MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

Description of Proposal (also referenced as the "Project"):

In February of 2019, the voters of Bethel School District overwhelming approved a Capital Bond, to include among other projects, the construction of New Bethel High School to replace the existing Bethel High School in a location (7718 224th Street East, Graham, Washington) that supports the student body and the community as recommended by the District's Long Range Facilities Task Force ("District Task Force"). The existing Bethel High School site, the oldest secondary building in the District, is not considered adequate to serve the needs of its students and as such, Bethel School District Bond Resolutions and Board Resolutions identified the Site for the new high school as District-owned property located near the intersection of 77th Avenue and 224th Street in the East Graham area of unincorporated Pierce County.

The District lies primarily in the rural area of southwest Pierce County. The location of the existing Bethel High School is located at 224th Street East/38th Avenue South in Graham. The replacement of Bethel High School would need to be geographically sited to support the current student body, the surrounding Bethel community and the District's transportation policies. The existing Bethel High School serves and the New Bethel High School will continue to primarily serve students residing within the Rural Area of Pierce County.

The proposed New Bethel High School consists of a 281,723-square foot, two-story high school that would house approximately 1,800 students upon occupancy and up to 145 staff. The Project includes capacity for four future classroom portables for an additional 200 students and one portable for a future student health center. The Project includes traditional and customary athletic high school facilities with six tennis courts, a baseball field with synthetic turf (or natural turf) installed to the baseline, a softball field with synthetic turf (or natural turf) installed to the baseline, and a synthetic track with a synthetic turf, lighted Multi-Purpose Field, and an adjacent grass practice field with use for discus and javelin.

Primary access to the New Bethel High School would be from the intersection of 77th Avenue E and 224th Street E where a new traffic signal will be installed with a right turn pocket on 224th Street E as a component of the Project. This access serves as the primary access for students, staff and visitor parking along with the student drop-off/pick-up loop. An access driveway from 70th Avenue E to the School Site is planned as a restricted access for school buses only and will

service only the bus drop off area. In the event of an emergency, removal bollards will allow access between the parking lots for exiting of passenger vehicles onto 70th Avenue East. On-site parking would be provided in three separate lots with a total of 478 parking stalls. For larger school events, the District has engaged with Rainier View Christian Church, the abutting property owner, with access to 77th Avenue East, to use the Church parking lot (with 178 spaces) for occasional District special events. Available parking at North Star Elementary School provides an additional 92 spaces with direct access and a signalized crosswalk from 224th Street East to the Site. The combined on-site and off-site parking supply available for larger events would total approximately 750 spaces. In addition, parking may be available within the school-bus load/unload area that can be accessed from the main student parking lot with the removal of bollards for these rare special events where additional parking may be necessary.

Project Proponent: Bethel School District No. 403 ("District")
5410 184th Street East, Building C
Puyallup, WA 98375

Project Location: The proposed New Bethel High School Site consists of four parcels, with a Site address of 7718 224th Street East. The Site is southerly and southeasterly and south and westerly of the 77th Avenue and 224th Street intersection in the Graham area of unincorporated Pierce County. The Site is located south of North Star Elementary School.

Parcel Numbers: Parcel Nos. 0418172009, 0418172010, 0418172019, and 0418172021

Lead Agency: Bethel School District No. 403

Date of Issue of MDNS: September 22, 2023

Date of Comment Deadline: October 9, 2023
4:30 p.m.

Bethel School District No. 403 (the "District") has determined that the Proposal with the mitigation measures which are incorporated into the Proposal and as set forth hereinbelow does not have a probable significant adverse impact on the environment. Therefore, an environmental impact statement (EIS) is not required under RCW 43.21C.030(2)(c). This decision was made after review of a completed Expanded Environmental Checklist with Appendices and Exhibits submitted by the District, engineering reports, environmental studies, plans, conditional use permit submittals, and other information on file with the District. This information is available to the public on request.

This Mitigated Determination of Nonsignificance (MDNS) is issued under WAC 197-11-350, 197-11-340(2). Comments must be submitted by closing of the Comment Deadline. The Responsible Official may reconsider the MDNS based on timely comments and may retain or modify the MDNS. The MDNS is

deemed final in accordance with WAC 197-11-390. The applicable appeal period will apply upon publication and issuance of a Notice of Action.

Responsible Official: Sara Coccia
Position/Title: Director of Construction and Planning
Responsible Official
Bethel School District
scoccia@bethelsd.org

Address: Bethel School District
Educational Service Center
516 176th Street East
Spanaway, WA 98387

Construction and Planning
5410 184th Street East, Building C
Puyallup, WA 98375

Telephone: 253-800-6772

Name of Agency adopting document: Bethel School District No. 403

Signature: Sara Coccia

Sara Coccia
Director of Construction and Planning
Responsible Official

Date: September 22, 2023

NOTE: Pursuant to RCW 43.21C.075, the final decision of the Responsible Official may be appealed in accordance with Bethel School District SEPA Policy 6890. In accordance with Bethel School District SEPA Policies, the District will issue a Notice of Action pursuant to RCW 43.21C.080 with the applicable appeal period. Any action to set aside, enjoin, review, or otherwise challenge such action on the grounds of noncompliance within the provisions of Chapter 43.21 RCW (State Environmental Policy Act) shall be commenced in Pierce County Superior Court.

FINDINGS OF FACT

GENERAL/LAND USE

Proposal

1. In February of 2019, the voters of Bethel School District overwhelming approved a Capital Bond, to include among other projects, the construction of New Bethel High School to replace the existing Bethel High School in a location (7718 224th Street East, Graham, Washington) that

supports the student body and the community as recommended by the District's Long Range Facilities Task Force ("District Task Force").

2. The existing Bethel High School site, the oldest building in the District, is obsolete and is not considered adequate to serve the needs of its students. Currently, with the excessive overcrowding, students are housed in eighteen (18) portables. Under District Board Resolution Nos. 33 (19-20), 52 (19-20), 10 (20-21), 36 (20-21), 08 (21-22), 32 (21-22), 03 (22-23), and 07 (22-23) , the District determined that in light of the existing Bethel High School's physical condition, the school building could not be efficiently or economically modernized or expanded to accommodate programmatic needs, technology innovations, and teaching methods to serve the students with an appropriate education and learning practices necessary for the modern workforce. Nor is the existing Bethel High School site of adequate size to adequately serve the educational goals and needs of its students.

3. The New Bethel High School will serve the same service boundary as serves the existing Bethel High School. The New Bethel High School is predominantly a rural serving school with 57% of the student population residing within the Rural-designated Area of Pierce County. The District has thirteen schools located within the Rural-designated Area of Pierce County.

4. In accordance with PCC ch. 18A.43, the District has made findings that the New Bethel High School Project is necessary to accommodate the District's need, which cannot otherwise be reasonably accommodated on an existing site.

5. The new location plays a substantive role in supporting the core values of the Bethel School Board:
   - 3.1 Equitable opportunities for all students.
   - 3.2 Engagement of parents and community.
   - 3.3 Diversity, cultural inclusion, mutual respect and fairness.
   - 3.4 Accountability for results.
   - 3.5 People are our greatest asset, dedicated and determine to serve our learning community.

6. The proposed New Bethel High School Project Site is comprised of four parcels (Parcel Nos. 0418172021, 0418172019, 0418172010, and 0418172009) in the Graham area of unincorporated Pierce County. The Site is approximately 98 acres and is located approximately 2.3 miles east from the existing Bethel High School site. An existing single family residence with outbuilding were located in the western portion of the Site on Parcel No. 0418172009 but these structures have been removed with only the foundations remaining. A pole storage barn/shed structure was located in the southerly portion of the Site on Parcel No. 0418172010 but was demolished in 2022 with the foundation only remaining. The existing site is comprised of vegetated/grass areas and thirteen wetlands which will be set aside in critical area tracts.

7. The Project Site abuts to the east urban-density subdivisions with 402 parcels within Grand Firs and 57 parcels within the Country West Plat. Subdivisions with dense suburban-level development also located west of 70th Avenue East within approximately two to two and one-

half miles of the Project Site. In addition, the Project Site is located in a node of civic uses to support the community resources, including Graham Fire, churches, and North Star Elementary.

8. The proposed New Bethel High School consists of a 281,723-square foot, two-story high school that will house 1,800 students upon occupancy with capacity for four future classroom portables for an additional 200 students and up to 145 staff. A fifth portable is planned for a future student health center. The Site is significantly larger than the other two high school sites to allow for the protection of critical areas and to place the building in the northerly center of the Site to maintain substantial buffers and sight lines from neighboring properties to the east, west and south to minimize any impacts to adjacent properties.

9. The Project includes traditional and customary athletic high school facilities with six tennis courts, a hardball baseball field with synthetic turf installed to the baseline, a softball field with synthetic turf installed to the baseline, and a synthetic track with a synthetic turf Multi-Purpose Field and an adjacent grass practice field with use for discus and javelin. Physical education and athletics offerings are an increasingly important educational function to assist in the growth of students to encourage critical thinking, healthy lifestyles, team building, and leadership. The Multi-Purpose Field would be the only lighted athletic facility to allow evening uses in the late fall/winter months for both football practices and community use. The three Bethel high schools will continue to hold football games on the Art Crate Field located at the existing Bethel High School site.

10. Primary access to the New Bethel High School would be from the intersection of 77th Avenue E and 224th Street E where a new traffic signal would be installed as a component of the Project. This access serves as the primary access for students, staff and visitor parking along with the student drop-off/pick-up loop. An access driveway from 70th Avenue E to the School Site is planned as a restricted access for school buses only and will service only the bus drop off area. The school-bus load/unload area will not be formally connected internally to the student or staff on-site parking or load/unload areas; however, there would be an emergency access connection that would remain closed (with removable bollards or gates) and opened only for emergency access or egress.

    The Project includes on-site parking for a total of 478 automobiles in three (3) separate lots in compliance with Pierce County regulations. For larger school events, the District has agreement with Rainier View Christian Church, the abutting property owner, with access to 77th Avenue East, to use the church parking lot (with 178 spaces) for occasional District special event use. Parking at North Star Elementary School provides an additional 92 spaces with direct access from 224th Street E to the site. The combined on-site and off-site parking supply available for larger events would total approximately 750 spaces.

11. The following approvals and permits are necessary under the proposed project:

State of Washington

- Department of Ecology, Construction Stormwater General Permit

- Department of Ecology, NPDES Stormwater Discharge Permit

Regional Agencies

- Utility service approvals/permits: Tacoma Public Utilities, Washington Water Service, Lumen, and Rainier Connect

Pierce County

- Conditional Use Permit
- Site Development Permits (Grading, Stormwater, off-site ROW Improvements, and on-site driveway improvements (vacated) 77th Avenue E as extended southerly (school access)
- Driveway Approach Permits (70th Avenue E and 77th Avenue E)
- Electronic Message Sign Permit
- Gate Permits
- Building Permit and associated permits
- Mechanical, Electrical, Plumbing, Sprinkler Underground, Fire Hydrants and Water Main Permits
- On-Site Sanitary Sewer System (Tacoma-Pierce County Health Department)

United States

- United States Army Corp of Engineers 404 Permit (obtained) associated with off-site road improvements (70th Avenue E)

12. Environmental review is required for the Conditional Use Permit in accordance with the State Environmental Policy Act (SEPA), RCW ch. 43.21C and associated regulations WAC ch. 197-11.

13. In accordance with SEPA and District policies and procedures, the District is acting as Lead Agency, as authorized under SEPA, for purposes of SEPA review. The District, on January 3, 2020, submitted a letter to Pierce County notifying the County that the District is acting as Lead Agency under SEPA for purposes of review under the SEPA. The County consented to the District assuming Lead Agency status for the New Bethel High School Project. On July 5, 2023, the District submitted and distributed a SEPA Expanded Checklist with Exhibits and Appendices containing the reports, studies, assessments, and plans associated with the proposed Project to the required agencies and governmental entities (there being no individual requests for SEPA notices), the District properly posted notice on the Project Site, published the SEPA Expanded Checklist on the District's website, and properly published notice (both in written and electronic format) in the District's designated newspaper of general circulation in the District boundaries, all in accordance with SEPA and District policies and procedures 6890. The Comment Period for the SEPA Checklist expired on July 21, 2023.

14. The proposed New Bethel High School Site consists of four parcels located easterly and southeasterly and southwesterly of the 77th Avenue and 224th Street intersection in the Graham area of unincorporated Pierce County. Two of the parcels (0418172009 and 0418172010) are roughly square-shaped and approximately 39 and 40 acres in size, respectively. The third parcel (0418172019) is approximately 14.2 acres in size and the fourth parcel (0418172021) is approximately 5.4 acres. Signage for the New Bethel High School Site will be placed on the northwest corner of vacant District property (Parcel 0418172022) but otherwise is not part of the Project.

Land Use: Zoning Classification/Comprehensive Plan

15. The proposed New Bethel High School Project Site is located within the Graham Community Plan area and is zoned as Rural 10 (R10). Education facilities such as public schools are a civic use permitted in an R10 zone under a Conditional Use Permit subject to consistency with the rural school criteria identified in Pierce County Code 18A.43.020.

16. The proposed Project Site is located in the Graham Community Plan Area and has a comprehensive plan land use designation of Rural 10 (R10).

17. The Project is consistent with:

    17A. The applicable County's county-wide Comprehensive Plan policies, including Land Use, Capital Facilities, Design and Character, Cultural Resources, Economic, Environment, Transportation, and Utilities.

    17B. The applicable Graham Community Plan policies, including Land Use and Civic, Community Character and Design, Rural Character and Compatibility, Natural Environment, Facilities, and Utilities.

    17C. The applicable County-wide design standards and the Graham Community Plan design standards and as otherwise set forth under Site Plan Review.

18. The Graham Community Plan recognizes the importance and unifying function of civic uses to provide resources to the community and as a gathering place where centrally located. See Graham Community Plan Vision Statement at F-15: Business, schools, fire district, law enforcement and other community resources are recognized as an important part of the community's resource base. The Graham Community Plan supports coordinated civic development "to promote a unified community" (See Graham Community Plan at F-86).

19. The New Bethel High School is located in a node of civic uses which will promote collective supportive resources for the community in an efficient manner, being centrally located on two major arterials, 224th Street East and 70th Avenue East.

PROJECT DESCRIPTION

20. The proposed New Bethel High School consists of a 281,723-square foot, two-story high school that would house approximately 1,800 students upon occupancy with capacity for four future

classroom portables for an additional 200 students and a fifth portable for a future student health center and up to 145 staff. The school site and design planning is consistent with the Graham Community Plan policies recognition of civic uses as an important and central element of the Graham Plan, protection of and enhancement to environmental features, and will be reflective of the rural character in design. The proposed building provides pull-out and flexible spaces for new teaching and learning environments, team building, and interdisciplinary experiences, space dedicated to core academic classrooms, including specialized science lab areas, technology, and special education classrooms, a library/media center, visual arts, performing arts, career and technical education, physical education, health services, including both traditional medical services and mental health counseling, student-family outreach, a student store, and a commons/cafeteria area large enough to accommodate the student population to allow for a community, unified area for dining and food services and student body events as well as smaller, separated areas. A screened, a 10.75 foot masonry-walled service yard would be located in the southeasterly area of the school building with an access road along the east side of the building. A greenhouse would be located north of the student parking area.

21. The Project includes traditional and customary athletic high school facilities with six tennis courts, a hardball baseball field with synthetic turf installed to the baseline, a softball field with synthetic turf installed to the baseline, and a synthetic track with a synthetic turf Multi-Purpose Field and an adjacent grass practice field with use for discus and javelin. Physical education and athletics offerings are an increasingly important educational function to assist in the growth of students to encourage critical thinking, healthy lifestyles, team building, and leadership.

22. The Multi-Purpose Field would be the only lighted athletic facility to allow evening uses in the late fall/winter months for both football practices and community use. The lighting system would consist of six, 80' mounted poles consistent with industry standards for high school sports facilities and Dark Sky International community friendly recommendations for field lighting to ensure adequate visibility and safety of players on the field coupled with minimization of lighting glare. The proposed lighting system would be a state-of-the art, technologically advanced with full cut-off style shielded LED luminaires with 24" extended shielding visors to eliminate spillage and direct view of the diodes. Additional reduction in direct glare is also achieved by internal shielding of the LED diodes. This additional shielding nearly eliminates direct view of the LEDs from off-site viewing locations. Dark Sky International, a recognized body, that advocates for preservation of the night sky, reviewed the proposed lighting system for the Multi-Purpose Field and determined that it exceeded Dark Sky compliance standards for minimization of lighting impacts and preservation of the night sky: (i) total light provided, (ii) amount of backlight generated by the luminaires, (iii) amount of spill light, (iv) percentage of uplight generated by the lighting system, and (v) amount of direct glare produced from off field locations. In addition, the field lighting would be controlled by a lighting control system and interfaced with the School District's Light Scheduling System and would include the programming protocols to come on no earlier than 60 minutes before an event and turn off within 30 minutes after an event to allow safe exiting and maintenance.

23. The primary access to the New Bethel High School would be from the intersection of 77th Avenue E and 224th Street E where a new traffic signal would be installed as a component of the Project. This access serves as the primary access for students, staff and visitor parking along

with the student drop-off/pick-up loop. It splits into two drive aisles to separate the staff, students and the student drop-off areas to achieve safe site circulation for both pedestrians and vehicles. An access driveway from 70th Avenue E to the School Site is planned as a restricted access for school buses only and will service only the bus drop off area. The school-bus load/unload area will not be formally connected internally to the student or staff on-site parking or load/unload areas; however, there would be an emergency access connection that would remain closed (with removable bollards) and opened in the event of an emergency.

24. The Project includes on-site parking for a total of 478 automobiles in three (3) separate lots in compliance with Pierce County regulations. For larger school events, the District has agreement with Rainier View Christian Church, the abutting property owner, with access to 77th Avenue East to use the church parking lot (with 178 spaces) for occasional District special event use. Parking at North Star Elementary School provides an additional 92 spaces with direct access from 224th Street E to the site. The combined on-site and off-site parking supply available for larger events would total approximately 750 spaces. In addition, the District parking may be available within the school-bus load/unload area that can be accessed from the main student parking lot with the removal of bollards for these rare special events where additional parking may be necessary.

25. Stormwater management was extensively evaluated with analysis of surface water and groundwater components in the existing condition and developed condition to design the stormwater systems in conformance with the 2021 Pierce County Stormwater Management and Site Development Manual ("Pierce County Stormwater Manual") to provide appropriate water quality measures and wetland protection under best management practices and Minimum Requirement No. 8 (Method 2) for the Category I Wetland on Parcel No. 0418172010 to sustain environment features in quality, hydrology, and function. The stormwater design (southern system) was also evaluated for any downstream impacts and was determined to have an insignificant downstream impact on Wetland Z and to the offsite Muck Creek Category I wetland in the developed condition of the Project as designed or in the event of failure of the pump system under a 100-year flood event. The stormwater design for the northern system was designed with substantial safety factor analysis.

26. The Site would be served by public water for potable water and fireflow from Washington Water Service. Sanitary sewer would be provided by six separate on-site sewerage systems in accordance with regulations of the Tacoma-Pierce County Health Department (TPCHD) and consistent with the regulations of the Washington State Department of Health. The TPCHD has determined that the proposed system is in compliance with the TPCHD regulations and any applicable Washington State Department of Health regulations.

27. New planted landscape areas would be provided consistent with the Graham Community Plan requirements along the perimeter buffers and within the parking lot islands. Additional planting would be provided in the plaza and courtyard spaces around the school building. The planting palette for the new planting areas would consist of a mixture of evergreen and deciduous shrubs and trees. A critical area tract (significantly greater than the minimum buffer requirements (11.6 acres larger) for a total of 24 acres has been set aside to protect the

westerly wetlands within Parcel No. 0418172009. Wetland Z will be protected with not less than a 225 foot buffer (which is substantially exceeded in some areas) through a buffer reduction with a 50' wide enhanced planting area from the current standard 300 foot buffer as allowed under PCC 18.E.30.060B to accommodate stormwater facilities for the Project and the Multi-Purpose Field. A substantial portion of the Site will remain in wetlands preserved in larger critical area tracts exceeding buffer requirements, undisturbed grass areas, inclusive of existing stands of trees, natural or seeded vegetated areas, new lawn, and perimeter landscaping with trees and shrubs.

SEPA Comments

28. The following comments were received by the District on the Environmental Checklist. The District provides the following responses based upon the reports, studies, memoranda, submittals, and plans as identified hereinabove and information on file:

    28.1 Letter, dated July 7, 2023, from Brad Beach of the Tribal Historic Preservation Office of the Nisqually Indian Tribe; *stating no specific comments or concerns*.

    Response:
    The District acknowledges that the Nisqually Indian Tribe also issued their comment with "respect [for] the traditional cultural knowledge of affected tribes and [with] support of their opinions on this matter as well".

    28.2 Email, dated July 12, 2023, with follow-up comments, from the Mike Shong, archaeologist for the Puyallup Tribe of Indians, including the following comments:

    - *Recommends archaeological monitoring of ground disturbance in areas that were not shovel tested as part of the cultural resources assessment for the project*.

    - *Noted the potential for buried archaeologically-significant features (e.g., privies). The IDP should address this and provide photographic examples for construction personnel to be aware of.*

    Response:
    To address comments from the Puyallup Tribe of Indians, the District and the Puyallup Tribe of Indians met to discuss the comments and developed an Archaeological Plan, effective September 19, 2023, which included an additional 710 shovel probes across the Project Site to be conducted by Historical Resources Associates and a modified Inadvertant Discovery Plan. Implementation of the Archaeological Plan shall be a mitigating condition under this MDNS.

    The District has also notified the Muckleshoot Indian Tribe, the Nisqually Indian Tribe, and the Squaxin Island Tribe of the Archaeological Plan developed with the Puyallup Tribe of Indians and further notified these Tribes of the commencement date of September 25, 2023 to conduct a portion of the additional shovel probes which are located in the areas intended to be set aside as Critical Area Tracts.

28.3 Email, dated July 7, 2023, with follow-up comment, dated July 18, 2023 from Cindy Beckett with the following comments:

- *Water resource land that she believes is located on the property and that it drains directly to a fish-bearing stream that flows to Muck Creek.*

  Response:
  Raedeke Associates examined potential wetland areas identified in aerial photographs, governmental reference maps, and other information about the Project Site from the NRCS Web Soil Survey, on-line National Wetland Inventory, Pierce County Public GIS, wetland delineations previously performed by SCJ Alliance in 2020, areas previously determined in 2007 to be wetland areas by Habitat Technologies during a wetland reconnaissance of the Parcel No. 0418172009 and later in 2011 by Habitat Technologies and John Comis, LLC in response to a complaint made to Pierce County in 2010, and public records contained in the Pierce County Permitting website. Raedeke Associates also thoroughly searched the entirety of the Project Site for the presence of any previously unidentified wetlands or streams.

  Raedeke Associates visited the Project Site on 23 occasions between March 2020 through July 2022 to collect data necessary for a complete wetland investigation. All of the wetland delineations, verifications, and determinations of on-site wetlands and identification of potential off-site wetlands were performed using methods and procedures of the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual and subsequent amendments and clarifications provided by the USACE, as updated for this area by the 2010 regional supplement to the USACE wetland delineation manual for the Western Mountains, Valleys, and Coast Region. The USACE Wetlands Delineation Manual is required by State law (WAC 173-22-035, as revised) for all local jurisdictions, including Pierce County. The Raedeke wetland investigation included not only the entire Project Site, but the areas where half-street and intersection improvements are to be constructed along 70th Avenue East and frontage and intersection improvements to be constructed along 224th Street East.

  Raedeke Associates, as set forth in their May 2023 *Wetland Analysis Report and Mitigation Plan for the New Bethel High School Project,* verified or delineated eleven separate Category III and Category IV wetlands (A, B, C, E, H, I, J, K, L, O, and Y) and one Category III wetland mosaic (F/G) consisting of three distinct, but closely spaced, small wetlands (F north, F south, and G) within the approximately 40-acre western portion of the Project Site (Parcel 0418172009). Raedeke Associates also identified three potential off-site wetlands within 315 feet of the Project Site boundaries. During Raedeke's investigation of the Project Site, Raedeke found that several of the areas determined to be wetland by Habitat Technologies (2007) and again later by Habitat Technologies and John Comis, LLC (2011), and also several areas that were identified as wetland by the Pierce County GIS, were not wetland based on the absence of indicators for one or more of the three wetland parameters (dominance by hydrophytic vegetation, hydric

soil, and wetland hydrology). The USACE Wetlands Delineation Manual requires that indicators for all three wetland parameters be present for an area to be determined to be wetland.

Scott Sissons, Pierce County Environmental Biologist 3, visited the Project Site on July 31, 2023 to review all wetland delineations within the site. In addition, during his July 31, 2023 site review, Mr. Sissons also reviewed areas that had been previously identified as wetland by Habitat Technologies in 2007 and by Habitat Technologies and John Comis, LLC in 2011, as well as areas identified as wetland by the Pierce County GIS, but which Raedeke Associates determined to not be wetland. Mr. Sissons agreed with the Raedeke determination that these areas were not wetland. Mr. Sissons also investigated other areas within the Project Site which exhibited field indicators for the potential presence of wetland. These included low areas such as depressions in the landscape, areas that were proximate to other delineated wetlands, or areas where wetland adapted vegetation was present. Mr. Sissons found no additional wetlands that had not been already identified by Raedeke Associates.

Mr. Sissons (Pierce County) issued a wetland review letter for the Project Site, dated August 3, 2023, confirming the accuracy of the Raedeke Associates wetland verification and delineation for the Project Site. Specifically, Mr. Sissons found:

> *"We concur with the wetland delineations of on-site Wetlands A, B, C, E, H, I, J, K, L, O & mosaic F/G consisting of several closely spaced wetland depressions (F north, F south and G). As well as Wetland Y and Z. The delineation for Wetland Z mimics the original Wetland Approval (AFN#200903020334) recorded for Rainier View Christian Church and the preliminary plat for the Development of 12 lots that was never built."*

In addition, all on-site wetlands with associated regulatory buffers will be set aside in perpetuity in Critical Area Tracts. The Critical Area Tracts on the Project Site total approximately 34.7 acres, which is 52% greater than the area encompassed by the wetlands and required buffers.

Also, the proposed development plan for the Project Site underwent federal review by the USACE before it issued Permit No. NWS-2022-377 to the District on December 23, 2022 to allow impacts to a roadside ditch along 70th Avenue East for half-street improvements and impacts to Wetland Y for replacement/relocation of a Site perimeter fence, as well as to allow the expansion of Wetland C to provide mitigation for the permitted impacts. The USACE reviewed the Project pursuant to the requirements of the Federal Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the National Historic Preservation Act and determined that the Project complies with the requirements of these laws provided the Bethel School District complies with the general and special permit conditions. The USACE found that the Project work authorized by the permit complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification (WQC) requirements and

the Coastal Zone Management (CZM) consistency determination decision for Nationwide Permit 39 used to authorize the work. In addition, a condition of the Project will be issuance of a National Pollutant Discharge Elimination System (NPDES) permit by WDOE which establishes consistency and compliance with federal law.

- *Opposition to any construction that may affect potential water resource lands.*

  The Project development depicted on the site plan, which was coordinated with the appropriate scientific consultants, Raedeke Associates, Sitts and Hill Engineers, Clear Creek Solutions, and Aspect Consulting, follows mitigation sequencing and includes measures to avoid and minimize impacts to all on-site delineated wetlands and their buffers, as well as to downstream areas including the North Fork of Muck Creek. This is reflected in the routing of roads and other Project elements to avoid wetlands and their buffers to the greatest extent practicable. In addition, the Project stormwater facilities are designed to meet the requirements of the 2021 Pierce County Stormwater Management and Site Development Manual and are designed to mimic the Wetland Z hydroperiod at the pre-developed condition as established by Clear Creek Solutions Wetland Z Volume Analysis Study and as described in the Sitts & Hill Engineers Stormwater Management Systems Memorandum. Project stormwater facilities also have been designed to support hydrologic conditions within the western wetlands (See supporting reports of Sitts & Hill and Clear Creek Solutions).

  Direct permanent impacts to all wetlands will be avoided with the exception of 8 SF of Wetland Y adjacent to 70th Avenue East for replacement of an existing barbed wire fence with a 6' foot chain link perimeter fence for school site security and safety. Some temporary impacts to wetland buffers A, B, F/G mosaic, H, J, O, and Y will be fully restored to pre-development pasture conditions.

  Proactively, the District, through Sitts & Hill Engineers have coordinated with the selected contractor, Cornerstone, to develop a construction sequence plan to ensure protection of the critical areas through best management practices. This includes the installation of stormwater conveyance systems and stormwater detention and infiltration systems as soon as reasonably possible to control stormwater volume to conform to the stormwater development plan to the extent reasonably possible during construction.

  In addition, as set forth in the SEPA Checklist, Raedeke Associates will be conducting inspection and monitoring of the critical areas during construction which will include the following:

  During Construction
  • Conduct weekly inspections during Project construction to verify that work activities by the General Contractor and sub-contractors do not affect wetlands, down streams waters, or other regulated critical areas beyond those impacts that are permitted by

the U.S. Army Corps of Engineers and Pierce County.
• Conduct weekly inspections during Project construction to inspect and monitor placement, condition, and effectiveness of stormwater BMPs and Temporary TESC measures implemented by the General Contractor during construction.
• Review General Contractor's implementation of the SWPPP. Review monthly Discharge Monitoring Reports submitted by the General Contractor to the Washington Department of Ecology.
• Review Stormwater Monitoring Plans on a quarterly basis and verify that they are being properly updated and implemented.
• Verify on a quarterly basis that the monitoring by the General Contractor of discharges by the stormwater conveyance systems, as specified in the Project NPDES Permit, are being performed in accordance with standards of the Washington State Construction Stormwater General Permit.

Post-Construction
In addition to the three-year and five-year monitoring periods relating to restoration and enhancement plans, Raedeke Associates will concurrently continue to conduct hydrologic monitoring to determine whether Wetlands A, C, K, L, E, and Z meet the Federal wetland definition for wetlands based upon the collection of water levels for three out of the five years of the monitoring period. The results of this additional monitoring will be evaluated by Raedeke in coordination with the District's consultants to determine whether implementation of any contingency measures are necessary.

- *GIS mapping (federal flood hazard maps) and Pierce County maps indicate flood hazard waters on the project site*.

  Response: See Response below under Section 28.4.

28.4 Letter, dated July 21, 2023, from James Halmo with the following comments

- *Wetlands and groundwater on the project site as it relates to the Grand Firs residential development project and the failure by Pierce County to finish mapping the northern flood pathway.*

  Response:
  With respect to flood plain mapping within the Grand Firs development, on January 20, 2006, Mr. Halmo filed a reconsideration request of the decision approving the final Plat of Grand Firs asserting, among other matters, that the applicant of Grand Firs had not provided an accurate mapping of the flood plain to support approval of the Final Plat.

  In denying Mr. Halmo's request for reconsideration by decision of March 21, 2006, the Hearing Examiner for Pierce County found, as follows:

> The applicant [for Grand Firs] responded to the assertion by demonstrating Northwest Hydraulics Consultants, Inc. (NHC) prepared a detailed floodplain analysis during development of the engineering plans. The analysis extended the County's floodplain studies throughout the Grand Firs site, and NHC provided the applicant with a Conditional Letter of Map Revision (CLOMR) for the Grand Firs Development. Pierce County reviewed the CLOMR, approved it, and forwarded it to the Federal Emergency management Agency (FEMA). In a letter dated September 13, 2005, from FEMA to John W. Ladenberg (County Executive), the author writes…
>
> > …In a letter dated November 5, 2004, Mr. Jeff P. Johnson, P.E., Principal, Northwest Hydraulics Consultants, Inc., requested that FEMA evaluate the effects that detailed hydraulic and hydrologic analyses, updated topographic information, and proposed modifications to Muck Creek, associated with the Grand Firs development, from approximately 8,000 feet upstream to approximately 9,800 feet upstream of 252nd Street East would have on the flood hazard information shown on the effective FIRM, FBFM, and FIS report… All data required to complete our review of this request for a Conditional Letter of Map Revision (CLOMR) were submitted with letters from Mr. Johnson. **We reviewed the submitted data and the data used to prepare the effective FIRM for your community and determine that the proposed project meets the minimum floodplain management criteria of the NFIP**… (Emphasis Added in Original).

