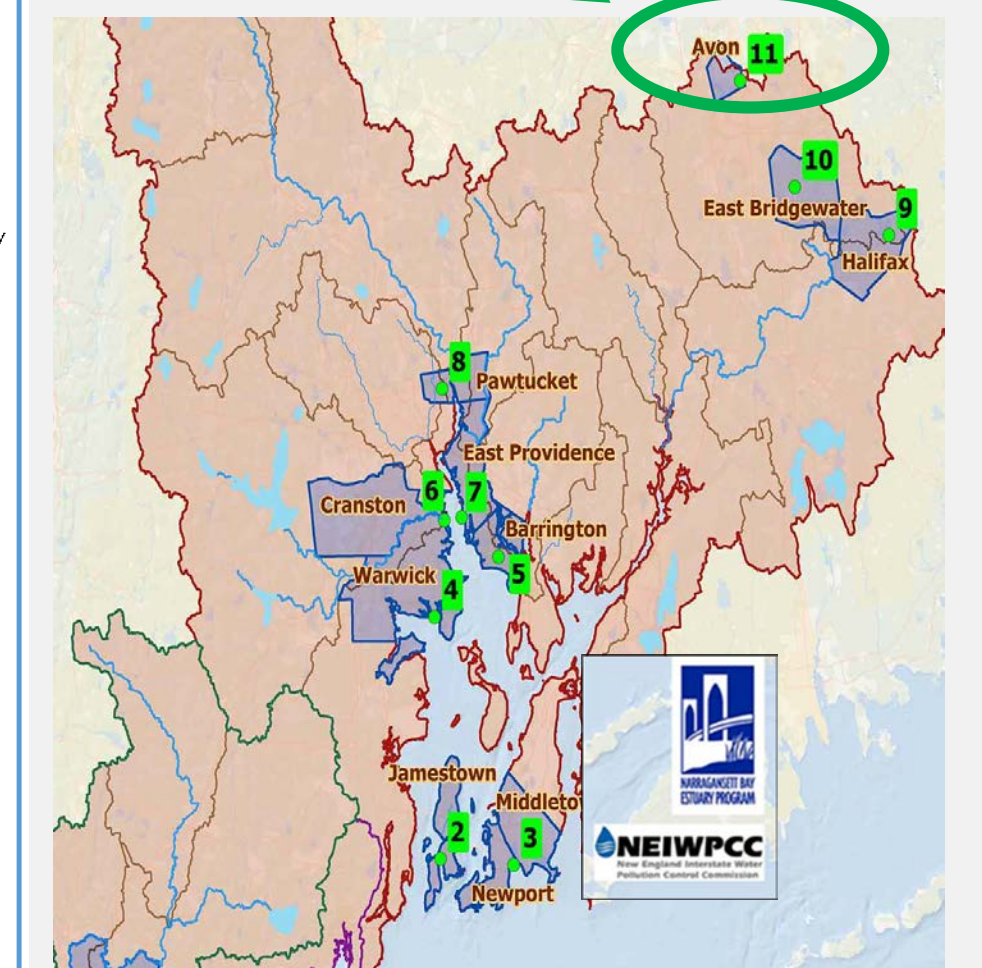
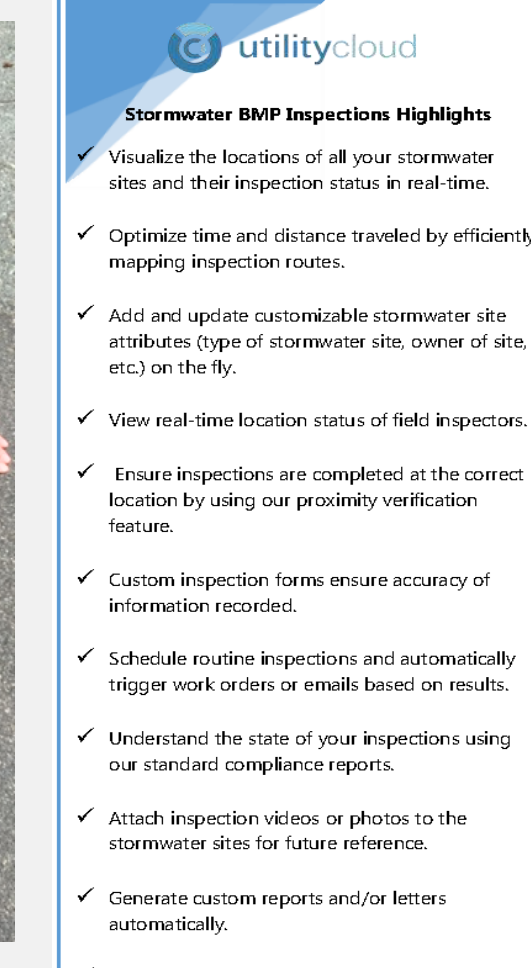
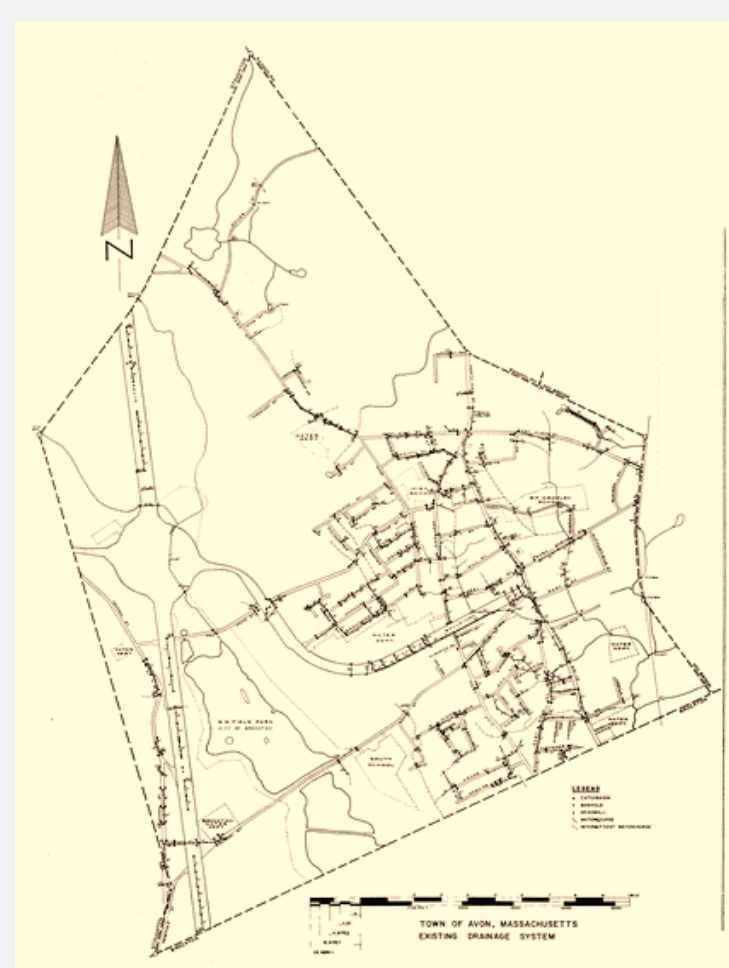


