 | 755.4 | - | 20.7 | 754.3 | - | 1.0 |
| ***DT-103*** | DT-103 | 775.0 | 5.8 | 1 | 3 | 766.1 | - | 18.0 | 769.0 | - | 29.1 | 771.3 | - | 56.3 | 771.1 | - | 2.6 |
| DT-104 | DT-104 | 801.0 | 8.0 | 4 | 12 | 792.0 | - | 6.1 | 795.4 | - | 10.0 | 795.6 | - | 19.3 | 781.2 | - | 0.9 |
| ***DT-105*** | DT-105 | 770.0 | 24.0 | 1 | 3 | 765.0 | - | 38.0 | 766.1 | - | 70.9 | 766.9 | - | 156.7 | 764.9 | - | 9.2 |
| DT-106 | DT-106 | 805.0 | 27.9 | 10 | 30 | 800.3 | - | 5.4 | 800.4 | - | 9.2 | 800.6 | - | 18.9 | 799.8 | - | 1.2 |
| DT-107 | DT-107 | 764.0 | 63.0 | 39 | 117 | 759.0 | - | 1.8 | 759.8 | - | 3.5 | 760.8 | - | 7.8 | 758.6 | - | 0.6 |
| DT-108 | DT-108 | 820.0 | 6.5 | 4 | 12 | 817.1 | - | 2.8 | 817.6 | - | 5.3 | 818.4 | - | 12.1 | 814.6 | - | 0.6 |
| DT-109 | DT-109 | 820.0 | 7.8 | 6 | 18 | 814.0 | - | 1.7 | 817.3 | - | 3.4 | 818.4 | - | 7.9 | 812.8 | - | 0.5 |
| DT-10A6 | DT-10A6 | 765.0 | 3.4 | 5 | 15 | 762.4 | - | 1.2 | 763.2 | - | 2.4 | 763.3 | - | 5.6 | 758.7 | - | 0.3 |
| DT-10A6 | DT-10A6 to WR Outfall | 752.0 | 3.4 | 5 | 15 | 0.0 | - | 0.0 | 0.2 | - | 0.0 | 0.3 | - | 0.0 | 0.0 | - | 0.0 |
| ***DT-10A7*** | DT-10A7 | 768.0 | 8.0 | 1 | 3 | 768.6 | 0.6 | 21.8 | 768.9 | 0.9 | 37.0 | 770.5 | 2.5 | 74.8 | 768.2 | 0.2 | 3.5 |
| ***DT-10A8*** | DT-10A8 | 765.0 | 4.4 | 1 | 3 | 761.7 | - | 12.7 | 762.3 | - | 21.2 | 762.6 | - | 42.0 | 759.4 | - | 2.0 |
| DT-10A9 | DT-10A9 | 804.0 | 46.1 | 28 | 84 | 804.0 | 0.0 | 1.4 | 804.3 | 0.3 | 2.9 | 804.5 | 0.5 | 7.1 | 793.9 | - | 0.6 |
| DT-11 | DT-11 | 811.5 | 8.1 | 5 | 15 | 808.1 | - | 2.7 | 809.4 | - | 5.1 | 809.9 | - | 11.7 | 804.0 | - | 0.6 |
| DT-110 | DT-110 | 819.0 | 9.7 | 8 | 24 | 807.6 | - | 1.9 | 811.4 | - | 3.5 | 817.4 | - | 7.8 | 806.8 | - | 0.5 |
| DT-111 | DT-111 | 798.0 | 9.6 | 7 | 21 | 793.6 | - | 2.4 | 796.3 | - | 4.6 | 796.4 | - | 10.5 | 792.8 | - | 0.5 |
| DT-112 | DT-112 | 785.0 | 8.0 | 7 | 21 | 783.5 | - | 1.9 | 783.7 | - | 3.8 | 784.0 | - | 9.0 | 783.3 | - | 0.4 |
| DT-113 | DT-113 | 738.0 | 0.0 | 11 | 33 | 710.2 | - | 5.0 | 710.4 | - | 11.3 | 710.7 | - | 29.1 | 710.1 | - | 2.1 |
| DT-113 | DT-113Outfall | 750.0 | 0.0 | 11 | 33 | 691.1 | - | 0.0 | 691.1 | - | 0.0 | 692.0 | - | 0.0 | 690.7 | - | 0.0 |
| DT-114 | DT-114 | 799.0 | 6.4 | 4 | 12 | 794.5 | - | 3.2 | 797.3 | - | 6.0 | 797.6 | - | 13.6 | 793.7 | - | 0.6 |
| DT-115 | DT-115 | 745.0 | 10.5 | 20 | 60 | 739.3 | - | 1.5 | 739.5 | - | 2.6 | 740.1 | - | 5.0 | 738.8 | - | 0.2 |
| DT-116 | DT-116 | 810.0 | 9.6 | 11 | 33 | 792.0 | - | 1.3 | 805.8 | - | 2.5 | 808.4 | - | 5.7 | 787.4 | - | 0.3 |
| DT-117 | DT-117 | 803.0 | 6.1 | 4 | 12 | 799.5 | - | 2.8 | 799.7 | - | 5.4 | 800.1 | - | 12.2 | 799.3 | - | 0.6 |
| DT-118 | DT-118 | 810.0 | 11.0 | 10 | 30 | 762.3 | - | 2.1 | 762.4 | - | 4.0 | 762.7 | - | 9.1 | 762.2 | - | 0.4 |
| DT-119 | DT-119 | 765.0 | 7.0 | 8 | 24 | 757.8 | - | 2.2 | 758.5 | - | 3.8 | 758.9 | - | 7.9 | 756.3 | - | 0.4 |
| DT-12 | DT-12 | 815.0 | 6.4 | 3 | 9 | 813.5 | - | 3.7 | 813.9 | - | 7.2 | 814.4 | - | 16.3 | 811.0 | - | 0.8 |
| DT-120 | DT-120 | 748.0 | 2.7 | 5 | 15 | 742.4 | - | 1.5 | 742.6 | - | 2.5 | 742.8 | - | 5.1 | 742.2 | - | 0.2 |
| DT-121 | DT-121 | 756.0 | 5.2 | 8 | 24 | 753.5 | - | 2.0 | 753.6 | - | 3.2 | 754.0 | - | 6.3 | 753.3 | - | 0.3 |
| DT-122 | DT-122 | 740.0 | 5.3 | 4 | 12 | 736.2 | - | 4.5 | 736.3 | - | 7.0 | 736.5 | - | 13.3 | 736.1 | - | 0.6 |
| DT-123 | DT-123 | 736.0 | 7.3 | 25 | 75 | 733.1 | - | 0.9 | 734.2 | - | 1.5 | 734.5 | - | 2.9 | 731.8 | - | 0.1 |
| DT-124 | DT-124 | 737.0 | 4.9 | 15 | 45 | 733.6 | - | 1.0 | 735.6 | - | 1.6 | 736.0 | - | 3.2 | 731.8 | - | 0.1 |
| DT-125 | DT-125 | 754.0 | 9.7 | 4 | 12 | 750.4 | - | 6.5 | 750.6 | - | 11.1 | 751.2 | - | 22.7 | 748.9 | - | 1.1 |
| DT-126 | DT-126 | 807.0 | 5.1 | 5 | 15 | 783.7 | - | 2.0 | 785.0 | - | 3.8 | 793.8 | - | 8.6 | 782.8 | - | 0.4 |
| DT-127 | DT-127 | 806.0 | 2.7 | 5 | 15 | 787.3 | - | 1.1 | 794.9 | - | 2.0 | 804.4 | - | 4.5 | 785.3 | - | 0.2 |
| DT-128 | DT-128 | 700.0 | 77.3 | 16 | 48 | 700.0 | 0.0 | 0.0 | 700.1 | 0.1 | 0.0 | 700.2 | 0.2 | 0.0 | 700.1 | 0.1 | 0.0 |
| DT-13 | DT-13 | 816.0 | 6.2 | 3 | 9 | 814.4 | - | 3.8 | 814.6 | - | 7.2 | 815.1 | - | 16.4 | 811.3 | - | 0.8 |
| DT-14 | DT-14 | 807.0 | 5.4 | 3 | 9 | 791.9 | - | 3.5 | 805.2 | - | 6.6 | 805.7 | - | 15.0 | 784.5 | - | 0.7 |
| DT-15 | DT-15 | 815.0 | 6.6 | 4 | 12 | 809.4 | - | 2.8 | 812.5 | - | 5.4 | 813.7 | - | 12.3 | 808.0 | - | 0.6 |
| DT-16 | DT-16 | 818.0 | 5.6 | 3 | 9 | 815.4 | - | 3.5 | 815.6 | - | 6.6 | 815.9 | - | 15.0 | 813.0 | - | 0.7 |
| DT-17 | DT-17 | 805.0 | 1.8 | 10 | 30 | 789.7 | - | 0.4 | 801.8 | - | 0.7 | 804.4 | - | 1.5 | 787.2 | - | 0.1 |
| DT-18 | DT-18 | 817.0 | 7.2 | 4 | 12 | 813.5 | - | 3.2 | 815.4 | - | 6.1 | 815.8 | - | 13.8 | 809.6 | - | 0.7 |
| DT-19 | DT-19 | 819.0 | 6.2 | 3 | 9 | 817.2 | - | 3.9 | 817.4 | - | 7.4 | 817.7 | - | 16.7 | 814.0 | - | 0.8 |
| ***DT-1A*** | DT-1A | 810.0 | 38.3 | 1 | 3 | 808.3 | - | 48.5 | 808.5 | - | 90.8 | 808.7 | - | 201.6 | 805.0 | - | 14.5 |
| ***DT-1A*** | DT-1A Outfall | 790.0 | 38.3 | 1 | 3 | 771.9 | - | 0.0 | 771.9 | - | 0.0 | 772.0 | - | 0.0 | 771.0 | - | 0.0 |
| DT-1B | DT-1B | 804.0 | 8.0 | 2 | 6 | 794.8 | - | 8.6 | 795.2 | - | 15.9 | 797.0 | - | 34.9 | 794.4 | - | 1.6 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

# Downtown
# Appendix B
# Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity
# City of Shakopee

| | | | | | | 2-Year Storm [2.90-in.] | | | 10-Year Storm [4.20-in.] | | | 100-Year Storm [7.40-in.] | | | 10-Day Snowmelt [7.20-in.] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed[1] | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)3 | Maximum Depth Above Manhole (ft)[3] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)4 | Maximum Depth Above Manhole (ft)[4] | Max Runoff Per Catch Basin (cfs)[4] |
| ***DT-1C*** | DT-1C | 800.0 | 2.3 | 1 | 3 | 792.5 | - | 4.4 | 792.6 | - | 8.5 | 793.1 | - | 19.3 | 792.2 | - | 0.9 |
| ***DT-1D*** | DT-1D | 784.0 | 2.6 | 1 | 3 | 776.4 | - | 4.0 | 776.6 | - | 8.2 | 777.0 | - | 20.0 | 776.2 | - | 0.9 |
| DT-2 | DT-2 | 808.0 | 9.5 | 15 | 45 | 804.8 | - | 1.2 | 805.7 | - | 2.2 | 806.7 | - | 4.9 | 803.6 | - | 0.2 |
| DT-20 | DT-20 | 754.0 | 2.7 | 4 | 12 | 746.2 | - | 1.4 | 746.5 | - | 2.6 | 746.8 | - | 5.7 | 745.6 | - | 0.3 |
| DT-21 | DT-21 | 761.0 | 19.1 | 11 | 33 | 750.8 | - | 2.7 | 753.3 | - | 5.1 | 754.3 | - | 11.7 | 749.2 | - | 0.7 |
| DT-22 | DT-22 | 760.0 | 3.9 | 6 | 18 | 755.7 | - | 0.9 | 756.7 | - | 2.0 | 758.6 | - | 4.9 | 755.4 | - | 0.2 |
| DT-23 | DT-23 | 807.0 | 4.7 | 10 | 30 | 790.4 | - | 0.9 | 805.1 | - | 1.8 | 805.6 | - | 4.0 | 788.6 | - | 0.2 |
| DT-24 | DT-24 | 810.0 | 4.2 | 4 | 12 | 791.2 | - | 2.1 | 807.6 | - | 3.9 | 807.9 | - | 8.9 | 790.5 | - | 0.4 |
| ***DT-25*** | DT-25 | 810.0 | 16.4 | 1 | 3 | 806.8 | - | 24.6 | 807.4 | - | 46.8 | 808.3 | - | 105.1 | 806.6 | - | 6.2 |
| DT-26 | DT-26 | 817.0 | 18.0 | 10 | 30 | 815.2 | - | 2.0 | 815.7 | - | 4.0 | 816.2 | - | 9.6 | 810.6 | - | 0.6 |
| DT-27 | DT-27 | 820.0 | 5.1 | 3 | 9 | 818.2 | - | 3.3 | 818.3 | - | 6.3 | 818.5 | - | 14.3 | 814.6 | - | 0.7 |
| ***DT-29*** | DT-29 | 818.0 | 9.4 | 1 | 3 | 814.0 | - | 10.8 | 815.7 | - | 22.5 | 817.4 | - | 54.9 | 814.0 | - | 3.2 |
| DT-2C10 | DT-2C10 | 819.0 | 6.3 | 7 | 21 | 816.7 | - | 1.7 | 817.3 | - | 3.3 | 817.5 | - | 7.4 | 812.0 | - | 0.4 |
| DT-2C11 | DT-2C11 | 820.0 | 4.1 | 5 | 15 | 815.2 | - | 1.6 | 816.2 | - | 3.1 | 816.6 | - | 6.9 | 809.7 | - | 0.3 |
| ***DT-2C12*** | DT-2C12 | 820.0 | 1.0 | 1 | 3 | 816.0 | - | 2.0 | 816.9 | - | 3.8 | 817.9 | - | 8.5 | 811.3 | - | 0.4 |
| DT-2C13 | DT-2C13 | 820.0 | 8.3 | 5 | 15 | 816.6 | - | 2.7 | 817.5 | - | 5.1 | 818.3 | - | 11.8 | 812.7 | - | 0.6 |
| DT-2C14 | DT-2C14 | 820.0 | 3.9 | 2 | 6 | 817.9 | - | 3.9 | 818.2 | - | 7.3 | 818.3 | - | 16.6 | 813.9 | - | 0.8 |
| DT-2C15 | DT-2C15 | 822.0 | 2.5 | 4 | 12 | 818.2 | - | 1.2 | 818.9 | - | 2.3 | 819.3 | - | 5.3 | 815.1 | - | 0.2 |
| DT-2C16 | DT-2C16 | 822.0 | 1.2 | 4 | 12 | 818.5 | - | 0.6 | 819.1 | - | 1.1 | 819.3 | - | 2.6 | 816.3 | - | 0.1 |
| DT-2C17 | DT-2C17 | 820.0 | 9.4 | 4 | 12 | 813.3 | - | 3.6 | 815.2 | - | 6.8 | 816.3 | - | 15.2 | 809.2 | - | 0.9 |
| DT-2C8 | DT-2C8 | 816.0 | 7.0 | 2 | 6 | 810.6 | - | 6.3 | 812.2 | - | 12.1 | 813.6 | - | 27.5 | 812.4 | - | 1.4 |
| DT-2C9 | DT-2C9 | 818.0 | 15.3 | 11 | 33 | 810.3 | - | 2.5 | 811.1 | - | 4.5 | 812.6 | - | 9.5 | 808.7 | - | 0.6 |
| DT-3 | DT-3 | 813.0 | 6.6 | 2 | 6 | 808.9 | - | 5.8 | 809.7 | - | 11.2 | 811.6 | - | 25.5 | 807.6 | - | 1.3 |
| DT-30 | DT-30 | 756.0 | 8.7 | 2 | 6 | 752.6 | - | 8.8 | 754.8 | - | 16.6 | 755.5 | - | 37.0 | 751.3 | - | 1.7 |
| DT-31 | DT-31 | 808.0 | 5.4 | 11 | 33 | 790.7 | - | 0.9 | 791.0 | - | 1.6 | 800.4 | - | 3.7 | 790.5 | - | 0.2 |
| ***DT-32*** | DT-32 | 810.0 | 19.3 | 1 | 3 | 806.7 | - | 26.9 | 807.5 | - | 51.6 | 808.5 | - | 117.1 | 806.6 | - | 7.2 |
| DT-33 | DT-33 | 802.0 | 6.4 | 4 | 12 | 799.9 | - | 2.9 | 800.3 | - | 5.5 | 800.5 | - | 12.5 | 799.4 | - | 0.6 |
| DT-34 | DT-34 | 802.0 | 3.6 | 6 | 18 | 797.0 | - | 0.9 | 799.2 | - | 1.9 | 799.4 | - | 4.7 | 796.4 | - | 0.2 |
| DT-35 | DT-35 | 798.0 | 5.2 | 6 | 18 | 795.3 | - | 0.8 | 795.5 | - | 2.0 | 795.8 | - | 5.3 | 795.0 | - | 0.3 |
| DT-36 | DT-36 | 800.0 | 3.7 | 6 | 18 | 798.5 | - | 1.0 | 798.7 | - | 2.1 | 799.1 | - | 4.9 | 798.2 | - | 0.2 |
| DT-37 | DT-37 | 801.0 | 9.3 | 13 | 39 | 799.3 | - | 1.1 | 799.5 | - | 2.1 | 799.7 | - | 4.6 | 796.0 | - | 0.3 |
| DT-38 | DT-38 | 811.0 | 5.6 | 6 | 18 | 807.5 | - | 1.8 | 807.9 | - | 3.4 | 808.1 | - | 7.7 | 805.9 | - | 0.4 |
| DT-39 | DT-39 | 812.0 | 12.0 | 9 | 27 | 810.3 | - | 1.9 | 810.5 | - | 3.7 | 810.7 | - | 8.4 | 807.1 | - | 0.5 |
| DT-4 | DT-4 | 804.5 | 9.1 | 11 | 33 | 802.5 | - | 1.4 | 802.7 | - | 2.6 | 803.2 | - | 6.0 | 802.2 | - | 0.3 |
