

MEMORANDUM

TO: Mayor Phil Chick and City Council
City of Nehalem

FROM: Carrie A. Richter, Contract City Attorney

DATE: March 27, 2024

RE: Staff Report for Ordinance No. 2024 - 02
Amendments to the City's Minimum Fire Flow Standards

This memorandum is intended to provide the City Council with background for the proposed amendments and if supported by the Council, to serve as findings that may be adopted in support of the Council's adoption of the enacting ordinance by reference.

Background

In November, 2022, the City Council adopted an ordinance declaring a moratorium on new water connections in the area northeast of Bob's Creek from North Fork Road and east of the intersection of North Fork Road and McDonald Road. Located outside of the city limits as well as the city urban growth boundary, this area includes the three phases of the Riverview Meadows development as well as the Twin Lakes subdivision, consisting of nine lots on the east side of Highway 53 and a handful of other lots, some with existing development. The City's existing water service in this area lacked sufficient water pressure to maintain a minimum of at least 20 pounds per square inch (psi) as required by OAR 333-061-0025 and failed to provide fire flows for new single family dwellings of 1000 gallons per minute (gpm) as required by the adopted Water Master Plan.

Since that time, the City has been working on solutions to address this shortfall. In 2023, the City worked with the developer of Phases 2 and 3 of Riverview Meadows to design a plan for providing water service to the new development through the construction of a reservoir, vault with controls, and a pump station (referenced as the "RVM2 improvements"). Development of Phases 2 and 3 are conditioned on installation of the RVM2 improvements.

In the spring of 2023, the City installed a pressure sustaining valve near North Fork Road/Riverview Meadows Rd. Hydrant tests occurring in the fall / winter of 2023 revealed that the pressure check valve prevented the water pressure from dropping below 20 psi in Riverview Meadows resolving the water pressure concern.

What remains is the fire flow shortfall. In the fall of 2022 and in early 2023, the City convened a number of meetings with stakeholders to address possible solutions including the installation of a small reservoir and pump at a lower elevation along Highway 53.

More recently, the City has had an opportunity to meet with representatives of Nehalem Bay Fire & Rescue about these obligations and conferred with nearby coastal communities about how they regulate minimum fire flows. The recommendations set forth below are based on those discussions.

Regulatory Framework for the Provision of Water

In order to obtain a new water service, a property owner must obtain approval from the City for the connection. Nehalem City Code (NCC) 51.04 sets forth a priority scheme for the provision of new water connections. Existing customers are to have the highest priority, followed by connections for existing lots within the city, followed by service to new partitions and subdivisions within the city and finally areas outside the city's urban growth boundary.

The recently adopted Nehalem Development Code provisions, NDC 157.408.02(C) sets forth the minimum standards for utility lines and facilities for all development. With respect to water service, subsection (C) provides:

“(C) Water Service. All development which has a need for public water shall install the facilities per the requirements of the City. Installation of the facilities shall be coordinated with the extension of sanitary sewer and storm drainage facilities.” *See also* NDC 157.408.03 (“all facilities must be designed and constructed to the requirements of the City Public Works Department and City Engineer.”)

Further, in order to obtain a land division or development site plan approval, all applicants must “design and install a water system to serve all lots or parcels within a development” in accordance with NCC 51.09. NDC 157.503.05(D) *See also* NDC 157.508.06 (Residential site plan criteria), NDC 157.508.07 (non-residential site plan criteria), NDC 157.510.05 (subdivision).¹

One of the City's adopted requirements relates to the provision of an adequate fire flow. For all new land divisions and planned developments, NCC 51.09(F) requires:

“Fire flows – Hydrants.

(1) All new mains shall be sized to provide flows meeting underwriter standards, and state health and safety requirements, as well as any other applicable and prevailing standard, for water pressure and for fire protection flows as well as projected future water demands.

¹ These provisions further provide that the cost of extending water service to a development site is the responsibility of the applicant. Where the city's master plan calls for the provision of infrastructure that is greater than that necessary to serve the proposed development, the code calls for reimbursement through a cost-sharing agreement with future users. NCC 51.08.

(2) All mains supplying a fire hydrant shall be no less than six inches in diameter, with all hydrants being no less than five inches in diameter.”

