



Ohio Environmental Protection Agency (Ohio EPA)

DIRECTOR'S FINAL FINDINGS AND ORDERS (DFFOS)

Introduction and History



- The Ohio EPA Director's Final Findings and Orders (DFFOs) signed on February 11, 2009
- What are the Findings and Orders?

Findings



- Columbus is under a consent order (Aug. 2002)
 - Implement System Evaluation & Capacity Assurance Plan
 - Must provide adequate capacity for base and peak flows
 - Take feasible steps to mitigate or stop sewer overflows and water-in-basements
- Columbus cannot comply without satellite communities
- Bexley's sanitary sewers discharge to Columbus
- Sanitary Sewer Overflows impact human health and are prohibited








Orders – Overall Goal



- The Orders require the City of Bexley to properly manage, operate, and maintain all parts of its sanitary system to:
 - provide adequate capacity to convey base and peak flows,
 - take feasible steps to eliminate sewer overflows and water-in-basements,
 - minimize inflow and infiltration,
 - and to notify parties with a reasonable potential of exposure to pollutants associated with an overflow.

Required Deliverables Status/Timeline

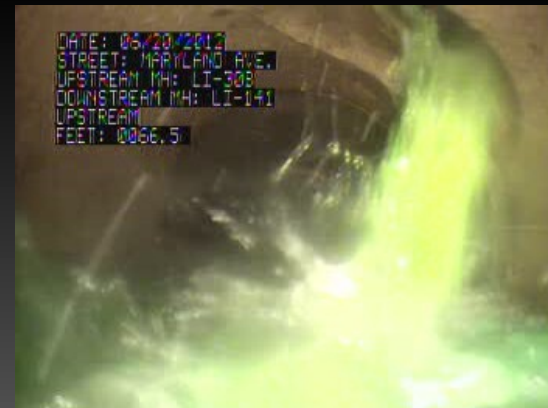


1. Bexley signed Orders 
2. Sanitary Sewer Evaluation Schedule submitted to OEPA 
 - Five years to complete study
3. Sanitary Sewer Overflow Emergency Response Plan and Public Notification Plan submitted to OEPA 
4. Capacity Management, Operation and Maintenance Program submitted to OEPA 
5. Final OEPA Report and Implementation Schedule 
 - Final Report Due to the OEPA Feb. 11, 2014
 - To include Final SSES Summary
 - Implementation Schedule for Improvements

Sanitary Sewer Evaluation Survey



- Flow Monitoring
- Hydraulic Modeling
- Manhole Inspections
- Smoke Testing
- Dyed Water Testing
- CCTV
 - O&M Tasks, Rehabilitation, Replacement and Schedule