| DT-40 | DT-40 | 810.0 | 13.4 | 4 | 12 | 805.7 | - | 4.8 | 806.6 | - | 9.2 | 808.5 | - | 20.9 | 804.8 | - | 1.3 |
| DT-41 | DT-41 | 809.0 | 4.1 | 10 | 30 | 803.6 | - | 0.8 | 803.7 | - | 1.5 | 804.2 | - | 3.5 | 803.4 | - | 0.2 |
| DT-42 | DT-42 | 819.0 | 5.2 | 4 | 12 | 812.1 | - | 2.0 | 816.0 | - | 4.2 | 816.3 | - | 10.1 | 809.8 | - | 0.5 |
| DT-43 | DT-43 | 760.0 | 8.2 | 18 | 54 | 757.8 | - | 1.1 | 758.3 | - | 2.0 | 758.6 | - | 4.1 | 756.9 | - | 0.2 |
| DT-44 | DT-44 | 770.0 | 7.6 | 10 | 30 | 768.2 | - | 1.5 | 768.4 | - | 2.9 | 768.7 | - | 6.5 | 762.5 | - | 0.3 |
| DT-45 | DT-45 | 792.0 | 6.4 | 8 | 24 | 785.5 | - | 2.1 | 785.5 | - | 3.6 | 785.8 | - | 7.4 | 785.4 | - | 0.3 |
| DT-46 | DT-46 | 768.0 | 6.0 | 11 | 33 | 765.4 | - | 1.7 | 766.3 | - | 2.8 | 766.5 | - | 5.3 | 762.4 | - | 0.2 |
| DT-47 | DT-47 | 802.0 | 6.2 | 8 | 24 | 794.6 | - | 1.4 | 797.2 | - | 2.6 | 797.5 | - | 5.9 | 790.9 | - | 0.3 |
| DT-48 | DT-48 | 793.0 | 6.4 | 8 | 24 | 789.3 | - | 1.6 | 791.2 | - | 2.9 | 791.5 | - | 6.6 | 787.6 | - | 0.3 |
| DT-49 | DT-49 | 809.0 | 5.4 | 4 | 12 | 802.2 | - | 2.6 | 802.7 | - | 5.0 | 805.5 | - | 11.2 | 801.7 | - | 0.5 |
| DT-5 | DT-5 | 813.0 | 6.4 | 4 | 12 | 809.6 | - | 3.0 | 811.4 | - | 5.8 | 812.1 | - | 13.1 | 808.2 | - | 0.6 |
| DT-50 | DT-50 | 807.0 | 6.1 | 5 | 15 | 800.0 | - | 2.3 | 801.0 | - | 4.4 | 805.1 | - | 9.9 | 799.3 | - | 0.5 |
| DT-51 | DT-51 | 801.0 | 6.3 | 8 | 24 | 796.8 | - | 1.5 | 799.2 | - | 2.9 | 799.5 | - | 6.5 | 795.8 | - | 0.3 |
| DT-52 | DT-52 | 813.0 | 5.8 | 7 | 21 | 810.5 | - | 1.5 | 811.4 | - | 2.9 | 811.7 | - | 6.5 | 808.0 | - | 0.3 |
| DT-53 | DT-53 | 816.0 | 5.8 | 6 | 18 | 813.1 | - | 1.7 | 813.3 | - | 3.3 | 813.6 | - | 7.5 | 810.7 | - | 0.4 |
| DT-54 | DT-54 | 816.0 | 4.2 | 4 | 12 | 814.1 | - | 2.1 | 814.2 | - | 4.0 | 814.4 | - | 8.9 | 810.8 | - | 0.4 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Downtown**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in.] | | | 10-Year Storm [4.20-in.] | | | 100-Year Storm [7.40-in.] | | | 10-Day Snowmelt [7.20-in.] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed[1] | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)3 | Maximum Depth Above Manhole (ft)[3] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)4 | Maximum Depth Above Manhole (ft)[4] | Max Runoff Per Catch Basin (cfs)[4] |
| DT-55 | DT-55 | 817.0 | 4.2 | 2 | 6 | 811.8 | - | 4.1 | 815.1 | - | 7.8 | 815.4 | - | 17.5 | 811.3 | - | 0.8 |
| DT-56 | DT-56 | 821.0 | 6.4 | 4 | 12 | 816.2 | - | 2.2 | 818.7 | - | 4.5 | 819.4 | - | 11.1 | 815.6 | - | 0.6 |
| DT-57 | DT-57 | 822.5 | 3.8 | 5 | 15 | 817.9 | - | 1.1 | 819.4 | - | 2.3 | 820.7 | - | 5.6 | 817.1 | - | 0.3 |
| DT-58 | DT-58 | 821.0 | 3.6 | 4 | 12 | 819.1 | - | 1.5 | 819.2 | - | 3.0 | 819.3 | - | 7.2 | 818.7 | - | 0.3 |
| DT-59 | DT-59 | 747.0 | 2.9 | 8 | 24 | 741.5 | - | 1.1 | 741.6 | - | 1.8 | 745.2 | - | 3.5 | 741.2 | - | 0.2 |
| DT-6 | DT-6 | 809.0 | 8.6 | 5 | 15 | 806.6 | - | 2.8 | 807.6 | - | 5.3 | 808.0 | - | 12.2 | 802.9 | - | 0.7 |
| DT-60 | DT-60 | 750.0 | 4.3 | 8 | 24 | 748.2 | - | 1.7 | 748.4 | - | 2.7 | 748.7 | - | 5.2 | 745.1 | - | 0.2 |
| DT-61 | DT-61 | 757.0 | 7.2 | 14 | 42 | 750.5 | - | 1.6 | 751.1 | - | 2.6 | 752.7 | - | 5.0 | 749.8 | - | 0.2 |
| DT-62 | DT-62 | 781.0 | 2.2 | 2 | 6 | 779.4 | - | 3.6 | 779.5 | - | 5.7 | 779.7 | - | 11.0 | 779.3 | - | 0.5 |
| DT-63 | DT-63 | 792.0 | 7.5 | 9 | 27 | 788.8 | - | 1.6 | 790.3 | - | 3.1 | 790.7 | - | 6.7 | 786.7 | - | 0.3 |
| DT-64 | DT-64 | 746.0 | 10.4 | 8 | 24 | 742.2 | - | 3.6 | 742.4 | - | 6.1 | 742.7 | - | 12.3 | 741.0 | - | 0.6 |
| DT-65 | DT-65 | 775.0 | 5.9 | 4 | 12 | 770.4 | - | 3.6 | 770.9 | - | 6.4 | 773.4 | - | 13.3 | 769.7 | - | 0.6 |
| DT-66 | DT-66 | 788.0 | 12.9 | 7 | 21 | 786.4 | - | 3.4 | 786.5 | - | 6.0 | 786.8 | - | 12.6 | 786.2 | - | 0.8 |
| DT-67 | DT-67 | 797.0 | 18.4 | 4 | 12 | 794.8 | - | 6.6 | 795.2 | - | 12.7 | 795.5 | - | 28.7 | 794.3 | - | 1.7 |
| DT-68 | DT-68 | 822.0 | 11.8 | 7 | 21 | 817.5 | - | 2.4 | 817.8 | - | 4.6 | 818.4 | - | 10.4 | 816.8 | - | 0.6 |
| DT-69 | DT-69 | 738.0 | 7.0 | 28 | 84 | 732.8 | - | 0.9 | 733.0 | - | 1.4 | 733.4 | - | 2.5 | 732.3 | - | 0.1 |
| DT-7 | DT-7 | 815.0 | 6.5 | 3 | 9 | 811.9 | - | 4.0 | 813.2 | - | 7.7 | 813.9 | - | 17.4 | 810.2 | - | 0.8 |
| DT-70 | DT-70 | 763.0 | 7.3 | 9 | 27 | 757.5 | - | 1.9 | 757.6 | - | 3.4 | 758.0 | - | 7.2 | 757.3 | - | 0.3 |
| DT-71 | DT-71 | 775.0 | 15.9 | 16 | 48 | 771.3 | - | 1.7 | 771.4 | - | 3.1 | 771.8 | - | 6.6 | 771.1 | - | 0.4 |
| DT-72 | DT-72 | 805.0 | 8.2 | 13 | 39 | 799.3 | - | 1.1 | 800.5 | - | 2.2 | 803.5 | - | 4.9 | 799.4 | - | 0.2 |
| DT-73 | DT-73 | 799.0 | 5.7 | 6 | 18 | 793.8 | - | 1.9 | 794.3 | - | 3.5 | 795.3 | - | 8.0 | 793.4 | - | 0.4 |
| DT-74 | DT-74 | 818.0 | 5.6 | 5 | 15 | 813.4 | - | 2.0 | 816.2 | - | 3.8 | 816.4 | - | 8.7 | 812.5 | - | 0.4 |
| DT-75 | DT-75 | 818.5 | 5.9 | 5 | 15 | 812.3 | - | 2.0 | 814.9 | - | 3.8 | 816.4 | - | 8.7 | 810.9 | - | 0.5 |
| DT-76 | DT-76 | 819.0 | 5.6 | 6 | 18 | 805.4 | - | 1.6 | 805.5 | - | 3.1 | 805.7 | - | 6.9 | 805.2 | - | 0.4 |
| DT-77 | DT-77 | 715.0 | 5.0 | 3 | 9 | 708.3 | - | 0.8 | 708.3 | - | 2.9 | 708.5 | - | 9.4 | 708.1 | - | 0.4 |
| ***DT-78*** | DT-78 | 710.0 | 5.4 | 1 | 3 | 704.2 | - | 3.8 | 704.5 | - | 10.7 | 706.6 | - | 32.1 | 703.8 | - | 1.5 |
| DT-8 | DT-8 | 754.0 | 37.2 | 18 | 54 | 751.1 | - | 3.2 | 752.3 | - | 6.0 | 752.8 | - | 13.4 | 750.1 | - | 0.8 |
| DT-80 | DT-80 | 739.0 | 4.1 | 16 | 48 | 736.7 | - | 0.8 | 737.1 | - | 1.3 | 737.3 | - | 2.5 | 733.4 | - | 0.1 |
| DT-81 | DT-81 | 746.0 | 7.5 | 7 | 21 | 744.4 | - | 2.5 | 744.5 | - | 4.5 | 744.6 | - | 9.6 | 741.1 | - | 0.4 |
| DT-82 | DT-82 | 749.0 | 11.3 | 5 | 15 | 746.0 | - | 4.4 | 746.8 | - | 7.9 | 747.4 | - | 17.0 | 744.6 | - | 0.9 |
| DT-83 | DT-83 | 748.0 | 10.5 | 21 | 63 | 736.2 | - | 1.2 | 736.3 | - | 2.1 | 736.7 | - | 4.3 | 733.3 | - | 0.2 |
| DT-84 | DT-84 | 735.0 | 10.1 | 13 | 39 | 706.3 | - | 1.4 | 706.8 | - | 2.5 | 707.1 | - | 5.6 | 706.4 | - | 0.3 |
| DT-85 | DT-85 | 752.0 | 7.0 | 10 | 30 | 750.3 | - | 1.4 | 750.4 | - | 2.6 | 750.5 | - | 5.9 | 746.8 | - | 0.3 |
| DT-86 | DT-86 | 753.0 | 10.8 | 9 | 27 | 751.4 | - | 1.8 | 751.9 | - | 3.5 | 752.4 | - | 7.8 | 749.1 | - | 0.5 |
| DT-87 | DT-87 | 745.0 | 26.1 | 39 | 117 | 733.5 | - | 1.6 | 734.2 | - | 2.6 | 736.2 | - | 5.0 | 732.5 | - | 0.3 |
| DT-89 | DT-89 | 731.0 | 6.8 | 5 | 15 | 726.1 | - | 3.9 | 727.0 | - | 6.6 | 728.9 | - | 13.0 | 724.9 | - | 0.6 |
| DT-9 | DT-9 | 805.0 | 3.5 | 4 | 12 | 782.2 | - | 1.7 | 782.7 | - | 3.3 | 789.5 | - | 7.4 | 781.8 | - | 0.3 |
| DT-90 | DT-90 | 720.0 | 7.0 | 4 | 12 | 706.2 | - | 2.2 | 706.6 | - | 4.9 | 707.3 | - | 12.6 | 705.5 | - | 0.6 |
| DT-91 | DT-91 | 780.0 | 7.7 | 11 | 33 | 768.4 | - | 1.4 | 770.8 | - | 2.6 | 771.8 | - | 5.9 | 767.5 | - | 0.3 |
| DT-92 | DT-92 | 758.0 | 12.3 | 5 | 15 | 755.5 | - | 3.8 | 756.0 | - | 7.1 | 756.6 | - | 15.9 | 752.8 | - | 0.9 |
| DT-93 | DT-93 | 768.0 | 5.4 | 7 | 21 | 762.8 | - | 1.5 | 765.5 | - | 2.9 | 767.1 | - | 6.5 | 762.4 | - | 0.3 |
| DT-94 | DT-94 | 773.0 | 6.3 | 6 | 18 | 771.3 | - | 1.7 | 771.7 | - | 3.5 | 772.1 | - | 8.3 | 768.4 | - | 0.4 |
| DT-95 | DT-95 | 766.0 | 5.8 | 4 | 12 | 760.2 | - | 2.6 | 760.7 | - | 5.2 | 761.6 | - | 11.9 | 758.9 | - | 0.5 |
| DT-96 | DT-96 | 756.0 | 3.0 | 3 | 9 | 752.3 | - | 2.2 | 752.4 | - | 4.1 | 753.0 | - | 8.8 | 752.2 | - | 0.4 |
| DT-97 | DT-97 | 755.0 | 25.4 | 22 | 66 | 742.3 | - | 2.6 | 743.2 | - | 4.3 | 747.5 | - | 8.4 | 741.1 | - | 0.5 |
| ***DT-98*** | DT-98 | 757.0 | 2.1 | 1 | 3 | 752.1 | - | 6.8 | 754.1 | - | 10.9 | 754.6 | - | 21.0 | 749.1 | - | 1.0 |
| DT-99 | DT-99 | 756.0 | 12.4 | 8 | 24 | 752.1 | - | 3.3 | 753.9 | - | 6.0 | 754.5 | - | 12.8 | 748.9 | - | 0.6 |
| DT-2C9 | Node1149 | 814.5 | 15.3 | 11 | 33 | 810.4 | - | 0.0 | 811.1 | - | 0.0 | 812.3 | - | 0.0 | 808.7 | - | 0.0 |
| DT-26 | Node1151 | 820.0 | 18.0 | 10 | 30 | 815.1 | - | 0.0 | 815.6 | - | 0.0 | 817.4 | - | 0.0 | 812.8 | - | 0.0 |
| DT-8 | Node1152 | 763.0 | 37.2 | 18 | 54 | 759.1 | - | 0.0 | 759.6 | - | 0.0 | 761.3 | - | 0.0 | 758.6 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Downtown**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2-Year Storm [2.90-in.] | | | 10-Year Storm [4.20-in.] | | | 100-Year Storm [7.40-in.] | | | 10-Day Snowmelt [7.20-in.] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed[1] | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)3 | Maximum Depth Above Manhole (ft)[3] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)4 | Maximum Depth Above Manhole (ft)[4] | Max Runoff Per Catch Basin (cfs)[4] |
| DT-8 | Node1153 | 795.0 | 37.2 | 18 | 54 | 775.7 | - | 0.0 | 776.2 | - | 0.0 | 784.3 | - | 0.0 | 775.2 | - | 0.0 |
| DT-1 | Node1154 | 750.0 | 91.2 | 123 | 369 | 719.3 | - | 0.0 | 719.8 | - | 0.0 | 720.9 | - | 0.0 | 718.7 | - | 0.0 |
| DT-101 | Node1158 | 772.1 | 9.4 | 10 | 30 | 762.7 | - | 0.0 | 765.5 | - | 0.0 | 770.5 | - | 0.0 | 761.3 | - | 0.0 |
| DT-97 | Node1160 | 755.0 | 25.4 | 22 | 66 | 749.9 | - | 0.0 | 750.2 | - | 0.0 | 750.9 | - | 0.0 | 749.2 | - | 0.0 |
| DT-101 | Node1165 | 764.0 | 9.4 | 10 | 30 | 761.2 | - | 0.0 | 762.3 | - | 0.0 | 762.4 | - | 0.0 | 758.6 | - | 0.0 |
| ***DT-10A7*** | Node1168 | 792.0 | 8.0 | 1 | 3 | 792.0 | 0.0 | 0.0 | 792.7 | 0.7 | 0.0 | 793.4 | 1.4 | 0.0 | 792.0 | 0.0 | 0.0 |
| ***DT-10A7*** | Node1169 | 766.0 | 8.0 | 1 | 3 | 766.6 | 0.6 | 0.0 | 767.0 | 1.0 | 0.0 | 770.5 | 4.5 | 0.0 | 766.3 | 0.3 | 0.0 |
| ***DT-10A7*** | Node1170 | 770.0 | 8.0 | 1 | 3 | 762.7 | - | 0.0 | 766.1 | - | 0.0 | 770.5 | 0.5 | 0.0 | 761.3 | - | 0.0 |
| DT-97 | Node1172 | 754.0 | 25.4 | 22 | 66 | 750.1 | - | 0.0 | 750.5 | - | 0.0 | 752.5 | - | 0.0 | 746.3 | - | 0.0 |
