



Freeland and Associates, Inc.
220 West Champion Street
Suite 200
Bellingham, Washington
360.650.1408

November 29, 2023

City of Bellingham
104 W. Magnolia Street
Stormwater Engineer
Bellingham, WA 98225

**Subject: 4193 Northwest Ave
Design Review
Preliminary Stormwater Design**

To whom it may concern:

The proposed townhouse development located at 4193 Northwest Ave Bellingham, Washington is located on a property that spans approximately 700 feet east to west. There is a large wetland complex that bisects the site. A single-family house and associated buildings and hard surfaces are located on the eastern portion of the site. The remainder of the site is undeveloped forested areas.

The eastern portion of the site is located on a high point of the general area. Areas along the southern property line drain stormwater to the east into the storm system within Northwest Avenue. This storm system conveys water south and eventually to Squalicum Creek. The portion that does not drain to Northwest Avenue discharges overland to the north where it is collected in Wetland A or Wetland B. Stormwater within those wetlands drains to a culvert under Mahogany Avenue and continues to discharge north. The center of the site that will not be developed appears to drain all runoff to Wetland B and into that same culvert.

The western portion of the site appears to drain stormwater north and west to Mahogany Avenue and Arctic Avenue. Conveyance systems within those two roads direct stormwater runoff to the City of Bellingham North End Regional Pond (NERP). Per the City of Bellingham modeling figures, this portion of this site was assumed that it did not drain to the NERP. However, per site visits and review of topography stormwater from the western portion of this site drains to Arctic Ave and Mahogany Ave, which drain to the NERP. The NERP was designed to provide detention and treatment for all areas draining to Mahogany

Avenue. Although this portion of the site was not included in the design of the NERP, that is where it drains naturally.

The NERP was sized for each property in the contributing basin to be developed with 95 percent impervious surface and five percent landscaping. Due to large wetland complexes on sites to be developed in the contributing basins to the NERP, remaining landscaping areas are to be forested as part of wetland mitigation. These wetlands also limit the hard surface areas able to be placed on site to well below the 95 percent impervious surface the NERP was designed to detain and treat. Therefore, there are allocated hard surface areas that were designed to drain to the NERP that will not be developed.

For example, the Pacific Place project at 1364 Mahogany Avenue developed a 9.40-acre lot. Per the Freeland and Associates, Inc. approved stormwater report dated March 2022, developed gravel areas being discharged to the NERP equal 2.77 acres. Impervious surfaces allocated to this 9.40-acre lot equal 8.93 acres per the approved Reichardt and Ebe Engineering, Inc. stormwater report dated December 2014. Therefore, there are approximately six acres of hard surface designed to drain to the NERP that will no longer be conveyed to the NERP. This is one individual site in a basin of sites with similar wetland areas.

Although the west side of this project site was not included in the original design of the NERP, there are sufficient remaining allocated hard surface areas that will not be developed on sites contributing to the NERP to account for the addition of the hard surface draining from this site. The NERP will be utilized for stormwater detention and treatment of runoff from the western portion of the project.

The proposed layout for this project has 11 townhouse units on the Northwest Ave side of the site and six townhouses on the Arctic Ave side of the site. As a project creating more than 5,000 square feet of hard surface, it will be subject to Minimum Requirements #1 through #9 in the 2014 Department of Ecology Stormwater Management Manual as required by Bellingham Municipal Code 15.42.060. Due to poor soil conditions and limited space for dispersion facilities outside of the wetland buffers, infiltration and dispersion techniques are considered infeasible for stormwater management. Therefore, stormwater will be detained and treated prior to discharging to downstream systems.

Stormwater from the eastern portion of the site will discharge to the detention and treatment system installed on the neighboring property to the south. As mentioned previously, the development on the east side is located at a high point that drains water to the north and south. Since stormwater from the proposed development will be collected and discharged to the property to the south, this will take water that typically drains to the north and divert it to the south. Some of the roof areas of townhouses will be dispersed to the wetlands to the north to maintain wetland hydrology but will not have 100-foot dispersion pathways and cannot be considered fully dispersed. See Table 1 for how this project will address Minimum Requirements #1 through #9.

