

MEMORANDUM

To: Mr. David A. Lothspeich, Village Manager
Village of Long Grove

Fr: Mr. Geoffrey L. Perry, P.E. – Village Engineer

Date: August 11, 2020

Re: Drain Tile Map Summary and Initial Recommendations
Mardan Estates & Mardan Woods
Village of Long Grove

Huddleston McBride completed a subsurface inventory of drain tiles that service Mardan Estates and Mardan Woods on July 20, 2020. The subsurface inventory was completed using hand-held probing rods to locate the drain tiles that were then mapped by GPS. The condition of the drain tiles were documented at 14 Data Points.

In brief review of the Drain Tile Map, we offer the following observations:

1. The Drain Tile Map is similar to the map completed in 2008. This investigation obtained additional information in a few locations such as along Route 53 (described in further detail below) and in the rear yard of 3258 Middlesax, for example.
2. The mapped drain tiles are shown as different colors and linetypes for the ease of identifying drain tile routes. In other words, each tile is shown as a different color/linetype.
3. 2224 Shiloh Drive. This property is located directly south of 3250 Middlesax Drive, on the south side of IL Route 53. (The address is not listed on the map). On the north side of this property, adjacent to the IL Route 53 right-of-way is a mapped wetland. In previous discussions, residents have advised the Village this wetland has more water in it than before IDOT's Route 53 widening project, completed in 2019.

Prior to this study, it was believed the wetland historically drained through a drain tile; however, there were no records of a drain tile. As shown on the map, a 4" clay drain tile was discovered that flows through this wetland to the north. As noted on the map, this drain tile has been damaged by utility installations and is causing upland surcharge and saturation on the north side of Route 53, in the right-of-way.

4. 3250 Middlesax Drive. This property is "downstream" of the drain tile that drains the wetland on 2224 Shiloh Drive (see above). The existing 4" clay drain tile flows into the crawlspace of this residence and exits the north side of the house. On the property, the 4" clay drain tile is approximately 10% silted in.
5. 3255 Mayflower Lane. The owners of this property have reported more standing water in their rear yard since 2017. As shown on the map, 2-4" drain tiles were discovered in the rear yard that converge and flow into the Route 53 right-of way. As noted on the map, this drain tile has been damaged by utility installations and is causing upland surcharge and saturation and ponding on the north side of Route 53, extending onto private property.
6. 3258 Middlesax Drive. This property has three separate drain tiles in the rear yard that converge into two outlets. The 2008 study identified an existing 4" clay drain tile that entered the property, from the south, and flowed through the septic field. The current study shows a pump pit along the south property with a 2" PVC discharge pipe.
7. 3280 Middlesax Drive. This property has a 10" clay drain tile that flows through the property from south to north. The routing of the drain tile is "speculated" based on data obtained. As shown on the map, this drain tile may flow through the foundation/crawlspace of the house.
8. Middlesax Drive. There is an existing 8" clay drain tile that runs under the road. This tile was located by inserting a metallic tracing wire in the pipe and locating the tile with a metal detector. Due to length limitations of the tracing wire and the location of the access point, the tile was only routed as far south as in front of 3257 and 3258 Middlesax Drive.

Our office discussed the drain tile survey with Huddleston McBride and offer the following:

1. The next level of effort to locate drain tiles, which is more intrusive than hand probing, is slit trenching. Owner approval is needed to complete this work on private property.
2. Many of the mapped tiles are silted in, to various degrees. Cleaning the pipes with traditional "jetting" is risky based on the small size and age of the drain tiles. Neither Huddleston McBride or our office recommends jetting the pipes.
3. The extent of which the drain tiles are silted in is based on Huddleston McBride's experience is hand probing tiles. To obtain more information, the tiles would need to be televised. In discussion with Huddleston McBride, most of the tiles are too small to televise with traditional track-mounted cameras. Thus, the cameras would need to be televised with push cameras.

Based on our review of the drain tile survey and conferring with Village Counsel, we offer the following recommendations to move forward:

1. Drain tiles have been impacted in the Route 53 right-of-way. As there is no reason to believe the Village caused this damage, the Village does not own property at the breakages and the damaged tiles do not impact water flow from/to Village owned property, Village Counsel has recommended the private residents be responsible to seek recourse from IDOT or other responsible parties, i.e. utility companies.
2. The information should be shared with the affected residents and they can consider options to seek recourse, which may include discussing their options with an attorney.
3. The Village can inform IDOT of the drain tile investigation results and the damage the broken drain tiles within their property. Under the Lake County Watershed Development Ordinance and Illinois Drainage Law, owners are required to maintain the conveyance of drainage through their property, even if it's underground. Village Counsel's recommendation is to inform IDOT only and not get overly involved.
4. Huddleston McBride was unable to locate the drain tile that services 3255 Mayflower Lane, on the south side of Route 53, by hand probing. The tile will need to be located by slit trenching.
5. Drainage in these subdivisions is largely dependent on drain tiles that appear to pre-date the subdivision (late 1950's). Replacing the drain tiles in their current location is not advisable due to their location and possible impacts to existing septic fields and vegetation that could result with in place replacement.
6. Middlesax Drive has a history of poor drainage in the right-of-way, especially near Merrimac Lane and north. There may be possibilities to improve the drainage through underground storm sewer pipes. However, there is no clear path to outlet the pipes to Mardan Lake (which is also privately owner) or Buffalo Creek.

Pursuit of the drainage improvements needs to be initiated with a high-level feasibility/due diligence study to determine scope of improvements, likely obstacles and costs.