

**Saint Anthony Park Community Council (SAPCC)  
Environment Committee**

**Proposal/Terms of Reference for a Desk Study**

**Drainage History and Current Status of the Bridal Veil Creek Watershed  
July 10 2004**

**Background/Introduction**

The Bridal Veil Creek (BVC) sub-watershed of the Mississippi River historically drained a 300-acre pond and wetland complex. This watershed comprised neighborhoods in Minneapolis (Southeast Como and Prospect Park Neighborhoods), St. Paul (St. Anthony Park and Hamline-Midway neighborhoods), St. Anthony Village, and Lauderdale. The creek still flows today, although mainly underground through the sewer system. It joins the Mississippi River at Bridal Veil Falls just northeast of the Franklin Avenue bridge in Minneapolis, where it emerges from a culvert.

The original landscape of Bridal Veil Creek was very much affected by the historic industrial development of Minneapolis and St. Paul. An 1867 map suggests that there were two tributaries of the creek, draining from the north and east. Since then, the original topography, drainage and vegetative cover of the BVC watershed have been greatly altered by industrialization and residential development. Most of the wetlands in the watershed were drained and filled by early settlers, farmers and later the railroads. The creek and nearby springs were diverted through ditches and storm sewers. The ponds were gradually filled in, although a few pond fragments still remain scattered throughout the St. Anthony Park, Lauderdale and Hamline-Midway neighborhoods. These remnant wetland sites include the Kasota Pond complex, Skonard Spring, Breck Woods marsh, the Caithlin Avenue wetland, Serita wetland, the "cellphone tower" wetland fragment, the Burlington Northern pond (aka Newell Pond or Fairview Pond), the man-made Bridal Veil pond and upstream meandering ditch, and numerous other very small fragments demonstrating wetland characteristics (hydrated soils and associated plant and aquatic communities).

Today, habitat is fragmented as is typical in a large urban brownfield. Several of these sites have been monitored or studied by members of the SAPCC Environment Committee, Southeast Como Improvement Association (SECIA), University of Minnesota faculty and students, and local residents. The Minnesota Department of Natural Resources provided a Metro Greenways planning grant to SAPCC in 2000 to undertake a preliminary baseline study of fragmented habitat, resulting in the report *What We Have Lost and What Remains: Options for Managing and Connecting Habitat in Saint Anthony Park with Surrounding Communities*. In 2003 SAPCC was awarded a DNR Conservation Partners grant to improve habitat at the Kasota pond complex and other sites. Also in 2003, SECIA was awarded a grant by the Mississippi Watershed Management Organization (MWMO) to re-establish a habitat link between the Bridal Veil pond and Kasota pond complex.

SECIA, SAPCC and other neighborhood groups have partnered together over the years on a variety of environmental issues that cross municipal boundaries. Volunteers from local communities have organized a number of events at the wetland and pond sites for at least a decade, including annual clean-ups and buckthorn removal. The sites have been used for various study and research activities by the U of M for about twenty years.

**Study Purpose and Objective**

The purpose of this study is the preparation of a comprehensive narrative report to inform the partnering agencies about the habitat and drainage (historic and contemporary) of the Bridal Veil Creek watershed. The report is to be based upon a comprehensive desk review of prior hydrologic and drainage studies and documentation. There are two main complementary foci of this study, each having equal weight:

- a. *hydrologic* (to enable SAPCC and partners make informed decisions concerning drainage, flooding, storm sewer, storm water, rain garden and general watershed issues);
- b. *habitat/ecosystem* (to inform SAPCC and partners about original cover/habitat to assist in rehabilitation efforts)

This report will be used as a key reference for planning and decision making by SAPCC, SECIA and other local organizations, and will guide future land use and environmental conservation activities initiated at the community level. The study output should not be simply an engineering-oriented report, but rather a factual narrative document and collection of maps and graphics that will richly inform the partnering organizations and citizens about the history and current condition of the Bridal Veil Creek watershed. Ultimately, the document should enable the partners to make more informed decisions about environmental issues, conservation and protection of fragmented habitat, land use and watershed management. The report should highlight gaps in information and knowledge, and recommend any additional field studies that might be needed in a possible second phase of investigation. The report will be shared with partners and other relevant agencies (DNR, CRWD, MPCA, MWMO, BWSR, MNDOT, etc.).