| DT-97 | Node1173 | 755.0 | 25.4 | 22 | 66 | 749.8 | - | 0.0 | 750.3 | - | 0.0 | 750.9 | - | 0.0 | 745.9 | - | 0.0 |
| DT-95 | Node1174 | 765.0 | 5.8 | 4 | 12 | 760.3 | - | 0.0 | 763.3 | - | 0.0 | 763.4 | - | 0.0 | 759.5 | - | 0.0 |
| DT-90 | Node1176 | 730.0 | 7.0 | 4 | 12 | 725.1 | - | 0.0 | 725.3 | - | 0.0 | 725.7 | - | 0.0 | 724.3 | - | 0.0 |
| DT-95 | Node1177 | 771.0 | 5.8 | 4 | 12 | 765.8 | - | 0.0 | 769.4 | - | 0.0 | 769.8 | - | 0.0 | 764.4 | - | 0.0 |
| DT-112 | Node1178 | 782.0 | 8.0 | 7 | 21 | 778.1 | - | 0.0 | 780.4 | - | 0.0 | 780.7 | - | 0.0 | 777.0 | - | 0.0 |
| DT-77 | Node1181 | 725.0 | 5.0 | 3 | 9 | 718.1 | - | 0.0 | 721.6 | - | 0.0 | 723.6 | - | 0.0 | 716.0 | - | 0.0 |
| DT-91 | Node1182 | 766.0 | 7.7 | 11 | 33 | 760.2 | - | 0.0 | 760.2 | - | 0.0 | 760.2 | - | 0.0 | 756.2 | - | 0.0 |
| DT-72 | Node1184 | 796.0 | 8.2 | 13 | 39 | 794.4 | - | 0.0 | 794.6 | - | 0.0 | 794.8 | - | 0.0 | 794.3 | - | 0.0 |
| DT-46 | Node1185 | 760.0 | 6.0 | 11 | 33 | 755.3 | - | 0.0 | 756.2 | - | 0.0 | 756.5 | - | 0.0 | 754.7 | - | 0.0 |
| DT-1 | Node1209 | 770.0 | 91.2 | 123 | 369 | 760.6 | - | 0.0 | 761.0 | - | 0.0 | 762.1 | - | 0.0 | 760.4 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

[1]

**Eagle Creek and Rice Lake**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2 year [2.90-in] | | | 10 year [4.20-in] | | | 100 year [7.90-in] | | | 10 day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed[1] | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)[2] | Max Runoff Per Catch Basin (cfs)[2][3] | Max Water Elevation (ft)3 | Maximum Depth Above Manhole (ft)[3] | Max Runoff Per Catch Basin (cfs)[3] | Max Water Elevation (ft)4 | Maximum Depth Above Manhole (ft)[4] | Max Runoff Per Catch Basin (cfs)[4] |
| EC-1 | EC-1 | 740.0 | 70.9 | 19 | 57 | 729.7 | - | 8.1 | 730.8 | - | 13.3 | 734.3 | - | 26.1 | 730.2 | - | 1.6 |
| EC-10 | EC-10 | 739.1 | 56.7 | 79 | 237 | 736.7 | - | 1.1 | 738.0 | - | 2.0 | 739.5 | 0.4 | 4.1 | 739.1 | - | 0.3 |
| ***EC-11*** | EC-11 | 754.0 | 30.3 | 1 | 3 | 746.5 | - | 76.2 | 748.2 | - | 122.7 | 752.4 | - | 236.1 | 746.6 | - | 13.7 |
| EC-16 | EC-16 | 760.0 | 21.2 | 21 | 63 | 749.1 | - | 1.8 | 750.1 | - | 3.4 | 752.7 | - | 7.5 | 749.5 | - | 0.4 |
| EC-16A | EC-16A | 748.0 | 13.6 | 19 | 57 | 749.1 | 1.1 | 1.4 | 750.1 | 2.1 | 2.6 | 752.7 | 4.7 | 5.9 | 749.5 | 1.5 | 0.3 |
| EC-17 | EC-17 | 755.0 | 9.9 | 3 | 9 | 751.1 | - | 5.9 | 752.0 | - | 11.5 | 752.8 | - | 26.3 | 750.7 | - | 1.3 |
| EC-1 | EC-1A | 740.0 | 70.9 | 19 | 57 | 721.2 | - | 0.0 | 721.2 | - | 0.0 | 721.2 | - | 0.0 | 721.2 | - | 0.0 |
| ***EC-1B*** | EC-1B | 738.0 | 80.9 | 1 | 3 | 736.5 | - | 48.5 | 736.9 | - | 106.8 | 738.0 | - | 273.1 | 737.8 | - | 25.4 |
| ***EC-1C*** | EC-1C | 736.0 | 32.7 | 1 | 3 | 736.2 | 0.2 | 20.5 | 736.3 | 0.3 | 48.2 | 736.8 | 0.8 | 130.8 | 736.1 | 0.1 | 9.9 |
| EC-20 | EC-20 | 756.0 | 31.6 | 17 | 51 | 753.2 | - | 1.3 | 754.1 | - | 3.1 | 754.5 | - | 8.3 | 753.4 | - | 0.6 |
| ***EC-21*** | EC-21 | 760.0 | 31.9 | 1 | 3 | 756.0 | - | 17.4 | 757.7 | - | 49.1 | 759.0 | - | 147.8 | 755.8 | - | 8.5 |
| ***EC-23*** | EC-23 | 750.0 | 5.1 | 1 | 3 | 750.1 | 0.1 | 5.9 | 750.2 | 0.2 | 13.7 | 750.7 | 0.7 | 36.3 | 750.1 | 0.1 | 1.6 |
| ***EC-24*** | EC-24 | 742.0 | 16.6 | 1 | 3 | 732.5 | - | 54.6 | 733.0 | - | 86.5 | 734.0 | - | 164.0 | 732.4 | - | 7.7 |
| EC-3 | EC-3 | 742.0 | 32.8 | 2 | 6 | 736.9 | - | 43.6 | 738.8 | - | 70.7 | 740.7 | - | 136.7 | 738.5 | - | 7.4 |
| ***EC-4*** | EC-4 | 742.0 | 4.2 | 1 | 3 | 740.0 | - | 13.3 | 741.1 | - | 21.4 | 742.1 | 0.1 | 41.2 | 740.5 | - | 1.9 |
| ***EC-7*** | EC-7 | 745.0 | 4.8 | 1 | 3 | 738.0 | - | 15.0 | 739.0 | - | 24.2 | 741.5 | - | 46.5 | 739.1 | - | 2.2 |
| EC-8 | EC-8 | 744.0 | 14.2 | 25 | 75 | 736.7 | - | 0.9 | 738.0 | - | 1.6 | 739.5 | - | 3.8 | 739.1 | - | 0.2 |
| EC-9 | EC-9 | 744.0 | 40.3 | 14 | 42 | 738.2 | - | 7.1 | 739.3 | - | 11.3 | 741.8 | - | 21.5 | 739.1 | - | 1.3 |
| ***BLB2L-2*** | EC-BLB2L-2 | 756.0 | 5.8 | 1 | 3 | 756.2 | 0.2 | 14.2 | 756.3 | 0.3 | 25.1 | 756.4 | 0.4 | 52.7 | 756.1 | 0.1 | 2.4 |
| ***BLB2M-2*** | EC-BLB2M-2 | 766.0 | 0.3 | 1 | 3 | 766.1 | 0.1 | 0.4 | 766.1 | 0.1 | 0.9 | 766.1 | 0.1 | 2.3 | 766.0 | 0.0 | 0.1 |
| RL-2 | Node1224 | 747.0 | 52.7 | 9 | 27 | 744.5 | - | 0.0 | 744.8 | - | 0.0 | 745.9 | - | 0.0 | 744.6 | - | 0.0 |
| EC-9 | Node1225 | 750.0 | 40.3 | 14 | 42 | 741.0 | - | 0.0 | 741.2 | - | 0.0 | 742.9 | - | 0.0 | 741.1 | - | 0.0 |
| EC-3 | Node1227 | 737.0 | 32.8 | 2 | 6 | 734.1 | - | 0.0 | 734.3 | - | 0.0 | 736.2 | - | 0.0 | 734.3 | - | 0.0 |
| EC-1 | Node1228 | 731.2 | 70.9 | 19 | 57 | 729.2 | - | 0.0 | 729.4 | - | 0.0 | 729.6 | - | 0.0 | 729.3 | - | 0.0 |
| EC-10 | Node1230 | 740.0 | 56.7 | 79 | 237 | 735.9 | - | 0.0 | 736.1 | - | 0.0 | 736.3 | - | 0.0 | 736.1 | - | 0.0 |
| ***RL-1*** | RL-1 | 760.0 | 3.7 | 1 | 3 | 737.4 | - | 13.0 | 737.8 | - | 20.1 | 738.5 | - | 37.5 | 738.4 | - | 1.8 |
| ***RL-1A*** | RL-1A | 740.0 | 171.2 | 1 | 3 | 733.4 | - | 0.0 | 734.3 | - | 0.0 | 735.1 | - | 0.0 | 733.8 | - | 0.0 |
| RL-2 | RL-2 | 750.0 | 52.7 | 9 | 27 | 737.9 | - | 12.5 | 738.8 | - | 20.4 | 740.9 | - | 39.8 | 738.3 | - | 2.6 |
| RL-3 | RL-3 | 748.0 | 79.4 | 67 | 201 | 738.4 | - | 1.6 | 739.9 | - | 2.9 | 742.9 | - | 6.1 | 739.1 | - | 0.5 |
| RL-4 | RL-4 | 750.0 | 33.7 | 72 | 216 | 739.4 | - | 0.5 | 741.1 | - | 1.1 | 745.1 | - | 2.6 | 739.9 | - | 0.2 |
| RL-5 | RL-5 | 748.0 | 88.5 | 80 | 240 | 741.4 | - | 0.7 | 742.5 | - | 1.6 | 746.1 | - | 4.0 | 741.6 | - | 0.4 |
| RL-6 | RL-6 | 752.0 | 31.8 | 28 | 84 | 745.3 | - | 0.9 | 746.7 | - | 2.0 | 750.6 | - | 5.1 | 745.4 | - | 0.4 |
| ***RL-7*** | RL-7 | 740.0 | 44.5 | 1 | 3.0 | 740.3 | 0.3 | 10.9 | 740.6 | 0.6 | 35.4 | 741.1 | 1.1 | 122.8 | 740.3 | 0.3 | 10.2 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Upper Valley**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2 year [2.90-in] | | | 10 year [4.20-in] | | | 100 year [7.90-in] | | | 10 day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***MP2-G*** | 2H2G | 941.0 | 53.7 | 1 | 3 | 918.0 | - | 0.0 | 918.0 | - | 0.0 | 921.1 | - | 0.0 | 918.0 | - | 0.0 |
| ***MP2-I*** | 2J2I | 914.0 | 26.2 | 1 | 3 | 907.7 | - | 0.0 | 907.8 | - | 0.0 | 907.9 | - | 0.0 | 907.8 | - | 0.0 |
| ***MP2-L*** | 2M2L | 924.0 | 33.4 | 1 | 3 | 918.9 | - | 0.0 | 919.3 | - | 0.0 | 919.8 | - | 0.0 | 919.4 | - | 0.0 |
| ***MP2-N*** | 2O2N | 974.0 | 199.5 | 1 | 3 | 966.2 | - | 0.0 | 966.2 | - | 0.0 | 966.3 | - | 0.0 | 966.2 | - | 0.0 |
| ***MP2-N*** | 2P2N2n | 970.0 | 199.5 | 1 | 3 | 961.3 | - | 0.0 | 961.4 | - | 0.0 | 961.4 | - | 0.0 | 961.2 | - | 0.0 |
| ***MP2-N*** | 2R2N1 | 982.0 | 199.5 | 1 | 3 | 968.0 | - | 0.0 | 968.0 | - | 0.0 | 968.0 | - | 0.0 | 968.0 | - | 0.0 |
| ***MP2-N*** | 2R2N2n | 934.0 | 199.5 | 1 | 3 | 930.0 | - | 0.0 | 930.0 | - | 0.0 | 930.0 | - | 0.0 | 930.0 | - | 0.0 |
| ***MP2-T*** | 2V2T | 968.0 | 81.5 | 1 | 3 | 962.3 | - | 0.0 | 962.5 | - | 0.0 | 962.7 | - | 0.0 | 962.2 | - | 0.0 |
| ***MP5-C*** | 5D5C2n | 956.0 | 50.2 | 1 | 3 | 943.8 | - | 0.0 | 944.8 | - | 0.0 | 946.8 | - | 0.0 | 945.3 | - | 0.0 |
| ***MP5-A*** | 5G5A | 954.0 | 286.7 | 1 | 3 | 944.6 | - | 0.0 | 944.7 | - | 0.0 | 944.8 | - | 0.0 | 944.7 | - | 0.0 |
| ***MP5-L*** | 5J5I | 954.0 | 251.2 | 1 | 3 | 946.6 | - | 0.0 | 946.6 | - | 0.0 | 946.6 | - | 0.0 | 946.6 | - | 0.0 |
| ***MP5-L*** | 5K5I | 952.5 | 251.2 | 1 | 3 | 945.3 | - | 0.0 | 945.3 | - | 0.0 | 945.3 | - | 0.0 | 945.3 | - | 0.0 |
| ***MP5-M*** | 5N5M | 954.0 | 81.1 | 1 | 3 | 950.7 | - | 0.0 | 951.1 | - | 0.0 | 951.4 | - | 0.0 | 951.2 | - | 0.0 |
| ***MP5-N*** | 5P5N | 968.0 | 143.4 | 1 | 3 | 962.1 | - | 0.0 | 962.2 | - | 0.0 | 962.4 | - | 0.0 | 962.2 | - | 0.0 |
| ***MP5-N*** | 5Q5N | 968.0 | 143.4 | 1 | 3 | 958.9 | - | 0.0 | 959.1 | - | 0.0 | 959.5 | - | 0.0 | 958.9 | - | 0.0 |
| ***LV1-I*** | LV1-I | 822.0 | 10.5 | 1 | 3 | 822.2 | 0.2 | 36.3 | 822.3 | 0.3 | 56.5 | 822.5 | 0.5 | 105.6 | 822.1 | 0.1 | 5.0 |
| ***LV1-J*** | LV1-J | 838.0 | 23.1 | 1 | 3 | 838.2 | 0.2 | 57.4 | 838.3 | 0.3 | 95.5 | 838.5 | 0.5 | 189.6 | 838.1 | 0.1 | 10.3 |
| ***LV1-L*** | LV1-L | 885.0 | 47.2 | 1 | 3 | 870.5 | - | 42.7 | 871.8 | - | 89.1 | 873.2 | - | 217.9 | 870.1 | - | 16.0 |
| ***LV1-M*** | LV1-M | 939.0 | 49.4 | 1 | 3 | 885.1 | - | 40.7 | 886.1 | - | 87.7 | 887.2 | - | 220.3 | 885.8 | - | 16.3 |
| ***LV1-M*** | LV1-M1 | 941.0 | 49.4 | 1 | 3 | 935.0 | - | 0.0 | 935.0 | - | 0.0 | 935.0 | - | 0.0 | 935.0 | - | 0.0 |
| ***LV2-A*** | LV2-A | 814.0 | 20.6 | 1 | 3 | 814.4 | 0.4 | 72.0 | 814.6 | 0.6 | 111.6 | 815.0 | 1.0 | 207.5 | 814.2 | 0.2 | 9.7 |
| ***LV2-B*** | LV2-B | 830.0 | 4.8 | 1 | 3 | 830.3 | 0.3 | 12.6 | 830.4 | 0.4 | 21.7 | 830.6 | 0.6 | 44.5 | 830.1 | 0.1 | 2.1 |
| ***LV2-C*** | LV2-C | 862.0 | 33.2 | 1 | 3 | 859.2 | - | 24.3 | 860.4 | - | 55.5 | 862.1 | 0.1 | 145.7 | 862.0 | 0.0 | 10.2 |
| ***LV2-D*** | LV2-D | 808.0 | 4.3 | 1 | 3 | 808.1 | 0.1 | 1.3 | 808.1 | 0.1 | 6.0 | 808.2 | 0.2 | 22.1 | 808.0 | 0.0 | 1.0 |
| ***LV2-E*** | LV2-E | 794.0 | 42.4 | 1 | 3 | 790.0 | - | 55.2 | 790.8 | - | 109.0 | 793.1 | - | 253.8 | 792.7 | - | 15.5 |
| ***LV2-F*** | LV2-F | 796.0 | 28.4 | 1 | 3 | 796.2 | 0.2 | 35.8 | 796.3 | 0.3 | 72.1 | 796.5 | 0.5 | 171.1 | 796.1 | 0.1 | 10.0 |
| ***LV2-G*** | LV2-G | 808.0 | 5.3 | 1 | 3 | 808.1 | 0.1 | 20.2 | 808.1 | 0.1 | 30.2 | 808.2 | 0.2 | 54.3 | 808.0 | 0.0 | 2.6 |
| ***LV2-H*** | LV2-H | 802.0 | 21.4 | 1 | 3 | 802.2 | 0.2 | 24.9 | 802.2 | 0.2 | 54.2 | 802.4 | 0.4 | 137.4 | 802.1 | 0.1 | 7.3 |
| ***LV2-I*** | LV2-I | 848.0 | 23.4 | 1 | 3 | 848.2 | 0.2 | 42.1 | 848.3 | 0.3 | 77.2 | 848.5 | 0.5 | 167.8 | 848.1 | 0.1 | 9.5 |
| ***LV2-Z*** | LV2-Z | 988.0 | 20.3 | 1 | 3 | 983.6 | - | 15.9 | 984.4 | - | 37.6 | 985.9 | - | 101.2 | 985.7 | - | 6.3 |
