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E. M. WATERBURY & ASSOCIATES, P.A.
ENGINEERING • PLANNING • LAND USE & DEVELOPMENT

March 21, 2021

West Long Branch Zoning Board of Adjustment
c/o Ms. Chris Ann DeGenaro, Zoning Board Secretary
965 Broadway
West Long Branch, NJ 07764

File No. WLBZB 2019-22

Re: Engineering Review No.1
Monmouth University (ZB 2019-22)
Use & Bulk Variances, Preliminary and Final Major Site Plan
400 Cedar Avenue
Block: 13, Lot: 1-5, 7-9, 11, 12.01 & 12.02; Zones: R-22 & I

Dear Board Members:

As requested, I have received the following as it relates to the referenced application:

- Correspondence prepared by Gary S. Forshner, Esq. of Greenbaum Rowe Smith & Davis LLP dated December 5, 2019.
- Completed Variance Application for the referenced project dated December 5, 2019.
- Correspondence prepared by Steven Mlenak, Esq. of Greenbaum Rowe Smith & Davis LLP dated December 24, 2020 with attached Phasing Plan.
- Completeness report and fee calculation for Bifurcated Variance application prepared by T&M Associates dated February 24, 2020.
- Revision Resubmission application form prepared by Steven Mlenak, Esq. dated December 24, 2020.
- Completed Development Regulations Checklist prepared by William E. Fitzgerald, PE, PP dated December 24, 2020.
- Application for Environmental Commission Site Plan Review.
- Architectural plans prepared by Brian Fitzgerald RA, AIA for Proposed Storage/ Maintenance Building Block 39, Lot 12.02 Monmouth University” dated last revised December 3, 2019, consisting of one (1) sheet.
- Architectural plans prepared by Brian Fitzgerald RA, AIA for Existing Residence Conversion to proposed Monmouth University Alumni House Block 39, Lot 2 dated last revised December 3, 2019, consisting of nine (9) sheets.
- Architectural plans prepared by Brian Fitzgerald RA, AIA for Proposed Conversion to Monmouth University office Block 39, Lot 12.02, 98 Larchwood Avenue” dated last revised December 3, 2019, consisting of six (6) sheets.
- Architectural plans prepared by Brian Fitzgerald RA, AIA for Proposed Conversion of Existing Alumni House to Temporary Police Station and Future Academic Building” Block 39, Lot 12.01 dated last revised December 3, 2019, consisting of six (6) sheets.
- Architectural plans prepared by Edward Matthew O’Brien RA, AIA for Proposed Golf House and Learning Center dated last October 4, 2019, consisting of four (4) sheets.
- Architectural plans prepared by Stephen J. Carlidge, AIA of Shore Point Architecture, PA for Monmouth University Police Headquarters last revised December 4, 2019, consisting of five (5) sheets.
- Engineering plan entitled “Monmouth University ‘D’ & ‘C’ Variance/ Preliminary and Final Site Plan prepared by William E. Fitzgerald, PE, PP dated last revised November 20, 2020 consisting of thirty (30) sheets.



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- Stormwater Management Report prepared by William E. Fitzgerald PE, PP dated last revised December 3, 2020.
- Correspondence dated December 9, 2020 prepared by William E. Fitzgerald PE, PP.
- Traffic Report prepared by John H. Rea, PE, and Scott T. Kennel dated December 5, 2019.
- Report from West Long Branch Shade Tree Commission dated January 25, 2020.
- Report from West Long Branch Fire Marshal dated January 6, 2020.

The application is for a Use 'D' Variance, Bulk Variances and Preliminary and Final Site Plan to expand the existing University property into lots containing residential homes at the corner of Larchwood and Cedar Avenues. The majority of the existing University is located within the I (Institutional) Zone of the community. The proposed development proposes to convert residential properties located within the R-22 (Residential) Zone into buildings and support improvements for the University. The proposed use is not permitted in the R-22 Zone. The portion of the University containing the development is located at the corner of Cedar Avenue and Larchwood Ave. The application was deemed complete at the Board's meeting on January 28, 2021.

I offer the following for the Board's consideration.

1.0 Of-Site Improvements

- 1.1 The site is located along the portion of Cedar Avenue that is in the jurisdiction of the New Jersey Department of Transportation. I defer comment to the Department for off-site Improvements along Cedar Avenue. The intersection is part of the NJDOT jurisdiction.
- 1.2 The project also has frontage along Larchwood Avenue. This roadway is in Borough jurisdiction. I defer comment to the Borough Engineer on off-site improvements along this roadway. However, I recommend that as a minimum the applicant repair any curb or sidewalk damaged along the frontages of the proposed project area. Sidewalk along Cedar is broken and depressed. In addition, the plans should reflect the removal of concrete aprons and the conversion of depressed curb to full height in areas where drives are proposed to be removed. It appears this work is shown pictorially but should be noted on the plan and details provided.
- 1.3 Please note the entrance is located off Larchwood Avenue. See comment 3.1 to follow for comment on access location. I note there is rutting along the edge of roadway where the curbing ends on Larchwood on the southwest corner of the intersection. I anticipate this is due to vehicles going to the east to go around vehicles turning west. Concrete curb exists on the western side of Larchwood, but none exists on the eastern side. I defer comment to the Borough Engineer if curbing should be provided along Larchwood in the limit of the proposed project, in particular between the intersection of Cedar Avenue and the proposed entrance drive.
- 1.4 The applicant proposes to connect the proposed stormwater management system to the existing inlet located on Cedar at the intersection with Larchwood. This inlet is part of the NJDOT drainage system. Approval is required from the NJDOT for the connection.



