

Technical Memorandum

Date: October 9, 2023

Project:

To: Mr. Tony Doran, Engineering Associate
City of Tualatin

From: Brian Ginter, PE

Re: HWM23-0001 - Water System Capacity Analysis

Introduction

As requested, this memorandum has been prepared to present the findings of our analysis of the water service to the proposed 124th Avenue Business Park located along SW 124th Avenue north of Tualatin-Sherwood Road. This memorandum presents the findings of this analysis for the City's use in determining the water system improvements necessary to meet fire flow and pressure requirements.

Background

The City's water system hydraulic model was used to perform a hydraulic analysis of pressure and fire flow performance in the City's water system under maximum day demand conditions with fire flow events evaluated at the site.

The proposed development is three large warehouses shell buildings for speculative warehousing or manufacturing tenants. The proposed development is located within the City's existing Pressure Zone A, served by the A level reservoirs at a nominal hydraulic grade of 296 feet above mean sea level (msl). Figure 1 illustrates the development site and adjacent water system infrastructure.

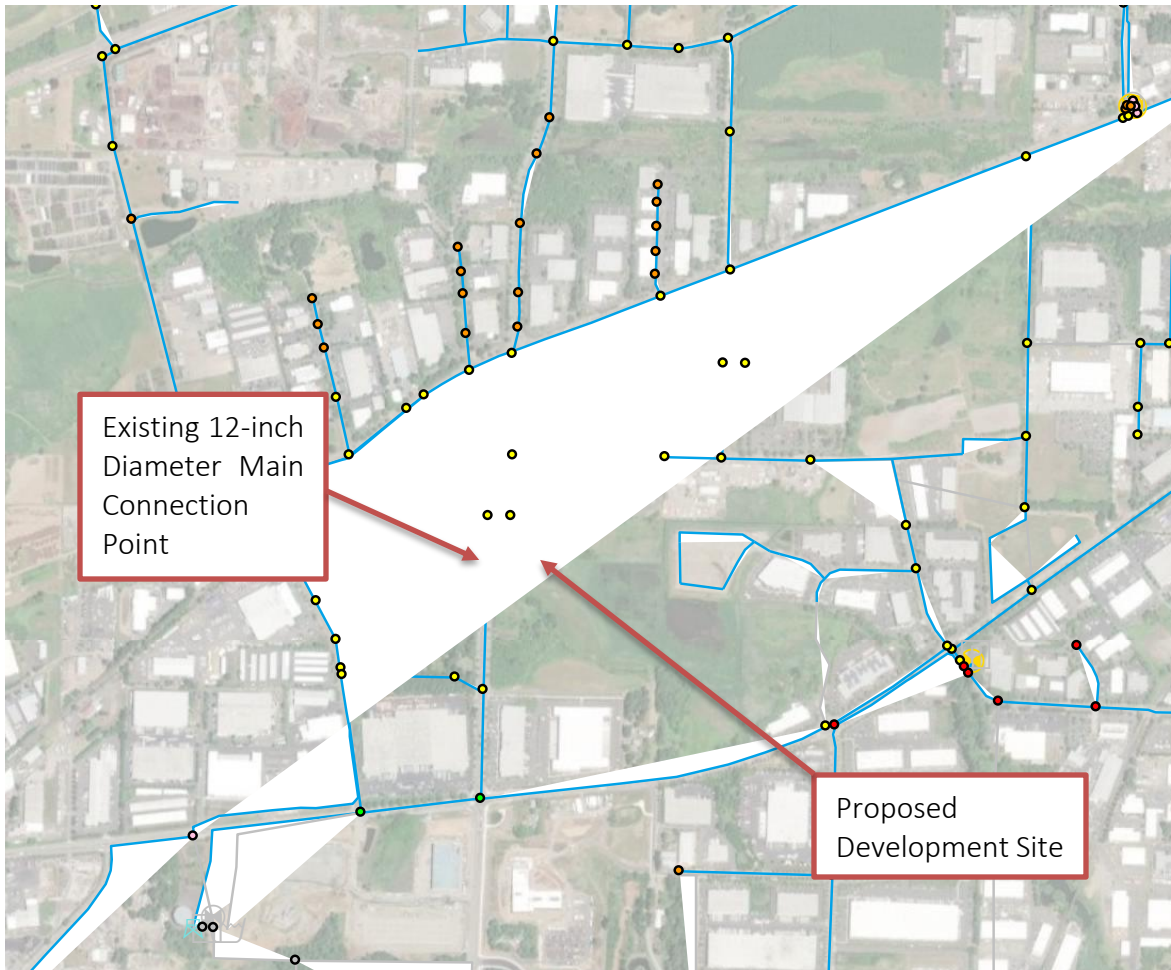


Figure 1. Proposed Development Site and Water System Infrastructure

Analysis and Findings

The hydraulic model was updated as described above and fire flow performance tested at one location onsite (shown in Figure 1).

A summary of specific model conditions for this analysis is presented below:

Demand Conditions: 2030 Maximum Day Demand

Fire Flow: 3,000 gpm

Projected Domestic Demand: 250 gpm Maximum Day Demand

Physical Condition: Existing facilities plus proposed connection

The hydrant location, fire flow capacity tested, and the calculated minimum pressure within the area influenced by the fire flow in Pressure Zone A are summarized in Table 1 below:

Table 1
Fire Flow Analysis Results

Location	Static Pressure (psi)	Residual Pressure at 3,000 gpm (psi)
Existing Public Hydrant @ SW 124 th Avenue adjacent to domestic/RP/FDC connections for proposed development	49	34

Based on the findings of this analysis and a review of overall system improvement needs presented in the Water System Master Plan, there are no required water distribution system improvements not located on the Business Park site necessary to serve domestic and fire suppression flows to the proposed development.

It is the developer's responsibility to size internal (private) fire and domestic mains for adequate service pressure, private hydrants and fire suppression sprinkler systems as these facilities are outside the scope of this analysis.

Please do not hesitate to contact us if you have any questions or comments in this regard. We would be happy to meet with you personally to discuss the findings presented in this memorandum.