| ***LV7-G*** | LV7-G | 980.0 | 161.0 | 1 | 3 | 980.4 | 0.4 | 71.1 | 980.7 | 0.7 | 163.8 | 981.2 | 1.2 | 441.9 | 980.3 | 0.3 | 47.5 |
| ***LV7-H*** | LV7-H | 960.0 | 139.1 | 1 | 3 | 959.3 | - | 67.3 | 960.3 | 0.3 | 152.5 | 961.1 | 1.1 | 399.8 | 960.3 | 0.3 | 42.3 |
| ***LV7-I*** | LV7-I | 918.0 | 52.0 | 1 | 3 | 918.2 | 0.2 | 48.0 | 918.4 | 0.4 | 100.3 | 918.9 | 0.9 | 245.8 | 918.2 | 0.2 | 17.5 |
| ***LV7-J*** | LV7-J | 878.0 | 99.7 | 1 | 3 | 878.5 | 0.5 | 46.6 | 879.0 | 1.0 | 113.1 | 879.9 | 1.9 | 316.8 | 878.5 | 0.5 | 28.5 |
| ***LV7-K*** | LV7-K | 892.0 | 46.6 | 1 | 3 | 892.2 | 0.2 | 29.0 | 892.4 | 0.4 | 70.3 | 893.2 | 1.2 | 192.9 | 892.3 | 0.3 | 13.7 |
| ***LV7-L*** | LV7-L | 920.0 | 267.8 | 1 | 3 | 920.4 | 0.4 | 95.5 | 920.6 | 0.6 | 228.0 | 921.2 | 1.2 | 633.1 | 920.3 | 0.3 | 75.2 |
| ***LV7-S*** | LV7-R | 872.0 | 94.0 | 1 | 3 | 868.7 | - | 48.8 | 872.0 | - | 123.5 | 873.8 | 1.8 | 350.6 | 872.4 | 0.4 | 32.2 |
| ***LV7-S*** | LV7-S | 910.0 | 94.0 | 1 | 3 | 908.8 | - | 32.3 | 910.2 | 0.2 | 85.5 | 910.6 | 0.6 | 257.9 | 910.1 | 0.1 | 24.7 |
| ***MP-BLD14C*** | MP-BLD14C | 980.0 | 2.7 | 1 | 3 | 974.0 | - | 0.0 | 974.0 | - | 0.0 | 974.0 | - | 0.0 | 974.0 | - | 0.0 |
| P-34 | MP-BLD18A | 850.0 | 127.3 | 253 | 759 | 830.0 | - | 0.8 | 830.1 | - | 3.4 | 830.1 | - | 12.0 | 830.0 | - | 0.5 |
| ***MP1-N*** | MP1-A1 | 805.0 | 52.5 | 1 | 3 | 794.7 | - | 0.0 | 795.0 | - | 0.0 | 796.8 | - | 0.0 | 794.7 | - | 0.0 |
| ***MP1-A2*** | MP1-A2 | 875.0 | 148.8 | 1 | 3 | 797.9 | - | 133.3 | 798.7 | - | 265.7 | 800.2 | - | 625.1 | 797.5 | - | 52.1 |
| ***MP1-AA*** | MP1-AA | 808.0 | 10.3 | 1 | 3 | 798.8 | - | 35.1 | 800.7 | - | 55.0 | 803.8 | - | 103.2 | 801.6 | - | 4.8 |
| ***MP1-B2*** | MP1-AB | 808.0 | 90.9 | 1 | 3 | 803.9 | - | 59.1 | 804.4 | - | 93.3 | 806.4 | - | 176.4 | 804.4 | - | 8.3 |
| ***MP1-AC*** | MP1-AC | 810.0 | 24.7 | 1 | 3 | 800.9 | - | 43.9 | 801.9 | - | 78.6 | 803.8 | - | 167.3 | 801.6 | - | 9.9 |
| ***MP1-AD*** | MP1-AD | 814.0 | 34.7 | 1 | 3 | 806.2 | - | 43.8 | 807.4 | - | 87.9 | 809.3 | - | 207.5 | 809.0 | - | 12.4 |
| ***MP1-AD*** | MP1-AD Outfall | 814.0 | 34.7 | 1 | 3 | 770.0 | - | 0.0 | 770.0 | - | 0.0 | 770.0 | - | 0.0 | 770.0 | - | 0.0 |
| ***MP1-B*** | MP1-B | 808.0 | 131.1 | 1 | 3 | 801.2 | - | 216.1 | 803.5 | - | 361.0 | 808.1 | 0.1 | 719.6 | 807.1 | - | 55.6 |
| ***MP1-B2*** | MP1-B2 | 806.0 | 90.9 | 1 | 3 | 798.6 | - | 143.4 | 799.6 | - | 246.7 | 800.7 | - | 505.5 | 797.9 | - | 37.6 |
| ***MP1-C*** | MP1-C | 864.0 | 6.4 | 1 | 3 | 852.1 | - | 3.1 | 852.3 | - | 10.8 | 852.7 | - | 36.0 | 852.1 | - | 1.6 |
| ***MP1-D*** | MP1-D | 860.0 | 6.8 | 1 | 3 | 850.5 | - | 2.8 | 850.7 | - | 10.6 | 851.2 | - | 36.6 | 850.3 | - | 1.6 |
| ***MP1-E*** | MP1-E | 920.0 | 15.8 | 1 | 3 | 868.9 | - | 17.7 | 869.2 | - | 38.1 | 869.9 | - | 97.4 | 868.5 | - | 5.4 |
| ***MP1-F*** | MP1-F | 888.0 | 27.1 | 1 | 3 | 873.1 | - | 34.5 | 876.1 | - | 69.2 | 882.4 | - | 163.9 | 873.0 | - | 9.7 |
| ***MP1-G*** | MP1-G | 876.0 | 20.8 | 1 | 3 | 871.1 | - | 56.1 | 871.8 | - | 95.6 | 872.8 | - | 194.0 | 871.2 | - | 9.0 |
| ***MP1-H*** | MP1-H | 880.0 | 42.0 | 1 | 3 | 801.2 | - | 101.0 | 803.6 | - | 165.5 | 808.4 | - | 323.6 | 807.1 | - | 18.8 |
| ***MP1-I*** | MP1-I | 810.0 | 14.3 | 1 | 3 | 803.0 | - | 47.0 | 805.1 | - | 74.6 | 809.2 | - | 141.6 | 807.1 | - | 6.6 |
| ***MP1-J*** | MP1-J | 870.0 | 53.4 | 1 | 3 | 810.6 | - | 95.0 | 811.3 | - | 164.5 | 812.6 | - | 339.1 | 811.0 | - | 22.2 |
| ***MP1-K*** | MP1-K | 884.0 | 6.9 | 1 | 3 | 878.6 | - | 10.5 | 879.1 | - | 21.9 | 880.2 | - | 53.6 | 878.6 | - | 2.4 |
| ***MP1-N*** | MP1-M | 804.0 | 52.5 | 1 | 3 | 797.5 | - | 18.0 | 800.2 | - | 34.7 | 801.4 | - | 78.9 | 800.4 | - | 3.6 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Upper Valley**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2 year [2.90-in] | | | 10 year [4.20-in] | | | 100 year [7.90-in] | | | 10 day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| MP1-O | MP1-N | 886.0 | 13.2 | 12 | 36 | 871.0 | - | 63.1 | 871.4 | - | 114.9 | 872.4 | - | 251.6 | 870.4 | - | 20.4 |
| ***MP1-P*** | MP1-O | 924.0 | 46.6 | 1 | 3 | 915.8 | - | 24.7 | 916.8 | - | 46.4 | 918.5 | - | 103.1 | 916.9 | - | 5.2 |
| ***MP1-Q*** | MP1-P | 942.0 | 9.9 | 1 | 3 | 936.4 | - | 54.4 | 936.5 | - | 104.5 | 936.9 | - | 237.8 | 936.2 | - | 17.1 |
| MP1-R | MP1-Q | 830.0 | 28.7 | 44 | 132 | 812.6 | - | 17.6 | 812.9 | - | 33.8 | 813.6 | - | 76.8 | 812.2 | - | 3.8 |
| MP1-S | MP1-R | 884.0 | 50.9 | 76 | 228 | 874.7 | - | 41.1 | 875.0 | - | 79.4 | 882.9 | - | 181.4 | 874.6 | - | 10.7 |
| MP1-S | MP1-S | 902.0 | 50.9 | 76 | 228 | 895.5 | - | 63.6 | 899.8 | - | 123.3 | 901.4 | - | 283.1 | 894.9 | - | 19.0 |
| ***MP1-T*** | MP1-T | 930.0 | 101.2 | 1 | 3 | 924.1 | - | 91.0 | 927.2 | - | 174.4 | 929.4 | - | 401.9 | 922.9 | - | 36.7 |
| ***MP1-U*** | MP1-U | 812.0 | 17.9 | 1 | 3 | 807.1 | - | 58.4 | 807.8 | - | 92.8 | 809.2 | - | 176.4 | 806.2 | - | 8.3 |
| ***MP1-V*** | MP1-V | 812.0 | 5.9 | 1 | 3 | 806.6 | - | 19.3 | 807.1 | - | 30.6 | 807.7 | - | 58.2 | 806.3 | - | 2.7 |
| ***MP1-W*** | MP1-W | 816.0 | 43.3 | 1 | 3 | 813.1 | - | 112.5 | 814.0 | - | 180.1 | 815.8 | - | 344.4 | 812.8 | - | 19.7 |
| ***MP1-X*** | MP1-X | 872.0 | 9.5 | 1 | 3 | 843.6 | - | 6.5 | 845.0 | - | 18.9 | 848.2 | - | 57.5 | 843.5 | - | 2.6 |
| ***MP1-Y*** | MP1-Y | 894.0 | 26.8 | 1 | 3 | 872.3 | - | 17.5 | 873.3 | - | 45.6 | 874.6 | - | 130.9 | 869.9 | - | 7.6 |
| ***MP1-Y1*** | MP1-Y1 | 920.0 | 42.4 | 1 | 3 | 885.9 | - | 54.0 | 886.7 | - | 105.5 | 898.0 | - | 243.8 | 885.1 | - | 15.6 |
| ***MP1-Y2*** | MP1-Y2 | 930.0 | 40.0 | 1 | 3 | 924.1 | - | 52.8 | 926.2 | - | 102.4 | 928.0 | - | 234.9 | 922.0 | - | 14.9 |
| MP1-Z | MP1-Z | 860.0 | 9.6 | 2 | 6 | 829.7 | - | 30.2 | 830.0 | - | 48.7 | 832.0 | - | 93.7 | 829.3 | - | 4.4 |
| ***MP2-A*** | MP2-A | 812.0 | 13.9 | 1 | 3 | 799.8 | - | 47.4 | 800.1 | - | 74.2 | 801.2 | - | 138.9 | 799.7 | - | 6.5 |
| MP2-B | MP2-B | 826.0 | 54.1 | 124 | 372 | 817.9 | - | 36.7 | 820.2 | - | 81.7 | 825.3 | - | 216.6 | 819.4 | - | 17.0 |
| MP2-B | MP2-B2 | 828.0 | 54.1 | 124 | 372 | 811.8 | - | 0.0 | 814.8 | - | 0.0 | 820.9 | - | 0.0 | 819.4 | - | 0.0 |
| ***MP2-C*** | MP2-C | 840.0 | 23.8 | 1 | 3 | 825.1 | - | 69.4 | 825.4 | - | 112.7 | 829.4 | - | 218.5 | 825.1 | - | 10.8 |
| ***MP2-C2*** | MP2-C2 | 846.0 | 20.4 | 1 | 3 | 842.9 | - | 46.6 | 843.3 | - | 81.8 | 844.2 | - | 170.6 | 842.6 | - | 8.6 |
| ***MP2-C2*** | MP2-C2 HW Ditch | 814.0 | 20.4 | 1 | 3 | 808.7 | - | 0.0 | 809.1 | - | 0.0 | 810.5 | - | 0.0 | 808.8 | - | 0.0 |
| ***MP2-D*** | MP2-D | 856.0 | 8.2 | 1 | 3 | 845.7 | - | 4.5 | 846.8 | - | 13.0 | 848.8 | - | 41.6 | 846.6 | - | 2.2 |
| MP2-D1 | MP2-D1 | 864.0 | 52.5 | 56 | 168 | 859.9 | - | 25.8 | 860.2 | - | 64.5 | 860.8 | - | 181.0 | 860.1 | - | 15.0 |
| MP2-D4 | MP2-D4 | 860.0 | 41.3 | 13 | 39 | 856.5 | - | 32.3 | 856.7 | - | 78.1 | 857.5 | - | 214.0 | 856.4 | - | 12.3 |
| ***MP2-E*** | MP2-E | 904.0 | 24.8 | 1 | 3 | 904.1 | 0.1 | 20.8 | 904.2 | 0.2 | 47.8 | 904.7 | 0.7 | 126.0 | 904.2 | 0.2 | 7.9 |
| ***MP2-F*** | MP2-F | 926.0 | 21.2 | 1 | 3 | 916.4 | - | 31.6 | 919.0 | - | 60.0 | 920.7 | - | 135.1 | 915.2 | - | 8.0 |
| ***MP2-G*** | MP2-G | 926.0 | 53.7 | 1 | 3 | 915.4 | - | 59.9 | 917.2 | - | 115.9 | 920.8 | - | 265.6 | 916.2 | - | 19.7 |
| ***MP2-G*** | MP2-H | 938.0 | 53.7 | 1 | 3 | 918.0 | - | 0.0 | 918.0 | - | 0.0 | 918.0 | - | 0.0 | 918.0 | - | 0.0 |
| ***MP2-I*** | MP2-I | 898.0 | 26.2 | 1 | 3 | 898.1 | 0.1 | 19.6 | 898.3 | 0.3 | 46.5 | 898.7 | 0.7 | 126.1 | 898.2 | 0.2 | 8.1 |
| ***MP2-J*** | MP2-J | 916.0 | 14.0 | 1 | 3 | 909.1 | - | 9.8 | 910.5 | - | 24.8 | 912.5 | - | 70.2 | 909.8 | - | 4.0 |
| ***MP2-K*** | MP2-K | 926.0 | 25.4 | 1 | 3 | 911.4 | - | 9.4 | 912.7 | - | 28.8 | 915.4 | - | 97.6 | 911.5 | - | 6.2 |
| ***MP2-L*** | MP2-L | 918.0 | 33.4 | 1 | 3 | 905.5 | - | 27.0 | 906.3 | - | 60.6 | 907.9 | - | 160.4 | 904.7 | - | 10.6 |
| ***MP2-M*** | MP2-M | 930.0 | 40.4 | 1 | 3 | 920.0 | - | 37.2 | 921.1 | - | 78.0 | 923.3 | - | 194.6 | 921.4 | - | 13.5 |
| ***MP2-N*** | MP2-N | 932.0 | 199.5 | 1 | 3 | 920.0 | - | 78.3 | 920.9 | - | 185.8 | 923.0 | - | 505.7 | 921.5 | - | 57.2 |
| ***MP2-O*** | MP2-O | 980.0 | 19.7 | 1 | 3 | 971.4 | - | 21.4 | 972.6 | - | 45.5 | 974.7 | - | 112.8 | 971.1 | - | 6.6 |
| ***MP2-P*** | MP2-P | 980.0 | 17.1 | 1 | 3 | 967.6 | - | 19.2 | 970.9 | - | 40.4 | 973.5 | - | 99.5 | 966.8 | - | 5.8 |
| ***MP2-Q*** | MP2-Q | 986.0 | 19.0 | 1 | 3 | 978.3 | - | 16.7 | 978.7 | - | 37.7 | 980.0 | - | 98.3 | 978.7 | - | 6.1 |
| ***MP2-R*** | MP2-R | 974.0 | 51.0 | 1 | 3 | 970.0 | - | 0.1 | 970.1 | - | 0.3 | 970.2 | - | 0.8 | 970.1 | - | 0.0 |
| ***MP2-S*** | MP2-S | 976.0 | 13.1 | 1 | 3 | 970.3 | - | 11.2 | 970.5 | - | 25.9 | 971.1 | - | 69.0 | 970.2 | - | 4.1 |
| ***MP2-T*** | MP2-T | 960.0 | 81.5 | 1 | 3 | 929.4 | - | 43.9 | 932.8 | - | 103.1 | 934.3 | - | 280.9 | 927.8 | - | 24.3 |
| ***MP2-T1*** | MP2-T1 | 950.0 | 367.4 | 1 | 3 | 938.4 | - | 196.0 | 938.7 | - | 403.3 | 939.6 | - | 991.9 | 939.2 | - | 119.2 |
| ***MP2-T1*** | MP2-U | 968.0 | 367.4 | 1 | 3 | 968.1 | 0.1 | 14.9 | 968.2 | 0.1 | 33.9 | 968.3 | 0.3 | 91.5 | 968.1 | 0.1 | 6.2 |
| ***MP2-V*** | MP2-V | 972.0 | 18.1 | 1 | 3 | 963.8 | - | 17.5 | 964.4 | - | 38.5 | 965.4 | - | 98.6 | 963.5 | - | 5.9 |
| ***MP2-W*** | MP2-W | 954.0 | 98.9 | 1 | 3 | 945.0 | - | 51.2 | 946.5 | - | 118.3 | 949.3 | - | 314.7 | 945.0 | - | 29.8 |
| ***MP2-X*** | MP2-X | 952.0 | 15.9 | 1 | 3 | 948.8 | - | 15.2 | 949.0 | - | 33.9 | 949.8 | - | 87.8 | 948.8 | - | 5.1 |
| ***MP3-A*** | MP3-A | 922.0 | 31.7 | 1 | 3 | 916.5 | - | 45.9 | 916.7 | - | 87.8 | 918.3 | - | 198.7 | 916.8 | - | 11.9 |
| ***MP3-B*** | MP3-B | 940.0 | 49.4 | 1 | 3 | 934.4 | - | 36.7 | 934.8 | - | 83.3 | 936.0 | - | 217.9 | 935.0 | - | 15.3 |