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2.0 Zoning

2.1 The portion of the University bounded by Cedar, Larchwood and Norwood Avenues overlaps two zones. The majority of the continuous campus in this area is located in the I zone. The portion of the property where the work is proposed is located in the R22 zone. The use is permitted in the I zone but is not permitted in the R22 zone. Therefore, a use “D” variance is required. Schools are considered an “inherently beneficial” use. This determination addresses the positive criteria requirement. However, the applicant is still required to address the negative criteria. The applicant should address the following as it relates to the application:

- a. Evaluate the public interest served by the inherently beneficial use.
- b. Identify any adverse consequences of granting the variance.

As part of their review the Board should consider conditions which might be imposed to mitigate any adverse consequences; and then, balance the public interest in granting the variance versus the adverse impact, as lessened by any conditions imposed by the Board. The Board should consider the application on balance and determine whether, on balance there would be a substantial detriment to the public good if the variance were granted.

2.2 The plans indicate relief requested from section 18.8.1c which states “That no nonconforming use may be expanded”. The applicant is proposing to expand the non-conforming use in the zone. Therefore, relief is required.

2.2 The plans indicate the project is on lots 1-5, 7-9, 11, 12.01 and 12.02. However, most of the work is contained on lots 1-5, 12.01 and 12.02, with minor overlap onto lot 7. The lots with the majority of the work, 1-5 12.01 and 12.02, lots are located within the R22 zone of the Borough. Lot 7 is in the I zone. Lots 7, 12.01 and 12.02 presently contain improvements relating to the university. Lots 1,2,4 &5 currently contain single family dwellings. Lot 3 is vacant. As noted above the proposed use is not permitted in the R22 zone. Section 18-5.1 outlines the requirements for the zone. Variances are required for any deviations from these requirements on lots 1-5, 12.01 and 12.02-The following is a comparison of the project to the zone requirements “I have provided the information as a single lot for the area created by lots 1-5, 12.01 and 12.02.

<u>Description</u>	<u>Required</u>	<u>Existing</u>	<u>Provided</u>
Lot Area	22500 SF	655,529 SF or 15.04 ac	655,529 SF or 15.04 ac
Lot width	150'	915.35' (Cedar Ave) 973±' (Larchwood)	915.35* (Cedar Ave) 973±' (Larchwood)
Front Yard Setback	35'	26.7** (Cedar Ave) 42.5'* (Larchwood)	26.7***, 50'**(Cedar Ave) 42.5***, 50'**(Larchwood)
Rear Yard Setback	35'	N/A	N/A
Side yard Setback- One Side	20'	125'±	77'±



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Description	Required	Existing	Provided
Lot Coverage	30%	18.5%±	40.0%±** (see comment 2.3 to follow)
Building Coverage	23%	3.29%	3.35%
Building Height- Principal	2.0 story, 35'	2 story, 30' max	2 story, 34.6' max
Building Height- Accessory	15'		28'9¼"***

* Existing Variance

** Proposed Variance or existing variance exasperation

2.3 Only the proposed improvements that extend onto lot 7 are located in the I zone. Section 18-5.1 outlines the requirements for the 'I' zone. The following is a comparison of the project to the zone requirements for design comparison purposes. Variances are not required for deviations from these criteria on the lots in the R22 zone. Please note, the applicant proposes the work in several contiguous properties. "I have provided the information for lots 1-5, 12.01 and 12.02 as a single lot.

Description	Required	Existing	Provided
Lot Area	5 acres	655,529 SF or 15.04 ac	655,529 SF or 15.04 ac
Lot width	300'	915.35' (Cedar Ave) 973±' (Larchwood)	915.35* (Cedar Ave) 973±' (Larchwood)
Front Yard Setback	70'	26.7** (Cedar Ave) 42.5'* (Larchwood)	26.7*', 50'*** (Cedar Ave) 42.5'*, 50'*** (Larchwood)
Rear Yard Setback	70'	N/A	N/A
Side yard Setback-			
One Side	40'	125'±	77'±
Both Sides	100'		
Lot Coverage	50%	121340± or 18.5%	262590SF± or 40.0% (see comment 2.3 to follow)
Building Coverage	23%	3.29%	3.35%
Building Height- Principal	2.0 story, 35'	2 story, 30' max	2 story, 34.6'
Building Height- Accessory	15'		28'9¼"***

* Existing deviation

** Proposed deviation or existing deviation exasperation

2.4 The above tables compare the proposed coverage to that permitted in the zones. The coverage in the lots in the R22 zone exceeds what is permitted. Relief is required. When comparing the proposed coverage to that required by the adjacent 'I' zone that contains the majority of the University, it can be seen that the proposed coverage is less than permitted by that ordinance. The coverages shown in the chart are approximate from the precepts provided in the zoning schedule. A listing of the coverages should be provided to confirm all required items are included such as parking areas, buildings, gravel areas used as drives, utility pads sheds, etc. A summary of each relating to a drainage area has been provided in the stormwater management report



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but did not appear to contain all these items. A breakdown by lot should be provided.

