DAM REMOVAL PROJECT OVERVIEW

Since approximately 1880, the Muskegon River flow has been impeded by a dam at Big Rapids. This dam was removed in two stages, 1966 and 2000.

The following is a summary of activity and events occurring between 1991 and 2002 as related to the removal of the final portion of the Big Rapids hydro dam. Within other parts of the overall dam report and web page (www.ci.big-rapids.mi.us) is a complete history of the dam noting construction (1880), electrical production (until 1955), the decision to remove the dam (1966), the inundation of the Muskegon River with a large amount of released sediment (1966 and 1967) and the final decision to remove the dam remnant (late 1990).

Many issues came together to make the dam removal project economically, ecologically, physically and politically acceptable. Between 1991 and 1997, three young men drowned within 750 feet of the dam. At the same time, a number of State and Federal ecological efforts were under way to restore rivers to their natural condition, led in the State of Michigan by the Great Lakes Protection Fund and the Great Lakes Fishery Trust. In the Spring of 1988, the Big Rapids water intake for the City's potable water source failed necessitating the construction of a new ground water source and eliminating the use of the Muskegon River as the source of drinking water for the community. Finally, throughout the nation and the State of Michigan, a number of communities "rediscovered" the value of river frontage.

In 1994, the City initially decided to relocate the drinking water intake from a position downstream of the Muskegon River hydro dam remnant to the impoundment upstream of the dam. At that time, the Michigan Department of Natural Resources (DNR) verbally indicated that they would not support the relocation of the intake and further, Federal Energy Regulatory Commission (FERC) dam licensure funds were available to assist the City with the removal of the hydro dam relic. This structure, approximately 6' tall was the foundation of the historic hydro dam left over after the aborted 1966 removal attempt. That attempt in 1966 succeeded only in removing the "tainter gates" and a portion of the super structure while releasing approximately a million cubic yards of sediment from the upstream impoundment into the Muskegon River system. The 1966 "fiasco" was remembered by long-term Mecosta County residents and proved to be a major challenge for the Big Rapids city officials who supported the 2000 dam removal to overcome.

Responding to people drowning at the dam and with the DNR promising to support the removal, the City entered into a $50,000 agreement with the DNR to fund a pilot study to determine the feasibility of the dam removal and later, in 1997 a supplemental study to develop plans for the actual removal. Both studies were completed by Prein & Newhof, P.C. of Grand Rapids, Michigan.

In 1997, the City submitted a successful application for approximately $800,000 of FERC funds for the dam removal. These funds were later withdrawn in response to complaints

from Michigan Consumer's Power, who felt the FERC money, generated by the licensure of "active" dams, needed to be expended within the impoundment of one of the 11 active dams within the regulated systems. The closest dam, Rogers Heights, was located approximately 7 miles downstream.

In 1998, the City obtained $100,000 funding from the National Fish and Wildlife Foundation and, with the assistance of a number of political players, most notably Big Rapid's Senator Joanne Emmons, the first of two $100,000 appropriations from the Michigan Department of Environmental Quality budget.

Throughout 1997 and 1998, the City worked with a variety of "stake holders" to obtain a workable plan for the removal of the dam, obtain funding for the dam removal and finally, obtain a permit from the Michigan Department of Environmental Quality (DEQ). With the assistance of the United States Geological Survey (USGS), the sediment was chemically analyzed (no toxicity) and the volume was quantified. The USGS determined that a maximum amount of 80,000 cubic yards would be relocated (washed downstream) as a result of the dam removal project. The vast amount of effort, engineering and political negotiations involved the correct method to mitigate the affects of the sediment released by the dam removal process.

Eventually, the City received the permit from the DEQ which included a responsibility to manage 80,000 cubic yards of sediment before, during and after the removal of the hydro dam. In 1998 and 1999 bids were solicited and a successful bidder, King Company of Holland, Michigan was awarded the project in December of 1999.

During the summer of 2000 the 6' hydro dam was removed and later, in the summer of 2001, the downstream coffer dam and secondary sediment trap was removed.

As required by a number of the funding agencies, the USGS extended their original research to study the Muskegon River physical and biological systems before, during and after the dam removal in an area approximately 2 miles upstream and 2 miles downstream of the former hydro dam. The results of this study are to be published in the spring of 2003.

The Big Rapids hydro dam and secondary coffer dam/sediment traps were removed from the Muskegon River in accordance with a DEQ permit over a two year period reestablishing the approximately 12' high gradient "Big Rapids" on the Muskegon River. The project was done on time, within budget and has been labeled a complete success by all parties. The project has received numerous awards from State agencies and been the subject of innumerable State and National articles published by Magazines interested in river ecology and engineering.

The City is once again celebrating its river heritage. In the fall of 2002, the City began construction of a $1,000,000 Riverwalk along the location of the former hydro dam funded in part by $250,000 of local funds raised in celebration of the Muskegon River.

Additionally, the first “Riverday Festival” was celebrated on August 29, 2002 through September 2, 2002.

The Muskegon River in Big Rapids is now navigable with the man made hazardous areas removed. By all accounts, with the exception of the removal of the artificial concentration of spawning walleye, the fishing habitat has been improved through reduction in water temperature, expansion of the migratory ranges and the re establishment of the original Muskegon River gravel beds, long covered by the silt upstream of the hydro dam.

Facts, figures, history, construction methods and individuals associated with the project and their contacts can be found within the City’s web page located at www.ci.big-rapids.mi.us.