The Hearing Examiner goes on to hold that generalized complaints is not a sufficient basis to impose a condition or deny a Project:

> Pierce County and FEMA have accepted the applicant's floodplain study. The reconsideration request provides no contradictory expert opinion of the studies and analysis, but is in the nature of unsubstantiated concerns. As held by the Washington Court of Appeals in *Maranatha Mining v. Pierce County*, 59 Wn. App 795 (1990):
>
> > The only opposing evidence was generalized complaints from displeased citizens. Community displeasure cannot be the basis of a permit denial…

The FEMA Firm Panel (53053C0587E) dated March 7, 2017 which includes Grand Firs and downstream properties incorporated the Map Amendment granted to Grant Firs. The 2017 FEMA Fir Panel does not indicate flooding to the northeast across 224th Street East from the Project Site.

- *Comments and examples of the flooding in the site vicinity is provided including letters from a neighbor that have experienced flooding, the Pierce County Water Program Memorandum (dated September 23, 2003), and undated photos of water (stated as "recent") and potential flooding of adjacent properties associated with wetlands, groundwater and the Grand Firs development project*.

  Response:
  Consistent with scientific standards, Aspect conducted a hydrogeologic study in 2020 and 2021 to characterize groundwater conditions across the Site, including an area being proposed for future stormwater facilities to support Site development (Aspect, 2023). Aspect's field efforts included constructing seven groundwater monitoring wells, installing a drive point piezometer, and establishing eight surface water monitoring stations (Figure 1); all of which were monitored with dedicated water level sensors that recorded measurements every 15 minutes from September 2020 to November 2021. The groundwater monitoring stations were located in the eastern portion of the Site and installed sequentially, such that each successive monitoring station was positioned to best address any site heterogeneity or data gap identified after the preceding well was installed. Further, the monitoring wells were intentionally positioned to allow for triangulation of water level gradients across any area of the eastern portion of the Site (i.e., a triangle can be drawn between any three of the wells to calculate a groundwater flow vector). The well construction and detailed monitoring data were evaluated alongside a large network of test pits completed across the Site and the results from infiltration and aquifer hydraulic testing (see Section 2 in the Aspect 2023 report) to provide a detailed hydrogeologic characterization for the Site.

  As discussed in Section 3.1.4.1 of the Aspect (2023) report, groundwater flows from the Grand Firs Development (where groundwater levels become elevated) toward the central portion of the Site during the wet season. The photo documentation of flooding within the Grand Firs Development provided by Halmo (2023) supports this finding, as it presents evidence of groundwater levels exceeding those measured at the Site. The water level data collected for Aspect's Site groundwater study shows that stormwater originating at the Site flows away from the Grand Firs Development, migrating either generally northward or southward depending on the time of year, and would therefore not discharge to those areas in Grand Firs Development noted to previously experience flooding problems. Further, as demonstrated by infiltration testing and aquifer hydraulic testing (Sections 2.1 and 2.5 of the Aspect [2023] report), the high permeability of Site soils means that the added groundwater recharge (e.g., from stormwater runoff, which will be managed and infiltrated onsite) from Site development will have limited effect on documented groundwater flow patterns, which are driven by very large regional inputs from precipitation.

  The 2023 Pierce County Comprehensive Flood Hazard Mitigation Plan, as currently before the Pierce County Council, and as approved by the Pierce County Planning Commission shows no mapping of groundwater flooding in the headwaters of Muck

Creek in the vicinity of the New Bethel High School Site (see Figure 6-118 in the Plan). As stated in the County Comprehensive Flood Hazard Mitigation Plan, the mapping "was compiled from overlaying a number of different sources of information for the Clover Creek watershed and central Pierce County. The county used its FEMA groundwater flooding maps and a number of different groundwater studies it had sponsored over the years to help delineate the areas shown. *The map was reviewed with the USGS and veteran staff at the county to help confirm this initial overlay of areas known to be susceptible to groundwater flooding." (Plan, at p. 6-316)*. The Plan further indicates that there are undersized culverts under 252nd Street East and beaver dams that contribute to flooding upstream. Upsizing of the culverts is not listed as a Pierce County project to be undertaken in the immediate future.

- *The District should expect high ground water levels.*

  Response:
  The 2017 FEMA Flood Panel shows that Wetland Z is within a 100-year flood Plain. The Pierce County Flood Plain Engineer, Dennis Dixon has indicated that the base flood elevation is approximately 481 (NAVD 88). No development, buildings, cut or fill is proposed within that portion of the Project Site containing a 100 year flood plain. The high school building is being constructed a minimum of 600 lineal feet from the edge of the flood plain with the lowest finish floor elevations (NAVD 88) of 511.67 in the northern third, 513.42 in the middle and 515.17 in the south third of the building. Thus, the building finish floor is a minimum of 30.67 feet above the 100-year flood elevation. Proposed Site amenities, including the Multi-Purpose Field and the adjoining grass field are located a minimum of 200 feet distant from the 100 year flood plain with a minimum ground surface elevation of 498.5, approximately 17.5 feet above the 100-year flood elevation. Therefore, there is no development proposed within the defined flood hazard area.

- *Hydrogeological Assessment by Aspect "draws on the Larson and Associates mapping"; references to the Graham Groundwater Study of 2007 and groundwater conditions.*

  Response:
  Aspect's Hydrogeological Assessment does not "rely" on the Larson and Associates study. Aspect included record information prepared by Larson and Associates to inform their mapping of the locations and elevations of off-site ponds and septic systems in the Grand Firs development. Ground surface elevations for the Project Site are from independent ground topographic survey prepared by licensed professional surveyors employed at Sitts & Hill Engineers. Groundwater monitoring elevations are measured using data loggers and through physical field measurements.

  As set forth in Aspect's Hydrogeological Assessment, a large body of work was previously completed for the broader Project Site area and was incorporated into the Site groundwater characterization as discussed in Aspect's report. Figures from prior reports, including several from a report referred to by Mr. Halmo as the "Graham

Groundwater Study of 2007" which was prepared by Pierce County and which was referred to in Aspect's report as the PGG (2007) report, the primary author. The "Graham Groundwater Study of 2007", contrary to Mr. Halmo's comments, was expressly discussed in Aspect's report with pertinent findings of the 2007 set forth under Section 1.4 and included figure excerpts as Appendix A.

The findings of Aspect's Site groundwater characterization are consistent with past groundwater studies that overlap the Site, which include the following (Aspect Memo, September 6, 2023):

- The report titled "*Hydrogeologic Framework, Groundwater Movement, And Water Budget In The Chambers-Clover Creek Watershed And Vicinity"* (USGS, 2010) evaluated a large dataset and developed groundwater contour maps depicting the groundwater flow direction across the Site and greater project area (included as Appendix B in Aspect, 2023). Their mapping indicated that groundwater flows to the northwest across the Site (away from the Grand Firs Development), with a high groundwater elevation extending from the southwest of the Grand Firs Development.
- The "*Graham Groundwater Study Report"* (PGG, 2007) identified the occurrence of a groundwater divide near the Site, separating groundwater flow into either a generally northward or southward flow direction. The location of this divide was not well defined in PGG's study, due to the coarse resolution of available data.
- The report titled *"Assessment of Surface Water and Groundwater Interchange within the Muck Creek Watershed Pierce County"* (Ecology, 2001) provided a generalized "dry season" groundwater contour map that encompassed the Site and broader area. The study indicated that shallow groundwater flowed generally to the northwest across the Site, and suggested localized deviations occur across the broad area of the study.
- The report titled *"Clover/Chambers Creek Geohydrologic Study for Tacoma-Pierce County Health Department"* (Brown and Caldwell,1985) also prepared groundwater contour and flow direction maps that extended across the Site and broader area. Their results also indicate that groundwater generally flows to the northwest across the Site, with the highest groundwater levels shown to the southeast of the Site, in the area of the Grand Firs Development. A groundwater divide is also suggested by this study as occurring within the Project area, which would separate flows into either a northward or southward direction.

The high spatial and temporal resolution data collected by Aspect during the Site groundwater study provided confirmation and refinement of these past studies, including the previous groundwater contour maps that overlapped the Site. Section 3.1.4 of the Aspect 2023 report describes the development and interpretation of the groundwater flow mapping for the Site in detail. Briefly, the Site groundwater study found that during the dry season, groundwater in the eastern portion of the Site generally flows to the north. During the wet season, high groundwater levels develop east of the Site, in the area of the Grand Firs Development, causing groundwater to be elevated in certain areas of the Site. These elevated groundwater levels form a

groundwater divide within the Site that directs groundwater within the Site to flow either northwesterly or southwesterly.

- *Rainfall in the 2020-21 testing time period had been on the mild side*.

  Response:
  Groundwater levels at the Site were measured and recorded at 15-minute intervals between September 2020 and November 2021, and Site precipitation was evaluated from a nearby weather station that reports to the National Oceanic and Atmospheric Administration (NOAA) Climate Data Online (CDO) database. The observed Site groundwater responses to precipitation are discussed in detail in Sections 2.4 and 3.1.1 of the Aspect (2023) report. The wet season precipitation over the monitoring period for the Site study (25.07 inches from November 1, 2020 to May 31, 2021) was approximately 94 percent of the average wet season precipitation calculated for the period of record spanning 2009 through 2021. Total monthly precipitation recorded from November 2020 through February 2021 was above average during the study monitoring period. This indicates that the monitoring period for the Site investigation represents typical weather conditions. Further, as discussed in Section 3.1.4.1 of the Aspect (2023) report, an assessment of the sensitivity of the mapped groundwater divide to additional precipitation found that once the seasonal peak groundwater level is reached, the location of the ground divide does not appear especially sensitive to additional precipitation. Aspect found that once Site groundwater levels reach a significantly elevated state during the wet season (e.g., exceeding about 478 feet at Well AMW-3), the groundwater divide ceases to migrate northward; this equilibration occurs because additional water level increases were found to occur similarly at all monitoring stations, such that the direction of groundwater flow was not significantly affected by increased water levels. This sensitivity assessment indicates that the monitoring period reflected the northernmost approximate location of the groundwater divide at the Site, where additional precipitation would not cause further substantive northward migration of the divide line.

- *Clear Creek Solutions Wetland Z's Inflow Volume Analysis states that the School District is not required to monitor the hydroperiod.*

  Response:
  Clear Creek Solutions Inflow Volume Analysis is based upon the most recent version of the Western Washington Hydraulics Model (WWHM 2012 version 2022/07/07) as required under the 2021 Pierce County Stormwater Management and Site Development Manual. The Model does not rely upon the physical monitoring of the Project Site to inform the results. The Model incorporates the full record of rainfall history in 15 minute time-steps, including the 1996 and 2005-2006 water years with even larger rainfall periods and storms incorporated into the Model that have not occurred in recorded history.

Further in response, the Clear Creek Solutions Wetland Z's Inflow Volume Analysis, in fact, evaluated the hydroperiod in conformance with the WWHM 2012 Model. Wetland Z is part of a larger depressional Muck Creek Category I wetland with sloped components, as determined by Raedeke Associates. This Category I wetland continues offsite to the east and south. Only a small portion of the northern edge of the Category I wetland (designated as "Wetland Z") is on the New Bethel High School site. The Pierce County Manual Minimum Requirement (MR) #8 requires that high quality wetlands, such as Wetland Z, be modeled to demonstrate compliance with the wetland protection standards using one of two methods. MR #8 is based on two methods (Method 1 and Method 2) depending on the type and characteristics of the wetland. Method 1 requires a minimum one year of monitoring followed by continuous simulation modeling of the wetland stage (water surface elevations). Method 1 only applies to Category I or II depressional or riverine impounding wetlands that the project proponent owns, or the project proponent has legal access to – for purposes of conducting monitoring in the wetland.

Regardless of whether legal access exists to a wetland, the controlling factor in deciding whether or not Method 1 is appropriate for demonstrating MR #8 compliance is that the wetland must be BOTH flat and accessible for stage (water surface elevation) monitoring.

The reason for limiting Method 1 to flat (depressional and riverine impounding) wetlands is because these are the only wetlands that have a flat water surface that directly responds to inflow to the wetland and that can be monitored for water level fluctuations in compliance with Method 1.

Sloped wetlands typically have an outlet that has the ability to release water from the wetland to compensate for the inflow and therefore maintain a much more consistent water depth than a flat wetland that is directly influenced by inflow and therefore minimizes the impact of additional inflow volume.

Wetland Z on the New Bethel High School Site has a sloped component. In other words, water in the wetland is constantly flowing from the upstream end to the downstream end. As a result of this constant flow from upstream to downstream, the effect of adding any additional water to the upstream end (the New Bethel High School Site) is minimal. Computation of the future 100-year flow into the wetland from the New Bethel High School Site shows only a 0.004 inch increase in water surface elevations in the 156-acre wetland compared to the existing conditions. This water level fluctuation increase in the wetland compared to existing conditions for even an extreme storm event is not observable. It is the thickness of one strand of hair.

As stated by Clear Creek Solutions, the developer of WWHM 2012, Method 2 is a harder standard to meet than Method 1. This is particularly true for summer low flows into a wetland where a very small change in wetland inflow volume can still exceed the Method 2 daily limit of no more than 20 percent inflow volume change from existing

conditions. These tiny summer changes in inflow volume can still exceed the 20 percent maximum change standard. Because of these low flow situations Method 2 is a more conservative standard for wetland protection compliance than Method 1.

The purpose of MR #8 is to provide protection (sustainability) of the wetland functions. Method 2 achieves that purpose over Method 1 for the Wetland Z wetland protection compliance analysis because site conditions determine, as shown here, that measuring water level fluctuation in the wetland is not feasible because of the characteristics of the larger Muck Creek off-site wetland, i.e., it is not a riverine impounding or depressional wetland. Therefore, whether or not legal access to the off-site wetland is available is irrelevant. The appropriate, more stringent, Minimum Requirement #8 Method 2 was utilized. As the Wetland Z Inflow Volume Analysis Study demonstrates, the discharge to Wetland Z from the developed condition will mimic the pre-developed condition.

- *Opposition to the proposed reduction of the Category I wetland buffer from 300 to 225 feet.*

  Response:
  Raedeke Associates independently investigated the mapped boundary of Wetland Z, as recorded in the Memorandum of Agreement under Pierce County Recording No. 200903020300 between Rainier View Christian Church and Pierce County executed on February 18, 2009. Raedeke Associates conducted the investigation of the mapped wetland boundary using standards of the USACE Wetland Delineation Manual. As described in the Raedeke Wetland Analysis Report, Raedeke Associates systematically walked up to 50 feet north and south of the mapped wetland boundary along its entire length, depending on steepness of topographical slope of the abutting uplands, to determine whether the current extent of Wetland Z remained accurate and found that the boundary of Wetland Z remained unchanged. Pierce County, through Scott Sissons, Environmental Biologist 3, determined, upon field review, that the 2009 mapped boundary of Wetland Z remained unchanged.

  Wetland buffers protect wetland functions by removing sediment, excess nutrients (phosphorous and nitrogen), and toxic substances (bacteria, metals, pesticides), by influencing the microclimate within the wetland, by maintaining adjacent habitat critical for the life needs of the many species that use wetlands, by screening adjacent disturbances (noise, light, etc.), and by maintaining habitat connectivity. As noted Raedeke Associates Memorandum, dated September 5, 2023, buffers alone have limited influence on wetland hydroperiod. Best Available Science (BAS) literature reviewed by WDOE (Sheldon et al. 2005, Hruby 2013) found that there was little published literature on the effectiveness of buffers in ameliorating the effect of changes in land use on wetland hydroperiod or in attenuation of surface water flow rates in the context of reducing the intensity of stormwater flows and potential flooding in a wetland. Some of the literature indicates that wetland buffers are far less effective at maintaining wetland hydroperiod than other mechanisms, such as controlling

impervious surfaces and utilizing effective stormwater management practices (Sheldon et al. 2005).

The buffer for Wetland Z will be reduced in width from 300 to 225 feet in accordance with criteria and requirements listed under PCC 18E.30.60.B.1.a. Pierce County buffer widths and the criteria and requirements necessary for reduction of a Category I wetland buffer are consistent with the most current recommendations by WDOE (2022) (Publication #22-06-014).

This approach includes options to reduce the buffer through protection of a habitat corridor, such as a stream corridor, and implementation of minimization measures to reduce the level of impact from the adjacent land use. The WDOE buffer width recommendations are based on a moderate-risk approach. This means that by adopting Ecology's recommendations, there is a moderate risk that wetland functions will be impacted. The recommended buffer widths were selected from the middle of the range of buffers suggested by BAS. The 2022 WDOE guidance is consistent with earlier WDOE (Sheldon et al. 2005, Hruby 2013, and WDOE 2016,) guidance. The proposed reduction of the Wetland Z buffer through protection of a habitat corridor connection to the greater Muck Creek system to the south, along with implementation of the proposed minimization measures described below, is consistent with the moderate risk approach recommended by WDOE.

As described in the Raedeke Associates *Wetland Analysis Report (*May 2023), the buffer reduction plan for Wetland Z meets all requirements of PCC 18E.30.60.B.1.a as follows:

• "Wetland Z is a portion of a larger Category I wetland that extends several miles to the south and is a Priority Habitat as defined by Washington Department of Fish and Wildlife (2008). Wetland Z and its buffer would be protected within a Critical Area Tract to remain contiguous and connected to off-site portions of the wetland and associated forested habitats all the way to the Muck Creek corridor. Protection of the corridor between Wetland Z and the Muck Creek corridor is a goal (GR D-11) of the Graham Community Plan.

• Measures to minimize the impacts of the NBHS on Wetland Z will be implemented by the School District and consist of the following: All lighting from adjacent areas of the NBHS, including lighting for the adjacent multi-purpose field will be shielded and directed downward and away from the wetland. The proposed lighting system will be a state-of-the art, fully shielded LED lighting system with extended shielding visors for additional mitigation measures (Stantec 2023). Analysis of the lighting plan (Stantec 2023) indicates that the lighting of the multi-purpose field will essentially have little or no spillover across the wetland buffer boundary and will be limited to the outer portion of the buffer. There will be a very small amount of glare that extends past the wetland buffer boundary line, but this also is not a bright amount of light, and it is expected to attenuate sharply to near zero past the edge of the wetland buffer boundary. The lighting system will be consistent with industry standards for high school sports facilities

and International Dark Sky community friendly recommendations for field lighting. Lighting impacts will be mitigated further by limiting lighting to occur primarily during late afternoon and evening hours until 10PM for the multi-purpose field. In addition, the inner 50 feet of the wetland buffer will be enhanced by densely planting trees and shrubs to establish a riparian forest community adjacent to the wetland boundary to shield the wetland from light generated by the NBHS. See the Wildlife Habitat Assessment for additional discussion of mitigation of potential lighting impacts.

- The New Bethel High School has been designed to limit noise impacts to Wetland Z. A noise study completed by Landau Associates (2023) found that operating noise levels at the Wetland Z area are expected to be 31 to 46 dBA, which are within the range of baseline noise levels recorded as already present at the Project Site and are expected to be within limits established by Pierce County (2022b) for the noise levels permitted to cross property boundaries. These are established as 55 dBA during the day (7 AM – 10 PM) and 45 dBA during the night (10 PM – 7 AM). Enhancement of the inner buffer of Wetland Z will provide additional noise mitigation by shielding the wetland from noise generating areas of the NBHS such as the multi-purpose field. See the *Wildlife Habitat Assessment Report* (RAI 2023a) for additional discussion of mitigation of potential noise impacts.

- During Project construction, erosion and sedimentation impacts to the wetland will be minimized through implementation of BMPs in according with a Pierce County-approved Stormwater Pollution Prevention Plan and Temporary Erosion and Sediment Control plan prepared in coordination with RAI. Any hazardous runoff and changes to water regime during Project construction will be minimized by routing all construction impacted stormwater to temporary stormwater storage and treatment facilities that will be constructed and managed in accordance with the Washington State Department of Ecology (2020) Construction Stormwater General Permit (CSWGP) per the NPDES permit that will be issued by the Washington Department of Ecology for the Project to Bethel School District. Once the NBHS is operational, all generated stormwater will be routed to permanent stormwater facilities that will be constructed to meet the Pierce County (2021) stormwater management requirements for protection of the Wetland Z hydrologic regimes and water quality discharged to the wetland.

- Impacts from pets and human disturbance will be minimized through use of a 6-foot-tall chain-link fence to be installed at the outer edge of the wetland buffer. In addition, the inner 50 feet of the Wetland Z buffer which currently consists of pasture dominated by grasses and few shrubs will be enhanced by densely planting native trees and shrubs to create a thorny, impenetrable barrier to entry. An ancillary benefit of the buffer enhancement will be to increase habitat diversity within the buffer and to establish additional vegetative shielding from noise generated by the NBHS. A locked gate through the chain-link fence will be installed to allow maintenance of the enhanced portion of the Wetland Z buffer during establishment of the trees and shrubs and for collection of mitigation performance and hydrologic data generated during a 5-year additional monitoring period.

• The generation of dust is most likely to occur during Project construction. Dust impacts will be minimized during construction through the use of BMPs such as regularly watering work areas, covering all truck loads, use of stabilized construction entrances, wheel washing, and other appropriate BMPs listed in the CSWGP (WDOE 2020) or otherwise required by Pierce County."

The 225-foot minimum buffer provided to Wetland Z exceeds the minimum buffers recommended by Best Available Science to provide water quality treatment and protection. Densely vegetated grassland within the wetland buffer, along with the highly infiltrative Spanaway soils mapped by the U.S. Natural Resources Conservation Service (NRCS) within the wetland buffer, will be especially effective in protecting water quality within the wetland. The proposed buffer also is within the range of buffer widths recommended by WDOE (2022) as appropriate for Category I wetlands that provide a high level of wildlife habitat functions such as Wetland Z. Enhancement of the wetland buffer with native trees and shrubs will provide additional benefit to wildlife that does not currently exist within the on-site portion of the buffer. As discussed above in our response to Comment 3, the 225-foot minimum buffer width provided to Wetland Z exceeds the standard 150-foot buffer required by Pierce County Code for fish-bearing streams and is consistent with WDFW riparian zone management width recommendations for protection of riparian functions and salmonids (Rentz et al. 2020).

Given the existing condition of the Project Site, including the area adjacent to Wetland Z which currently consists of pasture, as well as the landscape context, additional buffer area beyond that proposed would not significantly enhance the wetland functions or protection thereof. In addition, the Wetland Z buffer will be monitored regularly by RAI for a minimum of 5 years after Certificate of Occupancy has been issued by Pierce County. Raedeke will use the results of this monitoring to make maintenance recommendations to be implemented by the Bethel School District to ensure that new plantings within the buffer become well-established. Thus, Radeke Associates has concluded that implementation of the mitigation measures described above, wetland functions protected by the wetland buffer will not be adversely impacted by a reduction from 300 feet to 225 feet (which is exceeded in the easterly portion of Wetland Z buffer).

- *Concerns regarding the mosaic wetland buffer "located on the west side of land parcel 0418172009" and "March 29, 2011 photographs of bull dozers operating in the wetland"*.

  Response:
  As the public records on file with the Pierce County permit website establish, the permitting and restoration activities relating to Parcel 0418172009 arose from pasture management activities conducted by the District based upon the understanding that "the activities fell within the range of existing, exempt agricultural activities". As

further noted, in the County letter, dated October 10, 2011, "[p]hotographs and observations by local residents certainly give the impression that a substantial amount of grading was done, but soils data and survey information don't support that conclusion." The County noted that impacts to Parcel 0418172009 "appear[ed] to be minor". The site "has been altered by only a few inches in scattered locations and not to a degree that would cause any areas that met the wetland criteria to now not meet the wetland criteria". Permitted restoration was authorized by the County and the matter was resolved; the County's file was closed.

As described under the Wetland Analysis Report prepared by Raedeke Associates (May 2023), Raedeke Associates thoroughly investigated the Project Site, including areas previously identified as wetland by Habitat Technologies (2007) and Habitat Technologies and John Comis LLC (2011) within Parcel 4018172009. Raedeke Associates determination of wetland areas currently within the north-central portion of Parcel 0418172009 excluded a small depressional area at the north property boundary identified as "Z1" by Habitat Technologies and John Comis, LLC (2011). The "Z1" area is located northeast of "Wetland Z" (as identified by Habitat Technologies and John Comis, LLC [2011] and which is currently identified as Wetland A by Raedeke Associates. The location of this area is identified by Sample Plot SP-4 in the Habitat Technologies and John Comis, LLC (2011) report. Raedeke Associates determined that this area was not wetland based on the absence of indicators of a hydric soil as is required by the USACE Wetland Delineation Manual for a wetland determination. The RAI data form for SP-6 within this depression is provided in the Raedeke *Wetland Analysis Report (May* 2023). The difference between the Raedeke Associates determination of non-wetland for this area and the Habitat Technologies and John Comis, LLC determinations in 2011 is the passage of twelve years since the date of earlier investigation. Wetland delineations remain valid for a limited duration.

Current guidance by the USACE is that wetland delineations are valid for up to five years (RGLs 16-01 and 95-02) for purposes of administrating the Federal Clean Water Act (CWA). All local jurisdictions, including Pierce County must abide by regulations of the CWA. The five-year time period that a wetland delineation is considered to be valid is reflected in the County's administration of its Critical Areas Ordinance.

Raedeke Associates analyzed the currently delineated extents of wetlands in Pierce County Parcel 0418172009 to determine whether any of those areas could met criteria of PCC 18E.30.020.E.2 which defines a wetland mosaic complex. RAI measured the distances between the surveyed current extents of the most closely spaced assemblages of wetlands within Parcel 0418172009 using AutoCAD computer software. The results of our analysis of the two most closely spaced assemblages of wetlands in this portion of the Project Site are presented in Figure 8 of the *Wetland Analysis Report and Mitigation Plan* (RAI 2023b). Raedeke Associates determined that one wetland assemblage consisting of Wetlands F-north, F-south, and G met criteria of PCC 18E.30.020.E.2 to be considered a wetland mosaic. The other wetland assemblage consisting of Wetland A, B, and O does not meet the wetland mosaic criteria.

The 2011 Habitat Technologies and John Comis, LLC report described a wetland mosaic as being present within the north-central portion of Parcel 0418172009 consisting of three component areas: (1) the small depressional area (Z1) at the north property boundary that RAI determined to not be wetland, (2) "Wetland Z", and (3) Wetland W (as identified by Habitat Technologies and John Comis, LLC [2011] and which is currently identified as Wetland B by Raedeke Associates).

The 2011 Habitat Technologies and John Comis, LLC report did not provide descriptions of how the wetland boundaries were identified in the field or indicate that wetland boundaries were professionally surveyed, nor does the report provide the methods by which measurements between the three component parts of the described wetland mosaic were made to demonstrate how these three areas met the criteria for wetland mosaic provided in PCC 18E.30.020.E.2. Therefore, Raedeke concluded is was not possible to assess the accuracy of their determination that these three areas constituted a wetland mosaic at the time of their 2011 wetland investigation. Raedeke Associates has further concluded that due to the facts that (1) the small depressional area at the north boundary of Parcel 0418172009 does not currently meet criteria of the USACE Wetland Delineation Manual to be considered wetland and (2) the distance between the current extents of Wetlands A and B as identified by Raedeke Associates is greater than 100 feet, the three component areas identified by Habitat Technologies and John Comis, LLC would no longer be considered a wetland mosaic under current Pierce County Code.

Further, Scott Sissons, Pierce County Environmental Biologist 3, who conducted a on-site field review, issued a wetland review letter for the Project site, dated August 3, 2023, confirming the accuracy of the Raedeke Associates wetland verification and delineation for the entirety of the Project Site.

- *District's SEPA Checklist "states that the land parcels are not agricultural lands".*

  Response:
  The Project Site is not identified by Pierce County as property of long-term commercial significance for agricultural purposes under RCW 36.70A.170. In fact, under the last periodic update of the County's Comprehensive Plan in 2014-2015 in compliance with the requirements of the Growth Management Act, Pierce County specifically evaluated portions of the Project Site, among other properties, and determined that this Project Site was not a property which had long-term commercial significance for agricultural production.

- *Need to search for possible urban sites to serve an urban population are also discussed*.

  Response:
  There is a mischaracterization of the replacement school for the existing Bethel High School as a school "serving an urban population". This is not the case. New Bethel High School will continue to serve the exact same service boundary that serves the

student population of the existing Bethel High School which serves a rural student population in excess of 57%.

Moreover, there is no policy or regulatory requirement under the RCW 36.70A.211, the Pierce County Comprehensive Plan policies (LU-69 or LU-78), or PCC ch. 18A.43 to conduct any search in an urban area.

28.5 Letter, dated July 21, 2023, from Bryson Ahlers with the following comments:

- *Tansy Ragwort (poisonous to horses and cattle) is missing from a list of noxious weeds*.

  Response:
  It is possible that Tansy Ragwort occurs on the Site. However, Radeke Associates did not observe it during their field investigations of wetlands and wildlife habitats on site, which encompassed more than 20 field days over the last 3 years, many of which occurred during the spring and early summer months. The list of plants observed during our field investigations is documented in both the *Wildlife Habitat Assessment Report* (May 2023) and the *Wetland Analysis Report and Mitigation Plan* (May 2023) which was representative of Site conditions during the numerous Site investigations.

  Consistent with the Pierce County Noxious Weed Control Board requirements and guidelines (PCC 18J.15.100C(3), Raedeke Associates will assist the District in preparing an Operations and Maintenance Manual for the Site relating to the Critical Areas and site which will include a section on control of noxious weeds per the Pierce County Noxious Weed List, including guidance for prevention of introduction of noxious weeds and removal methods. An Operations and Maintenance Manual for the Site with guidance from Raedeke Associates shall be a mitigating condition of the Project.

- *States that certain birds are missing from the list include Northern Harrier, Killdeer, Juncos, Am Robins, Mallard ducks, Canada geese, Coopers hawk, hummingbirds, mourning doves, owls, red-winged blackbird, and Towhees. Skinks and newts are also missing from the amphibian list.*

  Response:
  The species noted in the comments are all relatively common species in appropriate habitats in the Puget Sound lowlands and may occur on the Project Site and vicinity. Raedeke Associated did, in fact, observe dark-eyed junco, American robins, mallards, and rufous hummingbirds during our investigations as these birds are listed in the Raedeke Associates *Wildlife Habitat Assessment Report* (May 2023). The SEPA checklist lists common species which were observed on the Site, but was not intended to be an exhaustive list and expressly referred to the *Wildlife Habitat Assessment Report* for a complete list of observed wildlife.

  The *Wildlife Habitat Assessment Report* states that the Site may be suitable for a variety of species adapted to the habitats on Site and in the vicinity but all species would not

necessarily be found on-Site during all times of year. Nevertheless, Raedeke Associates documented the presence or sign of 28 species during its numerous field investigations. The list is not intended to be an exhaustive list of all species that may be present at other times, but a representative list of species using the site as Raedeke Associates searched for signs of presence of listed or other Priority species.

Under Pierce County Code 18E.040.010), the purpose of a wildlife habitat assessment is to evaluate the potential presence or absence of a *regulated* fish or wildlife species or habitat affecting a subject property and the potential for impacts to such features as a result of a development proposal. In addition, Raedeke Associates evaluated the potential presence or absence of commonly occurring wildlife species in relation to habitats that would be retained or expanded under the Project proposal to assess any potential for significant adverse environmental impacts to those species. Raedeke Associates Wildlife Assessment Report has been reviewed by Scott Sissons, Pierce County Environmental Biologist 3, and his review letter dated August 3, 2023 concurred with Raedeke Associates conclusion that other than wetlands, no other regulated Fish and Wildlife Species and Habitat Conservation Areas per PCC 18E.40 have been found on Site.

28.6 Letter, dated July 21, 2023, from the Department of Ecology with the following comments:

- *All grading and filling of land must utilize only clean fill. All other materials may be considered solid waste and permit approval may be required from the health department prior to filling. Removed debris must be disposed of at an approved site.*

  Response:
  The District acknowledges Ecology's standard conditions which will be implemented.

- *If contamination occurs during construction, testing of the potentially contaminated media must be conducted. If contamination of soil or groundwater is readily apparent, or is revealed by testing, the Department of Ecology must be notified.*

  Response:
  The District acknowledges that if contamination occurs compliance with all regulations under the Model Toxics Control Act is required, including but not limited to testing and notification of Ecology.

28.7 Letter, dated July 21, 2023, from Pierce Transit with the following comments:

- *State, regional and local planning policies encourage entities to site major services and facilities near transit routes. The site is not located near a transit route and is not located within Pierce Transit's Public Transportation Benefit Area. It is unlikely that any sort of fixed route transit service will be provided in the future by a third party.*

Response:
The New Bethel High School will serves the same student population as the existing Bethel High School which is a predominantly rural student population residing within the Rural-designated area of Pierce County. New Bethel High School does not predominantly serve an urban student population. The District will have bus service available for all students attending the New Bethel High School which will include off-site athletic events and other school-arranged or sponsored events. Historically, the District has offered bus service during the school calendar year and summer school.