- 2.5 Section 18-7.1a outlines requirements for signs in R-22, R-15, and R-10 Residential Zones; Institutional Zone; RP Residential Professional Zone. Subsection (7) indicates “One non-flashing sign identifying a school, church, public building, public and private parks, or other such permitted use, not to exceed eight square feet in area on any one side and situated within the lot not closer than fifteen (15') feet from any street or property line”. The plans indicate a proposed monument sign to be located at the intersection of Cedar and Larchwood Avenues. The sign is shown as setback 11' from each front property line, has a height of 12'8” and a sign area of 22.23 SF. Variances are required for the location, size and height.
- 2.6 Section 18-7.2 outlines requirements for fences. Subsection (c) indicates m I offer the following as it relates to proposed fences:
- a. Subsection (c) indicates “Fences may be erected, altered or reconstructed to a height not to exceed three (3') feet above ground level when located within the required front yard setback. The plans delineate a fence identified as an ornamental metal fence along the frontages of Cedar and Larchwood Avenues. This is to connect to the existing that surrounds the rest of the University property along these roads. The plans contain a detail of a 6' high decorative aluminum fence. The applicant should clarify if this is the detail for the ornamental metal fence labelled on the plan. Relief is required for the height.
 - b. Please note subsection (e) indicates “The foregoing restrictions shall not be applied so as to prevent the erection of an open wire fence not exceeding eight (8') feet above ground level anywhere within a public park, public playground or school premises.” This would permit an open wire fence to be constructed within the front yard to a height of 8'. The proposed fence has openings in the section however it is not considered an open wire fence. Relief is required.
 - c. The plans indicate a five (5) feet tall solid wood fence surrounding the parking area for the proposed police station. Subsection (d) indicates “Fences may be erected, altered or reconstructed to a height not to exceed six (6') feet above ground level when located outside the required front yard setback.” The required front yard setback in the R22 zone is 35'. The fence is located outside of this setback therefore the five (5) feet high is permitted.1 A detail of the fence should be provided on the plans.
 - d. The plans indicate relief requested from section 18-7.2i which requires “All supporting members of the fence to be erected, altered or reconstructed shall be on the inside surface, meaning that the supporting members shall face the property constructing the fence, and not the neighboring property.” It is not clear on the plan the purpose for this request and should be clarified by the applicant.
- 2.7 Section 18-7.4 (a) of the Borough ordinances outlines the requirements for Off-Street Parking Regulations. I offer the following:



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- a. Subsection (a)1 indicates “All parking areas, passageways, and driveways (except when provided in connection with one family residences) shall be surfaced with a dustless, durable, all-weather pavement, clearly marked for car spaces, shall be adequately drained, and shall be adequately buffered, all subject to the approval of the Borough Engineer. Aisle widths and access drives shall not exceed twenty-five (25') feet in width without a specific determination by the Borough Engineer that the excess width is needed to accommodate the proposed use.” The applicant proposes aisle width of 24' and thereby conforms. This is adequate for the proposed perpendicular parking. Ave.
 - b. Subsection a(3) indicates “. Parking areas may be located in any yard space for commercial use and in any yard but the front yard for other uses and shall be adequately buffered in accordance with the site plan.” The drive aisle is contained within the property, however, is visible from Cedar Ave where buildings do not exist, like on lot 3 and a portion of lot 4. The applicant should address the buffering of the view of the roadway from Cedar Avenue.
 - c. Subsection a(4). No commercial motor vehicle shall be parked or stored anywhere on public streets or private property in an R-22, R-15, R-10, MF-1, SH-1 or RP District, unhoused or visible from a public street or any neighboring property, except when the vehicle is being used in the transaction of business with the owner or occupant of the property...” The plans indicate two proposed storage and maintenance buildings. The applicant should address if vehicles will be parked at these locations. No spaces are provided at each. In addition, the applicant should clarify if any commercial vehicles or equipment used by the University will be stored outside of the building at these locations. If so, relief is required. I note that a solid wood fence is proposed around the area. A detail of the fence should be provided on the plans.
 - d. Subsection a(6) indicates “ Not more than two driveways, of not less than twenty (20') feet or more than thirty (30') feet in width, used as a means of ingress and egress for nonresidential off-street parking areas shall be permitted for each two hundred (200') feet of frontage upon a public street, nor shall any driveway be located closer than fifty (50') feet to the intersection of two public streets.” The applicant proposes a new access to Larchwood. The existing is located outside of the scope of the provided. The frontage along Larchwood well exceeds 200' so the two drives are permitted. The width of the drive should be noted on the plans. It appears that the width including the curb returns is approximately 54'. This exceeds the thirty (30) required therefore relief is required.
- 2.8 Section 18.63(e) 2 outlines requirements for Principal Buildings and Uses as follows: “Each lot shall be permitted to contain only one principal structure as permitted by this Chapter ordinance, or as set forth in certain zones herein. Although several lots are noted in the application the site is being developed as one lot. Several principal buildings are proposed for construction. Therefore, a variance is required.
- 2.9 Section 18.6.3(f) 2 outlines requirements for Accessory Buildings and Structures as “detached accessory buildings and accessory structures shall be located in the side or rear yards only. Detached accessory buildings shall be set back from the side or rear lot line at least a distance equal to the height of such



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building.”

The proposed maintenance storage building is located outside of the front setback but fronts on Larchwood. The ordinance defines a front yard as

“YARD, FRONT- Shall mean an open, unoccupied space on the same lot with the principal building, extending the full width of the lot and situated between the street line and the building line, projected to the side lines of that lot. Setback line should be synonymous with the rear limit of the required front yard area.”

The structure is located to the side of the dwelling on Larchwood shown as converted to MU offices on the site plan, and out of the required front yard setback. I defer comment to the Board Attorney if the accessory is located within the front yard.

2.10 Section 18.6.3(f) 3 requires all, accessory buildings and structures combined shall occupy no more than the equivalent of 25% of the area of the rear yard, and there shall be no more than two accessory buildings permitted, exclusive of a garage.” The applicant contains more than three accessory buildings. The portion of the project in the R22 zone contains two maintenance and storage buildings, a convert garage converted to storage at the alumni building, a shed and a comfort station by the softball field. Relief is required for the number of accessory buildings.

