# WEST WINDSOR TOWNSHIP

## DEPARTMENT OF COMMUNITY DEVELOPMENT
### DIVISION OF ENGINEERING

**MEMORANDUM**

TO: West Windsor Township Planning Board

FROM: Francis A. Guzik, PE, CME
Director of Community Development/Township Engineer

DATE: April 28, 2021

SUBJECT: **Trustees of Princeton University**
**Preliminary/Final Major Site Plan – "Lake Campus North"**
Block 3, Lots 1.012 & 1.0113
Washington Road
PB 20-13

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**Documents Received/Reviewed:**

The following documents have been submitted for review:

A. Set of plans entitled "Princeton University Lake Campus Site Development – West Windsor Township Major Site Plan Application – Lake Campus North – Lot 1.012 and 1.0113, Block 3 – West Windsor Township, Mercer County, NJ", consisting of five (5) volumes (numbered 1A, 1B, 2A.1, 2A.2 & 2B), all dated April 7, 2021, with:

- Volumes 1A and 1B comprising the Site Civil portion (Christopher Longo, PE – Firm unspecified);
- Volumes 2A.1 and 2A.2 comprising the Landscaping plans (James Corner, LLA – James Corner Field Operations) and;
- Volume 2B comprising the Stormwater Management plans (Sandra A. Brock, PE – Nitsch Engineering, Inc.)

None of the volumes bears the title block of any firm, but all identify the following schedule of design team member firms:

- Master Plan Architect – Skidmore, Owings & Merrill, Architects, P.A.
- Open Space Design and Landscape Architects – James Corner Field Operations
- Integrated Site/Civil Engineers and Traffic – Vanasse Hangen Brustlin, Inc.
- Athletic Fields – Sasaki Architects, Landscaping Architects and Professional Engineers, PC
- Traffic, Transportation, Parking and Planning Advisory – BFJ Planning.
- Stormwater Design – Nitsch Engineering, Inc.

- Electrical, Site Utilities, Site-wide Security, IT and Low Voltage – Burns and McDonnell Engineering Company, Inc.
- Plumbing, Fire Protection, Gas and Reclaimed Water – AKF Group
- District Scale Sustainability and Site Lighting – Atelier Ten
- Wayfinding and Signage – Applied Wayfinding
- Site Accessibility Consulting and Peer Review – Code Consultants, Inc.
- Cost Estimation – AECOM
- Surveyors and Civil Consulting - Van Note Harvey Associates, Inc.
- Construction Manager – P. Agnes
- Historic Preservation Consultants – Mills + Schnoering Architects; and
- Attorney – Faegre Drinker Biddle & Reath, LLP

B. Set of plans entitled "Graduate Student Housing - Princeton University - West Windsor Township Major Site Plan Application – Lake Campus North – Vol. 3 - Lot 1.012, 1.0113, Block 3 – West Windsor Township, Mercer County, NJ", prepared by Mithun (William LaPatra, RA), consisting of twenty-two (22) sheets, dated April 7, 2021;

C. Set of plans entitled "Athletic Projects – Racquet Center – Princeton University - West Windsor Township Major Site Plan Application – Lake Campus North – Vol. 4 - Lot 1.012, 1.0113, Block 3 – West Windsor Township, Mercer County, NJ", prepared by Sasaki (Zachary P. Chrisco, PE & Vinicius Gorgati, RA), consisting of twenty-eight (28) sheets, dated April 7, 2021;

D. Plan entitled "North Campus Environmental Constraints Map – Princeton University Lake Campus Site Development", unattributed, consisting of one (1) sheet with a "Design Development" phase date of August 20, 2020, and referencing a plan prepared by Van Note Harvey Associates (VNHA) entitled "Existing Conditions Survey of the Lake Campus", dated November 21, 2018;

E. Report entitled "Environmental Information Statement – Lake Campus North Site Development – Princeton University, West Windsor Township, Mercer County, New Jersey", prepared by VHB Engineering, Surveying, Landscape Architecture, and Geology P.C., and dated October 2020;

F. Report entitled "West Windsor Township Major Site Plan Application – Lake Campus North – Stormwater Report" prepared by Nitsch Engineering (Sandra A. Brock, PE) dated October 30, 2020, revised through April 7, 2020;

G. Document entitled "Stormwater Management and Maintenance Plan – Princeton University Lake Campus North, West Windsor, NJ" prepared by Nitsch Engineering (Sandra A. Brock, PE) dated April 7, 2021;

H. Letter of Interpretation: Extension issued by NJDEP for Block 3, Lot 3 dated May 23, 2017 and referenced file No. 1113-10-0010.2 FWW170001;

I. Letter of Interpretation: Line Verification issued by NJDEP for Block 2, Lots 2, 3 and 6-11 and Block 3, Lots 1, 2, 3.01, 4, and 11-13 dated January 24, 2018 and referenced file No. 1113-02-0003.2 FWW170001;

J. Letter of Interpretation: Line Verification issued by NJDEP for Block 11602, Lot 2 (Municipality of Princeton) and Block 3, Lot 16 (Township of West Windsor) dated February 8, 2023, with a

subsequent "Clarification Letter" issued by NJDEP on February 27, 2018, setting the correct date of issue to February 8, 2018, and referenced file No. 1100-17-0001.1 FWW170001;

K. Plan entitled "Lot Consolidation Plan of Block 3, Lot 1.011, Eden Way Right-of-Way, & Block 2, Lot 2.01 – Prepared for The Trustees of Princeton University, Situated in West Windsor Township, Mercer Co., N.J." prepared by VNHA (Kenneth R. Raike, PLS), consisting of one (1) sheet, dated December 18, 2019, unrevised;

L. Letter from BFJ Planning to KyuJung Whang, Vice President of Facilities for Princeton University referenced "Traffic Impacts of the Initial Projects within the Near-Term Phase of the Princeton University Lake Campus GDP" dated November 5, 2020;

M. Photo report entitled "Trustees of Princeton University – Lake Campus North: Existing Conditions Photos – Township of West Windsor, New Jersey", undated.

N. Package of 11x17 color architectural renderings entitled "Lake Campus North Renderings" dated April 7, 2021, consisting of renderings showing views of the Graduate Student Housing buildings and the Racquet Center.

O. Development Application package, including;

- Cover letter;
- Completed Development Application form;
- Rider to same;
- Completed Site Plan Checklist;
- Green Development Checklist; and
- Environmental Impact Statement Worksheet (included in Submission Item E);
- Title Report prepared by Prestige Title Agency, Inc. for Block 3, Lot 1 dated July 2, 2018;
- Title Report prepared by Prestige Title Agency, Inc. for Block 3, Lot 2 dated February 22, 2019; and
- Title Report prepared by Prestige Title Agency, Inc. for Block 3, Lot 3 dated February 22, 2019.

**Narrative:**

The subject property is a 74.3-acre portion of a previous 201.2-acre tract consisting of Block 3, Lots 1.0113 and 1.012, which were created by way of minor subdivision under Planning Board Application No. PB18-03. The overall site is bounded on the west by the Delaware & Raritan Canal, on the south by Washington Road (Mercer County Route 571), on the east by US Route 1 and on the north by Lower Harrison Street (Mercer County Route 629). The property is owned by the Trustees of Princeton University and is located primarily within the E (Education) district, with some small portions in the R-2 residential zoning district.

The existing improvements consist of athletic fields and a "lightning shelter" building, two private roadways (Tiger Lane and Nursery Drive), greenhouses, and a single-family residence with a garage and other outbuildings. Within the tract is an "exception" area; designated as Block 3, Lot 15, which is the historic cemetery owned by Penns Neck Cemetery Association. The property is encumbered by a variety of environmental constraints including wetlands, flood hazard areas, DRCC stream corridor conservation easements, and Township Greenbelt. In addition to the environmental encumbrances, there is a 50'-wide sanitary sewer easement that parallels the Canal on the westerly portion of the property, and a 20'-wide sanitary sewer easement in the southeasterly portion of the property.

The subject property is bisected by a ridgeline that generally runs along the existing pathway from Washington Road past the cemetery parcel up to Lower Harrison Street. The westerly portion of the property is located within the Duck Pond Run HUC 14 subwatershed with the easterly portion within the Millstone River (Route 1 to Cranbury Brook) HUC 14 subwatershed. The westerly portion is also part of the larger Stony Brook HUC 11 watershed and the easterly portion is part of the larger Millstone River (Above Carnegie Lake) HUC 11 watershed. Both the current application and the previous Lake Campus South application are entirely contained within the Duck Pond Run/Millstone River subwatershed/watershed.

The property is located within the Stony Brook Regional Sewerage Authority (SBRSA) River Road Sewer Treatment Plant sewer service area. Domestic water supply will be provided by New Jersey American Water. The previous overall tract is located within the Delaware and Raritan Canal Commission (DRCC) Review Zones A & B. Lot 1.012 is the within Review Zone A, and Lot 1.0113 is entirely within Review Zone B.

