

Memorandum

To: Guy Tavares

From: Ben Ewing

CC: Lisa Tavares

Date: 04/05/2023

Re: Fire Flow Analysis for Proposed Commercial building at 51455 Huntington Rd

On March 1st, 2023 a fire hydrant flow test was performed by City of La Pine Public Works Staff on fire hydrant 231 (located one fire hydrant south of US Bank) with the pressure reading taken from the fire hydrant at the NW corner of 4th St and Huntington Rd. The static pressure (P_s) measured was 60 psi, the test pressure (P_t) was 49 psi, and the flow rate (Q_t) was 1,000 gpm.

Know Ledge Engineering performed the following fire flow analysis to calculate the flow available at 20 psi residual pressure (Q_{20}):

$$Q_{20} = Q_t \left(\frac{P_s - 20}{P_s - P_t} \right)^{0.54}$$
$$Q_{20} = 1,000(\text{gpm}) \left(\frac{60 - 20}{60 - 49} \right)^{0.54} = 2,008\text{gpm}$$

The available fire flow at 20 psi residual is approximately 2,008 gpm.

Per 2022 Oregon Fire Code Table B105.1(2), the required fire flow for a non-sprinklered Type V-B building with an area of 0-3,600 sq ft is 1,500 gpm. The fire flow available to the site at 20 psi residual exceeds the required fire flow.





L A P I N E

O R E G O N

CITY OF LA PINE

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HYDRANT NUMBER: 231

MAKE /SIZE: ~~Waterous~~ Waterous

LEAD SIZE: _____

LOCATION AUX. VALVE: _____

HYDRANT LOCATION: _____

NAME OF BUSINESS WORK BEING DONE FOR:

51455 Huntington RD

Date	Static Pressure	Residual Pressure	Pitot	Flow Rate	Flow @ 20 PSI
3-1-23	60 PSI	44 PSI		1000 GPH	



Signature

Branden Bren

Printed Name

3-1-23

Date

3-1-23

Date

From: Alexa Repko <arepko@lapineoregon.gov>
Sent: Wednesday, March 8, 2023 5:15 PM
To: Ben Ewing
Subject: FW: 51455 Huntington Rd - Fire Flow Test

Hi Ben,

Please see the Public Works responses in red below. Let me know if you have any other questions and I'll relay them to their Department.

Thanks,

Alexa

From: Ashley Ivans <aivans@lapineoregon.gov>
Sent: Wednesday, March 8, 2023 3:12 PM
To: Alexa Repko <arepko@lapineoregon.gov>
Cc: Branden Bren <bbren@lapineoregon.gov>; Dylan Gardner <dgardner@lapineoregon.gov>
Subject: RE: 51455 Huntington Rd - Fire Flow Test

Please see below.

From: Alexa Repko <arepko@lapineoregon.gov>
Sent: Wednesday, March 8, 2023 2:37 PM
To: Ashley Ivans <aivans@lapineoregon.gov>
Subject: FW: 51455 Huntington Rd - Fire Flow Test

Should I ask the guys about this?

From: Ben Ewing <ben@kl-engineering.com>
Sent: Wednesday, March 8, 2023 1:08 PM
To: Alexa Repko <arepko@lapineoregon.gov>
Subject: 51455 Huntington Rd - Fire Flow Test

Hello Alexa,

I am working with Guy and Lisa Tavares on the proposed commercial building at 51455 Huntington Rd. They forwarded me the fire flow test results from 3/1 and I was hoping to get a couple additional pieces of information:

- Location of the flow test hydrant (Identified as hydrant 231), **one hydrant south of US Bank**
- Location of the fire hydrant used for pressure reading **corner of 4th and Huntington**
- Conformation flow rate was gpm (listed as gph) **it is gallons per minute.**

Please let me know if there is someone else I should contact with these questions.

Thank you,

Ben Ewing, PE



c: 541.948.9284

ben@kl-engineering.com