At the present time, Pierce Transit has no routes coordinated with any Bethel Schools in the Urban area.
The Washington State Department of Transportation is leading a multimodal connectivity study which includes the Graham area. A Draft Study has specifically identified 224th Street East as a major east-west corridor serving significant existing residential densities which would be served with transportation system improvements.

- Recommends that the District provide alternative transportation options to the site in order to mitigate and lessen potential traffic impacts.

Response:
The District engaged Heffron Transportation to conduct a Transportation Study. The Transportation Technical Report (September 2020) prepared by Heffron Transportation identified certain right-of-way improvements to 224th Street including a signalized intersection and right turn pocket and improvements on 70th Avenue East, including a two-way left turn lane at the bus access to the Project Site and a right turn pocket at the intersection of 70th Avenue East and 224th Street East.

28.8 Letter, dated July 21, 2023, from Pierce County Traffic which identified transportation-related conditions for the Project, including:

- 70th Avenue East and 224th Street East Right-Turn Pocket: In accordance with the right-of-way plans approved by Pierce County on June 12, 2023, under Permit No. 968618 with Deviations approved under Application No. 946913 on September 22, 2021, Bethel School District shall: (i) construct a northbound-to-eastbound right-turn pocket on 70th Avenue East with a curb, gutter, and sidewalk will be located along the curb return at the southeast intersection of 70th Avenue East and 224th Street East with a single ADA ramp and (ii) modify the existing traffic signal to serve the new right turn pocket. A turn lane with 266 feet of storage and an 80-foot opening has been coordinated with County Traffic Section staff and is incorporated into the approved plans.

- 70th Avenue East Two-Way Left Turn Lane (Bus Entrance): In accordance with the right-of-way plans approved by Pierce County on June 12, 2023, under Permit No. 968618 with Deviations approved under Application No. 946913 on September 22, 2021, Bethel

School District shall construct a center-two-way left-turn lane with a total storage length of 275 feet at the proposed school bus access driveway. In addition, the District shall dedicate, as public right-of-way, to Pierce County five (5) feet along the westerly perimeter of the Site within Parcel No. 0418172009.

- 224th Street East and 77th Avenue East Signalized Intersection and Right-Turn Pocket: Install a new traffic signal at the intersection. The new traffic signal would be a fully actuated mast arm system with signal operating parameters provided by Pierce County Traffic Section staff. The District will dedicate three (3) feet along that portion of the northerly perimeter of Parcel No. 0418172023 for public right-of-way to widen the west leg of 224th Avenue E to provide an eastbound to southbound right-turn pocket (for turns entering the Site) with 200 feet of storage and an 80-foot opening. The south leg would be widened to provide one southbound entering lane and two northbound exiting lanes (one for left-turns and one for shared through and right-turn movements). The northbound left-turn lane would have 218 feet of storage and a 120 foot opening. Curbs, gutter, and sidewalk will be located along each of the four curb returns. Two ADA ramps will also be installed at each curb return location. The signal will include pedestrian-actuated crossing signals and marked crosswalks on all legs of the intersection. The District shall obtain approved right-of-way plans from Pierce County for the described right-of-way improvements. A Deviation under Application No. 958401 was approved by Pierce County on May 7, 2021 for a reduced distance of four (4) feet to 1.5 feet from the back of gravel to the proposed new right-of-way line along the south side of the right-turn pocket.

  Response:
  The District agreed with the Pierce County Traffic Division requirements which were consistent with the recommendations under the Transportation Technical Report prepared by Heffron Transportation.

  Right-of-way plans with required Deviations have been approved by Pierce County for the improvements on 70th Avenue East and the right-of-way improvements on 224th Street East and 77th Avenue East are in their final review.

Documents Submitted with SEPA Expanded Checklist and Relating to Threshold Decision

29. The following documents were submitted by the District and were reviewed in conjunction with the environmental review of the Project under the Expanded Environmental Checklist and in conjunction with the comments received by the District:

- *Geotechnical Engineering Report (*Migizi Group, Inc., September 13, 2021).
- *New Bethel High School Air Quality Screening-Level Analysis* (Landau Associates, April 27, 2023).
- *New Bethel High School Wetland Analysis Report and Mitigation Plan* (Raedeke Associates, May 29, 2023).

- *New Bethel High School Hydrogeologic Assessment (*Aspect Consulting, March 27, 2023*).*
- *New Bethel High School Wildlife Habitat Assessment* (Raedeke Associates, May 25, 2023).
- *New Bethel High School Noise Study* (Landau Associates, May 2, 2023).
- *New Bethel High School Site Lighting and Multi-Purpose Field Lighting Report* (Stantec, May 2023).
- *Bethel High School Replacement Project Cultural Resources Record Search* (Historical Research Associates, Inc., January 8, 2021).
- *New Bethel High School Replacement Project Archaeological Resources Inventory* (Historical Research Associates, Inc., March 6, 2023).
- *Transportation Technical Report for the New Bethel High School* (Heffron Transportation, Inc., September 14, 2020).
- *Western Wetlands Inflow Volume Analysis* (Clear Creek Solutions, March 20, 2023).
- *Wetland Z Wetland Inflow Volume Analysis* (Clear Creek Solutions, April 24, 2023).
- *Project Storm Facility Systems Technical Memorandum* (Sitts & Hill Engineers, April 26, 2023).
- *Conditional Use Permit Submittal* to Pierce County (Application Nos. 1014850, 1014851, 1015022, 1015023, 1015024).
- *Stormwater Drainage Report* (Sitts & Hill Engineers, Inc., September 20, 2023 submitted to Pierce County, Application No. 943653).
- *Memorandum* (Aspect Consulting, September 6, 2023) – Appendix A.
- *Technical Memorandum* (Raedeke Associates, Inc., September 5, 2023) – Appendix B.
- *Memorandum (*Sitts & Hill Engineers, September 21, 2023) – Appendix C.
- *Memorandum, Analysis of Stormwater Downstream Impact* (Clear Creek Solutions, August 30, 2023) – Appendix D.
- *Memorandum, 2021 Pierce County Stormwater Manual, Minimum Requirement No. 8* (Clear Creek Solutions, August 30, 2023) – Appendix E.
- *Memorandum to Dan Buhl re Wetland Application Nos. 1015022 and 1015023, Fish & Wildlife Application No. 1015024* (Scott Sissons, Pierce County Environmental Biologist 3, August 3, 2023).

- *Letter re Review of the Wetland and Fish and Wildlife Applications* (Scott Sissons, Pierce County Environmental Biologist 3, August 3, 2023).

- *Letter of Compliance for Outdoor Sports Lighting* (Dark Sky International, September 12, 2023) – Appendix F.

- *Archaeological Plan Bethel School District No. 403 and Puyallup Tribe of Indians, New Bethel High School Project (*Effective September 19, 2023) – Appendix G.

- *Pierce County Public Permit Records* and public information on file with the District.

EARTHWORK/STORMWATER

30. The western portion of the New Bethel High School Site is generally level with gentle slopes within the area. The eastern portion of the Site contains a more prominent slope that generally descends to the southeast.

31. The Soils Conservation Survey (SCS) for Pierce County maps soils on the Site as 41A - Spanaway gravelly sandy loam soils across the interior of the Site; 13B - Everett very gravelly sandy loam at the west ends of the Site; and 12A - Dupont Muck soils within the designated wetland area to the southeast. Test pit explorations completed as part of the geotechnical report for the Project generally confirmed the actual soil conditions and revealed relatively consistent subgrade conditions across the Site consisting of a surface mantle of sod and top soil, underlain by native recessional outwash deposits. This material is generally underlain by Vashon-aged glacial till. Recessional outwash that was encountered on the Site generally consisted of medium dense gravel with fine to coarse sand and scattered cobbles/boulders. This material was typically encountered within 12 to 24 inches of the existing grade and eventually transitioned to glacial till soils with depth.

32. Proposed filling and grading of the existing Site would be completed for the proposed building, parking lots, walkways, sidewalks and athletic fields. Approximately 170,000 cubic yards of excavated material is anticipated for the Project and general fill is anticipated to be equal to the 170,000 cubic yards that would be excavated. In addition, approximately 62,000 cubic yards of material (mainly strippings) would be exported.

33. With the development of the proposed New Bethel High School Project, it is anticipated that approximately 26 acres of the Site would be covered with impervious surfaces. New impervious surfaces would generally consist of building footprints, future portables, paved areas (surface parking, vehicular access/circulation areas, paved pathways), and tennis courts.

AIR QUALITY

34. An *Air Quality Screening-Level Analysis* was completed for the Project by Landau Associates. During construction, the New Bethel High School Project could result in temporary increases in localized air emissions associated with particulates and construction-related vehicles and

equipment. With the implementation of best management practices, it is anticipated that air quality emissions would not be significant.

35. Upon completion of the New Bethel High School, the primary source of emissions would be from vehicles travelling to and from the school. Since most of these trips currently occur at the existing Bethel High School and would simply be moved to the new Bethel High School Site, it is anticipated that significant air quality impacts from vehicle emissions would not occur. In addition, the transportation analysis for the Project indicates that traffic from the Project would result in minimal increases in delay at signalized intersections and therefore traffic-related air quality impacts would not be expected to be significant.

36. The estimated lifespan GHG emissions for the New Bethel High School would be approximately 341,644 $MTCO_2e$. Based on an assumed building lifespan of approximately 62.5 years, the proposed Project would be estimated to generate approximately 5,467 $MTCO_2e$ annually. For reference, the Washington State Department of Ecology threshold for potential significant GHG emissions is 25,000 $MTCO_2e$ annually, Therefore, the proposed New Bethel High School would be minimal and is therefore not anticipated to generate any significant amount of GHG emissions. Landau Associates concluded that the Project would not create any adverse, significant impact on climate change.

WATER RESOURCES

37. A *Wetland Analysis Report and Mitigation Plan* was prepared for the Project by Raedeke Associates which included 20 field investigations. The Site contains 12 existing wetlands in the western portion of the Site (Parcel No. 0418172009) which have been classified by Raedeke Associates as Category III or IV wetlands. These wetlands are labeled as Wetland A, B, C, E, H, I, J, K, L, Y and O; one wetland is also considered a mosaic wetland (Wetland F/G) and consists of three distinct but closely spaced small wetlands. Buffers for these wetlands range from 50 feet for Category IV wetlands to 80 feet for Category III wetlands in accordance with Pierce County regulations.

    Three potential off-Site wetlands were also identified abutting the Site and have been labeled as Potential Off-Site Wetlands 1, 2 and 3. All three wetlands are categorized as Category III wetlands with associated 80-foot buffers. However, it should be noted that Potential Off-Site Wetland 3 is located in the northwest corner of Parcel No. 0418172009 and its buffer area is interrupted by an off-site asphalt driveway which prevents buffer functions associated with that wetland and therefore the buffer does not extend into the New Bethel High School site in accordance with Pierce County Code 18E.20.035.

38. Direct impacts to the wetlands on the site would be largely avoided, except for grading and enhancement work to expand and enhance Wetland C as mitigation permitted by the U.S. Army Corps of Engineers (USACE): (i) for ditch impacts for half-street improvements along 70th Avenue E and (ii) a very small (8 sq. ft) area of Wetland Y for installation of nine (9) fence posts along the perimeter of the site facing 70th Avenue E.

39. Construction activity would occur adjacent to the wetlands and buffers located on the westerly portion of the site and would include development of a new access driveway used for bus access and relocation of a Tacoma Public Utilities pole from 70th Avenue E. The bus access would traverse a portion of wetland buffers associated with Wetlands A and B. Grading and fencing associated with a small portion of the bus parking area would affect wetland buffers identified as Wetlands B and O. Wetland mitigation in the nature of enhanced plantings of scrub shrub and native shrub would be installed within the wetland buffers of Wetlands A, B and O. Buffer averaging in accordance with PCC 18E.30.60B2 would be utilized for Wetland A in order to accommodate the location of the bus access road and for the Wetland F/G mosaic to accommodate a necessary relocation on-site of a Tacoma Public Utilities pole. A buffer reduction in accordance with a waiver under PCC 18E.20.035 would be utilized for Wetlands B and O to accommodate construction of the access driveway.

40. Each of the wetlands in the western portion of the site (Parcel 0418172009) has been formally delineated to confirm a regulatory compliant buffer although the District is setting aside an expanded area as a Critical Areas Tract within the western wetlands substantially in excess of the minimum buffer requirements. This additional area of 11.6 acres significantly expands the protection of the wetlands and preserves a total of approximately 24 acres.

41. Grading within a portion of the regulatory wetland buffer perimeter of Wetland C associated with a dispersal trench will provide adequate hydrology to Wetland C. A dispersal trench will also be installed with the Critical Area Tract (outside of the regulatory buffer perimeter) to provide adequate hydrology to Wetland L. Wetland C would be expanded and the inner 50 feet of its buffer enhanced to offset impacts to a portion of the roadside ditch along 70th Avenue East in conjunction the public right-of-way improvements required by the Project and impacts to eight (8) square feet for installation of nine (9) chain link fence posts within Wetland Y.

42. The Project proposes no less than a 225-foot buffer for the Category I wetland (Wetland Z) (which is substantially exceeded in some areas) as allowed under PCC 18.E.30.060B through a buffer reduction from the standard 300 foot buffer to accommodate the stormwater facilities and Multi-Purpose Field.

43. With the mitigation enhancement of Wetland C as authorized under the USACE 404 permit (for the 70th Avenue ditch impacts relating to ROW improvements and installation of 9 fence posts within Wetland Y), approximately 115 cubic yards of material will be removed from the wetland and used within uplands (part of the Critical Area Tract) adjoining Wetland C to create naturalistic contours between the upland buffers and created additional area for Wetland C.

44. The existing Category I wetland (Wetland Z) and a minor portion of the buffer abutting the boundary of the Wetland Z located in the southeast corner of the Site is within a 100-year floodplain according to Pierce County and under the FEMA 2017 Flood Plain mapping (Firm Panel No. 53053C0587E). No Project grading will occur within Wetland Z.

45. A *Hydrogeologic Assessment* was completed for the Project by Aspect Consulting. In the eastern portion of the site, a highly permeable aquifer was identified within the recessional outwash

sediments that is amenable to future on-site infiltration facilities. An array of eight groundwater monitoring stations constructed in the recessional outwash indicated that during the dry season, flow within this aquifer is northward across the site, away from Wetland Z. As groundwater levels rise from increased recharge during the wet season, groundwater divides form northerly within the recessional outwash aquifer over time, such that groundwater in the eastern portion of the Site flows either north or south, depending upon the groundwater catchment area (divide) during the wet season. The data collected for the assessment defined the timing and extent of groundwater divide formation at the Site under current conditions, which were utilized to locate proposed facilities to mimic the existing groundwater input to Wetland Z.

46. In the western portion of the Site, perched groundwater was identified atop glacial till, which daylights in several small depressions that were established as wetlands. As discussed in the Hydrogeologic Assessment, water level monitoring in several of these depressions does not indicate the occurrence of a hydraulic connection in the nature of a continuous perched flow condition within the westerly portion of the site. The wetlands vary widely in response to precipitation and wetland areas at lower elevations become dry while water is still present in wetlands at higher elevations (e.g., Wetland E dries before Wetland A, and Wetland K dries before Wetland C). The water level monitoring indicates localized zones of perched water atop an undulating till surface.

STORMWATER

47. A *Hydrogeologic Assessment* was completed for the Project by Aspect Consulting. In the eastern portion of the site, a highly permeable aquifer was identified within the recessional outwash sediments that is amenable to future on-site infiltration facilities. An array of eight groundwater monitoring stations constructed in the recessional outwash indicated that during the dry season, flow within this aquifer is northward across the site, away from Wetland Z. As groundwater levels rise from increased recharge during the wet season, groundwater divides form within the recessional outwash aquifer northerly over time, such that groundwater in the eastern portion of the Site flows either north or south, depending upon the groundwater catchment area (divide) during the wet season. The data collected for the assessment and evaluated by Aspect Consulting defined the timing and extent of groundwater divide formations (capture zones) at the Site under existing conditions, which were utilized to locate proposed stormwater facilities to mimic the existing groundwater input to Wetland Z.

48. These systems will be compliant with the 2021 Pierce County Stormwater Management and Site Development Manual. The western stormwater system addresses the westerly portion of the Site contributing surface and interflow to the Category III and IV wetlands within Parcel 0418172009 except the portion which is re-directed east to the southern system. Flow control and runoff treatment would be provided through dispersion fields, basic filter strips, and Jellyfish® filters. Runoff from Project surfaces within the western system either sheet flows directly to an associated dispersion field or will be collected in catch basins and released to a dispersion field or basic filter strip through a dispersion trench prior to discharge to Wetlands A, B, C, E, L and O.

49. The southern stormwater system would contribute surface, interflow and groundwater to Wetland Z. It consists of a lined bioretention facility for water quality treatment which collects stormwater and discharges to a thick membrane lined detention pond that is connected to a pump station. The pump station will meter out stormwater based upon discharge rates, utilizing the WWHM model, as described under the *Wetland Z Volume Inflow Analysis* prepared by Clear Creek Solutions. The proposed south detention pond contains two piped discharges. The first discharges at a prescribed flow rate from January 5 through October 14 to the south infiltration trench (located south of the Multi-Purpose Field) which infiltrates and contributes stormwater to Wetland Z, consistent with the Wetland Protection requirements (Minimum Requirement #8, Method 2) of the 2021 Pierce County Stormwater Manual. The second discharge would be connected to a second pump station and would discharge at a prescribed flow rate via a series of catch basins and piping solely to the north infiltration pond. Pump Station 2 will be available to operate all year when there is 0.5 ft of water above the bottom of the South Detention Pond.

50. The northern stormwater system would be located north of the most northerly groundwater zone and would not contribute surface, interflow or groundwater to Wetland Z. The northern system would collect, treat and infiltrate stormwater from the southerly and easterly portions of the site, runoff from the north, the developed portion of the Rainier View Christian Church property, 77th Avenue E, and a portion of 224th Street E. Flow control and water quality treatment requirements would be met with a bioretention pond.

PLANTS

51. Approximately 63 acres of existing vegetation would be removed from the New Bethel High School, primarily consisting of grass and pasture area.

52. Consistent with Pierce County Code (County-wide and Graham Community Plan) requirements, new planted landscape areas would be provided as part of the Project within perimeter buffer areas and parking lot islands. Additional plantings would be provided in the plaza and courtyard spaces around the proposed building. The planting palette for the new planting areas would consist of a mixture of evergreen and deciduous shrubs and trees including native and adapted species such as Acer circinatum, Pseudostsugamenzisii, Thjua plicata, Cornus sericea, Mahonia aquifolium and Symphoricarpos albus and a variety of shade trees. Vegetation on the outlying portions of the Site would consist of a mixture of new and retained natural grass.

53. The Project proposes to preserve the existing 2.6 acre stand of mature trees on the northeasterly portion of the Site. The integration of the existing trees near the eastern property line preserves a mature stand of trees representative of the historical forests in the Graham community, visually enhances the Site, provides shade and increases habitat value. Trees along the perimeter of the northwesterly area of Parcel No. 0418172019 are preserved as well as tree protection area along what is an existing fence line of Parcel No. 0418172009.

54. An emphasis has been placed on using native plants and drought tolerant ornamental shrubs, to minimize water use and maintenance. The wide variety of plant and tree types will increase

biodiversity on the site, provide shade, and nesting areas. The landscape plan includes approximately 278 trees in excess of Pierce County requirements and does not include the substantial number of trees and plantings associated with enhancement of Wetland C and Wetland Z which are part of the Mitigation Plans prepared by Raedeke Associates.

55. The bioretention ponds will be planted, consisting of primarily native plants within the treatment areas, with the bottom and side slopes of the areas primarily grass seeded. Additional dense plantings will be added around the Southern detention system and the Northern infiltration system to provide a screening buffer from the neighboring properties as consistent with Pierce County Code requirements.

56. Approximately 57 acres of open space areas which include the wetlands and the substantially larger Critical Area Tracts, vegetated areas, and landscaping trees and shrubs (excludes smaller segregated landscaped ornamental areas) would be retained and will provide habitat.

ANIMALS

57. A *Wildlife Habitat Assessment* was prepared for the Project and indicated that there is no evidence of federal or state threatened or endangered species or "species of Local Importance" as defined under Pierce County Code title 18E.40 on the Site and none were considered likely to occur. Investigation of the Site included in excess of 20 field days. The report evaluated the North American wolverine, marbled murrelet, streaked horned lark, yellow-billed cuckoo, Oregon spotted front, monarch butterfly, Taylor's checkerspot butterfly and both state and federal threatened and endangered salmonids within Pierce County. Although WDFW map indicates Wetland Z as gradient accessible for listed salmonids, research and field investigations determined that given the absence of a defined stream channel or bed within Wetland Z, the intermittent stream flow within the Muck Creek Basin area downstream, and the dense cover of reed canary grass in the off-site portions of Wetland Z that it is highly unlikely for listed salmonids to occur within the limits of Wetland Z. Coho salmon and winter steelhead trout are known to occur in portions of Muck Creek, downstream from the Project Site.

58. The Wildlife Assessment Report further concluded that with the adaptability of the local wildlife to human activity observed on the Project Site coupled with the all of the Project-designed minimization measures, significant adverse impacts to wildlife would not be probable and certain species, such as birds, may likely benefit from enhancement with availability for additional perching and foraging sites.

59. The proposed Project includes measures that would enhance portions of the site as open space that would be utilized by wildlife, including:

- Retention of approximately 57 acres of open space areas inclusive of Critical Areas Tracts and vegetated areas will be retained onsite.
- Re-vegetation of disturbed areas.
- New landscape areas with native trees and shrubs.

- Revegetation of wetland buffer areas that would be disturbed during construction.
- Enhancement and expansion of Wetland C.
- Development of a permanent stormwater system to protect hydrology of wetlands, including Wetland Z which drains to the North Fork of Muck Creek.
- Connectivity from the southerly boundary of Wetland Z to the off-site, downstream wetland area
- Minimization of artificial light impacts to wetlands.
- Minimization of noise impacts to wetlands.

ENERGY

60. Electricity and natural gas would be the primary source of energy that would serve the proposed New Bethel High School Project. Energy-efficient heating, ventilation, and air conditioning systems with management systems will be installed. The Project would not be anticipated to affect the use of solar energy by adjacent properties.

61. Most interior LED light fixture will be configured for manual or automatic continuous dimming for further energy reduction. Most individual fixtures may be controlled on an individual basis or grouped with software to be controlled in user-defined groups to tailor the light to the user's needs and to maximize energy-reduction goals.

62. Extensive "daylighting" and strategic use of translucent skylights will be implemented to minimize energy use.

63. Radiant-heated floor will be installed to reduce energy use.

64. Infrastructure to accommodate roof top solar panels will be installed.

65. The proposed New Bethel High School Project would be required to meet or exceed the requirements of the Washington Sustainable Schools Protocol (WSSP) which is intended to provide conservation measures for public school buildings to reduce energy consumption and achieve environmental qualities.

ENVIRONMENTAL HEALTH

66. Based on a review of the Washington State Department of Ecology website, there are no existing or former contamination sites on or in the vicinity of the New Bethel High School site. As with any construction Project, accidental spills of hazardous materials from equipment or vehicles could occur; however, a spill prevention plan will minimize the potential of an accidental release of hazardous materials into the environment.

67. During construction, gasoline and other petroleum-based products would be used for the operation of construction vehicles and equipment. During the operation of the school, chemicals that would be used on the Site would be limited to cleaning supplies and supplies in

conjunction with science laboratory classes. All such chemicals would be stored in an appropriate and safe location.

68. Implementation, as proposed, of appropriate BMPs and TESC measures in accordance with an approved SWPPP, consistent with standards of the Washington State Department of Ecology Construction Stormwater General Permit and the 2021 Pierce County Stormwater Management and Site Development Manual, including specific measures to prevent and control spills of pollutants, and to handle, control, and store potential contaminants will minimize the potential for an accidental release of hazardous materials into the environment.

NOISE

69. Temporary construction-related noise would occur as a result of on-site construction activities associated with the Project such as construction activities including, excavation/grading, demolition of the existing building, construction of the new building and associated Site improvements. Construction activities would comply with applicable Pierce County Noise Regulations (PCC 8.76), including PCC 8.76.070 which identifies exemptions from noise regulations for construction activities. Overall, construction-related noise would be temporary and is not anticipated to result in a significant adverse impact.

70. A *Noise Study* was completed for the proposed Project by Landau Associates which analyzed the potential noise implications that could result from the development of the new high school and associated athletic facilities (Appendix F to the Environmental Checklist for the full technical report). The primary source of noise from operation of the new building would be from the operation of three fluid coolers. With the installation of a 10.75-foot high masonry wall around the service yard, it is anticipated that noise from operation of the fluid coolers would comply daytime and night time noise requirements (55 dBA and 45 dBA, respectively). Although emergency generators are generally exempt from noise regulations, the maintenance testing of the generators is subject to regulations. The Noise Study evaluated testing of all the generators, including the back-up generators associated with the southern stormwater system together with operation of the fluid coolers, and determined that the sound levels are still well under Pierce County noise standards.

71. Noise modeling for student and staff arrivals and departures from access on 70th Avenue E and access from 77th Avenue E was also completed for the Project. Sound levels at neighboring properties abutting the east property line were anticipated to increase by 1 dBA which is not discernable to humans. The installation of a six-foot high solid wood fence 566 feet along the northwesterly property line (Parcel 0418172009) of the bus entrance at 70th Avenue E will minimize noise from arrivals and departures. Sound level increases from arriving and departing school buses are in compliance with levels at locations under the Pierce County Noise regulations (PCC ch. 8.76) with a short period of discernable increases from 3 to 9 dBA.

72. An analysis of noise associated with athletic events included noise modeling for the maximum use of the six tennis courts, the softball field, the baseball field, the Multi-Purpose Field, and associated grass field. The modeling also assumed three worst case scenarios of: (i) a high

school track event (with 400 spectators) at the Multi-Purpose Field and concurrent tennis matches, (ii) baseball/softball and tennis, and high school track event, a baseball/softball game, and concurrent tennis matches with all courts in use with 30 spectators. Based upon these inputs, sound levels at the nearest residents as well as an on-site receptor representing Wetland Z (the Category 1 wetland), were evaluated. These analyses demonstrated compliance with the County limitations and increases in sound levels generally between 1 to 2 dBA which is barely noticeable. Properties located near the tennis courts may experience noticeable increases in the range from 2 dBA to 7 dBA upon a worst case scenario of the unlikely occurrence of 30 spectators cheering continuously during the tennis matches.

73. The *Noise Study* further evaluated the athletic events based upon the proposed public address (PA) systems consisting of five speakers at the Multi-Purpose Field and two speakers at the grass field (used for discus/javeling-throwing field) and whistle blowing (assuming a high effort and without any directional benefit although whistle blowing is highly directional) as typically used in athletic events, both sources being short and intermittent noise sources. As demonstrated in the *Noise Study*, mitigation measures for the PA systems to restrict the volume of the system through installed software so as not to exceed a ceiling/maximum sound level of 70 dBA at the center of both the Multi-Purpose Field and the adjacent grass field will minimize any noise impacts. These would be established during a volume calibration and equalization testing to be conducted prior to usage. No music will be played on the PA systems. Model-calculated sound levels of the PA system at the Multi-Purpose Field and the grass field would be within the allowed noise limit for a source emitting noise less than 15 minutes in any hour.

74. The *Noise Study* completed for the Project indicates that noise associated with the Project, including operation of the building, onsite traffic, student/staff activity, and athletic facility activities (including use of the PA system) would comply with applicable Pierce County noise limits and that the anticipated noise sources and noise levels would not represent a significant adverse impact to the surrounding community.

75. The proposed New Bethel High School Project would include measures that would be provided to minimize noise levels from the site, including:

    - Installation of a 10.75-foot high masonry wall around the service yard to minimize noise from the proposed fluid coolers.
    - Installation of a six-foot high 566 feet long solid wood fence north of the bus entrance at 70th Avenue E to minimize noise associated with arrival and departure of buses on the Site.
    - Installed software for the PA system would be utilized to restrict the volume of the system to not exceed a ceiling/maximum sound level of 70 dBA at the center of the Multi-Purpose Field and adjacent grass field to ensure that the use of the system complies with applicable noise limits. These levels would be established during volume calibration and equalization testing that would be conducted prior to operation.
    - No music will be played on the PA system.
    - Post-Occupancy Compliance Evaluation will occur for the following systems:
        - Fluid coolers

- Emergency generators
- On-Site bus arrival and departure
- PA system calibration testing

LAND USE

76. Adjacent land uses north and westerly of the site are comprised of the Rainier View Christian Church and suburban-level dense development of single family residences; further to the north, beyond 224th Street E, are single family residences and North Star Elementary School. The area to the east and southerly of the site are urban-level density subdivisions consisting of a 402 single family subdivision known as Grand Firs and 57 residential parcels known as Country West. The areas to the south of the Site is comprised of single family residences. Adjacent land uses to the west of the site, beyond 70th Avenue E, are comprised of the Graham Fire and Rescue Headquarters (Station 94) and other civic uses. The proposed New Bethel High School Project would be designed to be consistent with the applicable requirements of the Pierce County Code Development Regulations and Zoning (Title 18) and would not be anticipated to significantly impact adjacent land uses.

77. Existing wetlands are located on and adjacent to the New Bethel High School Site and a *Wetland Analysis Report and Mitigation Plan* was prepared for the Project by Raedeke Associates (Raedeke Associates May 2023). Multiple field investigations and data review were conducted as part of the analysis to confirm wetland delineations and habitat ratings, document upland and wetland baseline conditions, and document any potential off-site wetlands along the Site boundary. In total, 13 wetlands were identified and delineated on the Site, including 12 in the western portion of the Site located at Parcel 0418172009 and one Category I wetland (described for purposes of the Project as Wetland Z) in the southeastern portion of the Site located on Parcel 0418172010. All of the wetland areas will be protected consistent with regulatory buffer requirements and will be set aside in large Critical Area Tracts with an additional 11.6 acres of land set aside for the westerly wetlands within a Critical Area Tracts in Parcel 0418172009.

78. Mitigation measures have been identified as part of the *Wetlands Analysis Report and Mitigation Plan* to maintain the quality, hydrology, and function of critical areas on the Site during construction and post-construction. With the implementation of those measures, no significant impacts to wetlands or downstream areas (including the North Fork of Muck Creek) would be anticipated.

AESTHETICS

79. The New Bethel High School would be designed consistent with the Graham Community Design Standards and include substantial use of traditional “school house” red brick, angular roof lines reminiscent of barns, wood siding, varied façade treatments through brick stacking patterns, recessed areas of the facades and courtyards, white accent mouldings, cornices, covered porticos, wrapped windows, varied roof patterns, and a mural honoring the historical forest resource in the Graham community.

80. Modulation of the scale and massing is achieved through varying building heights, articulation of building footprints, window-encased breezeways, varied façade patterns, areas of building reliefs, and varying exterior materials. The proposed central placement and orientation of the school building provides substantial separation from adjacent properties and maintains substantial setbacks from adjacent properties, including over 1,000 feet from the north property line, over 500 feet from the east property line, nearly 900 feet from the south property line, and nearly 1,400 feet from the west property line. There is approximately 25 acres of land separating the easterly and westerly residential areas.

81. The location of the school building also incorporates the existing topography of the Site and surrounding area to maintain public sightlines from the two major arterials surrounding the Site (224th Street E and 70th Avenue E) as well as from neighboring properties to the west.

LIGHT AND GLARE

82. A *Light and Glare Report* was prepared for the New Bethel High School Project by Stantec. The report included an analysis of the lighting sources for the Project, including parking lots, walkways, plaza areas and the Multi-Purpose Field.

83. Parking lots, walkways and plaza areas would be illuminated to provide safety for students, staff and visitors consistent with an overarching goal of the Graham Community Design standards to "enhance visibility and security". Exterior lighting in these areas would consist of high efficiency, fully shielded, cutoff LED luminaires which would precisely control the distribution of light downward. The proposed lighting design is intended to eliminate direct uplighting and minimize reflected light that could produce "sky glow". Lighting will be mounted on 24-foot tall poles as allowed by the County-wide design standards in lieu of 16-foot tall poles (under the Graham Community Plan) for parking lot illumination subject to a Site Review/Deviation Request; walkways and plaza areas would utilize 12-foot tall poles. The 24-foot tall poles are designed at the maximum separation to prevent off-site light spillage and to substantially minimize the volume of light and glare more effectively than 16-foot tall poles. Using 24-foot poles substantially reduces the quantity of necessary poles from 93 poles to 60 poles and 99 luminaires to 64 luminaires.