Section 3.3.3 of the City’s Water Master Plan is entitled “Fire Protection Ratings.” After explaining the component parts of the Insurance Service Organization fire protection grading system, the Plan provides:

“Fire flow requirements for this Water Master Plan update are taken from the Insurance Services Office “Fire Suppression Rating Schedule.” Section 604 FIRE FLOW AND DURATION reads that: “The fire flow duration shall be two hours for needed fire flows up to 2,500 gpm and three hours for needed fire flows of 3,500 gpm.” Requirements for needed fire flows are shown in Section 304 of that schedule. *Needed fire flows for single- and multiple family residences vary from 1000 gpm where homes are spaced greater than 100 feet to as much as 1,500 gpm for homes spaced at 100 feet and closer.* AWWA recommendations, for public water systems used for fire suppression is a minimum of 500 gpm with a residential pressure of 20 psi at any point in the system. The need to prioritize system improvements according to financial resources and realities may result in some areas, such as higher level pressure zones or isolated properties/areas, having more limited fire protection capabilities. Higher fire flows are needed for larger buildings and higher densities of construction characteristic of many core commercial areas and schools. Actual fire flow needs in any given area may vary widely according to the actual construction present.

Otak recommends that the City adopt the value of 1000 gallons per minute for an average separation of single family homes in the Nehalem area, and aspire to 1500 gpm where feasible. A value of 1,500 gpm is used in this master plan.” (Emphasis added) Pages 12-13.

It is clear from the discussion in the Water Master Plan, that the City imposed this requirement to not only reduce the risk of property damage from fire but to ensure that future homeowners would have a high likelihood of obtaining insurance to protect these investments. The Insurance Services Office (ISO), now known as Verisk, is an insurance advisory organization that provides statistical and actuarial information to businesses, including government entities such as fire and building code departments.

Through meeting with Nehalem Bay Fire, the City has learned that it has an established practice of trucking water as necessary to achieve sufficient flows. Other cities, such as Cannon Beach, provide a sliding scale for fire flows based on the size of the structure, assuming that automatic sprinklers are installed. The City Engineer has considered these alternatives and, as set forth in a supplemental memorandum agrees that providing automatic sprinklers inside of each new home in this area will be sufficient to compensate for a reduction in piped fire flow.

Proposed Amendments

Section 1.5(1) of the Water Master Plan contemplates periodic amendment that may be necessary as assumptions change, particularly with respect to fire flow requirements. As such, revisiting the fire flow standards would be appropriate but only so long as they continue to reflect the minimum requirements imposed by the Oregon Fire Code and the minimum recommended insurance standards. In addition to altering the substance of the standard, in order to apply to residential construction, the new standard must be clear and objective and set forth in the City's adopted land use regulations. ORS 197A.400 and ORS 227.173(1). For these reasons, the proposed amendments would alter the 2015 Water Master Plan, which is part of the City's Comprehensive Plan, as well as the Nehalem City Code, with the deleted text shown as ~~strikethrough~~ and new text is shown in red, as follows:

Water Master Plan on pages 13-14 would state:

~~Fire flow requirements for this Water Master Plan update are taken from the Insurance Services Office "Fire Suppression Rating Schedule." Section 604 FIRE FLOW AND DURATION reads that: "The fire flow duration shall be two hours for needed fire flows up to 2,500 gpm and three hours for needed fire flows of 3,500 gpm." Requirements for needed fire flows are shown in Section 304 of that schedule. Needed fire flows for single and multiple family residences vary from 1000 gpm where homes are spaced greater than 100 feet to as much as 1,500 gpm for homes spaced at 100 feet and closer. AWWA recommendations, for public water systems used for fire suppression is a minimum of 500 gpm with a residential pressure of 20 psi at any point in the system. The need to prioritize system improvements according to financial resources and realities may result in some areas, such as higher level pressure zones or isolated properties/areas, having more limited fire protection capabilities. Higher fire flows are needed for larger buildings and higher densities of construction characteristic of many core commercial areas and schools. Actual fire flow needs in any given area may vary widely according to the actual construction present.~~

~~Otak recommends that the City adopt the value of 1000 gallons per minute for an average separation of single family homes in the Nehalem area, and aspire to 1500 gpm where feasible. A value of 1,500 gpm is used in this master plan.~~

As initially adopted, the 2015 Water Master Plan required a minimum 1,000 gpm fire flow for all single and multiple family residences for homes spaced greater than 100 feet and as much as 1,500 gpm for homes spaced at 100 feet or closer. This provision did not allow for any reduction in flows where automatic sprinklers are provided. The 2014 ISO Guide for Determination of Needed Fire Flow and the 2022 Oregon Fire Code does allow for a reduction in the minimum fire flow requirements where automatic sprinklers are provided and existing hydrants and water mains are in place to serve existing undeveloped lots. However, where additional density is proposed in the form of a subdivision, partition or

planned unit development, it is essential that the 1000 gpm fire flow is maintained or special accommodation is necessary through a variance reviewed by the Planning Commission and, if necessary, City Council.

