

bank appears imminent in the vicinity of the Bismarck Zoo, the Bismarck Golf Course, and recreation center. A breakthrough in the vicinity of the zoo would release the main body of the stream into a depression which would immediately eliminate the zoo, and the recreation center and place the Bismarck sewage disposal plant in almost immediate jeopardy. This is indicated as the green area on the aerial map. Approximately 1,600 acres of valuable land would be isolated and eventually eroded away. Riverside Park would also be open to erosion. A temporary levee built by the city of Bismarck now stands as the only barrier opposing this breakthrough.

The second breakthrough area, which is colored in purple, is in the vicinity of the recreation center. It is now being resisted by a 50-foot strip of timberland and a homemade dike. Should breaching of this bank occur, 886 acres of land would be subjected to destruction. It would also destroy 4,000 feet of outfall pipeline and set up a continuing erosive attack on the recreation center as well as on the sewage treatment plant. The State prison farmland would then be exposed to a frontal attack by the main body of the stream.

On the right bank of the Missouri River, or the Mandan side, several sites are being eroded at a rapid rate. Shifting sandbars make it difficult to pinpoint a major breakthrough. However, fluctuating water levels under ice cover, have caused erosion at the sewage disposal plant. Improvement work that may be installed on the Bismarck side could create a ricocheting effect on the Mandan bank causing extensive damage to several areas. The shaping of the river on one side must be done in a manner that will compliment the other or else severe adversities will occur to the unprotected side. At present, there are 1,160 acres of land on the Mandan side that are being eroded at an accelerated rate. The area which will eventually be destroyed is colored brown. This erosion has become hazardous to the three bridges that cross the Missouri between Mandan and Bismarck: two marinas, the Mandan sewage outfall, the federally constructed revetment works on the Heart River, and the Fort McKeen and Fort Lincoln areas. The Fort McKeen and Fort Lincoln areas are important segments of the North Dakota State Park System. The destruction of these two sites would have national significance as indicated by Senator Burdick in his statement to the Senate committees. They are the locations from which General Custer started his last Indian campaign. The State has constructed a hard surface road from Interstate 94 to the forts to meet the visitor demand.

The deposition of silt at the headwaters of the Oahe Reservoir is and will further aggravate the problem if not corrected. It will create a delta condition in the area immediately below the Marsh Memorial Bridge. The mainstream will meander from bank to bank as directed by an added number of sandbars in nature's process of gradually widening the channel. The main flow, after a delta has been formed, will eventually be divided into many streams and small rivulets occupying an area of a mile and one-half in width.

An adequate bank rectification works in the present perilous area will confine the channel. Because of this confinement, it will accelerate the flow and the increased velocity will aid in carrying the silt further into the Oahe Reservoir thereby eliminating or greatly postponing any