3.0 Traffic and Circulation

3.1 The applicant proposes to construct a new drive leading to Larchwood. The proposed drive permits both ingress and egress into the site with full movement in each direction. The drive is located where there is an existing drive to the existing dwelling to be converted to MU office on Larchwood. I offer the following on the location of the access drive:

- a. This existing drive presently connects to the maintenance road that extends around the softball field so that I anticipate maintenance vehicles use this existing drive along with the residents. The conversion of the drive from that for a single residential home to a full access drive will increase the movement into and out of the site at this location. There is a residence opposite the proposed drive on the western side of Larchwood. The applicant should address impact to the home from headlights of vehicles egressing the property at this drive after sunset.
- b. During a site investigation I observed location of new drive to Larchwood. There is a Solid Fence on North side on the side of Lot #1. The applicant should address if this fence blocks the sight line for egress of the drive. I recommend a sight triangle be provided at the proposed drive.
- c. The applicant submitted a traffic report addressing impact to the area. The report provides traffic counts for the intersection and the existing Cedar Avenue drive from the University for the year 2019.



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Future calculations for traffic generations have not been provided. Since the application is for a use variance, the report should compare the traffic generated from the proposed use with that which is permitted in the zone. Any impacts due to the change should also be reviewed and any improvements required to mitigate the change offered.

- d. The report should address the stacking at the intersection to determine impact to the location of the drive during construction and after it is completed. I am concerned about left turn movements into and out of the site across a backed-up stacking lane. This should be addressed.
- e. The traffic report indicates that the proposed access will provide a safer egress for vehicles from the site as the existing drive on Cedar Avenue is at an unsignalized intersection. The report indicates that the existing Cedar Avenue drive experiences long stacking due to the volume of traffic on Cedar Avenue. The existing drive on Larchwood is located further to the south than the proposed location of the project. Access to this drive is through a circuitous route from lot 7 down through lots 12.01 and 12.02. The proposed drive provides a direct connection to Larchwood near Cedar Avenue not just for the proposed facilities but also for the existing parking located on lot 7. It is not clear from the traffic report if it anticipates existing traffic being redirected through the new connecting drive to Larchwood that prior would have used the Cedar Avenue drive. The Larchwood intersection is shown as operating at a level 'C' in the 2019 existing condition. The impact of the vehicles redirecting from the Cedar Avenue entrance to intersection should be addressed. Larchwood is a single lane in each direction. The edge of the road showed rutting indicating vehicles go around left turning, stopped vehicle for either a through movement or right turn. I am concerned that the redirect of the traffic will cause a greater stacking at the intersection which will then impact the site drive. The applicant should address if widening of Larchwood Avenue to add a right turn lane would reduce stacking and impact to the drive. I note that telephone poles exist along Larchwood on the applicant's frontage along Larchwood that would be impacted by a widening.
- f. The eastern end of the drive connects to the existing Cedar Avenue access. The drive is shown approximately 100' from Cedar Ave. A cross walk is provided in this location to connect the parking lot on lot 7 to the new facilities. The applicant should address any impact to the drive due to stacking at the Cedar Avenue access and the safety of having the walk so close to the Cedar Avenue access drive intersection. The applicant should address measures to protect pedestrians in this cross walk at this location.

3.2 Several structures are proposed to be constructed as part of the project. The following is a summary of the building and associated parking requirements as compared to the parking proposed on the plan:

Building Description	Building Size (SF)	Requirement	Required	Provided
a. Maintenance storage building 1	1800	1 per 250 SF	7.2	0
b. Maintenance storage building 2	1800	1 per 250 SF	7.2	0
c. MU Office	1860	1 per 250 SF	7.4	15
d. MU Alumni Center	4385	1 per 250 SF	17.5	19



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Building Description	Building Size (SF)	Requirement	Required	Provided
e. MU Police Headquarters	6667	1 per 250 SF	26.7	57
f. Temp police <i>or</i> future classrooms	4310	1 per 250 SF <i>or</i> 1 space per 3 seats	17.2 <i>or</i> TBP	245 <i>or</i> TBP
g. MU Golf Center	2966		11.8	<u>included in "f"</u>
	Total 23788		95.0-	336

TBP= To Be provided

In addition, the applicant proposes to relocate a rest room building by the softball field. Please note, the building shown in line 'f' above labelled as a temporary police station with a future use as classrooms. I anticipate the larger parking requirement will be when the building is used for classrooms. The parking calculation for a classroom is based on the number of seats. The number of classroom seats should be provided to determine the number of spaces required when the building is converted to a classroom space. Additional parking spaces are proposed than are required. The applicant should address the need for the Additional spaces and associated coverage.