84. Consistent with the Graham Community Plan and the Countywide design standards, the proposed lighting design and lighting levels for the parking lots, walkways, and plaza areas would be the minimum needed for visibility and safety. There is a substantial reduction in impacts to the surrounding properties with the use of 24' pole heights:

- Improved aesthetics with reduced visual clutter within the Project Site
- Reduction of overall lighting luminance
- Reduction in visible direct glare light sources
- Reduction in reflected glare off light poles
- Reduction of overall lighting reflected into the surrounding community and up to the atmosphere known as "sky glow.

85. All parking lot and driveway lighting will be equipped with motion sensors to dim the lighting to 50% unless motion is detected. In addition, these lighting systems would also be operated by lighting control system that would be interfaced with the District's Light Scheduling System to control the hours of operation during school or community use of the facility.

86. The proposed Multi-Purpose Field would be the only lighted athletic facility on the Site and would allow evening uses in the late fall and winter months for school athletic activities, as well as community uses. The Multi-Purpose Field lighting design would consist of six 80-foot tall poles with the incorporation of two low wattage shield luminaires mounted at a height of 16 feet on four poles and aimed above the field to ensure player visibility that are consistent with industry standards for pole heights in high school facilities and Dark Sky International (formerly known as International Dark Sky Association) community friendly recommendations for field lighting. The proposed lighting system will be a state-of-the art and the most technologically advanced lighting system available in the sports industry to provide lighting control directed to the field with full cut-off style shielding. The use of 80-foot tall light poles would nearly eliminate all off-site glare since the steep angle of the light would be directed only at the intended field area. The directional lighting from 80-foot tall poles would also minimize direct glare impact into Wetland Z and adjoining properties to the southwest and east. The Multi-Purpose Field lighting fixtures incorporate additional mitigation design features to further reduce any potential impacts with use of extended 24-inch shielding visors which further reduces glare and block light from being emitted into the atmosphere which would minimize potential "sky glow". Additional reduction in direct glare is also achieved by the use of internal shielding of the LED diodes. The use of this equipment blocks a significant amount of direct light that is emitted into the atmosphere.

87. To ensure visibility and safety of the players on the field, the lighting system is designed with 4000K Color Corrected Temperature ("CCT") luminaires under a Site Review/Deviation Request. Exterior athletic fields are typically installed with a range of 4000K to 6,000K color temperatures because there is a zone of darkness above the surface of the field created by the substantial reductions in the amount of up light and corresponding "sky glow" generated from the proposed lighting system. This zone of darkness impacts a player's ability to track a ball and other players on the field unlike vehicle drivers on streets which are not looking up into the sky. The increase of the CCT from 3000K to 4000K will not provide any material corresponding increase in the perceived brightness to the surrounding area but 3000K would be detrimental to visibility on the field and the associated safety of players on the field.

88. Dark Sky International, a recognized body, that advocates for preservation of the night sky, reviewed the proposed lighting system for the Multi-Purpose Field and determined that it exceeded Dark Sky compliance standards for minimization of lighting impacts and preservation of the night sky: (i) total light provided, (ii) amount of backlight generated by the luminaires, (iii) amount of spill light, (iv) percentage of uplight generated by the lighting system, and (v) amount of direct glare produced from off field locations. Dark Sky International issued to the District a Compliance letter, dated September 12, 2023, associated with the Multi-Purpose Field Lighting System.

89. As an additional mitigation measure incorporated to provide compatibility with the surrounding community, the Multi-Purpose Field lighting system will be controlled by a lighting control system and interfaced with the School District's Light Scheduling System to implement operating procedures to establish, among other protocols, that the athletic events will be scheduled to conclude by 10:00 p.m. and Field lights shall remain off when no school or community use is scheduled.

90. The Project-designed lighting systems will create no significant adverse impact to the surrounding community and implement the policies and standards of the County-wide and Graham Community Plan to "shield lighting", "decrease glare, "preserve the dark skies" and maintain the "visibility of stars".

91. Heavily shielded lighting and minimum CCT incorporated in the proposed design for the Multi-Purpose is also consistent with the focus of the JBLM Lighting Study to minimize light spillage, glare and "sky glow" to minimize impacts to night-time training operations.

RECREATION

92. The New Bethel High School would include several new athletic facilities on the site, including six tennis courts, a baseball field with synthetic turf for the infield, a softball field with synthetic turf for the infield, a synthetic track with a synthetic turf Multi-Purpose Field, and a grass practice field. Only the Multi-Purpose Field would include field lighting (see above Lighting Section for further details on lighting). The proposed athletic facilities would be utilized by the school for physical education classes and the school's sports teams and clubs. The facilities would also provide additional recreational opportunities needed in the Graham community which support physical activity for healthy lifestyles.

HISTORIC AND CULTURAL PRESERVATION

93. There are no existing buildings or structures located on the New Bethel High School site. Based on information from the Washington State Department of Archaeology and Historic Preservation's (DAHP) Washington Information System for Architectural and Archaeological Records Data (WISAARD), the closest listed buildings are the Fox Farm barn, the Gus Sorenson barn and the Yotter Farm barn which are located approximately 0.5 to 1.0 miles to the east and are listed on the Washington Heritage Barn Register.

94. An Archaeological Resources Inventory was completed for the New Bethel High School Project and determined that the Project would not be anticipated to impact any precontact, ethnographic period, historic Native American, or historic-period resources.

95. The Puyallup Tribe of Indians commented, requesting additional soil probes across the Project Site together with a modified Inadvertent Discovery Plan associated with construction activities. The District met and engaged with the Puyallup Tribe with the parties agreeing upon an Archaeological Plan, effective September 20, 2023 providing for 710 additional soil probes

across the Site and a modified Inadvertent Discovery Plan. See Archaeological Plan attached hereto as Appendix .

96. The District has notified the Muckleshoot Indian Tribe, the Nisqually Indian Tribe, and the Squaxin Island Tribe and the Department of Archaeology and Historic Preservation (DHAP) of the Archaeological Plan and the commencement of the additional soil probes. The District will continue to maintain communications with these Tribes and DAHP during the soil probes work and the results of the soil probes.

97. The District shall implement the Inadvertent Discovery Plan and provide the Plan attached to the Archaeological Plan to the District's contractor.

TRANSPORTATION

98. A *Transportation Technical Report* for the Project was prepared by Heffron Transportation, Inc. The main site access driveway for the school would occur at 77th Avenue E, which intersects 224th Street E directly across from the main driveway for North Star Elementary School. By Ordinance 2021-4, the former public right-of-way known as 77th Avenue E was vacated. This access, owned by the District, will provide the primary access for students, staff, and visitors. The access will also be shared with Rainier View Christian Church. 77th Avenue E would then be extended south of the existing cul-de-sac by the District for access to the new school only which will be gated. The 224th Street E / 77th Avenue E intersection is planned to be signalized as part of the New Bethel High School Project and would provide access to all on-Site parking spaces and a family-vehicle loading area. A second driveway, accessing the school bus load/unload area, is proposed from 70th Avenue E. The school-bus load/unload area would not be formally connected internally to the other on-site parking or load/unload areas; however, there would be an emergency access connection that would remain closed (with removable bollards) and opened for emergency access or egress.

99. The Project would require roadway improvements at three off-site public roadway locations; these have been coordinated with and approved by Pierce County and are incorporated into the overall Project proposal. The improvements are listed and described below.

- **224th Street E / 70th Avenue E** – The Project would construct a northbound-to-eastbound right-turn pocket on 70th Avenue E and modify the existing traffic signal to serve the new turn pocket.
- **224th Street E / 77th Avenue E / Site Access** – The Project would install a new traffic signal and will dedicate right-of-way to construct an eastbound-to-southbound right-turn pocket on 224th Street E. The Project would also widen the south leg to provide three lanes—one southbound entering lane and two northbound exiting lanes (one for left-turns and one for shared through and right-turn movements).
- **70th Avenue E** – The Project would construct a center-two-way left-turn lane at the proposed school-bus access driveway with frontage improvements in accordance with a deviation request. Five (5) feet along the perimeter of the Site within Parcel No.

0418172009 will be dedicated by the District to Pierce County, as requested by the County.

100. The proposed New Bethel High School is estimated to generate 4,060 trips per day (2,030 in, 2,030 out), which would be a net increase of 347 trips per day when compared to the existing Bethel High School. The new school is estimated to generate 1,100 trips during the morning peak hour (748 in, 352 out—a net increase of 94 trips (64 in, 30 out) compared the existing school) and 660 trips during the afternoon peak hour (211 in, 449 out—a net increase of 56 trips (18 in, 38 out) compared the existing school).

101. The school in coordination with the selected contractor (Cornerstone) will develop a construction management plan (CMP) that addresses traffic control during school construction. The CMP would define truck routes and lane closures, as necessary. The CMP would also include measures to keep adjacent streets clean on a daily basis at the truck exit points (such as street sweeping or on-site truck wheel cleaning) to reduce tracking dirt offsite. The CMP would identify parking locations for the construction staff on-site or at an off-site location.

PUBLIC SERVICES

102. The proposed Project is intended to replace the existing Bethel High School facility to provide adequate capacity to support the current and future student populations within the Bethel School District and provide modernized facilities to serve students.

103. Public services are now provided to the existing Bethel High School. As such there would be an incremental increase associated with future growth of the student population as proposed. Service providers plan for gradual increases in services demands and therefore, no significant public service impacts would be anticipated.

UTILITIES

104. All necessary utilities are currently available to the Project Site.

105. Electrical service would be extended from the 70th Avenue E right-of-way into the Project Site. Extension of natural gas is not planned for the Project. Telephone communications and internet service are provided by Rainier Connect and Lumen and would also be extended from the 70th Avenue E right-of-way.

106. Domestic water and fire flow water service is provided by Washington Water Service (formerly known as Rainier View Water Company). An extension from an existing water main would be required to serve the proposed Project. Existing 12-inch mains are located within 77th Avenue East and 70th Avenue E.

107. The wastewater system for the New Bethel High School is designed to meet the standards and regulations of the Washington State Board of Health Onsite Sewage Systems Chapter (WAC 246-272A) and the Tacoma-Pierce County Board of Health (TPCH) Resolution #2018-4560

Environmental Health Code Chapter 2 Onsite Sewage. The Project would be served by six onsite wastewater systems designed to treat and dispose of 3,500 gallons of wastewater per day each. The systems would be comprised of a sewage collection line, septic tank, pump tank, effluent pump, control panel, sewage transport line, and sand-lined pressure drainfield. The wastewater system is designed based on historical existing high school student and staff flows, waste strength and the prevailing site soil conditions as required by the Pierce County Health Department regulations. The TPCH has approved the on-site sewage disposal system subject to issuance of the Conditional Use Permit and decommissioning of any existing wells on-site.

SUMMARY

108. The proposed Project, as designed, with the incorporated Project-imposed mitigating conditions is not anticipated to result in significant adverse environmental impacts.

MITIGATION CONDITIONS

PIERCE COUNTY CODE

1. The District shall obtain a Conditional Use Permit to allow a public school in an R-10 land use designation consistent with rural school criteria identified in Pierce County Code 18A.43.020.

2. The District shall comply with all applicable design standards subject to approval of Site Review/Deviation, as requested.

3. A storm drainage plan, including temporary erosion control plans, shall be submitted to the Development Engineering Section as part of the site development plans. The drainage plans shall be in accordance with the current ordinance at time of application, Title 17A, Construction and Infrastructure Regulations – Site Development and Stormwater Drainage.

EARTH

4. Construction will comply with all temporary erosion and sedimentation control measures and best managements practices consistent with the 2021 Pierce County Stormwater Management and Site Development Manual will be implemented during construction.

5. Establish clearing and grading limits and provide temporary erosion control measures, such as:
    - Construction Entrance
    - Silt Fence
    - Tree Protection
    - Temporary Conveyance Ditches
    - Temporary Sediment Ponds

6. All silt fence and construction limits shall be reviewed by the Project Civil Engineer (Sitts and Hill Engineers) and Wetland biologist (Raedeke Associates) in the field prior to proceeding with any mass grading to ensure protection of all wetlands and to minimize disturbance within the critical area tracts. Maintain erosion control BMPs through duration of the Project. No uncontrolled stormwater runoff shall be discharged off-site during grading operations.

7. The District, in coordination with Sitts & Hill Engineers and the selected contractor, Cornerstone, will develop a construction sequence plan to ensure protection of the critical areas through best management practices. This includes the installation of stormwater conveyance systems and stormwater detention and infiltration systems as soon as reasonably possible to control stormwater volume to conform to the stormwater development plan to the extent reasonably possible during construction.

8. Critical area protection construction monitoring will be conducted by Raedeke Associates of all activities affecting critical areas within the Site for the duration of the New Bethel High School construction activities. Monitoring activities will include the following:

    8.1 Conduct weekly inspections during project construction to verify that work activities by the General Contractor and sub-contractors do not affect wetlands, downstream waters, or other regulated critical areas beyond those impacts that are permitted by the U.S. Army Corps of Engineers and Pierce County. Provide inspection documentation to the Bethel School District within two business days.

    8.2 Conduct weekly inspections during project construction to inspect and monitor placement, condition, and effectiveness of stormwater BMPs and Temporary TESC measures implemented by the General Contractor during construction.

    8.3 Provide inspection documentation to the Bethel School District within two business days.

    8.4 Review General Contractor's implementation of the SWPPP. Review monthly Discharge Monitoring Reports submitted by the General Contractor to the Department of Ecology. Provide a report of findings to the District within seven business days.

    8.5 Review Stormwater Monitoring Plans on a quarterly basis and verify that they are being property updated and implemented. Provide a report of findings to the District within seven business days after review is completed.

    8.6 Verify on a quarterly basis that the monitoring by the General Contractor of discharges by the stormwater conveyance systems, as specified in the Project NPDES Permit, are being performed in accordance with standards of the Construction Stormwater General Permit. Provide a report of findings to the Bethel School District within seven business days after review is completed.

AIR

9. Construction activities would be required to comply with Puget Sound Clean Air Agency (PSCAA) regulations, including Regulation I, Section 9.11 (prohibiting the emission of air contaminants that would be injurious to human health) and Regulation I, Section 9.15 prohibiting the emission of fugitive dust, unless reasonable precautions are employed.

10. During construction/site preparation and operation, disturbed areas would be watered as needed to control dust.

11. Standard operating procedures for school buses during student drop-off and pickup will be implemented to minimize the idling time and related emissions by shutting off their engines when parked.

12. New school buses would be fitted with technological features that reduce emissions and engine emissions would be gradually reduced in the future as older vehicles continue to be replaced by newer, lower-emitting vehicles.

WATER AND WATER RESOURCES

13. Stormwater management systems have been designed for the Project to segregate the Site into three areas based on their location, including the western, southern and northern area systems. These systems shall be compliant with the 2021 Pierce County Stormwater Management and Site Development Manual.

14. As part of the stormwater management systems, infiltration to Wetland Z would be consistent with the wetland protection requirements of the 2021 Pierce County Stormwater Manual (Minimum Requirement #8, Method 2) as approved by Pierce County. Inflow to Wetland Z through infiltration would mimic the natural groundwater conditions and events prior to development. Discharge flow rates have been determined to reproduce daily, monthly and annual flow volumes into Wetland Z consistent with Method 2 wetland protection, Minimum Requirement No. 8 criteria:

    - (1) Monthly inflow volumes from the proposed development site cannot increase or decrease by more than 15 percent from existing conditions, and
    - (2) Daily inflow volumes from the proposed development site cannot increase or decrease by more than 20 percent from existing conditions.

15. As additional mitigation measures associated with the southern system, redundant systems through secondary and tertiary resiliency measures are incorporated into the stormwater management system for the Project.

15.1 In the event of a power outage, two generators, one primary and one backup, with an automatic transfer switch has been designed to ensure that the southern stormwater system continues to manage all surface runoff within the tributary area of the southern system.

15.2 In the event of a complete failure of the pump systems, an emergency overflow spillway and infiltration pond system have been designed to capture outflow from the South Detention Pond which will discharge to the adjacent infiltration pond system for protection of Wetland Z.

16. All performance standards and monitoring requirements set forth under the *Wetland Assessment Report* prepared by Raedeke Associates shall be implemented.

17. Critical Area protection construction monitoring will be conducted by Raedeke Associates of all activities affecting critical areas within the Site for the duration of the NBHS construction activities. Monitoring activities will include:

- Conduct weekly inspections during project construction to verify that work activities by the General Contractor and sub-contractors do not affect wetlands, downstream waters, or other regulated critical areas beyond those impacts that are permitted by the U.S. Army Corps of Engineers and Pierce County. Provide inspection documentation to the Bethel School District within two business days.

- Conduct weekly inspections during project construction to inspect and monitor placement, condition, and effectiveness of stormwater BMPs and Temporary TESC measures implemented by the General Contractor during construction. Provide inspection documentation to the Bethel School District within two business days.

- Review General Contractor's implementation of the SWPPP. Review monthly Discharge Monitoring Reports submitted by the General Contractor to the Washington Department of Ecology. Provide a report of findings to the District within seven business days.

- Review Stormwater Monitoring Plans on a quarterly basis and verify that they are being property updated and implemented. Provide a report of findings to the District within seven business days after review is completed.

- Verify on a quarterly basis that the monitoring by the General Contractor of discharges by the stormwater conveyance systems, as specified in the Project NPDES Permit, are being performed in accordance with standards of the Washington State Construction Stormwater General Permit. Provide a report of findings to the District within seven business days after review is completed.

• Accompany the District and/or the Pierce County or WDOE representatives or Site inspections, as needed.

• Provide a quarterly report to the District, throughout the duration of construction to summarize construction activities related to on-site critical areas regulated by the USACE and Pierce County and status of critical area restorations and any other mitigation actions that have been undertaken by the General Contractor.

18. Raedeke Associates shall concurrently conduct additional hydrologic monitoring within Wetlands A, E, K, L, and Z for five years following construction of New Bethel High School. The purpose of the additional monitoring will be to assess whether the on-site delineated wetlands have sufficient hydrology for three out of five years of the monitoring period to meet the Federal wetland definition (Federal Register 1986:41251). A determination that an impact to a wetland has occurred will be made if the following condition is met:

• For three out of the five years of this additional mitigation monitoring period, the wetland must be inundated or saturated within 12 inches of the surface for 30 consecutive days during the growing season to satisfy the wetland hydrology parameter of the USACE Wetlands Delineation Manual (Environmental Laboratory 1987). The wetlands to be monitored were selected because they are regionally important (Wetland Z) or they are near portions of the Project Site that will be developed.

• Assessment of hydrologic impacts to Wetland C will be part of the 5-year long performance monitoring program required by the USACE as a condition of Permit # NWS-2022-377.

19. Contingency plans, in coordination with the District, the District Project consultants, and Pierce County (and/or USACE as applicable) will be implemented if the long-term performance monitoring within the mitigation sites, including the expanded Wetland C, the Wetland Z enhanced buffer, and other areas where temporary Project impacts to wetlands or their buffers have been restored shows that the mitigation objectives and performance standards have not been met.

20. Contingency plans, in coordination with the District, the District Project consultants will be implemented if performance monitoring within the expanded Wetland C or the additional long-term monitoring within Wetlands A, E, K, L, or Z documents that those wetlands no longer meet the wetland hydrology parameter of the USACE Wetlands Delineation Manual.

PLANTS

21. Consistent with Pierce County Code requirements, new planted landscape areas would be provided as part of the Project within perimeter buffer areas and parking lot islands.

Additional plantings would be provided in the plaza and courtyard spaces around the proposed building. The planting palette for the new planting areas would consist of a mixture of evergreen and deciduous shrubs and trees including native and adapted species such as Acer circinatum, Pseudostsugamenzisii, Thjua plicata, Cornus sericea, Mahonia aquifolium and Symphoricarpos albus and a variety of shade trees. Vegetation on the outlying portions of the Site would consist of a mixture of new and retained natural grass.

22. Approximately 57 acres of open space areas which includes the wetlands and the substantially larger Critical Area Tracts, vegetated areas, and landscaping trees and shrubs (excludes smaller segregated landscaped ornamental areas) will be retained.

ANIMALS

23. Measures incorporated into the Project would preserve and enhance portions of the site as open space which would be utilized by wildlife, including: retention of approximately 57 acres of open space areas inclusive of Critical Areas Tracts and vegetated areas will be retained onsite; re-vegetation of disturbed areas; new landscape areas with native trees and shrubs; revegetation of wetland buffer areas; enhancement with woody material and shrubs with the expansion of Wetland C; development of a stormwater system to protect hydrology of wetlands; connectivity from the southerly boundary of Wetland Z to the off-site, downstream wetland area; minimization of artificial light impacts to wetlands; and, minimization of noise impacts to wetlands.

24. The most valuable habitats and the only existing 2.6 acre stand of trees on the Site, will be retained in an open space area (including approximately 35 acres of Critical Area Tract) to provide interconnecting open spaces.

25. Exceedance of Pierce County tree unit requirements (approximately 278 trees) will provide habitat that does not now exist on the Site for resting, perching, and nesting.

26. Raedeke Associates will assist the District in preparing an Operations and Maintenance Manual for the Site relating to the Critical Areas and the Site in general which will include a section on control of noxious weeds per the Pierce County Noxious Weed List, including guidance for prevention of introduction of noxious weeds and removal methods.

ENERGY

27. The proposed New Bethel High School Project would be required to meet or exceed the requirements of the Washington Sustainable Schools Protocol (WSSP) which is intended to provide conservation measures for public school buildings to reduce energy consumption and achieve environmental qualities. Measures to be incorporated into the proposed building include: utilizing low maintenance and rapidly renewable materials; energy efficient domestic water heating; energy efficient HVAC systems; energy management system for HVAC and lighting systems; radiant heated flooring; solar readiness for rooftops; extensive daylighting

and strategic use of skylights; low energy LED lighting with occupancy and daylight sensors; and building system commissioning.

ENVIRONMENTAL HEALTH

28. Implementation, as proposed, of appropriate BMPs and TESC measures in accordance with an approved SWPPP, consistent with standards of the Washington State Department of Ecology Construction Stormwater General Permit and the 2021 Pierce County Stormwater Management and Site Development Manual, including specific measures to prevent and control spills of pollutants, and to handle, control, and store potential contaminants will minimize the potential for an accidental release of hazardous materials into the environment.

NOISE

29. Installation of a 10.75-foot high masonry wall around the service yard to minimize noise from the proposed fluid coolers.

30. Installation of a six-foot high, 566 foot long solid wood fence north of the bus entrance at 70th Avenue E to minimize noise associated with vehicles on the site.

31. The school buses will be required to turn off their engines when parked.

32. Installed software for the PA systems will be utilized to restrict the volume of the system to not exceed a ceiling/maximum sound level of 70dBA at the center of the Multi-Purpose Field and adjacent grass field to ensure that the use of the system complies with applicable noise limits. Post-installation volume calibration and equalization testing will be conducted by Landau Associates prior to operation to ensure modeled sound levels are achieved. Landau Associates will prepare a Technical Memorandum confirming the results of the calibration and equalization testing to confirm compliance.

33. No music will be played on the PA systems.

34. The District will engage Landau Associates to conduct post-occupancy sound measurements of the coolers, the emergency generators, and the arrival and departures of the school buses to confirm compliance with Pierce County Code. Landau Associates will prepare a Technical Memorandum to confirm the sound measurements.

LAND USE

35. The proposed design of the New Bethel High School Project is consistent with Countywide Comprehensive Plan Policies and Design Standards and Graham Community Plan Policies and Design Standards with requested Deviations/Site Review.

36. The school building is reflective of historical and traditional rural design in the use of "school-house red" brick, brick patterns, cornices, mouldings, roof lines, porches and porticos, and incorporation of a mural to honor the historic timber industry in the Graham community plan.

37. Intentional design features provide for reduced massing with diversification of scale through segmented buildings. Modulation is achieved by varying building heights, articulation of building footprints, a window-encased breezeway, window patterns, varied facade patterns and varying substantial distances from abutting properties, areas of building reliefs and recessed areas, and varied exterior materials (brick and wood elements).

38. The school building is located in the central portion of the site to provide substantial setbacks varying from approximately 500 feet to over 1000 feet to the abutting properties coupled with large open space areas (approximately 25 acres) of separation both westerly and easterly to adjacent properties.

39. Mitigation measures are incorporated as part of the Project design to ensure compatibility with adjacent residential areas through noise attenuation measures (fencing along Parcel 0418172009) and a walled service area, programming of the public address system for athletic events, lighting of only the Multi-Purpose Field, and designed driveways and parking area lighting and the Multi-Purpose field lighting systems with state-of the art lighting systems that are heavily shielded coupled with standard operating procedures to control operation of the lighting systems through the interface with the School District's Light Scheduling System. The lighting systems are also equipped to dim to 50% when no motion is detected or as programmed following conclusion of an event at the Multi-Purpose Field. All athletic events will be scheduled to conclude by 10:00 p.m.

AESTHETICS

40. The proposed design of the New Bethel High School Project would be consistent with Countywide Design Standards and Graham Community Plan Policies and Design Standards as allowed with Deviations/Site Review.

41. The proposed orientation and location of the building would maintain public sightlines from 224th Street E and 77th Avenue E as well as from the west.

LIGHT AND GLARE

42. Proposed parking lot light poles heights (24 feet) are designed to prevent off-site light spillage and minimize glare and lighting impacts more effectively than 16-foot tall poles.

43. The proposed Multi-Purpose Field lighting fixtures is designed with state-of-the art and the most technologically advance sports field lighting to direct light on the playing field away from the adjacent properties and Wetland Z and will minimize light spill, including the use of "full cut-off" style and extended 24-inch shielding visors to further reduce glare, focus light, and block light from being emitted into the atmosphere to minimize potential "sky glow".

44. All parking and driveway lighting, and the Multi-Purpose Field lighting will be subject to operating procedures and controlled by a lighting control system that is interfaced with the School District's Light Scheduling System.

45. All parking and driveway lighting will be further mitigated by operation of the lighting control system which will be interfaced with the School with the following standard operating procedures:

- Parking and drive aisle lighting will come on 15 minutes prior to the arrival of Staff at 5:00 a.m. and will to be turned off approximately 15 minutes following completion of school's janitorial services (typically around 11:15 p.m.).

- Lighting will be turned off during the daylight hours and on weekends except in the event of an activity on the Site.

- The lighting system will also be installed with motion detectors that will keep the lighting dimmed to 50% unless motion is detected.

46. The New Bethel High School Field Lighting will be controlled by a lighting control system and interfaced with the School District's Light Scheduling System, to implement the following operating procedures:

- For school or community use of the Field on any day of the week, the Field lights will turn on approximately 60 minutes prior to the scheduled use and will be turned off approximately 30 minutes after an event to allow safe existing of players and spectators and maintenance of the Field by District staff.

- The lighting system shall be dimmed to 50% following the conclusion of a scheduled event to allow for safe egress and custodial services after completion of scheduled use.

- Athletic events will be scheduled to conclude by 10:00 p.m.

- Field lights shall remain off when no school or community use is scheduled.

47. The District's lighting design consultant, Stantec, will conduct post-occupancy testing of each exterior lighting system installed to ensure appropriate aiming of the lighting system. Any associated necessary adjustment(s) to the lighting system(s) shall be made by the District's lighting design consultant and a Technical Memorandum will be prepared.

RECREATION

48. The proposed Project would include several new athletic facilities on the site, including six tennis courts, a baseball field with synthetic turf for the infield, a softball field with synthetic turf for the infield, a synthetic track with a synthetic turf multi-purpose field, and a grass practice field. Only the Multi-Purpose Field would include field lighting (see lighting section above). The proposed athletic facilities would be utilized by the school for physical education classes and the school's sports teams and clubs. The facilities would also provide additional recreational opportunities for the benefit of the Graham community when not in use for school functions.

HISTORIC AND CULTURAL PRESERVATION

49. The District shall implement the Archaeological Plan developed with the Puyallup Tribe of Indians, effective as of September 19, 2023.

50. The District has notified the Muckleshoot Indian Tribe, the Nisqually Indian Tribe, and the Squaxin Island Tribe and the Department of Archaeology and Historic Preservation (DHAP) of the Archaeological Plan and the commencement of the additional soil probes. The District will continue to maintain communications with these Tribes and DAHP during the soil probes work and the results of the soil probes work.

TRANSPORTATION

51. 224th Street E / 70th Avenue E – Construct a northbound right-turn lane. Pocket length shall be 275 feet, with openings and tapers to meet Pierce County standards. Modify/re-construct the traffic signal at the intersection to accommodate the additional lane. If adequate right-of-way exists on the south east corner of the intersection, curb, gutter, sidewalk, and curb ramps shall be provided.

52. 224th Street E / 77th Avenue E – Install a fully-actuated mast arm traffic signal system at the intersection. Construct an eastbound right turn lane. Pocket length shall be 200 feet, with openings and tapers to meet Pierce County standards. Provide marked crosswalks for all legs of the intersection. Curb, gutter, sidewalk, and curb ramps shall be present at all radii for this intersection (two ramps are required at each corner).

53. 70th Avenue E (Bus Entrance) – Construct a center-two-way left-turn lane with storage for 275 feet at the proposed school-bus access driveway and frontage improvements in accordance with a deviation request.

54. Dedicate right of way, as needed to allow for construction and maintenance of all improvements. In general, four feet of right of way is required behind all improvements, i.e., signal cabinet, sidewalk, back of shoulder, if no sidewalk, etc., unless otherwise approved via the deviation process.

55. All construction shall meet Pierce County standards, unless otherwise approved via the deviation process. All construction shall meet accessibility guidelines.

56. The school in coordination with the selected contractor (Cornerstone) will develop a construction management plan (CMP) that addresses traffic control during school construction. The CMP would define truck routes and lane closures, as necessary. The CMP would also include measures to keep adjacent streets clean on a daily basis at the truck exit points (such as street sweeping or on-site truck wheel cleaning) to reduce tracking dirt offsite. The CMP would identify parking locations for the construction staff on-site or at an off-site location.

NOTE: The issuance of this Mitigated Determination of Nonsignificance does not constitute project approval. The Bethel School District No. 403 will comply with all other applicable federal, state or local requirements.

NOTE: Pursuant to RCW 43.21C.075, the final decision of the Responsible Official may be appealed. In accordance with Bethel School District SEPA Policy & Procedures, the District will issue a Notice of Action pursuant to RCW 43.21C.080 with the applicable appeal period.

MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

APPENDICES

A. *Memorandum* (Aspect Consulting, September 6, 2023)

B. *Technical Memorandum* (Raedeke Associates, Inc., September 5, 2023)

C. *Memorandum (*Sitts & Hill Engineers, September 21, 2023)

D. *Memorandum, Analysis of Stormwater Downstream Impact* (Clear Creek Solutions, August 30, 2023)

E. *Memorandum, 2021 Pierce County Stormwater Manual, Minimum Requirement No. 8* (Clear Creek Solutions, August 30, 2023)

F. *Letter of Compliance for Outdoor Sports Lighting* (Dark Sky International, September 12, 2023)

G. *Archaeological Plan Bethel School District No. 403 and Puyallup Tribe of Indians, New Bethel High School Project (effective* September 19, 2023)

MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

APPENDIX A

Memorandum

(Aspect Consulting, September 6, 2023)

APPENDIX A

MEMORANDUM

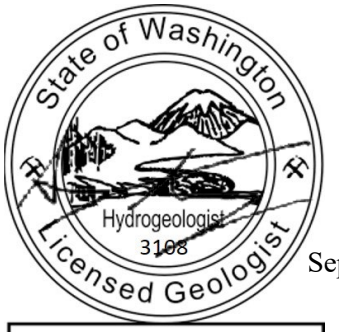
Project No. 200316

September 6, 2023

To: Jeff Mann and Sara Coccia, Bethel School District

cc:

From:



September 6, 2023

Andrew Austreng, LHG
Associate Hydrogeologist
aaustreng@aspectconsulting.com

Owen Reese, PE
Principal Engineer
oreese@aspectconsulting.com

Re: **New Bethel High School SEPA Checklist Review Comment Support**

This memorandum by Aspect Consulting, LLC (Aspect) provides information to the Bethel School District (District) to inform its responses to comments received on the State Environmental Policy Act (SEPA) Checklist prepared for development of the New Bethel High School (Site). The project Site is within Pierce County, with a current physical address of 7718 224th Street East, Graham, Washington.

Background

Aspect conducted a hydrogeologic study in 2020 and 2021 to characterize groundwater conditions across the Site, including an area being proposed for future stormwater facilities to support Site development (Aspect, 2023). Aspect's field efforts included constructing seven groundwater monitoring wells, installing a drive point piezometer, and establishing eight surface water monitoring stations (Figure 1); all of which were monitored with dedicated water level sensors that recorded measurements every 15 minutes from September 2020 to November 2021[1]. The groundwater monitoring stations were located in the eastern portion of the Site and installed sequentially, such that each successive monitoring station was positioned to best address any Site heterogeneity or data gap identified after the preceding well was installed.

