

LID/Green Stormwater Infrastructure in Karst Areas
Meeting Notes Synthesis | 1 Nov 2019

What? A group of 15 individuals representing different organizations and local governments around the state held a half-day workshop on 1 Nov 2019 to discuss interest in development of an LID/GI manual tailored to Karst, springs, and/or groundwater regions of FL. The complete list of workshop attendees is appended to this summary. During introductions, participants were asked to share words or phrases that come to mind when they think of Florida’s springs and Karst regions. The word cloud to the right summarizes their responses—a balanced mix of positive (e.g., “natural beauty”) and negative (e.g., “finger-pointing”) terms.

Why/Motivation? FDEP is being pushed to expand on and do more with the BMAP Program and wants to identify feasibility of low-impact development (LID) and green infrastructure (GI) applications for addressing water quality impairment in Karst, springs, and high groundwater-recharge regions. Evidence to date suggests that continuing the pace and status quo of urban development around the state, especially as it moves into the less urbanized regions of North Central Florida, will exacerbate rather than alleviate nutrient loading to already impaired water bodies. Water quality solutions must be tailored to specific sites (historical land use, geologic and hydrologic features, pollutant sources, etc.) and development scenarios. In addition, it is essential to evaluate and identify specific practices that are not only technically, but also economically and practically feasible.

The state, water management districts, and local governments will also need to identify and/or develop and adopt incentives—both regulatory carrots and sticks—to generate buy-in, build momentum, and speed the adoption of specified practices. These initiatives are intended to start first with planning guidance, design specs, and voluntary incentives through a manual and supplemental products that serve 6-8 counties and many cities. Regulatory mandates and statewide guidance are more of a long-term, aspirational goal that will first require broad public support and public- and private-sector buy-in.

Context/History? Early in the workshop, participants each shared their professional positions and roles along with their experiences with and perspectives on LID/GI initiatives, projects, and practices. This discussion helped provide context for where the most promising opportunities might be to help catalyze next steps on developing a guidance manual. It also allowed for reflection on the most pervasive barriers or roadblocks (real and perceived) to successful promotion, adoption, and implementation of LID/GI projects. Experiences shared ranged from very limited (e.g., discussion of the subject with little buy-in to promote adoption locally) to quite extensive (e.g., installation of demonstration projects along with monitoring; delivery of local government workshops to improve awareness and promote buy-in).

Several participants noted that current stormwater requirements, NPDES, or MS4 programs already address *to some extent* water quality goals consistent with LID/GI principles, but much more (support and financial investment) is needed to move the needle across new development, redevelopment, and



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retrofit scenarios. There was also agreement among the group that a holistic approach is necessary and that a guidance manual should not only specify individual practices, but must also provide an integrated, “treatment-train” planning and design approach.

Key Opportunities & Challenges: While the group shared the perspective that an LID/GI guidance manual specifically incorporating recommendations for Karst, springs, and high groundwater-recharge areas is an important piece of moving the BMAP Program forward (“pushing the boundaries”) and that there are promising opportunities and resources that can be leveraged to do so, they also recognized the many challenges and impediments to developing effective incentives for and accelerating LID/GI implementation. The list of constraints to moving ahead and doing so quickly is a long one, including general resistance to change and lack of: clear communication of *why* LID/GI; funding; education and awareness; trained personnel and practitioners; certainty about water quality BMP performance (evidence-based); understanding of risks and benefits of LID/GI adoption; and documentation of economic benefits and tradeoffs of alternative LID/GI approaches vs. standard practice. Three of the most pervasive barriers noted were 1) lack of local government and agency “buy-in” to incorporate guidance and associated requirements in comprehensive plans, land development regulations, and local codes, 2) lack of Florida-specific, data-driven evidence on water quality benefits of LID/GI stormwater management practices, and 3) lack of a unified definition and state framework for LID/GI. On top of these challenges, there a (perceived or real) lack of consistency in the design specifications for individual LID/GI practices and treatment-train approaches. Finally, LID/GI and BMAP credits are perceived as “trying to make new developments clean up pollution from existing projects”, and it is perhaps equally important to address water quality goals through redevelopment and targeted retrofits.

Parallel opportunities to address these challenges include monitoring of installation and demonstration projects to document water quality benefits/costs; coupling water quality and quantity goals in planning and practice (e.g., stormwater reuse for irrigation); 319 and other grants to develop BMP ‘cut sheets’ and tailor to unique geologic features (e.g., Alachua County designates criteria for “Karst-sensitive areas”; and prioritizing integration of LID/GI practices in redevelopment and retrofit projects.

Priority Audience, Next Steps & Timeline: In the second half of the workshop, participants listed and prioritized audiences for an LID/GI design and guidance manual and supplemental products or tools. Among a list of eight key audiences, the group identified **local governments** (elected officials, staff, and management) and **development teams** as the top priority target audiences. They also identified specific partners and collaborators who may help move this initiative forward and noted that the timing of bringing in/inviting different audiences (e.g., homebuilders) to the table will be critical and needs to be carefully planned.

Next steps are to take this information back to others at FDEP, evaluate their internal timeline, develop a draft scope of work for this group to review before proceeding with a formal contract or services agreement, and ultimately, FDEP would like to house these materials on a website supplemented with infographics and other more “accessible” and educational media.