



**2013 Hydraulic Model Update:
Industrial Park Improvements**

City of Versailles, KY

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engineering | architecture | geospatial

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Chapter 1

Introduction

1.1 Introduction

The City of Versailles currently supplies approximately 3.1 million gallons per day (MGD) of potable water to customers within the City and within Woodford County. The City of Versailles provides potable water to both the Northeast and South Woodford County Water Districts. These water districts use approximately 0.4 and 0.43 million gallons per day (MGD) respectively.

The City of Versailles contains an industrial park located in the northeastern portion of the City. The industrial park is a major source of employment for the City. Approximately 1,600 employees work for the companies located within the industrial park. However, these industries are experiencing less than adequate fire protection. Current fire protection tests have shown that these industries are not able to meet their flow and residual pressure requirements. As an important factor in the economy of the City, Versailles contracted GRW Engineers to perform a hydraulic analysis of their existing water distribution system as well as recommend improvements. If the industries continue to experience less than adequate fire protection, the City of Versailles could face an economic downturn by the industries evacuating.

1.2 Scope of Study

In order to determine recommended improvements to the City's water distribution system, the following items were prepared.

- Existing water distribution system assessment
- Design criteria standards
- Seven (7) computer models to simulate the water system's response to a normal water usage distribution – these include:
 - o Existing System at Average Flow (calibration model)
 - o Existing System with Recommended Improvements at Average Flow
 - o Existing System with Recommended Improvements at Max Day Flow
 - o Future System with 2020 Demands with Improvements
 - o Future System with 2030 Demands with Improvements
 - o Future System with 2040 Demands with Improvements
 - o Future System with 2050 Demands with Improvements

- Computer models to simulate extreme events (i.e., fire flows) at strategic locations throughout the system
- Recommendations to maximize system performance
- CADD base map graphically integrated with pipe system components
- Final Report