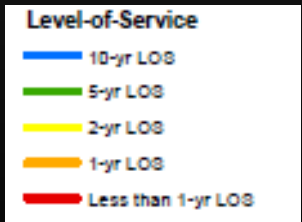
Findings of the Investigation



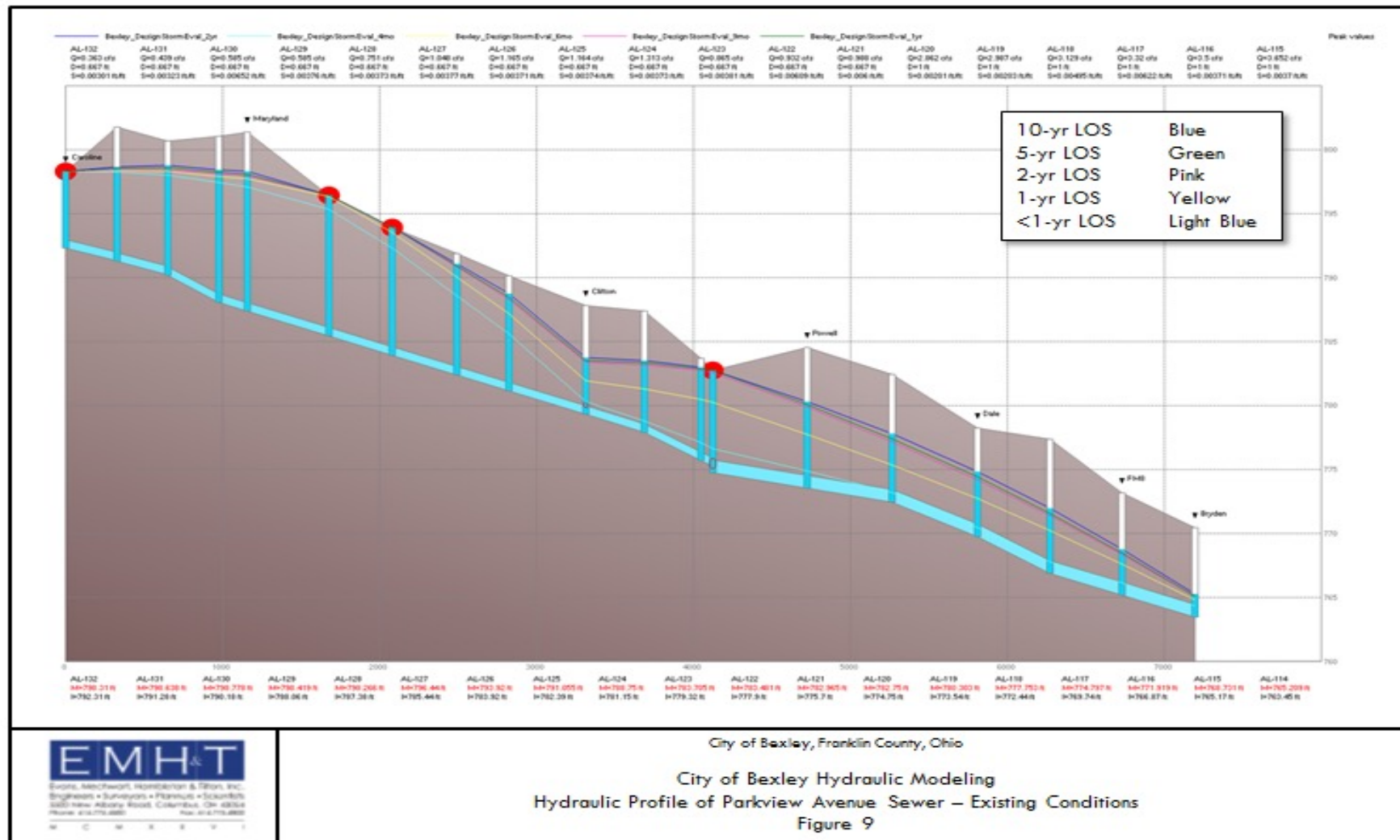
- Capturing up to 43% of Stormwater in the Sanitary Sewer System
- Comparison of Observed Flows to Columbus Design Stds.
 - System exceeded expected design flow
 - Design Flow (9.76 cfs) / Observed Flow (14.49 cfs)
- Observed Surcharging
 - Possible Sanitary Sewer Overflows
 - Possible Water-in-Basements
- The Sanitary Sewer System isn't designed to handle the increased flow

