



Bassett Creek Watershed Management Commission

BACKGROUND MATERIALS on FLOOD CONTROL PROJECT (FCP)

Excerpts from BCWMC Watershed Management Plan included here:

- **2.8.1 BCWMC Flood Control Project (description)**
- **4.2.2 Flood and Rate Control Policies (policies related to Flood Control Project)**
- **Figure 2-14 Flood Control Project Features**

2.8.1 BCWMC Flood Control Project

The largest structural Flood Control Project undertaken by the BCWMC was the Bassett Creek Flood Control Project. From 1987 – 1996, the USACE constructed the \$40 million Flood Control Project. The project was the cooperative effort of the USACE, MnDOT, MDNR, the BCWMC, and the BCWMC member cities. The project controls flooding in portions of Golden Valley, Plymouth, Minneapolis, and Crystal and reduced flood elevations along the Bassett Creek corridor by 2 feet in Golden Valley, 1½ feet in Crystal, and up to 4½ feet in Minneapolis. The BCWMC Flood Control Project also reduced average annual flood damages by 62 percent. Table 2-8 lists all of the features of the BCWMC Flood Control Project. Figure 2-14 identifies the BCWMC Flood Control Project structures. Note that the BCWMC Flood Control Project differs from the system referred to as the BCWMC “Trunk System.” The extent of the trunk system is presented in Figure 2-15.

The principal feature of the BCWMC Flood Control Project is the new 1.7-mile tunnel through downtown Minneapolis. The tunnel was built in three phases, at a cost of \$28 million. Phase 1 was constructed in 1979, at a cost of \$12 million (\$39 million in 2014 dollars), Phase 2 was constructed in 1990, at a cost of \$2.8 million (\$5.1 million in 2014 dollars), and Phase 3 was constructed in 1992, at a cost of \$13.4 million (\$22.8 million in 2014 dollars). The tunnel diverts Bassett Creek, where it plunges underground at Glenwood and Colfax Avenues in Minneapolis, into the Mississippi River. The original tunnel, some sections of which were built more than a century ago, was undersized and deteriorating. The tunnel could no longer accommodate increased drainage and was on the verge of collapse. Such a collapse would have caused major flooding. The new tunnel provides cooperative storm drainage for Bassett Creek, Interstate Highways 94 and 394, and portions of the City of Minneapolis. The tunnel empties into the Mississippi River just south (downstream) of St. Anthony Falls.

With the BCWMC Flood Control Project in place, runoff from the watershed area tributary to the old tunnel no longer flows to Bassett Creek. In 2000, the BCWMC, the City of Minneapolis, and the Mississippi WMO entered into a joint and cooperative agreement for a boundary change to reflect these changed drainage conditions (see Appendix I). The boundary change transferred 1,002 acres

from the BCWMC to the Mississippi WMO. The City of Minneapolis is currently responsible for maintenance of the old tunnel. The joint and cooperative agreement includes obligations related to the old and new tunnels, and requires BCWMC approval for any modifications affecting peak flows or hydraulic capacity in the new tunnel (see Appendix I).

The BCWMC Flood Control Project also included construction of the following six major features:

- Highway 100 control structure
- Wisconsin Avenue control structure
- Highway 55 control structure
- Markwood/Edgewood area modifications – Edgewood control structure, Edgewood Avenue basin, and Markwood channel improvements
- Golden Valley Country Club control structure
- Medicine Lake outlet structure

The control structures consist of low flow orifices with overflow weirs to restrict flows.

Other principal features of the BCWMC Flood Control Project include the Bassett Creek Park Pond project, replacing ten street crossings, flood-proofing five homes, and making channel improvements. In addition to providing flood control benefits, some of the project features provide water quality benefits (e.g., Bassett Creek Park Pond and the fish barrier at the tunnel). The features of the BCWMC Flood Control Project are shown on Figure 2-14 and listed in Table 2-8. The project also included the monitoring and disposal of hazardous materials from an area of the project where contaminated soils were present (Irving Avenue dump site).