Following the subdivision process, the applicant came before the Board for the approval of a 20-year General Development Plan (GDP), which was approved by the Board early in 2020 (PB18-09). This current application is the second site plan approval sought for Lot 1.012 and a very small portion of Lot 1.0113 under that GDP. A concurrent site plan for Lot 1.0113, identified as "Lake Campus South", is also before the Board. Reference to that application is made as warranted on the various aspects of this current application.

The proposed development associated with "Lake Campus North" is as follows:

- 379 units of Graduate and post-doctoral Student Housing (GSH), consisting of three 3-story buildings, broken down as follows;
    - 253 Studio/1-Bedroom units;
    - 63 2-Bedroom units;
    - 48 3-Bedroom units; and
    - 15 4-Bedroom units
- A Racquet Center with indoor and outdoor tennis courts, indoor squash courts, locker rooms, coaches' offices, sports medicine facilities and a fitness center. The outdoor tennis area will be illuminated by 40-foot tall light stanchions;
- Rugby and flexible recreation fields that will have field goals at either end of each field and one scoreboard, but will not have artificial lighting; and
- An area directly to the east of the Racquet Center that will have four compactors for storage and pickup of trash and recycling from campus facilities. This area will also be used as a loading area for the Racquet Center and as a drop-off for visiting team buses.

In addition to the four primary development components of this application, appurtenant improvements are proposed, such as lighting, landscaping, vehicular and pedestrian access, underground utilities such as sanitary sewer, potable water, electric, telecommunications, and chilled water and hot water distribution lines (supply and return) as part of the thermal transfer system.

Finally, a complex and ambitious stormwater management design is proposed that consists of bioretention basins, stone-filled trenches (both infiltration and subsurface extended detention), porous pavement, meadow infiltration basins and a bioretention swale.

Upon review of the documentation submitted, the following comments are offered:

## 1.0 Site Plan

1.01 The following checklist waivers have been requested:

**Section 200-13 (Preliminary Site Plan Approval)**

- Checklist item #9 requires all wetlands areas be depicted with surveyor's metes and bounds for the outbound areas. This applicant has requested a checklist waiver from this requirement. I have no objection to the Board granting a temporary waiver from this requirement and deferring it to a condition of approval.

**Section 200-14 (Final Site Plan Approval)**

- The applicant has requested checklist waivers from Final Site Plan checklist items 200-14.C.1.a), C.1.b)(1) & C.1.b)(5). As these items all relate to the situation where the applicant pursues Preliminary and Final approvals separately, I have no objection to the granting of these waivers as Preliminary and Final approvals are being sought concurrently.

## 2.0 Access and Circulation

2.01 The current application proposes 12 (porous pavement) parking stalls adjacent to GSH Building 3, and 17 parking stalls east of the racquet center for a total of 29 surface stalls for Lake Campus North. All other parking demand is proposed to be satisfied with the Lake Campus South project's parking deck and 24 surface stalls. As a reminder, the 5-story parking deck is proposed in two phases, with Phase 1 construction to provide 612 spaces. Phase 2 of the parking deck will consist of an addition of 325 spaces, for an ultimate supply of 937 spaces at the deck.

Combined with the 53 surface stalls aggregate for Lake Campus North (29 stalls) and South (24 stalls) results in a total parking supply of 665 spaces with initial construction. With the additional 325 spaces "banked" in Phase 2 of the garage, the total potential parking build-out is 990 spaces for Lake Campus.

The parking calculations provided by the applicant based upon RSIS for the GSH apartments and factoring in University student demand reductions for the other uses results in a parking demand of 1,274 spaces. The applicant has provided shared parking calculations that show that the peak parking demand will be on weekends, when a maximum peak demand of 908 spaces will occur.

Testimony should be provided to the Board in support of the University's design waiver request, and their proposed traffic and parking monitoring program, since their shared parking scenario indicates a deficit of 243 spaces from what is required (908 less 665 stalls initially constructed). Comments on the monitoring programs are deferred to the Township Traffic Consultant.

2.02 Ordinance Section 200-27.D(2) requires one loading area for up to 10,000 square feet of building floor area for apartments and/or dormitories and another for floor area of 10,001 to 100,000 square feet and yet another for 100,001 square feet. The applicant is to provide testimony to the Board on how they envision loading/unloading will be handled in the residential area. For the purpose of quantifying the design waiver relief the University is seeking, the GFAs of the individual buildings are as follows:

- Building A: 107,140 SF (3 loading areas required);
- Building B: 135,539 SF (3 loading areas required); and
- Building C: 87,378 SF (2 loading areas required)

2.03 Section 200-29.I.(3) requires that two-way driveways are to be 24-feet in width. Several proposed driveways do not comply and as discussed at the Lake South Planning Board hearing, the applicant intends to seek a design waiver. Testimony to the Board's satisfaction in support of this design waiver is required.

## 3.0 Stormwater Management

3.01 The subject application was deemed complete prior to the adoption of the Township's current "Green Infrastructure" Stormwater Control Ordinance (SCO) and has thus been reviewed under the requirements of the old SCO. The project will result in over one-acre of disturbance and the creation of over ¼-acre of new impervious surfaces. As such, the project must comply with all aspects of the SCO, including water quality. I have reviewed the Stormwater Management design and offer the following:

- The required stormwater quantity reductions for the 2-, 10- and 100-year design storms for the Lake Campus North and South projects have been met;
- The required 80% TSS reduction water quality standard has been met; and
- The required groundwater recharge balance has been met.

3.02 A Stormwater BMP Maintenance Plan has been submitted for review. I have reviewed same and have found several minor items that will require further attention. These technical items may be addressed between this office and the applicant's SWM Engineer directly, rather than listing them here. Approval of the Stormwater BMP Maintenance Plan by this office should be made a condition of any Board approval on this application.

3.03 The Soil Erosion and Sediment Control Notes Sheet C-909 Subsection F. indicates that temporary sediment basins are to be converted to fully functional basins subsequent to the start of construction of the GSH buildings, Racquet Center and athletic fields, but prior to the completion of the remainder of the site work. Temporary sediment basins must remain in place until their contributing drainage areas are fully stabilized, including the installation of all base course paving, at a minimum. The notes shall be revised to comply and this should be made a condition of any Board action on this application.

## 4.0 Utilities

4.01 A sanitary sewer report that calculates the proposed flows from the North Campus has not been provided with the current submission. The sanitary sewer demand must be established by the applicant's engineer and approved by this office. A Treatment Work Approval permit from NJDEP will be required for the proposed development. The applicant will also need to request and receive sewer allocation from the Township Council for this project. Addressing these items should be made a condition of any Board action on this application.

4.02 The applicant shall demonstrate a minimum of 18" of vertical separation between the bottom of the sanitary sewer and the top of the potable water lines in the profile labelled "GSH Sanitary Alignment" on Sheet C-1401 or provide the required concrete encasement.

4.03 Potable water for this project will be provided by New Jersey American Water. Locations of all proposed hydrants are subject to the review and approval of the Director of Fire and Emergency Services.

## 5.0 Lighting

5.01 The proposed lighting design does not explicitly comply with the requirements of Township Ordinance 200-31.K. The applicant shall identify the proposed deviations to the Board and identify the alternate standards to be used. Testimony to the Board's satisfaction with regard to any requested design waivers must be provided.

## 6.0 General

6.01 Metes and bounds descriptions for any proposed easements and dedications, with closure calculations for same, are to be submitted for review and approval of this office. The forms of any easement and dedication shall be reviewed and approved by the Board Attorney. This should be made a condition of any Board action on this application.

6.02 All construction details are subject to the review and approval of the Township Engineer. This should be made a condition of any Board action on this application.

6.03 The applicant is required to submit Engineer's construction cost estimates for review. The Applicant will be required to post one estimate consisting solely of items within the public rights-of-way and any proposed buffer landscaping for the establishment of required performance guarantees and another estimate that includes all site improvements for the establishment of construction escrow inspection fees in accordance with the MLUL and the Township Ordinance. This should be made a condition of any Board action on this application.

6.04 As per Ordinance section 200-81.1 the applicant will be required to provide, via both hard copy and in electronic format, approved site plans being submitted for signature and as-built surveys upon project completion should this project be approved and constructed. Electronic copies of the Stormwater Management Report and Maintenance Manual are also requested upon approval of same. This should be made a condition of any Board action on this application.

6.05 Per recent guidance from NJDEP, only the cover page and the page identifying the "responsible party" (if not the same page) of the Stormwater BMP Maintenance Plan must be recorded upon the deed to the property. This should be made a condition of any Board action on this application.

6.06 Other outside agency approvals will also be required. The following approvals are anticipated at this time:

- Mercer County Planning Board
- Mercer County Soil Conservation District
- Delaware and Raritan Canal Commission
- NJDEP (Treatment Works Approval)

All outside agency approvals are to be obtained as a condition of any approval that may be granted.

This completes the review of the referenced site plan documents. Other comments may be offered based on the responses to the above issues.

FG:IH
cc: Applicant (christopherdegrezia@dbr.com)

BURGIS ASSOCIATES, INC.

