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Restoration of Urban Parks in Minneapolis and St. Paul

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History

The Twin Cities of Minneapolis and St. Paul share a heritage of well-planned, carefully managed and heavily used urban parks, parkways and natural areas. The two cities form the core of Minnesota's largest metropolitan area of over 2.8 million people. Located in the east central part of the state, at the northern terminus of commercial navigation on the Mississippi River, the heavily urbanized sandstone bluffs above the river valley contain few remnants of the region's original vegetation. At one time, oak savanna and oak woodland-brushland (bur oak, pin oak, aspen and hazel thickets, and prairie openings), maple-basswood and oak forest, and tallgrass prairie (bluestems, Indian grass, prairie dropseed, June grass, and grama grasses) dominated the upland portions of the landscape. Floodplain forest (silver maple, cottonwood, elm, green ash, willow) still comprises much of the river valley beyond the cities' central business districts (Aaseng, et al, 1993; DNR, 1994,1998).

Plans for both Minneapolis and St. Paul park systems were originally developed by Chicago landscape architect Horace W. S. Cleveland in the late nineteenth century. Cleveland had the foresight to envision an inter-linking network of scenic drives, parks, and river boulevards for the "United Cities", and understood the importance of preserving some of the natural features of the land adjacent to the cities' lakes and rivers. Cleveland's legacy to Minneapolis is a park system comprising almost 6,400 acres – 1,400 of which are water – and 58 miles of parkways. St. Paul now includes 4,207 acres of parkland and 46 miles of parkways.

Minneapolis Parks

The Minneapolis park system is governed by a nine-member elected board of commissioners – six representing each of the city's park districts and three elected at large. The Minneapolis Park and Recreation Board (MPRB) was established by charter as a semi-independent board with the power to enact ordinances governing park use, to levy taxes, and establish its own budget (with limited veto power by the Mayor and some City Council control over the allocation of state funds). The MPRB's approved budget for 1998 is approximately $46 million (Theis, 1998).

Restoration activities in the parks have occurred under the direction of MPRB's Environmental Operations staff. Before the early 1990s, management practices were primarily limited to the enhancement of existing vegetation at several remnant prairie, bog, wetland and woodland sites using buckthorn removal, prescribed burning and mowing. The first systematic restoration effort began in 1993 with the receipt of an "LCMR" grant to restore prairie at several park sites. (The Legislative Commission on Minnesota Resources - LCMR - recommends projects to be funded each biennium by the Environment and Natural Resources Trust Fund, primarily money from state lottery proceeds). Prairie plantings were deemed more likely to be accepted by the public –

a prairie landscape would maintain the open "park-like" vistas to which most people are accustomed – than other types of restorations (Lee, 1998).

Site selection was initially an intuitive process undertaken with the assistance of an established restoration firm. A variety of experimental planting techniques were employed - including seeding through turf grass with no site preparation - most proved unsuccessful. The failure of this project, combined with public outcry over a controversial budget-driven cutback in mowing turf grass along shorelines and steep slopes, forced a reevaluation of the park system's approach to restoration management.

Vegetation Conversion Program

In 1995, the Park Board agreed to fund a five-year Vegetation Conversion Program to reestablish native plant communities throughout the park system. Under this program, almost 50 sites have been converted. Most of these conversions have involved the replacement of existent turf grass sites with prairie grasses. (A limited number of wetland, savanna, and forest restorations have also been undertaken).

Site selection and management practices have become more established, and assessment and evaluation are built into the management plan. Site selection criteria for the establishment of new prairies include: whether the site is located in a neighborhood or regional park – regional parks are given priority because of greater availability of open space; percentage of tree cover – sites with full sun exposure are preferred; low potential for recreational use – to reduce the likelihood of human impact and to preserve recreational space; steep slopes and other areas which are difficult or dangerous to mow; sites where it has been difficult to establish turf grass - often because of poor soil, especially sand and gravel areas (Lee, 1998).