| ***MP3-C*** | MP3-C | 915.0 | 22.3 | 1 | 3 | 910.8 | - | 32.1 | 911.3 | - | 61.4 | 912.4 | - | 138.9 | 910.9 | - | 8.4 |
| MP4-A | MP4-A | 820.0 | 12.1 | 2 | 6 | 814.4 | - | 33.9 | 814.6 | - | 57.0 | 815.8 | - | 114.0 | 814.6 | - | 5.3 |
| MP4-A1 | MP4-A1 | 824.0 | 41.6 | 87 | 261 | 816.6 | - | 30.7 | 818.2 | - | 68.7 | 820.9 | - | 178.1 | 817.7 | - | 13.2 |
| MP4-A2 | MP4-A2 | 840.0 | 58.6 | 53 | 159 | 835.5 | - | 48.3 | 837.9 | - | 103.7 | 838.6 | - | 259.9 | 835.8 | - | 19.4 |
| MP4-A3 | MP4-A3 | 842.0 | 132.7 | 76 | 228 | 831.0 | - | 79.9 | 832.8 | - | 174.1 | 836.7 | - | 441.6 | 833.0 | - | 42.3 |
| MP4-A5 | MP4-A5 | 824.0 | 31.2 | 54 | 162 | 814.0 | - | 26.6 | 814.0 | - | 58.6 | 814.0 | - | 152.5 | 814.0 | - | 10.1 |
| ***MP4-D1*** | MP4-D1 | 902.0 | 7.8 | 1 | 3 | 890.3 | - | 8.9 | 890.4 | - | 20.7 | 891.1 | - | 54.9 | 890.3 | - | 2.5 |
| ***MP4-D2*** | MP4-D2 | 896.0 | 16.9 | 1 | 3 | 893.6 | - | 15.5 | 894.5 | - | 35.1 | 895.4 | - | 91.8 | 893.2 | - | 5.3 |
| ***MP4-D3*** | MP4-D3 | 910.0 | 6.0 | 1 | 3 | 902.7 | - | 6.8 | 903.5 | - | 15.9 | 905.1 | - | 42.1 | 902.0 | - | 1.9 |
| ***MP4-D4*** | MP4-D4 | 914.0 | 27.5 | 1 | 3 | 900.4 | - | 21.1 | 900.9 | - | 50.1 | 902.9 | - | 135.1 | 900.6 | - | 8.5 |
| ***MP4-E*** | MP4-E | 912.0 | 22.7 | 1 | 3 | 904.1 | - | 18.7 | 904.9 | - | 43.7 | 906.1 | - | 116.7 | 905.2 | - | 7.0 |
| ***MP5-A*** | MP5-A | 955.0 | 286.7 | 1 | 3 | 941.7 | - | 234.0 | 942.1 | - | 428.0 | 943.0 | - | 941.3 | 942.6 | - | 106.3 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Upper Valley**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2 year [2.90-in] | | | 10 year [4.20-in] | | | 100 year [7.90-in] | | | 10 day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***MPS-B*** | MPS-B | 954.0 | 109.1 | 1 | 3 | 946.7 | - | 54.4 | 947.5 | - | 124.2 | 949.1 | - | 333.7 | 947.0 | - | 32.7 |
| ***MPS-C*** | MPS-C | 952.0 | 50.2 | 1 | 3 | 943.7 | - | 75.7 | 944.4 | - | 137.3 | 945.6 | - | 295.8 | 944.7 | - | 20.0 |
| ***MPS-D*** | MPS-D | 956.0 | 42.7 | 1 | 3 | 947.1 | - | 32.9 | 947.9 | - | 73.0 | 949.6 | - | 188.0 | 948.2 | - | 13.6 |
| ***MPS-E*** | MPS-E | 966.0 | 13.7 | 1 | 3 | 953.6 | - | 15.0 | 954.6 | - | 31.7 | 956.8 | - | 78.6 | 953.1 | - | 4.6 |
| ***MPS-F*** | MPS-F | 956.0 | 24.8 | 1 | 3 | 947.2 | - | 20.9 | 947.9 | - | 47.8 | 949.1 | - | 125.6 | 947.4 | - | 7.9 |
| ***MPS-G*** | MPS-G | 952.0 | 36.0 | 1 | 3 | 945.7 | - | 35.7 | 946.2 | - | 72.8 | 947.3 | - | 180.5 | 946.3 | - | 12.4 |
| ***MPS-G*** | MPS-H | 954.0 | 36.0 | 1 | 3 | 947.3 | - | 0.0 | 947.3 | - | 0.0 | 947.3 | - | 0.0 | 947.3 | - | 0.0 |
| ***MPS-L*** | MPS-I | 952.5 | 251.2 | 1 | 3 | 945.0 | - | 0.0 | 945.0 | - | 0.0 | 945.0 | - | 0.0 | 945.0 | - | 0.0 |
| ***MPS-J*** | MPS-J | 954.0 | 11.3 | 1 | 3 | 947.9 | - | 12.0 | 948.5 | - | 26.9 | 949.5 | - | 69.8 | 948.2 | - | 3.7 |
| ***MPS-K*** | MPS-K | 954.0 | 28.0 | 1 | 3 | 946.7 | - | 20.8 | 947.6 | - | 48.0 | 949.0 | - | 130.7 | 947.3 | - | 8.6 |
| ***MPS-L*** | MPS-L | 952.0 | 251.2 | 1 | 3 | 948.8 | - | 130.6 | 949.6 | - | 270.9 | 951.1 | - | 667.3 | 950.2 | - | 80.9 |
| ***MPS-M*** | MPS-M | 954.0 | 81.1 | 1 | 3 | 950.3 | - | 53.5 | 950.5 | - | 113.8 | 951.1 | - | 287.0 | 950.5 | - | 26.3 |
| ***MPS-N*** | MPS-N | 960.0 | 143.4 | 1 | 3 | 951.2 | - | 59.1 | 952.4 | - | 137.4 | 954.1 | - | 368.3 | 952.2 | - | 42.0 |
| ***MPS-O*** | MPS-O | 960.0 | 100.6 | 1 | 3 | 951.2 | - | 48.1 | 952.5 | - | 110.6 | 954.1 | - | 296.8 | 952.2 | - | 29.9 |
| ***MPS-P*** | MPS-P | 974.0 | 29.5 | 1 | 3 | 963.8 | - | 18.5 | 964.8 | - | 42.9 | 966.9 | - | 116.6 | 964.1 | - | 8.9 |
| ***MPS-Q*** | MPS-Q | 968.0 | 21.4 | 1 | 3 | 960.2 | - | 14.5 | 961.2 | - | 34.0 | 962.7 | - | 90.8 | 960.2 | - | 6.5 |
| MP6-A | MP6-A | 952.0 | 600.7 | 23 | 69 | 940.5 | - | 502.4 | 940.9 | - | 872.7 | 942.0 | - | 1809.5 | 941.4 | - | 230.9 |
| ***MP6-B*** | MP6-B | 970.0 | 54.0 | 1 | 3 | 950.3 | - | 16.8 | 950.7 | - | 51.4 | 951.5 | - | 164.5 | 950.3 | - | 13.2 |
| ***MP7-A*** | MP7-A | 972.0 | 69.7 | 1 | 3 | 965.7 | - | 38.4 | 966.7 | - | 87.3 | 968.7 | - | 229.0 | 968.4 | - | 21.2 |
| ***MP7-B*** | MP7-B | 970.0 | 33.3 | 1 | 3 | 970.1 | 0.1 | 22.7 | 970.1 | 0.1 | 52.6 | 970.2 | 0.2 | 139.8 | 970.1 | 0.1 | 10.3 |
| ***MP7-C*** | MP7-C | 948.0 | 159.2 | 1 | 3 | 945.9 | - | 71.0 | 947.1 | - | 161.2 | 948.5 | 0.5 | 428.1 | 948.1 | 0.1 | 47.4 |
| ***MP7-D*** | MP7-D | 970.0 | 20.3 | 1 | 3 | 970.1 | 0.1 | 14.2 | 970.2 | 0.2 | 32.9 | 970.1 | 0.1 | 87.4 | 970.1 | 0.1 | 6.2 |
| ***MP7-E*** | MP7-E | 962.0 | 60.5 | 1 | 3 | 960.8 | - | 32.3 | 961.5 | - | 74.5 | 962.2 | 0.2 | 202.5 | 962.0 | 0.0 | 18.1 |
| ***MP7-F*** | MP7-F | 928.0 | 71.8 | 1 | 3 | 919.6 | - | 42.2 | 920.7 | - | 97.9 | 925.6 | - | 260.6 | 919.6 | - | 21.8 |
| ***LV7-G*** | MP7-G Channel | 936.0 | 161.0 | 1 | 3 | 936.4 | 0.4 | 0.0 | 936.7 | 0.7 | 0.0 | 937.3 | 1.3 | 0.0 | 936.4 | 0.4 | 0.0 |
| ***MP7-M*** | MP7-M | 852.0 | 110.4 | 1 | 3 | 850.1 | - | 51.3 | 850.2 | - | 120.7 | 850.8 | - | 331.5 | 850.2 | - | 32.3 |
| ***MP7-N*** | MP7-N | 860.0 | 84.8 | 1 | 3 | 860.3 | 0.3 | 43.5 | 860.6 | 0.6 | 107.3 | 861.3 | 1.3 | 298.4 | 860.5 | 0.5 | 24.2 |
| ***MP7-O*** | MP7-O | 918.0 | 84.8 | 1 | 3 | 918.1 | 0.1 | 44.7 | 918.4 | 0.4 | 108.4 | 918.9 | 0.9 | 297.7 | 918.2 | 0.2 | 24.9 |
| ***MP7-P*** | MP7-P | 882.0 | 54.2 | 1 | 3 | 882.3 | 0.3 | 34.5 | 882.4 | 0.4 | 83.3 | 882.8 | 0.8 | 227.7 | 882.2 | 0.2 | 15.9 |
| ***MP7-Q*** | MP7-Q | 840.0 | 69.7 | 1 | 3 | 840.5 | 0.5 | 28.3 | 840.6 | 0.6 | 83.2 | 841.7 | 1.7 | 257.2 | 840.8 | 0.8 | 17.7 |
| ***MP7-Q*** | MP7-Q Runoff | 782.0 | 69.7 | 1 | 3 | 0.5 | - | 0.0 | 0.6 | - | 0.0 | 1.7 | - | 0.0 | 0.8 | - | 0.0 |
| ***LV7-R*** | MP7-R-Channel | 850.0 | 116.1 | 1 | 3 | 844.0 | - | 0.0 | 844.0 | - | 0.0 | 850.8 | 0.8 | 0.0 | 850.1 | 0.1 | 0.0 |
| ***MP7-T*** | MP7-T | 974.0 | 11.8 | 1 | 3 | 974.1 | 0.1 | 9.2 | 974.2 | 0.2 | 21.8 | 974.3 | 0.3 | 58.6 | 974.1 | 0.1 | 3.6 |
| MPE1-A | MPE1-A | 908.5 | 47.2 | 4 | 12 | 901.1 | - | 24.5 | 902.6 | - | 60.2 | 903.6 | - | 172.9 | 902.9 | - | 13.4 |
| ***MPE1-B*** | MPE1-B | 913.0 | 21.6 | 1 | 3 | 909.0 | - | 33.0 | 909.6 | - | 62.3 | 911.0 | - | 139.5 | 909.1 | - | 8.2 |
| ***MPE1-C*** | MPE1-C | 914.0 | 28.8 | 1 | 3 | 909.4 | - | 28.5 | 910.5 | - | 62.2 | 912.8 | - | 158.0 | 909.5 | - | 9.5 |
| ***MPE1-D*** | MPE1-D | 916.0 | 10.0 | 1 | 3 | 912.1 | - | 12.3 | 912.4 | - | 27.2 | 913.0 | - | 69.7 | 912.2 | - | 3.3 |
| ***MPE1-E*** | MPE1-E | 928.0 | 11.6 | 1 | 3 | 916.8 | - | 6.8 | 917.7 | - | 18.6 | 923.8 | - | 55.1 | 916.8 | - | 3.1 |
| ***MPE1-F*** | MPE1-F | 974.0 | 23.8 | 1 | 3 | 924.8 | - | 23.7 | 925.6 | - | 52.1 | 927.8 | - | 133.1 | 925.1 | - | 7.7 |
| MPF-G | MPF-G | 913.0 | 19.6 | 30 | 90 | 906.4 | - | 23.8 | 908.2 | - | 48.7 | 910.5 | - | 117.2 | 905.5 | - | 6.8 |
| MPF1-A | MPF1-A | 908.0 | 79.4 | 12 | 36 | 902.0 | - | 47.1 | 902.3 | - | 109.7 | 904.0 | - | 294.4 | 902.0 | - | 23.8 |
| ***MPF1-B*** | MPF1-B | 904.0 | 8.4 | 1 | 3 | 895.4 | - | 9.0 | 896.5 | - | 21.0 | 903.3 | - | 56.2 | 897.7 | - | 2.7 |
| MPE1-A | MPF1-C | 910.0 | 47.2 | 4 | 12 | 907.0 | - | 2.9 | 907.2 | - | 8.3 | 907.7 | - | 25.3 | 907.1 | - | 1.1 |
| MPF1-D | MPF1-D | 918.0 | 7.5 | 2 | 6 | 914.9 | - | 6.9 | 915.8 | - | 17.0 | 917.4 | - | 46.9 | 915.8 | - | 2.3 |
| MPF1-E | MPF1-E | 922.0 | 27.8 | 3 | 9 | 917.3 | - | 31.1 | 918.5 | - | 65.5 | 920.8 | - | 161.7 | 917.5 | - | 9.4 |
| MPF1-F | MPF1-F | 918.0 | 5.6 | 7 | 21 | 914.2 | - | 8.0 | 914.6 | - | 17.1 | 916.4 | - | 42.5 | 914.4 | - | 1.9 |
| ***MPF1-F1*** | MPF1-F1 | 924.0 | 19.9 | 1 | 3 | 916.9 | - | 7.2 | 918.2 | - | 22.2 | 923.3 | - | 75.8 | 919.1 | - | 4.8 |
| ***MPF1-F2*** | MPF1-F2 | 932.0 | 4.5 | 1 | 3 | 930.6 | - | 2.6 | 931.9 | - | 8.2 | 932.6 | 0.6 | 26.0 | 932.0 | 0.0 | 1.2 |
| MPF1-G | MPF1-G | 926.0 | 31.5 | 3 | 9 | 923.9 | - | 8.3 | 924.2 | - | 28.9 | 924.8 | - | 101.6 | 924.2 | - | 7.1 |
| MPF1-H | MPF1-H | 940.0 | 37.1 | 7 | 21 | 937.7 | - | 27.4 | 938.1 | - | 68.0 | 938.4 | - | 189.1 | 938.0 | - | 10.8 |
| ***MPG1-A1*** | MPG1-A1 | 926.0 | 14.9 | 1 | 3 | 923.2 | - | 17.1 | 923.8 | - | 35.6 | 924.7 | - | 86.8 | 923.6 | - | 5.1 |
| MPG1-A2 | MPG1-A2 | 930.0 | 17.5 | 15 | 45 | 928.1 | - | 33.9 | 928.2 | - | 62.4 | 928.4 | - | 136.2 | 923.8 | - | 7.1 |
| MPG1-B | MPG1-B | 910.0 | 45.0 | 28 | 84 | 905.2 | - | 31.1 | 906.6 | - | 79.4 | 908.9 | - | 225.0 | 905.1 | - | 12.8 |
| MPG1-C | MPG1-C | 920.0 | 22.7 | 13 | 39 | 903.4 | - | 18.9 | 904.9 | - | 44.6 | 907.8 | - | 119.9 | 905.1 | - | 6.9 |
| MPG1-D | MPG1-D | 902.0 | 25.6 | 21 | 63 | 896.8 | - | 14.0 | 897.3 | - | 39.6 | 898.3 | - | 119.7 | 897.8 | - | 6.8 |
| MPG1-F | MPG1-F | 926.0 | 62.8 | 37 | 111 | 922.5 | - | 23.1 | 923.1 | - | 65.7 | 924.9 | - | 200.6 | 923.3 | - | 16.1 |
| MPG1-G | MPG1-G | 923.0 | 64.6 | 8 | 24 | 900.8 | - | 13.8 | 901.7 | - | 49.7 | 903.7 | - | 177.5 | 902.1 | - | 14.1 |
| ***MPG1-H*** | MPG1-H | 888.0 | 8.7 | 1 | 3 | 888.1 | 0.1 | 3.1 | 888.2 | 0.2 | 10.7 | 888.4 | 0.4 | 36.0 | 888.1 | 0.1 | 2.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Upper Valley**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2 year [2.90-in] | | | 10 year [4.20-in] | | | 100 year [7.90-in] | | | 10 day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| MPG1-H1 | MPG1-H1 | 900.0 | 3.9 | 2 | 6 | 900.1 | 0.1 | 1.1 | 900.1 | 0.1 | 5.1 | 900.2 | 0.2 | 19.4 | 900.2 | 0.2 | 0.8 |
| ***MPG1-H2*** | MPG1-H2 | 888.0 | 4.6 | 1 | 3 | 345.2 | - | 1.9 | 709.0 | - | 7.2 | 888.1 | 0.1 | 24.8 | 888.1 | 0.1 | 1.1 |
| MPG2-A | MPG2-A | 836.0 | 37.0 | 11 | 33 | 833.5 | - | 44.5 | 833.9 | - | 82.3 | 834.9 | - | 180.7 | 834.7 | - | 14.3 |
| ***MPG2-B*** | MPG2-B | 858.0 | 4.1 | 1 | 3 | 858.1 | 0.1 | 9.5 | 858.2 | 0.2 | 17.1 | 858.2 | 0.2 | 36.3 | 858.1 | 0.1 | 1.7 |
