

1.0 Introduction

The City of Midland Utilities Division operates a Waste Water Treatment Plant (WWTP), a Water Treatment Plant, and a Sanitary Landfill. Sludge from the WWTP is typically land applied as a beneficial soil amendment to local agricultural lands. However, this practice is not possible year-round and sludge is frequently hauled to the landfill for disposal. Landfills are designed to safely contain the liquid and solid portions of solid waste and prevent water that percolates through the waste from entering the groundwater. Over time, as much as 50-100 years, this contained waste will biodegrade and reach a condition where the waste poses minimal risk of groundwater contamination. During this time, the decomposing waste releases landfill gas, containing valuable methane (natural gas). Currently the City of Midland (City) vents its landfill gas to the atmosphere. However, this resource can be developed to power operations at the WWTP. Furthermore, the practice of treating sludge in the landfill can be scientifically refined to improve gas generation and more quickly decompose the waste, reducing the time during which groundwater contamination is possible.

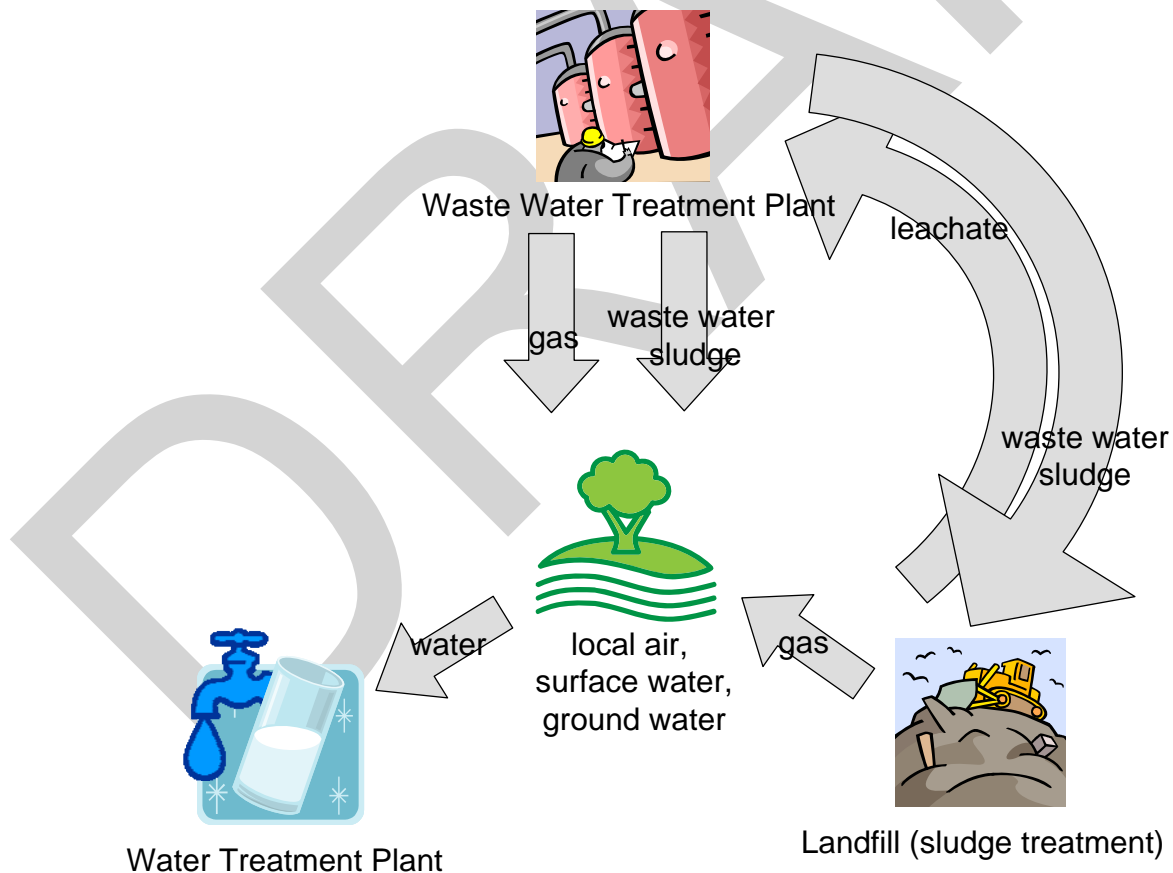


Figure 1-1 Schematic Diagram of Key Features of City of Midland Utilities

The State of Michigan, through the Michigan Department of Environmental Quality (MDEQ), regulates projects such as the proposed scientific sludge addition as Research, Development, and Demonstration Projects (RDDP). The green energy development component of this work is key, as the conversion of this landfill and sludge-derived gas energy effectively offsets the cost of its development. Therefore, by taking advantage of this untapped resource, the City can advance its commitment to the environment while providing the most cost-effective service to its wastewater, water, and landfill customers.

