STORMWATER MANAGEMENT AND FLOODING ISSUES

Tuesday, September 3, 2024

STORM WATER GOALS

1. Reduce the impact of flooding by:
   - Identifying Choke Points and resolving the Issue
2. Current Storm Water System is over 100 years old – Average age is 70 years.
3. Designed to accommodate Drainage for a 15 year storm
4. Since 2021 there have been 14 -100 year storms
5. City, County and State must address Climate Change Storm Water Management, erosion, run off and improvement to infrastructure. It's a collaborative effort

Hurricane IDA - September 1, 2021

Catastrophic and historic levels of damage

- City is still recovering 3 years later – Engle Street Retaining wall
- Glenwood Road is still closed
- Other levels of government are impacting approvals for projects

September 2022

- After months of effort the Mayor was able to convince New Jersey DEP and Army Corp of Engineers to meet in Englewood and review IDA Storm aftermath and recovery efforts
- Both DEP and Army Corp of Engineers agreed on desilting, desnagging and the other removal solutions
- Work began immediately to desnag and desilt the Overpeck Creek
- Approximately 550 truck loads of material has been removed from the Overpeck Creek
- East/West Culverts that were silted in for years were opened and are now properly flowing

September 2022

- Senator Gordon Johnson contacts Englewood about a potential Storm Water Study by NJIT Rutgers & Stevens Institute.
- The City meets with the Study Team in October 2022
- Both agree that a grant application should be submitted
- Grant is awarded in December of 2023
- Grant funded study in March 2024
- Approximately 2.5 year study

Since March 2024

- Drones have been flown over the waterways
- Elevation data is being entered and plotted
- 35 Structures (culverts and bridges) have been identified along Overpeck Creek and Metzler Brook
- Sensors placed in streams
- Cameras placed in the Overpeck Creek
- More sensors and cameras to be installed
- A high resolution Terrain Map is being created
- When finalized it will be able to receive real time data and be better able to predict storm impacted areas

On March 8th 2024, the City Manager organized the Regional Flooding and Storm Water Mitigation Group with the following:

- Bergenfield
- County of Bergen
- Cresskill
- Englewood Cliffs
- Englewood
- Fort Lee
- Leonia
- NJIT
- Palisades Park
- State OEM
- Teaneck
- Tenafly
- Representation from Congressman Gottheimer's Office
- Representation from State Senator Gordon Johnson and Assembly Member Haider & Park

Shared services project planned for the fall of 2024

Council Actions to Reduce Flooding and Address Climate Changes

- Purchase of 47 Brook Avenue for Retention Basin
- Adopted Storm Water Management Plan in October 2023
- Funded required studies and updates for Storm Water Plan
- Insured that Storm water flooding and other related issues are reviewed as part of the Master Plan
- Purchase of Equipment to clean out catch basins, culverts and waterways – Cat Long Arm, Sewer Jet Vac Truck & Camera
- Desnagging of Flat Rock Brook in 2023
- Rebuilding the storm water and sanitary sewer system on Chestnut impacted by IDA

CHOKE POINTS

- CSX – swales along the tracks have not been maintained for decades
- In September of 2023 the City DPW removed a 260 foot long clog that backed up onto South Dean Street
- New Jersey Turnpike Authority Drainage Easement behind Knapp Place (August 6th Storm) Drainage improvements need to be addressed in that area
- Crystal Lake is being silted in
- Crystal Lake is not draining properly

August 6, 2024

- 5.9 inches of rain in approximately 3 hours
- Storm cell stalled over Englewood Cliffs and Englewood
- Over 300 people rescued
- Storm occurred at rush hour
- 7 Fire Departments assisted the Englewood Fire Department by providing high water rescue vehicles

August 18, 2024

- 2.5 inches of rain in 25 minutes
- Peak of Storm around 8:00 p.m.

