

To: Kimberly Clarke, AICP Date: 11/13/20

From: Van Calombaris, PE

Subject: FEMA Regulatory Floodplain – 181st Street Project No. 20-R0055

The Village continues to receive requests from our residents to remove properties along the 181st Street corridor from Oak Park Ave. to Ridgeland Ave. from the FEMA regulatory flood plain (see Figure 1). The current FEMA Flood Insurance Rate Maps indicate much of this area to be within the 100-year floodplain – meaning there is a 1% chance of flooding in any given year. Typically, floodplain areas are found along low-lying areas contiguous to waterways. However occasionally, floodplain areas are found upstream of waterways in areas that don't appear to be connected to any waterways. This is one such case.

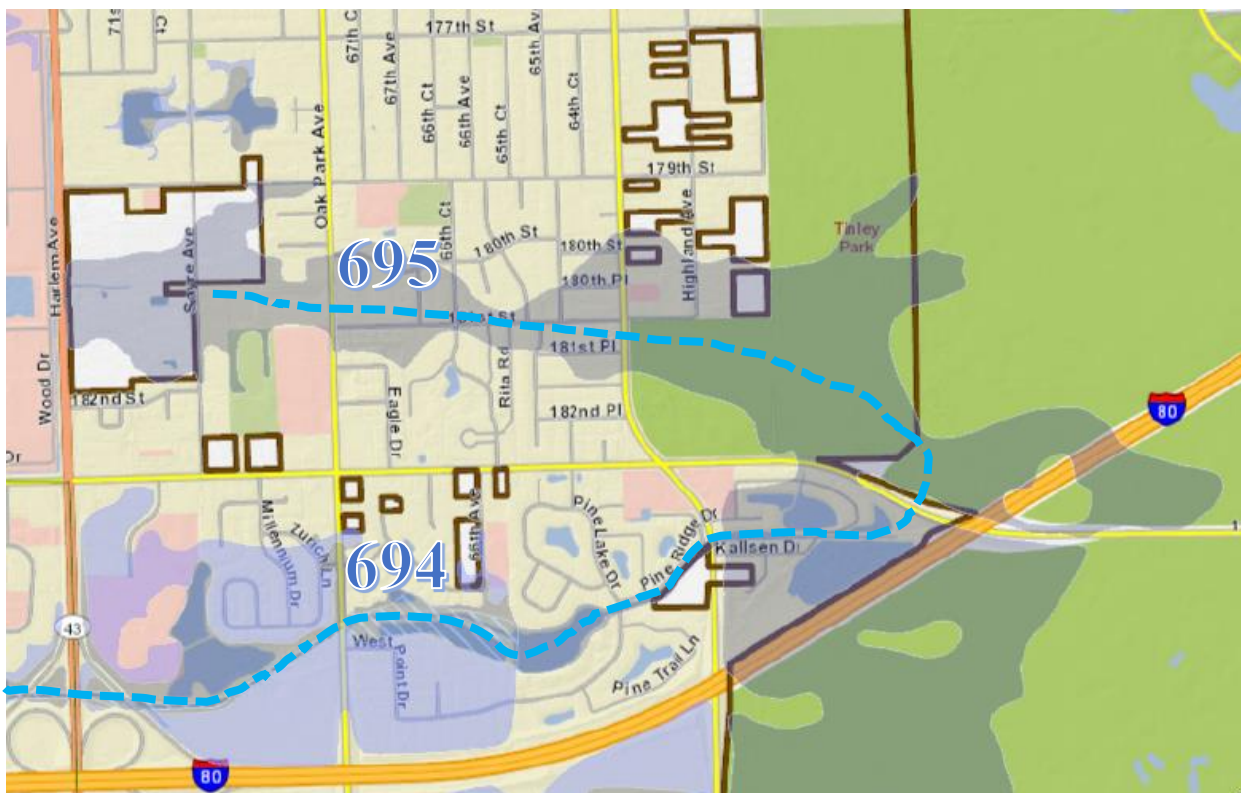


Figure 1- 181st Street Corridor

--- Overland Flow Path

694 FEMA Floodplain Elevation

Historically, the 181st Street corridor experiences flooding during periods of heavy rain events. It is of note that there is a 60-inch diameter sewer that runs south from 181st Street to the Union Drainage Ditch. The Union Drainage Ditch floodplain is slow moving and the backwater effects impact the operation of this sewer. As can be seen in Figure 1, the flood protection elevation at 181st Street is 695 feet above sea level and at the outlet channel a half mile away is only 1-foot less at 694. The geometry is such that gravity cannot move the water quick enough.

This condition is reflected in the United States Geological Survey's historic Flood of Record maps that were published for this area. FEMA began issuing flood maps in the 1980's. This area in question was constructed prior to these available records. It was during FEMA's map modernization program that the floodplains were added and became a regulatory issue. This map modernization process utilized computer modeling to calculate surface water elevations in conjunction with digital elevation data. Areas that are designated as being in the floodplain are Federally regulated and typically residents within these areas that have federally insured mortgages are required to acquire flood insurance from their lending institutions. FEMA has updated their maps several times since the 1990's with their most recent updates for Tinley Park being completed in 2008. The current maps indicate that approximately 50 buildings along this 181st St. area are within the floodplain.

Some years ago, the village collaborated with the US Army Corps of Engineers and the Metropolitan Water Reclamation District of Greater Chicago (MWRDGC) to find a funding source to try and mitigate this floodplain. It is not a simple task. As noted, the backwater from the Union Drainage Ditch would have to be separated from this watershed, effectively creating a subbasin that would pump water out from a storage facility. At one time the area located in the Cook County Forest Preserve District land east of Ridgeland Avenue was considered, and the costs for construction were in the tens of millions of dollars. It was an 'unfundable' project as it simply did not meet any cost-benefit requirements.

More recently the Village has made requests to the MWRDGC for possible grant funding for this improvement but unfortunately has not qualified because of the high cost of the project versus the total savings in flood insurance premiums should they not be necessary any longer. Additional maintenance costs alone would negate the premium savings. With a payback period of greater than 140 years, it is doubtful that grant funding will ever become a viable option for the Village and its residents of this area.