

Chessia Consulting Services LLC



January 9, 2024

Mr. Chris DiIorio
Community Planning Director
Town of Hull
253 Atlantic Ave.
Hull, MA 02045

RE: Proposed Site Plan
Paragon Dunes Development
189 & 193 Nantasket Avenue and
0 George Washington Boulevard
Hull, MA

Dear Mr. DiIorio:

Chessia Consulting Services, LLC has reviewed the Application for a site plan review for the above referenced project. It is my understanding that the Board has requested that the plans be reviewed for compliance with the requirements and the Nantasket Beach Overlay District (NBOD) Special Permit, and for a Site Plan under Section 40 of the Zoning Bylaws. Other aspects of the Zoning Bylaws such as parking that are applicable to the proposed project would also be reviewed. Tighe & Bond has been retained to review the Traffic Impact Analysis. In addition, as the locus is in a wetland resource area (Land subject to Coastal Storm Flowage), a Notice of Intent will be required together with stormwater analysis and compliance with DEP Regulations. An Order of Conditions has been received from the Conservation Commission for a portion of the project. This portion is parking in the narrow strip of land listed as 0 George Washington Boulevard, which was reviewed by this office for the Conservation Commission. I also previously reviewed the “Paragon Boardwalk” project, which occupies 189 Nantasket Avenue for the Planning Board in 2019.

I have reviewed the stormwater design under Section 401-4.01 C Site Plan Review, but utilized the DEP Stormwater Standards as a template. I visited the site with you and Matt Sullivan on January 4, 2024 to review existing conditions on the site.

The following information was received regarding the project:

Plans Entitled:

- “Paragon Dunes Mixed-Use Redevelopment 189 & 193 Nantasket Avenue & 0 George Washington Boulevard Hull Massachusetts Permitting Plans October 2023” dated October 10, 2023, prepared by Civil & Environmental Consultants,

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Inc. consisting of 43 sheets including Surveyed Existing Conditions Plans and Architectural Plans. (Plans)

Supporting Documentation:

- Town of Hull Planning Board Planning Board form.
- Letter dated October 11, 2023 prepared by Drohan Tocchio & Morgan, P.C. Re: The Procopio Companies Paragon Dunes Development. (Application Letter)
- Copies of property deeds.
- “Traffic Impact Study Paragon Dunes Mixed Use Development 197 Nantasket Avenue Hull, MA” prepared by McMahon dated October 2023.
- “Appendix for Traffic Impact Study Paragon Dunes Mixed Use Development 197 Nantasket Avenue Hull, MA” prepared by McMahon dated October 2023.
- “Stormwater Report Paragon Dunes Mixed-Use Development 189 & 193 Nantasket Avenue & 0 George Washington Boulevard Hull Massachusetts” dated October 2023, Professional Engineers stamp date 10/10/2023 prepared by Civil & Environmental Consultants, Inc. (Report)

I also reviewed prior plans in my files for both the Paragon Boardwalk project and the Conservation Commission filing for parking on a portion of the George Washington Boulevard parcel.

The proposed project is a Mixed-Use development that would include razing the existing buildings and site improvements, and constructing a new mixed-use building with a maximum footprint of 50,421 square feet, listed as the second floor of the building and including balconies. The total building gross square footage is listed as 188,511 square feet including 6,971 square feet of commercial space, 38,441 square feet of parking garage and 143,099 square feet of residential space. The residential space is inclusive of balconies. A total of 132 residential units are proposed. In addition, parking and utility improvements are proposed. The existing property comprises several parcels, the land area is listed as 2.57 acres on the plans but only a portion of the property is proposed to be redeveloped under this permit. The site is currently developed with a commercial facility including an arcade. The project is located in the Commercial Recreation B Zoning District.

