



MEMORANDUM

To: Burlington Development Review Board
Mary O’Neil, Principal Planner
Scott Gustin, Principal Planner & Asst. Administrative Officer

From: Joe Weith, Senior Project Manager

Date: August 19, 2022

Re: Sketch Plan Review – Project Narrative

Burlington School District (“BSD”) is proposing to demolish and remediate the existing Burlington High School/Burlington Technical Center (“BHS/BTC”) buildings on Institute Road and construct a new 268,500 square foot building for BHS/BTC. This narrative provides a brief description of the project and addresses several key design aspects and regulatory requirements as outlined in the Burlington Comprehensive Development Ordinance (“CDO”).

Project Description

Buildings A through G of the existing BHS/BTC campus will be fully demolished and remediated. The furthest building to the north which currently houses the wood chip plant will remain, however, the use and retrofit of this building has not yet been determined. Our plan is to demolish/remediate buildings A and B before construction of the new building begins and then demo/remediate buildings C through G simultaneously with construction of the new building.

The new 268,500 square foot BHS/BTC building will have a linear orientation along Institute Road. Two main entrances will serve the building – a south entrance and a north entrance. The south entrance will face Institute Road and serve as the primary entrance

for visitors and student drop-off. The north entrance will face the staff parking lot and bus drop-off area. Both entrances will provide direct access to the 2-story student commons which will function as the student activity hub and heart and soul of the new school.

No change is anticipated in the number of students and staff that have historically occupied the BHS/BTC campus on Institute Road.

Program highlights include:

- **Two-level Student Commons** for dining, gathering, collaboration.
- **Three Small Learning Communities for BHS** each with a variety of classroom sizes, science labs, extended learning areas, teacher planning, and student support spaces.
- **Significant Student Support resources** including Counseling & Special Needs.
- **Five Tech Center Program spaces** with dedicated BTC entrance.
- **Large Group Multi-Purpose Presentation space.**
- **750 seat Auditorium** with robust lighting, rigging, & sound systems.
- **12,000 sf Gym plus 5,500 sf Community Gym** with dedicated after-hours entrance.
- **Layout supports exterior connections** for extended learning areas & outdoor opportunities.

Dimensional Standards and Density

Building Setbacks: The building setback from North Avenue is 280 feet (20 foot minimum required) and 120 feet from Institute Road (20 foot minimum required).

Lot Coverage: The proposed lot coverage for both parcels combined (north and south sides of Institute Road) is 27.35% (Maximum lot coverage of 60% allowed).

Building Height: The maximum building height along the elevation facing North Avenue (i.e., east elevation) is 57 feet. The height segments used for this calculation were approximately 45 feet. The maximum building height along the elevation facing Institute Road (i.e., south elevation) is 62' – 11". The height segments used for this calculation were approximately 65 feet. The maximum building height along both elevations is well below the maximum allowed height of 80 feet.

Stormwater

The proposed stormwater management system will use a Regenerative Conveyance System (RCS) to provide centralized stormwater treatment and detention for the new school facilities. This system consists of a series of stepped pools and stone grade change structures with underlying filter and infiltration materials to provide improved water quality treatment. The system will handle stormwater flows from Institute Road, the lands to the north and a small portion of the athletic field impervious surfaces. The RCS system will be located south of Institute Road and west of the sports stadium. It will also correct the current state of disrepair of the existing stormwater outfall which is severely undermined and has partially collapsed .

To provide the most efficient treatment of the runoff from the school property, a system has been developed where the clean stormwater runoff from the Arms Forest area to the north will be intercepted and conveyed separately around the treatment facility.

These facilities have been designed to address the “3-Acre Rule” requirements recently adopted by the State for all of the redeveloped portion of the property.

Parking

Vehicle Parking: As shown in attached Exhibit A - Parking Table, the maximum allowed number of parking spaces is 1,275. The plans currently show 352 permanent parking stalls. We are currently analyzing the potential for additional overflow event parking that would be used only occasionally to handle large events such as state championship sporting events at the sports complex, graduation in the gymnasium and regional performances in the auditorium. The location, parking surface material (e.g., reinforced green space) and number of overflow event parking spaces will be determined before submission of the zoning application.