- 3.3 Section 18.6.5B requires "In any zone all required yards, open spaces, off-street parking and landscaping must be contained within that zone". As noted above the site proposes excess parking from the buildings that are proposed. I note however that the parcels in the R22 zone are contiguous and supporting the existing use of the University on the surrounding lots. Therefore any parking proposed to support those existing improvements are crossing the zone and would require relief from this section.
- 3.4 Section 18-7.4(a)1 requires "parking areas, passageways and driveways to be surfaced with a dustless, durable all-weather pavement, clearly marked for car spaces..." The area in front of the western most storage and maintenance building along Larchwood Avenue is shown as a gravel area. Relief is required from this section of the ordinance.
- 3.5 Section 18-7.4 (b) 1 of the Borough ordinances outlines the requirements for Loading and Unloading Regulations as follows "For every building, structure or part thereof having over 5,000 square feet of gross building area erected and occupied for commerce, dry cleaning, places of public assembly, industry and other similar uses involved in the receipt and distribution by vehicles of materials or merchandise, there shall be provided and permanently maintained adequate space for standing, loading and unloading services in order to avoid undue interference with the public use of streets or alleys". None of the proposed buildings meet these criteria in either size or use. Therefore, a loading area is not required. I anticipate however that materials and supplies will be delivered to each of the buildings. The applicant should address any anticipated delivery vehicles and method for delivery to each site.
- 3.6 An asphalt area exists adjacent to the proposed golf center. The applicant should address if this is proposed to have parking spaces for the instructor/coach. If so, they should be delineated on the plan. Also, the applicant should address if ADA parking will be provided near this facility, I note the entrance into this asphalt area is through an existing parking space in the main parking lot. Prior access to this area could be achieved through



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a roadway that is located along the softball field. This roadway will be eliminated as part of the project so the access through the parking space will be the main access to the area. I recommend the space be stripped to prevent others from parking in that location. Any reconfiguration of the parking in that area to permit this access should be shown on the plan.

- a. The plans indicate the location of the handicap spaces for each of the proposed parking areas. The number and location as required by ordinance has been provided in the plans. Enlarged details of the grading for the transition areas and ADA ramps should be included in the plans.
- b. A space is hatched on the northern side of the parking area around the temporary police station. The purpose of that hatching should be provided. I note that the number of spaces shown for that parking area does not include that space.
- c. The existing garage located on lot 2 is shown as being converted to storage. An access path is shown leading to the building. The path is blocked by parking spaces. The applicant should address the frequency of utilizing the building and address if the parking spaces should be striped to prevent vehicles from parking in the area of the proposed storage building access.
- d. A bituminous drive is shown on the eastern side of the proposed police station. It connects Cedar Avenue to the proposed access drive. It appears gates are provided at each end of the drive. The gates should be labelled on the plan and the dimension provided from the gate to the back of sidewalk. As a minimum the distance should allow a vehicle to end fully into the drive prior to the gate. It appears approximately 20' is provided at either end. The applicant should address what types of vehicles will have access to this drive to confirm adequate length and how the gated system will work.
- e. A proposed bituminous drive is shown for the dwelling on Larchwood converted to MU offices. The location of the drive is shown close to the intersection with Larchwood. The purpose of the drive and the phasing of it should be addressed.
- f. The plans include a phasing plan for the project. The title block indicates the project is a Preliminary and Final Site Plan. The applicant should address if they are requesting final for all phases at this time. The phasing plan separates the project components into individual phases. The order of the projects is not noted. In general, the phases should be able to stand on their own. This requires that all downstream stormwater systems be provided and the roadways required to access each stage are installed. I recommend the phasing clarify the construction timing of the main drives and the recharge system for stormwater.

4.0 Grading, Drainage and Utilities

- 4.1 The applicant has submitted a stormwater management report and design for review. The project meets the requirements to be categorized as a 'Major Development' by stormwater standards. This designation requires that the applicant provide a design that meets water quality standards and reduces the rate of runoff from the



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site. The applicant has proposed the use of underground detention systems to reduce the rate of runoff and the use of a filter system to address water quality requirements. I offer the following on the proposed design:

- a. Major development projects are required to recharge the annual amount of runoff into the ground. To determine the feasibility of recharging runoff the applicant has submitted results of soil borings taken throughout the site. I have reviewed the borings and the permeability results. Diverse permeability results are shown near each other. The site contains restrictive layers that vary in depth but are mainly close to the surface. The presence of the restrictive layers limits the amount of recharge that can be achieved for the site. Having said that, the applicant has proposed a system that has opportunity to allow recharge. The design has underground chambers that create storage volume surrounded with stone. The applicant has proposed a denser stone. I had discussed with the applicant's engineer surrounding the area with a stone that will allow recharge if the soils permit. However, I would recommend that the portions of recharge system closest to structures with basements not have recharge directed toward the structure.
- b. The applicant proposes to use "Upflow™" filter systems to address water quality for the site. In addition, a mechanism called a "Hydrobrake™" is proposed within the drainage outlet structures to manage the rate of runoff from the water quality storm. The applicant should address the maintenance requirements of the systems and what the impact would be if the system maintenance is delayed. An Operations and Maintenance Manual is required addressing all components of the proposed system.
- c. The volume needed for the underground storage is achieved using Stormtech™ chambers and a series of stacked R-tanks™. Inspection ports are proposed for the Stormtech™ that would allow inspection and maintenance. The applicant should address access for inspection and possible maintenance for the R-tank™ system.
- d. I have reviewed the proposed drainage calculations as it relates to the rate of runoff reduction achieved by the design. The applicant is required to reduce the runoff from the site by 50% for the 2-year storm, 25% for the 10-year storm and 20% for the 100-year storm. The applicant proposes the following reduction rates.

Storm Event	Existing Runoff	Proposed Runoff	Percent Reduction	Required Reduction	Conforms Yes or No
2 Yr	2.19 cfs	1.07 cfs	51.1%	50%	Yes
10 Yr	7.98 cfs	3.65 cfs	54.3%	25%	Yes
100 Yr	23.35 cfs	17.32	25.8%	20%	Yes

It should be noted that the calculations have indicated the proposed rate reduction without anticipating recharge into the soil. The soils did not appear to support recharge in all areas; therefore it is reasonable to prepare the calculations with a recharge consideration from an engineering point of



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view. Any recharge that does occur from the project will create a further reduction of runoff.