TABLE 1 - MINIMUM REQUIREMENT SUMMARY: EAST SIDE NEW DEVELOPMENT			
Minimum Requirement		Standard Requirements Incorporated	Comments (Report Section Reference or BMP Identifier)
#	Description		
1	Preparation of Stormwater Site Plans	✓	Will be completed with construction documents.
2	Construction Stormwater Pollution Prevention Plan	✓	Will be completed with construction documents.
3	Source Control of Pollution	✓	Will be addressed with construction documents.
4	Preservation of Natural Drainage Systems and Outfalls	✓	Will be addressed with construction documents.
5	On-Site Stormwater Management	✓	Due to poor soil conditions and lack of space for dispersion pathways, infiltration and dispersion techniques are infeasible with this project. BMP T5.13 will be the only BMP applied to this site.
6	Runoff Treatment	✓	Runoff treatment will be completed in a proprietary treatment system downstream of the detention system on the neighboring property.
7	Flow Control	✓	Flow control will be provided for the proposed project in a detention system on the property to the south.
8	Wetlands Protection	✓	Wetland protection analysis will be completed with construction documents. Wetland protections will meet proposed mitigation plan.
9	Operation and Maintenance	✓	Will be completed with construction documents.

Stormwater from the western portion of the site will discharge to the City of Bellingham NERP. This matches where stormwater is currently discharging in the existing condition. The NERP will provide stormwater detention and treatment for this proposed project. See Table 2 for how this project will address minimum requirements #1 through #9.

TABLE 2 - MINIMUM REQUIREMENT SUMMARY: WEST SIDE NEW DEVELOPMENT			
Minimum Requirement		Standard Requirements Incorporated	Comments (Report Section Reference or BMP Identifier)
#	Description		
1	Preparation of Stormwater Site Plans	✓	Will be completed with construction documents.
2	Construction Stormwater Pollution Prevention Plan	✓	Will be completed with construction documents.
3	Source Control of Pollution	✓	Will be addressed with construction documents.
4	Preservation of Natural Drainage Systems and Outfalls	✓	Will be addressed with construction documents.
5	On-Site Stormwater Management	✓	Due to poor soil conditions and lack of space for dispersion pathways, infiltration and dispersion techniques are infeasible with this project. BMP T5.13 will be the only BMP applied to this site.
6	Runoff Treatment	✓	Runoff treatment will be completed in the NERP.
7	Flow Control	✓	Flow control will be provided in the NERP.
8	Wetlands Protection	✓	Wetland protection analysis will be completed with construction documents. Wetland protections will meet proposed mitigation plan.
9	Operation and Maintenance	✓	Will be completed with construction documents.

Proposed improvements trigger Minimum Requirements #1 through #9. Stormwater from the two sides of the site will be managed with stormwater detention and treatment systems not located on this site. These detention and treatment systems have been designed to meet the Department of Ecology Stormwater Management Manual and the Bellingham Municipal Code 15.42.060.

