

Memo

Date: Tuesday, May 24, 2022

Project: 3633 90th Ave SE Development

To: Jeromy Hicks (City of Mercer Island)

From: David Kuhns (HDR)

Subject: Available Fire Flow in 3633 90th Ave SE Vicinity

Typical pressures for 3633 90th Ave SE

- Typical summer pressure = 87 psi
- Typical winter pressure = 88 psi

Note: Calculated using extended period simulation model runs given 2022 allocated demands in hydraulic model at an assumed elevation of 278 feet at the parcel.

Fire flow information for Hydrant C4-12 near 3633 90th Ave SE

The City of Mercer Island currently plans on completing the 2022 Improvements Project in the vicinity of 3633 90th Ave SE. Fire flow information was provided both for the existing piping as well as after the 2022 Improvements Project is in place.



EXISTING SYSTEM

- Static pressure = 87 psi
- Available fire flow = 766 gpm
- Residual pressure at available fire flow = 53 psi

SYSTEM AFTER 2022 IMPROVEMENTS

- Static pressure = 87 psi
- Available fire flow = 2,342 gpm
- Residual pressure at available fire flow = 72 psi

Note: Fire flow information calculated during maximum day demand conditions with operational, equalizing, and fire suppression storage volumes depleted. Available fire flow is the flow available at the hydrant's connection point to the distribution system main without causing any location in the distribution system to drop below 20 psi or for distribution system pipes to exceed a 10 foot per second velocity.