The site is located on the south side the Nantasket Avenue and extends through to the DCR property to the south, a portion of the property has frontage on George Washington Boulevard along the westerly end of the parcel. There are three Assessor’s Parcels listed as follows:

Assessor’s Parcel #	Lot Area (sf)	Lot Area (acres)
37-002	84,232	1.934
37-003	32,548	0.747*
37-004	27,571	0.633
Totals	144,351	3.314

Listed as 1.934 acres on the Survey Plans

I note that prior submissions had lot lines and metes and bounds that are not consistent when compared to the current plans. The Board may want clarification on this issue, in particular relative to the land near the carousel.

The site is in the Commercial Recreation B District, and also is in the NBOD overlay District. The site has frontage on Nantasket Avenue, George Washington Boulevard and Rockland Circle. The site would be accessed from George Washington Boulevard and Rockland Circle. Four curb cuts are proposed to George Washington Boulevard and will require approval from the DCR. There is one also one curb cut proposed at Rockland Circle. This would also require coordination with the DCR and the Town of Hull as it will alter their existing curb cut to the DCR land as proposed.

Topographically, the site is generally fairly level. There are variable grades around the mini golf course and a water feature that has an overflow to an undetermined location. There are also variable grades with some low areas in the southern part of the site proposed for the open parking lot as well as within the Boardwalk facility. The general slope is from Nantasket Avenue to George Washington Boulevard. There are several drainage features that should be fully investigated as several are indicated as extending to unknown locations. As the Paragon Boardwalk portion was permitted and constructed within the last 4 years, there should be full documentation of the utilities, including stormwater for this area. The open parking area was also permitted through the Conservation Commission in 2022 and existing stormwater facilities, with the exception of an undetermined outlet, was all identified and should be indicated. The plans should identify all utility terminations for pipes crossing the site with inverts if applicable to identify existing uses that would be impacted by the work.

Some utilities are indicated on the plans but insufficient data to determine connections has been provided. There are utility poles indicated around the property, guy wires and support poles have not all been indicated. It is proposed to remove poles within the site along George Washington Boulevard and install a below grade conduit system for part of this area.

A review of Mass GIS mapping indicates that the locus is not in a habitat area, or ACEC but runoff would discharge to the ACEC as it is located at the edge of the bay to the southwest of the site. The majority of the site is identified as a barrier beach area based on MassGIS. The site is also in the FEMA flood hazard zone partly in the Zone AO (3' depth) and partly in Zone A (flood elevation 10).

I have listed the applicable sections of the Zoning Bylaw with comments relative to the material provided versus the Regulations. In addition, if insufficient supporting data has not been provided to justify the design, it has been noted in my comments.

410-3.12 – Nantasket Beach Overlay District

A. Purpose.

I recommend that the Board review the submittal relative to the purpose of the Bylaw.

B. Scope of Authority.

- (1).The project is being filed under the Overlay District Regulations.
- (2).I have reviewed the project under the Regulations of the Overlay District as they apply to this project.
- (3).A Special Permit is required and has been requested.
- (4).The project is in the Special Flood Hazard Area, but the Applicant has not requested an increase in height. The proposed building height is listed as 40' but this is only along Nantasket Avenue. The building would be higher along the George Washington Boulevard frontage as the grades are lower. Based on the Definition the height should be based on the mean grade around the building not just the elevation along Nantasket Avenue. This issue will need to be addressed by the Applicant and the Board.

C. Special Permit Administration and Procedures.

- (1).The site plan is at an acceptable scale under the Regulations. The plans have been stamped by a Professional Engineer, Professional Land Surveyor and by a Registered Architect as required.
 - (a) A Traffic Assessment has been provided. This aspect of the project will be provided under separate cover by Tighe & Bond.
 - (b) It is unclear if the Board will require any data on fiscal impacts of the proposed project.
- (2) through (10). No comment required; the Board should consider the requirements under these sections. I note that the Special Permit allows the Board to impose conditions for some aspects of the project greater than the minimum requirements listed in the NBOD.

D. Definitions.

No engineering comment required.