Bicycle Parking: While the plans currently show 243 bicycle parking spaces, the District and design team are still assessing the number of long term and short term spaces that would be appropriate for a school of this size. The 243 spaces currently shown are based on a recommendation put forth by the City DPW for the ReEnvision project (see attached memo dated 1/29/21). The Collaborative for High Performance Schools (CHPS) recommends 1.5 bike parking spaces per 10 students (see attached CHPS Criteria Interpretation) which would require 115 bike parking spaces (using a “design enrollment” of 1,150 students). Furthermore, LEED recommends 2.5% of all building occupants for short term bike parking and 5% for long term parking. If we were to assume 1,400 building occupants, the LEED standards would require 105 bike spaces (35 short term and 70 long term).

While the CDO requires a minimum of 128 long term and 320 short-term spaces (448 total bicycle parking spaces), we believe somewhere between 105 to 243 bicycle parking spaces will be more than enough to adequately serve a school of this size.

Traffic

Traffic operations on the proposed campus and on adjacent North Avenue have been reviewed by our traffic consultant. As the design has progressed, the traffic consultant has provided input on the circulation at the site as well as improvements to the operation of the signalized intersection to better accommodate all users (e.g., motorists, pedestrians, and cyclists). The total number of site users is not anticipated to significantly change from pre-pandemic levels as a result of this project. Focus was given to improvements in pedestrian, bicycle, and transit interactions with the property.

At the North Avenue/Institute Road intersection the following improvements are recommended and in planning pending Burlington City and GMT review and input:

- Addition of a right turn lane (turn to southbound) on the Institute Road approach;
- Relocate the southbound transit stop on North Avenue to the north side of the intersection;
- Add pedestrian crosswalks, accessible ramps, pedestrian push buttons and pedestrian signal heads across the north leg and east leg of the intersection;
- Add a traffic signal head to control the Institute Road approach;
- Repaint existing bicycle lanes northbound along North Avenue at the signalized intersection and add a bicycle turn box;
- Buffer southbound bicycle lane to the south of the intersection for first 200 feet (using paved area from moved transit stop);
- Restripe all pavement markings within 200' of the intersection

Energy Efficiency/Sustainability

The new BHS/BTC building will use a renewable primary heating system as required by Burlington Ordinance Chapter 8 Article 5. The building's heating, cooling, and domestic hot water will be provided by electric heat pumps connected via heat exchanger to an open-loop ground source (i.e., geothermal) heat pump loop. This system is designed to provide all anticipated heating and cooling needs for the project. This proposed system is based upon the confirmation of substantial water flows on site from a test well and design phase energy modeling of the building. The building enclosure performance will exceed VT CBES 2020 standards, with a particular focus on air tightness. Building and equipment performance values have been optimized through the energy modeling process.

The roof is arranged and structured to support solar photovoltaic arrays and infrastructure will be put in place to support the BSD's plan to arrange for installation of solar PV by a third-party on the building's roof through a power purchase agreement. The BHS/BTC

project is registered as a LEED project, and we will continue to refine and optimize energy and materials performance throughout the design and construction process.

Environmental

Extensive testing of building materials and soils for hazardous materials has been conducted on the property. Hazardous materials have been detected on site including asbestos, lead, PCBs, and polyaromatic hydrocarbons (PAHs) in the soils that exceed EPA and VTDEC standards. Remediation of hazardous materials will consist of the following:

- Accessible asbestos containing materials (ACM) will be removed prior to demolition of the buildings.
- Buildings A – G will be abated prior to demolition activities.
- The entire buildings will be demolished and disposed of as PCB bulk product waste.
- There will likely be select remediation of PCB building materials on the exterior of the building including joint and door caulking.
- Soil remediation will include select soil excavation and disposal to satisfy VTDEC and EPA regulations.