Storm Key

Red – is over 2 feet of water

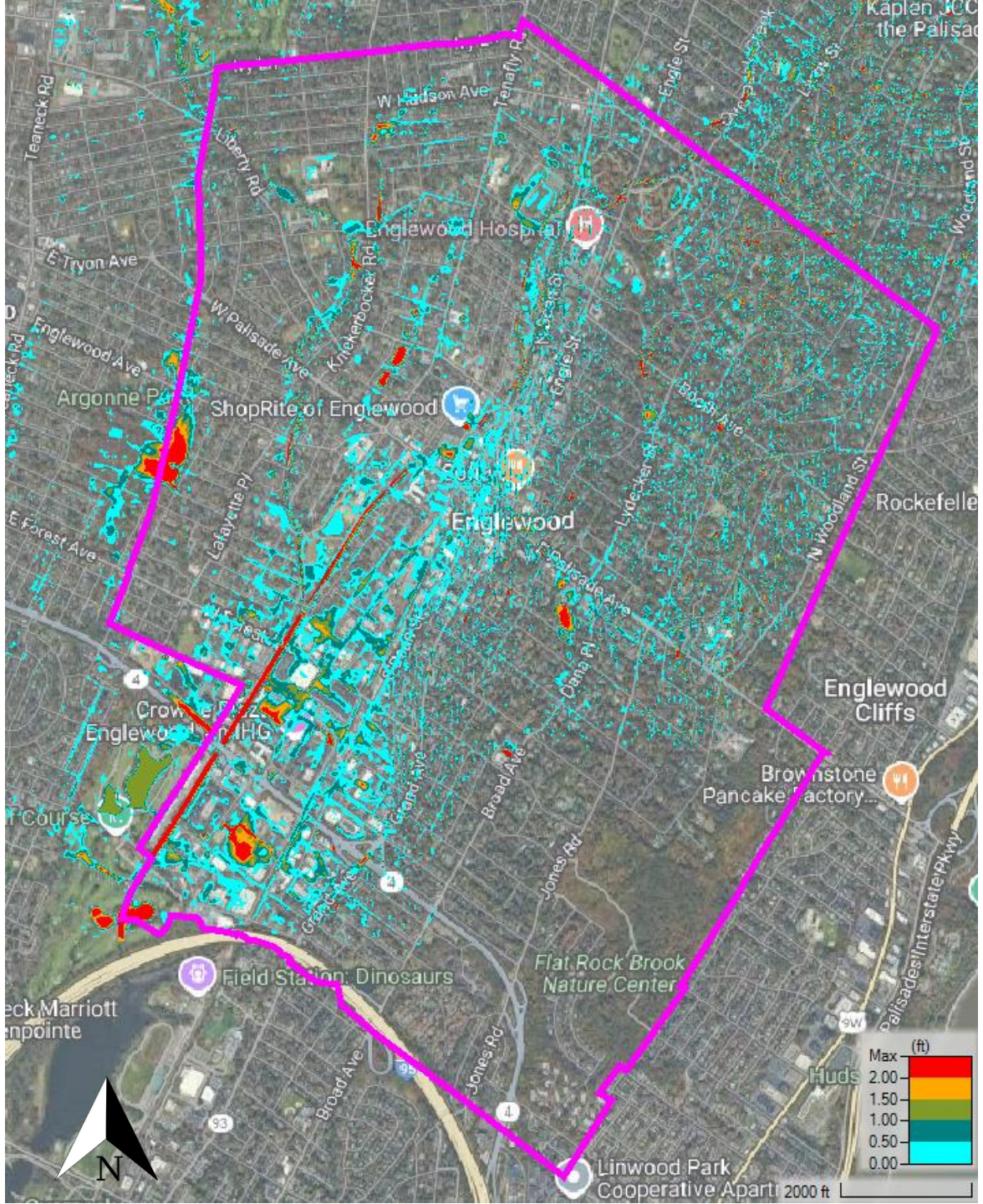
Yellow – is up to 2 feet of water

Dark Blue – is up to 1 foot of water

Light Blue – is up to 6 inches of water

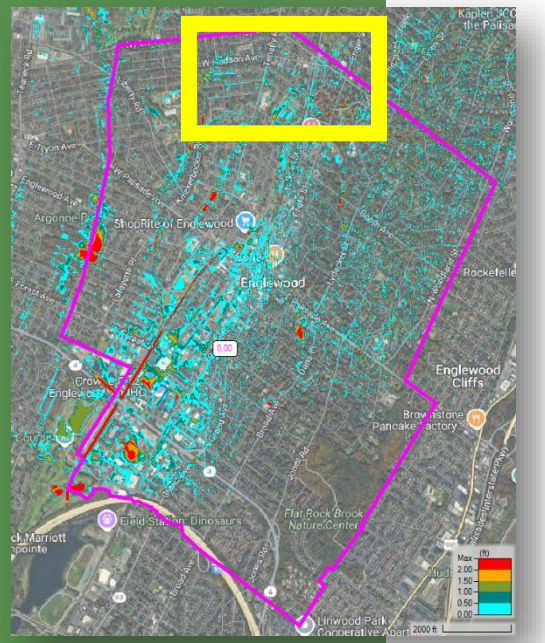
Maximum predicted water level based on the storm event on August 18, 2024