## Stormwater and Green Infrastructure Master Plan

Four square miles in size, Avon has over 23% impervious cover and ranks in the top 15% of Massachusetts communities in terms of impervious surface. Stormwater from these impervious surfaces flows to Trout Brook, a 604(b) listed stream in the upper reaches of Narragansett Bay. This stormwater also recharges the Town's drinking water groundwater sources. To protect its high-risk groundwater supply, address the impairment, and proactively meet NPDES permit requirements, the Town has undertaken comprehensive master planning.

The SNEP application proposed to prioritize subwatershed locations for field sampling locations and to identify sites suitable in priority areas for BMPs/green infrastructure. The approach included mapping land uses, impervious surfaces, and drainage structure, and developing more detailed topography. Structures would also be inspected for condition and initial IDDE screening. Before start of the SNEP project, Avon was awarded a MassDEP grant (WIPTA, BRP-2015-02). This allowed the Town to utilize its GIS and operations management systems to complete much of this advance work. The SNEP project can now focus more in-depth on source area prioritization, targeted sampling, and BMP/green infrastructure assessment.



## Results/Conclusions

**Avon implemented replicable, cost effective methods to enhance available GIS data for source prioritization and green infrastructure retrofit planning:**

- More detailed topography can be created through available LiDAR data sets and GIS analysis, allowing smaller catchment areas to be developed to divide flow for treatment in more locations
- Newer GPS units are affordable and can achieve sub-centimeter scale - an accuracy sufficient for most drainage/green infrastructure planning. Vertical accuracy allows hydraulic conveyance capacities to be evaluated. Field elevation survey is otherwise costly and a lengthy process
- Not having local orthophotos/plainimetrics, pavement coverage was improved by a volunteer using heads up digitizing with open source GIS. ArcGIS and Google Earth were not suitable. A higher resolution aerial photo as a base would be helpful for improved impervious surface mapping, and future planning and evaluation. Regional efforts such as working with the 2017 UASI flyover is a possibility. Crowd source GIS mapping is also worth exploring
- Field data inspection can be streamlined, simplified, organized and reported with cloud-based technology

**Work completed to date allows Avon to maximize the resources provided by SNEP to complete field sampling efforts and evaluation of site specific BMPs, and to accelerate development of the Town's comprehensive Stormwater & Green Infrastructure Master Planning efforts.**

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