[1] Surface water monitoring stations continue to be monitored as of the date of this memorandum.

Further, the monitoring wells were intentionally positioned to allow for triangulation of water level gradients across any area of the eastern portion of the Site (i.e., a triangle can be drawn between any three of the wells to calculate a groundwater flow vector). The well construction and detailed monitoring data were evaluated alongside a large network of test pits completed across the Site and the results from infiltration and aquifer hydraulic testing (see Section 2 in the Aspect [2023] report) to provide a detailed hydrogeologic characterization for the Site.

We understand that the District received a comment letter from James Halmo dated July 21, 2023 during the SEPA comment period (Halmo, 2023) that included comments related to hydrogeologic conditions at the Site. The following sections of this memo are intended to address the comments contained in that letter that pertain to Aspect's hydrogeologic study of the Site.

Flooding Considerations at the Grand Firs Development

Concerns that Site stormwater management will exacerbate existing flooding at the Grand Firs Development can be evaluated from the groundwater contour maps prepared using groundwater level data collected during the Site investigation (Figures 5 through 8 in the Aspect [2023] report), which are included with this memo as Figures 1 through 4 with the addition of flowlines to show the approximate directions of groundwater flow at the Site relative to the Grand Firs Development. As discussed in Section 3.1.4.1 of the Aspect (2023) report, groundwater flows from the Grand Firs Development (where groundwater levels become elevated) toward the central portion of the Site during the wet season. The photo documentation of flooding within the Grand Firs Development provided by Halmo (2023) supports this finding, as it presents evidence of groundwater levels exceeding those measured at the Site.

The water level data collected for Aspect's Site groundwater study shows that stormwater originating at the Site flows away from the Grand Firs Development, migrating either generally northward or southward depending on the time of year, and would therefore not discharge to those areas in Grand Firs Development noted to previously experience flooding problems. Further, as demonstrated by infiltration testing and aquifer hydraulic testing (Sections 2.1 and 2.5 of the Aspect [2023] report), the high permeability of Site soils means that the added groundwater recharge (e.g., from stormwater runoff, which will be managed and infiltrated onsite) from Site development will have limited effect on documented groundwater flow patterns, which are driven by very large regional inputs from precipitation.

Incorporation of Past Groundwater Studies

A large body of work was previously completed for the broader Site area and was incorporated into the Site groundwater characterization and discussed in the Aspect (2023) report. Figures from past reports that illustrate their key findings were excerpted and provided as attachments to the Aspect (2023) report, including several from a report referred to by Halmo (2023) as the "Graham Groundwater Study of 2007" which was prepared by Pierce County and referred to in this memo and in Aspect's 2023 report as the PGG (2007) report, citing the primary author[2].

[2] Halmo (2023) suggested the results of what was referred to as the "Graham Groundwater Study of 2007" were not included in the Aspect (2023) report. Aspect (2023) referred to the " Graham Groundwater Study Report" as PGG (2007), summarized pertinent findings of the study in Section 1.4, and included figure excerpts as Appendix A. It is acknowledged that PGG (2007) was inadvertently omitted from the list of references provided in the Aspect (2023) report.

The findings of Aspect's Site groundwater characterization are consistent with past groundwater studies that overlap the Site, which include the following:

- The report titled "*Hydrogeologic Framework, Groundwater Movement, And Water Budget In The Chambers-Clover Creek Watershed And Vicinity"* (USGS, 2010) evaluated a large dataset and developed groundwater contour maps depicting the groundwater flow direction across the Site and greater project area (included as Appendix B in Aspect, 2023). Their mapping indicated that groundwater flows to the northwest across the Site (away from the Grand Firs Development), with a high groundwater elevation extending from the southwest of the Grand Firs Development.
- The "*Graham Groundwater Study Report"* (PGG, 2007) identified the occurrence of a groundwater divide near the Site, separating groundwater flow into either a generally northward or southward flow direction. The location of this divide was not well defined in PGG's study, due to the coarse resolution of available data.
- The report titled *"Assessment of Surface Water and Groundwater Interchange within the Muck Creek Watershed Pierce County"* (Ecology, 2001) provided a generalized "dry season" groundwater contour map that encompassed the Site and broader area. The study indicated that shallow groundwater flowed generally to the northwest across the Site, and suggested localized deviations occur across the broad area of the study.
- The report titled *"Clover/Chambers Creek Geohydrologic Study for Tacoma-Pierce County Health Department"* (Brown and Caldwell,1985) also prepared groundwater contour and flow direction maps that extended across the Site and broader area. Their results also indicate that groundwater generally flows to the northwest across the Site, with the highest groundwater levels shown to the southeast of the Site, in the area of the Grand Firs Development. A groundwater divide is also suggested by this study as occurring within the project area, which would separate flows into either a northward or southward direction.

The high spatial and temporal resolution data collected during the Site groundwater study provided confirmation and refinement of these past studies, including the previous groundwater contour maps that overlapped the Site. Section 3.1.4 of the Aspect (2023) report describes the development and interpretation of the groundwater flow mapping for the Site in detail. Briefly, the Site groundwater study found that during the dry season, groundwater in the eastern portion of the Site generally flows to the north. During the wet season, high groundwater levels develop east of the Site, in the area of the Grand Firs Development, causing groundwater to be elevated in certain areas of the Site. These elevated groundwater levels form a groundwater divide within the Site that directs groundwater within the Site to flow either to the northwest or southwest.

Representativeness of the Groundwater Study Period

Groundwater levels at the Site were measured and recorded at 15-minute intervals between September 2020 and November 2021[3], and Site precipitation was evaluated from a nearby weather station[4] that reports to the National Oceanic and Atmospheric Administration (NOAA) Climate

[3] Monitoring began at each well once it was developed.

[4] Daily precipitation data was obtained for station "Graham 2.7 SW" (also referred to as Station No. US1WAPR0028).

Data Online (CDO) database. The observed Site groundwater responses to precipitation are discussed in detail in Sections 2.4 and 3.1.1 of the Aspect (2023) report.

The wet season precipitation over the monitoring period for the Site study (25.07 inches from November 1, 2020 to May 31, 2021) was approximately 94 percent of the average wet season precipitation calculated for the period of record spanning 2009 through 2021. Total monthly precipitation recorded from November 2020 through February 2021 was above average during the study monitoring period. This indicates that the monitoring period for the Site investigation represents typical weather conditions. Further, as discussed in Section 3.1.4.1 of the Aspect (2023) report, an assessment of the sensitivity of the mapped groundwater divide to additional precipitation found that once the seasonal peak groundwater level is reached, the location of the ground divide does not appear especially sensitive to additional precipitation. Briefly, Aspect (2023) found that once Site groundwater levels reach a significantly elevated state during the wet season (e.g., exceeding about 478 feet[5] at Well AMW-3), the groundwater divide ceases to migrate northward; this equilibration occurs because additional water level increases were found to occur similarly at all monitoring stations, such that the direction of groundwater flow was not significantly affected by increased water levels. This sensitivity assessment indicates that the monitoring period reflected the northernmost approximate location of the groundwater divide at the Site, where additional precipitation would not cause further substantive northward migration of the divide line.

References

Aspect Consulting, LLC (Aspect), 2023. Hydrogeologic Assessment – New Bethel High School Site in Graham, Washington. Prepared for Bethel Scholl District, Project No. 200316. March 27, 2023.

Brown and Caldwell, 1985. *Clover/Chambers Creek Geohydrologic Study for Tacoma-Pierce County Health Department.* Phase II Report Dated March 11, 1985.

Halmo, James, L.,2023). Letter from James Halmo to Jeffery Mann, Bethel School District. RE: Comments on Expanded Environmental Checklist for the New Bethel High School Project. July 21, 2023.

United States Geologic Survey (USGS), 2010. Hydrogeologic framework, Groundwater Movement, and water budget in the Chambers-Clover Creek Watershed and vicinity, Pierce County, Washington: Scientific Investigations Report 2010–5055,

Pacific Groundwater Group (PGG), 2007. Graham Groundwater Study Report. Prepared for Pierce County Public Works and Utilities Water Programs Division. April, 2007.

Washington Department of Ecology (Ecology), 2001. Assessment of Surface Water and Groundwater Interchange within the Muck Creek Watershed Pierce County. Publication No. 01-03-037. December 2001.

[5]Elevations are reported as relative to NAVD 88

Limitations

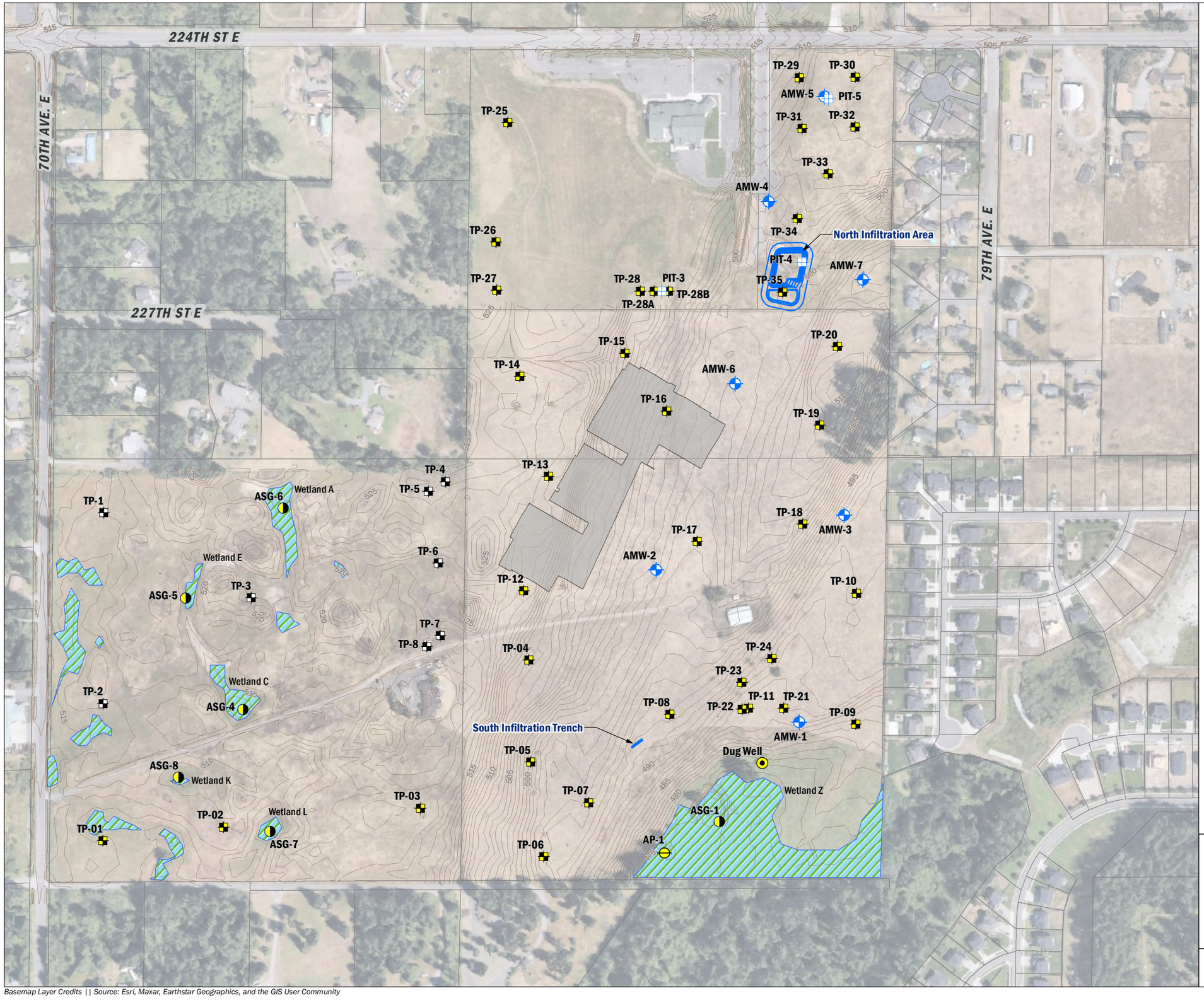
Work for this project was performed for the Bethel School District (Client), and this memorandum was prepared in accordance with generally accepted professional practices for the nature and conditions of work completed in the same or similar localities, at the time the work was performed. This memorandum does not represent a legal opinion. No other warranty, expressed or implied, is made.

All reports prepared by Aspect Consulting for the Client apply only to the services described in the Agreement(s) with the Client. Any use or reuse by any party other than the Client is at the sole risk of that party, and without liability to Aspect Consulting. Aspect Consulting's original files/reports shall govern in the event of any dispute regarding the content of electronic documents furnished to others.

Attachments: Figure 1 – District Area Map and Monitoring Locations
Figure 2 – Groundwater Elevation October 2020
Figure 3 – Groundwater Elevation December 2020
Figure 4 – Groundwater Elevation January 2021
Figure 5 – Groundwater Elevation February 2021

V:\200316 Bethel SD New High School Hydrogeologic Support\Deliverables\SEPA Comment Response Memo\NBHS_SEPA_HG_CommentResponse_090623.docx

FIGURES



Test Pit, Migizi, 2021

Test Pit, E3 RA, 2008

Monitoring Well

Infiltration Test

Piezometer

Staff Gauge

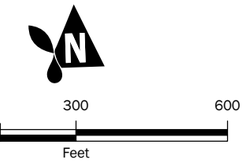
Dug Well
(Existing dug well decommissioned in 2010)

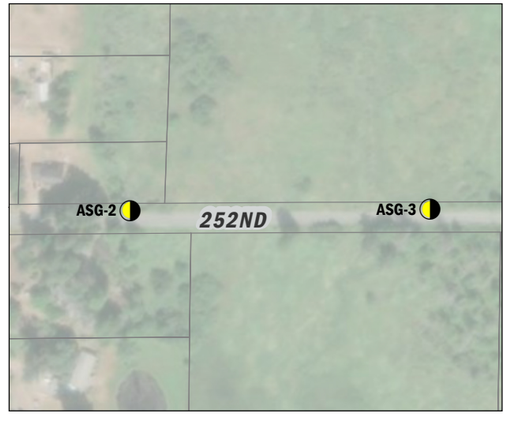
Proposed Building

Pierce County Tax Parcel

Wetlands (Surveys provided by "Sitts and Hill, 2022")

Notes:
- *Features are approximate.*
- *Aerial image sourced from Google Earth Pro.*
- *Staff Gauges in western wetland from "Wetland Staff Gauge Exhibit", New Bethel High School", Sitts and Hill, Civil - Structural - Survey, Tacoma, Washington, 12-22-21.*
- *Test Pits from "Site and Exploration Plan", 23009 70th Ave E, Graham, Washington", E3RA, Inc., Tacoma, Washington, 10-13-08.*





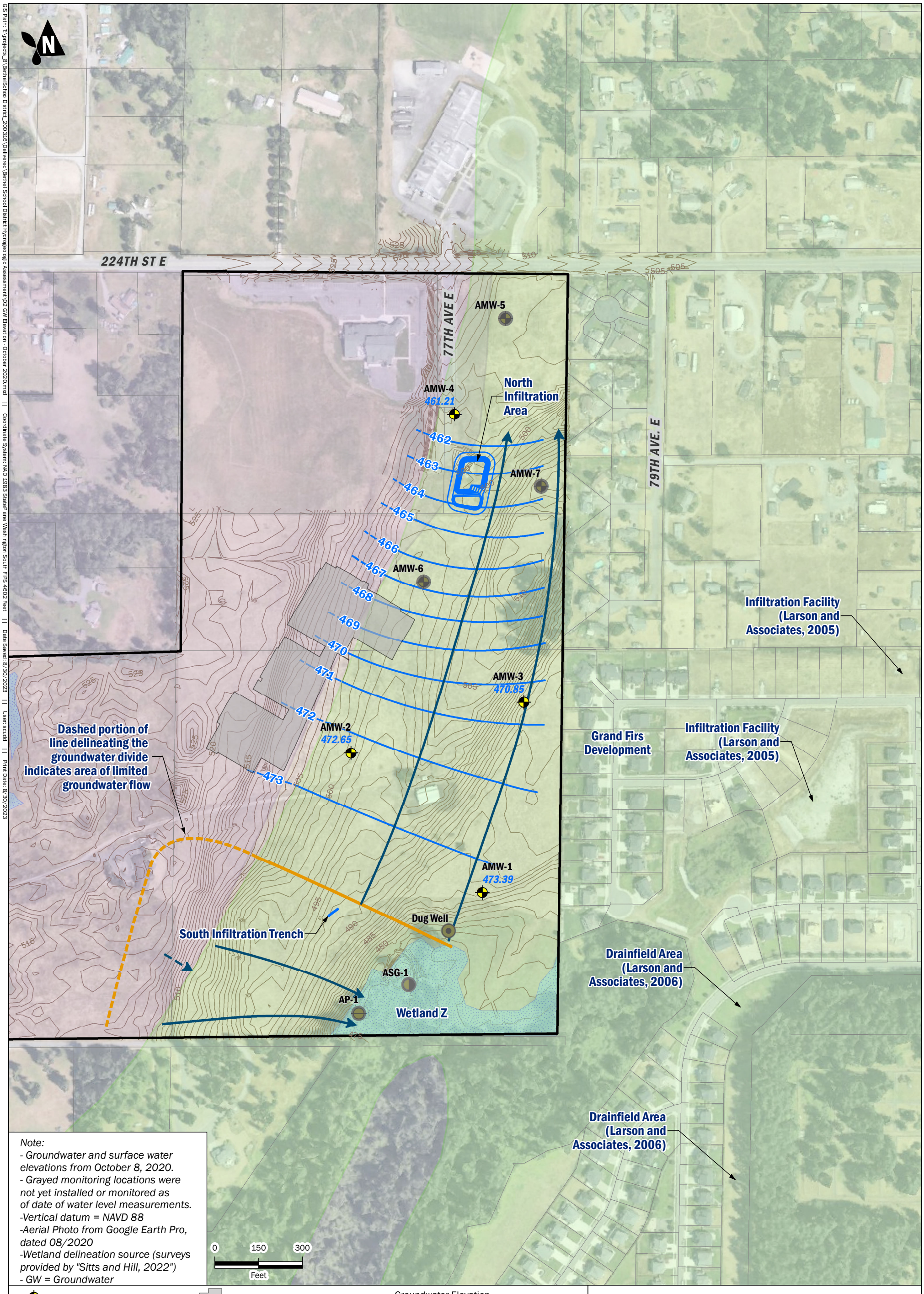
District Study Area Map and Monitoring Locations

Bethel School District
Hydrogeologic Assessment
Graham, Washington

Aspect Consulting	MAR-2023	BY: ML / TDR / WBL	FIGURE NO. 1
	PROJECT NO. 200316	REVISED BY: ACA / SCC / WBL	

Basemap Layer Credits || Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

GIS Path: T:\projects_8\BethelSchoolDistrict_200316\Delivered\Bethel School District Hydrogeologic Assessment\02 District Study Area Map and Monitoring Locations.mxd || Coordinate System: NAD 1983 StatePlane Washington South FIPS 4602 Feet || Date Saved: 3/28/2023 || User: wlongmire || Print Date: 3/28/2023

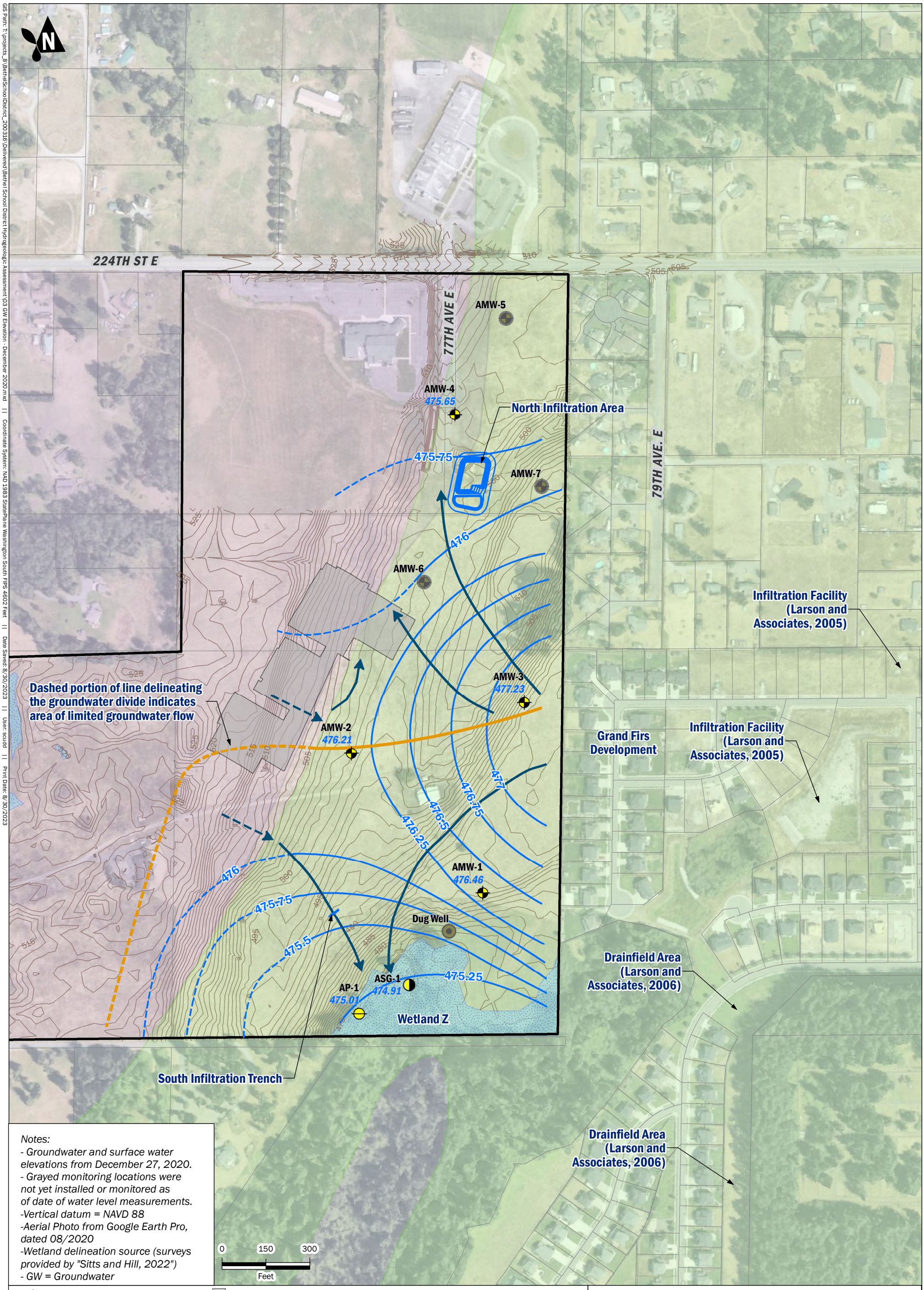


Groundwater Elevation October 2020

Hydrogeologic Report: Bethel High School
Bethel School District
Graham, Washington

Aspect Consulting	AUG-2023	BY: ML / SCC / WBL	FIGURE NO. 2
	PROJECT NO. 200316	REVISED BY: ACA / SCC	

GIS Path: T:\projects_8\BethelSchoolDistrict_200316\Delivered\Bethel School District Hydrogeologic Assessment\02 GW Elevation - October 2020.mxd || Coordinate System: NAD 1983 StatePlane Washington South FIPS 4602 Feet || Date Saved: 8/30/2023 || User: scudd || Print Date: 8/30/2023



Notes:
- Groundwater and surface water elevations from December 27, 2020.
- Grayed monitoring locations were not yet installed or monitored as of date of water level measurements.
-Vertical datum = NAVD 88
-Aerial Photo from Google Earth Pro, dated 08/2020
-Wetland delineation source (surveys provided by "Sitts and Hill, 2022")
- GW = Groundwater

- Monitoring Well
- Piezometer
- Staff Gauge
- Dug Well (Existing dug well decommissioned in 2010)
- Elevation Contour (1ft Interval)
- Estimated Groundwater Basin Contributing Flow to Wetland
- Proposed Building
- District Study Area
- Pierce County Tax Parcel
- Wetlands
- Groundwater Flow Direction
- Limited Groundwater Flow
- Groundwater Elevation Contour
- Interpreted Groundwater Elevation Contour

Surficial Geology

- Vashon Outwash
- Vashon Glacial Till
- 478.5 Measured GW or Surface Water Elevation

Groundwater Elevation December 2020

Hydrogeologic Report: Bethel High School
Bethel School District
Graham, Washington

Aspect Consulting	AUG-2023	BY: ML / SCC / WBL	FIGURE NO. 3
	PROJECT NO. 200316	REVISED BY: ACA / SCC	

GIS Path: T:\projects_8\BethelSchoolDistrict_200316\Delivered\Bethel School District Hydrogeologic Assessment\03 GW Elevation - December 2020.mxd || Coordinate System: NAD 1983 StatePlane Washington South FIPS 4602 Feet || Date Saved: 8/30/2023 || User: scudd || Print Date: 8/30/2023

224TH ST E

77TH AVE E

79TH AVE. E

AMW-5

AMW-4
480.82

AMW-7

AMW-6

AMW-3
480.96

AMW-2
479.92

AMW-1
478.3

Dug Well

ASG-1
475.48

AP-1
475.66

Wetland Z

480.5

480

479.5

479

478

477

476.5

476

478.5

477.5

481

North Infiltration Area

Infiltration Facility (Larson and Associates, 2005)

Infiltration Facility (Larson and Associates, 2005)

Grand Firs Development

Drainfield Area (Larson and Associates, 2006)

Drainfield Area (Larson and Associates, 2006)

South Infiltration Trench

Dashed portion of line delineating the groundwater divide indicates area of limited groundwater flow

Notes:
- Groundwater and surface water elevations from January 14, 2021.
- Grayed monitoring locations were not yet installed or monitored as of date of water level measurements.
-Vertical datum = NAVD 88
-Aerial Photo from Google Earth Pro, dated 08/2020
-Wetland delineation source (surveys provided by "Sitts and Hill, 2022")
- GW = Groundwater

0 150 300
Feet

- Monitoring Well
- Piezometer
- Staff Gauge
- Dug Well (Existing dug well decommissioned in 2010)
- Elevation Contour (1ft Interval)
- Estimated Groundwater Basin Contributing Flow to Wetland
- Proposed Building
- District Study Area
- Pierce County Tax Parcel
- Wetlands
- Groundwater Flow Direction
- Limited Groundwater Flow
- Groundwater Elevation Contour
- Interpreted Groundwater Elevation Contour

Surficial Geology

- Vashon Outwash
- Vashon Glacial Till
- 478.5 Measured GW or Surface Water Elevation

Groundwater Elevation January 2021

Hydrogeologic Report: Bethel High School
Bethel School District
Graham, Washington

Aspect CONSULTING

AUG-2023	BY: ML / SCC /WBL	FIGURE NO. 4
PROJECT NO. 200316	REVISED BY: ACA / SCC	

224TH ST E

77TH AVE E

79TH AVE. E

AMW-5 479.53

AMW-4 479.41

AMW-7 479.7

AMW-6 479.25

AMW-3 479.69

AMW-2 478.41

AMW-1 477.68

Dug Well 476.82

ASG-1 475.17

AP-1 475.39

Wetland Z

North Infiltration Area

South Infiltration Trench

Infiltration Facility (Larson and Associates, 2005)

Infiltration Facility (Larson and Associates, 2005)

Grand Firs Development

Drainfield Area (Larson and Associates, 2006)

Drainfield Area (Larson and Associates, 2006)

Dashed portion of line delineating the groundwater divide indicates area of limited groundwater flow

Notes:
- Groundwater and surface water elevations from February 27, 2021.
-Vertical datum = NAVD 88
-Aerial Photo from Google Earth Pro, dated 08/2020
-Wetland delineation source (surveys provided by "Sitts and Hill, 2022")
- GW = Groundwater

0 150 300
Feet

- Monitoring Well
- Piezometer
- Staff Gauge
- Dug Well (Existing dug well decommissioned in 2010)
- Elevation Contour (1ft Interval)
- Estimated Groundwater Basin Contributing Flow to Wetland
- Proposed Building
- District Study Area
- Pierce County Tax Parcel
- Wetlands
- Groundwater Flow Direction
- Limited Groundwater Flow
- Groundwater Elevation Contour
- Interpreted Groundwater Elevation Contour

Surficial Geology

- Vashon Outwash
- Vashon Glacial Till
- 478.5 Measured GW or Surface Water Elevation

Groundwater Elevation February 2021

Hydrogeologic Report: Bethel High School
Bethel School District
Graham, Washington

Aspect Consulting	AUG-2023	BY: ML / SCC / WBL	FIGURE NO. 5
	PROJECT NO. 200316	REVISED BY: ACA / SCC	

MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

APPENDIX B

Technical Memorandum

(Raedeke Associates, Inc., September 5, 2023)

APPENDIX B

Raedeke Associates, Inc.

Wetland & Aquatic Sciences
Wildlife Ecology
Landscape Architecture

TECHNICAL MEMORANDUM

September 5, 2023

To:	Ms. Sara Coccia Bethel School District #403
From:	Emmett Pritchard, B.S. Principal / Pierce County Qualified Wetland Specialist Raedeke Associates, Inc. Rick Lundquist, M.S. Principal / Pierce County Qualified Wildlife Biologist Raedeke Associates, Inc.
RE:	New Bethel High School – Response to SEPA comments (RAI Project No. 2020-023-020)

At your request, Raedeke Associates, Inc. (RAI) prepared the following responses to SEPA comments submitted to the Bethel School District #403 (hereafter School District) by Ms. Cindy Beckett, Mr. Jim Halmo, and Mr. Bryson Ahlers regarding their concerns related to potential wetland and wildlife impacts that may occur as a result of the development of the New Bethel High School. We note that the complete comments provided by Ms. Beckett and Mr. Halmo pertained not only to their concerns about potential wetland impacts, but also included concerns regarding other project areas which are not applicable to this memo. School District responses to these other non-wetland or wildlife-related concerns will be provided by others in separate memorandums. In several instances, specific comments regarding wetlands by Ms. Beckett and Mr. Halmo also included other areas of concern. In those instances, we have highlighted the portion of the specific comment for which we have provided a response.

We have excerpted each specific comment below pertaining to wetland or wildlife concerns followed by our response. Ms. Beckett provided similar comments in emails dated July 7 and July 18, 2023 regarding her concern that wetlands in the western portion of the Project Site be protected. For the sake of expediency, we have included both as Comment 1 and provided a single response below. Mr. Halmo raised a similar concern, specifically pertaining to protection of wetlands in the western portion of the Project Site;

however, we have elected to respond to this as a separate comment (Comment 2) because of the question he raises regarding the identification of a wetland mosaic in a 2011 report prepared by Habitat Technologies and John Comis, LLC for the western portion of the Project Site.

RESPONSE TO COMMENTS

COMMENT 1

July 7, 2023 email from Ms. Cindy Beckett to Mr. Jeffrey Mann, Bethel School District, excerpted:

> *"I would greatly appreciate it if you would contact me please regarding the plan to build the new school on 224th. I was in contact with the Federal school admin office in the past about this property, they did confirm to me that they will not fund nor approve for the State school admin/construction office to fund construction of a new school on that water resource land. I have the LIDAR of that property as well. Both the GIS (Federal flood hazard map) and the county maps clearly show this water presence, and many living in that area also provided statements."*

July 18, 2023 email from Ms. Cindy Beckett to Ms. Sara Coccia, Bethel School District, excerpted:

> *"From the school site flowing south, the Muck becomes a very impressive water system (enclosed). It is imperative that this be protected, and I do not believe the Federal school admin office will approve the loss of water to this creek system by creating 100% impervious surface and compacting the land under a school complex of this size. I will be contacting both Federal and State construction depts about this issue as well. It is worth noting that neighbors took pictures of a past school principle actually bulldozing the wetlands on 70th, of course illegal even then. This issue has been going on for a long time."*

RESPONSE

RAI investigated the entire Project Site to verify wetland delineations previously done by Ms. Lisa Palazzi, PWS, of SCJ Alliance in 2020 and to delineate any previously unidentified wetlands. As part of our investigation, we examined potential wetland areas identified in aerial photographs, reference maps, and other information about the Project Site from the NRCS Web Soil Survey, on-line National Wetland Inventory, and Pierce County Public GIS and thoroughly searched the entirety of the Project area for the presence of previously unidentified wetlands and streams.