Overall



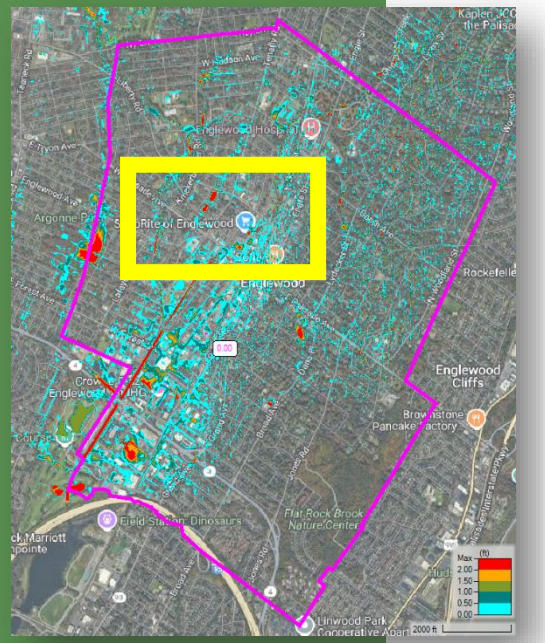
Maximum predicted water level based on the storm event on August 18, 2024

North



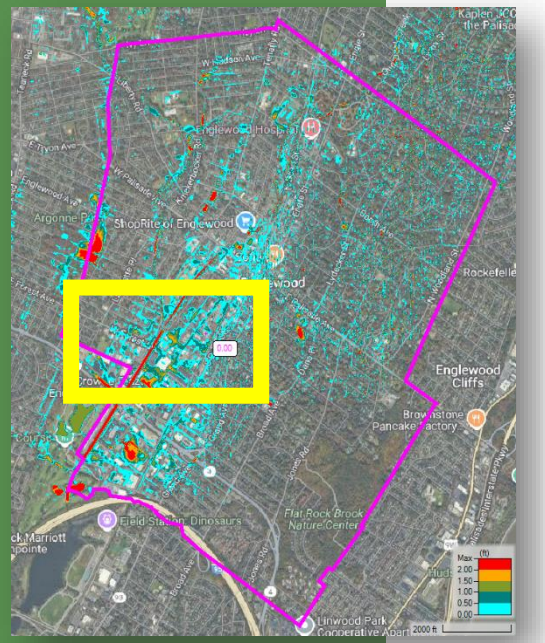
Central

Maximum predicted water level based on the storm event on August 18, 2024

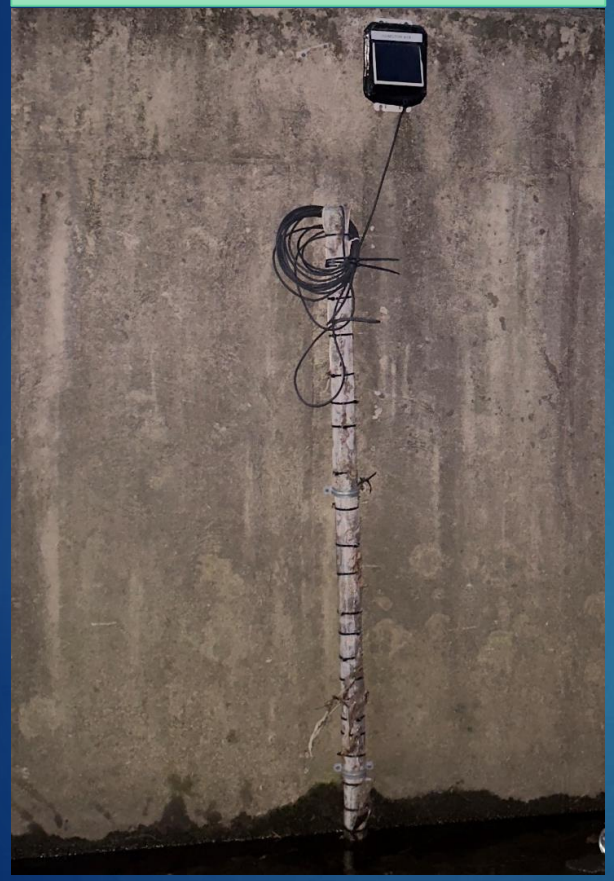
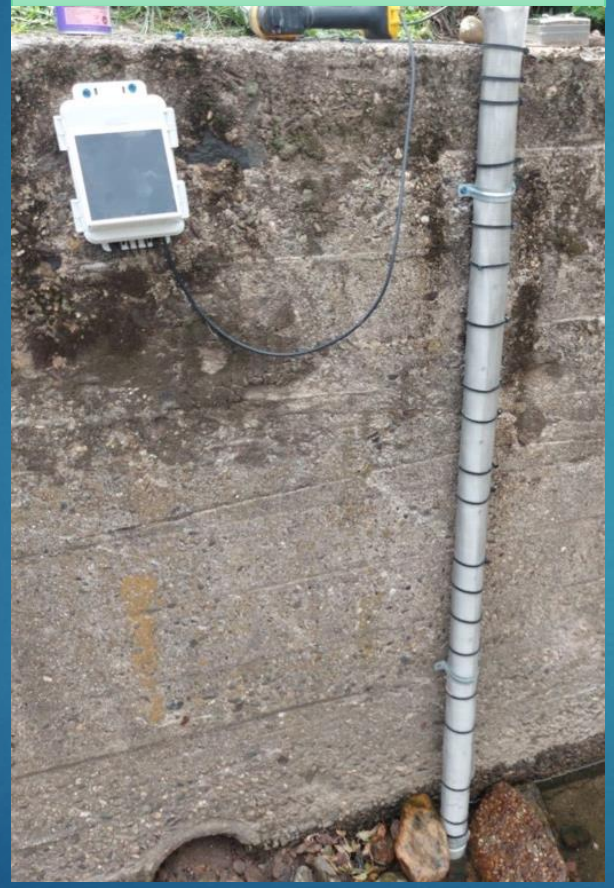
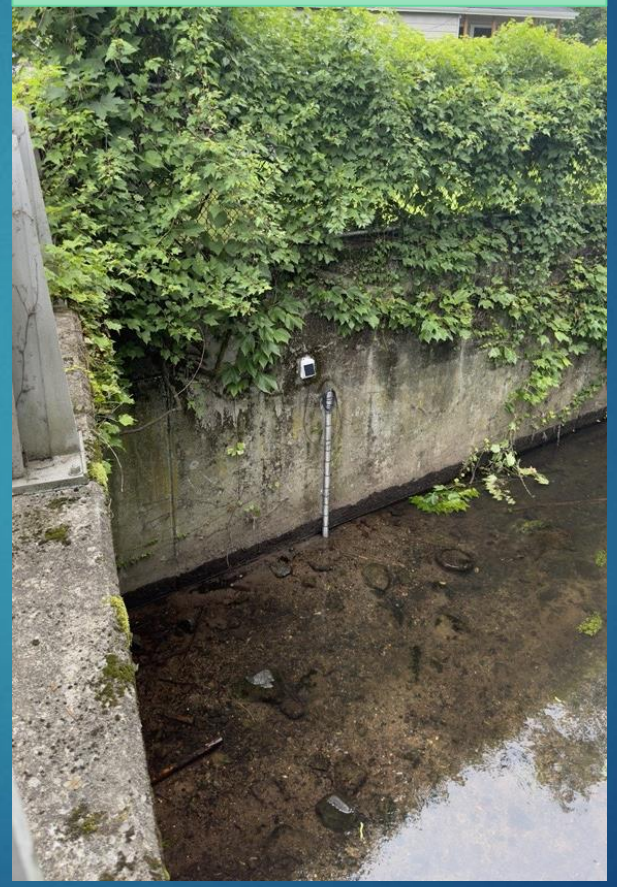


Maximum predicted water level based on the storm event on August 18, 2024

South



Water level sensors

Hamilton Ave	Depot Sq Park	Wilbur St	Forest Ave
			

Plan going forward

- Upgrade Storm Water System in logical sequence
- Use data from NJIT Study to design Storm Water Upgrades
- Address flooding issues regionally
- CSX and Turnpike Authority must maintain easements on a regular basis. Must be active partners in our efforts.
- Work with the State and Federal government to keep stream banks formalize and in the same location
- Be Proactive in designing retention basins
- Work with Planning Board and Zoning Board to decrease the amount of impervious coverage allowed on each parcel
- Storm Water Management must be part of any development
- NJIT / Rutgers /Stevens Storm Water Study will move east to analyze routes of storm water run off and topography that impacts neighbors