



# City of Seven Hills Water Management Task Force

July 21, 2020

# Water Management Task Force

- ▶ **Committee Members**
- ▶ **Technical Advisor**
- ▶ **Mission Statement**
- ▶ **Introduction**
- ▶ **Accomplishments**
- ▶ **In Progress**
- ▶ **Conclusion**



# Water Management Task Force



## ▶ **Committee Members:**

- ▶ Mayor Anthony Biasiotta
- ▶ Councilman John Kulju, Public Works Chairperson
- ▶ Kristin Saban, Chief of Staff
- ▶ Jack Johnson, Service Director
- ▶ Daniel Collins, City Engineer
- ▶ Mark Schmitzer, Assistant City Engineer
- ▶ Scott Belz, AECOM (Engineering Consultant)
- ▶ Mike Vano, Sewer Department
- ▶ Sue Oyster, Service Department

## ▶ **Technical Advisors:**

- ▶ Pete Bode, West Creek Conservancy

# Water Management Task Force



## ▶ Mission Statement

- ▶ Develop short and long term plans to remediate water related issues.
- ▶ Identify and prioritize specific projects that will lead to the rehabilitation of the sewer systems and other control measures to minimize flooding.
- ▶ Provide Public Educations Platforms
- ▶ Identify potential partnerships and synergies with other agencies.
- ▶ Research funding and economic assistance programs.

# Water Management Task Force



## ▶ Introduction

- ▶ The existing City sewer and drainage system has an age that exceeds 55 years.
- ▶ We have identified 4 major components of our management system for review.
  - ▶ Preventive maintenance of our Storm and Sanitary Sewers
    - ▶ The primary objective of a sewer preventive maintenance program is to minimize resident inconveniences that are caused by storm and sanitary sewer issues and to protect the resident's investment in an essential infrastructure utility; the sewer system.
  - ▶ Rehabilitation of the City's storm water control measures
    - ▶ Retention and detention basins allow us to manage stormwater runoff to lessen flooding and downstream erosion during water events
  - ▶ Improve/repair the City's existing Storm and Sanitary Sewers
    - ▶ Preventive maintenance for time to time must be supplemented with target actions / improvements to address changing needs, emergent issues and address the aging infrastructure
  - ▶ Address public & private property Infiltration and Inflow (I/I, cross connections) issues
    - ▶ Infiltration and Inflow issues result in storm water entering the sanitary system resulting in diminished capacity of sanitary sewers. Removal of these issues will restore sanitary sewers to their original capacity

# Water Management Task Force



## ▶ Accomplishments - Preventive Maintenance

- ▶ Reviewed current preventive maintenance procedures.
  - ▶ In 2019, we cleaned and televised 16,291 LF of storm sewer and 57,911 LF of sanitary sewer for a total 74,202 LF or 14.05 miles.
  - ▶ We have 51 miles of sanitary sewer pipes and 42 miles of storm sewer pipes
  - ▶  $93 \text{ miles of pipes} \times 5280 \text{ ft. per mile} = 491,040 \text{ feet}$  divided by 7 years = 70,149 feet of pipe to be cleaned annually. By maintaining our current rate of maintenance (74,202 LF) we will be slightly ahead of the 7 year pace.
  - ▶ Current Policy is to clean all sewers on a seven yr. cycle and all catch basins on the three yr. cycle. We have contracted with Cuyahoga County Dept. of Public Works to increase our capacity to allow us to accelerate this schedule and will continue to look to become more efficient.
    - ▶ The following streets have had or are currently having routine maintenance (All sanitary and storm sewers were cleaned and jetted. All have been videoed and all catch basins have been cleaned) performed by the County in 2020:
      - ▶ Lotus
      - ▶ East Hill Circle
      - ▶ South Cricket
      - ▶ Cresthill
      - ▶ Cricket Lane
      - ▶ Ridgeview
      - ▶ John Glenn
      - ▶ East Decker
      - ▶ Long Ridge
      - ▶ Chestnut

# Water Management Task Force



- ▶ **Accomplishments - Rehabilitation of the City's storm water control measures**
  - ▶ Identified 56 storm water control measures throughout the city. Most of them consist of retention and detention basins and several bio-retention basins. The topography of the City accounts for the reason for such a large number of these measures in Seven Hills. The majority are privately owned/managed. We verified that letters have been sent by Cuyahoga Soil & Water Conservation District to the responsible parties of record for the purpose of ensuring the facilities are being maintained.
  - ▶ Contract with AECOM to perform an engineering analysis on the Calvin Park/Sommerset Lane Basin in order for us to compile an accurate proposal the for rehabilitation of this storm water control measure.
  - ▶ Prepared a proposal for dredging, disposal and stream bed restoration of the Waxberry Detention Basin
  - ▶ Co-ordinated with the NEORSD on restoration of the natural floodplain on Donna Rae / Forest Overlook. 4 homes have been demolished and 3 more are scheduled.