For each conversion type, a management plan is developed and a schedule of site preparation and maintenance procedures is followed. Critical to the program's success has been the development of a Vegetation Management Database which provides a comprehensive site-based record of all restoration activities. Individual site reports include contractor name, seeding/planting date(s), staff notes and assessments, weed treatments, and burn history, along with the names of the city council member and park commissioner in whose ward or district the site is located.

Chain of Lakes Clean Water Partnership

The other large-scale restoration effort in which the Park Board is engaged is funded through a program established under section 319 of the Clean Water Act. The Minnesota Pollution Control Agency administers the grant program through its Clean Water Partnership with local units of government. The Chain of Lakes Clean Water Partnership was formed in 1994 to improve water quality in the Minneapolis Chain of Lakes – Brownie, Cedar, Lake of the Isles, Calhoun, and Harriet. In cooperation with the Minnehaha Creek Watershed District, the Park Board and other agencies will work on the construction and/or restoration of wetlands and detention ponds, upgrading storm sewers, altering shoreline erosion control practices through a public education campaign.

A 4.6 acre site at the southwest corner of Cedar Lake was chosen for one of the partnership's first projects. In 1995, Cedar Meadows was created with the excavation of a stormwater detention pond. Planting of a wetland proceeded in the spring of 1996 with the installation of plugs and seeds of emergent marsh, wet meadow and upland prairie species. Subsequent monitoring revealed that only 10-15% of the material originally planted in both the upland and wetland areas had survived. A "replanting committee" was formed to reevaluate the site, a new contractor was hired to redesign and reinstall the wetland (working closely with the Park Board's horticultural staff), and the upland prairie was successfully reseeded. The hoped for benefit to Cedar Lake will be a 50% reduction in phosphorous entering from stormwater runoff (Lee, 1998).

The Clean Water Partnership is currently working with a Citizens Advisory Committee on the design of the Southwest Calhoun Wetland Ponds planned to begin construction in the fall of 1998.

St. Paul Parks

The St. Paul Division of Parks and Recreation has approached restoration much differently. Organized as a separate department within city government, the Division has an appointed nine-member advisory commission, and a 1998 budget of approximately $32.1 million dollars. Though it has been involved in some significant restorations, the Parks Division has no formal restoration program. Several projects have been undertaken in conjunction with other city agencies – e.g., Planning and Public Works - as part of larger economic development initiatives. The Phalen Corridor Initiative on the city's East Side has incorporated a major wetland restoration component as part of its overall neighborhood revitalization goal. Engineering design work to remove asphalt, gravel and fill material and excavate the original lakebed of Ames Lake – upon which Phalen Shopping Center was built in the 1960s – is underway. Seeding and planting of a wet meadow, emergent marsh and adjacent upland prairie was recently completed (1998).

Another project grew out of the city's downtown riverfront revival campaign. The combined efforts of Mayor Coleman, several major foundations, corporations, urban planners and community groups led to the formation in 1995 of a non-profit organization, Greening the Great River Park, charged with overseeing the reforestation of a four mile stretch of the Mississippi River adjacent to the downtown business district. The majority of the 25,000 native trees and shrubs required for the recreated maple-basswood, floodplain, and oak forest groves were planted by volunteers working with the Greening project. Plantings will be maintained by private property owners along the river corridor, but the Parks Division will be responsible for replacement and upkeep of plant materials on city-owned land. A nearby 35 acre recreated prairie site was seeded in the fall of 1997 and will be maintained by the city, the St. Paul Port Authority, and the state.

The Parks Division has also initiated several of its own projects. Native planting sites exist at over twenty different park locations and school sites (though many are only small patches or strips - approaching a scale that is almost garden-like). The Division has recently received an LCMR grant to undertake oak savanna restorations in several regional parks - Indian Mounds,

Battle Creek and Phalen. In cooperation with the Minneapolis Park Board, it is pursuing another grant to develop a native plant habitat interpretive program at five newly established and ten existing restoration sites in Minneapolis and St. Paul parks.