COMMUNITY PLANNING
LAND DEVELOPMENT AND DESIGN
LANDSCAPE ARCHITECTURE

Principals:
*Joseph H. Burgis PP, AICP*
*Edward Snieckus, Jr. PP, LLA, ASLA*
*David Novak PP, AICP*

# MEMORANDUM

To: West Windsor Planning Board
West Windsor Division of Land Use
From: David Novak PP, AICP
Subject: Trustees of Princeton University – Lake Campus North
Preliminary and Final Site Plan
Block 3 Lots 1.012 and 1.0113
Washington Road
Date: April 27, 2021
BA#: 3688.22
WWT#: PB 20-13

## Introduction

The applicant, the Trustees of Princeton University, has submitted an application seeking preliminary and final site plan review for the development of Princeton University's Lake Campus North. The site, which is identified by municipal tax records as Block 3 Lots 1.012 and 1.0113, is located along Washington Road in the E Educational District.

In addition to the application form and application checklists, the following has been submitted for review:

1. Preliminary and Final Major Site Plan Volume 1A, consisting of thirty (30) sheets, dated November 3, 2020 (last revised April 7, 2021)
2. Preliminary and Final Major Site Plan Volume 1B, consisting of twenty-eight (28) sheets, dated November 3, 2020 (last revised April 7, 2021).
3. Preliminary and Final Major Site Plan Volume 2A, consisting of nineteen (19) sheets, dated November 3, 2020 (last revised April 7, 2021).
4. Preliminary and Final Major Site Plan Volume 2A.2, consisting of eighteen (18) sheets, dated November 9, 2020 (last revised April 7, 2021).
5. Preliminary and Final Major Site Plan Volume 2B, consisting of twenty (20) sheets, dated November 3, 2020 (last revised April 7, 2021).
6. Preliminary and Final Major Site Plan Volume 3A, consisting of twenty-two (22) sheets
7. Athletic Projects – Racquet Center, consisting of twenty-nine (29) sheets, dated April 2, 2021
8. Graduate Student Housing, consisting of twenty-two (22) sheets, dated April 2, 2021.
9. Lot Consolidation Plan, prepared by Van Note-Harvey Associates, Inc., consisting of one (1) sheet dated August 7, 2019
10. Lake Campus North Renderings.

## Property Description

The subject site is located in the northerly portion of the Township, at the northerly corner of the intersection of US Route 1 and Washington Road. The site has an area of approximately 127.3 acres and is irregularly shaped. It fronts along: Washington Road for approximately 2,650 feet; US Route 1 for approximately 2,450 feet; and Harrison Street for approximately 350 feet.

The site is largely characterized by cultivated farm fields as well as some athletic fields. Tiger Lane, which is a private roadway, extends through the northerly portion of the site. An existing utility station, as well as an expanded utility station presently under construction, are located within the southerly portion of the site near US Route 1. A cemetery is located within the central portion of the site; however, this cemetery is located on a separate lot which is not included in this application.

Surrounding land uses consist of: Princeton University-owned lands and Lake Carnegie to the north; residential uses to the northeast; a car rental establishment and gas station to the east; a PSE&G substation and the SRI International campus to the southeast; an abandoned gas station, an existing gas station, a house of worship, commercial building, and residential dwellings to the south; and Princeton University-owned lands to the west. See the map at the end of this memorandum for an overview of the subject site and its surrounding environs.

## Proposed Improvements

The applicant proposes to begin development of an approximately sixty (60) acre portion of the site for Princeton University's Lake Campus North. This project area will be located within the northerly portion of the site. The following is summarized:

- Graduate Student Housing

  Graduate student housing is proposed to be located within the westerly portion of the project area. The housing will be for graduate and post-doctorate students. A total of three (3) buildings containing three hundred and seventy-nine (379) units are proposed. The following table summarizes the bedroom distribution of these units.

*Table 1: Bedroom Distribution*

| Unit Type | Number | Percentage |
|---|---|---|
| One-Bedroom | 253 | 66.8% |
| Two-Bedroom | 63 | 16.6% |
| Three-Bedroom | 63 | 16.6% |
| Total | 379 | 100.0% |

The proposed buildings will also contain bike rooms, study rooms, and storage rooms. Building 1 will contain a café on the first floor. Building 3 will contain a community room, leasing offices, and a kids playroom. The buildings will have heights of three (3) stories. Their façades will predominantly consist of painted fiber cement siding, as well as fiber cement paneling, wood paneling, and metal fascia.

- Racquet Center

The Racquet Center is proposed to be located within the central portion of the project area. As noted by the application materials, the Racquet Center will be utilized by the University's varsity squash and tennis teams. The facility will comprise a total of approximately 180,262 square feet. Its interior will contain nine (9) tennis courts and twelve (12) indoor squash courts, as well as locker rooms, coaches' offices, sports medicines facilities, and a fitness center. The façade of the building will largely consist of metal paneling as well as Reysta and glass panels.

In addition to the above, eight (8) outdoor tennis courts as well as bleachers are proposed to the south and southeast of the Racquet Center. Eight (8) lighting fixtures are also proposed in this area, all of which will have heights of forty (40) feet. Seventeen (17) parking spaces, including two (2) ADA spaces, are proposed to be located to the east of the building.

- Operations Center

A small operations center is to be located to the east of the Racquet Center. Four (4) compactors, as well as space for another compactor, are to be located in this area, which will be partially screened with a fence. The application materials further indicate that this area will also be utilized to accommodate deliveries for the Racquet Center, as well as a loading area for team buses. Moreover, the materials note that all uses in this area will be screened by berming and landscape.

- Rugby and Flexible Recreation Fields

Rugby and flexible recreation fields are proposed to be located within the easternmost part of the project area. As noted by the application materials, these fields are to be relocated from their current position along Washington Road. The fields will consist of mowed grass, and will include field goals on either side of three (3) rugby fields as well as a scoreboard. No lighting or bleachers are proposed in this area.

## Master Plan

As per the Township's 2020 Land Use Plan, the subject site is located in the Education (E-1) land use category which is located along Washington Road and Alexander Road. The 2020 Plan notes that the lands within this category are owned by Princeton University. It is the intent of this land use category and corresponding district to encourage the development of a comprehensive educational campus which may include a combination of educational, research, collaboration, office and other customary uses and facilities of a modern educational/research university. The 2020 Plan also encouraged the expansion of the land use category and corresponding district to encapsulate additional properties along Eden Way and Harrison Street.

## Zoning

The site is presently located in the E Education District, wherein planned educational developments are permitted. The following table provides the bulk standards of the E District.

*Table 2: E District Standards*

| Regulations | Required | Existing | Proposed | [1]Cumulative | GDP | Code |
|---|---|---|---|---|---|---|
| Mix of Uses | Required | Proposed | Proposed | Proposed | Proposed | 200-221A.(3)(a) |
| Min. Lot Area (ac) | 100 | 73.4 | 73.4 | 198.7 | 201.2 | 200-221A.(3)(b) |
| Min. Tract Frontage (ft) | 400 | 942 | 942 | 3,579 | 3,579 | 200-221A.(3)(c) |
| Max. Bulk and Density | | | | | | 200-221A (3)(d) |
| FAR: One-Story Buildings | 0.25 | 0.004 | 0.008 | 0.006 | N/A | 200-221A.(3)(d)[1] |
| FAR: Multistory Buildings | 0.35 | 0.000 | 0.050 | 0.020 | N/A | 200-221A.(3)(d)[1] |
| FAR: Weighted | 0.336 | 0.004 | 0.116 | 0.029 | 0.15 | 200-221A.(3)(d)[1] |
| Max. Improvement Coverage (%) | 50 | N/A | 16.6 | 11.6 | 18.3 | 200-221A.(3)(e) |
| Max. Building Height (st/ft) | 6/70 | 1/21 | 3/39.5 | 5/49.1 | 6/70 | 200-221A.(3)(f) |
| Building Arrangement (ft) | | | | | | 200-221A (3)(g) |
| Perimeter Setback | 100 | N/A | N/A | N/A | N/A | 200-221A.(3)(g)[1] |
| Perimeter Buffer | 50 | N/A | N/A | N/A | N/A | 200-221A.(3)(g)[1] |
| Internal Access Road Setback | 25 | 314 | 25 | 25 | 25 | 200-221A.(3)(g)[2] |
| Local/Collector/Arterial Road Setback | 50 | 470 | 94 | 94 | 95 | 200-221A.(3)(g)[2] |
| Arterial Road to 4-Story Buildings | 300 | N/A | N/A | 2,047 | 340 | 200-221A.(3)(g)[3] |
| Common Open Space | 20 | 99.9% | 63.2% | 75.3% | 57.8% | 200-221.A.(3)(h) |

[1] *Inclusive of Lake Campus South and North*

## Planning Review

We offer the following comments on the proposed development:

1. Previously Approved General Development Plan (GDP)

   The applicant previously received GDP approval in early 2020 for the development of the proposed Lake Campus. As part of that GDP, the applicant received approval for the following:

   a. *Residential Use*. A maximum of five hundred (500) units of housing for post-doctorate and/or graduate students.

   b. *Nonresidential Use*. A maximum of 985,000 square feet of nonresidential uses, which was to consist of:

      i. Education, administrative, collaboration, and research facilities;
      ii. Athletic facilities and campus recreation;
      iii. Support/maintenance/utilities facilities, and;
      iv. Campus retail, service, and amenities.