| ***MPG2-D*** | MPG2-D | 904.0 | 4.2 | 1 | 3 | 898.1 | - | 3.4 | 898.7 | - | 9.0 | 901.1 | - | 26.4 | 898.8 | - | 1.2 |
| MPG3-A | MPG3-A | 840.0 | 11.1 | 10 | 30 | 832.0 | - | 12.4 | 832.7 | - | 27.3 | 837.0 | - | 69.8 | 835.6 | - | 3.7 |
| MPG3-A1 | MPG3-A1 | 840.0 | 62.4 | 59 | 177 | 830.3 | - | 49.5 | 831.3 | - | 109.2 | 837.0 | - | 279.8 | 835.6 | - | 19.9 |
| MPG3-A2 | MPG3-A2 | 838.0 | 26.1 | 34 | 102 | 838.5 | 0.5 | 15.6 | 838.5 | 0.5 | 38.5 | 838.5 | 0.5 | 106.7 | 838.5 | 0.5 | 7.6 |
| MPG3-A5 | MPG3-A5 | 840.0 | 8.3 | 12 | 36 | 832.4 | - | 11.9 | 833.4 | - | 25.3 | 838.2 | - | 62.7 | 838.0 | - | 2.9 |
| MPG3-A6 | MPG3-A6 | 848.0 | 6.0 | 2 | 6 | 834.3 | - | 1.5 | 834.6 | - | 5.6 | 835.3 | - | 20.1 | 834.3 | - | 1.3 |
| ***MPG3-B*** | MPG3-B | 870.0 | 32.0 | 1 | 3 | 866.3 | - | 25.4 | 867.4 | - | 61.1 | 869.8 | - | 166.7 | 866.5 | - | 9.6 |
| MPG3-C1 | MPG3-C1 | 878.0 | 15.1 | 4 | 12 | 870.3 | - | 13.6 | 870.6 | - | 31.1 | 871.5 | - | 81.8 | 870.6 | - | 4.7 |
| ***MPG3-C2*** | MPG3-C2 | 886.0 | 1.9 | 1 | 3 | 878.1 | - | 1.7 | 878.1 | - | 4.3 | 878.1 | - | 12.3 | 878.0 | - | 0.6 |
| ***MPG3-D*** | MPG3-D | 892.0 | 11.7 | 1 | 3 | 888.1 | - | 5.0 | 888.5 | - | 15.9 | 891.7 | - | 50.9 | 889.2 | - | 2.9 |
| MPG3-F | MPG3-E | 908.0 | 8.9 | 2 | 6 | 904.8 | - | 0.0 | 905.1 | - | 0.0 | 906.0 | - | 0.0 | 905.1 | - | 0.0 |
| MPG3-F | MPG3-F | 908.0 | 8.9 | 2 | 6 | 905.9 | - | 6.6 | 906.4 | - | 16.2 | 907.3 | - | 45.2 | 906.2 | - | 2.6 |
| ***MPG3-G*** | MPG3-G | 908.0 | 12.3 | 1 | 3 | 896.5 | - | 3.9 | 897.2 | - | 13.2 | 899.1 | - | 46.6 | 896.9 | - | 2.9 |
| MPG3-H1 | MPG3-H1 | 842.0 | 62.1 | 58 | 174 | 833.3 | - | 78.0 | 840.0 | - | 144.7 | 840.9 | - | 318.7 | 840.4 | - | 23.8 |
| MPG3-H3 | MPG3-H3 | 828.0 | 69.9 | 51 | 153 | 833.3 | 5.3 | 49.7 | 840.0 | 12.0 | 112.9 | 840.9 | 12.9 | 295.5 | 840.4 | 12.4 | 22.0 |
| MPG3-H4 | MPG3-H4 | 882.0 | 10.9 | 6 | 18 | 882.2 | 0.2 | 19.3 | 882.5 | 0.5 | 38.1 | 883.0 | 1.0 | 88.8 | 882.4 | 0.4 | 4.1 |
| MPG3-H5 | MPG3-H5 | 902.0 | 19.7 | 16 | 48 | 898.1 | - | 22.4 | 898.6 | - | 46.9 | 900.4 | - | 115.0 | 898.6 | - | 6.7 |
| ***MPG3-I*** | MPG3-I | 897.0 | 10.1 | 1 | 3 | 892.1 | - | 8.1 | 892.3 | - | 19.1 | 892.4 | - | 54.7 | 892.2 | - | 3.0 |
| MPH-0028 | MPH-0028 | 820.0 | 23.1 | 16 | 48 | 814.2 | - | 10.9 | 814.8 | - | 28.4 | 817.0 | - | 84.4 | 814.9 | - | 6.3 |
| MPH-10A1 | MPH-10A1 | 746.0 | 1.4 | 3 | 9 | 746.0 | 0.0 | 2.7 | 746.1 | 0.1 | 5.1 | 746.1 | 0.1 | 11.5 | 746.0 | 0.0 | 0.5 |
| ***MPH-10A2*** | MPH-10A2 | 748.0 | 11.4 | 1 | 3 | 738.4 | - | 10.7 | 740.0 | - | 25.8 | 745.0 | - | 70.6 | 739.0 | - | 3.6 |
| MPH-10A3 | MPH-10A3 | 754.0 | 20.3 | 12 | 36 | 752.1 | - | 32.5 | 752.4 | - | 59.8 | 752.7 | - | 130.5 | 750.1 | - | 7.9 |
| MPH-10A4 | MPH-10A4 | 750.0 | 4.8 | 7 | 21 | 740.3 | - | 8.4 | 740.9 | - | 16.6 | 744.3 | - | 38.8 | 740.8 | - | 1.8 |
| ***MPH-10A5*** | MPH-10A5 | 758.0 | 2.6 | 1 | 3 | 752.1 | - | 5.2 | 752.7 | - | 9.9 | 754.4 | - | 22.1 | 750.3 | - | 1.0 |
| MPH-10B | MPH-10B | 734.0 | 19.6 | 6 | 18 | 710.2 | - | 36.5 | 711.4 | - | 66.5 | 713.5 | - | 143.8 | 710.7 | - | 8.0 |
| ***MPH-10B-1*** | MPH-10B-1 | 746.0 | 8.6 | 1 | 3 | 738.9 | - | 27.3 | 739.2 | - | 43.9 | 739.7 | - | 84.6 | 738.4 | - | 4.0 |
| MPH-10C | MPH-10C | 742.0 | 18.9 | 15 | 45 | 729.5 | - | 47.7 | 730.3 | - | 77.3 | 734.0 | - | 149.7 | 729.7 | - | 8.5 |
| MPH-10C-1 | MPH-10C-1 | 746.0 | 16.9 | 29 | 87 | 746.2 | 0.2 | 25.8 | 746.3 | 0.3 | 48.6 | 746.5 | 0.5 | 108.5 | 746.1 | 0.1 | 6.4 |
| ***MPH-10C-2*** | MPH-10C-2 | 735.0 | 1.9 | 1 | 3 | 729.2 | - | 1.1 | 730.3 | - | 3.4 | 732.9 | - | 10.8 | 729.7 | - | 0.5 |
| ***MPH-10C-2*** | MPH-10C-2 OCS | 732.0 | 1.9 | 1 | 3 | 729.0 | - | 0.0 | 729.1 | - | 0.0 | 729.4 | - | 0.0 | 729.1 | - | 0.0 |
| ***MPH-10C-3*** | MPH-10C-3 | 736.0 | 0.6 | 1 | 3 | 729.4 | - | 2.0 | 730.7 | - | 3.1 | 734.3 | - | 5.7 | 730.1 | - | 0.3 |
| ***MPH-10C-4*** | MPH-10C-4 | 738.0 | 1.2 | 1 | 3 | 738.1 | 0.1 | 4.0 | 738.1 | 0.1 | 6.3 | 738.2 | 0.2 | 12.2 | 738.0 | 0.0 | 0.6 |
| ***MPH-10C-5*** | MPH-10C-5 | 750.0 | 0.8 | 1 | 3 | 744.4 | - | 2.5 | 744.5 | - | 4.0 | 744.7 | - | 7.7 | 744.2 | - | 0.4 |
| MPH-2C | MPH-2C | 798.0 | 172.4 | 60 | 180 | 794.3 | - | 97.2 | 795.0 | - | 208.1 | 796.9 | - | 521.3 | 794.7 | - | 55.3 |
| MPH-3C1 | MPH-3C1 | 794.0 | 22.7 | 11 | 33 | 786.7 | - | 6.1 | 792.5 | - | 20.0 | 794.7 | 0.7 | 70.1 | 791.2 | - | 5.2 |
| MPH-3C2 | MPH-3C2 | 796.0 | 42.5 | 13 | 39 | 794.1 | - | 83.8 | 794.2 | - | 144.0 | 794.7 | - | 294.5 | 794.2 | - | 17.9 |
| ***MPH-3C3*** | MPH-3C3 | 814.0 | 12.2 | 1 | 3 | 803.1 | - | 40.6 | 803.8 | - | 64.0 | 805.6 | - | 120.8 | 802.7 | - | 5.7 |
| MPH-4B | MPH-4B | 800.0 | 62.3 | 24 | 72 | 794.5 | - | 26.3 | 794.7 | - | 64.6 | 795.5 | - | 182.7 | 794.5 | - | 17.6 |
| MPH-4C | MPH-4C | 794.0 | 10.9 | 5 | 15 | 789.5 | - | 13.5 | 792.1 | - | 29.2 | 793.4 | - | 73.6 | 789.6 | - | 3.7 |
| MPH-5C1B | MPH-5C1B | 798.0 | 40.0 | 11 | 33 | 792.5 | - | 43.7 | 796.0 | - | 85.1 | 796.6 | - | 196.0 | 793.8 | - | 14.6 |
| MPH-5C1E | MPH-5C1E | 820.0 | 18.7 | 7 | 21 | 814.8 | - | 37.5 | 815.0 | - | 64.4 | 815.5 | - | 131.8 | 814.4 | - | 7.9 |
| MPH-5C1F | MPH-5C1F | 818.0 | 4.7 | 8 | 24 | 814.1 | - | 8.8 | 814.4 | - | 17.0 | 815.5 | - | 38.9 | 814.4 | - | 1.8 |
| MPH-5C2A | MPH-5C2A | 796.0 | 25.4 | 6 | 18 | 785.0 | - | 7.6 | 786.2 | - | 24.6 | 793.1 | - | 83.7 | 785.8 | - | 6.0 |
| MPH-5C2B2 | MPH-5C2A OCS | 795.0 | 19.6 | 16 | 48 | 784.9 | - | 0.0 | 786.2 | - | 0.0 | 793.1 | - | 0.0 | 785.7 | - | 0.0 |
| MPH-5C2A2 | MPH-5C2A2 | 792.0 | 55.9 | 51 | 153 | 785.4 | - | 42.6 | 787.7 | - | 92.2 | 793.1 | 1.1 | 235.3 | 786.5 | - | 18.3 |
| MPH-5C2B | MPH-5C2B | 798.0 | 90.0 | 75 | 225 | 783.8 | - | 73.8 | 785.2 | - | 152.2 | 793.1 | - | 374.6 | 784.7 | - | 30.3 |
| MPH-5C2B2 | MPH-5C2B2 | 794.0 | 19.6 | 16 | 48 | 783.8 | - | 27.4 | 785.2 | - | 53.3 | 793.1 | - | 122.6 | 784.7 | - | 7.2 |
| MPH-5C2B3 | MPH-5C2B3 | 796.0 | 3.8 | 3 | 9 | 783.9 | - | 2.8 | 785.2 | - | 7.8 | 793.1 | - | 23.5 | 784.7 | - | 1.0 |
| MPH-5C2C | MPH-5C2C | 796.0 | 21.2 | 13 | 39 | 783.8 | - | 20.0 | 785.1 | - | 45.0 | 792.9 | - | 116.6 | 784.6 | - | 6.7 |
| MPH-5C2C2 | MPH-5C2C2 | 798.0 | 32.1 | 17 | 51 | 791.3 | - | 28.6 | 792.7 | - | 60.5 | 796.2 | - | 149.8 | 791.1 | - | 10.7 |
| MPH-5C2D | MPH-5C2D | 804.0 | 30.4 | 34 | 102 | 798.0 | - | 30.9 | 798.5 | - | 64.2 | 801.2 | - | 157.7 | 799.1 | - | 10.5 |
| MPH-6A1 | MPH-6A1 | 795.0 | 118.4 | 91 | 273 | 781.4 | - | 85.4 | 783.0 | - | 184.6 | 789.5 | - | 470.1 | 782.4 | - | 38.1 |
| ***MPH-6A3*** | MPH-6A3 | 806.0 | 42.1 | 1 | 3 | 800.1 | - | 135.0 | 801.7 | - | 215.7 | 804.4 | - | 411.9 | 799.4 | - | 19.4 |
| MPH-6B1 | MPH-6B1 | 784.0 | 59.6 | 45 | 135 | 777.7 | - | 48.8 | 782.7 | - | 102.9 | 789.5 | 5.5 | 256.6 | 781.3 | - | 20.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Upper Valley**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2 year [2.90-in] | | | 10 year [4.20-in] | | | 100 year [7.90-in] | | | 10 day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| MPH-7A | MPH-7A | 828.0 | 115.7 | 149 | 447 | 807.7 | - | 142.1 | 810.3 | - | 257.5 | 814.8 | - | 559.1 | 808.6 | - | 45.3 |
| MPH-7B12 | MPH-7B12 | 782.0 | 121.2 | 112 | 336 | 781.3 | - | 118.8 | 782.9 | 0.9 | 230.2 | 789.5 | 7.5 | 538.7 | 782.3 | 0.3 | 43.6 |
| MPH-7B2-A | MPH-7B2-A | 792.0 | 6.5 | 9 | 27 | 784.5 | - | 14.4 | 784.8 | - | 26.3 | 789.5 | - | 57.1 | 784.4 | - | 2.6 |
| MPH-7B2-B | MPH-7B2-B | 792.0 | 10.8 | 18 | 54 | 786.4 | - | 31.4 | 787.1 | - | 52.0 | 789.5 | - | 102.9 | 786.7 | - | 4.8 |
| MPH-8A | MPH-8A | 820.0 | 110.3 | 69 | 207 | 801.8 | - | 149.0 | 804.9 | - | 262.9 | 810.8 | - | 552.5 | 803.5 | - | 44.6 |
| MPH-8A1 | MPH-8A1 | 822.0 | 32.7 | 16 | 48 | 817.9 | - | 21.1 | 820.2 | - | 48.2 | 820.7 | - | 129.8 | 816.2 | - | 10.0 |
| MPH-8B | MPH-8B | 780.0 | 179.7 | 76 | 228 | 770.7 | - | 117.3 | 771.7 | - | 239.7 | 773.1 | - | 576.9 | 771.1 | - | 60.1 |
| ***MPH-8B1*** | MPH-8B1 | 804.0 | 13.4 | 1 | 3 | 799.6 | - | 40.3 | 802.1 | - | 66.0 | 802.4 | - | 129.2 | 801.9 | - | 6.0 |
| MPH-8C1 | MPH-8C1 | 834.0 | 16.7 | 18 | 54 | 827.2 | - | 10.0 | 828.0 | - | 26.9 | 829.3 | - | 78.8 | 829.2 | - | 4.6 |
| MPH-8C2 | MPH-8C2 | 858.0 | 164.4 | 165 | 495 | 830.5 | - | 61.5 | 833.4 | - | 155.9 | 836.2 | - | 453.4 | 836.2 | - | 44.7 |
| MPH-8C3 | MPH-8C3 | 838.0 | 58.5 | 80 | 240 | 830.5 | - | 23.5 | 833.4 | - | 63.3 | 836.2 | - | 188.5 | 836.2 | - | 15.7 |
| MPH-8C4 | MPH-8C4 | 842.0 | 12.6 | 10 | 30 | 835.6 | - | 7.7 | 836.4 | - | 22.1 | 838.2 | - | 68.1 | 836.3 | - | 3.5 |
| MPH-8C6 | MPH-8C5 | 846.0 | 17.4 | 21 | 63 | 837.1 | - | 0.0 | 839.1 | - | 0.0 | 839.7 | - | 0.0 | 839.4 | - | 0.0 |
| MPH-8C7 | MPH-8C7 | 834.0 | 7.6 | 3 | 9 | 828.3 | - | 4.5 | 828.8 | - | 13.5 | 829.7 | - | 41.9 | 828.4 | - | 2.0 |
| MPH-8E | MPH-8E | 848.0 | 43.1 | 17 | 51 | 836.9 | - | 80.0 | 838.3 | - | 136.1 | 844.1 | - | 275.9 | 837.4 | - | 18.3 |
| MPH-8E1 | MPH-8E1 | 846.0 | 12.5 | 6 | 18 | 844.2 | - | 38.8 | 844.3 | - | 61.5 | 844.5 | - | 116.6 | 840.6 | - | 5.8 |
| MPH-8F | MPH-8F | 836.0 | 19.1 | 20 | 60 | 820.8 | - | 10.7 | 821.3 | - | 27.5 | 822.2 | - | 82.0 | 820.6 | - | 5.3 |
| MPH-8F1 | MPH-8F1 | 848.0 | 8.3 | 6 | 18 | 843.3 | - | 15.3 | 844.9 | - | 29.3 | 846.8 | - | 66.3 | 842.8 | - | 3.2 |
| MPH-8F2 | MPH-8F2 | 848.0 | 14.6 | 6 | 18 | 841.8 | - | 22.2 | 844.1 | - | 41.9 | 846.7 | - | 93.8 | 840.9 | - | 5.6 |
| MPH-8G | MPH-8G | 820.0 | 22.2 | 11 | 33 | 813.0 | - | 31.2 | 814.0 | - | 60.6 | 816.1 | - | 138.9 | 812.8 | - | 8.2 |
| MPH-8H | MPH-8H | 822.0 | 7.6 | 3 | 9 | 812.4 | - | 10.2 | 813.6 | - | 22.3 | 815.1 | - | 56.6 | 814.2 | - | 2.6 |