Capacity Issues Found

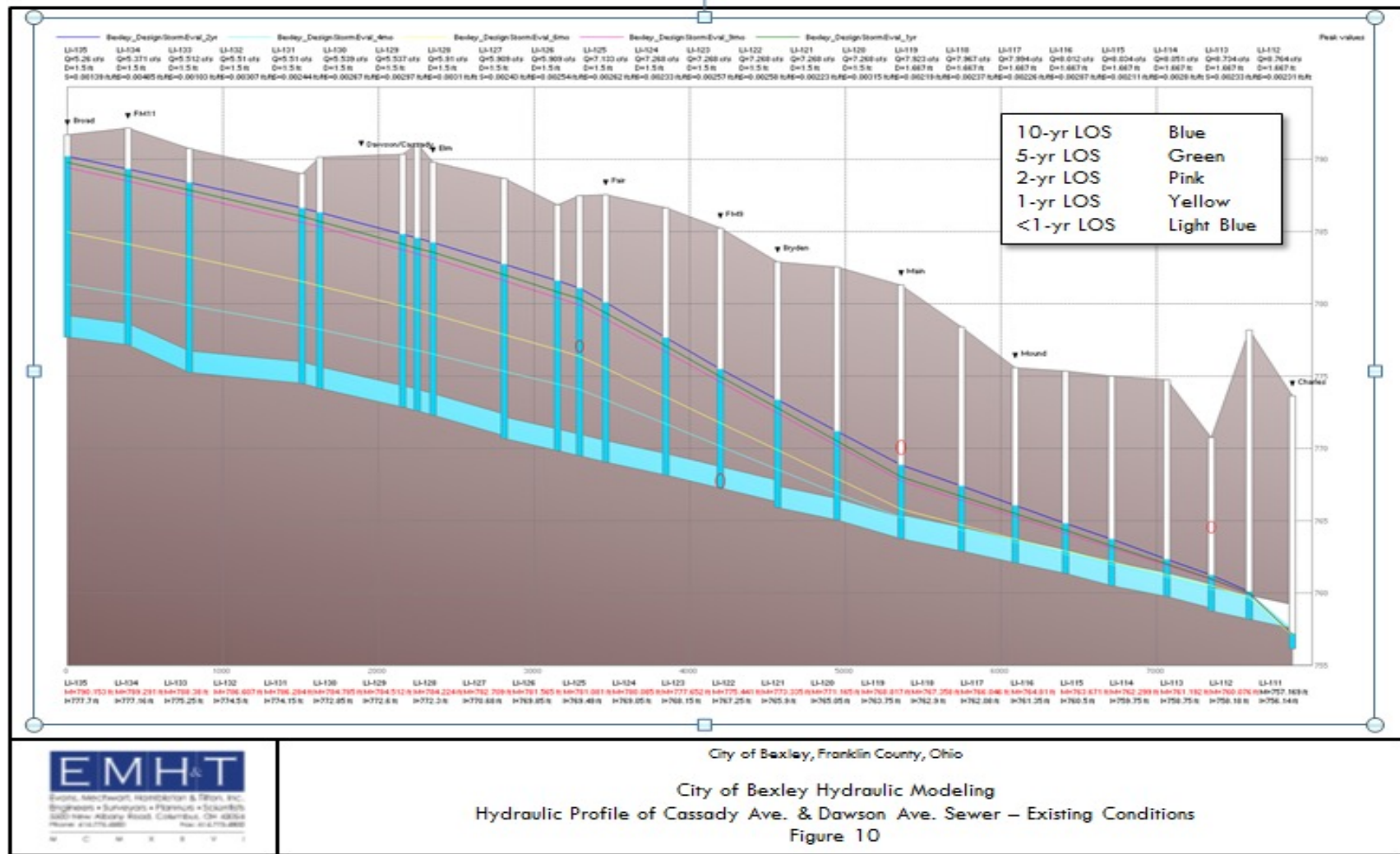
- Columbus Requirements
 - 10-year level of service for Water-in-Basements
 - 25-year level of service for Sanitary Sewer Overflows
- Found Capacity Issues
 - Parkview Avenue
 - < 1-year level of service
 - Cassady Avenue
 - < 1-year level of service