   In consideration of the above, the following is noted:

   c. *Comparison with the previously approved GDP*. The proposed Lake Campus South development largely coincides with what was envisioned during the GDP process.

   d. *GDP Tracking Chart*. The applicant has provided a GDP tracking chart on Sheet C-201. This chart, which is summarized below, compares the proposed nonresidential square footages and residential units by campus phase to what was approved in the GDP.

*Figure 1: Nonresidential Square Footage*

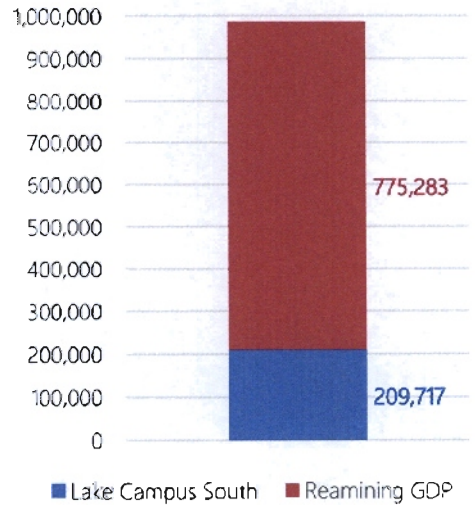
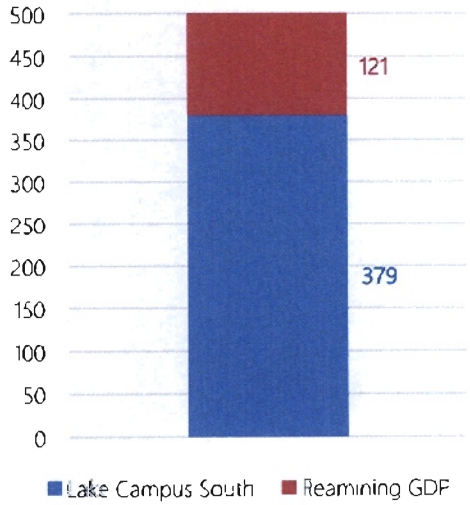



*Figure 2: Residential Units*



2. Graduate Student Housing

The following is noted regarding the proposed Graduate Student Housing:

a. *Basic Profile Information*. The applicant should provide an overview as to what graduate student housing generally consists of, including an overview as to who generally resides in such housing, what the typical household sizes are, and how many school-aged children are typically generated.

   The applicant has thus far indicated that the proposed development includes apartment-style housing for graduate students and post-doctorates who will be attending classes or working as research assistants. Thus, the applicant has noted that the population will primarily include adult singles, couples, and a small number of families. As a reference point, the applicant has indicated that as of December 2020, there are seven (7) children under the age of five (5) and six (6) children over the age of five (5) living in Princeton's other graduate student housing units, which account for 1,268 total beds.

b. *Bicycle Rooms*. Bike rooms will be provided in the interior of the buildings. A total of eighty (80) bicycles are accommodated within the buildings. Two hundred and ninety-six (296) exterior parking spaces are also located in this area.

c. *Amenities*. Building 1 will contain a café on the first floor, while Building 3 will contain a community room, leasing offices, and kids playroom. It is our understanding that these amenities will be shared.

d. *Parking Management*. The applicant should provide testimony as to how parking will be managed for the graduate student housing, particularly in regard to the Parking Garage proposed in the Lake Campus South application.

   The applicant has thus far indicated that the top two (2) levels of the garage will be reserved for students; however, their location will change between the first and second phases of construction, and may depend on timing of events. The applicant has also indicated that the University expects three hundred and seventy (370) spaces will be required to meet the actual demand from the Graduate Student Housing on a typical weekday, based upon past experience. Access to the spaces will be distinguished by a simple gate system, which may be open to the public during special events.

e. *Refuse Management*. The applicant should provide testimony as to how refuse collection will be managed. The applicant has indicated that the University will collect trash and recycling at the development and transport them to a central collection area adjacent to the Racquet Center. The applicant has also noted that they manage their own trash and recycling collection with a campus-wide system of small vehicles which pick up trash at regular intervals throughout the week.

   In addition to the above, the applicant has also identified the locations of the trash areas. The applicant has indicated that the trash areas will not be assigned by unit or building. Rather, students will be able to use whichever trash area is closest or most convenient to their unit.

3. Racquet Center

   The following is noted regarding the proposed Racquet Center:

   a. *Background Information*. The applicant should provide additional background information regarding the utilization of the racquet center. The applicant has thus far indicated that the athletic facility is primarily intended to be utilized for its varsity athletes. When space is available and similar facilities are not in use, the applicant may provide access to those facilities to others. Furthermore, the fitness center portion of the building is intended to be open to the larger campus community, but not the public.

   b. *Parking Management*. The applicant has indicated that all users parking for two (2) or more hours will be directed to park in the Parking Garage proposed in the Lake Campus South application. Short-term parking, which may include drop-offs and pick-ups at the Graduate Student Housing, deliveries, and parking for the fitness center will be allowed in the proposed short-term parking lots.

4. Operations Center

   The following is noted regarding the proposed Operations Center:

   a. *Number of Compactors*. Four (4) compactors are to be located in this area, with room for a fifth (5th) roll-off container as needed.

   b. *Compactor Enclosure*. A screening fence is proposed on three (3) sides of the compactor area, which will consist of cedar wood boards anchored to painted steel posts.

c. *Screening*. In addition to the aforementioned, the application materials also indicate that the operations center will be screened by berming and landscaping. A single row of (6) white cedars are proposed along the southerly side of this center. The applicant has indicated that three (3) additional tennis courts, to be constructed in the future, would provide additional screening.

5. Rugby and Flexible Recreation Fields

The following is noted regarding the proposed Rugby and Flexible Recreation Fields:

a. *Background Information*. The applicant should provide background information as to whom the fields will be utilized by. The applicant has indicated that the fields are primarily intended to be utilized for its varsity and club athletics. When space is available and similar facilities are not in use, the applicant may provide access to those facilities to others.

b. *Access*. The applicant provide testimony as to how the fields will be accessed. The applicant has noted that the majority of the students who use the fields will arrive by "foot, scooter, or bicycle" principally. Such students will principally arrive from Washington Road and enter near the campus via Nursery Lane or the path south of the Graduate Housing. Parking for events will be provided at the proposed Parking Garage. Bicycle parking has also been provided near the rugby fields.

6. Bicycle Parking

The following is noted regarding bicycle parking:

a. *Proposed Number of Bicycle Spaces*. The applicant has proposed a total of four hundred and eighty-nine (489) parking spaces in the Lake Campus North. When combined with the Lake Campus South development, a total of five hundred and fifteen (515) bicycle spaces are proposed.

b. *Location of Bicycle Spaces*. The applicant has provided additional bicycle parking near the proposed rugby and Flexible Recreational Fields. The applicant has also noted that additional bicycle parking will be provided at a future Haaga House.

7. Waiver Relief

The applicant may require waiver relief from the following items. Additional waivers may be identified by the Township's other professionals:

a. *Use of Pervious Surfaces*. Waiver relief is required from Section 200-36.1 which establishes that pervious surfaces shall be utilized for all other paved areas except for drives and parking areas, including sidewalks, trails, courtyards, and other site amenities. The applicant has proposed asphalt sidewalks in the interior of the site.

b. *Loading*. Waiver relief is required from Section 200-27D.(2) which requires eight (8) loading areas for the Graduate Student Housing and three (3) loading areas for the Racquet Center. The applicant has proposed to utilize shared loading areas.

c. *Roadway Width*. The applicant has requested waiver relief from Section 200-29I.(3) which establishes a road width of twenty-four (24) feet, whereas the applicant has proposed twenty-two (22) foot widths.

d. *Roadway Width with Bicycles*. The applicant has requested a waiver from Section 200-29N.(3) which requires thirty (30) foot wide roadways when combine with bicycle access, whereas the applicant has proposed twenty-two (22) feet roadways with shared and separate access.

e. *Lighting*. The applicant has requested a waiver from Section 200-31K for exceeding the average permitted footcandle within parking areas.