This project plan details the City's need to implement these technologies, the environmental and economic benefits of this green energy development, and the various factors that the City will take into account in the implementation of this plan.

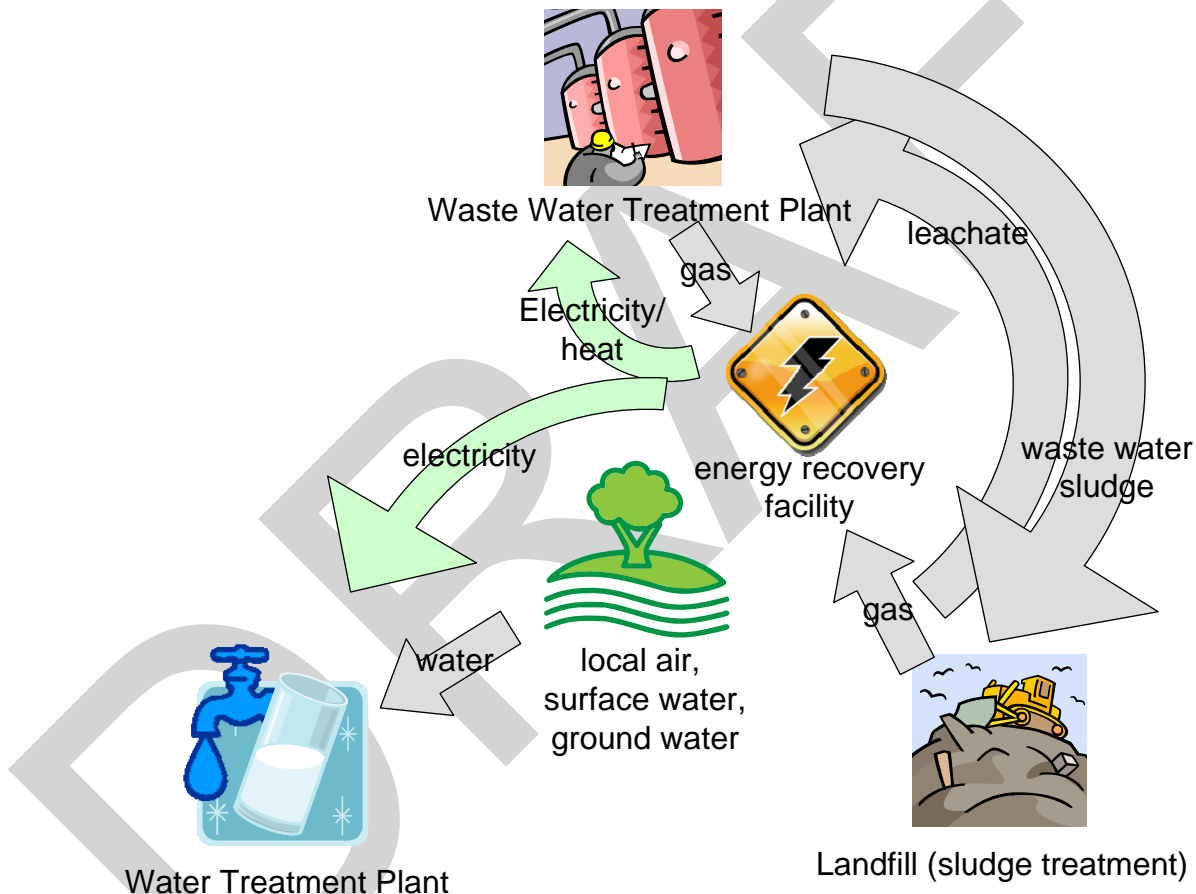


Figure 1-2 Schematic Diagram of Key Features of City of Midland Utilities Showing Proposed Improvements