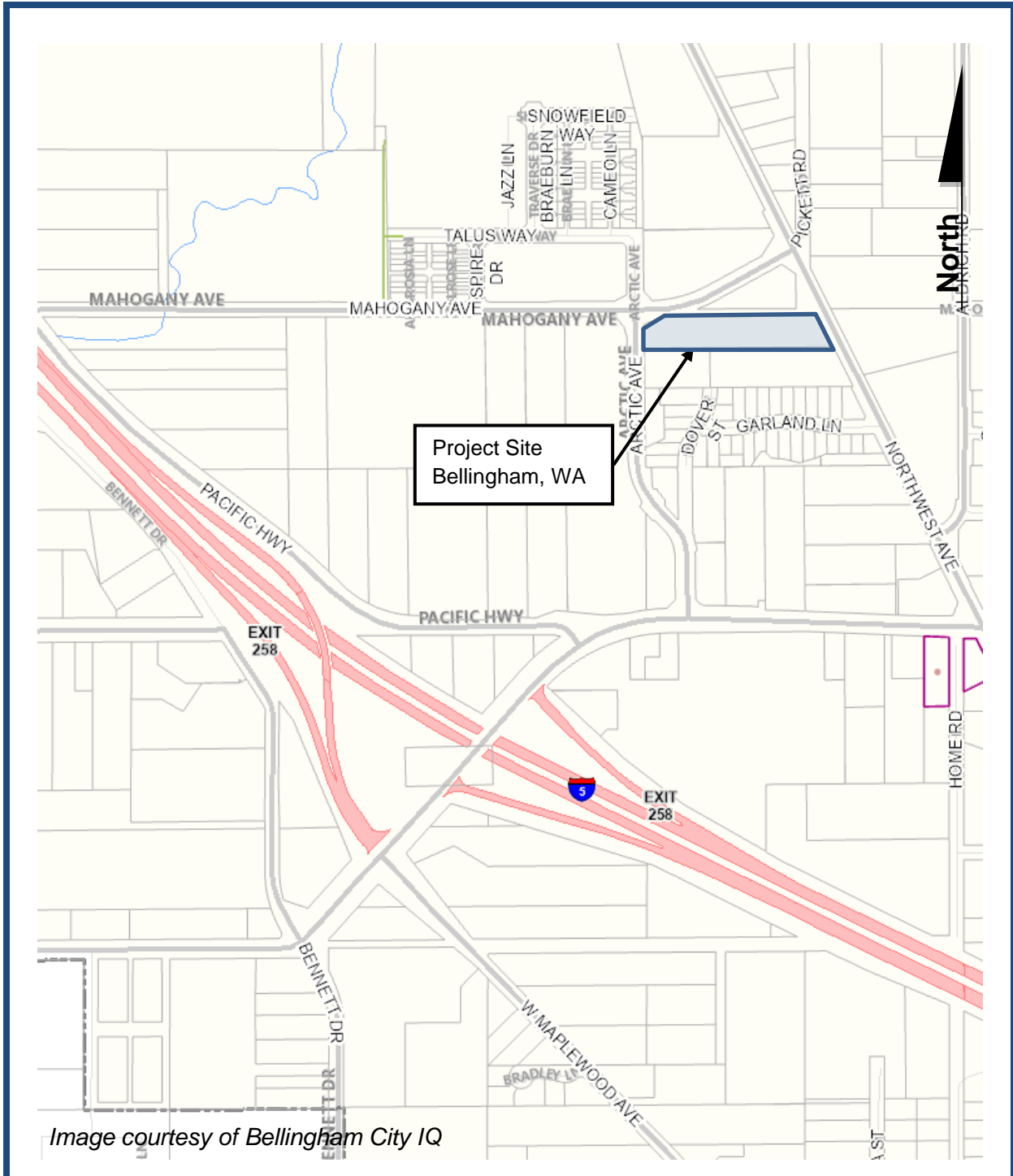
Please contact us with any questions or concerns about these observations.

Sincerely,
Freeland and Associates, Inc.

A handwritten signature in blue ink, appearing to read "Davis Phillips". The signature is fluid and cursive, with a large initial "D" and "P".

Davis Phillips, PE

- Encl: Fig. 1 - Vicinity Map*
Fig. 2 - Aerial Photograph of Site
Fig. 3 - Regional Soils Map



Vicinity Map

Fig. 1



Image courtesy of Bellingham City IQ



Aerial Photograph of Site

Fig. 2



Image courtesy of UC Davis and NRCS



Regional Soils Map

Fig. 3