



The Importance of a Triple Bottom Line Approach for Safeguarding Urban Water Quality

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Water environments are greatly valued in urban areas as ecological and aesthetic assets. However, it is the water environment that is most adversely affected by urbanisation. Urban land use coupled with anthropogenic activities alters the stream flow regime and degrade water quality with urban stormwater being a significant source of pollutants. Unfortunately, urban water pollution is difficult to evaluate in terms of conventional monetary measures. True costs extend beyond immediate human or the physical boundaries of the urban area and affect the function of surrounding ecosystems. Current approaches for handling stormwater pollution and water quality issues in urban landscapes are limited as these are primarily focused on 'end-of-pipe' solutions. The approaches are commonly based either on, insufficient design knowledge, faulty value judgements or inadequate consideration of full life cycle costs. It is in this context that the adoption of a triple bottom line approach is advocated to safeguard urban water quality. The problem of degradation of urban water environments can only be remedied through innovative planning, water sensitive engineering design and the foresight to implement sustainable practices. Sustainable urban landscapes must be designed to match the triple bottom line needs of the community, starting with ecosystem services first such as the water cycle, then addressing the social and immediate ecosystem health needs, and finally the economic performance of the catchment. This calls for a cultural change towards urban water resources rather than the current piecemeal and single issue focus approach. This paper discusses the challenges in safeguarding urban water environments and the limitations of current approaches. It then explores the opportunities offered by integrating innovative planning practices with water engineering concepts into a single cohesive framework to protect valuable urban ecosystem assets. Finally, a series of recommendations are proposed for protecting urban water resources within the context of a triple bottom line approach.

KEY WORDS: Water resources, water infrastructure, sustainability, sustainable urban development