| MPH-8I | MPH-8I | 844.0 | 20.0 | 28 | 84 | 840.5 | - | 10.7 | 841.0 | - | 28.4 | 842.3 | - | 85.8 | 840.7 | - | 5.5 |
| MPH-8J | MPH-8J | 820.0 | 18.5 | 15 | 45 | 811.1 | - | 27.7 | 811.9 | - | 52.5 | 815.0 | - | 118.1 | 811.1 | - | 7.0 |
| ***MPH-8K*** | MPH-8K | 804.0 | 39.3 | 1 | 3 | 799.7 | - | 146.4 | 802.3 | - | 220.8 | 803.3 | - | 401.1 | 802.0 | - | 18.9 |
| MPH-9A | MPH-9A | 802.0 | 128.3 | 83 | 249 | 787.9 | - | 23.7 | 789.7 | - | 70.8 | 796.0 | - | 235.1 | 789.5 | - | 29.1 |
| MPH-9A1A | MPH-9A1A | 818.0 | 22.8 | 4 | 12 | 812.2 | - | 4.5 | 813.4 | - | 16.1 | 816.3 | - | 59.5 | 813.6 | - | 4.9 |
| ***MPH-9A1B*** | MPH-9A1B | 818.0 | 10.7 | 1 | 3 | 808.8 | - | 2.6 | 811.0 | - | 9.4 | 814.6 | - | 33.9 | 812.1 | - | 2.3 |
| MPH-9A2 | MPH-9A2 | 822.0 | 23.4 | 43 | 129 | 812.2 | - | 5.6 | 813.2 | - | 19.8 | 815.9 | - | 72.3 | 813.2 | - | 5.2 |
| MPH-9A3 | MPH-9A3 | 818.0 | 24.6 | 46 | 138 | 819.0 | 1.0 | 5.3 | 819.0 | 1.0 | 19.5 | 819.0 | 1.0 | 70.7 | 819.0 | 1.0 | 5.4 |
| MPH-9A4 | MPH-9A4 | 826.0 | 9.0 | 3 | 9 | 805.1 | - | 2.9 | 805.8 | - | 10.6 | 806.5 | - | 38.4 | 806.1 | - | 2.0 |
| ***MPH-9B2*** | MPH-9B2 | 784.0 | 39.1 | 1 | 3 | 782.0 | - | 141.9 | 782.3 | - | 216.5 | 782.6 | - | 397.0 | 782.5 | - | 18.7 |
| MPH-9C1-Central | MPH-9C1-Central | 753.0 | 22.6 | 5 | 15 | 746.2 | - | 27.5 | 748.9 | - | 56.2 | 750.6 | - | 135.1 | 747.8 | - | 7.9 |
| MPH-9C1-East | MPH-9C1-East | 756.0 | 119.5 | 10 | 30 | 752.1 | - | 180.7 | 752.1 | - | 299.0 | 752.2 | - | 590.6 | 751.9 | - | 50.6 |
| MPH-9C1-West | MPH-9C1-West | 752.0 | 57.4 | 17 | 51 | 741.8 | - | 48.7 | 742.6 | - | 103.5 | 745.1 | - | 257.0 | 742.2 | - | 19.2 |
| ***MPH-9C3*** | MPH-9C3 | 762.0 | 157.3 | 1 | 3 | 751.7 | - | 250.4 | 753.2 | - | 405.7 | 755.9 | - | 785.4 | 753.0 | - | 67.7 |
| ***MPH-9C4*** | MPH-9C4 | 760.0 | 45.4 | 1 | 3 | 756.0 | - | 96.2 | 757.3 | - | 155.9 | 758.5 | - | 301.9 | 755.2 | - | 20.0 |
| MPH-9D1 | MPH-9D1 | 750.0 | 9.4 | 6 | 18 | 742.3 | - | 13.1 | 743.7 | - | 26.4 | 745.3 | - | 62.7 | 744.3 | - | 3.5 |
| ***MPH-9D10*** | MPH-9D10 | 746.0 | 2.5 | 1 | 3 | 745.5 | - | 4.7 | 746.0 | 0.0 | 9.1 | 746.2 | 0.2 | 20.9 | 746.0 | 0.0 | 1.0 |
| MPH-9D2 | MPH-9D2 | 752.0 | 11.8 | 10 | 30 | 745.7 | - | 17.1 | 748.7 | - | 32.8 | 750.3 | - | 74.6 | 747.8 | - | 4.4 |
| MPH-9D3 | MPH-9D3 | 760.0 | 33.3 | 11 | 33 | 751.7 | - | 41.7 | 753.4 | - | 84.5 | 757.3 | - | 201.2 | 751.9 | - | 11.7 |
| MPH-9D4 | MPH-9D4 | 744.0 | 19.5 | 18 | 54 | 743.2 | - | 22.3 | 744.0 | 0.0 | 46.5 | 745.0 | 1.0 | 113.5 | 742.5 | - | 6.7 |
| MPH-9D5 | MPH-9D5 | 754.0 | 18.9 | 16 | 48 | 742.8 | - | 16.7 | 744.1 | - | 37.0 | 747.8 | - | 95.1 | 743.7 | - | 6.2 |
| MPH-9D6 | MPH-9D6 | 750.0 | 7.4 | 10 | 30 | 743.8 | - | 13.5 | 744.7 | - | 26.5 | 747.3 | - | 61.1 | 744.9 | - | 2.8 |
| MPH-9D7 | MPH-9D7 | 750.0 | 3.3 | 2 | 6 | 744.2 | - | 5.9 | 744.7 | - | 11.6 | 746.5 | - | 26.9 | 744.7 | - | 1.2 |
| MPH-9D8 | MPH-9D8 | 752.0 | 11.3 | 8 | 24 | 747.3 | - | 15.7 | 748.9 | - | 32.0 | 750.6 | - | 76.6 | 748.0 | - | 4.1 |
| MPH-9D9 | MPH-9D9 | 750.0 | 25.7 | 17 | 51 | 739.5 | - | 34.4 | 741.4 | - | 67.0 | 745.9 | - | 154.3 | 739.7 | - | 9.5 |
| ***MPH-9DC*** | MPH-9DC | 792.0 | 5.0 | 1 | 3 | 782.0 | - | 16.6 | 782.3 | - | 26.2 | 782.6 | - | 49.5 | 782.5 | - | 2.3 |
| ***MR1A-1*** | MR1A-1 | 736.0 | 10.3 | 1 | 3 | 728.1 | - | 32.7 | 728.7 | - | 52.6 | 734.7 | - | 101.1 | 727.7 | - | 4.7 |
| MR1A-2 | MR1A-2 | 736.0 | 11.5 | 2 | 6 | 729.0 | - | 36.6 | 730.6 | - | 58.8 | 734.4 | - | 112.8 | 728.8 | - | 5.3 |
| ***MR1A-3*** | MR1A-3 | 736.0 | 2.2 | 1 | 3 | 729.6 | - | 7.0 | 731.8 | - | 11.3 | 733.3 | - | 21.6 | 729.6 | - | 1.0 |
| MR1A-4 | MR1A-4 | 734.0 | 13.0 | 5 | 15 | 730.4 | - | 39.9 | 732.3 | - | 64.3 | 733.2 | - | 123.6 | 730.5 | - | 6.0 |
| ***MR1A-5*** | MR1A-5 | 734.0 | 20.7 | 1 | 3 | 731.1 | - | 54.1 | 732.3 | - | 87.6 | 733.2 | - | 169.4 | 731.1 | - | 9.4 |
| ***MR1A-6*** | MR1A-6 | 734.0 | 11.4 | 1 | 3 | 732.8 | - | 36.4 | 733.1 | - | 58.4 | 733.6 | - | 112.1 | 732.3 | - | 5.2 |
| MR1B-1 | MR1B-1 | 744.0 | 17.1 | 7 | 21 | 740.4 | - | 52.2 | 742.1 | - | 84.0 | 743.0 | - | 161.5 | 738.3 | - | 7.8 |
| ***MR1B-2*** | MR1B-2 | 756.0 | 5.6 | 1 | 3 | 746.8 | - | 17.9 | 748.6 | - | 28.8 | 752.1 | - | 55.3 | 742.0 | - | 2.6 |
| ***MR1B-3*** | MR1B-3 | 750.0 | 9.6 | 1 | 3 | 748.1 | - | 30.5 | 748.3 | - | 49.1 | 748.5 | - | 94.3 | 744.6 | - | 4.4 |
| MR1B-4 | MR1B-4 | 746.0 | 18.6 | 4 | 12 | 744.2 | - | 59.1 | 744.4 | - | 95.0 | 744.7 | - | 182.5 | 742.6 | - | 8.5 |
| MR1C | MR1C | 760.0 | 43.7 | 56 | 168 | 758.5 | - | 105.5 | 758.7 | - | 169.5 | 759.1 | - | 325.4 | 758.1 | - | 19.5 |
| ***MR1D-1*** | MR1D-1 | 736.0 | 9.7 | 1 | 3 | 734.5 | - | 30.8 | 734.7 | - | 49.6 | 735.0 | - | 95.3 | 734.1 | - | 4.5 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Upper Valley**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2 year [2.90-in] | | | 10 year [4.20-in] | | | 100 year [7.90-in] | | | 10 day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***MR1E*** | MR1E | 760.0 | 6.7 | 1 | 3 | 747.9 | - | 21.1 | 749.5 | - | 34.0 | 752.8 | - | 65.3 | 746.9 | - | 3.1 |
| MR2A | MR2A | 746.0 | 81.3 | 41 | 123 | 744.9 | - | 160.2 | 745.2 | - | 256.8 | 745.8 | - | 494.2 | 744.3 | - | 35.8 |
| ***MR3A*** | MR3A | 740.0 | 71.4 | 1 | 3 | 736.9 | - | 139.4 | 737.6 | - | 226.0 | 738.6 | - | 439.7 | 736.2 | - | 31.4 |
| ***MR3A-1*** | MR3A-1 | 740.0 | 13.7 | 1 | 3 | 738.2 | - | 42.3 | 738.4 | - | 68.1 | 739.0 | - | 131.1 | 734.7 | - | 6.3 |
| ***MR3A-2*** | MR3A-2 | 738.0 | 12.0 | 1 | 3 | 738.3 | 0.3 | 38.1 | 738.4 | 0.4 | 61.3 | 738.6 | 0.6 | 117.8 | 738.1 | 0.1 | 5.5 |
| MR3B | MR3B | 742.0 | 94.2 | 5 | 15 | 734.3 | - | 192.7 | 736.1 | - | 313.2 | 739.6 | - | 607.9 | 735.3 | - | 41.4 |
| ***MR3C*** | MR3C | 734.0 | 30.1 | 1 | 3 | 727.8 | - | 74.0 | 728.4 | - | 118.1 | 730.2 | - | 225.4 | 726.7 | - | 13.6 |
| ***MR3D*** | MR3D | 734.0 | 6.7 | 1 | 3 | 729.4 | - | 21.3 | 730.0 | - | 34.3 | 731.2 | - | 65.8 | 728.6 | - | 3.1 |
| ***MR4A*** | MR4A | 738.0 | 10.0 | 1 | 3 | 731.3 | - | 31.7 | 731.8 | - | 51.1 | 733.6 | - | 98.2 | 730.8 | - | 4.6 |
| ***MR4B*** | MR4B | 734.0 | 10.0 | 1 | 3 | 732.1 | - | 31.5 | 732.2 | - | 50.6 | 732.5 | - | 97.2 | 731.5 | - | 4.6 |
| ***MR4C*** | MR4C | 734.0 | 6.7 | 1 | 3 | 730.9 | - | 21.4 | 731.0 | - | 34.4 | 731.5 | - | 66.1 | 730.2 | - | 3.1 |
| ***MR4D*** | MR4D | 736.0 | 9.7 | 1 | 3 | 734.4 | - | 30.7 | 734.8 | - | 49.4 | 735.4 | - | 95.0 | 731.3 | - | 4.4 |
| ***MR4F*** | MR4F | 734.0 | 14.6 | 1 | 3 | 734.2 | 0.2 | 45.6 | 734.2 | 0.2 | 73.8 | 734.3 | 0.3 | 142.7 | 734.1 | 0.1 | 6.7 |
| ***MR4G*** | MR4G | 736.0 | 14.1 | 1 | 3 | 732.5 | - | 40.3 | 733.2 | - | 65.1 | 734.0 | - | 125.6 | 731.0 | - | 6.4 |
| ***MR5A-1*** | MR5A-1 | 738.0 | 24.8 | 1 | 3 | 738.2 | 0.2 | 63.9 | 738.2 | 0.2 | 103.5 | 738.4 | 0.4 | 199.9 | 738.1 | 0.1 | 11.2 |
| ***MR5A-1*** | MR5A-3 | 738.0 | 24.8 | 1 | 3 | 725.5 | - | 0.0 | 729.2 | - | 0.0 | 733.9 | - | 0.0 | 723.4 | - | 0.0 |
| ***MR6A-1*** | MR6A-1 | 736.0 | 16.0 | 1 | 3 | 734.5 | - | 42.6 | 735.0 | - | 69.0 | 736.1 | 0.1 | 133.3 | 734.7 | - | 7.2 |
| ***MR6A-1A*** | MR6A-1A | 738.0 | 1.8 | 1 | 3 | 734.5 | - | 5.6 | 734.9 | - | 9.0 | 736.1 | - | 17.3 | 734.7 | - | 0.8 |
| ***MR6A-2*** | MR6A-2 | 738.0 | 4.3 | 1 | 3 | 733.4 | - | 8.6 | 734.3 | - | 16.3 | 735.0 | - | 36.7 | 733.3 | - | 1.7 |
| ***MR6A-2A*** | MR6A-2A | 738.0 | 3.2 | 1 | 3 | 735.1 | - | 0.9 | 735.3 | - | 4.3 | 735.8 | - | 16.3 | 735.2 | - | 0.7 |
| ***MR6A-3*** | MR6A-3 | 740.0 | 1.3 | 1 | 3 | 736.4 | - | 4.0 | 738.0 | - | 6.5 | 738.1 | - | 12.4 | 734.6 | - | 0.6 |
| ***MR6A-4*** | MR6A-4 | 740.0 | 0.6 | 1 | 3 | 734.5 | - | 1.7 | 735.0 | - | 2.8 | 737.9 | - | 5.4 | 734.7 | - | 0.3 |
| ***MR6A-5*** | MR6A-5 | 736.0 | 10.0 | 1 | 3 | 736.4 | 0.4 | 31.6 | 736.6 | 0.6 | 50.8 | 736.7 | 0.7 | 97.7 | 736.1 | 0.1 | 4.6 |
| MR6B-1 | MR6B-1 | 736.0 | 9.9 | 2 | 6 | 733.3 | - | 31.4 | 733.8 | - | 50.6 | 734.8 | - | 97.2 | 733.0 | - | 4.5 |
| ***MR6B-2*** | MR6B-2 | 736.0 | 3.7 | 1 | 3 | 734.2 | - | 11.5 | 734.3 | - | 18.6 | 734.8 | - | 36.0 | 733.0 | - | 1.7 |
| ***MR6B-2A*** | MR6B-2A | 734.0 | 2.5 | 1 | 3 | 734.1 | 0.1 | 7.9 | 734.4 | 0.4 | 12.7 | 734.9 | 0.9 | 24.5 | 734.1 | 0.1 | 1.1 |
| MR6C-1 | MR6C-1 | 746.0 | 5.2 | 3 | 9 | 744.1 | - | 10.2 | 744.3 | - | 19.5 | 744.5 | - | 43.9 | 744.1 | - | 2.0 |
| MR6C-1A | MR6C-1A | 736.0 | 50.7 | 8 | 24 | 734.2 | - | 99.1 | 734.4 | - | 160.9 | 735.0 | - | 313.0 | 734.1 | - | 22.3 |
| MR6CE1 | MR6CE1 | 738.0 | 37.6 | 17 | 51 | 733.0 | - | 35.1 | 733.8 | - | 73.1 | 734.8 | - | 180.0 | 733.0 | - | 12.6 |
| ***MR6CE2*** | MR6CE2 | 738.0 | 1.7 | 1 | 3 | 735.4 | - | 5.5 | 735.8 | - | 8.9 | 736.3 | - | 17.1 | 734.6 | - | 0.8 |
| MR6D | MR6D | 754.0 | 34.1 | 15 | 45 | 744.2 | - | 29.9 | 744.5 | - | 63.5 | 744.9 | - | 157.4 | 744.1 | - | 11.4 |
| MR6F | MR6F | 754.0 | 23.6 | 9 | 27 | 745.0 | - | 34.9 | 746.1 | - | 66.4 | 747.5 | - | 149.7 | 745.2 | - | 8.9 |
| ***MR7*** | MR7 | 722.0 | 541.2 | 1 | 3 | 722.3 | 0.3 | 187.6 | 722.6 | 0.6 | 417.6 | 723.1 | 1.1 | 1097.6 | 722.3 | 0.3 | 156.6 |
| ***MR7*** | MR7 Outfall | 710.0 | 541.2 | 1 | 3 | 692.7 | - | 0.0 | 692.8 | - | 0.0 | 693.0 | - | 0.0 | 691.7 | - | 0.0 |
| BLA1-A | MR7 Outfall 2 | 710.0 | 861.4 | 7 | 21 | 690.8 | - | 0.0 | 691.1 | - | 0.0 | 691.6 | - | 0.0 | 690.3 | - | 0.0 |
| ***MR7*** | MR7 Outfall 3 | 736.0 | 541.2 | 1 | 3 | 701.4 | - | 0.0 | 702.4 | - | 0.0 | 704.4 | - | 0.0 | 701.8 | - | 0.0 |
| ***MR7*** | MR7 Outfall 4 | 710.0 | 541.2 | 1 | 3 | 692.8 | - | 0.0 | 692.9 | - | 0.0 | 693.0 | - | 0.0 | 691.4 | - | 0.0 |
| MPF1-A | Node1001 | 924.0 | 79.4 | 12 | 36 | 915.2 | - | 0.0 | 915.2 | - | 0.0 | 915.3 | - | 0.0 | 915.2 | - | 0.0 |
