



MEMORANDUM

TO: BRIAN JOHNSON, WATER SYSTEM
SPECIALIST
FROM: RUSS PORTER, P.E.
MAYA VITA, E.I.T.
DATE: SEPTEMBER 11, 2025
SUBJECT: INDUSTRIAL PARK WAY FIRE FLOW
AVAILABILITY
CITY OF PUYALLUP, PIERCE COUNTY,
WASHINGTON
G&O #21415.24

Per your request, we have analyzed the available fire flow around 1601 Industrial Park Way. The following assumptions used to determine the static pressure and available fire flow are noted as follows.

- The available fire flows and pressures are measured at thirteen nodes, corresponding to thirteen existing hydrants within, or nearby the 1601 Industrial Parkway site, as shown in the attached figure.
- Water system demands are based on projected 2038 demands and reservoirs are depleted of fire suppression and equalizing storage, as established in the *2019 Water System Plan (WSP)* approved by the Washington State Department of Health (DOH). The City's water model was updated in 2021 to reflect additional system improvements since the WSP was developed.
- All pump stations are idle, and the Salmon Springs source is operating at 1,100 gallons per minute (gpm).

The site is located in Zone 1, which is supplied by the Maplewood Springs and the 15th Avenue SE Reservoirs. The system was modeled with the piping indicated on the attached figure.

The available pressure under 2038 peak hour demands at the hydrants is included in Table 1.



TABLE 1

Peak Hour Pressure

Node	Hydrant	Elevation, feet	Peak Hour Pressure, psi
J-9548	NW 351	41	51.74
J-9549	NW 343	38	53.03
J-9550	NW 346	38	53.04
J2442	NW350	40	52.17
J2444	NW 349	36	53.91
J2446	NW348	36	53.91
J2448	NW 347	37	53.47
J2450	NW 345	39	52.47
J2452	NW 344	39	52.60
J2454	NW 355	37	53.46
J2456	NW 354	36	53.90
J2462	NW 353	36	53.90
J720	NW 352	38	53.03

Available fire flow was modeled at thirteen existing hydrants on or near the 1601 Industrial Park Way site. Site piping is mainly 16- and 12-inch ductile iron. The results of this modeling are included in Table 2. The modeled fire flow is available at each hydrant individually, but not simultaneously.

TABLE 2

Modeled Fire Flow Availability

Node	Hydrant	Modeled Fire Flow, gpm⁽¹⁾	Residual Pressure at Modeled Fire Flow, psi	Minimum System Pressure at Modeled Fire Flow, psi
J-9548	NW 351	4,769	20	20
J-9549	NW 343	4,846	20	20
J-9550	NW 346	4,012	20	20
J2442	NW 350	4,844	20	20



TABLE 2 – (continued)

Modeled Fire Flow Availability

Node	Hydrant	Modeled Fire Flow, gpm⁽¹⁾	Residual Pressure at Modeled Fire Flow, psi	Minimum System Pressure at Modeled Fire Flow, psi
J2444	NW 349	3,953	28	20
J2446	NW 348	4,405	21	20
J2448	NW 347	4,237	20	20
J2450	NW 345	2,816	29	20
J2452	NW 344	2,522	33	20
J2454	NW 355	4,880	20	20
J2456	NW 354	1,567	42	20
J2462	NW 353	4,802	21	20
J720	NW 352	4,811	21	20