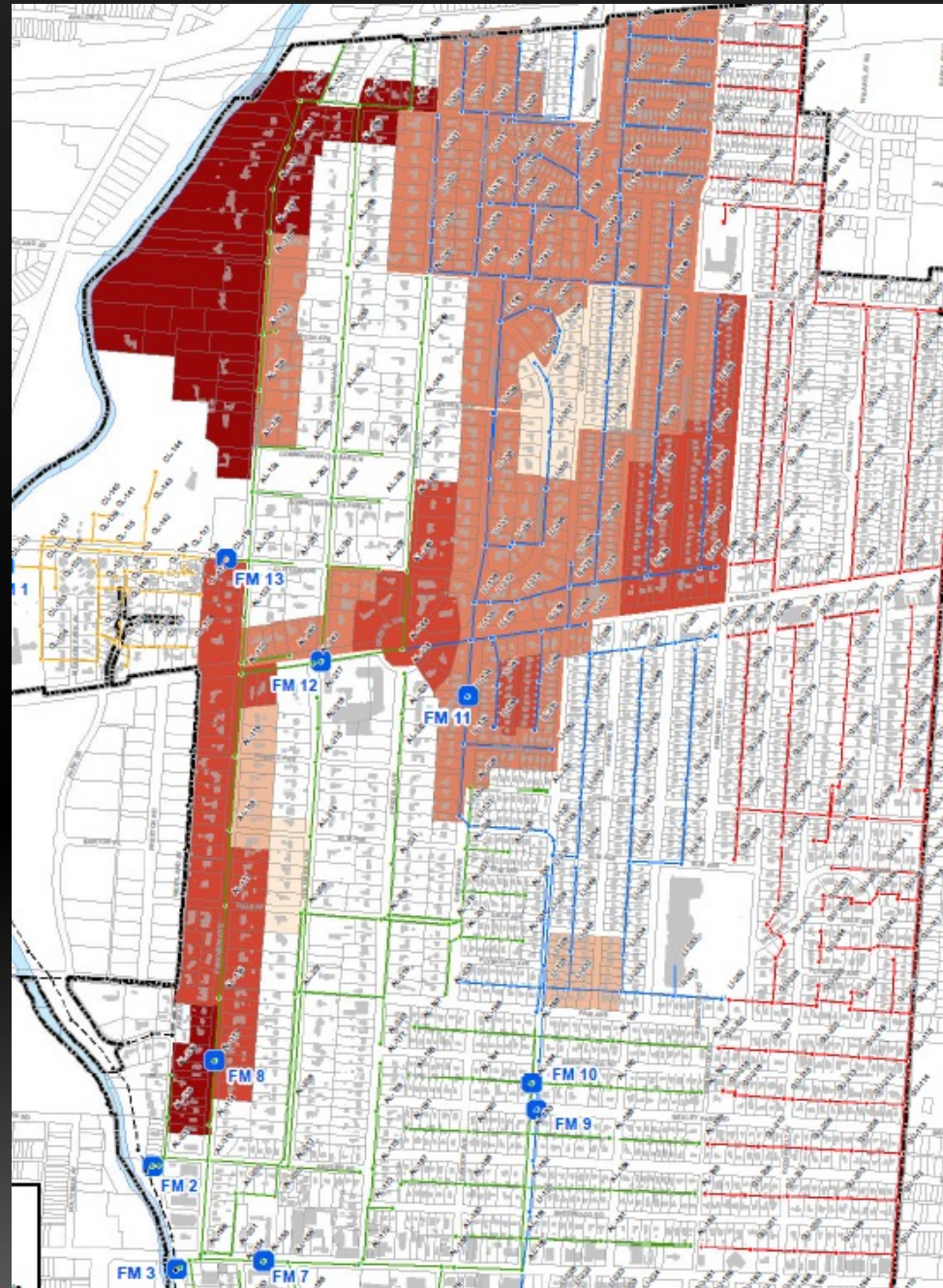
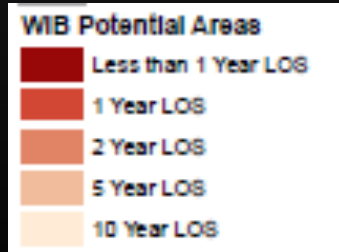
Existing Capacity of the Parkview Avenue Sewer