Based on the foregoing, for all subdivision or planned unit development approvals, all lots shall satisfy one of the following minimum standards:

- 1) 1000 gpm with a flow duration of one hour where the total residential square footage is less than 3,600 square feet and 1,500 gpm where the total residential square footage exceeds 3,600, or
- 2) Obtain a variance to these requirements pursuant to NDC 157.506 through a Type III procedure.

Any new single family, accessory dwelling units and/or duplex (whether attached or detached) dwellings shall satisfy one of the following minimum standards:

- 1) 1000 gpm with a flow duration of one hour where the total residential square footage is less than 3,600 square feet and 1,500 gpm where the total residential square footage exceeds 3,600,
- 2) 350 gpm with a flow duration of 30 minutes and every dwelling unit includes an automatic sprinkler system, or
- 3) Obtain a variance to these requirements pursuant to NDC 157.506 through a Type III procedure.

In addition to amending the Water Master Plan with these provisions, the following conforming NCC and NDC amendments are also recommended for adoption:

Nehalem City Code 51.09 Subdivisions, partitions and planned developments.

(F) Fire flows – Hydrants.

- (1) All new mains shall be sized to provide flows meeting underwriter standards, and state health and safety requirements, as well as any other applicable and prevailing standard, for water pressure and for fire protection flows as well as projected future water demands.

- (2) All new land divisions or planned development that will include any new single family, accessory dwelling units and/or duplex (whether attached or detached) dwellings shall satisfy one of the following minimum standards:
 - (a) 1000 gpm with a flow duration of one hour where the total residential square footage is less than 3,600 square feet and 1,500 gpm where the total residential square footage exceeds 3,600, or
 - (b) Obtain a variance to these requirements pursuant to NDC 157.506 through a Type III procedure.

~~(2)~~(3) All mains supplying a fire hydrant shall be no less than six inches in diameter, with all hydrants being no less than five inches in diameter.

Nehalem Development Code 157.408.03 Public Facility Improvements

(A) Except for sanitary sewers, all public facility improvements shall be designed and constructed in compliance with the requirements of the City Public Works Department and City Engineer. The City Engineer (or designee) shall determine compliance with these standards. These standards are considered requirements and may not be altered per provisions in this Development Ordinance.

(B) Sanitary sewer facility improvements shall be designed and constructed in compliance with Nehalem Bay Wastewater Agency requirements. The Agency shall determine compliance with these standards. These standards are considered requirements and may not be altered per provisions in this Development Ordinance.

(C) Any new single family, accessory dwelling units and/or duplex (whether attached or detached) dwellings shall satisfy one of the following minimum standards:

- 1) 1000 gpm with a flow duration of one hour where the total residential square footage is less than 3,600 square feet and 1,500 gpm where the total residential square footage exceeds 3,600,
- 2) 350 gpm with a flow duration of 30 minutes and every dwelling unit includes an automatic sprinkler system, or
- 3) Obtain a variance to these requirements pursuant to NDC 157.506 through a Type III procedure.

In situations where a land division applicant is unable to meet the 1000 gpm standard or where an applicant seeking a connection for an existing lot is unable to satisfy subsection (1) or (2) above, an applicant may obtain a variance. NDC 157.506 provides the structure for obtaining a variance. Although it is typically applied to relieve an applicant from complying with development standards such as lot coverage or setbacks, with a few modifications, it does provide criteria suitable for the city engineer, the public and elected officials the opportunity to make a decision about whether waiver of the standards is appropriate on a case-by-case basis. Modifications necessary to accommodate adjustment of the fire flow standards through the land use variance procedure would need to be modified slightly to include:

157.506.01 Applicability

The development standards in this Development Ordinance are to protect the public health, safety, and welfare by establishing setbacks, building height limits and other development requirements. To address unique characteristics associated with a property, the City may allow a modification to quantifiable requirements. Modifications resulting in a greater than a 10% change in a *quantifiable* standard and all adjustments to the minimum fire flow standards are reviewed as a Variance.

