



1519 NE 177th St. • P.O. Box 55367 • Shoreline, WA 98155 • Phone: 206.362.8100 • Fax: 206.361.0629

**Commissioners:** November 20, 2020

Ron Ricker

Charlotte Haines

Patricia Hale

**District Manager:** Mark J Garey

Diane Pottinger, P.E.

14827 88<sup>TH</sup> AVE NE  
Kenmore, WA 98028

Re: Fire Flow Analysis Task Order No. 1740  
36XX NE 205<sup>TH</sup> ST (parcel 4022900497)  
Lake Forest Park, WA 98155

Dear Mr. Mark J Garey,

Attached is the Fire Flow Analysis requested for your project. Below are the requirements based on the District's design criteria.

<b>Fire Flow Available per Attached</b>	<u>1400 gpm</u>
<b>Water System Improvements Required to Complete Project</b>	<u>NO</u>
<b>Water System Extension Required</b>	<u>NO</u>
<b>Analysis Expiration Date</b>	<u>11-20-2021</u>
<b>Please contact North City Water District for Water System Improvement details.</b>	

**Note:** North City Water District requires the property owner to upgrade the existing water service to meet the current District Standards. Fire Service may be required.

Should you have any question concerning the above, please feel free to contact me at (206) 362-8100.

Sincerely,

A handwritten signature in cursive ink that reads "Denny Clouse".

Denny Clouse  
Operations Manager



## NORTH CITY WATER DISTRICT

### FIRE FLOW ANALYSIS INFORMATION

Task Order No.: 1740

Date: November 20, 2020

Applicant Name: Mark J Garey

Project Location: 36xx NE 205<sup>th</sup> St, LFP

Proposed Use:

Single Family Home

Static Pressure Range at Project Location:

95 psi (minimum); 99 psi (maximum)

Available Fire Flow (@ 20 psi min or 10 fps max):

1,400 GPM

Distance from Property to Fire Flow Hydrant(s):

220 feet

Location of Fire Hydrant(s) (Refer to Attached Map):

24312 NE 205<sup>th</sup> St (Hydrant E1-1, 502 Zone)

Fire Flow Analysis Expiration Date:

(one year from date of issuance)

A hydraulic analysis of the District's water distribution system was performed to determine available fire flow at the above-referenced project location. The analysis was conducted in accordance with WAC 246-290-230. Specific analysis criteria and operational conditions are as follows:

- This analysis is based on the District's existing water distribution system configuration.
- Analysis results indicate the capacity of the distribution system (as opposed to a given fire hydrant) to produce the required fire flow with a minimum residual pressure of 20 psi at all points throughout the distribution system (not including transmission piping). Actual fire flows may vary due to distribution system changes, variations in system demand and operational conditions.
- Fire hydrant distance is measured from the project line fronting the right-of-way, to the hydrant. Results of this analysis do not include potential new project site piping or hydrants.
- Minimum static pressure is based on Peak Hour Demand and reservoirs at the bottom of their respective equalizing ranges.
- Maximum static pressure is based on minimum system demand and reservoirs full.
- Fire flow demand is superimposed over existing Maximum Day Demand (MDD).
- The amount of fire suppression storage volume is based on Zoning/Land-use type, as defined in the Comprehensive Plan and does not consider actual structures proposed by the applicant.
- Maximum allowed velocity in the distribution system is 10 feet per second for existing mains and 8 feet per second for new mains, during MDD plus fire flow conditions.
- The 590 to 502 zone PRV at the 3.7 tank site is offline for this analysis. Supply Stations 1 and 3 to the 502 zone are at their normal setpoints.
- All pressure reducing stations are operating at their normal setpoints.