E. Special Permit uses.

The proposed uses are allowed in the Commercial Recreation B District. Fewer residential units are allowed in the Commercial Recreation B District than proposed. It is my understanding that there isn't a limit on units included in the NBOD provided other requirements, parking in particular, are met.

F. Prohibited uses.

The project proposes both residential and commercial restaurant spaces, which are not prohibited uses.

G. Dimensional, lot and density regulations

Under this section, existing dimensional non-conformities **may** be allowed to continue at the Board's authorization. The Applicant has requested a waiver of some setbacks as noted below.

- (1).Setbacks and Yards
 - (a) There is no minimum lot size; the existing lot is listed as 144,351 square feet (3.314 acres). The project complies with this requirement.

- (b) The minimum frontage is 25' unless otherwise deemed acceptable to the Board. The Submittal indicates that the lot has 513 feet of frontage on Nantasket Ave., 604 feet on George Washington Boulevard and 94 feet on Rockland Circle. The project complies with this requirement.
- (c) The Regulations require a 10 foot front yard setback. The Applicant has requested a waiver to have a minimum 1.4 foot setback based on the Application Letter. The Plans indicate a minimum setback of 1.83 on Nantasket Avenue. The existing building is listed as 1.3 feet from Nantasket Avenue. The submittal should also discuss setbacks from George Washington Boulevard as they are proposed as less than 10 feet. The existing building is also closer than 10 feet but the setback is not specified on the plans. Based on my review of this requirement it appears to reference maintaining setbacks consistent with other buildings on the same block. The abutting buildings are setback further than the buildings to be removed in some cases. The Board can consider existing building setbacks in the same block to determine an average setback. I recommend that the existing conditions survey plan be expanded to include the two adjacent lots and the existing building setbacks on these adjacent lots along Nantasket Avenue and George Washington Boulevard. Typically the average of the setbacks would be used to determine an acceptable setback. The Board should address this request.
- (d) The site does not abut a residential district and there is no side yard setback required.
- (e) The site does not abut a residential district and there is no rear yard setback required.
- (f) Multi-Family structures are required to be set back 25 feet from lot lines. This project is submitted as a mixed use building although there is less than 5% commercial space so this would not apply.

(2). Height Requirements

The maximum height allowed is 40 feet with certain exceptions. As noted the height is only measured at Nantasket Avenue and the overall height may not comply.

- (a) This section discusses preservation of existing residential views.
 - [1] The site does not abut a Residential District. This would not apply.
 - [2] The building would not be within 250 feet of a Residential District. This would not apply.
- (b) The Application Letter does not discuss any request to increase the building height as part of this section. The project is in the Special Flood Hazard Area as it is in the FEMA Zones AO and A and if approved an increase in height of up to four feet, excluding appurtenances, could be permitted above the minimum elevation required under 780 CMR.
- (c) This section provides an additional height allowance based on specific performance requirements for floodproofing. The Application does not request additional height under this section.

H. Open Space

The site is less than 6 acres in size an open space plan is not required for this project. The Bylaw allows the Board to require an open space plan for smaller sites to protect community interests. The Board should inform the Applicant if an open space plan will be required for this site. I note that the plans indicate several pathway easements. I recommend that the Board obtain data on the rights granted under these easements to determine if there are any public or private access rights to cross the property that would need to be addressed in the submission.

I. General Requirements for Developments under the NBOD

- (1). The site is not in a residential district, but does abut a residential building to the east. There are Landscape Plans with plantings but there do not appear to be any privacy fences. The plants would provide some screening. The Board may want to have a Landscape Architect review the plans.
- (2). No awnings are indicated on the plans, this section would not apply.
- (3). This section discusses signs. The Board should solicit input from the Design Review Board for signage as discussed in the Bylaws. The plans only include traffic signs.