Each control structure leaves the creek virtually unaffected during normal flow conditions. For large storm events, the storage upstream of control structures generally results in higher water levels than under preproject conditions. Maintenance may be required in storage areas after significant rainfall events. Each control structure lowers peak discharges immediately downstream of the structure. Implementation of all the control structures and the storage they provide resulted in a smaller tunnel and fewer measures needed to increase stream capacity.

In the vicinity of Glenwood Inglewood Waters and the abandoned Fruen Mill, downstream of Glenwood Avenue, the Flood Control Project proposed removal of an existing stone dam and retaining walls and installing a concrete drop structure, new retaining walls, and widening of the creek channel. This work was not supported by the City of Minneapolis and was deleted from the BCWMC Flood Control Project.

The watershed south of 36th Avenue and west of Hampshire Avenue in the City of Crystal, was diverted to a ponding area downstream of 36th Avenue by the construction of approximately 1,150 feet of culvert. Large inlet structures were constructed on 36th Avenue and on each side of Hampshire Avenue and Louisiana Avenue.

Creekside residents immediately benefited from the modifications even prior to the full completion of the BCWMC Flood Control Project. When an 8-inch rainstorm struck the area in July 1987, the Highway 55 control structure, completed just one month previously, protected homes and businesses downstream of the structure from over \$1 million (\$1.9 million in 2014 dollars) in flood damages.

A construction account was set up for the BCWMC Flood Control Project. Cash contributions to the account totaled over \$6.9 million and included contributions from the member cities (assessments), MnDOT (drainage to tunnel), the MDNR (grants), Hennepin County (grant), General Mills (grant), and interest earned on investments. After paying for the project and paying back \$215,000 owed to the BCWMC Administrative account, there was \$1,535,000 remaining in the construction account. The BCWMC decided to use the remaining funds for future work related to the BCWMC Flood Control Project: floodproofing of remaining homes in the floodplain, emergency repairs to the Flood Control Project system, and long-term maintenance and repair of the BCWMC Flood Control Project system.

4.2.2 Flooding and Rate Control Policies

19. The BCWMC will maintain a Flood Control Emergency Repair Fund for funding emergency repairs of the BCWMC Flood Control Project features.

20. The BCWMC will maintain a Long-Term Maintenance Fund with annual assessments. The BCWMC will use the Long-Term Maintenance Fund to fund major repairs and major maintenance of the BCWMC Flood Control Project features (Flood Control Project features are listed in Table 2-8).