*Map 1: Subject Site (scale: 1" = 800')*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Cc: S. Surtees, WWT CD
Lisa Komjati, WWT CD
Fran Guzik, WWT Engineer
Dan Dobromilsky, WWT Landscape Architect
Ian Hill, Consultant Engineer

Van Cleef
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Robert J. Clerico, P.E., P.P., CME, CPWM
Samuel D. Costanzo, P.E. & P.P.
Cynthia V. Norfleet, COO
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Michael K. Ford, P.E., P.P.
Jeffrey W. Munzing, P.E.
Stanley J. Schrek, P.E., A.I.A., P.P., CME, LEED AP
Herbert J. Seeburger, Jr., P.E., CME, CPWM

# MEMORANDUM

**TO:** Planning Board
West Windsor Township

**FROM:** Christopher B. Jepson, P.E.
Environmental Consultant

**DATE:** April 27, 2021

**SUBJECT:** Trustees of Princeton University – Lake Campus North (PB 20-13)
Preliminary/Final Major Site Plan
Block 3, Lot 1.012 & 1.0113
VCEA Project No. 20-25-WW

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As West Windsor Township's environmental consultant, Van Cleef Engineering Associates (VCEA), has reviewed the most recently submitted of site plans and accompanying information and visited the site for the above referenced application for a preliminary/final major site plan and offers the following comments for the Board's consideration:

## I. Overview

The applicant is seeking a review of the recently submitted material for construction of the Lake Campus North complex that has a proposed graduate student housing center that has three, three-story buildings that contain 379 units with amenities and open space. The North Campus will also construct a Racquet Center that will be 180,000 square feet with indoor tennis and squash courts, locker rooms, coach's offices, a sports medicine facility and a fitness center. The Racquet Center is being relocated from the Jadwin Gym. There will be outdoor tennis courts and bleachers constructed adjacent to the Racquet Center. Rugby and flexible recreation areas will be relocated from adjacent to Washington Road to the northern portion of the site. An existing scoreboard will also be relocated there. A small operations area will be constructed east of the proposed Racquet Center. It will include 4 compactors for storage and trash and recycling pickup. This area will also be used as a loading zone for team buses and for deliveries to the Racquet Center. The project location is along the north side of Washington Road, and is approximately 73.4 acres in size. This site is located in the Planned Educational Development zone (PED) district where this type of development is sanctioned.

Van Cleef ENGINEERING ASSOCIATES, LLC

## II. Comments/Recommendations on Pertinent Issues

### A. Wetlands

Wetlands are present on the subject site and are basically located along the northern property boundary and follow the D&R Canal. They are extensive and also include the wooded area that also coincides with the D&R Canal. Wetlands demarcation are clearly shown in the plans. The applicant has submitted NJDEP approved LOIs for the project. There will be no disturbance to the wetlands in this application.

### B. Greenbelt

There is a large section of proposed Greenbelt located generally in the northwestern portion of the site and is associated with the existing forested area along the D&R Canal. There is no development proposed for that area. The plans now show the Greenbelt line (Racquet Center and Graduate Housing). The forest in that area is a mature deciduous forest with maple, oak, ash and sweetgum among many others. The applicant has submitted a tree removal plan with some larger trees slated for removal. This is an extensive process. There is also a proposal to plant 1200 trees, native shrubs and ground cover for this project. These new plantings will attempt to decrease the view of the new buildings from the State Park area.

### C. Water Quality

This project site generally drains to the D&R Canal or the Millstone River. A DRCC permit is required since more than one acre of impervious coverage is proposed. This project site is also in Zone A which is adjacent to the D&R Canal. There is robust stormwater management proposed for this project with a series of localized green infrastructure practices dispersed throughout the project site. The stormwater runoff not infiltrated by these structures will flow to a new stormwater conveyance infrastructure west of the Racquet Center and Rugby Fields. This system then sheet flows toward the existing wetland area west of nursery Drive. The intent is to handle stormwater flows at the source as much as possible. Please go into more detail regarding this system.

### D. Environmentally Sensitive Areas

The proposed project site is underlain by the Stockton Sandstone geological formation. Stockton Sandstone is an important geological formation in providing potentially good aquifer recharge. There are sloping areas on the site and 1% of the site are over 10%. There is a large area of flood hazard and flood plains that are located on this site and basically follow the D&R Canal. This site has a low to

moderate erosion hazard. This project is compliant with FAR and MIC requirements. During the site visit in the fall numerous bird species were seen including vultures, crows, cardinals, sparrows, and blue jays among others. Deer signs were observed in many areas with a herd seen in one area.

### E. Historic Resources

The site is partially located in both the Lake Carnegie Historic District and the D&R Canal Historic District. It is also adjacent to the Washington Road Elm Allee which is a 0.7 mile portion of Washington Road planted with a row of Princeton Elm Trees that were developed by the Princeton Nurseries in 1920.

The applicant has indicated that a known Native American archeological site (36ME60) is in the area. Past investigations showed some inconsistencies and the applicant has indicated that a Phase 1 archeological is being currently reviewed for the Lake Campus site development by the Ottery Group. Please submit that information to the Township when it becomes available.

Other historical sites – past and present – include the demolished Garrett Schenck House that was constructed in the late 1730s near the intersection of Washington Road and Route 1. The Penns Neck Cemetery is a state listed and NRHP-eligible resource. The Lake Carnegie Historic District and the D&R Canal Historic District are also on the National Register of Historic Places.

### F. Other Environmental Concerns/Comments

The applicant has completed and submitted the West Windsor Township Green Development Practices Checklist for this phase of the project. The applicant has indicated that many green development techniques will be utilized in the design and construction for this project. A whole site Life Cycle Assessment will be conducted to determine the total embodied carbon impact and the reduction from the baseline for the site. The Township would like a copy of that report when it becomes available. One item that appears missing from the Green Development Checklist is the addition of permeable pavers to the project.

They are furthering their sustainability by pursuing a Passive House Certification for the Graduate Student Housing and pursuing a Leeds Gold Certification for the Racquet Center.

## III. ITEMS PROVIDED FOR REVIEW

- Cover Letter and Rider (4 sheets), prepared by Faegre Drinker Biddle & Reath LLP, dated November 9, 2020.
- Development Application, Agreement to Pay for Review, Taxpayer ID information, Site Plan Checklist and existing conditions photographs.
- GDP Development Tracking Chart
- NJDEP Wetlands LOI Extension (Block 3 Lot 3) dated May 23, 2017.
- Cover Letter NJDEP Wetlands LOI Approval, prepared by Van Note-Harvey Associates, dated February 9, 2018.
- NJDEP Wetlands LOI Line Verification (Blocks 2,3 and 6-11Lots 3; 1, 2, 3.01, 4 and 11-13) dated January 24, 2018.
- Wetlands Plan (Block 3, Lot 3) 1 sheet, prepared by Van Note-Harvey Associates, dated September 10, 2012.
- Wetlands Plans (Block 2 &3 Lots1,2,3,3.01, 4, 6, 7, 8,9, 19,11,12 and 13) 2 sheets, prepared by Van Note Harvey Associates dated July 28, 2017.
- Wetland Plan (Block 11602 Lot 2 and Block 3 Lot 16) 1 sheet, prepared by Van Note Harvey Associates dated November 15, 2017.
- Traffic Impacts Letter (11 pages), prepared by BFJ Planning, dated November 5, 2020.
- Site Plans North Campus-Vol1A (30 sheets), prepared by SOM Architects, dated November 9, 2020, revised February 16, 20121 and April 7, 2021.
- Site Plans North Campus–Vol1B (28 sheets), prepared by SOM Architects, dated November 9, 2020, revised February 18, 2021 and April 7, 2021.
- Site Plans North Campus- Vol 2A (19 sheets), prepared by SOM Architects, dated November 9, 2020, revised February 18,2021 and April 7, 2021.
- Site Plans North Campus – Vol 2A2 (18 sheets), prepared by SOM Architects, Dated November 9, 2020, revised February 18, 2021 and April 7, 2021.
- Site Plans North Campus– Vol 2B (20 sheets), prepared by SOM Architects, dated November 9, 2020, revised February 18, 2021` and April 7, 2021.
- Athletic Projects - Racquet Center Plans (28 sheets), prepared by Sasaki, dated November 9, 2020, revised April 7, 2021.
- Graduate Student Housing Plans (22 sheets), prepared by Mithun, dated November 9, 2020, revised April 7, 2021.
- Lake Campus North Environmental Impact Statement Worksheet, prepared by VHB Engineering P.C., dated October 2020.
- North Campus Environmental Constraints Map, prepared by Skidmore, Owings & Merrill Architects, PA, August 20,2020.
- Lot Consolidation Plan, prepared by Van Note-Harvey Associates, Inc., dated August 7, 2019.
- Green Development Practices Checklist, dated October 8, 2020.
- Lake Campus North, Lake Campus North Renderings, prepared by Skidmore, Owings & Merrill Architects, PA, dated April 7, 2021.