| ***SC-3B*** | Node1009 | 947.0 | 92.0 | 1 | 3 | 947.0 | 0.0 | 0.0 | 947.0 | 0.0 | 0.0 | 947.0 | 0.0 | 0.0 | 947.0 | 0.0 | 0.0 |
| MPH-SC2C2 | Node1024 | 820.0 | 32.1 | 17 | 51 | 798.9 | - | 0.0 | 799.3 | - | 0.0 | 800.2 | - | 0.0 | 798.7 | - | 0.0 |
| MPH-8B | Node1074 | 780.0 | 179.7 | 76 | 228 | 781.3 | 1.3 | 0.0 | 782.9 | 2.9 | 0.0 | 784.2 | 4.2 | 0.0 | 782.3 | 2.3 | 0.0 |
| MPH-8B | Node1075 | 802.0 | 179.7 | 76 | 228 | 795.0 | - | 0.0 | 795.2 | - | 0.0 | 795.2 | - | 0.0 | 795.2 | - | 0.0 |
| MR1C | Node1145 | 744.0 | 43.7 | 56 | 168 | 744.2 | 0.2 | 0.0 | 744.3 | 0.3 | 0.0 | 744.5 | 0.5 | 0.0 | 744.1 | 0.1 | 0.0 |
| MR2A | Node1146 | 730.0 | 81.3 | 41 | 123 | 727.4 | - | 0.0 | 728.6 | - | 0.0 | 729.5 | - | 0.0 | 725.5 | - | 0.0 |
| MPH-8B | Node1168 | 774.0 | 179.7 | 76 | 228 | 765.9 | - | 0.0 | 768.7 | - | 0.0 | 773.3 | - | 0.0 | 767.0 | - | 0.0 |
| MPH-9D3 | Node1169 | 771.0 | 33.3 | 11 | 33 | 755.9 | - | 0.0 | 758.5 | - | 0.0 | 769.1 | - | 0.0 | 757.0 | - | 0.0 |
| MPH-8B | Node1170 | 770.0 | 179.7 | 76 | 228 | 756.0 | - | 0.0 | 758.5 | - | 0.0 | 769.2 | - | 0.0 | 757.2 | - | 0.0 |
| MPH-SC2B2 | Node1215 | 794.0 | 19.6 | 16 | 48 | 784.9 | - | 0.0 | 786.1 | - | 0.0 | 793.3 | - | 0.0 | 785.6 | - | 0.0 |
| MPG3-C1 | Node762 | 908.0 | 15.1 | 4 | 12 | 895.1 | - | 0.0 | 895.2 | - | 0.0 | 895.6 | - | 0.0 | 895.4 | - | 0.0 |
| ***MPG3-D*** | Node763 | 905.0 | 11.7 | 1 | 3 | 897.4 | - | 0.0 | 898.6 | - | 0.0 | 898.9 | - | 0.0 | 898.8 | - | 0.0 |
| MPE1-A | Node764 | 912.0 | 47.2 | 4 | 12 | 908.1 | - | 0.0 | 908.5 | - | 0.0 | 909.5 | - | 0.0 | 908.2 | - | 0.0 |
| MP4-A3 | Node767 | 912.0 | 132.7 | 76 | 228 | 890.9 | - | 0.0 | 891.5 | - | 0.0 | 891.4 | - | 0.0 | 891.3 | - | 0.0 |
| MPF1-G | Node769 | 940.0 | 31.5 | 3 | 9 | 937.2 | - | 0.0 | 937.3 | - | 0.0 | 937.4 | - | 0.0 | 937.3 | - | 0.0 |
| ***MPF1-F1*** | Node770 | 930.0 | 19.9 | 1 | 3 | 923.2 | - | 0.0 | 923.5 | - | 0.0 | 924.4 | - | 0.0 | 923.5 | - | 0.0 |
| MPG1-G | Node779 | 908.0 | 64.6 | 8 | 24 | 900.8 | - | 0.0 | 901.7 | - | 0.0 | 903.7 | - | 0.0 | 902.1 | - | 0.0 |
| MPH-9A | Node783 | 822.0 | 128.3 | 83 | 249 | 813.3 | - | 0.0 | 813.3 | - | 0.0 | 815.4 | - | 0.0 | 813.3 | - | 0.0 |
| MPG3-A1 | Node785 | 840.0 | 62.4 | 59 | 177 | 831.0 | - | 0.0 | 833.9 | - | 0.0 | 837.0 | - | 0.0 | 835.7 | - | 0.0 |
| ***MP4-E*** | Node788 | 915.0 | 22.7 | 1 | 3 | 910.1 | - | 0.0 | 910.1 | - | 0.0 | 910.2 | - | 0.0 | 910.1 | - | 0.0 |
| MPG3-A1 | Node789 | 870.0 | 62.4 | 59 | 177 | 833.3 | - | 0.0 | 840.0 | - | 0.0 | 840.9 | - | 0.0 | 840.4 | - | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.

**Upper Valley**
**Appendix B**
**Maximum Node Depth Results (Flooding) and Catch Basin Inlet Capacity**
**City of Shakopee**

| | | | | | | 2 year [2.90-in] | | | 10 year [4.20-in] | | | 100 year [7.90-in] | | | 10 day Snowmelt [7.20-in] | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Subwatershed | Node Name | Rim Invert | Subwatershed Area (ac) | Number of Catch Basins | Total Subwatershed Inlet Capacity (cfs) (3 cfs per Catch Basin) | Max Water Elevation (ft) | Maximum Depth Above Manhole (ft) | Max Runoff Per Catch Basin (cfs) | Max Water Elevation (ft)2 | Maximum Depth Above Manhole (ft)3 | Max Runoff Per Catch Basin (cfs)2 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs)3 | Max Water Elevation (ft)5 | Maximum Depth Above Manhole (ft)6 | Max Runoff Per Catch Basin (cfs) |
| ***MPG3-D*** | Node790 | 906.0 | 11.7 | 1 | 3 | 898.3 | - | 0.0 | 898.7 | - | 0.0 | 899.9 | - | 0.0 | 899.5 | - | 0.0 |
| MPG3-A1 | Node791 | 892.0 | 62.4 | 59 | 177 | 888.1 | - | 0.0 | 888.2 | - | 0.0 | 888.5 | - | 0.0 | 888.3 | - | 0.0 |
| MPH-8C6 | Node794 | 848.0 | 17.4 | 21 | 63 | 844.1 | - | 0.0 | 844.3 | - | 0.0 | 844.8 | - | 0.0 | 844.3 | - | 0.0 |
| MPH-8C4 | Node795 | 846.0 | 12.6 | 10 | 30 | 834.0 | - | 0.0 | 839.1 | - | 0.0 | 839.6 | - | 0.0 | 839.4 | - | 0.0 |
| ***MP1-A2*** | Node798 | 876.0 | 148.8 | 1 | 3 | 796.9 | - | 0.0 | 796.9 | - | 0.0 | 797.0 | - | 0.0 | 796.9 | - | 0.0 |
| ***MP1-A2*** | Node801 | 858.0 | 148.8 | 1 | 3 | 852.4 | - | 0.0 | 852.5 | - | 0.0 | 852.9 | - | 0.0 | 852.2 | - | 0.0 |
| ***MP1-N*** | Node802 | 825.0 | 52.5 | 1 | 3 | 809.3 | - | 0.0 | 809.8 | - | 0.0 | 810.8 | - | 0.0 | 809.1 | - | 0.0 |
| ***MP1-B2*** | Node804 | 900.0 | 90.9 | 1 | 3 | 842.2 | - | 0.0 | 842.2 | - | 0.0 | 842.5 | - | 0.0 | 842.1 | - | 0.0 |
| ***MP1-B*** | Node806 | 860.0 | 131.1 | 1 | 3 | 850.3 | - | 0.0 | 850.4 | - | 0.0 | 850.7 | - | 0.0 | 850.2 | - | 0.0 |
| ***MP1-B*** | Node807 | 848.0 | 131.1 | 1 | 3 | 842.1 | - | 0.0 | 842.2 | - | 0.0 | 842.3 | - | 0.0 | 842.1 | - | 0.0 |
| ***MP1-B*** | Node808 | 876.0 | 131.1 | 1 | 3 | 870.1 | - | 0.0 | 870.1 | - | 0.0 | 870.3 | - | 0.0 | 870.1 | - | 0.0 |
| ***MP1-B2*** | Node810 | 858.0 | 90.9 | 1 | 3 | 852.1 | - | 0.0 | 852.1 | - | 0.0 | 852.3 | - | 0.0 | 852.1 | - | 0.0 |
| ***MP1-E*** | Node812 | 874.0 | 15.8 | 1 | 3 | 868.2 | - | 0.0 | 868.3 | - | 0.0 | 868.3 | - | 0.0 | 868.2 | - | 0.0 |
| MPF1-A | Node814 | 918.0 | 79.4 | 12 | 36 | 913.2 | - | 0.0 | 913.3 | - | 0.0 | 913.3 | - | 0.0 | 913.3 | - | 0.0 |
| MPH-9C1-West | Node817 | 785.0 | 57.4 | 17 | 51 | 740.0 | - | 0.0 | 746.4 | - | 0.0 | 746.9 | - | 0.0 | 740.0 | - | 0.0 |
| ***MPH-6A3*** | Node821 | 825.0 | 42.1 | 1 | 3 | 803.4 | - | 0.0 | 803.3 | - | 0.0 | 804.5 | - | 0.0 | 802.5 | - | 0.0 |
| ***MPG3-I*** | Node822 | 904.0 | 10.1 | 1 | 3 | 896.3 | - | 0.0 | 896.3 | - | 0.0 | 900.3 | - | 0.0 | 897.2 | - | 0.0 |
| MP2-B | Node824 | 826.0 | 54.1 | 124 | 372 | 814.9 | - | 0.0 | 815.4 | - | 0.0 | 825.1 | - | 0.0 | 819.4 | - | 0.0 |
| ***MP4-D4*** | Node833 | 906.0 | 27.5 | 1 | 3 | 900.4 | - | 0.0 | 901.0 | - | 0.0 | 901.6 | - | 0.0 | 900.6 | - | 0.0 |
| ***MP1-A2*** | Node834 | 942.0 | 148.8 | 1 | 3 | 936.1 | - | 0.0 | 936.2 | - | 0.0 | 936.3 | - | 0.0 | 936.1 | - | 0.0 |
| ***MP3-A*** | Node836 | 936.0 | 31.7 | 1 | 3 | 932.1 | - | 0.0 | 932.1 | - | 0.0 | 932.2 | - | 0.0 | 932.1 | - | 0.0 |
| MPG3-A1 | Node849 | 841.0 | 62.4 | 59 | 177 | 830.4 | - | 0.0 | 831.3 | - | 0.0 | 836.9 | - | 0.0 | 835.7 | - | 0.0 |
| ***MP4-D4*** | Node853 | 922.0 | 27.5 | 1 | 3 | 916.7 | - | 0.0 | 916.8 | - | 0.0 | 918.3 | - | 0.0 | 917.0 | - | 0.0 |
| MPF1-A | Node855 | 908.0 | 79.4 | 12 | 36 | 901.4 | - | 0.0 | 902.2 | - | 0.0 | 903.3 | - | 0.0 | 901.2 | - | 0.0 |
| MPF-G | Node856 | 908.0 | 19.6 | 30 | 90 | 896.4 | - | 0.0 | 897.5 | - | 0.0 | 898.6 | - | 0.0 | 896.4 | - | 0.0 |
| ***MPG3-I*** | Node858 | 900.0 | 10.1 | 1 | 3 | 881.0 | - | 0.0 | 881.0 | - | 0.0 | 881.0 | - | 0.0 | 881.0 | - | 0.0 |
| PLOC-H4 | PLOC-H4 | 840.0 | 3.7 | 5 | 15 | 817.0 | - | 7.4 | 817.3 | - | 25.0 | 818.0 | - | 82.7 | 817.9 | - | 4.6 |
| PLOC H4a | PLOC-H4a | 851.0 | 75.4 | 3 | 9 | 844.3 | - | 10.2 | 844.7 | - | 27.8 | 846.0 | - | 82.1 | 844.9 | - | 4.8 |
| PLOC-H4b | PLOC-H4b | 820.0 | 19.4 | 6 | 18 | 815.1 | - | 7.4 | 816.0 | - | 25.0 | 818.2 | - | 82.7 | 814.9 | - | 4.6 |
| ***SC-1A*** | SC-1A | 948.0 | 42.0 | 1 | 3 | 938.2 | - | 18.6 | 938.5 | - | 52.0 | 939.2 | - | 156.8 | 938.5 | - | 11.2 |
| ***SC-1B*** | SC-1B | 950.0 | 40.6 | 1 | 3 | 950.6 | 0.6 | 29.8 | 950.9 | 0.9 | 67.3 | 951.5 | 1.5 | 175.3 | 950.4 | 0.4 | 12.8 |
| ***SC-1C*** | SC-1C | 954.0 | 11.8 | 1 | 3 | 953.0 | - | 9.1 | 953.7 | - | 21.9 | 954.2 | 0.2 | 61.2 | 954.0 | 0.0 | 3.5 |
| ***SC-1D*** | SC-1D | 956.0 | 4.2 | 1 | 3 | 946.1 | - | 5.5 | 947.1 | - | 12.0 | 949.0 | - | 30.6 | 948.8 | - | 1.4 |
| DS-02B | SC-2 | 972.0 | 73.2 | 3 | 9 | 960.0 | - | 1.4 | 960.0 | - | 3.3 | 960.0 | - | 8.7 | 960.0 | - | 0.4 |
| SC-3A | SC-3A | 954.0 | 49.9 | 3 | 9 | 948.6 | - | 32.3 | 950.5 | - | 84.7 | 952.3 | - | 244.5 | 949.2 | - | 13.9 |
| ***SC-3B*** | SC-3B | 954.0 | 92.0 | 1 | 3 | 946.0 | - | 25.6 | 946.0 | - | 82.5 | 946.1 | - | 272.2 | 946.1 | - | 21.7 |
| ***SC-3C*** | SC-3C | 956.0 | 19.1 | 1 | 3 | 955.5 | - | 16.2 | 955.9 | - | 37.9 | 956.2 | 0.2 | 101.4 | 956.0 | 0.0 | 5.8 |
| ***SC-3D*** | SC-3D | 959.5 | 7.7 | 1 | 3 | 956.8 | - | 9.8 | 957.5 | - | 21.8 | 958.8 | - | 56.2 | 958.6 | - | 2.6 |
| ***SC-3E*** | SC-3E | 956.0 | 89.7 | 1 | 3 | 951.7 | - | 39.7 | 952.0 | - | 96.6 | 952.3 | - | 269.4 | 952.1 | - | 25.7 |
| ***SC-3F*** | SC-3F | 982.0 | 8.9 | 1 | 3 | 976.0 | - | 7.7 | 976.7 | - | 17.8 | 977.7 | - | 47.2 | 977.6 | - | 2.7 |
| ***SC-3G*** | SC-3G | 966.3 | 7.4 | 1 | 3 | 960.5 | - | 7.2 | 961.0 | - | 17.0 | 962.1 | - | 45.8 | 961.9 | - | 2.3 |
| ***SC-4A*** | SC-4A | 934.0 | 464.0 | 1 | 3 | 933.5 | - | 74.4 | 934.1 | 0.1 | 204.6 | 935.4 | 1.4 | 648.0 | 934.8 | 0.8 | 103.8 |
| ***SC-4B*** | SC-4B | 942.0 | 65.8 | 1 | 3 | 940.5 | - | 26.3 | 941.0 | - | 68.7 | 941.9 | - | 205.4 | 941.8 | - | 17.7 |
| ***SC-4C*** | SC-4C | 940.0 | 26.4 | 1 | 3 | 935.2 | - | 16.7 | 937.4 | - | 40.4 | 939.7 | - | 110.7 | 934.7 | - | 7.7 |
| ***SC-4D*** | SC-4D | 936.0 | 114.5 | 1 | 3 | 932.0 | - | 56.8 | 933.2 | - | 131.2 | 935.3 | - | 353.1 | 932.5 | - | 34.3 |
| ***SC-4E*** | SC-4E | 948.0 | 95.5 | 1 | 3 | 936.9 | - | 51.3 | 937.7 | - | 115.0 | 939.2 | - | 301.9 | 937.5 | - | 29.4 |
| ***SC-5F*** | SC-5F | 963.0 | 29.7 | 1 | 3 | 963.1 | 0.1 | 13.9 | 963.3 | 0.3 | 42.4 | 963.6 | 0.6 | 133.4 | 963.1 | 0.1 | 7.5 |
| ***MP7-N*** | west culvert | 912.0 | 84.8 | 1 | 3 | 912.4 | 0.4 | 0.0 | 912.7 | 0.7 | 0.0 | 912.8 | 0.8 | 0.0 | 912.5 | 0.5 | 0.0 |

[1] ***Bold and Italicized*** subwatershed names represent areas with incomplete catch basin data. These areas were assumed to have one catch basin. This assumption may not be correct and inlet concerns may be invalid.
[2] Areas with flooding over 2 feet were flagged as potentially severe flooding areas and are highlighted in red.
[3] Areas with maximum runoff greater than maximum inlet capacity were flagged as potential flood areas and are highlighted and red.