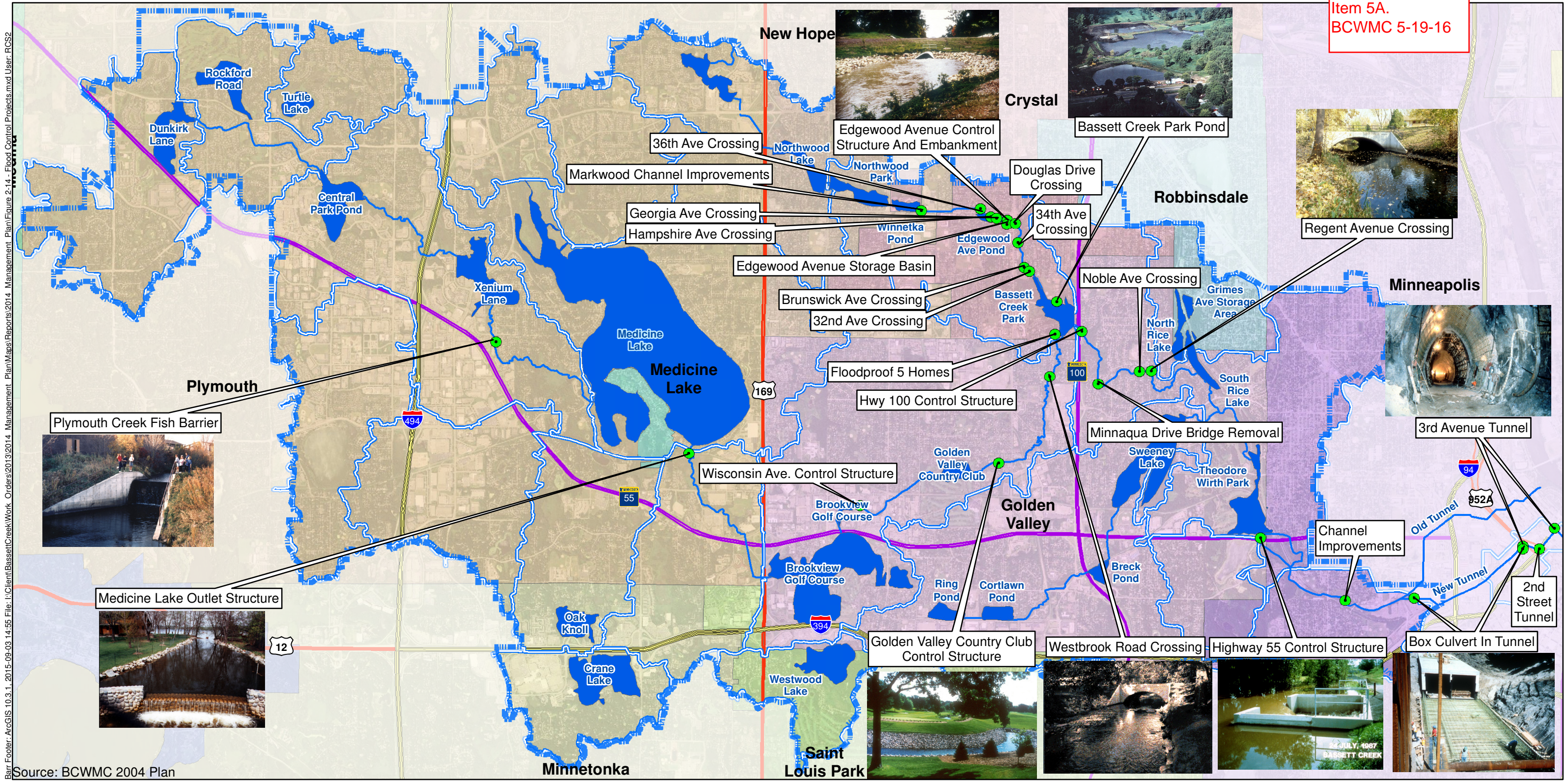
21. The BCWMC will regularly inspect the BCWMC Flood Control Project system, including water level control and conveyance structures, and perform the follow-up reporting. This is part of the BCWMC's annual water quality and flood control programs (see Table 5-4).

22. During the first five years of Plan implementation, the BCWMC will work with the member cities to determine responsibilities for major rehabilitation and replacement of the BCWMC Flood Control Project features and establish the associated funding mechanisms.

23. The BCWMC will finance major maintenance and repair of water level control and conveyance structures that were part of the original BCWMC Flood Control Project on the same basis as the original project. New road crossings of the creek that were installed as part of the project will be maintained by the city where the structure is located.

24. Member cities shall be responsible for routine maintenance and repair of BCWMC Flood Control Project structures located within each city. Each member city shall be responsible for routine cleaning, including removal of debris, brushing, and tree removal from the BCWMC Flood Control Project features located within their city.

Item 5A.
BCWMC 5-19-16



Source: BCWMC 2004 Plan

- BCWMC Jurisdictional Boundary
- Major Subwatersheds
- Flood Control Projects
- Designated Water Quantity and Water Quality Storage Facilities (From Fig. 15 of 2004 Plan)

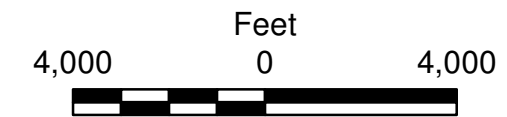


Figure 2-14

FLOOD CONTROL PROJECT FEATURES
Bassett Creek Watershed Management Commission
2015 Management Plan

Barr Footer: ArcGIS 10.3.1, 2015-09-03 14:55 File: I:\Client\BassettCreek\Work_Orders\2013\2014_Management_Plan\Map\BassettCreekWork_Orders\2013\2014_Management_Plan\Figure 2-14 - Flood Control Projects.mxd User: RC92