Dave Harms, P.E., Senior Engineer  
BHC Consultants, LLC



11-20-20

17711 Ballinger Way NE  
Lake Forest Park, WA 98155  
Telephone: (206) 364-7711



Lake Forest Park

## CITY OF LAKE FOREST PARK CERTIFICATE OF WATER AVAILABILITY

*Do not write in this box*

Number	Name
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<input checked="" type="checkbox"/> Building Permit	<input type="checkbox"/> Preliminary Plat or PUD
<input type="checkbox"/> Short Subdivision	<input type="checkbox"/> Rezone or Other

Applicant's Name Mark J Garey

Proposed Use Single Family Residence

Location Parcel 4022900497

(Attach map and legal description if necessary)

### WATER PURVEYOR INFORMATION

**Domestic Service Only:**

1. a.  Water will be provided by service connection only to an existing 6 water main size 20 feet from the site.

**Domestic, Fire and Other Service: (See back of form)**

b.  Water service will require an improvement to the water system of:

- (1)                    feet of water main to reach the site; and/or
- (2) the construction of a distribution system on the site; and/or
- (3) other (describe) improvement may be required, depending on fire flow requirement

2. a.  The water system is in conformance with a County approved water comprehensive plan.

OR b.  The water system improvement will require a water comprehensive plan amendment.

3. a.  The proposed project is within the corporate limits of the district, or has been granted Boundary Review Board approval for extension of service outside the district or city, or is within the County approved service area of a private water purveyor.

OR b.  Annexation or BRB approval will be necessary to provide service.

4. a.  Water is/or will be available at the rate of flow and duration indicated below at no less than 20 psi measured at the fire hydrant 220' from the building/property (or as marked on the attached map):

**Rate of Flow**

- Less than 500 gpm (approx.                    gpm)
- 500 to 999 gpm
- 1,000 gpm or more
- flow test of                    gpm
- calculation of 1400 gpm

**Duration**

- less than 1 hour
- 1 hour to 2 hours
- 2 hours or more
- other

(Commercial Building permits require flow test or calculation)

OR b.  Water system is not capable of providing fire flow.

**COMMENTS/CONDITIONS:** (1) The fire flow requirement for the applicant's proposed project must be determined to identify if improvements to the District's system are necessary. (2) This is not an application for or approval of water service to the proposed site. A proper application must be filed with and accepted by the District before service will be provided. The District has a connection charge (also called general facilities charge) and meter installation charge for each new water service provided. It is recommended that the applicant consult with the District to obtain applicable fees, charges, and procedures which may change during the property development process.

I hereby certify that the above water purveyor information is true. This certification shall be valid for one year from date of signature.

NORTH CITY WATER DISTRICT

Agency Name

Operations Manager

Title

Denny Clouse

Signatory Name

Signature

Date

11/20/2020

**ADDITIONAL INFORMATION FOR EACH NUMBERED ITEM ON FORM FRONT**

1A. Domestic service only is referenced in this item, 1A. Domestic service is for in-house consumption only and excludes fire protection.

1B. Service for a combination of domestic, fire and other conditions is referenced in this item.

4A. A computer analysis of the District's water system was performed for the purpose of determining the available water supply to fight a fire at the project location described above. This analysis was based on the District's existing water system, without any development related improvements. The results of the analysis indicate the fire flow capacity of the District's existing system as shown on this form at a minimum residual pressure of 20 psi at all points throughout the distribution system. Actual fire flows may vary due to water system configuration changes, time of day, demands on system, and operational parameters.

A summary of the operational conditions used in the analysis follows:

- The District was experiencing buildout peak day demand conditions.
- Supply Stations 1 and 3, 660 Zone Booster Pump Station, and Booster Stations 1 and 2 were operating. Supply Station 3 connected to 492 Zone.
- The 3.7 MG Reservoir level was drawn down 34.5 feet, and the 2.0 MG 424 Zone Reservoir level was drawn down 19 feet.
- All pressure reducing stations were operating at their normal setpoints.
- WAC 246-290-230 (6) Distribution systems – If fire flow is to be provided, the distribution system shall also provide maximum day demand (MDD) plus the required fire flow at a pressure of at least 20 psi (140 kPa) at all points throughout the distribution system, and under the condition where the designed volume of fire suppression and equalizing storage has been depleted.
- Maximum allowed velocity in the distribution system is 10 feet per second during peak day demand and fire flow conditions.