CT DOT MS4 Program
and
MS4 Mapping

SERC

January 19, 2023

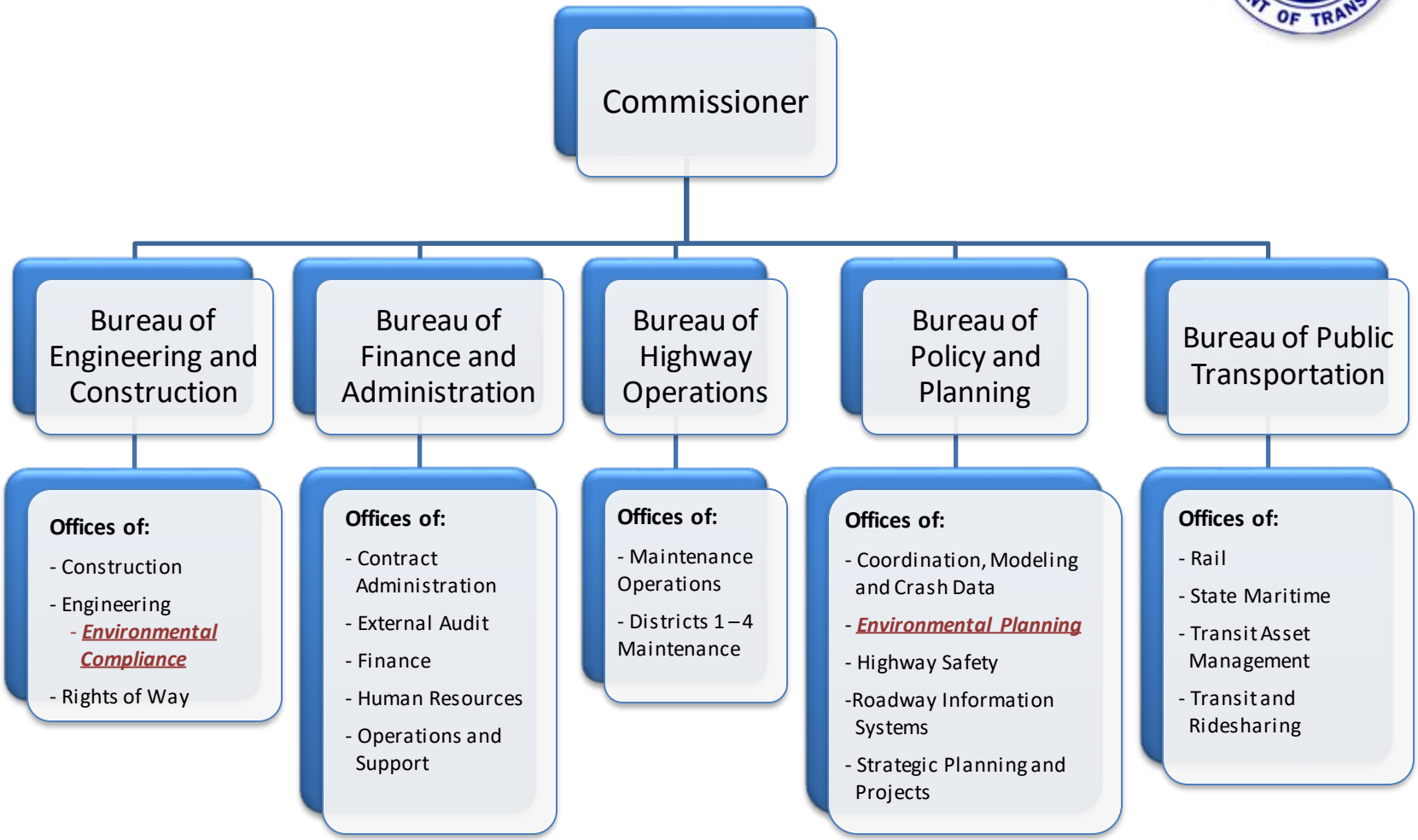
"MS4"