157.506.02 Process

(A) For property within the City Limits or for a new city water service request for property outside the City Limits, a Variance application shall be reviewed in accordance with the Type III review procedures specified in Section 157.523 and subject to the decision criteria in Section 157.506.06.

(B) For property outside the City Limits, and within the Urban Growth Boundary, a Variance application shall be reviewed by Tillamook County in accordance to provisions in the Intergovernmental Agreement, and subject to the decision criteria in Section 157.506.06

157.506.03 Application

An application for a Variance shall be filed with the City (or County as applicable) and accompanied by the appropriate fee. Notice shall be subject to the provisions in Section 157.523.

157.506.04 Submittal Requirements

(A) Vicinity map showing all streets, property lines, streams, river and waterways where applicable, and other pertinent data to locate the proposal, with north arrow and scale of drawing.

(B) Tax map and tax lot number or tax account of the subject property.

(C) Applicable dimensions and calculations.

(D) Location of all existing easements within the property, and location of City utilities (water and storm drainage) and sanitary sewer (Nehalem Bay Wastewater Agency) within the property.

(E) Existing use of the property, including location of existing structures with dimensions of the structures and distances from property lines. It shall be noted whether the existing structures are to remain or be removed from the property.

(F) A site plan clearly indicating the proposed variance including dimensions.

(G) If applicable, stamped engineered utility design plans and flow calculations prepared by a licensed civil engineer.

157.506.05 Variance Applicability

Under the following provisions, an applicant may propose a Variance from a standard of this Ordinance, except when one or more of the following apply:

(A) The proposed variance would allow a use which is not permitted in the district.

(B) Another procedure and/or criterion is specified in the Ordinance for modifying or waiving the requirement or standard.

(C) Modification of the requirement or standard is prohibited within the district.

157.506.06 Decision Criteria

The Planning Commission may allow a Variance from a requirement or standard of this Ordinance after a public hearing conducted in accordance with the Type III review procedures provided that the applicant provides evidence that the following circumstances substantially exist:

(A) Exceptional or extraordinary circumstances apply to the property which do not apply generally to other properties in the same zone or vicinity, and result from lot size or shape, legally existing prior to the date of this Ordinance, topography, or other circumstances over which the applicant has no control.

(B) Such variance is necessary for the preservation and enjoyment of a substantial property right of the applicant possessed by the owners of other properties in the same vicinity or district.

(C) The authorization of such variance will not be materially detrimental to the public welfare or injurious to property in the vicinity or district in which property is located, or otherwise conflict with the objectives of any City plan or policy.

(D) That the special conditions and circumstances on which the application is based do not result from a self-imposed hardship or a negligent or knowing violation of this Ordinance by the applicant.

(E) The variance requested is the minimum variance which would alleviate the hardship.

157.506.07 Conditions of Approval

In approving the Variance, the City may impose such conditions as it deems appropriate to ensure that the intent of this Section is carried out.

Findings in Support of Amendments

As a modification to the City’s land use regulations, these changes must be consistent with any applicable statewide land use goals, adopted rules and the City’s Comprehensive Plan. These findings are supported by a memorandum from the City Engineer which is attached.

Oregon Statewide Planning Goals: Goal 1 – Citizen Involvement

To develop a citizen involvement program that insures the opportunity for citizens to be involved in all phases of the planning process.

Finding: The proposed amendments have been reviewed by the Planning Commission on March 21, 2024 in compliance with Goal 1. These amendments were provided to DLCD with mailed notice to all owners within this area 35 days prior to the City Council hearing scheduled on April 8, 2024.

Goal 2 – Land Use Planning To establish a land use planning process and policy framework as a basis for all decision and actions related to use of land and to assure an adequate factual base for such decisions and actions. [...]

Finding: The City of Nehalem’s Development Code provide an acknowledged and established land use planning process and policy framework which service as the basis for all decisions and actions related to land use, and include approval criteria to assure than an adequate factual base is provided for those decisions and actions.

Goal 6 – Air, Water and Land Resources Quality To maintain and improve the quality of the air, water and land resources of the state.

Finding: These amendments will not affect waste and process discharge of development, nor air, water and land resource quality. Nehalem’s water system will continue to comply with the Safe Drinking Water Act, the EPA and Oregon Health Authority requirements. The proposed amendments conform to Goal 6.