The abatement, remediation, and demolition will require the following regulatory agency permits and approvals to facilitate completion of the project:

- Site Investigation Report for hazardous building materials (PCBs) to be approved by VTDEC Sites Management Section (SMS).
- Site Investigation Report for soil materials to be approved by VTDEC SMS.
- Compliance with Vermont Department of Health lead and ACM regulations.
- Corrective Action Plan (CAP) for hazardous building materials (PCBs) and soil remediation to be approved by VTDEC SMS. This includes public notice and final decision.
- Corrective Action Construction Completion Report to be prepared for completed hazardous building materials (PCBs) and soil remediation.
- Performance based disposal of PCBs in accordance with the EPA 40 CFR section 761.61(b). This includes proper EPA notification and closure requirements.

Exhibit A - Parking Table

Vehicle Parking			
Maximum Parking Standard			
Use	Max Parking Standard	Proposed Metric	Max Parking Allowed
School Secondary	5 per Classroom	80 classrooms	400
Performing Arts Center	1 per 4 seats	750 seats	188
Recreational Facility - Outdoor Commercial	1 per 4 seats	1,000 seats	250
Recreational Facility - Indoor (Gym & Community Gym)	1 per 4 seats	1,750 seats	438
Total Max Parking Allowed			1276
Proposed Parking			
Type	No. of Spaces		
Permanent Spaces	352		
Overflow Event Parking	TBD		
Total Parking Spaces Proposed	TBD		



City of Burlington
Department of Public Works

Technical Services Engineering Division
645 Pine Street, Suite A
Burlington, VT 05402
P 802-863-9094 / F 802-863-0466 / TTY 802-863-0450
www.burlingtonvt.gov/DPW

TO: Mary O'Neil, Principal Planner, Dept. of Permitting & Inspections

FROM: Laura Wheelock, P.E., Senior Public Works Engineer
Nicole Losch PTP, Senior Transportation Planner

CC: Chapin Spencer, Director
Norm Baldwin, P.E., Assistant Director/City Engineer

DATE: January 29, 2021

SUBJECT: 52 Institute Road – Burlington High School Application to DRB

The Department of Public Works (DPW), has reviewed the application materials submitted by the applicant for the above referenced property and offer the following comments or suggestions related to work planned both within the public Right-of-Way (ROW) as well as within the parcel. Additionally there are comments around the bike parking waiver.

DPW respectfully requests that in their review of the application the comments and conditions mentioned in this communication be added onto the staff recommendations to become conditions of the applicant's permit.

Public Right-of-Way

1. There are proposed on street parking changes shown within the plans that will require the approval of the DPW Commission prior to the ability to implement those changes and new/adjusted crosswalks. **The applicant shall work with DPW staff to understand what is needed to facilitate this request to the DPW Commission. This approval is needed prior to obtaining and excavation permit.**
2. **The street lighting that is being adjusted along Institute Rd will need to be reviewed and approved by the Burlington Electric Department.** DPW's specific concern is ensuring that lighting design along this corridor meets pedestrian standards for the new sidewalk sections and crosswalks. We will also require that the lighting be installed and operational prior to use of the pedestrian facility.
3. DPW has concerns with the conflict of bicycles at the exit road and use of the bi-directional bike lane. Bicycles with origins or destinations south of Institute Road are being led to conflict with existing vehicles in the current layout of the site plan. **DPW request the applicant provide accommodations for these bicycle trips with widening the existing sidewalk on the parcel to allow bicycle trips to cross at North Ave and continue on a widened multiuse path to the path that exists within the bus loop to facilitate safer movement of these users.**

4. **DPW requests that the applicant provide an on ramp accommodation for bicycles with an origin/destination north of Institute Road at the corner where the bus loop and pedestrian facility meet at North Ave to allow these users to have a way to reach the location of the short and long term bike parking more directly.**

Parcel:

DPW offers the following comments for consideration of the Development Review Board (DRB) in their review of the application.

5. Within the site there are multiple locations where detectible warning strips are not shown in locations where a protected pedestrian facility interfaces with the road/vehicle ways. Americans with Disability Act (ADA) regulations require these devices at all these points even absent of a crosswalk. This occurs in several locations within the main parking area, as well as the improvements proposed at the student parking.
6. There are multiple locations where sidewalks dead-end at lawn, in our experience it can be difficult to remove snow with abrupt termination of walkways.
7. At the termination of the bike lane along the exit road the opening in the sidewalk should be widened to make navigating this transition safer for those on a bicycle.
8. Bike lane with the catch basins is a concern.
9. Bike lane unprotected from vehicle is a concern.