- Municipal Separate Storm Sewer System (MS4)
- EPA Clean Water Act (1972)
- EPA Regulates MS4 Phase I (1990)
  - Population > 100,000
- EPA Regulates MS4 Phase II Rules (1999)
  - Population <100,00 (Small MS4s)
- CTDEEP Issues Phase II Permits (2004)

"MS4"

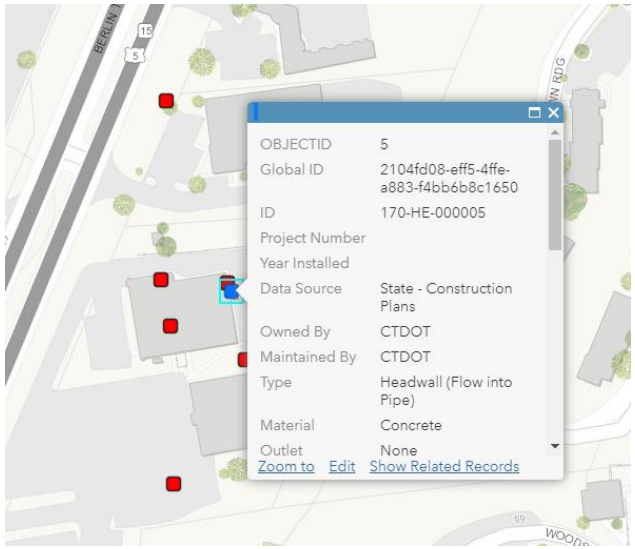
- 121 Municipalities in Connecticut qualify and are regulated under DEEP's Small MS4 general permit
  - 48 towns do not have the population density to qualify
  - Other government Institutions above a certain size
- CT DOT considered a "Non-Traditional" municipality under MS4
  - DEEP issued "General Permit for the Discharge of Stormwater from Department of Transportation Separate Storm Sewer Systems " in 2018, effective June 2019

CTDOT MS4 Team



Stormwater System Mapping

- All regulated MS4's are required to map their storm sewer system
  - Pipes and Swales
  - Catch Basins and Manholes
  - Detention/Retention Ponds
  - Other Storage and Treatment
  - Discharge Outfalls
- Regardless of regulatory requirements, still a good idea
  - "Asset Management"
  - "State of Good Repair"
  - Upkeep and Maintenance
  - Lifecycle and Replacements
  - And….