We also reviewed areas previously determined in 2007 to be wetland by Habitat Technologies during a wetland reconnaissance of the western portion of the Project Site (Pierce County Parcel 0418172009) and later in 2011 by Habitat Technologies and John Comis, LLC in response to a complaint made to Pierce County regarding work by the Bethel School District within Parcel 0418172009, then known as the Crate property. As part of our review of the Habitat Technologies (2007) and John Comis, LLC (2011) identified wetlands in Parcel 0418172009, we reviewed documents found on the Pierce County website (application nos. 715514 and 715518), as well public records in the School District's files.

We visited the Project Site on 23 occasions beginning in March 2020 through July 2022 to collect data necessary to complete our wetland investigation. All of our wetland delineations, verifications, and determinations of on-site wetlands and identification of potential off-site wetlands were performed using methods and procedures of the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual and subsequent amendments and clarifications provided by the USACE, as updated for this area by the 2010 regional supplement to the USACE wetland delineation manual for the Western Mountains, Valleys, and Coast Region. The USACE Wetlands Delineation Manual is required by State law (WAC 173-22-035, as revised) for all local jurisdictions, including Pierce County. Our wetland investigation included the entire Project Site, as well as all areas where half-street and intersection improvements are to be constructed along 70th Avenue East and frontage and intersection improvements to be constructed along 224th Street East (RAI 2022, RAI 2023b).

We verified or delineated eleven separate Category III and Category IV wetlands (A, B, C, E, H, I, J, K, L, O, and Y) and one Category III wetland mosaic (F/G) consisting of three distinct, but closely spaced, small wetlands (F north, F south, and G) within the approximately 40-acre western portion of the Project Site. We also identified three potential off-site wetlands within 315 feet of the Project Site boundaries. The results of our wetland investigation are presented in the May 29, 2023 *Wetland Analysis Report and Mitigation Plan for the New Bethel High School Project* (RAI 2023b).

During our investigation of the Project Site, we found that several of the areas determined to be wetland by Habitat Technologies (2007) and again later by Habitat Technologies and John Comis, LLC (2011), and also several areas that were identified as wetland by the Pierce County GIS, were not wetland based on the absence of indicators for one or more of the three wetland parameters (dominance by hydrophytic vegetation, hydric soil, and wetland hydrology). The USACE Wetlands Delineation Manual requires that indicators for all three wetland parameters be present for an area to be determined to be wetland.

Mr. Scott Sissons, Pierce County Planning and Public Works Environmental Biologist 3, visited the Project Site with RAI on July 31, 2023 to review all wetland delineations within the Site. In addition, during his July 31, 2023 site review, Mr. Sissons also

reviewed areas that had been previously identified as wetland by Habitat Technologies in 2007 and by Habitat Technologies and John Comis, LLC in 2011, as well as areas identified as wetland by the Pierce County GIS, but which RAI determined to not be wetland. Mr. Sissons agreed with our determination that these areas were not wetland. Mr. Sissons also investigated other areas within the Project Site which exhibited field indicators for the potential presence of wetland. These included low areas such as depressions in the landscape, areas that were proximate to other delineated wetlands, or areas where wetland adapted vegetation was present. Mr. Sissons found no additional wetlands that had not been already identified by RAI.

Mr. Sissons issued the County's wetland review letter for the Project Site to the Bethel School District dated August 3, 2023 confirming the accuracy of the RAI wetland verification and delineation for the Project Site, including the western portion of the Site (Pierce County 2023a). Specifically, Mr. Sissons found:

> *"We concur with the wetland delineations of on-site Wetlands A, B, C, E, H, I, J, K, L, O & mosaic F/G consisting of several closely spaced wetland depressions (F north, F south and G). As well as Wetland Y and Z. The delineation for Wetland Z mimics the original Wetland Approval (AFN#200903020334) recorded for Rainier View Christian Church and the preliminary plat for the Development of 12 lots that was never built."*

All delineated on-site wetlands will be provided protective buffers in accordance with requirements of Pierce County (2022b) code and encompassed within one of three Critical Area Tracts to protect them and to preserve habitat connectivity between the wetlands. The Bethel School District will set aside additional area within the western Critical Area tracts to encompass the wetlands and their Pierce County-required buffers. The critical area tracts on the Project Site total approximately 34.7 acres, which is 52% greater than the area encompassed by the wetlands and their required Pierce County buffers. The larger area encompassed within the Critical Area Tracts is being provided by Bethel School District to protect in perpetuity a large contiguous area of habitat that will provide habitat connections between the wetlands that otherwise would not be protected.

The proposed site plan follows mitigation sequencing and includes measures to avoid and minimize impacts to all on-site delineated wetlands and their buffers, as well as to downstream areas including the North Fork of Muck Creek. This is reflected in the routing of roads and other Project elements to avoid wetlands and their buffers to the greatest extent practicable. In addition, the Project stormwater facilities are designed to meet the requirements of the Pierce County (2021) Stormwater Management and Site Development Manual and are designed to mimic the Wetland Z hydroperiod at the pre-development condition (Sitts & Hill 2023; Clear Creek Solutions, Inc. 2023b). Project stormwater facilities also have been designed to support hydrologic conditions within the western wetlands (Sitts & Hill 2023; Clear Creek Solutions, Inc. 2023a).

Direct, permanent impacts to all wetlands will be avoided with the exception of a small amount (approximately 8 sq. ft.) of Wetland Y adjacent to 70th Avenue East for replacement and relocation of an existing barbed-wire fence with a 6-foot chain-link perimeter fence necessary for school site security and student safety. Mr. Sissons (Pierce County 2022a) determined that Pierce County will not require mitigation for impacts to Wetland Y from the new chain-link fence installation due to the very small area of the wetland that will be permanently impacted. A permit was issued to the Bethel School District by the USACE covering impacts to Wetland Y (NWS-2022-377). Mitigation for impacts to Wetland Y will be provided by the expansion of Wetland C as a condition of the USACE permit.

Some temporary impacts will be necessary to pasture vegetation dominated predominantly by grass and forb species within Wetland Y and the buffers for Wetlands A, B, F/G mosaic, H, J, O, and Y in the west portion of the Project Site for replacement/relocation of perimeter fences, construction of internal chain-link fences, and for grading to construct the Project. An approximately 0.48-acre area of temporary impacts at the outer perimeter of the Wetland Z buffer in the southeast corner of the Site will be necessary for grading to construct the multi-use athletic field. Wetland C and its buffer will be temporarily impacted to expand the wetland as mitigation for USACE-regulated ditch impacts necessary for construction of Project-related half-street improvements to 70th Avene East and for impacts to Wetland Y for fence replacement and relocation.

All temporarily impacted wetlands and wetland buffers, other than impacts associated with USACE-required expansion of Wetland C, will be restored to pre-development pasture conditions. The expanded Wetland C and the inner 50 feet of its buffer will be enhanced with native, low-stature trees and shrubs and the outer 30 feet of the wetland buffer will be restored to pasture conditions. In addition, to the enhancement of Wetland C, the inner 50 feet of the buffer for Wetland Z will be enhanced with native trees and shrubs to create and densely vegetated forest community to discourage disturbance by humans and pets and which will provide other ancillary benefits for wildlife.

During construction, appropriate Best Management Practices (BMPs) and Temporary Erosion Sediment Control (TESC) measures will be implemented by the Project General Contractor in accordance with a Stormwater Pollution Prevention Plan (SWPPP) consistent with standards of the Pierce County (2021) Stormwater Management & Site Development Manual and in compliance with National Pollutant Discharge Elimination System (NPDES) permit issued to the Project by the Washington Department of Ecology. RAI will monitor construction activities at the Site on a weekly basis for the duration of the Project construction to verify that work activities by the General Contractor and sub-contractors do not adversely impact on-site wetlands and their associated Critical Area Tracts or other off-site critical areas beyond those impacts that are permitted by the USACE and Pierce County.

Following completion of Project construction, RAI will conduct a minimum of 5 years of hydrologic monitoring within Wetlands A, C, E, K, L, and Z after Certificate of Occupancy has been issued by Pierce County. The results of the additional monitoring would be used by the Bethel School District to determine whether unanticipated adverse impacts to wetland hydrology have occurred as a result of Project development and whether implementation of contingency measures are necessary to restore wetland hydrologic conditions.

Through avoidance and minimization of impacts to Critical Areas, and mitigation of all identified Project-related impacts, as well as through incorporation of Project elements including the setting aside of additional area within protected Critical Area Tracts, and through monitoring construction activities to ensure all Critical Areas within the Project Site are not impacted during Project construction, followed by long-term monitoring of selected wetlands, it is our professional opinion that the Project will not result in significant adverse impacts to wetlands or downstream areas within the Muck Creek system.

COMMENT 2

July 23, 2023 letter from Mr. Jim Halmo to Mr. Jeffrey Mann, Bethel School District, excerpted:

> *"Fourth, the second wetland area of concern is the mosaic wetland buffer located on the west side of land parcel 0418172009.*
>
> *On March 29, 2011, I photographed two bull dozers operating for so-called "agricultural purposes." They were actually trying to destroy the documented mosaic wetland."*

RESPONSE

As described in our response to Comment 1, RAI thoroughly investigated the Project Site, including areas previously identified as wetland by Habitat Technologies (2007) and Habitat Technologies and John Comis, LLC (2011) within Pierce County Parcel 0418172009, but which we determined to be not wetland. Pierce County (2023a) confirmed the accuracy of the RAI wetland delineations for the Project Site, including the western portion of the Site.

Our determination of wetland areas currently within the north-central portion of the property excluded a small depressional area at the north property boundary identified as "Z1" by Habitat Technologies and John Comis, LLC (2011). The "Z1" area is located northeast of "Wetland Z" (as identified by Habitat Technologies and John Comis, LLC [2011] and which is currently identified as Wetland A by RAI [2023b]). The location of

this area is identified by Sample Plot SP-4 in the Habitat Technologies and John Comis, LLC (2011) report. We determined that this area was not wetland based on the absence of indicators of a hydric soil as is required by the USACE Wetland Delineation Manual for a wetland determination. The RAI data form for SP-6 within this depression is provided in the *Wetland Analysis Report and Mitigation Plan* (RAI 2023b).

The difference between our current determination of non-wetland for this area and the Habitat Technologies and John Comis, LLC determinations in 2011 is likely due to twelve years having passed since the date of earlier investigation. Wetland delineations remain valid for a limited duration. The USACE has issued guidance regarding this consideration:

> *"Since wetlands are affected over time by both natural and man-made activities, we can expect local changes in wetland boundaries. As such, wetlands jurisdictional delineations will not remain valid for an indefinite period of time." (USACE Regulatory Guidance Letter [RGL] 90-06).*

Current guidance by the USACE is that wetland delineations are valid for up to five years (RGLs 16-01 and 95-02) for purposes of administrating the Federal Clean Water Act (CWA). All local jurisdictions, including Pierce County must abide by regulations of the CWA. The five-year time period that a wetland delineation is considered to be valid is reflected in the County's administration of its Critical Areas Ordinance. For example, see a recent Wetland Memorandum of Agreement issued by Pierce County relating to the Fred 310 Development under Pierce County Recording No. 220207010593.

RAI analyzed the currently delineated extents of wetlands in Pierce County Parcel 0418172009 to determine whether any of those areas could met criteria of PCC 18E.30.020.E.2 which defines a wetland mosaic complex as:

> *"Connecting Mosaic Pattern Wetlands. In cases where the wetlands to be categorized are smaller than one acre in size and separated from each other by less than 100 feet (on average), the DOE mosaic methodology shall be used to determine the wetland category. The area of the wetlands must be greater than 50 percent of the total combined area of wetland and upland for the patchwork to be categorized as one wetland. The boundary of the mosaic wetlands must reflect the ecological interconnectedness of the wetlands within the mosaic. The County will not accept mosaic boundaries drawn to minimize the area of wetland within the mosaic. (See Figure 18E.30-1 in Chapter 18E.120)."*

RAI measured the distances between the surveyed current extents of the most closely spaced assemblages of wetlands within Parcel 0418172009 using AutoCAD computer software. The results of our analysis of the two most closely spaced assemblages of

wetlands in this portion of the Project Site are presented in Figure 8 of the *Wetland Analysis Report and Mitigation Plan* (RAI 2023b). We determined that one wetland assemblage consisting of Wetlands F-north, F-south, and G met criteria of PCC 18E.30.020.E.2 to be considered a wetland mosaic. The other wetland assemblage consisting of Wetland A, B, and O does not meet the wetland mosaic criteria.

The 2011 Habitat Technologies and John Comis, LLC report described a wetland mosaic as being present within the north-central portion of Parcel 0418172009 consisting of three component areas: (1) the small depressional area (Z1) at the north property boundary that RAI determined to not be wetland, (2) "Wetland Z", and (3) Wetland W (as identified by Habitat Technologies and John Comis, LLC [2011] and which is currently identified as Wetland B by RAI [2023b]).

The 2011 Habitat Technologies and John Comis, LLC report did not provide descriptions of how the wetland boundaries were identified in the field or indicate that wetland boundaries were professionally surveyed, nor does the report provide the methods by which measurements between the three component parts of the described wetland mosaic were made to demonstrate how these three areas met the criteria for wetland mosaic provided in PCC 18E.30.020.E.2. Therefore, it is not possible to assess the accuracy of their determination that these three areas constituted a wetland mosaic at the time of their 2011 wetland investigation. Regardless, due to the facts that (1) the small depressional area at the north boundary does not currently meet criteria of the USACE Wetland Delineation Manual to be considered wetland and (2) the distance between the current extents of Wetlands A and B is greater than 100 feet, the three component areas identified by Habitat Technologies and John Comis, LLC would no longer be considered a wetland mosaic per Pierce County (2022b) Code. Moreover, the documentation on the Pierce County website (application nos. 715514 and 715518) does not provide any evidence that a wetland delineation was approved by the County or that the existence of a wetland mosaic was confirmed.

COMMENT 3

July 7, 2023 email from Ms. Cindy Beckett to Mr. Jeffrey Mann, Bethel School District, excerpted:

> *"It is in fact illegal to do this, I met with the past superintendent about this as well, and provided print outs of both the GIS overlay and the LIDAR clearly establishing that water resource property drains directly into a fish bearing stream that flows into the Muck Creek system. It appears that this information went nowhere."*

RESPONSE

The May 25, 2023 *Wildlife Habitat Assessment Report* (RAI 2023a) and the May 29, 2023 *Wetland Analysis Report and Mitigation Plan* (RAI 2023b) identifies the North Fork of Muck Creek and the un-named tributary to the North Fork of Muck Creek whose headwaters are fed, in part, by Wetland Z within the SE corner of the Project Site as fish-bearing streams. We based our findings on our review of the Washington Department of Fish and Wildlife (WDFW 2023) SalmonScape and the Northwest Indian Fisheries Commission (NWIFC 2023) on-line databases. The WDFW (2023) and the NWIFC (2023) databases identify Wetland Z as being "gradient accessible" to two salmonid fish species, Coho salmon (*Oncorhynchus kisutch*) and sockeye salmon (*Oncorhynchus nerka*). It is important to note that the term "gradient accessible" does not mean that these fish species have been documented or are presumed to be present in a given stream reach. "Gradient accessible" is the current designation for what was formerly termed "modeled presence" in the SalmonScape database, and was later corrected to "gradient accessible" (Maddie Gray, WDFW, pers. comm., April 21, 2023). It is worth noting that sockeye salmon are not documented as being present anywhere within the greater Muck Creek basin by the WDFW (2023) SalmonScape or NWIFC (2023) SWIFD map databases.

All of the wetlands on-site, including Wetland Z (which flows into the North Fork of Muck Creek), have been identified, delineated, rated, and would be retained within critical area tracts that encompass their buffers required under Pierce County (2022b) Code. In addition, the inner 50 feet of the wetland buffer will be enhanced with native trees and shrubs. Moreover, as discussed above, the findings of the wetland report have been affirmed and verified by Pierce County (2023a).

It is worth noting that the 225-foot buffer to be provided to Wetland Z exceeds the standard 150-foot buffer required by Pierce County (2022b) for fish-bearing streams by 50 percent. The provided 225-foot buffer also exceeds WDFW riparian zone management width recommendation, measured as one site potential tree height at 200 years ($SPTH^{200}$) for Douglas fir (*Pseudotsuga menziesii*), that would be necessary to provide full protection of riparian functions and salmonids (Rentz et al. 2020). The $SPTH^{200}$ for the Project Site in the vicinity of Wetland Z is 187 feet as determined using the WDFW SPTH mapping tool.

COMMENT 4

July 7, 2023 email from Ms. Cindy Beckett to Mr. Jeffrey Mann, Bethel School District, excerpted:

> *"The Pierce County planning department has no authority to ignore or dismiss Federal law nor to permit damage and destruction of the protected water resources of this creek system."*

RESPONSE

The proposed development plan for the Project Site underwent federal review by the USACE before it issued Permit No. NWS-2022-377 to the Bethel School District on December 23, 2022 to allow impacts to a roadside ditch along 70th Avenue East for half-street improvements and impacts to Wetland Y for replacement/relocation of a Site perimeter fence, as well as to allow the expansion of Wetland C to provide mitigation for the permitted impacts. The USACE reviewed the Project pursuant to the requirements of the Federal Endangered Species Act, the Magnuson-Stevens Fishery Conservation and Management Act, and the National Historic Preservation Act and determined that the Project complies with the requirements of these laws provided the Bethel School District complies with the general and special permit conditions. The USACE found that the Project work authorized by the permit complies with the Washington State Department of Ecology's (Ecology) Water Quality Certification (WQC) requirements and the Coastal Zone Management (CZM) consistency determination decision for Nationwide Permit 39 used to authorize the work.

In addition, a condition of the Project will be issuance of a National Pollutant Discharge Elimination System (NPDES) permit by WDOE which establishes consistency and compliance with federal law.

Mr. Scott Sissons, Pierce County Planning and Public Works Environmental Biologist (Pierce County 2023a) has reviewed and approved the May 29, 2023 *Wetland Analysis Report and Mitigation Plan* (RAI 2023b). Mr. Sissons' wetland review letter (Pierce County 2023a) stated that he was in general agreement with the findings of the report, including his concurrence with the wetland delineations, wetland ratings, buffers to be provided for wetland protection, and approved the proposed on-site mitigation to be implemented by the Bethel School District. Based on his findings, Mr. Sissons has forwarded his Recommended Conditions of Approval for the Conditional Use Permit to the Pierce County Planner (Pierce County 2023a, 2023b).

Mr. Sissons acknowledged in his wetland review letter (Pierce County 2023a) and recommended CUP approval conditions (Pierce County 2023b) that the Bethel School District is providing on-site mitigation under the requirements of the USACE Permit No. NWS-2022-377 issued for the Project. As condition of project approval, Mr. Sissons recommend that, upon approval of the mitigation plan by the USACE and prior to the ROW Project construction, a detailed set of mitigation plan construction drawings including grading and planting plan sheets with construction notes, materials specifications, and details shall be prepared by Raedeke Associates, Inc. on behalf of the Bethel School District and submitted to Pierce County.

COMMENT 5

July 23, 2023 letter from Mr. Jim Halmo to Mr. Jeffrey Mann, Bethel School District, excerpted:

> *I am also concerned that monitor testing sites do not appear to be located farther outside the wetland areas, particularly the Cell 1 site (Wetland Z}.*
>
> *Accordingly, I strongly disagree with the proposed reduction of the Category 1 wetland buffer from 300 feet to 225, based on the limited mapping and what I personally observed in 2005. The reduction is not justified.*

RESPONSE

RAI independently investigated the mapped boundary of Wetland Z, as recorded in the Memorandum of Agreement under Pierce County Recording No. 200903020300 between Rainier View Christian Church and Pierce County executed on February 18, 2009. We conducted our investigation of the mapped wetland boundary using standards of the USACE Wetland Delineation Manual. We systematically walked up to 50 feet north and south of the mapped wetland boundary along its entire length, depending on steepness of topographical slope of the abutting uplands, to determine whether the current extent of Wetland Z remained accurate and found that the boundary of Wetland Z remained unchanged. Pierce County (2023a) determined that the 2009 mapped boundary of Wetland Z remained unchanged as part of its current wetland review for the Project.

Wetland buffers protect wetland functions by removing sediment, excess nutrients (phosphorous and nitrogen), and toxics (bacteria, metals, pesticides), by influencing the microclimate within the wetland, by maintaining adjacent habitat critical for the life needs of the many species that use wetlands, by screening adjacent disturbances (noise, light, etc.), and by maintaining habitat connectivity. It should be noted that buffers alone have limited influence on wetland hydroperiod. Best Available Science (BAS) literature reviewed by WDOE (Sheldon et al. 2005, Hruby 2013) found that there was little published literature on the effectiveness of buffers in ameliorating the effect of changes in land use on wetland hydroperiod or in attenuation of surface water flow rates in the context of reducing the intensity of stormwater flows and potential flooding in a wetland. Some of the literature indicates that wetland buffers are far less effective at maintaining wetland hydroperiod than other mechanisms, such as controlling impervious surfaces and utilizing effective stormwater management practices (Sheldon et al. 2005).

The buffer for Wetland Z will be reduced in width from 300 to 225 feet in accordance with criteria and requirements listed under PCC 18E.30.60.B.1.a. Pierce County (2022b) buffer widths and the criteria and requirements necessary for reduction of a Category I wetland buffer are consistent with the most current recommendations by WDOE (2022) (Publication #22-06-014) found in Appendix C of that document for Buffer Option 1.

This approach includes options to reduce the buffer through protection of a habitat corridor, such as a stream corridor, and implementation of minimization measures to reduce the level of impact from the adjacent land use. The WDOE buffer width recommendations are based on a moderate-risk approach. This means that by adopting Ecology's recommendations, there is a moderate risk that wetland functions will be impacted. The recommended buffer widths were selected from the middle of the range of buffers suggested by BAS. The 2022 WDOE guidance is consistent with earlier WDOE (Sheldon et al. 2005, Hruby 2013, and WDOE 2016,) guidance. The proposed reduction of the Wetland Z buffer through protection of a habitat corridor connection to the greater Muck Creek system to the south, along with implementation of the proposed minimization measures described below is consistent with the moderate risk approach recommended by WDOE.

Specifically, buffer reduction must meet the following requirements listed in PCC 18E.30.60.B.1.a below:

B. Modification of Buffer Widths. The standard buffer widths of PCC 18E.30.060 A. may be decreased through the averaging or reduction mechanisms of this Section. The standard buffer width may also be increased.

1. Standard Conditions. The buffer widths recommended for land uses with "high intensity" impacts to wetlands can be reduced to those recommended for "moderate intensity" impacts under the conditions identified below.

a. For wetlands that score moderate or high for habitat (20 points or more), the width of the buffer around the wetland can be reduced if both the following conditions are met:

(1) A relatively undisturbed native, vegetated corridor at least 100 feet wide is protected between the wetland and any other Priority Habitats as defined by the Washington State Department of Fish and Wildlife. The corridor must be protected for the entire distance between the wetland and the Priority Habitat via some type of legal protection such as a conservation easement; and

(2) Measures to minimize the impacts of different land uses on wetlands, as summarized in the following table, are applied.

Examples of Disturbance	***Examples of Measures to Minimize Impacts***	***Activities that Cause the Disturbance***
Lights	*Direct lights away from wetland*	*Parking Lots, Warehouses, Manufacturing, High Density Residential*
Noise	*Place activity that generates noise away from the wetland.*	*Manufacturing, High Density Residential*

Examples of Disturbance	***Examples of Measures to Minimize Impacts***	***Activities that Cause the Disturbance***
Toxic runoff	*Route all new untreated runoff away from wetland,* *Covenants limiting use of pesticides within 150 feet of wetland* *Integrated pest management programs*	*Parking Lots, Roads, Manufacturing, Residential Areas, Application of Agricultural Pesticides, Landscaping*
Change in water regime	*Infiltrate or treat, detain and disperse into buffer new runoff from surfaces*	*Any impermeable surface, Lawns, Tilling*
Pets and Human disturbance	*Fence around buffer* *Plant buffer with "impenetrable" natural vegetation appropriate for region*	*Residential areas*
Dust	*BMPs for dust*	*Tilled fields*

The following is excerpted from the May 29, 2023 *Wetland Analysis Report and Mitigation Plan* prepared by RAI.

"The buffer reduction plan for Wetland Z meets all requirements of PCC 18E.30.60.B.1.a as follows.

- Wetland Z is a portion of a larger Category I wetland that extends several miles to the south and is a Priority Habitat as defined by Washington Department of Fish and Wildlife (2008). Wetland Z and its buffer would be protected within a Critical Area Tract to remain contiguous and connected to off-site portions of the wetland and associated forested habitats all the way to the Muck Creek corridor. Protection of the corridor between Wetland Z and the Muck Creek corridor is a goal (GR D-11) of the Graham Community Plan (Pierce County 2006).
- Measures to minimize the impacts of the NBHS on Wetland Z will be implemented by the School District and consist of the following:
    - All lighting from adjacent areas of the NBHS, including lighting for the adjacent multi-purpose field will be shielded and directed downward and away from the wetland. The proposed lighting system will be a state-of-the art, fully shielded LED lighting system with extended shielding visors for additional mitigation measures (Stantec 2023). Analysis of the lighting plan (Stantec 2023) indicates that the lighting of the multi-purpose field will essentially have little or no spillover across the wetland buffer

boundary and will be limited to the outer portion of the buffer. There will be a very small amount of glare that extends past the wetland buffer boundary line, but this also is not a bright amount of light, and it is expected to attenuate sharply to near zero past the edge of the wetland buffer boundary. The lighting system will be consistent with industry standards for high school sports facilities and International Dark Sky community friendly recommendations for field lighting. Lighting impacts will be mitigated further by limiting lighting to occur primarily during late afternoon and evening hours until 10PM for the multi-purpose field. In addition, the inner 50 feet of the wetland buffer will be enhanced by densely planting trees and shrubs to establish a riparian forest community adjacent to the wetland boundary to shield the wetland from light generated by the NBHS. See the Wildlife Habitat Assessment (RAI 2023a) for additional discussion of mitigation of potential lighting impacts.

- The NBHS has been designed to limit noise impacts to Wetland Z. A noise study completed by Landau Associates, Inc. (2023) found that operating noise levels at the Wetland Z area are expected to be 31 to 46 dBA, which are within the range of baseline noise levels recorded as already present at the Project Site and are expected to be within limits established by Pierce County (2022b) for the noise levels permitted to cross property boundaries. These are established as 55 dBA during the day (7 AM – 10 PM) and 45 dBA during the night (10 PM – 7 AM). Enhancement of the inner buffer of Wetland Z will provide additional noise mitigation by shielding the wetland from noise generating areas of the NBHS such as the multi-purpose field. See the *Wildlife Habitat Assessment Report* (RAI 2023a) for additional discussion of mitigation of potential noise impacts.
- During Project construction, erosion and sedimentation impacts to the wetland will be minimized through implementation of BMPs in according with a Pierce County-approved Stormwater Pollution Prevention Plan and Temporary Erosion and Sediment Control plan prepared in coordination with RAI. Any hazardous runoff and changes to water regime during Project construction will be minimized by routing all construction impacted stormwater to temporary stormwater storage and treatment facilities that will be constructed and managed in accordance with the Washington State Department of Ecology (2020) Construction Stormwater General Permit (CSWGP) per the NPDES permit that will be issued by the Washington Department of Ecology for the Project to Bethel School District. Once the NBHS is operational, all generated stormwater will be routed to permanent stormwater facilities that will be constructed to meet the Pierce County (2021) stormwater management requirements for

protection of the Wetland Z hydrologic regimes and water quality discharged to the wetland.

- Impacts from pets and human disturbance will be minimized through use of a 6-foot-tall chain-link fence to be installed at the outer edge of the wetland buffer. In addition, the inner 50 feet of the Wetland Z buffer which currently consists of pasture dominated by grasses and few shrubs will be enhanced by densely planting native trees and shrubs to create a thorny, impenetrable barrier to entry. An ancillary benefit of the buffer enhancement will be to increase habitat diversity within the buffer and to establish additional vegetative shielding from noise generated by the NBHS. A locked gate through the chain-link fence will be installed to allow maintenance of the enhanced portion of the Wetland Z buffer during establishment of the trees and shrubs and for collection of mitigation performance and hydrologic data generated during a 5-year additional monitoring period.
- The generation of dust is most likely to occur during Project construction. Dust impacts will be minimized during construction through the use of BMPs such as regularly watering work areas, covering all truck loads, use of stabilized construction entrances, wheel washing, and other appropriate BMPs listed in the CSWGP (WDOE 2020) or otherwise required by Pierce County."

The 225-foot minimum buffer provided to Wetland Z exceeds the minimum buffers recommended by BAS to provide water quality treatment and protection. Densely vegetated grassland within the wetland buffer, along with the highly infiltrative Spanaway soils mapped by the U.S. Natural Resources Conservation Service (NRCS) within the wetland buffer, will be especially effective in protecting water quality within the wetland. The proposed buffer also is within the range of buffer widths recommended by WDOE (2022) as appropriate for Category I wetlands that provide a high level of wildlife habitat functions such as Wetland Z. Enhancement of the wetland buffer with native trees and shrubs will provide additional benefit to wildlife that does not currently exist within the on-site portion of the buffer. As discussed above in our response to Comment 3, the 225-foot minimum buffer width provided to Wetland Z exceeds the standard 150-foot buffer required by Pierce County (2022b) code for fish-bearing streams and is consistent with WDFW riparian zone management width recommendations for protection of riparian functions and salmonids (Rentz et al. 2020).

Given the existing condition of the Project Site, including the area adjacent to Wetland Z which currently consists of pasture, as well as the landscape context, additional buffer area beyond that proposed would not significantly enhance the wetland functions or protection thereof. In addition, the Wetland Z buffer will be monitored regularly by RAI for a minimum of 5 years after Certificate of Occupancy has been issued by Pierce

County. RAI will use the results of this monitoring to make maintenance recommendations to be implemented by the Bethel School District to ensure that new plantings within the buffer become well-established. Therefore, it is our professional opinion that through implementation of the mitigation measures described above, wetland functions protected by the wetland buffer will not be adversely impacted.

Our conclusion that application of the requirements of PCC 18E.30.60.B.1.a will provide sufficient protection to Wetland Z to avoid significant adverse impacts is supported by 18E.30.010 Development Regulations – Critical Areas General Provisions which states, among other things, that the purpose of the Chapter 18E is to avoid impacts arising from land development and other activities affecting wetlands.

"

COMMENT 6

July 21, 2023 email from Mr. Bryson Ahlers to Mr. Jeffrey Mann, Bethel School District:

> *"I note that Tansy Ragwort (poisonous to horses & cattle) is missing from your "noxious weed" list. Vacant lot at 7226 227th St E has hundreds of these plants growing just across the fenceline from school site.*

RESPONSE

While it is possible that tansy ragwort occurs on the school district property, RAI did not observe it during our field investigations of wetlands and wildlife habitats on site, which encompassed more than 20 field days over the last 3 years, many of which occurred during the spring and early summer months. The list of plants observed during our field investigations, as documented in both the May 25, 2023 *Wildlife Habitat Assessment Report* (RAI 2023a) and the May 29, 2023 *Wetland Analysis Report and Mitigation Plan* (RAI 2023b), is not meant to be exhaustive, but representative of current site conditions. Should any noxious weeds that require control be found on site, control measures would be implemented per PCC 18J.15.100C(3) and consistent with Pierce County Noxious Weed Control Board requirements and guidelines. In accordance with a Memorandum of Agreement to be executed between the School District and Pierce County, RAI will assist the Bethel School District in preparing an Operations & Maintenance Manual for the Project related to maintenance of the Critical Area Tracts and school grounds. This Operations & Maintenance Manual will include a section on control of noxious weeds which will include guidance for prevention of introduction of noxious weeds into these areas and methods to remove them in the event that they are identified.

COMMENT 7

July 21, 2023 email from Mr. Bryson Ahlers to Mr. Jeffrey Mann, Bethel School District:

> *"Further, missing from your list of birds observed on the site would Northern Harrier, Killdeer, Juncos, Am Robins, Mallard ducks, Canada geese, Coopers hawks, hummingbirds, mourning doves, owls, Red-winged blackbird, Towhees and more.*
>
> *Missing from the amphibian list are skinks & newts."*

RESPONSE

The species noted in the comments are all relatively common species in appropriate habitats in the Puget Sound lowlands and may occur on the project site and vicinity. RAI did in fact observe dark-eyed junco, American robins, mallards, and rufous hummingbirds during our investigations, and these birds are listed in our *Wildlife Habitat Assessment Report* (RAI 2023a). The SEPA checklist lists common species which were observed on the site, but is not intended to be an exhaustive list. The SEPA checklist refers to the *Wildlife Habitat Assessment Report* (RAI 2023a) for a complete list of observed wildlife. The *Wildlife Habitat Assessment Report* (RAI 2023a) states that the site may harbor a variety of species adapted to the habitats on site and in the vicinity but, of course, not all species would be found there during all times of year. Nevertheless, RAI documented the presence or sign of 28 species during our field investigations. Again, this is not meant to be an exhaustive list of all species that may be present at other times, but a representative list of species using the site as RAI searched for signs of presence of listed or other Priority species.