Bike Parking Waiver

The Department of Public Works was asked to comment on the BHS ReEnvisioning's parking waiver request related to bike parking.

BHS provided:

- A summary of the requirements based on the Zoning Ordinance – 474 total,
- An example of requirements suggested by the Collaborative for High Performance Schools (CHPS) – 191 total,
- A proposal to install 20 bike parking spaces initially and increase to 120 over time.

DPW requests the DRB require 243 bike parking spaces, including 77 long-term spaces and 166 short-term spaces; and that 100% of the bike parking be installed during the first phase of construction since student capacity is not increasing in future construction phases.

At a minimum, BHS should be required to follow the CHPS reference to install a minimum of 191 bike parking spaces during the first phase of construction; with 30% long-term parking as recommended in the Zoning Ordinance.

This was the first school review for bicycle parking requirements since the Zoning Ordinance's Bike Parking section was updated, and this was a good opportunity to review the applicability of the Zoning Ordinance requirements themselves. As a result, DPW also has suggestions for Zoning Ordinance revisions to align with real-world applications; and DPW's request to the DRB for BHS ReEnvisioning is based on this consideration.

- The Zoning Ordinance calculates bike parking based on the number of students, number of classrooms, and square footage. It equates to approximately 30% of the required bike parking for schools be long-term bike parking.
- The CHPS recommendations are based on student population. BHS estimates that future student capacity could be 1,276 and 190 staff (1,466 total). Although the CHPS recommendations are based on student population, bike parking should be considered as a need by both students and staff.
 - Applying the CHPS recommendations to total capacity equates to 220 total bike parking required; applying Zoning guidance, 66 should be long-term and 154 should be short-term spaces.
- To more closely align with the CPHS recommendations, the Zoning Ordinance could be amended to calculate:
 - Long-term bike parking as 1 space per 20 students and 1 space per 20,000 s.f. (a reduction from 1 space per 10 students), and
 - Short-term bike parking as 2 spaces per classroom (a reduction from 4 spaces per classroom)

Applying this hypothetical new threshold for bike parking relative to the Zoning Ordinance, BHS would require 77 long-term bike parking spaces, 166 short-term bike parking spaces, and 243 total bike parking spaces.

Please contact us if you have any questions or require additional information related to this review.

CHPS Criteria Interpretation [CCI-SS-01]

Published [5/16/2019]

Topic: Human Transportation-Number of Bike Spaces Required

Category: Sites

Applicable Prerequisites/Credits:

Edition	Criterion Number and Name
US-CHPS 2014/2016	SS 9.1 Human Powered Transportation
CA-CHPS 2014/2016	
NE-CHPS v3.x	
HI-CHPS 2012	SS C6 Human Powered Transportation
TX-CHPS 2009/2015	SS 9.1 Human Powered Transportation
VA-CHPS 2011	SS.C7 Pedestrian / Bike Access / Human Powered Transportation

Credit Interpretation Question:

The CHPS Criteria credit, Human Powered Transportation, states the following about bike parking spots:

"Provide suitable means for securing bicycles, and scooters outside the school, skates and skateboards and helmets indoors (including lockers and/or cabinets). The storage must be safe, convenient, and at accessible locations for a minimum number of occupants (students, teachers and staff) as specified below:

- Elementary: 20% (up to 500 occupants), 15% (over 500 occupants)
- Middle school: 15%
- High school: 10%, and plan for an additional 5% in the event of growth through designated space, but not suitable means for securing. "

CHPS has revisited bike parking space requirements since they seem to exceed the actual demand for bicycle parking. Therefore, CHPS has now adopted the language from the Core Criteria v3 on the number of bike parking spaces.

Credit Interpretation Ruling:

For grades 4-12: the credit will now require 1.5 bike parking spaces for every 10 students planned capacity (2 parking spaces minimum).