

Low Impact Development of Transportation Infrastructure

The Solution:

5 Techniques of Low Impact Development (LID)

•Bioretention- used to remove a wide range of pollutants.



•Permeable Pavers- used to eliminate standing water on pavement.



•Cisterns- used as a storage for water.



•Soil Amendments- used to aid soil in absorbing and holding more moisture.



•Inlet Control Devices- used to control flow into storm sewers.



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The Problem:



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Focus: Low Impact Development functions as a land planning and engineering design approach that manages stormwater runoff. LID practices typically retain rainwater and encourage infiltration rather than allowing it to runoff into ditches and storm drains; thereby, minimizing flooding and pollution problems.

Benefits: LID provides many benefits to the environment including improved water quality, reduce number of costly flooding events, restore aquatic habitat, improve groundwater recharge rate, and can enhance neighborhood aesthetics. LID also has been effective in mitigating the urban heat island effect, saving energy, reducing air pollution, and increasing property values when implemented broadly.

Transportation and LID: Among the numerous case studies investigated, Silver Lake Beach in Wilmington, MA. determined the source of high levels of Escherichia coli (E-coli) bacteria in the storm waters. During the case study, half of the conventionally paved parking lot were replaced with a combination of LID techniques including permeable pavers, porous asphalt, and bioretention cells. These permeable surfaces and bioretention cells encouraged stormwater to infiltrate the ground which allowed pollutants to be broken down by natural processes. The results of this case study proved that these particular LID techniques allotted for higher infiltration rates and a lower risk of contaminated groundwater.

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