Van Cleef
ENGINEERING ASSOCIATES, LLC

If you should have any questions or concerns regarding these comments please contact me at this office.

cc: Applicant
S. Surtees, WWT CD
D. Novac, Burgis Associates
D. Dobromilsky, Landscape Architect
Planning Board Members
Gerald Muller Esq., Gerald Muller Law
J. L'Amoreaux, Traffic Consultant
F. Guzik, Township Engineer

# WEST WINDSOR TOWNSHIP

**DEPARTMENT OF COMMUNITY DEVELOPMENT**
**DIVISION OF ENGINEERING**

**MEMORANDUM**

Date: April 27, 2021

To: West Windsor Township Planning Board

From: Dan Dobromilsky, LLA, PP, LTE
Landscape Architect

Subject: **PRINCETON UNIVERSITY – Lake Campus North – PB 20-13**
Graduate Student Housing and Racquet Center
**Landscape Architectural Review**
Block 3, Lot 1.0113
Route One, Washington Road, Lower Harrison

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The submitted plans have been analyzed the following questions and comments are offered for consideration as this application is reviewed:

1. This project will not impact the Township Greenbelt, which occurs along the D&R canal in this area. Although 421 existing trees will be removed, it is noted that 24% (99) of the trees to be removed are of exotic species that exhibit very invasive tendencies, and 19% (79) of these trees are Ash, *Fraxinus* species that are subject to infestation by Emerald Ash Borer and are expected to perish over the next few years as a result. The planting of 1,143 new trees, and many new plantings at the shrub and groundcover level, almost all of indigenous species, will mitigate the tree and habitat loss. Known of the non-native species (about 80 trees or 7% of the total) proposed with this design are not of species designated as invasive of native habitats. This project will enhance the tree and landscape resources of the community.
2. The applicant should indicate if they are planning to implement a program to remove the other exotic invasive species trees in this area of the campus to help reduce the pressure on native species and habitats, associated with the D&R Canal Park and Greenbelt lands, which is presented by the presence of these trees.
3. The proposed landscape architectural design addresses and exceeds the standards and guidelines offered by Township codes. The planting design, site furnishings, and the creation of new outdoor spaces will greatly enhance this new campus for residents and visitors. The diversity of plant species and landscape types that will be developed will enrich the function and environment of the new campus.

4. The closest building for this project to an existing Township residence will be approximately 1,800 feet away. The proposed rugby fields will be about 600 feet away. These dimensions mitigate the need for any landscape buffering at the edge of this project or along North Harrision Street. Vegetation will not and could not contribute any mitigation of significance for any added noise (construction or subsequent) that may occur as a result of this project.
5. The green design and sustainability initiatives of the University with this project will also present a desirable contribution and model for more environmentally progressive land development in the community. It is recommended that the Board review the Green Building Checklist submitted with this project to get a full understanding of the scope of these efforts. In particular, the aesthetic integration of stormwater infiltration and treatment into the landscape / campus design should be exemplary. However, the efforts toward more sustainable energy use / production and control of carbon emissions are laudable.

Upon request, additional comments may be offered based upon the submission or presentation of updated or modified information.

cc: Applicant

**ARORA and ASSOCIATES, P.C.**
**Consulting Engineers**
Princeton Pike Corporate Center
1200 Lenox Drive, Suite 200, Lawrenceville, NJ 08648
(609) 844-1111 • Fax (609) 844-9799

SURINDER S. ARORA, PE
President

# MEMORANDUM

**DATE:** April 27, 2021

**TO:** West Windsor Township Planning Board

**FROM:** Jeffrey A. L'Amoreaux, P.E.
Traffic Consultant

**SUBJECT:** Preliminary and Final Site Plan Approval
Trustees of Princeton University
Lake Campus North
PB20-13
Block 3, Lots 1.012 and 1.0113
West Windsor Township, Mercer County, New Jersey

We are in receipt of the following information for review pertaining to the submission of preliminary and final site plan approval for the referenced planned educational development:

- One (1) copy of point-by-point response to Traffic Consultant report.
- One (1) copy of a Summary of Design Changes memorandum, as prepared by Skidmore, Owings & Merrill, Architects, P.A.
- One (1) copy of the following revised application materials:
  a) Development Application
  b) Site Plan Checklist
- Four (4) half-scale and seven (7) full-scale set of plans as referenced below:
  c) Site Plan Volumes 1A and 1B, as prepared by Christopher Longo, P.E.
  d) Site Plan Volumes 2A.1 and 2A.2, as prepared by James Corner, RLA.
  e) Site Plan Volume 2B, as prepared by Sandra Brock, P.E.
  f) Architectural Plans for Graduate Student Housing, as prepared by Mithun;
  g) Architectural Plans for Racquet Center, as prepared by Sasaki Architects, Landscape Architects and Professional Engineers, PC;
  h) Lot 1.011 Consolidation Plan, dated August 7, 2019, prepared by Van Note-Harvey Associates, Inc.
- One (1) copy of eye-level renderings depicting the various buildings and open spaces described in the site plan, as requested by the Township;

- One (1) copy of the Stormwater Report prepared by Nitsch Engineering;
- One (1) copy of the Stormwater Operations and Maintenance Plan prepared by Nitsch Engineering;
- Two (2) copies of Title Reports for the subject property:
  - i) Report of Title for Block 3, Lot 2 (now part of Block 3, Lot 1.0113), dated February 22, 2019;
  - j) Report of Title for Block 3, Lot 3 (now part of Block 3, Lot 1.0113), dated February 22, 2019; and
  - c) Report of Title for Block 3, Lot 1 (now part of Block 3, Lot 1.012), dated July 2, 2018.

This phase of development for the Lake Campus North calls for the construction of several buildings and athletic facilities namely:

- Graduate Student and Post Doc Housing (GSH)- a complex of three separate buildings comprising a total of 329,000 gross square feet (g.s.f.), which contains 379 housing units (607 bedrooms)
- The Racquet Center - a 180,000 g.s.f. building will include indoor tennis courts, indoor squash courts, locker rooms, coaches' offices, sports medicine facilities, and a fitness center (serving campus users). Outdoor tennis courts and associated bleacher seating would be connected to the south side of the building. The proposed racquet center would serve as the new home for the Princeton University's squash and tennis teams, which would relocate from their current facilities at Jadwin Gym.
- Rugby and flexible recreation fields, which will be relocated from their current locations along Washington Road to the eastern portion of the project site, bounded to the north by Nursery Drive and to the east by the existing nursery operation.
- A small operations area east of the Racquet Center comprising of compactors for storage and pickup of trash and recycling from campus facilities.

Vehicular access to this site is proposed through two (2) unsignalized intersections along Washington Road. The first intersection to the north would be formed by the reconfiguration and upgrade (gravel surface to paved road) of the existing Tiger Lane to intersect Washington Road from the east forming a T-type unsignalized intersection with stop-control on the Tiger Lane approach. To the south, a new 22-feet wide roadway (Innovation Way) would be constructed directly across from the driveway that currently serves the 300 Washington Road Service Center to form a four-legged unsignalized intersection with STOP-sign controls on the Innovation Way and Service Center approaches.

We have completed a review of the above-referenced documentation, and offer the following comments, all of which are satisfied, but have been included for the Board's edification. As such, this review amounts to a "clean" review letter.

**Traffic Impact Study**

We note that the cardinal directions referenced in this memorandum follow the same scheme ('Princeton Directions') indicated in the traffic impact statement, where Washington Road is assumed to run in a general north-south direction.

1. A parking generation estimate for the athletics services and the Racquet Center has been provided in Tables 2 and 3 based on West Windsor Township and 'actual' parking rates, respectively. In addition, a traffic generation estimate has been provided for the athletics services/fitness center based on the number of parking spaces. The relationship (conversion rates) established between the parking demand and the traffic generation of these facilities in the traffic generation table (Table 1) should be explained.

   *Satisfied*
   *The consultant explained that 15 parking spaces were assumed for the athletic services/fitness center on the assumption that most of the fitness center patrons would either walk, bike, or use the Tiger shuttle service. It is further assumed that each patron would spend one (1) hour at the center, which results to one (1) inbound vehicle trip and a corresponding outbound vehicle trip during the peak hours. These assumptions are based on the observed usage at the existing Dillon Gym, which is located along Elm Drive on the University's main campus. Additional assumptions were made for the traffic generation for the athletic employees, coaches, and spectators. The consultant assumed that 45% of the athletic employees would arrive and depart during the peak hours and 50% of the athletic coaches would travel within the peak hours. Most of the athletic events that attract visitors would be scheduled for weekends and weekday evenings outside the peak hours. The very few occasions where the events would start or extend into the peak hours, the number of visitors(spectators) are projected to be very small. This assertion was based on the consultant's review of past athletic events in the university. Accordingly, 35 parking spaces was deemed appropriate for the anticipated spectators.*

   *The assumptions made by the consultant in the traffic generation for the fitness center and the athletic spectators were based on data obtained for similar facility and athletic events, respectively. The traffic generation for the athletic employees and coaches were based on engineering judgement. Overall, the assumptions made in the traffic generation appear to be reasonable; however, we reserve the opportunity to determine their veracity during the proposed traffic monitoring program.*

2. The difference between the Athletics Employees and Athletics Coaching Staff as indicated on Table 1 (Lake Campus Initial Projects Traffic Generation) is to be explained. On the parking generation

tables (Tables 2 and 3 respectively), it appears that there are no parking generation estimates provided for the athletics coaching staff, whereas a traffic generation estimate for half of the coaching staff was assumed in the PM peak hour (Note #6 of Table 1). The consultant should explain the rationale for the traffic generation for the coaching staff in the PM peak hour without any parking provision for them.