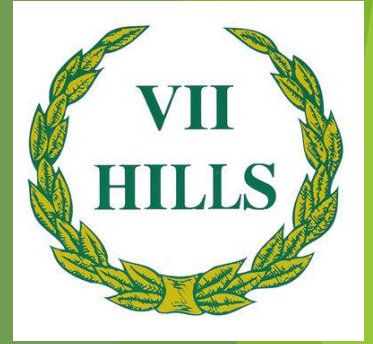
# Water Management Task Force



- ▶ **Accomplishments - Improve/repair the City's existing Storm and Sanitary Sewers**
  - ▶ Compiled 2019 and 2020 flooding data into GIS map to identify problematic areas within the City.
  - ▶ Completed jetting and documenting two 24 inch culvert pipes on Hickory Lane. This was identified as a bottle neck that impacted neighborhoods up stream. This work should help reduce storm back up that was impacting the Cresthill Area.
  - ▶ Completed the relining of sanitary sewers on John Glenn Drive and repaired laterals as needed. In addition we have installed one flow monitors at the intersection of John Glenn and Winchester to measure the effectiveness of the repair. The area was identified as having a higher rate of sewer-related issues. Since the repairs have been complete we have had 2 heavy rain events without a report of flooding.
  - ▶ Completed the relining 270 linear feet of the 18 inch sanitary sewer on Rangeview Drive. This street was identified by our sewer department as having a higher rate of sewer back ups.
  - ▶ Prepared a proposal & obtained costs for two additional double Catch Basin's and to replace the selected curbs on Donna Rae to alleviate downhill flooding from Alla Dr.
  - ▶ Applied for the County's 50/50 program for Chestnut resurfacing, replace selected curbs and rehab selected catch basins.



# Water Management Task Force



## ► Accomplishments - Improve/repair the City's existing Storm and Sanitary Sewers

- AECOM completed Mainline Dye Testing and Closed Circuit Television Video Inspection 48 sanitary sewers. Structural and operation and maintenance (O&M) observations were recorded. O&M observations were recorded per PACP standards. A total of approximately 11,182 linear feet of sewer was inspected.
  - Bayberry Dr - 1,873 LF
  - Bittersweet Dr - 871 LF
  - Broadview Rd - 359 LF
  - Driftwood Dr - 396 LF
  - Firethorn Dr - 896 LF
  - Maron Ln - 613 LF
  - Panorama Dr - 1,360 LF
  - Primrose Dr - 905 LF
  - Skyview Dr - 1,224 LF
  - St Maron Dr - 404 LF
  - Tanglewood Ln - 1,758 LF
  - Waxberry Dr - 523 LF
- Based on the results of this testing we identified short term improvements for Firethorn, Bayberry, Bittersweet. (Open Cut Point Repairs and Cured-in-Place Pipe (CIPP)). Note: These streets are part of the long term NEORSR report.

# Water Management Task Force



## ▶ Accomplishments - Improve/repair the City's existing Storm and Sanitary Sewers

- ▶ Prepared a proposal for Cheryl Ann Culvert Improvements
  - ▶ Initial estimates indicated this would be a large repair. On account of the large estimate we decided to engage professional engineering services to confirm / verify the solution provided by the contractor.
- ▶ Prepared a plans & completed a bid packet proposal for Skyview Dr. (Storm sewer outfall improvements); Out for public bid opening on August 3, 2020
- ▶ Participated on a NEORS D MCIP call to discuss submitting a plan (Grant Application) for E. Ridgewood
  - ▶ Note: The E. Ridgewood / Crossview Area is the subject of in depth review being conducted by the NEORS D. The ETA for the report based on this review is September 2020.
  - ▶ The report will be the basis of additional recommendations for this area.
  - ▶ The City will be applying for 2022 NEORS D MCIP funding for this project

## ▶ Accomplishments - Address public & private property Infiltration and inflow (I/I) (cross connections) issues

- ▶ Working with the County to establish a program for residents to voluntarily have their service laterals dye tested. The City will cover the cost of the inspection so there is no charge to the resident for the test, however if any defects are detected they will be required to be corrected within a specified period of time by responsible party (City or Resident).

# Water Management Task Force



## ▶ In progress

- ▶ Partnership with West Creak Conservancy
  - ▶ Working on the possibility of establishing a private bio-swale / Rain Garden programs.
  - ▶ Exploring the restoration of the Drexel Retention Basin and watershed (stream).
- ▶ Identifying potential revenue sources to address public and private sewer issues
- ▶ Preparing a proposal for the long term management of City Owned storm water management facilities. Goal to perform maintenance on all facilities every 2 years.
- ▶ Preparation for a virtual public meeting and preparing documentation for the City's website
- ▶ Hemlock Creek Watershed Utility Improvement Project - 300 properties now have the ability to tie into a new public sanitary sewer.
  - ▶ Upon tie-in completion we will contract with AECOM to perform testing of the Hemlock area to monitor the effectiveness of the improvements and to measure flow / capacity.
- ▶ Bid packages and/or estimates being prepared for the proposals identified under accomplishments.

# Water Management Task Force



## ▶ Conclusion

- ▶ Today's presentation is just the start of what will be our on-going efforts to remediate this long standing issue.
- ▶ It's important to note that nothing human's can make will be able to completely stop what mother nature creates.
- ▶ The task force has hopefully created what will be the blue print going forward.
  - ▶ Preventive Sewer Maintenance
  - ▶ Targeted Sewer Upgrades
  - ▶ Upgrade Storm Water Control Facilities
  - ▶ Identify and correct, public and private, Infiltration and Inflow (I/I, cross connections).
- ▶ Today we touched on all the above and more, but fully understand these efforts need to be on-going and long-term to achieve the results we are hoping for.