Goal 7 – Areas Subject to Natural Disasters and Hazards To protect people and property from natural hazards.

Finding: The proposed amendments will continue to ensure that fire flows are sufficient to protect people and property and provides a resilient water system to reduce risk posed by fire. The proposed amendments conform to Goal 7.

Goal 10 – Housing To provide for the housing needs of citizens of the state.

Finding: Nehalem’s goals addressing housing are found in the Comprehensive Plan. The proposed amendments do not affect policies related to housing but will promote them by allowing for expiration of the moratorium that has prevented new water connections for the past two years. The proposed amendments conform to Goal 10.

Goal 11 – Public Facilities and Services To plan and develop a timely, orderly and efficient arrangement of public facilities and services to serve as a framework for urban and rural development.

Finding: These amendments are intended to serve the needs of present and future development. These text amendments will allow for the continued provision of a reliable and economical supply of water to meet current and future needs as explained in memorandum from the City Engineer. The proposed amendments conform to Goal 11.

B. Oregon Administrative Rules (OAR) Chapter 660-011-0000: Public Facilities Planning 660-011-0010:

The Public Facility Plan (1) The public facility plan shall contain the following items:

- (a) An inventory and general assessment of the condition of all the significant public facility systems which support the land uses designated in the acknowledged comprehensive plan;*
- (b) A list of the significant public facility projects which are to support the land uses designated in the acknowledged comprehensive plan. Public facility project descriptions or specifications of these projects as necessary;*
- (c) Rough cost estimates of each public facility project;*
- (d) A map or written description of each public facility project's general location or service area;*
- (e) Policy statement(s) or urban growth management agreement identifying the provider of each public facility system. If there is more than one provider with the authority to provide the system within the area covered by the public facility plan, then the provider of each project shall be designated;*
- (f) An estimate of when each facility project will be needed; and*
- (g) A discussion of the provider's existing funding mechanisms and the ability of these and possible new mechanisms to fund the development of each public facility project or system.*

Finding: The City's adopted 2015 Water Master Plan continues to illustrate inventories, cost estimates, and timeframes. These standards are met.

OAR 660-011-0045: Adoption and Amendment Procedures for Public Facility Plans

- (1) The governing body of the city or county responsible for development of the public facility plan shall adopt the plan as a supporting document to the jurisdiction's comprehensive plan and shall also adopt as part of the comprehensive plan:*
 - (a) The list of public facility project titles, excluding (if the jurisdiction so chooses) the descriptions or specifications of those projects;*
 - (b) A map or written description of the public facility projects' locations or service areas as specified in sections (2) and (3) of this rule; and*
 - (c) The policy(ies) or urban growth management agreement designating the provider of each public facility system. If there is more than one provider with the authority to*

provide the system within the area covered by the public facility plan, then the provider of each project shall be designated.

Finding: If adopted, these amendments will become part of the City’s 2015 Water Master Plan, which is a supporting document to the City’s Comprehensive Plan. These standards are met.

Goal 6: Air, Water and Land Resources Quality Comprehensive Plan Policies

- 1. The City will ensure that the actions it takes are consistent with appropriate state and federal environmental quality standards, statutes, programs and policies, including those for water quality, air quality and noise.*
- 5. The City will continue implementing the City of Nehalem Master Water Plan.*

Finding: The proposed amendments are consistent with the state standards and the City of Nehalem Water Master Plan.

Goal 11: Public Facilities and Services Comprehensive Plan Policies

- 2. Public facilities and services shall be extended in an orderly and efficient manner.*
- 3. The cost of public services or facilities shall be distributed equitably among those residents or land developments creating a need for such services.*
- 7. Large developments or heavy water users should make equitable contributions to the improvement of the water system and shall pay all costs associated with the extension of water lines.*
- 8. Water lines within a proposed development shall be adequately sized to meet future needs at the projected density or usage, including fire flow requirements.*

Finding: The City Engineer has evaluated this proposal and determined that these water improvements will be adequate to allow new water connections within the moratorium area to new development in compliance with state and local regulations, if accomplished consistent with the proposed plan and conditions. Developers will remain responsible for the cost of extending water service to meet the new minimum fire flow requirements.

Conclusion

Based on the foregoing along with the City Engineer's memorandum, the City Council can conclude that the proposed amendments will allow greater flexibility with respect to fire flows while ensuring that an adequate supply of water is available to protect people and property into the future.