J. Off-Street Parking and Loading Requirements

Based on Table 1 the following parking is required:

87 studio or 1 bedroom units	= 87	spaces
45 2 or 3 bedroom units	= 90	spaces
6,971 sf restaurant 2 spaces per 150 sf = <u>93</u>		spaces
	270	spaces required*

It is proposed that the restaurant uses obtain parking from existing on-street parking. The plans include a long strip of parking that is far from the building, some is nearly 1,000 feet from the closest corner of the building. The Board should review this aspect of the plan as there is considerable discretion allowed the Board for a Special Permit.

*The Board may reduce the requirements, also refer to comments below.

- (1). Shared parking: It does not appear that shared parking is proposed. A traffic impact study is required where shared parking is proposed. A traffic impact study has been submitted.
 - (a) The Applicant may propose shared parking for the retail/service uses subject to documentation from the DCR relative to use of the spaces in the DCR lot. The DCR lot is within 500 feet as required to propose shared parking in the DCR lot. To implement this option, documentation from the DCR is required.
 - (b) Not applicable combined parking is not proposed.
- (2). Fee-in-lieu of parking. It is unclear if fees in lieu of parking would be proposed for the restaurant use. This should be addressed by the Applicant. If proposed the Applicant must demonstrate compliance with the requirements under this section, which have not been listed at this time as no data on this aspect has been provided.
- (3). Bicycle Parking
 - (a) Sheet A-101 of the Architectural Plans indicates 18 bicycle spaces in the lower level southwest corner of the building. The Board should determine if any common bicycle racks should be provided for the commercial uses.

- (b) Two bicycle spaces are required for every 20 required off-street spaces. In this case 270 off-street spaces are required. A total of 14 bicycle spaces would be required. The plans indicate 18 spaces but the sizing does not comply with requirements.
- (c) Bicycle spaces are required to be of 2 feet by 6 feet. The plans indicate an area that scales 5 feet wide by 25 feet long. This could be adjusted to provide the required spaces but should be longer and wider.
- (d) This section discusses the specific requirements for bicycle racks. It is unclear if the bicycle racks comply as no detail has been provided.
- (e) Not applicable, shared bicycle parking is not proposed.

K. Design Standards

Most of these Standards are not civil engineering issues. The Board should review the design for compliance with the intent of the district regulations.

L. Incentives for constructing buildings that are adapted to and resilient to the impacts of climate change on coastal communities in designated floodplain districts.

It does not appear that the Applicant has requested any of the incentives under this section of the Bylaw.

Section 410-4.1 Site Plan Review

A. Purpose:

No engineering comment required.

B. Applicability:

- (1). Not applicable a subdivision is not proposed.
- (2). This section triggers site plan review as a new building with both non-residential and multi-family residential uses for over three units is proposed.
- (3). The calculations include the aggregate floor area, no existing buildings are proposed to remain on the site.
- (4). Not applicable a wireless communication facility is not proposed.

C. Application and Review Procedure

(a) Basic Requirements:

No engineering comment required.

(b) Materials Required:

- (a) The site plans have been prepared by and stamped by a Professional Engineer and existing conditions plans have been stamped by a Professional Surveyor and Landscape Plans are stamped by a Landscape Architect. The Architectural Plans are stamped by an Architect. The site plans provided are at the required scale of 1" = 20'.

[1] The location of the former buildings and the proposed buildings, etc. are included on the plans as required. I note that there are also a set of Existing Conditions Plan prepared by a Professional Land Surveyor. I

recommend that the plans clarify the various existing easements and identify what rights are afforded by these easements. There should be a plan in the set that identifies where easements are eliminated, if that is proposed, and if additional easements are required such as to access through the site from the DCR lot to Nantasket Avenue. There is a partial easement in this area but it does not extend completely through the site. There are several passageway easements that appear to be eliminated by the project. As the site consists of three parcels but is being developed as one site, it is unclear if any cross easements would be required if any parcels are transferred or if it is proposed to combine the parcels indicated as part of the project. The Boardwalk development project as-constructed, is inconsistent with the approved design based on the Existing Conditions Plans.