Results

St. Paul's restoration efforts have largely been "opportunity driven" (Agness, 1998). In many cases they have evolved as outgrowths of projects whose goals were not primarily ecological. While the Parks Division has been involved in the planning and/or implementation of most restorations, it has less frequently taken the lead in initiating projects. The lack of an overarching restoration philosophy has led to problems with all phases of the restoration process.

Without a formal restoration program (including established implementation and short and long-term maintenance procedures and a stable source of funding) problems are inevitable. It is difficult to properly maintain prairie sites when there is no agreed upon schedule for mowing, burning, or spot treating weeds. (To date, there have been no prescribed burns of any prairie sites in St. Paul parks). The result has been a predictable loss in quality due to invasive weeds at many sites. Experienced crews trained in the proper procedures are also missing from the equation. The intended result of reduced maintenance has often metamorphosed into a "no maintenance" outcome.

As one project participant stated, few restorations are self-sustaining, especially in an urban context where virtually all features of a naturally functioning ecosystem are absent (Burrell, 1998). The Phalen wetland reconstruction provides additional insights into the pitfalls of urban parkland restoration.

Construction of Phalen wetland on the former site of a derelict strip mall was envisioned as a community-based project that would rely heavily on neighborhood and volunteer time commitments for planting and maintenance. Sustaining adequate levels neighborhood involvement has proved problematic, and parks staff has scrambled to enlist student volunteers from local elementary and secondary schools to fill in the gaps when planting time approached. Issues of proper site preparation also appeared when park crews would not use herbicide on parts of the wetland site, resulting in problems with control of reed canarygrass and smooth brome. Routine maintenance issues will still need to be resolved.

The most difficult challenge for the St. Paul Division of Parks and Recreation remains one of "getting everyone on the same page." In the absence of a planned, long-term, adequately funded native plant restoration and maintenance program, money will continue to be spent on individual projects without effective means of evaluating success, correcting failure and assuring taxpayer dollars are well-spent.

The experience of Minneapolis Park and Recreation Board has been qualitatively different. It embarked on a comprehensive parkland restoration program with clearly articulated ecological goals – habitat creation and enhancement, water quality improvement, shoreline erosion protection, expanded environmental education/volunteer opportunities for the public, reduced herbicide/pesticide use (and the ever hoped for desire to reduce park maintenance costs.) It

created an important monitoring tool – the Vegetation Management Database – which was critical for establishing routine maintenance practices, and will undoubtedly contribute to greater program success. Unfortunately, funding for the Vegetation Conversion Program was cut its third year of operation (1998).

The mechanism used by the Park Board to encourage citizen involvement in the restoration planning process - Citizen Advisory Committees – can also create as many problems as it solves. The Chain of Lakes master planning process often ended in neighbors lining up on one side, environmentalists on another, and designers and park planners on yet a third. Though Cedar Meadows encountered a number of problems – initial planting/seeding failure, contractor inexperience – neighbors generally supported the project. The proposed wetland plantings for Lake Harriet, on the other hand, generated substantial neighborhood resistance - recalling earlier controversies related to reduced mowing of turf grass in the parks.

Both cities have experienced problems resulting from government contracting procedures that require acceptance of the lowest bidder on a job. Poor seed quality and/or contractor performance problems were occasionally encountered, but a small group of established, reputable seeding/planting contractors seems to have emerged. While public acceptance have become less of problem as the ecological benefits of restoration are more widely appreciated, phone calls about weed fields and mosquito control are still received.

Minneapolis has demonstrated that when restoration is an integral part of parks planning, it can be highly successful. The New York City park system began a similar effort to restore its natural areas over ten years ago, and is now in the midst of restoring landfills, salt marshes, and woodlands throughout its 10,800 hectare park system (Matsil, 1996). Like the Minneapolis Park Board's Environmental Operations staff, New York City Parks Natural Resources Group supplied the cadre of leaders who would develop the core of knowledge necessary to plan, implement and maintain a successful restoration program over the long term. It is hoped that resources will again be found to continue the work that was cut short in Minneapolis parks, and perhaps establish a comparable program in St. Paul.

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