

BLACK CREEK - FORMER PORTER DRAIN: MEMO

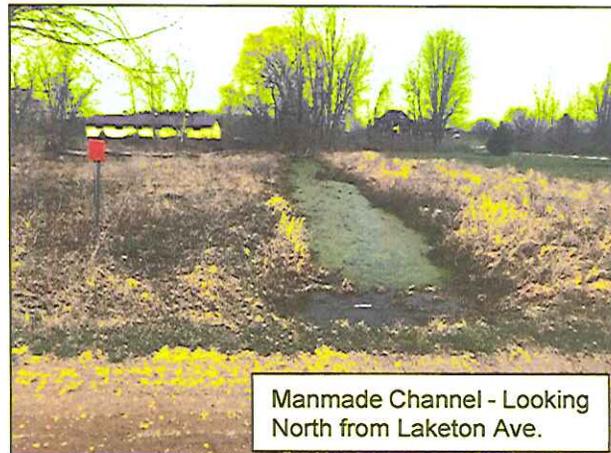
Date: April 9, 2020

By: Andrew Stoffel - Land & Resource Engineering (LRE)

Re: Former Porter Drain – Potential Branch

Introduction: South of the former Porter Drain along Laketon Avenue there is standing / stagnant water in an existing manmade channel that heads north from Laketon Avenue towards the former Porter Drain. The Muskegon County Drain Commissioner, Brenda M. Moore, requested that LRE review this issue in more detail and investigate the feasibility of establishing a new branch to improve drainage between Laketon Avenue and the former Porter Drain.

Existing Conditions: LRE staff performed a field investigation on April 6, 2020. There is a culvert under Laketon Avenue, approximately 1,545 feet east of Moorland Road, that conveys stormwater from the south to the north roadside ditch. The roadside ditch network flows toward the manmade channel that ultimately discharges into the former Porter Drain. The water in the existing manmade channel is stagnant and has a thick layer of green algae on the surface. There is another private ditch that flows from east to west and empties into the manmade channel, just north of Laketon Avenue.

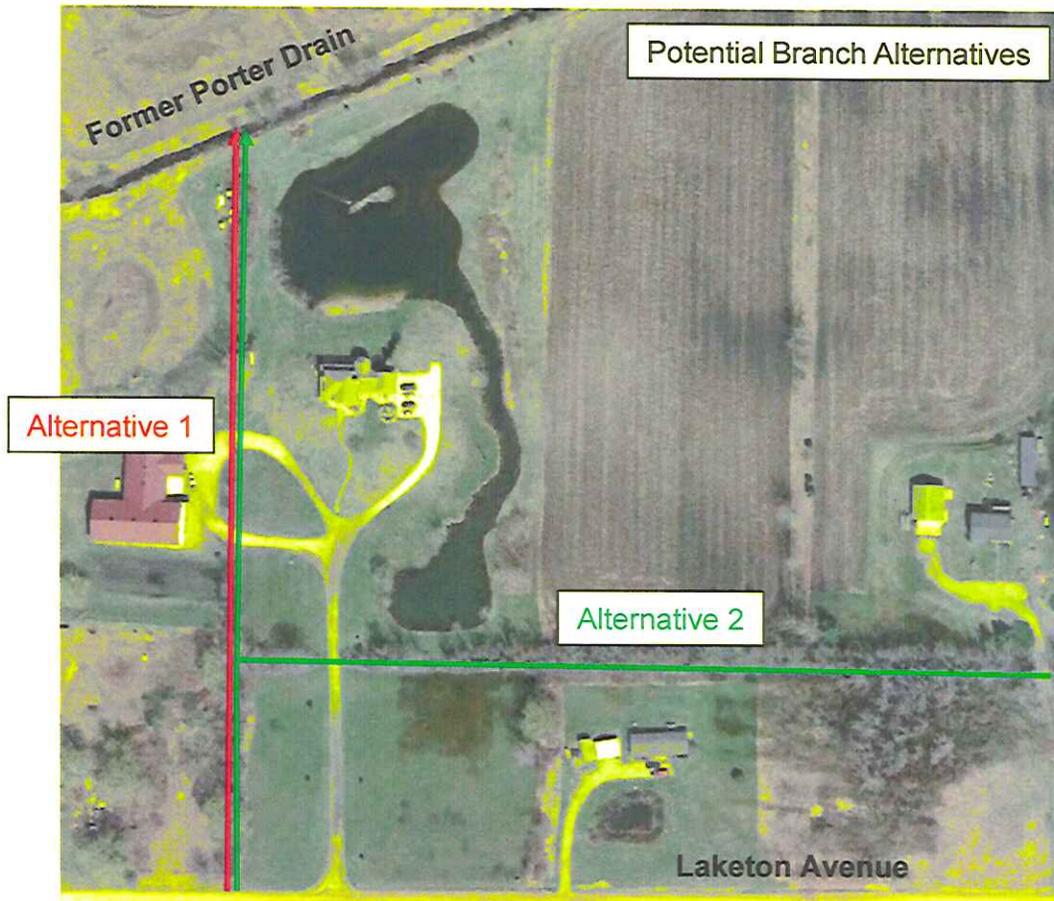


Manmade Channel - Looking North from Laketon Ave.

Evaluation of Alternatives: Based on our field investigation, there are two feasible alternatives to alleviate the standing water and improve drainage adjacent to Laketon Avenue.

Alternative 1: Establish a new branch (consisting of open channel and enclosed storm sewer) north from Laketon Avenue. The new branch would follow the existing manmade channel from Laketon Avenue to the former Porter Drain. An EGLE permit for improvements to the existing drainage system pursuant to Part 301 & 303 of the Natural Resources and Environmental Protection Act, 1994 PA 451 as amended (NREPA) may be required. In addition, drainage easements will be required from traversed landowners.

Alternative 2: This alternative includes everything in Alternative 1 as well as establishing a secondary branch along the existing private ditch running east to west approximately 285 feet north of Laketon Avenue. This alternative will likely require an EGLE permit pursuant to the NREPA and additional drainage easements.



Preliminary Recommendations: LRE recommends Alternative 2, as it maximizes the amount of flooding relief for the properties adjacent to the former Porter Drain and along Laketon Avenue. Both alternatives will likely require an EGLE permit pursuant to Part 301 & 303 of NREPA as well as additional drainage easements.

Implementation: Construction of a new branch from Laketon Avenue to the former Porter Drain will require additional topographic survey and engineering design to determine the optimal alignment for the new branch. Additional LRE fees are anticipated to be approximately \$5,000 (excluding permitting and easements). Construction cost estimates will be generated after the survey and preliminary engineering is complete.

Please feel free to contact my cell at (708) 612-3313 with any questions or if we can be of further assistance.

Sincerely,

Land & Resource Engineering (LRE)

Andrew Stoffel
Andrew Stoffel
Project Engineer