

**High Resolution Remote Sensing Data and Participatory Spatial Analysis as a tool for
Integrated Landscape - Based Stormwater Management (IMLaS):
Turning Nuisance into an Asset**

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There is much concern about environmental impacts of stormwater runoff from residential properties. Local and state agencies nationwide realize the need for stormwater management and potential value of low-impact design practices. However there are few tools that can help residents and planners make informed decisions about alternative methods for distributed stormwater management.

Addressing this issue, a project was undertaken as part of the ***Redesigning the American Neighborhood (RAN)*** program managed by the University of Vermont that looks at the Butler Farm/Oak Creek neighborhood in South Burlington, VT, USA. The goal of the RAN program is to develop and test tools that will allow homeowners, developers, and city/state officials to apply a mix of stormwater interventions at various spatial scales to optimize environmental, social, and economic goals associated with stormwater management. The use of a diverse palette of ideas, technologies, engineering approaches, spatial analysis and landscape specifications tailored to a particular neighborhood is helping to achieve the dual goals of effective stormwater management and public acceptance.

Retrofitting an existing stormwater system could be costly. This is often viewed as a burden for the neighborhood residence and can stir up a conflict environment between residents, city and state. To help mitigate potential conflict and guide the process toward constructive solution we are developing a new participatory framework for environmental consensus building – **Participatory Spatial Analysis (PSA)**. The use of this framework in conjunction with the high resolution Remote Sensing data creates an analytical approach for research, visualization, education, conflict resolution and decision making at multiple levels of neighborhood, City and State. The cumulative result of applying this framework together with the development of spatial **MSDD (Micro Stormwater Drainage network Density)** index leads us through the multiple discussions with the stakeholders towards the **Integrated Modular Landscape - Based Stormwater Management (IMLaS)** plan for action.