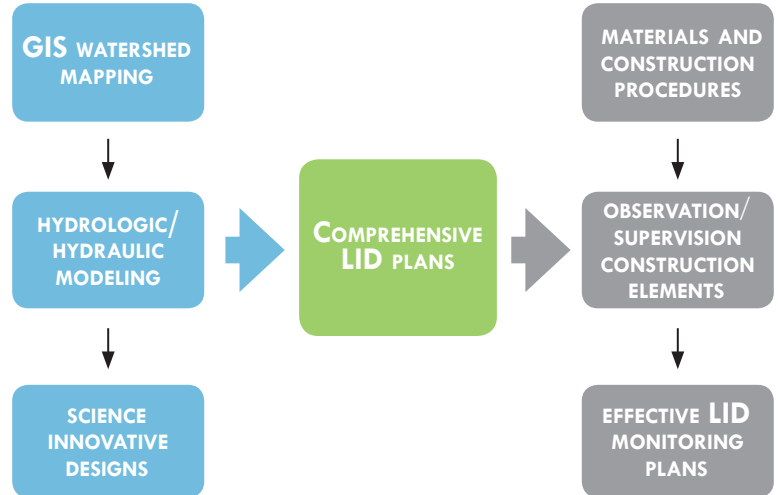


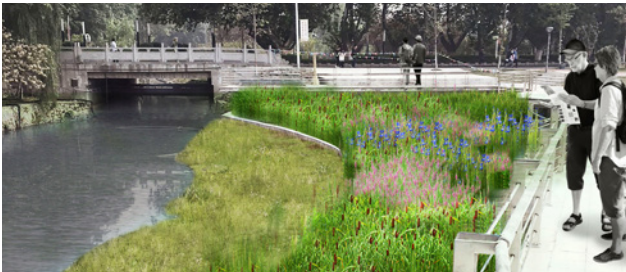
**GREEN EARTH OPERATIONS** has been working with municipalities and private developers in China since the inception of the Sponge City program in 2014. In fact, we directed planning in ZhenJiang one of the first Sponge Cities in China. Our internationally recognized US and China based civil engineering staff is highly experienced at evaluating site constraints and opportunities needed to design stormwater control management systems that meet the runoff reduction and total suspended solids (TSS) removal targets. We have been working on multiple “Sponge Pilots” in various cities, lending our decades of green stormwater design experience to local design teams. We have provided all required analysis and design tasks specific to performance calculations, stormwater modeling, stormwater design, and post project monitoring.

## SPONGE CITY PROCESS



## PROJECTS

### ZHENJIANG SPONGE CITY PLANNING AND INFRASTRUCTURE DESIGN



Used GIS and PCSWMM to develop a stormwater management plan for 22 km<sup>2</sup> city area. Mapped source loads by land cover type and runoff volume. Generated plans to meet Sponge City goals to minimize flooding by matching developed and pre-developed hydrograph peak flows from 30-year storm, to reduce annual TSS load by 60%, and to control annual runoff volume by 75%. Developed SD and DD design packages and coordinated with local design firm for CD production. These are under construction.

### NINGBO SPONGE CITY RETROFIT DESIGN



Designed individual Low Impact Development (LID) facilities at the building scale for seven city blocks of residential neighborhoods totaling 1.0 km<sup>2</sup>. Provided the design basis, sizing calculations, and design development packages for LID green infrastructure within roadways and landscape areas necessary to meet Sponge City targets. The projects are under construction.

### WUHAN SPONGE CITY PILOT EVALUATION AND FACILITY DESIGN



Evaluated existing Sponge City LID approach by using PC SWMM stormwater model to determine treatment and TSS removal of 2 km<sup>2</sup> LID pilot project. Design was optimized to meet the Sponge City goals by including an additional regional treatment facility using unprecedented TSS removal systems to reduce maintenance. Then developed innovative “smart dam” system to use excess capacity in existing deep storage pipe network to remove more TSS.

### CHONGQING LONGHU LIJIA LID DESIGN



Currently developing the conceptual design of a 10-hectare high-end residential development, the first Sponge City pilot project in Chongqing. We are working with local design teams to ensure this project will meet the Sponge City goals. This will involve the use of innovative LID facilities integrated into the landscape.