Quality Control of Urban Runoff and Sound Management: Ramallah District as a Case Study

Ziad Mimi[1], Amjad Aliewi[2], Amjad Assi[2], Jumana Abu Sada[2], Subhi Samhan[3] and Ibrahim Shalash[1]

[1]Water Studies Institute, Birzeit University
[2] House of Water and Environment
[1] Palestinian Water Authority

Abstract

Urban runoff pollution sources, including storm water, combined sewer overflows, and diffuse or non-point sources of water pollution are formidable obstacles to achieving water source goals in numerous municipalities in arid and semiarid climates. Ramallah currently holds one of the highest rates of urbanization in Palestine causing a significant increase in surface runoff. Consequently, this causes increased flooding and a significant decrease in water quality due primarily to the accumulation of pollutants. It is necessary to manage urban stormwater runoff on an integrated catchment basis, thereby reducing the negative impact of urbanization on the environment and quality of life. The results of samples taken from selected sites in the Ramallah District will be discussed in this paper. Urban runoff pollution problems are more difficult to control than steady-state, dry-weather point discharges because of the intermittent nature of rainfall and runoff, the large variety of pollutant source types, and the variable nature of source loading. Groundwater management to reduce the impacts of urbanization on the environment and their effectiveness will be discussed and illustrated, based on analyses from prior studies. Because the expense of constructing facilities to collect and treat urban runoff is often prohibitive, this paper emphasizes the development of a least-cost-approach to controlling storm water pollution, including nonstructural controls and low-cost structural controls.

Keywords: Water quality, storm water, best management

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