*Satisfied*
*The athletics employees are described as employees that are domiciled in Lake Campus whereas the athletic coaches are stationed outside of the Lake Campus with some of them going to the Lake Campus for late afternoon practice sessions. The consultant explained that in the traffic generation table (Table 1), the two groups were assessed independently whereas in the parking generation (Tables 2 and 3), both groups were combined into one group, since some of the athletic coaches are anticipated to be on Lake Campus prior to the PM peak hour. We disagree with this premise for combining the two groups together; however, we acknowledge that the resultant number of parking spaces will not be affected otherwise. In general, it is recommended practice to evaluate every traffic or parking generator individually except where cross-use is anticipated.*

3. There is a volleyball court located within the graduate student housing (GSH) Building 'A'. The consultant should provide information regarding the projected usage of this court, that is, whether it will be solely for students' recreation or be used for competitive events involving outside teams/spectators? If the latter is the case, how was it accounted for in the traffic generation?

*Satisfied*
*The volleyball court within the graduate student housing, Building 'A' is proposed for the student's recreational use only. Therefore, there are no additional traffic generation anticipated from the usage of the volleyball court.*

4. The trip distribution estimates represent that 50% of the site traffic is anticipated to/from the north and south of Washington Road. On the traffic generation table (Table 1), it is indicated that twenty-four (24) University service vehicles are anticipated during the AM and PM peak hours, respectively. It is our understanding that these service vehicles would travel to the site from/to Princeton in the north. Based on this, an explanation should be provided to justify the 50-50 trip distribution north and south along Washington Road.

*Satisfied*
*The consultant acknowledges that the 24 university service vehicles would primarily travel to and from Princeton, north of Lake Campus; however, the 50-50 trip distribution north and south along Washington Road represents a worst-case distribution for the site. This is reasonable from a traffic Impact assessment perspective. As discussed during the TRC meeting, a more representative trip*

*distribution would be established from the proposed traffic monitoring program, which should drive further traffic analysis.*

5. A summary table of the levels of service for the intersections of Washington Road at Tiger Lane and the proposed Innovation Lane, respectively have been provided on page 4 of the Traffic Impact memo. At the Washington Road and Tiger Lane intersection, the results appear to indicate reductions in the delay along the Tiger Lane approach during the AM (15.1 sec/vehicle - existing condition and 14.6 sec/vehicle - build condition) and PM build peak hours (14 sec/vehicle - existing condition and 12.9 sec/vehicle for the build condition). Since no change is being proposed to the existing operation at this intersection, the consultant should provide an explanation for the projected reduction in delay on the Tiger Lane approach despite the increase in traffic volumes along the Tiger Lane approach and both approaches of Washington Road.

   *Satisfied*
   *As noted previously in the Lake Campus review, the traffic consultant explained that the reduction in the delay along the Tiger Lane approach during the future condition (initial phase condition) represents the weighted average delays of the left and right turn movements. Right turn minor street movements at an unsignalized intersection typically operate at lower delay than the left turn on the same approach. In general, the left turns from the minor street have more delays due to more conflicting movements encountered. As such, the left turn traffic volume is the major driver of the approach delay at an unsignalized intersection. With regards to the Tiger Lane approach, the projected increase in the left turn volume based on the trip distribution is minimal in comparison to the right turn volume; hence, the average weighted delay is lower than in the existing condition. The overall delay during the initial phase construction along Tiger lane would be acceptable, however it should be noted that an updated analysis should be done using the actual trip distribution to be established from the traffic monitoring program. The traffic monitoring program would be conducted at some stage after the initial phase construction is completed and operational.*

6. The level of service results shown for the intersection of Washington Road and Innovation Lane appear to indicate that the eastbound and westbound through movements are not permitted. The results indicate shared left/right movements only for both the eastbound service center driveway and the westbound Innovation lane. The consultant should confirm that the through movements on both the eastbound and westbound approaches would be prohibited during this initial build phase. Otherwise, the capacity analyses should be revised to account for potential through traffic on both approaches. If no new traffic has been assigned to both movements, default values ('dummy' values of 1) should be used in capacity analyses.

   *Satisfied*
   *The consultant has provided revised Synchro analysis at this location to include the through movements along the eastbound and westbound approaches. The resultant levels of service are acceptable.*

7. The level of service results at the Washington Road and Innovation Lane intersection for the PM peak hour indicate that the westbound approach shared left/right would operate at level of service (LOS) D during the initial build phase. Though a LOS C is desired for new approach roadways to a street intersection, LOS D would be deemed acceptable. The consultant should note that as the site is being developed, a level of service worse than LOS D should be avoided for any new approach roadway/driveway to an existing township street. The applicant is requested to analyze and propose appropriate traffic control measures ensuring levels of service (LOS) D or better.

   *Satisfied*
   *No mitigative action is required at this stage. Our comment was more of a cautionary advice considering the capacity analysis results provided for the proposed Innovation Lane approach at its intersection with Washington Road. The level of service (LOS) for this approach during the initial phase indicates a LOS D and we contend that as the site is being developed, a level of service worse than LOS D, would not be acceptable. The applicant is to consider this while developing the access provisions for the site.*

8. The consultant has provided a traffic and parking monitoring program for this site application. The overall program is divided into two monitoring schemes, one for the day-to-day weekday traffic operation and the other for special events, specifically athletic spectator events that take place in Lake Campus. For the weekday daily traffic operation monitoring, the consultant has proposed the following effort on page 5 of the traffic impact memo:

   - Traffic counts and observations during the commuter peak hours (7-9am and 4-6pm)
   - Parking occupancy counts during late morning and early afternoons.

   The consultant should provide the timeframe for the 'late morning and early afternoons' counts described in the memo. It is recommended the parking occupancy counts be conducted as well during the commuter peak AM and PM periods.

   *Satisfied*
   *The applicant agrees to conduct the Lake Campus parking occupancy surveys between 7AM and 7PM for the initial traffic monitoring phase. This is appropriate and acceptable.*

9. We recommend that parking demand counts be conducted simultaneously with the parking occupancy counts. The parking demand and occupancy counts should be counted at both off-street (parking garage) and on-street parking facilities including all surface parking lots proposed for this initial build phase.

   *Satisfied*

*Several assumptions were made in the determination of the overall parking supply for the site. Though, the determination is a key goal of the traffic monitoring program; however, it is penitent that the parking demand be ascertained as well during each monitoring period. The applicant has indicated that the survey details of the parking demand would be made determined at the time of survey. This is deemed reasonable and satisfactory.*

10. For the monitoring program related to major athletic events, traffic counts two hours prior to the start and after the event respectively, and parking occupancy counts have been proposed by the consultant. In addition to these counts, we recommend that parking demand counts at all parking facilities be conducted. In addition, all on-street parking demands within the event location should be documented.

*Satisfied*
*The traffic consultant has indicated that the parking demand surveys would be determined as part of the overall survey details at the time of the traffic monitoring program. This seems appropriate and acceptable.*

11. Prior to the commencement of any traffic monitoring program, the consultant should give the township an advance notice of the dates/times scheduled for each monitoring program so that the township will have the opportunity to deploy its staff or other personnel to independently observe the traffic operations.

*Satisfied*
*The traffic consultant has indicated that the township will be promptly notified prior to the commencement of each traffic monitoring program.*

**Site Plan**

1. It is indicated that all the sidewalks withing the Graduate Student Housing (GSH) buildings would be shared between bicycles and pedestrians. Due to the projected high volume of pedestrian and bike traffic, the consultant should evaluate and consider installing appropriate shared path markings and signs that would allow dedicated lanes for bicyclists and pedestrians respectively within the shared path. At minimum, R9-7 signs should be considered at the beginning of each sidewalk within the GSH. Detailed plans of all proposed sign locations and placements are requested.

*Satisfied*
*The consultant indicates that it is widely understood that pedestrians and bicycles share the majority of sidewalks within the university campus and the provision of dedicated bike lanes would require wider sidewalks. Since bicyclist expect that pedestrians share the sidewalks, the magnitude of*

*pedestrians/bike conflicts would be greatly minimized. This type of operating condition is sustainable in a university campus and would be deemed acceptable to most pedestrians and cyclists.*

2. There appears to be provisions for fire lanes along the west side of Building A, running parallel to Washington Road and between Buildings A and B within the GSH complex. It is unclear how a fire truck would access the rest of the GSH complex. Additional information should be provided regarding the anticipated routes for fire trucks within the housing complex. A circulation plan and turning template for a typical West Windsor fire truck is desirable.

   *Satisfied*
   *An updated fire protection plan has been provided, which shows the proposed fire truck access to the area between Buildings B and C. We defer to the township's Fire Marshall for further comments on the adequacy of the plan.*

3. The total number of bicycle racks (bollards) being proposed for the GSH complex is to be tabulated and provided. The tabulation should include the total number of bike racks relative to the number of dwelling units or rooms per building.