### **Justification for the Study**

The great majority of the original wetlands in Minnesota have been drained and filled. Within the metropolitan area, most natural wetlands have been lost to development. There are few undeveloped natural wetlands and ponds that are not already surrounded by fully developed landscapes in the urban core of Minneapolis and St. Paul. MWMO documents note that the Kasota ponds in the BVC watershed are the last remaining undeveloped natural wetlands in the middle Mississippi watershed. There is ample evidence that the sites provide valuable wetland habitat and ecosystem functions that are highly valued by the public.

Bridal Veil Creek has been largely forgotten in public memory, and the Kasota pond fragments are largely overlooked by planners and policy-makers. However, pressures to develop private lands containing wetland characteristics in the BVC watershed have continued unabated, as seen in the incremental filling of the north Kasota pond for the installation of billboard footings and parking lot expansion; the dumping of construction materials in the west pond; and expansion of railroad ballast into the north and west ponds.

A key focus of the SAPCC and SECIA environment committees has been to protect and conserve the Kasota pond complex, Bridal Veil pond and other remnant natural landscape features. Local residents and community councils have reacted to proposed new developments at the wetlands, with mixed results. There has been discussion in the SAPCC environment committee that more information is needed about the hydrologic characteristics of the wetland and pond areas to better inform local planning, decision making and pro-active (rather than reactive) management. A key question is the degree to which the pond and wetland fragments were historically linked, and whether those linkages continue to exist today through surface, subsurface or other routes. What steps and actions can be taken to ensure the protection and conservation of the remaining wetlands, and to maximize habitat values and ecosystem functions?

### **Potential Partners and Cooperators:**

- Saint Anthony Park Community Council (SAPCC);

- Southeast Como Neighborhood Improvement Association (SECIA)
- Prospect Park/East River Road Improvement Association (PPERRIA)
- Hamline-Midway Neighborhood Association
- City of Lauderdale Community Council
- Capital Region Watershed District
- Mississippi Watershed Management Organization
- Minnesota Department of Natural Resources

### **Scope of Work:**

1. Undertake a desk review and analysis of all known, prior hydrologic and drainage studies; environmental, habitat, pollution and ecosystem studies and reports; and other relevant materials and information on the BVC watershed, to be summarized in a narrative report. Materials to be reviewed include (but are not limited to):

- Historic plat and real estate maps, survey records and other historic materials. For example, the 1867 Empson plat map delineates the historic BVC “cascade” and wetland features, and historic geologic features of the Mississippi River gorge and BVC in Lauderdale and Saint Anthony Park. Possible sources include the Ramsey and Hennepin County Historical Societies; Empson Map Company; digital Sanborn maps (1884-1951); Minnesota Historical Society; U of M and Hamline University map libraries, etc.;
- Documentation and maps from public works, water and sewer and other relevant departments in the municipalities within and neighboring the watershed;
- Railroad history and documents, if available;
- SCS soil survey for Ramsey County (1914)
- Ramsey County Soil and Water Conservation District 1981 wetland inventory. Each wetland was classified according to standards set forth in the U.S. Fish and Wildlife Service, Circular 39 "Wetlands of the United States, 1971." The classifications used in the RCSWCD 1981 inventory follow the FWS Circular 39 (1956) system that distinguishes wetlands by vegetation and water depth. Although Federal agencies use a more current classification system (Classification of Wetlands and Deepwater Habitats of the United States, 1979), the Circular 39 system is referenced in the State Statute.
- Minnesota Department of Natural Resources 1979 Protected Waters and Wetlands Inventory
- National Wetlands Inventory web site, where each wetland is given an identifier. Several of the Kasota area ponds are included.
- Slide set of underground sewer system (available from K. Eckman);
- Aerial photographs, remote sensing and GIS images;
- Studies conducted by University of Minnesota faculty and staff, and by other colleges (e.g. Cooper, Eckman, and various students);
- The SEED-SEMI AUAR report and annexes (available from MCDA, SECIA or SAPCC);
- Documentation from MNDoT on the design and construction of Trunk Highway 280 and resulting impact on BVC and associated ponds and wetlands;
- Documentation and studies from MPCA and EPA related to polluted sites in the Highway 280 corridor (especially the Valentine-Clark site and the Elm Street Ash Dump), and impact on the BVC topography and drainage;
- Documentation from the City of Minneapolis and EPA regarding the culverting of Bridal Veil Creek above the duck pond in the early 1990s due to contamination of the Valentine-Clark site;
- The Phase II environmental report for the proposed BP Amoco development (available from SAPCC);
- The Serita Wetland study commissioned by CRWD;
- Hydrologic/engineering findings from the Brock White study of Skonard Spring;

- Pond monitoring data collected by SAPCC volunteers (available from SAPCC and K. Eckman);
- Bridal Veil Creek and Pond Site Analysis, March 2004, Kestrel Design Group;
- Materials and information from other sources as appropriate.

