consor

Technical Memorandum

Date:	October 10, 2022
Project:	20-2737
To:	Mr. Tony Doran, Engineering Associate Ms. Kim McMillan, PE, City Engineer City of Tualatin
From:	Brian Ginter, PE
Re:	Water System Capacity Analysis – LAM Research Property Office Building G

Introduction

As requested, this memorandum has been prepared to present the findings of our analysis of the water service to the proposed expansion at the Lam Research property located at 11155 SE Leveton Drive. 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 pressure and flow conditions were tested at the proposed location for the new domestic and fire service vaults located southeast of the proposed "Building G", connecting to the existing high pressure main in SW Leveton Drive.

The proposed development is a new 120,000 square foot office building. The proposed development is located within the City's existing Pressure Zone A but is served by a high pressure main fed by the Tualatin Supply Main connection directly from the PWB wholesale supply system at a static hydraulic grade of approximately 530 feet. Figure 1 illustrates the development site, adjacent water system infrastructure, and the location of the modeled fire flow test.

Analysis and Findings

The hydraulic model was updated as described above and fire flow performance tested at the proposed fire service location (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

Physical Condition: Existing facilities plus proposed connection

Since the proposed domestic and fire suppression services are proposed to be connected to the high pressure main, there is adequate flow and pressure available without impact to the residual pressure I the adjacent Pressure Zone A area. Static pressures in the transmission main exceed 150 psi and a 20 psi drop is estimated under fire flow conditions.

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 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.

Figure 1 | Proposed Development Site and Water System Infrastructure