- e. The NJDEP has issued new stormwater management requirements that were effective on March 1, 2021. The new regulations require the municipality adopted revised stormwater regulations incorporating their new criteria. To my knowledge these have not been adopted. However, the applicant is required to incorporate these improvements based on the time it was submitted and deemed complete. A large focus of the new regulations relates to incorporating green infrastructure with an enhancement of recharge and the use of trees in to break up the pavement areas to cool waters before they discharge downstream. Even though the applicant is not required to adhere to these requirements I did review the project to see what aspects could be incorporated and offer the following:
- i. The applicant has provided extensive soil information that shows that the site does not appear suited for the use of swales and similar for green infrastructure recharge as clay type soils exist at the surface in many areas. This was noted in the field during my site investigation where water was ponded in various areas at the surface even though there had not been rain for several days prior to the site investigation.
 - ii. I note that the applicant has proposed to detain runoff below ground in chambers surrounded by stone. As noted above I have spoken to the applicants' engineer about maximizing the opportunity for recharge where the soils will permit by using stone that would allow transmission of water from the containment chambers into the soil. As noted above any recharge that is achieved into the soil will further reduce runoff from the site.
 - iii. The new regulations require that the fields of impervious be broken up with trees to allow shading and cooling of the surface. Rain that lands on hot asphalt becomes heated before it flows through the system to the downstream stream. I recommend trees be incorporated into the parking lots for aesthetic purposes and to achieve this goal. Portions of parking areas not providing trees are the parking lot to the north of the temporary police station, the western side of the parking area for the proposed police station, the western side of the Alumni building parking area and in the parking lot behind the dwelling converted to MU offices along Larchwood Ave. Any special detail for the planting of the trees within the recharge area should be provided on the plans.
- 4.2 The grading plan indicates that the softball field grades toward the proposed project area, however it is not shown as part of the drainage area for the site. I note that the plan indicates a separate drainage system underneath the softball field that is connected to a sperate drainage system on the southern side of the project area. Therefore, the exclusion of this area from the grading and drainage plan is reasonable from an engineering point of view.
- 4.3 The applicant proposes stormwater pumps to drain the system within the required 72 hours. The applicant should address if duplicity will be provided in the pump design to provide a backup should one fail and what



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provisions are in place should there be a power outage.

- 4.4 The applicant should provide the seasonal high-water table for the soil logs provided. I note the Monmouth County soils report shows KKHB soils with depth to water table, 12-24", where most of the development is proposed. Some of the soil logs indicate that seepage and mottling was not observed. However, others indicate a water table monitoring was installed. Results of the monitoring should be submitted.
 - 4.5 Stormwater basin #4 shows a light fixture in the middle of the recharge field. The applicant should address if special treatment of the foundation is required to be located as shown. In addition, I have noted in Comment 4.1e above to have trees planted in the parking areas to break up the appearance and cool the runoff from summer rains. Any required details for these intrusions into the recharge field should be added to the plan.
 - 4.6 The plans include a cross section of the proposed recharge field depicting the material surrounding the system, and the cover over the system. It notes the soils around it being fully compacted. If recharge is to occur, then the portions where recharge is encouraged would need to have less compaction. This note should be revised in areas where recharge will be encouraged. The plan also shows a cover of 18". The applicant should also confirm the systems ability to handle H₂O loading based on the full section.
 - 4.7 The applicant should add to the plan the rim and invert information for drainage manhole DMH 3.9 and drainage inlets DI 3.5 and 3.4.
 - 4.8 The plans indicate the use of tide gates to keep back flow flowing back into filters. The applicant should address if these are manual, or gravity operated, and any impact to the surrounding area should they fail to operate correctly.
 - 4.9 The sanitary sewer is shown as connecting out toward Cedar Ave. The manhole is located within the sidewalk. The location should be shown on all the plans with the rim and invert elevations. Approval from the sewerage authority is required.
 - 4.10 The applicant should provide flow calculations indicating the flow into each inlet to check inlet inflow capability. Also, the pipe flow design should be provided to check the pipe sizing to Borough ordinances. The ordinance requires the piped system be capable of handling a minimum of 10-year storm for all pipes less than 60" in size. In particular this pipe size is required for pipes connecting runoff to the recharge system. This requirement would not apply to the pipes carrying runoff from the recharge system downstream as they are part of the recharge system and would be sized as required to meet the required runoff rate reductions provided which includes control of the runoff rate up to a 100-year storm.
 - 4.11 The applicant should address any impact to the proposed design should the downstream system be full and causing a backwater on the proposed system.
- 5.0 Landscaping and Lighting