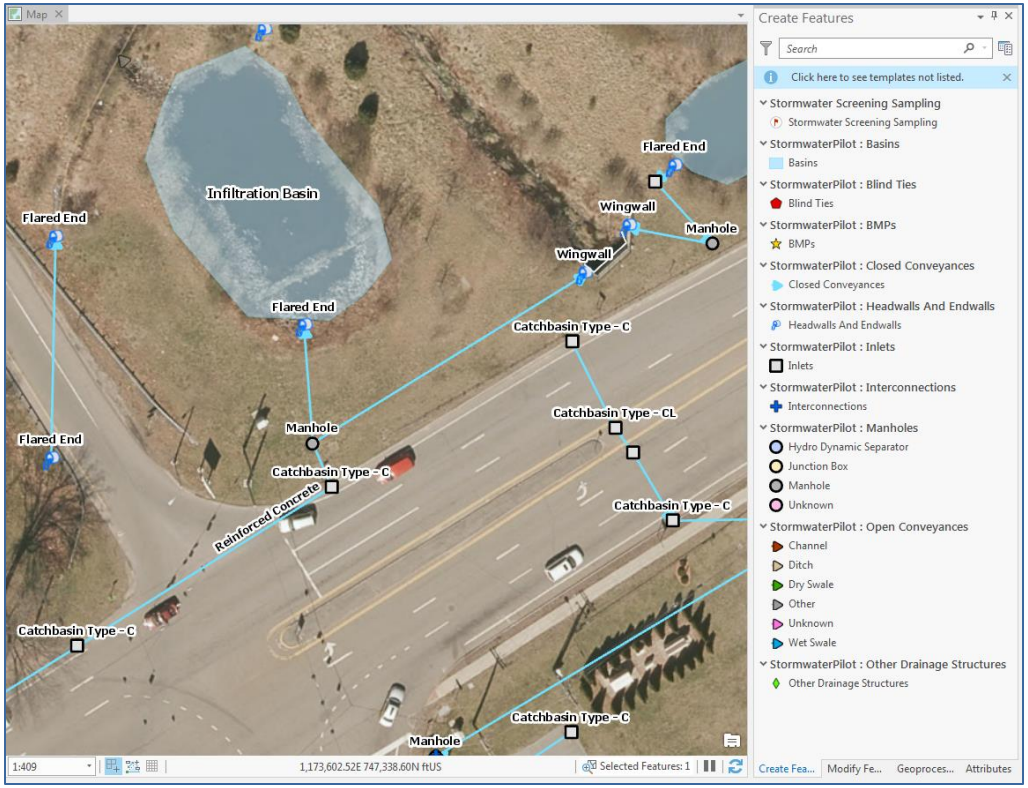
Stormwater System Mapping

- Spill Response!
  - Control the hazard
  - Limit the environmental harm/clean-up
  - Where's the outfall to the waterbody? → boom deployment
  - Are there other structures along the way? → intercept at a manhole

Stormwater System Mapping

Mapping DOT's Stormwater System

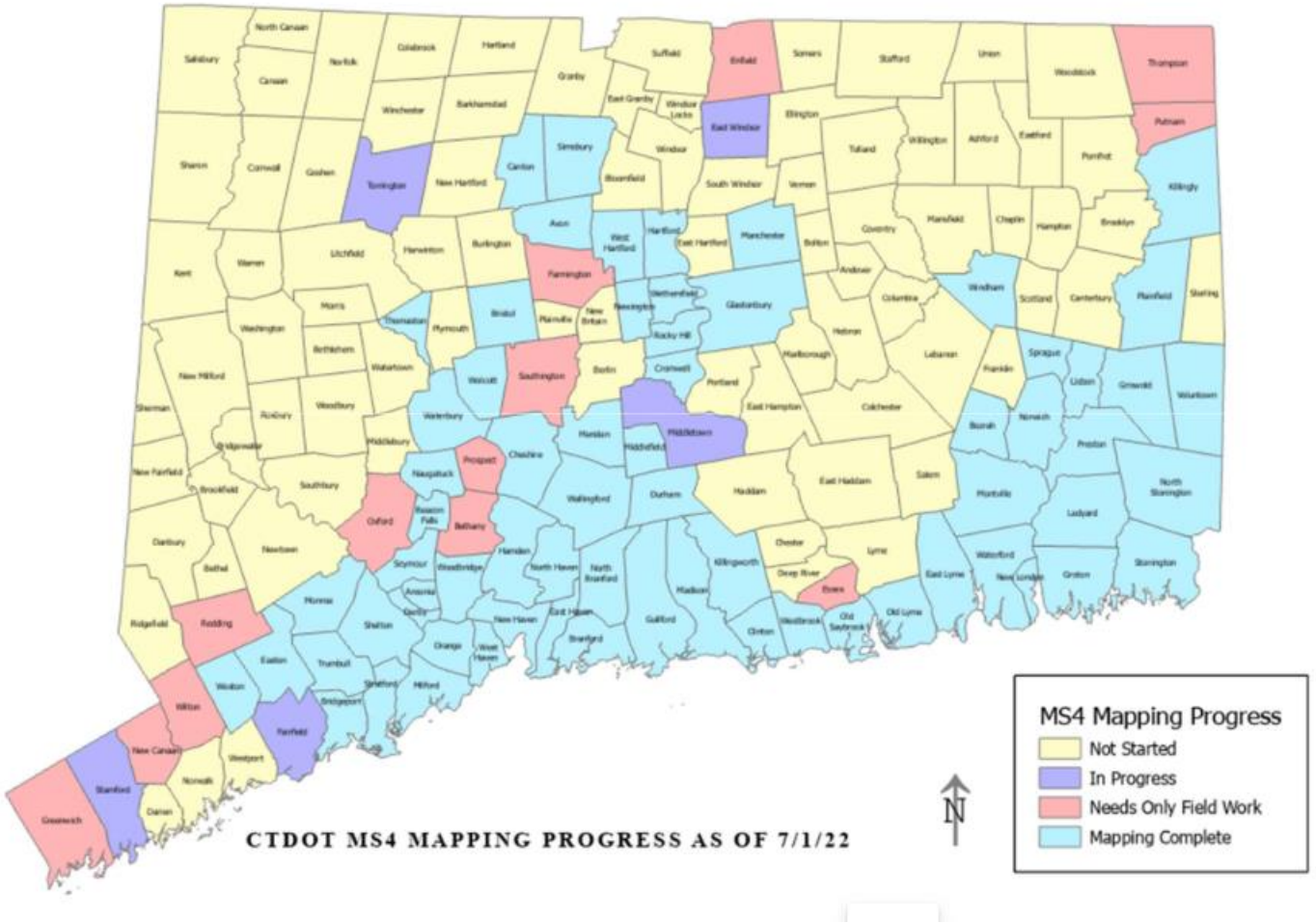
- Started from scratch
- Mapping Standardization
  - COG's GIS Standards Committee
- Mapping format available for public use