Under Pierce County code (PCC 18E.040.010), the purpose of a wildlife habitat assessment is to evaluate the potential presence or absence of a *regulated* fish or wildlife species or habitat affecting a subject property and the potential for impacts to such features as a result of a development proposal. In addition, RAI evaluated the potential presence or absence of commonly occurring wildlife species in relation to habitats that would be retained or expanded under the development proposal to assess any potential for significant adverse environmental impacts to those species. The May 25, 2023 *Wildlife Habitat Assessment Report* (RAI 2023a) accomplishes this and is consistent with industry standards. The report has been reviewed by Scott Sissons, Pierce County staff Environmental Biologist 3, and his review letter dated August 3, 2023 concurred with our conclusion that other than wetlands, no other regulated Fish and Wildlife Species and Habitat Conservation Areas per PCC 18E.40 have been found on site (Pierce County 2023a). Mr. Sissons letter also found the plans to be consistent with Pierce County code (PCC 18E) requirements (Pierce County 2023a).

As stated in the *Wildlife Habitat Assessment Report* (RAI 2023a), all of the most valuable habitats, including the wetlands and their buffers and the only existing forest stand on site, would be retained in open space tracts (nearly 35 acres encompassing critical areas, their buffers, and interconnecting open space, and an additional 22 acres of other open space, which will be vegetated) that would continue to provide habitat for a variety of wildlife species. In addition, the project proposes to enhance (0.14 acres) and expand the area of Wetland C by 0.15 acres with plantings of shrub and emergent species and enhance the inner 50 feet (0.49 acres) of the Wetland C buffer with plantings of shrubs and low-height trees. The project also includes enhancement of the inner 50 feet (1.64 acres) of the Wetland Z buffer with plantings of trees and shrubs. These enhancements will provide increased habitat structure and diversity to benefit wildlife habitat within the retained critical area (open space) tract.

The project landscape plan further includes retention and plantings of trees that greatly exceed code requirements (total of 910 tree units provided versus 632 required – note that, per PCC 18J.15.030H, an existing "tree unit" is equivalent to a tree 1 to 6 inches dbh retained). The wetland enhancement elements and proposed landscaping will provide additional potential habitat elements (resting, perching, nesting) for wildlife across the site. The proposed site plan would establish critical area tracts encompassing the wetlands and their buffers. The critical area tracts on the site total approximately 34.7 acres, which is 52% greater than the area encompassed by the wetlands and their required Pierce County buffers. In the western part of the site in particular, the critical area tract would maintain a substantial area of existing contiguous habitat connections among the wetlands and their standard buffers, which provides wildlife habitat benefit beyond that required under Pierce County code for the project.

LIMITATIONS

We have prepared this Technical Memorandum for the exclusive use of Bethel School District. No other person or agency may rely upon the information, analysis, or conclusions contained herein without permission from the Bethel School District.

We warrant that the work performed conforms to standards generally accepted in our field, and has been prepared substantially in accordance with then-current technical guidelines and criteria. The conclusions of this report represent the results of our analysis of the information provided by the project proponent and their consultants, together with information gathered in preparation of these responses to SEPA comments. No other warranty, expressed or implied, is made.

If you have any questions or comments, or wish to discuss this issue further, please contact us at (206) 525-8122 or at epritchard@raedeke.com.

LITERATURE CITED

Clear Creek Solutions, Inc. 2023a. New Bethel High School Site, Western Wetlands, Pierce County, Washington, Wetland Inflow Volume Analysis (Pierce County Parcel 0418172009). March 20, 2023 report prepared for Bethel School District No. 403, Puyallup, WA.

Clear Creek Solutions, Inc. 2023b. New Bethel High School Site, Wetland Z, Pierce County, Washington, Wetland Inflow Volume Analysis (Pierce County Parcel 0418172010). April 24, 2023 report prepared for Bethel School District No. 403, Puyallup, WA.

Habitat Technologies. 2007. Wetland and Drainage Corridor Reconnaissance Level Assessment. 23009 – 70th Avenue East (Parcel 0418172009), Pierce County, Washington. Report prepared for Ms. Catherine Carlson, Bethel School District. August 17, 2007.

Hruby, T. 2013. Update on Wetland Buffers: The State of the Science, Final Report, October 2013. Washington State Department of Ecology Publication #13-06-11.

John Comis Associates LLC & Habitat Technologies. 2011. Crate Property Wetland Delineation Study. Parcel 0418172009: 23009 – 70th Avenue East. Pierce County SRS Problem Number 43103. Report prepared for Ms. Catherine Carlson, Facilities Planner, Bethel School District. August 23, 2011.

Landau Associates, Inc. 2023. New Bethel High School Noise Study. May 2023.

Northwest Indian Fisheries Commission. 2023. Statewide Integrated Fish Distribution (SWIFD) Mapper. Salmon and Steelhead Habitat Inventory and Assessment Program. Available at: https://geo.nwifc.org/swifd/. Last accessed April 2023.

Pierce County. 2006. Pierce County Comprehensive–Plan – Graham Community Plan. Pierce County Public Works and Utilities Water Programs Division. April 2007.

Pierce County. 2021. Ordinance No. 2021-45: Pierce County Stormwater and Site Development Manual. Effective July 1, 2021. Available at: https://www.piercecountywa.gov/DocumentCenter/View/106293/Stormwater-Management-and-Site-Development-Manual20210701?bidId=.

Pierce County. 2022a. Email from Mr. Scott Sissons, Pierce County Planning and Public Works, to Mr. Emmett Pritchard, Raedeke Associates, Inc., regarding New Bethel High School – fill within Wetland Y for new fence installation. August 22, 2022.

Pierce County. 2022b. Title 18E: Development Regulations – Critical Areas. Current through ordinance 2022-80s, passed December 13, 2022. Accessed at: http://www.codepublishing.com/WA/PierceCounty/#!/PierceCounty18E/PierceCounty18E.html.

Pierce County. 2023a. Letter from Mr. Scott Sissons, Environmental Biologist 3, Pierce County Planning and Public Works, to Mr. Jeffrey Mann, Bethel School District, regarding New Bethel High School, Conditional Use Permit App. No. 1014850, Wetland App. No. 1015022 & 1015023, Fish & Wildlife App. No. 1015024, Parcel No. 0418172009, 0418172010, 0418172019 & 0418172021. August 3, 2023.

Pierce County. 2023b. Memorandum: Land Use & Environmental Review – Biologist Section. From Mr. Scott Sissons, Environmental Biologist 3, Pierce County Planning and Public Works to Mr. Dan Buhl, Senior Planner, Pierce County Planning and Public Works regarding New Bethel High School, Conditional Use Permit App. No. 1014850, Wetland App. No. 1015022 & 1015023, Fish & Wildlife App. No. 1015024, Parcel No. 0418172009, 0418172010, 0418172019 & 0418172021. August 3, 2023.

Raedeke Associates, Inc. 2022. New Bethel High Sch^{oo}l 70th Avenue East Half-Street Improvements Project – Ditch Assessment and Mitigation Plan. April 15, 2022 report to Ms. Sara Coccia, Bethel School District #403, Spanaway, WA.

Raedeke Associates, Inc. 2023a. New Bethel High School Wildlife Habitat Assessment. May 2023 report to Ms. Sara Coccia, Bethel School District #403, Spanaway, WA.

Raedeke Associates, Inc. 2023b. Wetland Analysis Report for the New Bethel High School Project Pierce County, Washington. May 2023 report to Bethel School District #403, Spanaway, Washington.

Rentz, R., A. Windrope, K. Folkerts, and J. Azerrad. 2020. Riparian Ecosystems, Volume 2: Management Recommendations. Habitat Program, Washington Department of Fish and Wildlife, Olympia.

Sitts & Hill Engineers, Inc. 2023. New Bethel High School - Project Storm Facility Systems. April 26, 2023 memorandum from Kathy Hargrave, Sitts & Hill Engineers, Inc. to the Bethell School District.

Sheldon, D., T. Hruby, P. Johnson, K. Harper, A. McMillan, T. Granger, S. Stanley, and E. Stockdale. March 2005. Wetlands in Washington –tate - Volume 1: A

Synthesis of the Science. Washington State Department of Ecology. Publication #05-06-006. Olympia, WA.

Stantec. 2023. Lighting Analysis of New Bethel High School Project Site. May 2023.

Washington Department of Ecology. 2016. Wetland Guidance for CAO Updates: Western Washington Version. Shorelands and Environmental Assistance Program, Washington State Department of Ecology, Olympia, Washington. Publication No. 16-06-001. June 2016.

Washington Department of Ecology. 2020. Washington State Construction Stormwater General Permit. Issued November 18, 2020; effective January 1, 2021 through December 31, 2025.

Washington Department of Ecology. 2022. Wetland Guidance for Critical Areas Updates: Western and Eastern Washington. Shorelands and Environmental Assistance Program, Washington State Department of Ecology, Olympia, Washington. Publication No. 22-06-014. October 2022.

Washington Department of Fish and Wildlife. 2008. Priority habitats and species list. August 2008 (updated June 2016), Olympia, WA. 174 pp.

Washington Department of Fish and Wildlife. 2023. SalmonScape Mapping Tool. http://apps.wdfw.wa.gov/salmonscape/map.html. Last accessed April 2023.

MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

APPENDIX C

Memorandum

*(*Sitts & Hill Engineers, September 21, 2023)

APPENDIX C

sitts&hill
4815 Center Street
Tacoma, WA 98409-2319
(253) 474-9449 / sittshill.com

Brent K. Leslie, PE, SE
Kathy A. Hargrave, PE
Larry G. Lindell, PE, SE
Michael A. McEvilly, PLS
Andrew J. Boileau, PE, SE
David C. Boileau, AIA

Memorandum

To: Bethel School District, Sarah Coccia, Director of Construction & Planning

From: Kathy A. Hargrave, PE, Sitts & Hill

Date: September 21st, 2023

Subject: Responses to SEPA Comments from Mr. James Halmo

Sitts & Hill has reviewed comments from James Halmo who has two broad and three narrow areas of concern regarding the development of the New Bethel High School Project. Mr. Halmo's comments are presented below in *italicized lettering* with our responses in **bold**.

The first broad area of concern for Mr. Halmo is the extent of the "groundwater flooding issues" in the vicinity of the project site.

The limits of riverine flooding extend northeasterly and southerly from and include Wetland Z in the southeast corner of the school district property. This floodplain is mapped on the FEMA Firm Panel dated March 7, 2017. This panel does not indicate flooding to the northeast across 224th Street East from the project site, though Mr. Halmo has produced an aerial photograph that shows an accumulation of water on the north side of 224th Street East concurrent with flooding in the FEMA floodplain on the south side of 224th Street East.

The development of the high school structure is outside of the potential flood hazard area, defined by Pierce County. From Pierce County Code 18E.70.020 Flood Hazard Areas are:

A. *Potential Flood Hazard Areas.*

1. Potential flood hazard areas, as depicted on the Critical Areas Atlas-Flood Hazard Area Map, include:

a. *Detailed Study Areas.* (See Figure 18E.70-1 in Chapter 18E.120 PCC.)

(1) FEMA Flood Insurance Rate Map numbered AE zones and VE zones.

(2) Areas within 150 feet horizontal distance from the base flood elevation established for the mapped A and V zones.

(3) Areas within the UGA that are 2 feet, or in rural areas 5 feet, of vertical height from the base flood elevation established for the mapped A and V zones.

b. *Unstudied Areas.* FEMA Flood Insurance Rate Map unnumbered A zones and shaded X zones and areas within 150 feet horizontal distance from the mapped areas of the mapped A and shaded X zones. (See Figure 18E.70-2 in Chapter 18E.120 PCC.)

c. *Natural Waters/Watercourse.* Areas within 65 feet horizontal distance from the ordinary high water mark of an identified natural watercourse. (See Figure 18E.70-3 in Chapter 18E.120 PCC.)

d. *Groundwater Flooding Areas.* Areas within 300 feet horizontal distance from a mapped groundwater flooding area. (See Figure 18E.70-4 in Chapter 18E.120 PCC.)

e. *Potholes.* Areas not identified as a mapped flood hazard area, but within 10 feet of vertical relief from the bottom of an identified pothole or within 2 feet of vertical relief of a potential surface water spillway or other type of outlet. (See Figures 18E.70-5 and 18E.70-6 in Chapter 18E.120 PCC.) Potholes may be identified by Pierce County topographic mapping, field survey, or site inspections.

f. *Channel Migration Zones (CMZ).* Channel Migration Zones shall apply only to those watercourses listed below in PCC 18E.70.020.B.4. In those areas where detailed CMZ studies have been completed and accepted by Pierce County, additional horizontal and vertical review threshold criteria (i.e., 150' horizontal and 2' or 5' vertical) shall not apply. (See Figure 18E.70-7 in Chapter 18E.120 PCC.)

The on-site portion of the 100 year flood is a riverine flood area with a base flood elevation of approximately 481 (NAVD 88) based upon our correspondence with Pierce County (floodplain engineer), review of the FEMA Firm Panel dated March 7, 2017. No development, buildings, cut or fill is proposed within that portion of the Bethel School District property containing the 100 year floodplain.

The high school building is being constructed a minimum of 600 lineal feet from the edge of the floodplain with lowest finish floor elevations (NAVD 88) of 511.67 in the northern third, 513.42 in the middle and 515.17 in the south third of the building. The building finish floor is a minimum of 30.67 feet above the 100-year flood elevation. Proposed site amenities including the multi-purpose field and the practice field are located a minimum of 200 feet distant from the 100-year floodplain with a minimum ground surface elevation of 498.5, approximately 17.5 feet above the 100-year flood elevation. Stormwater discharge through the south infiltration trench is at an elevation of 489.0, approximately 8 feet above the 100-year flood elevation.

Pierce County Code Chapter 18E.70 Flood Hazard Areas has no prohibitions with respect to the type of development proposed for the New Bethel High School (NBHS) located outside the defined flood hazard area.

The hydrology to the downstream drainage system, in the southeastern portion of the site containing Wetland Z, will be maintained. Under normal operating conditions, the maximum modeled rise in flow elevation for discharges to the south is calculated to be approximately 0.004 inches (Clear Creek Solutions, Inc. Memo dated August 15th, 2023). Under extraordinary conditions, when all safeguards have failed for keeping the drainage pumps operational during power outages, the calculated rise for the 100-year event is 0.006 inches, well below the Pierce County defined Zero Rise of 0.01 Feet (PCC 18E.70050 Appendices A. 1).

Specific Concerns raised by Mr. Halmo, related to "groundwater flooding" are:

A. *Concerns raised with respect to the Grand Firs development and the floodplain associated with headwaters of Muck Creek. Mr. Halmo addressed the Pierce County Hearing Examiner in February of 2004 with a number of issues regarding the Grand Firs project, including the failure of the County to finish mapping the northern flood pathway prior to a case hearing. The Hearing Examiner issued his decision while the exact floodway was not mapped nor did the Examiner Mandate it to be completed…*

   On January 20, 2006, Mr. Halmo timely filed a reconsideration request of the decision approving the Final Plat (of the Grand Firs development) asserting, among other issues specifically related to the Grand Firs development, the applicant has not provided an accurate mapping of the floodplain.

   From the Hearing Examiners March 21, 2006 decision, "The applicant responded to the assertion by demonstrating Northwest Hydraulics Consultants, Inc. (NHC) prepared a detailed floodplain analysis during development of the engineering plans. The analysis extended the County's floodplain studies throughout the Grand Firs site, and NHC provided the applicant with a Conditional Letter of Map Revision (CLOMR) for the Grand Firs Development. Pierce County reviewed the CLOMR, approved it, and forwarded it to the Federal Emergency management Agency (FEMA). In a letter dated September 13, 2005, from FEMA to John W. Ladenberg (County Executive), the author writes…

> **…In a letter dated November 5, 2004, Mr. Jeff P. Johnson, P.E., Principal, Northwest Hydraulics Consultants, Inc., requested that FEMA evaluate the effects that detailed hydraulic and hydrologic analyses, updated topographic information, and proposed modifications to Muck Creek, associated with the Grand Firs development, from approximately 8,000 feet upstream to approximately 9,800 feet upstream of 252nd Street East would have on the flood hazard information shown on the effective FIRM, FBFM, and FIS report…**
>
> **All data required to complete our review of this request for a Conditional Letter of Map Revision (CLOMR) were submitted with letters from Mr. Johnson.**

> **We reviewed the submitted data and the data used to prepare the effective FIRM for your community and determine that the proposed project meets the minimum floodplain management criteria of the NFIP…**

Pierce County and FEMA have accepted the applicant's floodplain study. The reconsideration request provides no contradictory expert opinion of the studies and analysis, but is in the nature of unsubstantiated concerns. As held by the Washington Court of Appeals in Maranatha Mining v. Pierce County, 59 Wn. App 795 (1990):

> **The only opposing evidence was generalized complaints from displeased citizens. Community displeasure cannot be the basis of a permit denial…**
>
> **We cannot escape the conclusion, in view of the evidence in support of Maranatha's application, that the Council based its decision on community displeasure and not on reasons backed by policies and standards as the law requires… 59 Wn. App 795 at 804, 805."**

On March 21, 2006 the Hearing Examiner issued his denial of the Request for Reconsideration of the Final Plat Approval for Grand Firs.

B. *Flooding at 22718 – 82nd Avenue East.*

Development of the high school will have no significant impact on the 100-year flood elevation at the property located at 22718 – 82nd Avenue East, since hydrology will be maintained in the southeastern area of the site. Maintaining hydrology to Wetland Z is in conformance with Minimum Requirement # 8 - Wetland Protection in the Pierce County Stormwater and Site Development Manual (Manual).

Stormwater infiltrating in the northern retention pond is traveling in a generally northwesterly direction and is tributary to the Clover Creek Basin. The bottom of the facility is a minimum of 15 feet above the high groundwater elevation (Aspect Hydrogeologic Assessment).

C. *The Pierce County Water Programs memo dated September 23rd, 2003 expressing strong concerns early about the proper mapping of flood elevations in the Grand Firs complex.*

From the Hearing Examiners decision dated March 21, 2006, in which the request for reconsideration of the approval of the Final Plat of Grand Firs was denied, in part based upon the detailed flood study prepared for the project, this concern is rendered moot.

The Bethel High School Team has been working with Development Engineering and a Pierce County Flood Engineer. There is no question that the NBHS project

has used the current FEMA flood maps and Pierce County has provided the base flood elevation to us at elevation 481 NAVD 88.

D. *Aerial photograph taken on January 19th, 2006 showing the flooding starting north of 224th Street down into the designed (still homeless) Grand Firs complex, as well as wetlands on the now western school property.*

Stormwater in the on-site easterly sub-basin area of the Bethel School District property will be reliably infiltrated. Results from groundwater monitoring demonstrate that infiltrated water in the northern retention pond travels sub surface in a northwesterly direction, away from the Grand Firs development. The stormwater infiltrated in the northern retention pond is tributary to the Clover Creek Basin. Further, the depth to groundwater under the northern infiltration pond is a minimum of 15 feet below the bottom of the facility.

Stormwater contributing to the Zone A flood plain will enter the groundwater system through an infiltration trench in the southeast upland area of the site. Because the hydrology to the wetland, located in the flood plain, is required to be maintained with the development of the school, excess stormwater from development of the site will not be routed in this direction.

E. *More recent photos of water flowing with Grand Firs housing constructed on top of the 'dike-like' land filling the property at 22718 – 82nd Avenue East. The School District should expect high ground water levels when the properties along 82nd Avenue, north of Grand Firs, are flooded.*

The high school building is being constructed a minimum of 600 lineal feet from the edge of the floodplain with lowest finish floor elevations of 511.67 in the northern third, 513.42 in the middle and 515.17 in the south third of the building. The building finish floor is a minimum of 30.67 feet above the 100-year flood elevation. Proposed site amenities including the multi-purpose field and the practice field are located a minimum of 200 feet distant from the 100-year floodplain with a minimum ground surface elevation of 498.5 approximately 17.5 feet above the 100-year flood elevation. Stormwater discharge through the south infiltration trench is at an elevation of 489.0, approximately 8 feet above the 100-year flood elevation.

No adverse impact from the development of the high school is proposed to occur within the existing floodplain and no buildings are proposed within the potential flood hazard area. The analysis for the normal drainage conditions and the "full overflow" drainage condition when a large portion of the site stormwater is tributary to Wetland Z, in the 100-year flooding condition, yields calculated rise of less than 0.01 FT in both situations (0.004 and 0.006-inches respectively).

From PCC 18E.70.050 Appendices, A. Floodplain/Floodway Analysis V. Zero Rise Analysis, A. The Zero Rise Analysis (ZRA) is required where encroachment within

the flood fringe area is allowed and approved by Pierce County*. The ZRA must show that the proposed development encroachment in the flood fringe area will not show a measurable rise in the base flood elevation (i.e., less than 0.01 foot), resulting from a comparison of existing conditions and proposed conditions.

***Bethel School District is not proposing any development encroachment within the flood fringe. The above described analysis was performed, though not required, in an abundance of caution to quantify impacts to the downstream drainage system south of the southeast corner of the property and potential impacts on mapped riverine flooding.**

The second broad area of concern is from interpretation of the information presented in the Aspect Consulting Hydrogeological Assessment and the validity of calculations, prepared by Clear Creek Solutions, for the maintenance of hydrology to Wetland Z.

A. *The Hydrogeological Assessment by Aspect Consulting draws on the Larson and Associates mapping, which drew questions from the PALS staff about the proper documenting of ground elevations.*

   The Aspect Hydrogeologic Assessment does not "rely" on any substantive analysis prepared by Larson and Associates in their study. They have included record information prepared by Larson and Associates to inform their mapping of the locations and elevations of off-site ponds and septic systems in the Grand Firs development.

   Ground surface elevations for the School District site are from an independent ground topographic survey prepared by licensed professional surveyors employed at Sitts & Hill Engineers, Inc. Groundwater monitoring elevations are measured using data loggers and through physical field measurements.

B. *Groundwater is clearly a source of concern by neighbors to the north, and it has been for many years.*

   See responses to broad concern number one items B, C and D.

C. *The County has seen periods of higher rainfall in some years and much less in others. While the rainfall in 2020-2021 testing period has been on the mild side, the 2005-2006 rainfall, as documented in the County's Report, was excessively substantial. Thus, it provides a significant marker for comparing time periods for both rainfall and "groundwater flooding."*

   From the Aspect Hydrogeologic Assessment on pages 9 and 10, "Daily and monthly precipitation records for the NOAA station near the Site are presented in Figure 3 and Table 3 for 2011 through 2021, along with the average calculated over the same period. Data indicate that the wet season precipitation over the monitoring period (25.07 inches from November 1 to May 1) was 94 percent of the average wet

season precipitation calculated over the most recent 10-year period. Total monthly precipitation recorded from November through February was above average during the monitoring period. This indicates that the monitoring period for the Site investigation represents typical weather conditions."

D. *There is a strong possibility you (the School District) may encounter wet fields during an excessive rainy season.*

Proposed site amenities including the multi-purpose field and the practice field are located a minimum of 200 feet distant from the 100-year floodplain with a minimum ground surface elevation of 498.5, approximately 17.5 feet above the 100-year flood elevation. It is highly unlikely that the fields will be adversely affected by high groundwater.

E. *The 22-page document prepared by Clear Creek Solutions on Wetland Z's inflow volume analysis states that the School District is not required to monitor the wetland hydroperiod because it does not have access to the outlet of the Category 1 wetland. However, that does not negate the extreme possibility that its calculations, based largely on a mild rainfall season, do not reflect what can occur when more serious groundwater levels arise.*

Clear Creek Solutions inflow volume analysis to Wetland Z is based upon the most recent version of the Western Washington Hydraulics Model (WWHM2012 version 2022/07/07). This model *does not* rely upon the physical monitoring period to inform results. The model incorporates the full record of rainfall history in 15 minute time-steps, including the 1996 and the 2005-2006 water years with even larger rainfall periods and storms incorporated into the model that have not occurred in the recorded history.

In conformance with Pierce County's recommendations for the Conditional Use Permit, Wetland, and Fish and Wildlife Applications; monitoring of wetland hydrology within Wetlands A, C, E, K, L and Z shall be conducted by Raedeke Associates, Inc. for a minimum of 5 years after Certificate of Occupancy has been issued by Pierce County for the NBHS.

F. *There are also concerns that the monitoring testing sites do not appear to be located farther outside the wetland areas, particularly the Cell1 site (Wetland Z).*

The proposed location of monitoring points and wells are appropriate to confirm the site drainage systems are functioning as designed and discharges off-site are within anticipated ranges.

G. *Mr. Halmo strongly disagrees with the Pierce County approved reduction in the Wetland Z buffer from 300 feet to 225 feet, based upon what he considers "limited mapping" and personal observations in 2005. He states, " The reduction is not justified."*

Raedeke Associates, Inc. delineated the wetlands, Sitts & Hill Engineers incorporated the wetland flags into their topographic survey and Pierce County Staff have verified the wetland mapping is accurate.

From Pierce County Correspondence to Bethel School District dated August 3rd, 2023:

"Wetland Z is a Category I wetland and will require a 225-foot buffer with a 15-foot building setback with buffer modification per PCC 18E.30.060 B. In addition, to the measures to minimize impacts found in the table in PCC 18E.30.060 B. 1, the project will enhance the inner 50 feet of the Wetland Z buffer with densely spaced plantings of native trees and shrubs."

The first narrow area of concern is the westerly wetlands located on Pierce County Tax Parcel Number 0418172009.

On March 29, 2011, Mr. Halmo photographed two bull dozers operating for so-called "agricultural purposes."

The activity that Mr. Halmo is referring to above was the subject of Pierce County permitting and restoration. The file is closed on these activities.

The second narrow area of concern is the District's documents stating that the land parcels are not Agricultural Lands… In a formal legal rezone, the lands could be rezoned to ARL. That is most assuredly true.

Agricultural Resource Lands (ARL) are Resource Lands with restrictive Zoning requirements for development associated with them. The Bethel School District parcels are not Pierce County designated Agricultural Resource Lands.

Mr. Halmo's third and last narrow area of concern is the siting of NBHS in the rural area. He states, "the School District continues to have a legal obligation to search for possible urban sites serving an urban population.

It is our understanding that this concern will be addressed by others on the NBHS development Team.

Please feel free to contact our office with any comments regarding this comment/response memo.

SITTS & HILL ENGINEERS, INC.

Kathy A. Hargrave

Kathy A. Hargrave, PE, Principal Civil Engineer

O:\18400\18413\Correspondence\Civil\Memos\Memos re SEPA Comments\2023-09-21 Final Sitts Memo re James Halmo SEPA Comments.docx

MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

APPENDIX D

Memorandum
Analysis of Stormwater Downstream Impact

(Clear Creek Solutions, August 30, 2023)

APPENDIX D

CLEAR CREEK SOLUTIONS, INC.

15800 Village Green Drive #3
Mill Creek, WA 98012
425-225-5997
www.clearcreeksolutions.com

MEMO

DATE: 30 August 2023

TO: Bethel School District No. 403, Puyallup, WA

CC:

FROM: Doug Beyerlein, PE

SUBJECT: Downstream Impacts from Runoff from the New Bethel High School

The purpose of this memo is to present the expected downstream impacts from runoff from the New Bethel High School (NBHS) on the large Muck Creek Category I wetland to the south, of which Wetland Z (as designated on the NBHS site) is a small part under two scenarios based upon an assumption of a 100-year flood event:

(1) The first scenario assumes that the NBHS stormwater system is operating as designed.

(2) The second scenario assumes that the NBHS stormwater system is not operating as designed with a complete failure of the pumps and back-up pumps and generators resulting in an overflow of stormwater from the Southern System.

As described in the New Bethel High School Site Wetland Z Wetland Inflow Volume Analysis report (Clear Creek Solutions, 24 April 2023), a WWHM2012 model, as required by Pierce County Site Development Regulations, was created for Wetland Z and its drainage area to calculate the wetland daily and monthly inflow volumes. As part of that analysis the flood frequency was calculated for the inflow to the Category I wetland from Wetland Z (see Table 1 below).

Table 1. Wetland Z Flood Frequency

Flood Frequency	Existing (cfs)	Future with Pumps (cfs)
2 Year	0.2737	0.2595
5 Year	0.4556	0.4713
10 Year	0.5946	0.6653
25 Year	0.7899	0.9857
50 Year	0.949	1.2891
100 Year	1.1192	1.6569

The flood frequency calculations are based on the largest peak flow in each water year (1 October through 30 September) for each of the 158 years in the model's simulation of future developed conditions. The U.S. Geological Survey flood frequency methodology (Log Pearson Type III), which is the default methodology used in the WHHM2012 Model, was used to calculate the 2,5, 10, 25, 50, and 100-year peak flows. The 100-year value was used to evaluate and quantify downstream impacts.

The future with pumps 100-year peak flow is 1.6569 cfs. By definition there is no specific 100-year flood in the model simulation (because flood frequency is computed statistically and not from a single storm event). The closest simulated peak flow in the model results is 1.646 cfs. This event, which occurs in simulation year 2024, was selected to represent the 100-year flood for the downstream impact analysis.

The corresponding existing and future peak flow values for this simulated 100-year event were then scaled up to match the existing and future 100-year flood frequency values. Following the scaling process the future with pumps peak flows exceeded the existing conditions as shown in Table 2.

Table 2. 100-Year Event with Pumps

Date and Time	Existing (cfs)	Future with Pumps (cfs)	Increase with Pumps (cfs)	Increase with Pumps (ac-ft)
2/4/2024 1:15	0.65957	0.75247	0.09290	0.00192
2/4/2024 1:30	0.87713	1.21989	0.34276	0.00708
2/4/2024 1:45	1.11912	1.65686	0.53774	0.01111
2/4/2024 2:00	0.74821	1.36780	0.61959	0.01280
2/4/2024 2:15	0.55504	0.96313	0.40809	0.00843
2/4/2024 2:30	0.45183	0.67428	0.22246	0.00460
2/4/2024 2:45	0.39623	0.47922	0.08298	0.00171
			Total	0.04766

The excessive flow (water) from the NBHS property during the 100-year event increases the amount of water in the downstream offsite wetland. The total amount of the increase is the difference in the amount of water (measured in acre-feet) added to the offsite wetland from

the future NBHS development compared to existing conditions. The difference is 0.04766 acre-feet of water added to the wetland.

The downstream Muck Creek Category I wetland has a surface area of approximately 156 acres, as determined by Raedeke Associates Inc.. The addition of 0.04766 acre-feet of water during the 100-year event spread out over the 156 acres results in an increase in wetland water surface elevation of 0.0003 feet or 0.004 inches. This is approximately the width of a human hair.

The above analysis and results are based on the South Detention Pond pumps working as expected during the 100-year event. Additional downstream impact analysis was conducted for the situation where the pumps were not working – for whatever reason.

In the situation where the pumps are not working the South Detention Pond will fill with water until the water overtops the pond and discharges through the emergency spillway to the adjacent emergency infiltration pond. Based on field infiltration tests conducted by the Migizi Group, as described in their Geo-Technical Engineering Report, the emergency infiltration pond will infiltrate all of the overflow into the ground. The water will then travel through the groundwater to Wetland Z where it will discharge to the downstream offsite Muck Creek Category I wetland.

For the no-pump situation the same flood frequency and 100-year flow volume analysis was conducted as was done for the working-pump situation described above (see Table 3).

Table 3. 100-Year Event with No Pumps (UPDATE)

Date and Time	Existing (cfs)	Future No Pumps (cfs)	Increase No Pumps (cfs)	Increase No Pumps (ac-ft)
2/4/2024 1:00	0.501898609	0.551828266	0.049929658	0.001031604
2/4/2024 1:15	0.659567892	0.905426408	0.245858516	0.005079721
2/4/2024 1:30	0.877133672	1.370870164	0.493736491	0.010201167
2/4/2024 1:45	1.119117133	1.806021048	0.686903915	0.014192230
2/4/2024 2:00	0.748210374	1.518312890	0.770102516	0.015911209
2/4/2024 2:15	0.555037590	1.115515455	0.560477865	0.011580121
2/4/2024 2:30	0.451826506	0.828080717	0.376254212	0.007773847
2/4/2024 2:45	0.396231475	0.634033991	0.237802516	0.004913275
2/4/2024 3:00	0.366772987	0.514086184	0.147313197	0.003043661
2/4/2024 3:15	0.352131116	0.439136633	0.087005516	0.001797635
2/4/2024 3:30	0.346362525	0.391385127	0.045022602	0.000930219
2/4/2024 3:45	0.345974439	0.360652557	0.014678119	0.000303267
			Total	0.076757957

For the no-pump situation the 100-year discharge to the wetland increased from 1.6569 cfs (pumps working) to 1.8060 cfs (pumps not working). The associated increase in flow volume to the downstream offsite Muck Creek Category I wetland increased from 0.04766 acre-feet of

water to 0.07676 acre-feet. Spreading this 0.07676 acre-feet of water over the 156-acre wetland produces a rise in water surface elevation of 0.006 inches when the pumps are not working compared to existing conditions. The wetland water surface elevation rise for the situation where the pumps are working is 0.004 inches compared to existing conditions.