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- 5.1 Section 18-7.3 outlines Landscape requirements.as follows” any use required by this Chapter to be screened shall be contained within a fence or wall not less than six (6') feet in height, or a visual screen consisting of evergreen or evergreen type hedges, or shrubs, spaced so as to provide a solid and compact wall of landscape materials, located and maintained in good condition and within ten (10') feet of the property line, provided further that the regulations may be expanded based upon the recommendations of the Borough Engineer” The portions of the University fronting on Cedar Avenue are surrounded by a metal fence. As noted in section 2 above, the fence is located within the front yard area. The fence proposed is an open metal fence that will provide separation but not screening. The plans indicate a mix of supplemental plantings along Cedar Avenue behind the proposed open metal fence. The applicant should address buffering of the project from their street frontages. I note that a fence is proposed around parking area to the west of the proposed police station. Plantings are proposed on the northern side of the fence to buffer the appearance from Cedar Avenue.
- 5.2 The plan indicates the existing trees on the site. See comment-5.3 to follow for specific comments on trees noted during my site investigation. I anticipate trees will be removed as part of the project. The trees to be removed should be noted on the plans. Section 23-4.4 outlines requirements for tree replacement as follows: “Unless otherwise stated in these rules, the removal of any six (6") inch tree or six (6") inch grouping of trees must be replaced with trees the total diameter at breast height (DBH) of which is equal to at least 30% of the total diameter at breast height (DBH) inches removed. No replacement tree shall have a diameter breast height less than two (2") inches. If the removal of one tree necessitates a replacement of more than three trees, DBH may be satisfied by planting three trees and thereafter substituting shrubs for trees at a rate of one shrub per one (1") inch of DBH.” A tree preservation plan is required by ordinance. The applicant should address trees of greater than 6” to be removed and show the trees to be replaced meet the criteria. Please note, if the removal of trees is necessary to erect a building, home or other structure, and these trees exist within the footprint of the structure, there is no requirement that these trees be replaced.
- 5.3 The site proposes to install shade trees along the proposed roadways at a spacing of `approximately 40' on center. This is reasonable.
- 5.4 During site investigation I observed the following as it relates to existing vegetation on the site:
- a. Observed the area between the Alumni building and where the police building will be built on lot 5. There appears to be a pond with waterfall behind lot 4which is not shown on submitted plan. A large Sycamore tree near the pond. The applicant should address if this tree will remain or be removed.
 - b. Observed areas around softball fields. In this area there exists a heavy bamboo screen between Cedar Ave frontage and ballfield. The applicant should address if they will remain or be removed. If removed the applicant should address the screen that will be provided.
 - c. Observed the back of Lot #3. Lot is vacant with some mature trees. The applicant should address if these trees will remain or be removed.
- 5.5 I am in receipt of report prepared by the West Long Branch Shade Tree Commission dated January 25, 2020.



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The report has requested the white ash trees shown on the plan be replaced with one from the list provided in their report.

- 5.6 Foundation plantings are not proposed around the proposed buildings. The applicant should address their proposal for these plantings.
- 5.7 The plan provides for evergreen and deciduous trees. It also includes evergreen and semi evergreen shrubbery. An ornamental plant of Carolina rose plants are proposed along the western side of the parking area on lot 7. I would suggest the applicant consider introducing a dispersed ornamental trees and shrubbery into the plan to provide seasonal interest at various locations.
- 5.8 The applicant should address if any landscaping is proposed around the entrance sign at the Cedar and Larchwood Avenues intersection.
- 5.9 The plans should address the treatment of the area once the dwelling and related improvements on lot 1 is removed.
- 5.10 The plans indicate a generator pad proposed along Cedar Avenue to the east of the proposed police building. There appears to be a shed and possible fencing in this area as well. The screening of this utility from the adjacent roadways should be addressed and detailed.
- 5.11 Section 18-7.4a(7) of the Borough ordinances indicates “ All parking areas and appurtenant passageways and driveways serving commercial uses shall be illuminated adequately during the hours between sunset and sunrise when the use is in operation. Adequate shielding shall be provided by commercial uses to protect adjacent residential zones from the glare of such illumination.”. The applicant has provided a lighting plan for review. The plan provides a point-by-point analysis of the lighting along the proposed drives and in the parking areas. I offer the following as it relates to the proposed lighting:
 - a. The plans indicate that two styles of lights are proposed. Details of the lights and the light foundations should be provided. One is noted as being ornamental. The applicant should address the style of the other and how each correlate to the lighting existing on the roadways connecting to the development.
 - b. The applicant should address if the proposed lights are dark sky compliant. Dark sky compliant fixtures prevent a ‘glow’ of the development up into the sky. Although not noted as a requirement by the ordinance, being dark sky compliant would relate to the overall brightness of the development for the surrounding residences.
 - c. All lights are proposed to be LED. The pole heights range from 16’ to 28’. The decorate lighting is proposed along the entrance drive. The second downward directed lights are proposed in the parking areas. The 28’ high poles are shown as being interior to the site. Lighting is proposed backing up to Cedar Avenue in the police building parking area. I recommend the lighting closest to Cedar Avenue



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be either shielded or directed to not have a bright spot visible from Cedar Avenue.

- d. No lighting is shown in the area of the proposed maintenance buildings by the softball field. The applicant should address if any building mounted lighting is proposed. If proposed, it should be shown on the plan. I recommend that as a minimum, security lighting be provided in the area.
- e. Any proposed building lighting should be shown on the architectural plans and reflected on the site plan.
- f. A walk exists from the dwelling on Larchwood to be converted to MU offices to Larchwood. The applicant should address if any lighting exists in the front yard for this walk or is any proposed.
- g. An ornamental light is proposed along the entrance from Larchwood. The applicant should address its location relative to the dwelling across the street to see if the visibility of the light in the fixture will produce objectionable lighting as a bright spot for the homes across the street.
- h. I recommend the average to minimum and maximum to minimum lighting levels be provided for each parking area.
- i. A new restroom building is proposed at the softball field. The applicant should address if any security lighting is proposed on that structure.

6.0 General Comments

- 6.1 The applicant should address if the lots are to be consolidated.
- 6.2 The zoning schedule indicates a post development impervious coverage of 0.5% on lot 1. The plan notes the drive and building indicated for future demolition. The applicant should clarify their proposal for the timing of the building and driveway removal. Also, the applicant should confirm if the removal of the dwelling and site improvements on lot 1 are included in the limit of disturbance.
- 6.3 I am in receipt of comments from the Fire Marshal, Charles F Shirley Jr dated January 6, 2020. The applicant should address the comments contained in the report. A revised report is required for any plan revisions.
- 6.4 Details of the proposed relocated restroom should be provided.
- 6.5 The plans indicate an on-site pavement section of 1.5 "of FABC wearing course, 3.5" of bituminous stabilized course and 4" of dense graded aggregate. The ordinance requires a section of 1.5" of FABC wearing course and 4" stabilized base course. The applicant should provide structural analysis of the proposed section comparing it to that required by ordinance.