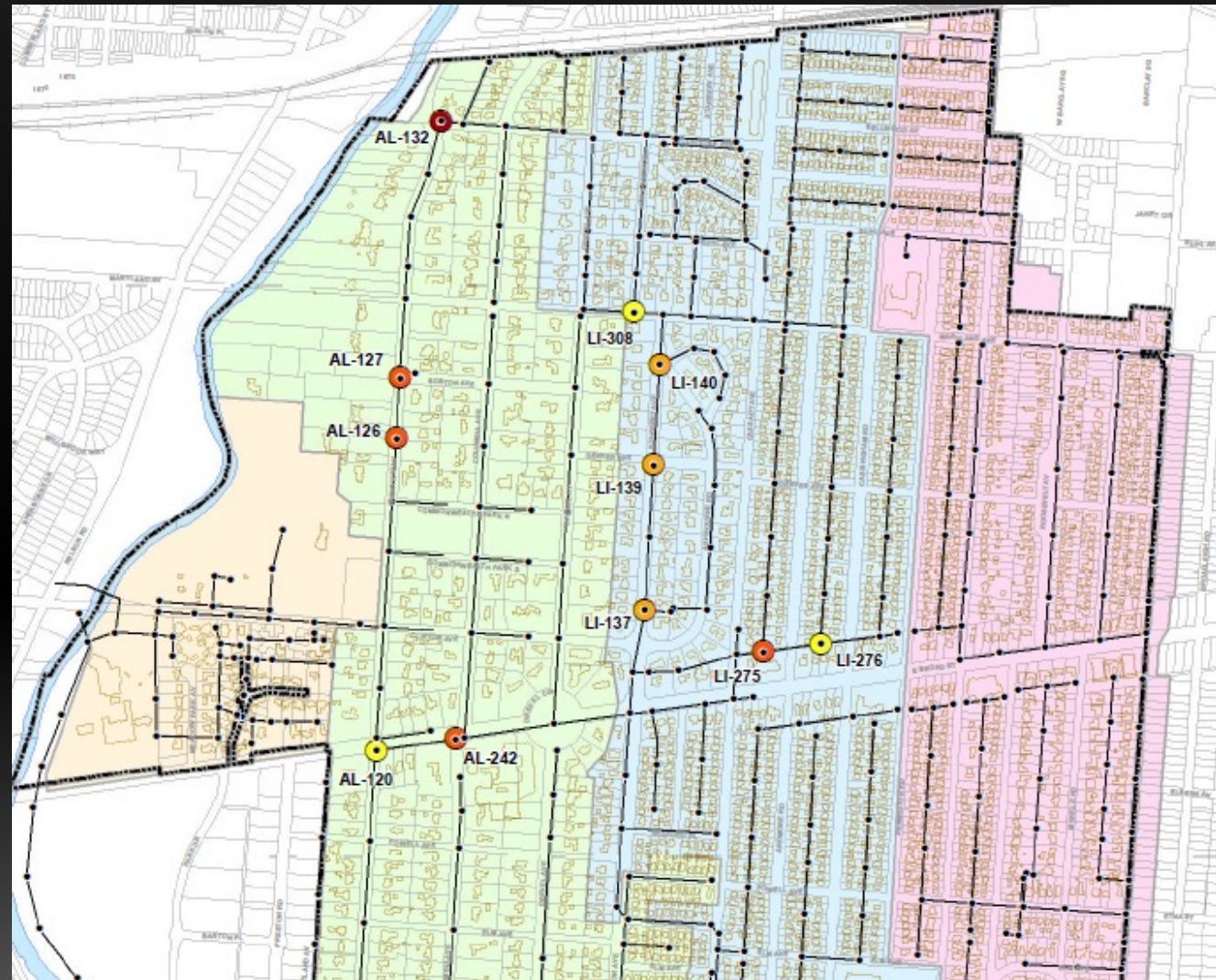
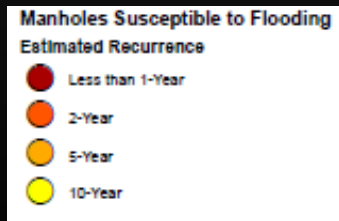
Existing Capacity of the Cassady Avenue Sewer