Stormwater System Mapping

- CTDOT storm sewer mapping
  - Town-by-Town approach
  - Conversion/digitization of best available construction plans
  - Field verified to the maximum extent practical
  - 63 out of 121 towns completed and published to date
    - ~half done
    - Remainder at least by 2029

Stormwater System Mapping



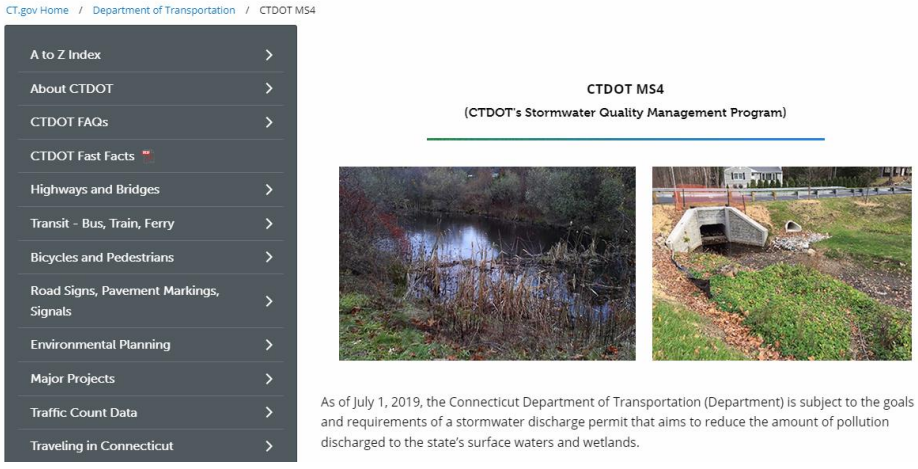
Stormwater System Mapping

- What do we map?
  - CTDOT pipes, outfalls, manholes, catch basins, etc.
- What haven't we mapped?
  - Municipally-owned pipes, outfalls, structures, etc.
  - Privately-owned pipes, outfalls, structures, etc.

Stormwater GIS Map

Mapping DOT's Stormwater System

- Progress to Date
  - Apprx. 50% of State is mapped
  - 50% required by June 2024
- Reference Guide available on CTDOT MS4 Webpage