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- 6.6 Utility pads for air conditioning and or generators should be provided on the plan and added into the lot coverage.
- 6.7 My file does not contain a report from the Traffic Safety Officer. A report should be obtained, and any comments addressed.
- 6.7 The project requires approval from the following agencies:
- a. Monmouth County Planning Board.
 - b. Freehold Soil Conservation District.
 - c. Borough Engineer for off-site impacts and improvements.
 - d. New Jersey Department of Transportation for any intersection improvements and connection to drainage.
 - e. Sewerage Authority.

I recommend a condition of any approval the Board might grant be conditioned upon the applicant returning to the Board outside agency review cause changes to the plan.

I reserve the right to make additional comments once the above information is requested. If you have any questions or require additional information, kindly advise.

Very truly yours,

Elizabeth M. Waterbury, P.E., P.P.

West Long Branch Zoning Board Engineer

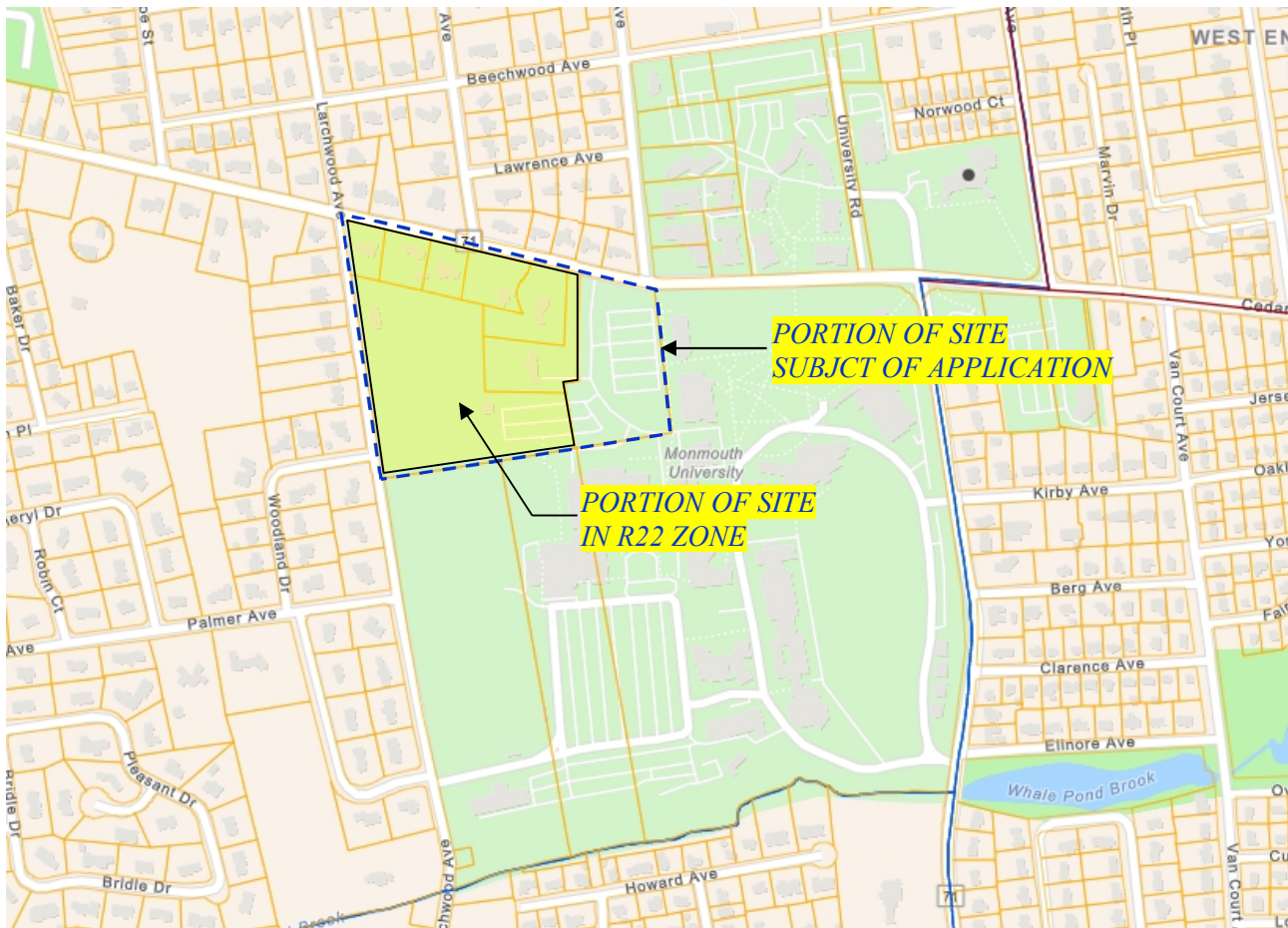
cc: Gordon N. Gemma Esq., via email
Steven Mlenak, Esq., via email
smlenak@greenbaumlaw.com



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Location map from Monmouth County Property Viewer



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Aerial view from Monmouth County Property Viewer. Imagery noted as from Spring 2020



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Street view from Google Maps of proposed entrance drive location.
Imagery noted as from August 2018.