Possible Water-in-Basements



Possible Sanitary Sewer Overflows



Alternative Analysis

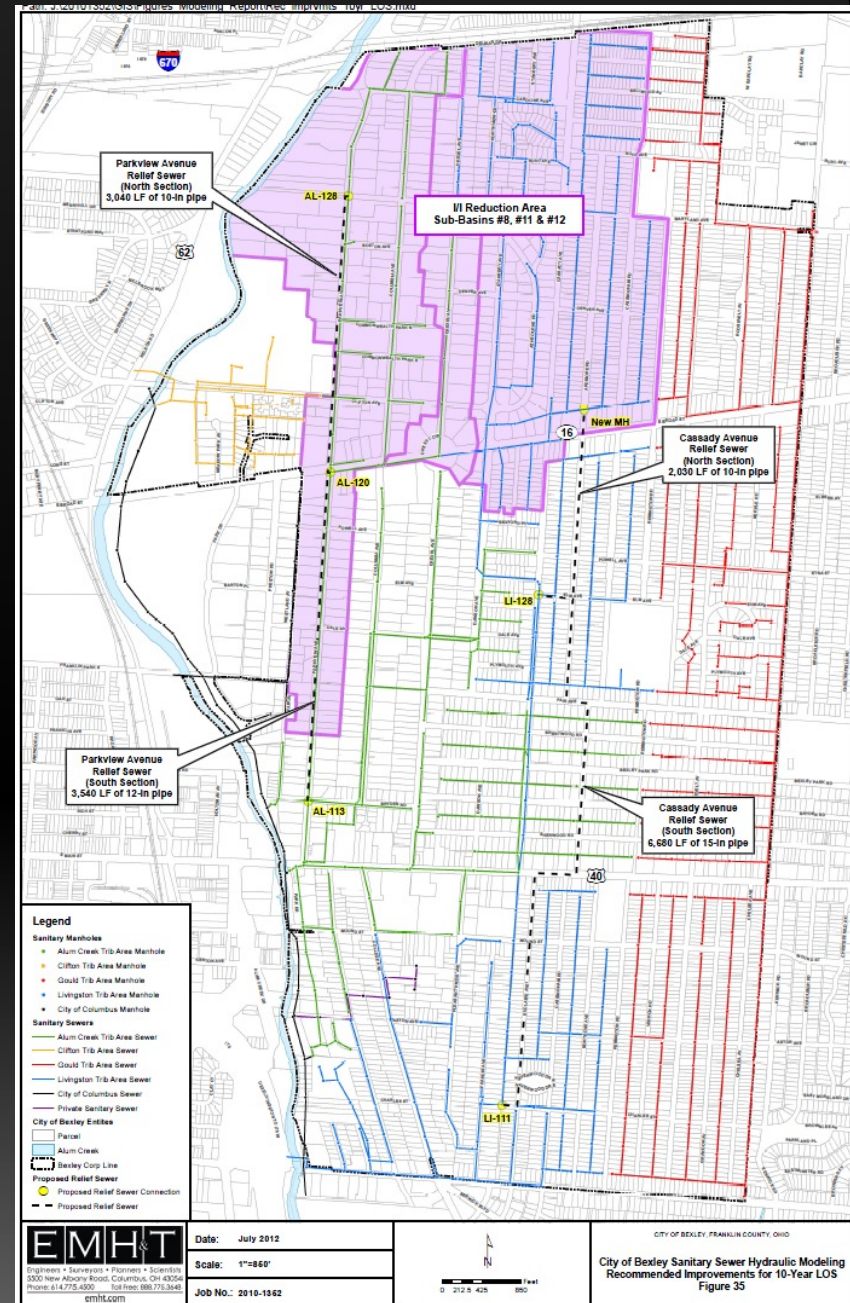


- Alternatives Evaluated
 - I/I Reductions
 - Private (downspouts, laterals, cleanouts, etc.)
 - Public infrastructure
 - Relief Sewers
 - Parkview Avenue
 - Cassady Avenue
 - Storage
 - Control flow to Columbus' Sewer System
 - Inline/offline storage options