As noted above, 0.004 inches is approximately the width of a human hair. If the pumps are not working when the 100-year flood occurs, the corresponding rise compared to existing conditions will be 0.006 inches, approximately the width of two human hairs.

Based on the above calculations, the 100-year flood from the NBHS site (with or without the pumps working) will have an insignificant downstream impact on Wetland Z and the offsite Muck Creek Category I wetland.

MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

APPENDIX E

Memorandum
2021 Pierce County Stormwater Manual
Minimum Requirement No. 8

(Clear Creek Solutions, August 30, 2023)

APPENDIX E

CLEAR CREEK SOLUTIONS, INC.

15800 Village Green Drive #3
Mill Creek, WA 98012
425-225-5997
www.clearcreeksolutions.com

MEMO

DATE: 30 August 2023

TO: Bethel School District No. 403, Puyallup, WA

CC:

FROM: Doug Beyerlein, PE

SUBJECT: Wetland Analysis Methods under WHHM 2012 Model related to the New Bethel High School Wetland Z

The purpose of this memo is to discuss the selection of Minimum Requirement #8 Method 2 wetland inflow volume modeling analysis for the New Bethel High School (NBHS).

The wetland inflow volume modeling for the NBHS site was based on the requirements specified in the 2021 Pierce County Stormwater Management and Site Development Manual. The Pierce County Manual requires that the wetland inflow volume modeling be conducted using the 2012 Western Washington Hydrology Model (WWHM2012), provided by the Washington State Department of Ecology.

Wetland Z is part of a larger depressional Muck Creek Category I wetland with sloped components, as determined by Raedeke Associates. This Category I wetland continues offsite to the east and south. Only a small portion of the northern edge of the Category I wetland (designated as "Wetland Z") is on the New Bethel High School site.

The Pierce County Manual Minimum Requirement #8 requires that high quality wetlands, such as Wetland Z, be modeled to demonstrate compliance with the wetland protection standards using one of two methods.

Minimum Requirement #8 (MR #8) is based on two methods (Method 1 and Method 2) depending on the type and characteristics of the wetland.

Method 1 requires a minimum one year of monitoring followed by continuous simulation modeling of the wetland stage (water surface elevations). Method 1 only applies to Category I

or II depressional or riverine impounding wetlands that the project proponent owns, or the project proponent has legal access to – for purposes of conducting monitoring in the wetland.

Regardless of whether legal access exists to a wetland, the controlling factor in deciding whether or not Method 1 is appropriate for demonstrating MR #8 compliance is that the wetland must be BOTH flat and accessible for stage (water surface elevation) monitoring.

The reason for limiting Method 1 to flat (depressional and riverine impounding) wetlands is because these are the only wetlands that have a flat water surface that directly responds to inflow to the wetland and that can be monitored for water level fluctuations in compliance with Method 1.

Sloped wetlands typically have an outlet that has the ability to release water from the wetland to compensate for the inflow and therefore maintain a much more consistent water depth than a flat wetland that is directly influenced by inflow and therefore minimizes the impact of additional inflow volume.

Wetland Z on the NBHS Site has a sloped component. In other words, water in the wetland is constantly flowing from the upstream end to the downstream end. As a result of this constant flow from upstream to downstream, the effect of adding any additional water to the upstream end (the NBHS site) is minimal. Computation of the future 100-year flow into the wetland from the NBHS site shows only a 0.004 inch increase in water surface elevations in the 156-acre wetland compared to the existing conditions. This water level fluctuation increase in the wetland compared to existing conditions for even an extreme storm event is not observable.

Method 1, as adopted under the 2021 Pierce County Stormwater Management and Site Development Manual, is based on the concept of water level fluctuations (WLF) and whether or not they exceed permissible values. There are many details in calculating WLF values, but basically the equation is the maximum water level minus the average water level. This is calculated on both a monthly and daily basis for both the modeled existing wetland conditions and the modeled future conditions.

If monitored WLF is < 15 cm (0.49 ft, 5.91 inches),

o Allowable WLF change for the wetland (A) = 20 cm (0.66 ft, 7.87 inches) – monitored WLF

o Allowable WLF change for the proposed project = A / percentage of development by proposed project in the contributing basin area.

If monitored WLF for a given calendar month is ≥ 15 cm (0.49 ft, 5.91 inches),

o Allowable WLF of the wetland (A) for that calendar month may increase by up to, but no more than, 5 cm (0.16 ft, 1.97 inches).

o Allowable WLF change for the proposed project = 5 cm / percentage of development by proposed project in the contributing basin area.

The focus of Method 1 is to demonstrate that the changes in water level will not adversely affect the wetland.

As noted above, **Method 1 only applies to Category I or II depressional or riverine impounding** (*emphasis added*) wetlands that the project proponent owns, or the project proponent has legal access to – for purposes of conducting monitoring in the wetland.

Method 2, in contrast to Method 1, is completely focused on limiting the wetland inflow volume on both a daily and monthly basis. Method 2 criteria requires that the daily inflow volume not change by more than 20 percent from existing conditions and monthly inflow volume not change by more than 15 percent. In many ways, Method 2's criteria is more difficult to meet than Method 1 (see further explanation below).

The larger Muck Creek wetland (of which Wetland Z is only a small part of) is not a flat wetland. It is a sloped wetland. In addition, the Bethel School District does not own any of the larger wetland (only 3.293 acres on the northern edge of the larger 156-plus acre wetland is located on the NBHS site). Nor does the School District have legal access to the outlet of the larger offsite wetland, which is required for monitoring of the wetland water level fluctuations. For these reasons Wetland Z does not meet the standard for application of Method 1.

As a historical side note, prior to the 2012 Washington State Department of Ecology Stormwater Manual for Western Washington (the Ecology manual is the basis for the Pierce County manual), the wetland protection standard compliance methodology for all wetlands was similar to today's Method 1. It was based on change to water surface fluctuations.

I personally conducted a number of wetland modeling studies to show compliance with that pre-2012 wetland protection methodology. For sloped wetlands compliance was always achievable. This was because there was never significant change in water surface fluctuations when the expected extra stormwater could flow in to the wetland and then quickly out the downstream end.

It is my opinion that the ease of meeting wetland protection compliance for sloped wetlands likely provided Ecology the impendence to add Method 2 to the stormwater manual in 2012. Method 2 is a harder standard to meet than Method 1. This is particularly true for summer low flows into a wetland where a very small change in wetland inflow volume can still exceed the Method 2 daily limit of no more than 20 percent inflow volume change from existing conditions. These tiny summer changes in inflow volume can still exceed the 20 percent maximum change standard. Because of these low flow situations Method 2 is a more conservative standard for wetland protection compliance than Method 1.

The purpose of MR #8 is to provide protection (sustainability) of the wetland functions. Method 2 achieves that purpose over Method 1 for the Wetland Z wetland protection compliance analysis because site conditions determine, as shown here, that measuring water level fluctuation in the wetland is not feasible because of the characteristics of the larger Muck

Creek off-site wetland, i.e., it is not a riverine impounding or depressional wetland. Therefore, whether or not legal access is available is irrelevant.

For all of the above-stated reasons the School District used Method 2 to demonstrate compliance with Pierce County Minimum Requirement #8.

MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

APPENDIX F

Letter of Compliance for Outdoor Sports Lighting

(Dark Sky International, September 12, 2023)

APPENDIX F

DarkSky International
5049 E. Broadway Blvd. #105, Tucson, AZ 85711
USA
tel +1.520.293.3198

To: Project Lead

September 12th, 2023

Congratulations! The lighting design for New Bethel High School Football/Soccer fields located in Graham, WA have been reviewed and found to be in compliance with the DarkSky International Outdoor Sports Lighting (OSL) program. This letter confirms compliance with Phase I (design compliance) and allows you to apply for Phase II (installation certification).

We are excited to have you join the community of outdoor sports lighting facilities working to reduce light pollution and improve the night time environment. By adhering to the DarkSky International Outdoor Sports Lighting criteria, your project will:

- Minimize neighborhood nuisance light by greatly reducing spill light and glare in the local area.
- Manage high angle light, thus dramatically decreasing offsite light trespass and sky glow.
- Mitigate neighborhood light pollution and sky glow, which will benefit the environment, the astronomy community, and others impacted by poorly designed outdoor sports facilities.
- Minimize light output, thereby reducing energy consumption and avoiding over lighting.

Sincerely,

James Brigagliano LC, MIES, LEED Green Assoc.

Lighting Program Manager
james.brigagliano@darksky.org

MITIGATED DETERMINATION OF NONSIGNIFICANCE
STATE ENVIRONMENTAL POLICY ACT

BETHEL SCHOOL DISTRICT NO. 403
NEW BETHEL HIGH SCHOOL PROJECT

APPENDIX G

Archaeological Plan
Bethel School District No. 403
and
Puyallup Tribe of Indians
New Bethel High School Project

(effective September 19, 2023)

APPENDIX G

ARCHAEOLOGICAL PLAN
BETHEL SCHOOL DISTRICT NO. 403 AND PUYALLUP TRIBE OF INDIANS
NEW BETHEL HIGH SCHOOL PROJECT

I. BACKGROUND

A. The District has applied for a Conditional Use Permit ("CUP") from Pierce County to construct a replacement for Bethel High School ("New Bethel High School") consisting of a 281,723 square foot, two-story school building, with provision for expansion of five portables, four of which will be used for future classrooms and one portable as a future student health care center, with associated access and parking for students and staff from 77th Avenue East and for bus access from 70th Avenue East with an on-site arrival and departure area, athletic fields, a greenhouse, a field house/concession stand, a storage building for track equipment, landscaping, and preservation of all wetlands in critical area tracts on certain real property commonly known as 7718 224th Street East, Graham, Pierce County, Washington and comprised of four (4) parcels described as Pierce County Parcel Nos. 0418172009, 0418172010, 0418172019, and 0418172021 (collectively, the "NBHS Site" or "Site").

B. In conjunction with the proposed construction of New Bethel High School, the District has obtained funding through a capital bond approved by the voters of the District and funding from the Washington State ("State") school facilities construction fund. One of the obligations of State funding is compliance with the Governor's Executive Order No. 21-02 requiring evaluation of any potential impacts to archaeological and cultural resources from a proposed project. In addition, compliance under the State Environmental Policy Act (SEPA) (WAC ch. 197-11), the Indian Graves and Records Act (RCW ch. 27.44), and Archaeological Sites and Resources Act (RCW ch. 27.53) is also required.

C. In this regard, the District engaged Historical Resources Associates, Inc. ("HRA") to first conduct an archival records search and associated assessment for any potential archaeological and cultural resources on the NBHS Site and within a one (1) mile radius of the Site. Following receipt of the Records Study, dated January 8, 2021, the District consulted with the Muckleshoot Indian Tribe, the Nisqually Indian Tribe, the Puyallup Tribe of Indians, the Samish Indian Nation, the Snoqualmie Indian Tribe, the Squaxin Island Tribe, the Suquamish Tribe, and the Confederated Tribes and Bands of the Yakama Nation to notify these Tribes about the Project and to seek any additional information about the Project area they may have that is not readily available through other written sources.

D. Following engagement with these Tribes, HRA conducted further research and in 2022, HRA proceeded to perform 32 shovel probes across the southeasterly to northeasterly areas of the NBHS Site. One amethyst bottle base glass fragment was discovered within one of the shovel probes. Thereafter, HRA completed its Archaeological Resources Inventory Report, dated March 6, 2023.

E. On July 6, 2023, the District issued its SEPA Checklist which included copies of HRA's Record Survey and its Archaeological Resources Inventory Report, including a proposed Inadvertent Discovery Plan. The District received two comments associated with the SEPA Checklist relating to

"historic and cultural preservation". The Nisqually Indian Tribe had no comment, but issued their comment with "respect [for] the traditional cultural knowledge of affected tribes and [with] support of their opinions on this matter as well". The Puyallup Tribe of Indians issued a comment requesting additional field investigation on the NBHS Site and an expanded Inadvertent Discovery Plan with photographic samples of materials that may be encountered upon ground disturbance associated with earthwork on the NBHS Site.

F. The District met with the Puyallup Tribe of Indians to discuss their requests. Based upon the requests of the Puyallup Tribe of Indians and consistent with the District's values of recognition and respect for all cultures, the District proposed a resolution to further address and evaluate whether potential cultural resources exist on the NBHS Site.

G. This Plan memorializes the terms and conditions reached between the District and the Puyallup Tribe of Indians to address the comments of the Puyallup Tribe of Indians.

II. PLAN

In consideration of the mutual benefits and covenants herein, the parties agree as follows:

1. The above recitals are an integral part of this Plan and are expressly incorporated herein by reference as if fully set forth.

2. The terms and conditions of this Plan shall also be deemed to be and shall be treated as:

2.1 Consistent with and associated with the consultation and engagement process under Executive Order No. 21-02 and the process implemented under the authority of the Washington State Department of Archaeology and Historic Preservation ("DAHP"); and

2.2 A mitigating condition under the SEPA in response to the Puyallup Tribe of Indians comment, dated July 12, 2023, to the NBHS SEPA Checklist associated with the NBHS Project.

3. The District agrees to:

3.1 Conduct approximately 710 additional shovel probes (the "Additional Shovel Probes") spaced approximately every twenty (20) meters on the NBHS Site in the areas illustratively depicted on ***Exhibit A*** attached hereto and incorporated herein by this reference. All Shovel Probes will be 30 centimeters (cm) in diameter and at least 50 cm in depth, plus two culturally sterile 10-cm levels or until glacial till is reached. Each probe will be hand dug with a shovel and select Shovel Probes may be extended in depth with an auger. Soils will be screened through 1/4-inch hardware mesh placed over tarps to catch the sediments as they are screened. The Shovel Probes will be backfilled with the removed soil and plotted using a GPS instrument.

3.2 Engage HRA to perform the Additional Shovel Probes. The Additional Shovel Probes shall be performed as soon as reasonably possible based upon the work schedule of HRA. In this regard, the Puyallup Tribe of Indians acknowledges that the Additional Shovel Probes to be

located within the critical area tracts will consist of approximately 126 Shovel Probes and will commence approximately September 25, 2023. The District has obtained approval from the Pierce County Wetland Biologist (Scott Sissons) to conduct the Additional Shovel Probes within the critical area tracts. The remainder of the Shovel Probes will commence in approximately October or November, 2023.

3.3 Provide not less than fourteen (14) calendar days advance notice to the Puyallup Tribe of Indians prior to commencement of the Additional Soil Probes. The District agrees to and recognizes the Puyallup Tribe of Indians request to be present on each day of the field work. In this regard, HRA shall be solely responsible for notifying the Puyallup Tribe of Indians and the District of those dates and any interruptions thereto of the field work.

4. The Puyallup Tribe of Indians and the District agree that:

4.1 In the event a member of the Puyallup Tribe of Indians is not present upon discovery of any archaeological or cultural resource during the field work, HRA will promptly notify the Puyallup Tribe of Indians THPO and Archaeologist and the District of such discovery.

4.2 In the event of a discovery of any archaeological or cultural resources, HRA shall be responsible, in consultation with the Puyallup Tribe of Indians and the District, for undertaking all ordinary and customary practices of documentation and preservation of such resources. HRA will take general survey notes (locations, setting, disturbances, etc.), as well as detailed notes about the Shovel Probes and any identified archaeological or cultural resources. No artifacts will be collected, they will instead be placed back into the excavated area created by the Shovel Probe. HRA shall further be responsible for notifying DAHP and the District.

4.3 The District and the Puyallup Tribe of Indians will act in good faith and use their best efforts to reach resolution of any concern, issue, or disagreement during the field work, preservation of any discovered archaeological or cultural resources, or to the extent required, any necessary consultation with DAHP.

5. Based upon such additional records research, the field work, and any discovered archaeological or cultural resources, HRA shall prepare an Addendum to its Archaeological Resources Inventory Report, dated March 6, 2023. A copy of such Addendum shall be delivered to the Puyallup Tribe of Indians and DAHP.

6. The District shall be obligated to incorporate, as part of the contractual terms and conditions of construction of the NBHS, that certain expanded Inadvertent Discovery Plan (the "Expanded Inadvertent Discovery Plan") attached hereto as ***Exhibit B***. The Puyallup Tribe of Indians acknowledges that the attached IDP is appropriate and adequate for the construction activities to be performed on the NBHS Site.

7. The parties acknowledge and agree that telephonic and email notices, when appropriate under the circumstances to timely perform the terms and conditions under this Plan, may be exchanged between the parties. Any other notices may be delivered by overnight courier service, mailed registered or certified mail, return receipt requested. If a notice is sent via overnight

courier, it shall be deemed received upon the next business day. If a notice is mailed, it shall be considered delivered three (3) days after deposit in such mail. The addresses to be used in connection with such correspondence and notices are the following, or such other address as a party shall from time to time direct:

District:	Bethel School District No. 403 516 176th Street East Spanaway, WA 98387 Attention: Sara Coccia, Director of Construction and Planning Telephone: 253-800-6772/Cell: 206-276-1157 Email: scoccia@bethelsd.org
Puyallup Tribe of Indians:	Puyallup Tribe of Indians 3009 East Portland Avenue Tacoma, WA 98404 Attention: Brandon Reynon, THPO Cultural Resources Telephone: 253-573-7965 Email: brandon.reynon@puyalluptribe-nsn.gov Attention: Mike Shong, Archaeologist Telephone: 2523-573-7800 Email: mike.shong@PuyallupTribe-nsn.gov
Historical Resources Associates:	Historical Resources Associates, Inc. 1904 3rd Ave, Suite 240 Seattle, WA 98101 Attention: Lynn Compas, Principal Cell: 206-660-7090

8. This Plan constitutes the entire Plan between the parties and no modifications or revisions shall be binding unless made in writing with the consent of both parties.

9. The terms and conditions contained in this Plan shall apply to and bind the parties and assigns of the parties.

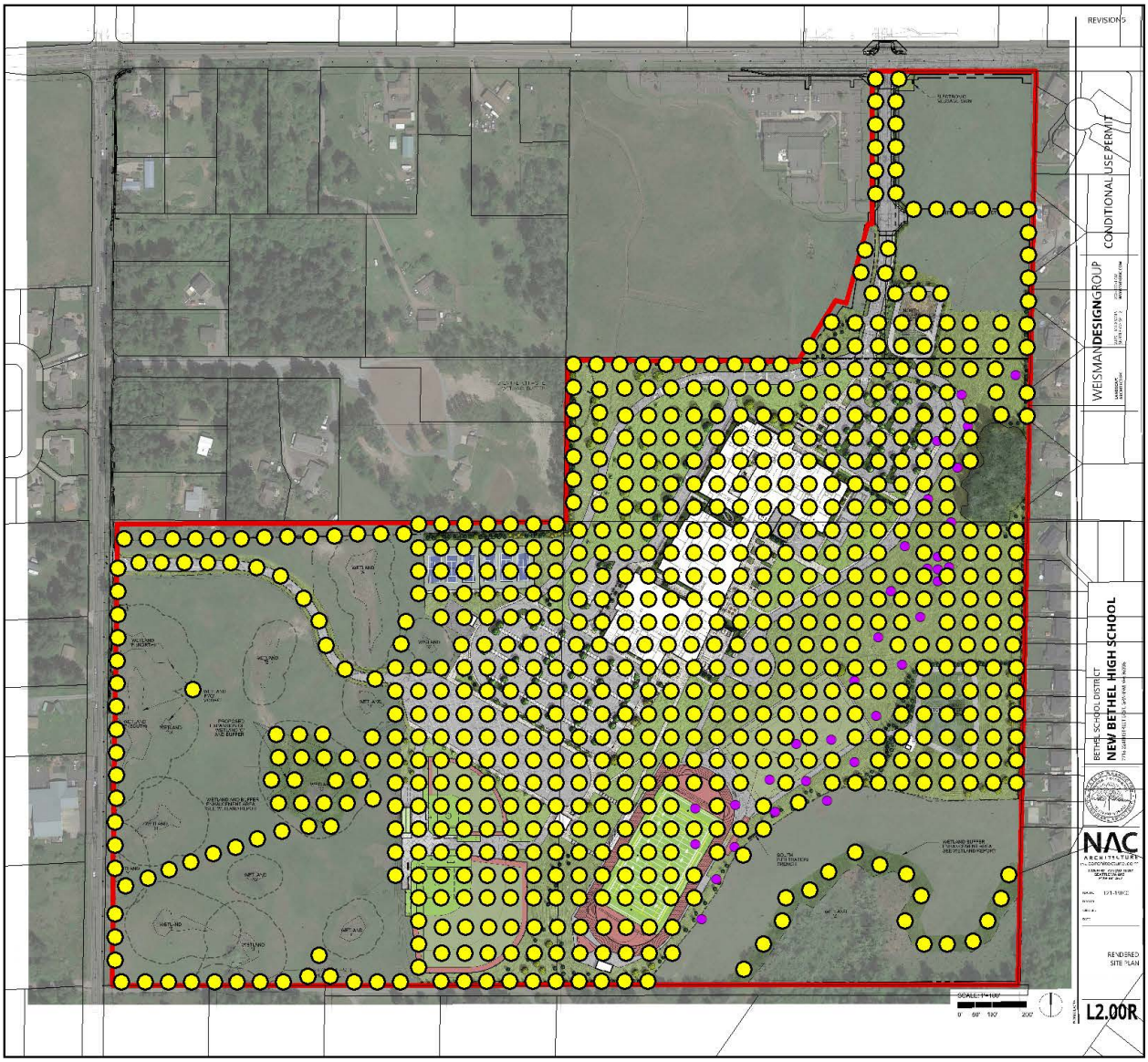
10. The individuals executing this Plan covenant they have the unconditional authority to bind the parties identified in this Plan.

11. The District shall promptly provide a copy of this Plan to DAHP and Pierce County.

EXHIBIT A

ADDITIONAL SHOVEL PROBES

ILLUSTRATIVE MAP



Bethel High School Replacement Project Proposed Shovel Probe Locations

- Proposed Shovel Probe Location
- Previously Excavated Shovel Probe
- Bethel HS Replacement AI
- Tax Parcel

NBHS Site Plan
Date: 8/18/2023

Historical Research Associates, Inc.

Coord/Projection	Datum	Scale
NAD 1983 UTM Zone 10N Transverse Mercator	NAD83	1:6,000
Township/Range	Quadrangle	
T18N R4E	Frederickson, WA	

Service Layer Credits:

0 250 500 1,000 Feet
0 75 150 300 Meters

Historical Research Associates, Inc., Seattle, WA

EXHIBIT B

EXPANDED INADVERTENT DISCOVERY PLAN

INADVERTENT DISCOVERY PLAN FOR ARCHAEOLOGICAL RESOURCES AND HUMAN REMAINS

FOR THE PROPOSED

NEW BETHEL HIGH SCHOOL

BETHEL SCHOOL DISTRICT NO. 403

August 21, 2023

INADVERTENT DISCOVERY PLAN FOR ARCHAOLOGICAL RESOURCES AND HUMAN REMAINS FOR THE NEW BETHEL HIGH SCHOOL PROJECT ARCHAEOLOGICAL RESOURCES INVENTORY 7718 224TH STREET EAST, GRAHAM, PIERCE COUNTY, WASHINGTON[1]

COMPLIANCE WITH ALL APPLICABLE LAWS PERTAINING TO ARCHAEOLOGICAL RESOURCES (RCW 27.53, 27.44 and WAC 25-48) AND WITH HUMAN REMAINS (RCW 68.50) IS REQUIRED. FAILURE TO COMPLY WITH THESE REQUIREMENTS COULD RESULT IN A MISDEMEANOR AND POSSIBLE CIVIL PENALTIES AND/OR CONSTITUTE A CLASS C FELONY.

In the event that archaeological deposits or artifacts (including but not limited to the examples shown in Figures 1 through 10) are inadvertently discovered during construction in any portion of the proposed Area of Potential Effects (APE), ground-disturbing activities should be halted immediately. The Project Manager and the School District shall be contacted immediately. The School District will contact its archaeological consultant to confirm that the material constitutes a cultural artifact or deposit. The Project construction supervisor shall establish a buffer zone around the find to protect the location and archaeologists during this inspection. Work may continue in other portions of the proposed APE if it will not cause damage to the find.

If the find is archaeological, the School District will contact the Department of Archaeology and Historic Preservation (DAHP) and the interested Tribes, as appropriate. The School District will arrange for the implementation of any treatment (or mitigation) measures agreed upon in consultation with DAHP and interested parties.

Cultural material that may be protected by law could include, but is not limited to:

- Buried layers of black soil with layers of shell, charcoal, and fish and mammal bones;
- Non-natural sediment or stone deposits that may be related to activity areas of people;
- Stone, bone, shell, horn, or antler tools that may include projectile points (arrowheads), scrapers, cutting tools, wood working wedges or axes, and grinding stones;

[1] Pierce County Parcel Nos. 0418172021, 0418172019, 0418172010, and 0418172009.

- Stone tools or stone flakes;
- Buried cobbles that may indicate a hearth feature;
- Old ceramic pieces, metal pieces, tools, bottles, and shards/pieces of glass;
- Perennially damp areas, which may have preservation conditions that allow for remnants of wood and other plant fibers; in these locations, there may be remains including fragments of basketry, weaving, wood tools, or carved pieces; and
- Human remains. If ground-disturbing activities reveal human remains, the protocol detailed below must be followed.

INADVERTENT DISCOVERY OF HUMAN REMAINS

Any human remains that are discovered during ground-disturbing activities shall be treated with dignity and respect.

If human remains are uncovered, the School District shall be notified. The School District will contact its archaeologist consultant. If it is unclear whether the bones are human or animal, the DAHP Physical Anthropologist Guy Tasa (360-790-1633) can be consulted to make a determination. All construction activity **must** cease that may cause further disturbance to those remains, and the area of the find must be secured and protected from further disturbance.

If the find is of human skeletal remains, this **must** be reported to the Pierce County Medical Examiner **and** local law enforcement in the most expeditious manner possible. The remains should not be touched, moved, or further disturbed. The Pierce County Medical Examiner will assume jurisdiction over the human skeletal remains and make a determination of whether those remains are forensic or non-forensic. If the coroner determines the remains are non-forensic, then they will report that finding to DAHP, who will then take jurisdiction over those remains and report them to the appropriate cemeteries and affected Tribes. The DAHP Physical Anthropologist will determine if the remains are Native American, and the School District will carry out consultation with DAHP and affected Tribes for the final disposition of the remains.

Examples of Archaeological Artifacts and Deposits that Require Treatment

Figure 1. Shell midden and layered stratigraphy of shell and blackened soil.

Figure 2.
Examples of stone tools.

Figure 3.
Examples of stone flake and tools.

Figure 4.
Examples of hearth (oven) and fire features.

Figure 5. Examples of perishable artifacts.

Figure 6. Example of a historic-period building foundation.

Figure 7. Example of a historic-period wooden/corduroy road.

Figure 8. Example of historic-period artifacts.

Figure 9. Example of bottles from historic-period debris dump.

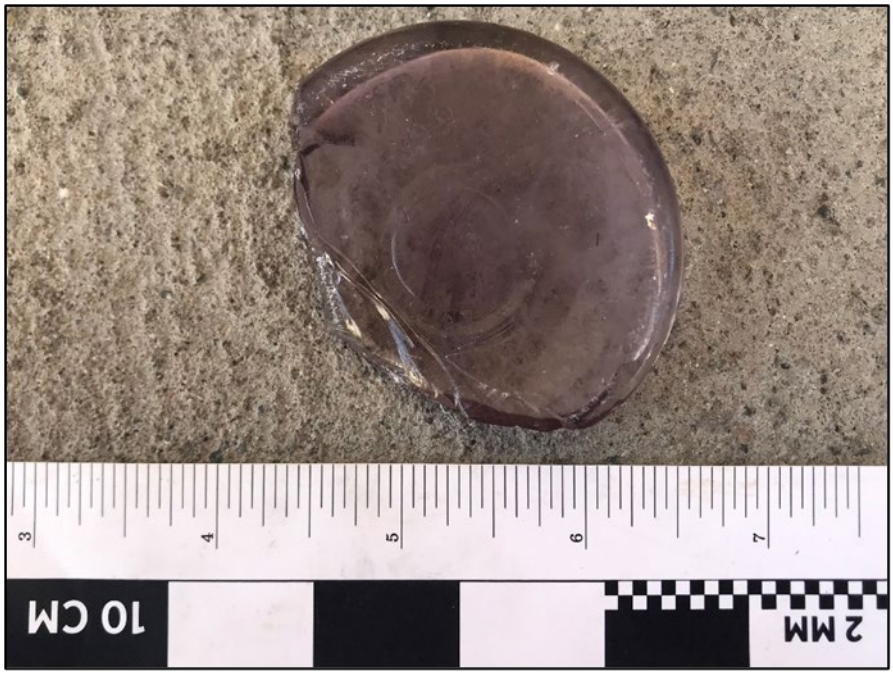


Figure 10. Example of an historic-period bottle base.

Table 1. Project Contact List

New Bethel High School Project Manager
Jamie Glenisky
Bethel School District
Cell: 253-600-9393
jglenisky@bethelsd.org

Bethel School District
Sara Coccia
Director of Construction and Planning
Telephone: 253-800-6772
Cell: 253-276-1157
Email: scoccia@bethelsd.org

Pierce County Sheriff's Department
930 Tacoma Avenue South
Telephone: (253) 287-4455

Pierce County Medical Examiner
Karen Cline-Parhamovich, DO
Medical Examiner's Ofc
3619 Pacific Avenue
Tacoma, WA 98418
Telephone: 253-798-6494

Archaeological Consultant
Historical Resources Associates, Inc.
Lynn Compas, Principal
Telephone: 206-660-7090
Email: lcompas@hrassoc.com

Washington State Department of Archaeology and Historic Preservation (DAHP)

State Archaeologist
Dr. Rob Whitlam
PO Box 48343
Olympia, WA 98501
Telephone: 360-586-3080 (office)
Email: Rob.whitlam@dahp.wa.gov

State Physical Anthropologist
Dr. Guy Tasa
PO Box 48343
Olympia, WA 98501
Telephone: 360-790-1633
Email: Guy.tasa@dahp.wa.gov

Tribes

Confederated Tribes and Bands of the Yakama Nation
Kate Valdez, THPO
PO Box 151
Toppenish, WA 98948
Telephone: 509-865-1068
kate@yakama.com

Muckleshoot Tribe
Laura Murphy, Archaeologist, Cultural Resources
39015 172nd Ave. SE
Auburn, WA 98092
Telephone: 253-876-3272
Email: laura.murphy@muckleshoot.nsn.us

Nisqually Tribe
Brad Beach, THPO
4820 She-Nah-Num Dr SE
Olympia, WA 98513-9105
Telephone: 360-456-5221 x 1277
Cell: 360-528-0680
Email: beach.brad@nisqually-nsn.gov

Puyallup Tribe of Indians
Brandon Reynon, Cultural Resources
3009 E. Portland Ave.
Tacoma, WA 98404
Telephone: 253-573-7986
Email: Brandon.Reynon@puyalluptribe-nsn.gov

Samish Indian Nation
Jackie Ferry, THPO
2918 Commercial Ave.
Anacortes, WA 98221
Telephone: 360-293-6404 x 126
Email: jferry@samishtribe.nsn.us

Snoqualmie Indian Tribe
Steven Mullen-Moses, Director, Archaeology and Historic Preservation
PO Box 969
Snoqualmie, WA 98065
Telephone: 425-495-0249 x2010
Cell: 425-495-6097
Email: steve@snoqualmietribe.us

Squaxin Island Tribe
Rhonda Foster, THPO
200 SE Billy Frank Jr. Way
Shelton, WA 98584-9200
Telephone: 360-432-3850
rfoster@squaxin.us

Suquamish Tribe
Stephanie Trudel, THPO
PO Box 498
Suquamish, WA 98392-0498
Telephone: 360-394-8529
trudel@suquamish.nsn.us