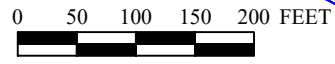
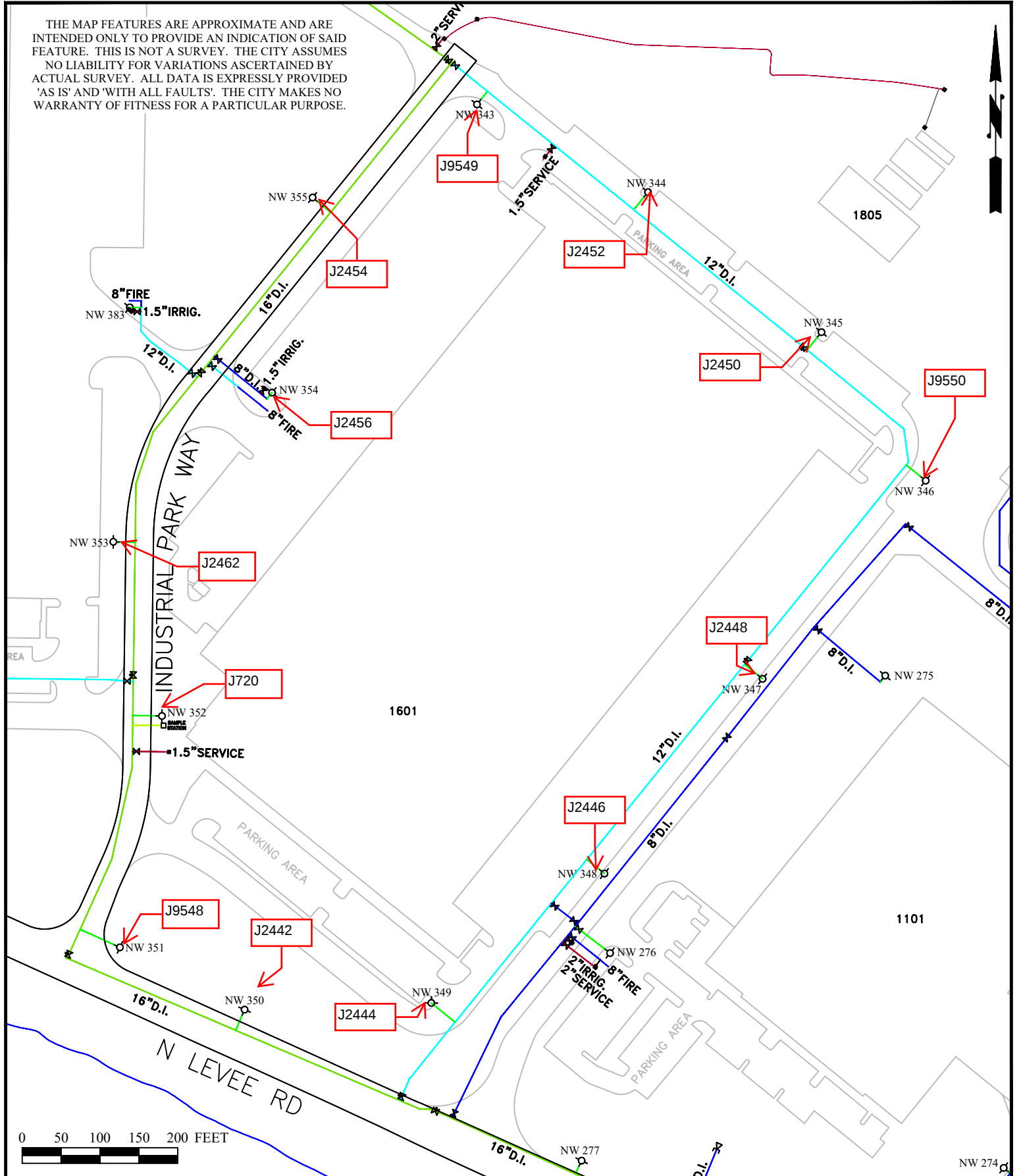
(1) Limited by the minimum system-wide pressure requirement of 20 psi at all service locations.

Fire flow to the hydrants is limited by the 20-psi minimum system pressure. Note that hydrant NW 354 has the least available flow due to being on the dead-end of an 8-inch pipe. Hydrant NW 354 is important for the building's sprinkler system as it provides an access point for the Fire Department to supplement the interior sprinklers.

The Department of Health and City Standards for water distribution systems are to meet the peak hourly demand of the system while providing a minimum pressure of 30 psi, system-wide. Under peak daily demand with a fire flow, the system is designed to maintain a minimum pressure of 20 psi, system-wide. Although the peak hourly demand pressure may currently be higher than these standards, the Developer must recognize that the City may not provide pressure higher than 30 psi in the future. The flows and pressures determined in this memo are based on the approximate hydrant elevation at ground level. The Developer may design their sprinkler system for whatever pressure they wish; however, they must recognize and be responsible for conditions when the pressure may be less than currently exists.

RP/sr

THE MAP FEATURES ARE APPROXIMATE AND ARE INTENDED ONLY TO PROVIDE AN INDICATION OF SAID FEATURE. THIS IS NOT A SURVEY. THE CITY ASSUMES NO LIABILITY FOR VARIATIONS ASCERTAINED BY ACTUAL SURVEY. ALL DATA IS EXPRESSLY PROVIDED 'AS IS' AND 'WITH ALL FAULTS'. THE CITY MAKES NO WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.



CITY OF PUYALLUP
PUBLIC WORKS
WATER DIVISION

HYDRAULIC MODEL FOR 1601 INDUSTRIAL PARK WAY

SCALE AS SHOWN
08/29/2025
COP\PW\WATER\S_MAINT\PDF\QSEC\PG082\MODEL FOR 1601 INDUSTRIAL