   *Satisfied*
   *Bike bollards schedules for the Graduate Student Housing (GSH) have been provided on the revised plans. A total of 399 bollard spaces are being proposed, which results in a provision of 1.05 bike spaces per dwelling unit. This is deemed to be adequate for the GSH and is acceptable.*

4. The garbage provisions for the GSH are to be explained. There appears to be two locations marked on Drawing Number, Vol 2A, Sheet L-101.00 as TBD (TR) indicating that the number of trash receptacles has not been determined. The two locations of receptacles are currently shown first, at the northeast section of Building B, just south of Nursery Lane and second, east of Building C, immediately north of the adjacent surface parking lot. The consultant should explain the trash provisions for each building and their locations.

   *Satisfied*
   *The consultant indicates that the collection and transportation of trash and recycling materials at the GSH would be done by Princeton University. It is understood that the university uses small vehicles (Kabuto scooters) and F-450 type trucks to pick up trash at regular intervals throughout the week. there are three locations serving the three building blocks, respectively. Three locations of trash receptacles have been identified to serve each of the building blocks, namely: at the surface lot east of Building C, along Nursery Lane- north of Building B, and at the surface lot- south of Building A. There are concerns with the latter location, the surface lot south of Building A. The locations and access to the receptacles are deemed acceptable.*

5. The consultant is to provide information regarding the garbage truck access to the proposed locations of trash receptables for each building. A circulation plan and turning template for a typical West Windsor Township garbage truck will be sufficient.

   *It has been explained by the consultant that the garbage collection and recycling services within Lake Campus would be managed by the university using F-450 type trucks and golf cart sized (Kabuto scooters) vehicles. Plan C-813 shows the proposed circulating plans and turning templates for both types of vehicles at the Nursery lane and surface parking lot 2 receptable areas, respectively. Surface parking lot 1 resides in Lake Campus South; therefore, the related garbage truck turning templates have not submitted with this application. On Plan C-813, there is no turning template shown for the F-450 type garbage truck at the Nursery lane receptacle area, north of Building B. The turning templates are to be provided if the F-450 type trucks are anticipated to access this location.*

   *The 'K-type' turning maneuver for the F-450 type garbage truck at the surface lot 2 receptacle location would require turns in/out of parking spaces. It seems that this maneuver will be problematic for a condition that most of the parking spaces are occupied. The applicant should consider additional mitigative measures, such as modification of the garbage collection and/or parking schedules etc.*

   *Satisfied*
   *The consultant that the receptable area, north of Building B is not anticipated to be serviced by the F-450 type garbage trucks but by the kabuto scooter vehicles. A revised turning template has been provided for the surface lot #2. The K-type turns by the F-450 garbage trucks indicate some encroachment into the ADA access aisle. Though, this would not be the ideal operating condition, however it is expected that the aisle would be clear during any garbage collection activity.*

6. It has been proposed to convert the existing Nursery Lane to pedestrian/bicycle use only. Three (3) 'site bollards' to prevent traffic from entering Nursery Lane have been provided on the east leg (Nursery Lane) of the intersection with Washington Road. (Drawing Number Vol 2A, Sheet L-101.00). It is also indicated that emergency vehicle access would be provided to the site at this location. For this to be feasible, the bollards would have to be either removable or retractable. Additionally, on the same drawing and sheet, two (2) site bollards are shown to be installed across the 16-feet roadway, just east of Building C, and intersecting Nursery Lane. The details and functions of these 'site bollards' should be provided relative to emergency vehicular access along the roadways they are placed across.

   *Satisfied*
   *The consultant indicates that the proposed 'site bollards' would be removable for emergency access and campus maintenance vehicle access. This is appropriate and satisfactory.*

7. On Drawing Vol 1A, Sheet C-506, there is a series of ten (10) 'No Parking Anytime' signs indicated along an approximate 300 feet segment of Nursery Lane and beginning from points on both sides of Nursery Lane located approximately 150 feet east of Washington Road. Information is to be provided regarding these signs as follows:

    a. The purpose of the signs, given that Nursery Lane would be designated for pedestrian and bicycle traffic only with occasional emergency vehicle access and perhaps, garbage collection.
    b. All the signs are faced towards the westbound approach. Is this reflective of the directional usage proposed for this roadway?
    c. Are there other measures that can be implemented to deter parking without the 'over-emphasis' (10 signs within 300 feet) of the "No-Parking Anytime" sign?

    *Satisfied*
    *The 'No Parking Anytime' signs have been designated to be removed as indicated on Plan C-406.*

8. There is a set of twelve (12) parking spaces including one (1) ADA accessible parking space with a 22-feet aisle located just east of the Building C complex on Drawing Number Vol 1A, Sheet C-506. Pervious pavement has been proposed for the parking spaces and has the benefit of controlling surface runoff. It is acknowledged that pervious pavements are ADA-compliant provided that the right types of fillers are used, and installation is done properly with minimal transitions between pavers to allow smooth movement of wheelchairs. The consultant is to confirm the ADA compliance of the proposed pavement at this parking lot.

    *Satisfied*
    *The applicant indicates that the proposed pervious pavement proposed for the parking spaces at the surface parking lot 2 will be ADA compliant, and smooth movements of wheelchairs would be ensured.*

9. For the set of parking spaces described in item 8, above, two spaces have been designated as ADA accessible spaces. Per ADA standards, it is recommended that one space should be designated as ADA Van accessible space with the appropriate signing.

    *Satisfied*
    *At the surface parking lot 2, one (1) of the two -(2) ADA accessible parking spaces has been designated as van accessible per ADA requirements.*

10. There are no areas shown in the site plan designated for loading and unloading at each of the three (3) building complexes for the GSH. It appears that the surface parking lots located east of the Building C complex and another located south of Building Complex A along 'Spine Road' in the Lake Campus South Site Plan are intended to serve as loading and unloading areas for the GSH.

Information should be provided to demonstrate that daily deliveries by delivery trucks, loading and unloading of heavy items can be safely accomplished at these parking lots without undue disruption to both pedestrian and bicycle traffic within the GSH.

*Satisfied*
*The proposed locations of loading and unloading within the surface lots and along Spine Road do not meet the provisions of Code 200-29Q, P. The applicant has requested a waiver of the design standards. Testimony or documentation to support waiver is to be provided.*

11. At the parking lot located between the Racquet Center and the athletic fields, two spaces have been designated as ADA accessible spaces. Per ADA standards, it is recommended that one space should be designated as an ADA Van accessible space with the appropriate signing. In addition, two international ADA signs are shown at the head of the ADA parking spaces as required by the ADA requirements. However, both signs are located at the far side of the sidewalk atop of the parking spaces. Though this is an acceptable practice; however, the typical location is on the nearside of the sidewalk, just at the head of the parking space and would be more desirable. Information that guided the choice of the far side location should be provided.

*Satisfied*
*A van accessible ADA parking space has been designated for one of the two ADA parking spaces at the surface lot located between the Racquet Center and the athletic fields.*

12. Truck turning templates are to be provided for the typical truck classes expected to visit this site (e.g., fire truck, garbage/trash truck, SU-30, tractor trailer).

*Satisfied*
*Truck turning templates have been provided for the typical truck classes anticipated in the site.*

13. The parking provisions for the Lake Campus North and South (different application) include the parking garage and surface lot #1 located on the Lake Campus South and the surface lots located on Lake Campus North. It is our understanding that the referenced surface lots would be used for short term parking (drop-offs, pick-ups, loading and unloading). In consideration, information is to be provided to demonstrate that the total number of parking provided would still meet the parking requirements for both sites. In addition, the consultant should explain how the short-term parking spaces are factored in the overall parking supply.

*Satisfied*
*The surface parking lots were included in the peak hour parking supply for the site and the applicant has provided banked parking for the parking garage. In addition, the parking durations at the surface lots have not been determined. With longer parking durations (excess of 30 minutes), the surface lots*

*would most likely meet the projected parking supply. We are confident that any parking shortfalls would be identified and addressed timely through the university's traffic monitoring program.*

14. As the site is currently laid out, most of the ADA parking spaces for the GSH would be in the parking garage at Lake Campus South and the other ADA parking spaces are located within the surface parking lots that have being designated for short-term parking (usually 15 minutes or less). Given the proximity of the surface lots to the GSH in relative comparison to the parking garage, it would seem more ideal to designate more of the parking spaces within the surface parking lots as officially allocated, long-term ADA parking spaces. The consultant should consider the benefits of locating the residential ADA parking spaces closer to the housing complex; desirably, close to an entrance of each building.

*Satisfied*
*The surface lots are proposed for short term parking for daily conveniences such as unloading of groceries etc. The university management of the parking allows it to address special needs for ADA accessibility and parking. This process would be most effective in addressing the daily parking needs of the site.*

This completes our comments presently. Additional comments may be provided as this project moves forward.

CC:

| | |
|---|---|
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