The consultant should make all efforts to seek out other materials not listed here.

2. Prepare a comprehensive narrative report with substantive annexes, summarizing all known prior documentation. This factual, informational report should address the following points:

a. To the degree possible, describe the historic delineation of the Bridal Veil Creek watershed, including prominent hydrologic wetland, pond and spring features. Give a brief narrative chronological summary of changes made to the creek and its drainage over time. Describe the degree to which historic hydrologic linkages among wetland and pond fragments remain intact.

b. To the degree possible, describe the prior and current sources of recharge to key wetland and pond fragments;

c. Identify gaps in current knowledge and information about the hydrology and drainage of the BVC watershed;

d. To the extent possible, describe in detail the original habitat features, vegetative cover and plant communities associated with the historic watershed. This will assist efforts in habitat restoration and mitigation.

d. Make recommendations for further possible field studies that might be indicated as a result of this desk study;

e. Identify key parcels of land with high ecosystem or hydrologic function that may need further attention or action by the partners.

**Outputs/deliverables:**

1. Preparation of a detailed narrative written report answering the above questions, with specific recommendations for next steps. As noted above, the study output should not be simply an engineering-oriented report, but rather a factual narrative document and collection of maps and graphics that will richly inform the partnering organizations and citizens about the drainage and hydrology of Bridal Veil Creek. The report should be written in a style understandable by a non-engineering audience, with technical processes and terms clearly described and defined. The report should contain key maps and graphic materials (to the degree possible) in chronological order in the annex. The report and annexes should be provided in both hard-cover and CD-ROM formats. The report and annexes will be reproduced on the SAPCC and SECOMO websites, and made available to partnering agencies for their websites (e.g. CRWD, MWMO, DNR, etc.).

2. Give practical recommendations in the report for next steps, including possible additional phase two field studies, or other actions or activities needing attention by SAPCC and its partners.

3. Preparation and inclusion in the report of two maps, the first illustrating the historic watershed delineation, and the second map estimating the current delineation. The delineations should include key landscape features and relevant utilities (storm sewer, sanitary sewer, potable water lines, etc.). Elevations for these features, as well as elevation of surface water ponds (normal high water levels) should also be noted so that some inference about groundwater flow can be made.

4. Provide SAPCC with a hardcover binder containing photocopies of all documents, maps, aerial photos and other materials reviewed. For future use as reference material, this collection should contain a reference list and pagination.

5. Oral presentation of draft report and findings to the SAPCC and its environment committee, its cooperators and other interested parties at public fora to be determined, in order to receive feedback and inputs from the partners.

6. Delivery of final report and reference materials to SAPCC, MWMO, CRWD and other partners.

7. Participation in four public fora organized by SAPCC for public education and information, and onward planning and decision making by the partners.

**Funding agency:**

Mississippi Watershed Management Organization (MWMO)

**Contracting and oversight agency:**

Saint Anthony Park Community Council Environment Committee (SAPCC)

Contact persons: Melissa Matthews (SAPCC Executive Director) and Karlyn Eckman

**Implementing agency:**

Contractor or consulting firm to be determined in consultation with MWMO and CRWD. The contractor must have a wetland ecologist and/or biologist, and a hydrologist on staff and fully available for this study. Each professional is expected to contribute equally to this study.

**Timetable**

All tasks and deliverables are to be completed within six months of signing the contract.

**Budget**

Contractor/consulting fees:	\$30,000.00*
SAPCC administrative costs	5,000.00**
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Grand total:	35,000.00

\* Consulting fees are all-inclusive and cover database access fees, reproduction and printing costs, map fees, travel costs, and any other fees and expenses associated with the desk study.

\*\* SAPCC's administrative costs include the following: (20% time for SAPCC's part-time community organizer; printing and distribution costs; costs associated with website development (in collaboration with SECIA); advertising, organizing and hosting at least four public fora comprising all partner communities and organizations; mileage and parking; and other miscellaneous or discretionary costs.