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Title: Life Cycle Cost Comparison Of Traditional Stormwater Management And Low Impact Development

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## ABSTRACT

Low Impact Development (LID) is a recent innovation in stormwater management (SWM) that strives to replicate the pre-development hydrology after construction. While widely endorsed by government entities like the EPA and the US Army Corps of Engineers as an environmentally friendly stormwater solution, it has been slow to be adopted by builders, developers, and contractors in the private sector due to concerns about cost and long-term viability. Studies that were done previously have not included two vital factors in the cost estimates: the cost of land and environmental mitigation. This study incorporates these two factors with the cost of construction and maintenance for 15 years for a cost comparison. The purpose of this project is to evaluate overall cost in an effort to show that LID is cost effective. Thirty sites in central Virginia were analyzed using the cost of land, construction, maintenance, environmental mitigation for both traditional SWM and LID, using Present Value Cost (PVC).

Results indicate that overall, using these four factors, LID presents a cost savings over traditional SWM of approximately \$28,000 per acre. Projects that were large (>50 acres), residential, and had stream or wetland impacts benefited more from LID than projects that were small, commercial and that did not have environmental impacts.