DOT Related Links

Water & Noise Compliance Webpage

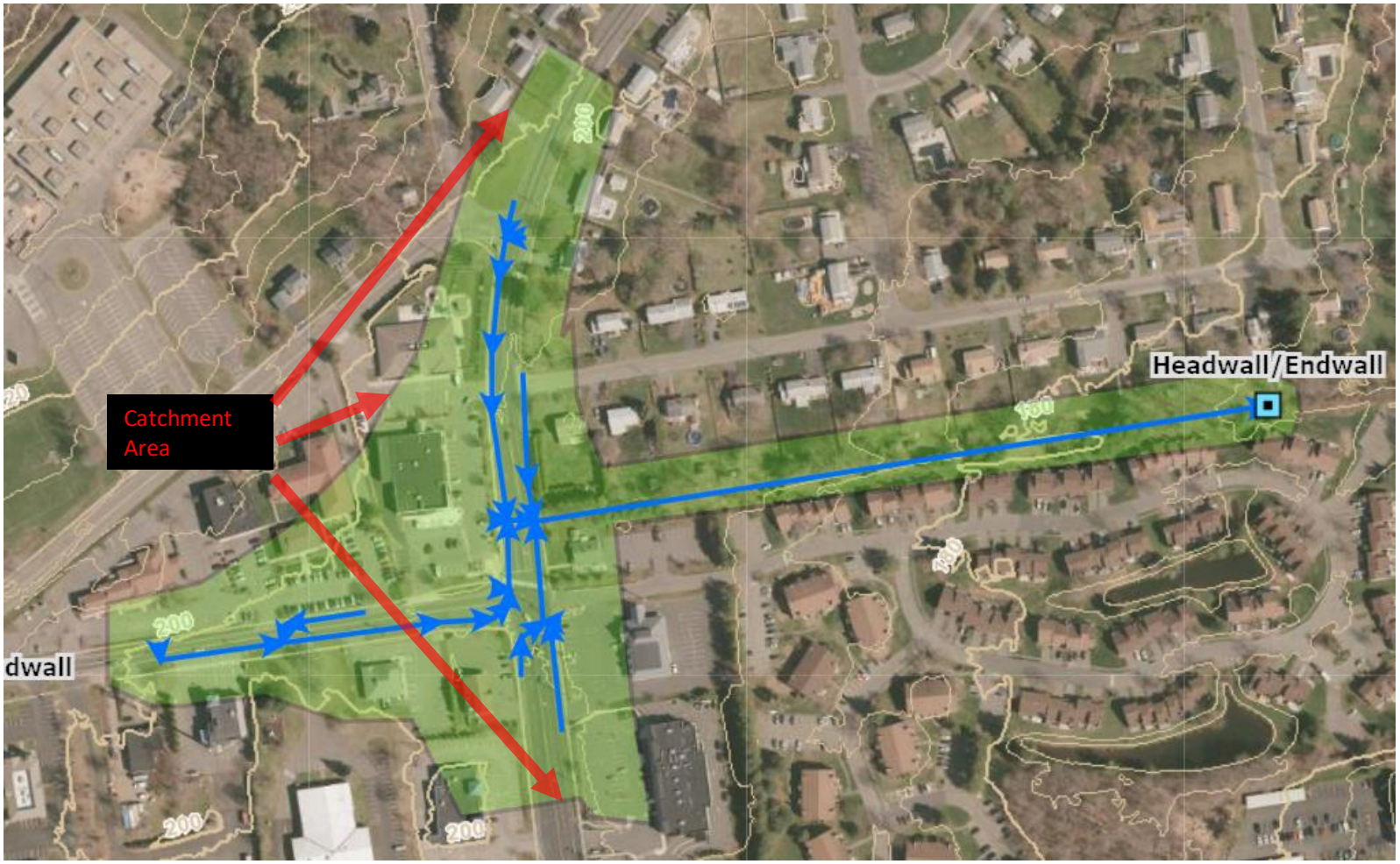
Hydraulics and Drainage Webpage

Environmental Compliance Webpage

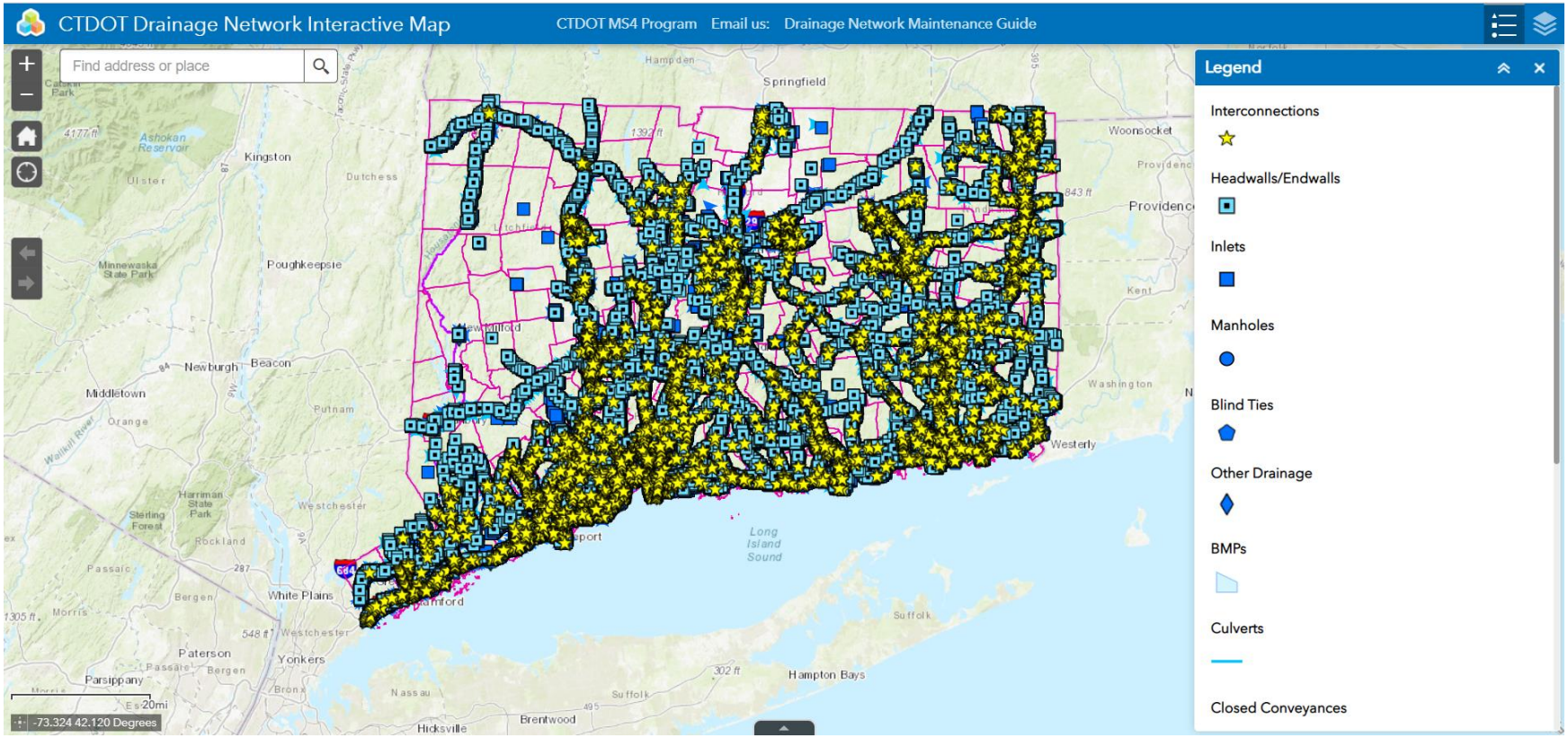
CTDOT MS4 GIS Database Maintenance Guide

CTDOT MS4 Drainage GIS Map

Catchment Area



Live walk through



Drawbacks and Caveats

Limitations

- Information from construction plans may not be 100% accurate
- New construction, mapping lags
- Private property → CT DOT system
- Municipal system → CT DOT system
- Data disclaimers

Wish list/Next Steps?

- Integrate with Town mapping data
- Challenges – no set standard
  - Paper map? Perfectly acceptable…
  - Perfect integration means using the same schema
  - Imperfect integration means….
    - Links to municipal maps

Questions ?

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