Final Recommendations

- Capacity Enhancements

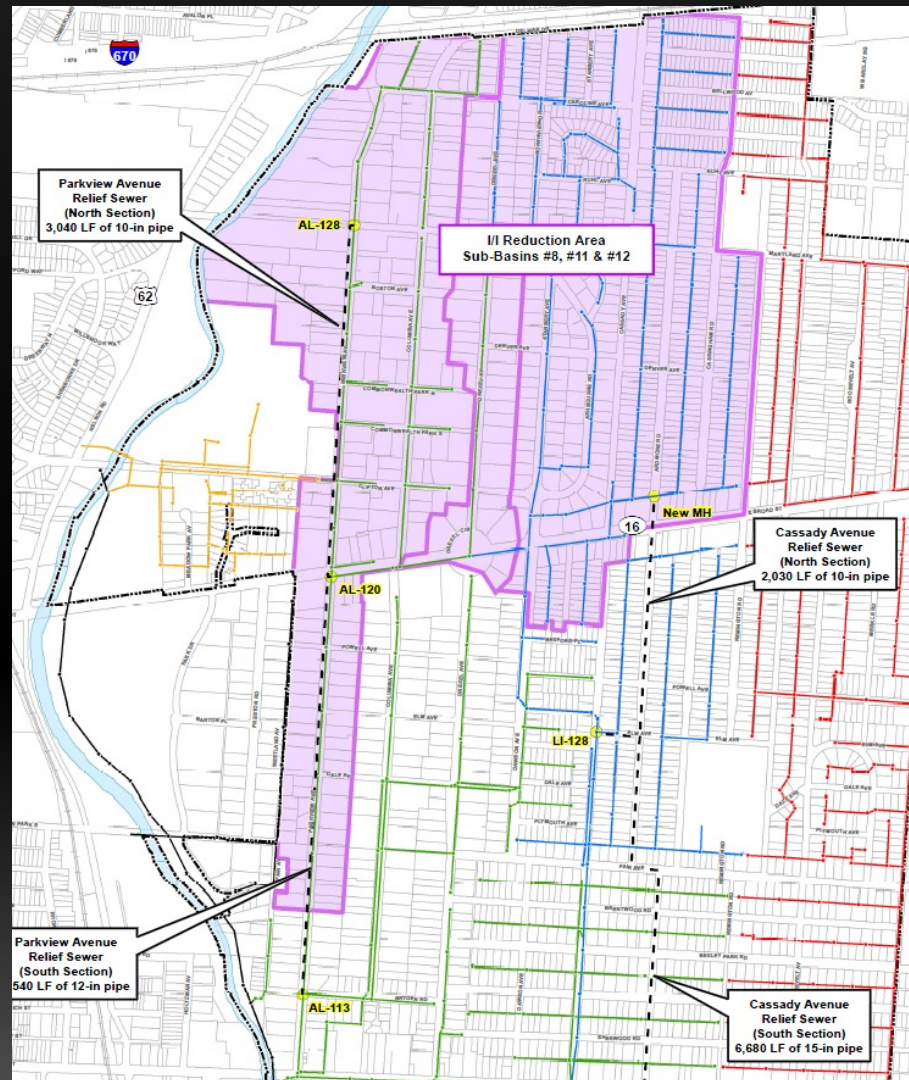
- Parkview Avenue Relief Sewer South of Broad Street (3,540 LF of 12-inch Sewer)
 - Parkview Avenue Relief Sewer North of Broad Street (3,040 LF of 10-inch Sewer)
 - Cassady Avenue Relief Sewer South of Fair Avenue (6,680 LF of 15-inch Sewer)
 - Cassady Avenue Relief Sewer North of Fair Avenue (2,030 LF of 10-inch Sewer)



Final Recommendations



- I/I Reduction
 - 15% Reduction Assumed
 - Basin #8, #11 and #12



Final Recommendations



- Possible Storage Required

- 15% Reduction Assumed Basin #8, #11 and #12
- 300,000 gallons \pm
- Regional Storage Option
- In-Line Storage Option



Final Recommendations



- Total Recommended Improvements is estimated at \$22 Million

<u>Project Description</u>	<u>Estimated Project Cost in 2014 Dollars</u>
High Priority North of Fair	\$1,718,900.00
High Priority South of Fair	\$656,850.00
Medium Priority North of Fair	\$5,989,125.00
Medium Priority South of Fair	\$4,835,550.00
Parkview Relief North	\$1,146,834.00
Parkview Relief South	\$1,356,134.00
Cassady Relief North	\$800,656.00
Cassady Relief South	\$2,762,322.00
Storage	\$2,708,400.00
Total Improvements	\$21,974,771.00

Implementation Schedule



- Must submit proposed schedule for improvements by Feb. 11, 2014
- DFFOs suggest 5-year Study and 10-year Improvement Plan
 - Does allow for extended schedules
 - Community needs to provide financial justification with submittal
 - Ohio EPA will review and notify the Community if the proposed schedule is unacceptable
- We will propose 40-year improvement schedule to the Ohio EPA
- We will have 90 days to settle any schedule dispute

Any Questions?

