

NEXT-GENERATION WATERSHED MANAGEMENT PRACTICES FOR CONSERVATION DEVELOPMENT

U.S. Environmental Protection Agency, Region 1 (EPA R1)

PROJECT SUMMARY

The *Next-Generation Watershed Management Practices for Conservation Development* project is about envisioning a different future of watershed management. The project will evaluate a range of new and redevelopment (nD/rD) approaches to better understand and communicate the future impact upon watersheds and the potential for enhanced site design and management for optimal sustainability and resilience. This includes examining green infrastructure practices, the minimization, reduction and removal of existing impervious cover, and next-generation municipal bylaws / ordinances.

This project examines headwater stream segments in the Taunton River Watershed to understand the impacts of, and potential approaches for managing impervious cover (IC). This will examine a pre-development condition, the current built state, a scenario with MS4 requirements, next-generation Conservation Development (CD) practices, and a number of future scenarios that consider potential climate change conditions (flooding and drought) and future buildout. Scenarios will be used to illustrate the effect of land use decision making at the watershed and site scale and the importance of next-generation municipal bylaws / ordinances. Project results will demonstrate how nD/rD impacts water quality, flooding frequency and duration, channel stability, ecohydrological function, and hydrogeomorphology.

Next-generation CD practices will include a de-emphasis of impervious cover (IC) (e.g., primarily access roads, driveways, parking lots and hardened or bare rooftops), and increased reliance on practices that emphasize next-generation site design and development practices (e.g., soil management practices), architecture (e.g., green roofs, Low Impact Development (LID)) and landscape architecture – in general, CD practices that promote conservation of site-scale functional attributes and ecosystem services to help ensure preservation of pre-development-like hydrology, hydrogeology, and ecological diversity and vitality. In addition, it is envisioned that such CD practices will incorporate agriculture to increase sustainability of food systems and foster an increased appreciation and use of forest canopy and landscape architecture to promote evapotranspiration to offset the “heat island effect” that results from excessive IC.

The project includes the development of technical support documents (TSD) and webinars, trainings, and a workshop for the Southeast New England Program (SNEP) Technical Assistance Network (STAN) to facilitate transfer of the project outputs. The project will develop a municipal engagement ‘toolbox’ of next-generation SW management and CD practices that include:

1. **Conceptual Site-Development Plans** representing a range of hypothetical new and redevelopment projects that are representative of realistic MA development projects for illustrating site management scenarios including “business as usual” (i.e., conventional) site design practices and CD practices.
2. **Next-Generation Model Ordinance and Bylaw** recommendations addressing local government requirements for SW management and site-development practices that incorporate the findings of FDC1 Project and concurrent FDC2A work.
3. **A Compendium of Advanced SW Management and Conservation-Based Site-Scale Design** practices to primarily inform local municipal government officials and decision makers, and secondarily, site-development practitioners (architects, site engineers, landscape architects).
4. **Communications Materials** that demonstrate the impacts at the watershed and site-scale levels to inform local land use regulatory decision making, and that are tailored to the needs of the municipal governments.

PROJECT PARTNER INVOLVEMENT

The Project Team is seeking project partners to provide input and feedback on the development of a municipal engagement toolbox. Specifically, we are seeking project partners to provide input on the development of municipal engagement outreach materials to ensure the materials effectively address a municipal audience of land use practitioners. The intended audience is local municipal government officials and decision makers, and secondarily, site-development practitioners (architects, site engineers, landscape architects).

We anticipate 5 working meetings over an 11-month period beginning in December 2021. Meetings will be held virtually or in person in the Taunton River Watershed if conditions allow. Meetings will be approximately 2 hours in length. Tentative meeting dates are listed below

Draft Schedule of Municipal Engagement Working Meetings

Meeting #1. Introduction to project and selection of hypothetical CD and LID site-development project concepts	2 nd week of December
Meeting #2. Combined with Technical Steering Committee Meeting #1 outlining modeling scope and outputs that will support this Project	January 2022
Meeting #3. Present and discuss baseline alternative level of control using conceptual site-development designs with modeling results and select additional Alternative (2) level of control to be further evaluated	March 2022
Meeting #4. Combined with Technical Steering Committee Meeting #2 presenting all project modeling results for various simulations including alternatives of level of local regulatory control for site development activities.	June 2022
Meeting #5. Present final results of site-development alternative analyses and collaborate to identify recommended effective communication methods/outputs and lessons learned through Municipal Engagement process	August 2022

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