The Plans indicate the proposed access and parking areas with dimensions. Portions of the sitework are proposed within the DCR right of way. The Applicant should provide documentation that the proposed work will be allowed by the DCR. There is a loading area for the residential units located in the west side of the site, accessed off of George Washington Boulevard. A 10' by 30' space is proposed, which accesses the trash room. There appears to be another loading area indicated on the east side in the DCR easement, but there is no label so it is unclear if this is also a proposed loading area. The submittal should discuss where and how moving vans, and commercial deliveries, etc. would service the project. Is there a space for UPS, FEDEX, and Amazon deliveries, etc. There is a general trash room and a "chute" for trash, no dumpsters within the building are indicated. The Board may request details of how the trash area will function. A photogrammetric plan has not been provided. It is unclear what is proposed for lighting but lighting of the facility is proposed and the plans indicate some light locations and a pole base detail.

Partial data on existing utilities is indicated. The Existing Conditions Plans do not indicate the extensive utility work done for the Boardwalk project to connect water, sewer, electric, etc. to the various units in the site. Water and gas are currently accessed off of Nantasket Avenue. Sewer, electric, telephone and drainage would connect at George Washington Boulevard. There are several existing connections to water and gas along Nantasket Avenue. The Demolition and Erosion Control plan indicates capping many of the existing utilities, but not all of the existing utilities that may be eliminated. Not all stormwater features are indicated on the plans. Partial data on existing sanitary sewer is provided. Data on the drainage is incomplete as further discussed under DEP Stormwater Management Regulations below.

Proposed utilities are indicated the plans. The plans indicate three new water services and three new fire protection lines to the Dunes Project. It appears that the two commercial units would each have a separate service and there would be one service for the residential portion of the project. It is proposed to reuse the existing fire protection line connection at the street for the residential building. I note that none of the existing buildings would remain and some sort of temporary cap to utilities to remain would be required. The Board should receive comment from Weir River Water System that the project will be served and that the proposed utility design is acceptable to the Weir River Water System. It appears that there would be one new gas connection is for the entire project. It is assumed that there would be separate meters for the end users. The Board should receive data on how many meters and if individual unit meters for the residential units will be required as this would take up a large amount of space. Sewer is proposed to connect to a new proposed manhole in George Washington Boulevard. The plans should include notes and details on what will be done to cap/remove exist sewer services as there are many throughout the site. The plans should specify pipe sizes for water and sewer. It is proposed to connect power and other cable utilities via new underground conduits off of existing utility poles along George Washington Boulevard. The duct bank appears to interfere with other proposed and existing utilities and this aspect of the design should be addressed. This would likely be large duct bank with many conduits. Some overhead utilities cross the site to other facilities and some poles would be required to maintain these services. Based on the plans all units would receive power through a transformer at the west end of the building. As with other utilities electric services can require an extensive meter bank and where this would be located is an important aspect of the design.

I recommend that the Board obtain comment from the respective utility purveyors.

The stormwater system would connect to three existing outlets that are partially indicated. Full survey data on the outlet pipes to be used should be provided, including material, diameter and inverts. There would be an increase in impervious area so the project is considered a partial redevelopment under DEP regulations. Catch basins, storm sewers and manholes are proposed to collect runoff and provide initial treatment. There are four subsurface infiltration systems for recharge and treatment and four proprietary treatment units are proposed to provide pretreatment of runoff. The DPW or appropriate State Agency, should review this aspect of the design as all of the systems ultimately pass through DCR property. The outlets, although not all identified would discharge to an Area of Critical Environmental Concern (ACEC) and a higher water quality volume for treatment is required. At a

minimum the design should include all other connections to the manholes with pipe sizes, materials and direction of flow, etc. Any associated catch basins or manholes up and down gradient should also be indicated on the plans as applicable. The capacity of the system may be required to be identified by the Board, DPW or State. Under current NPDES permits for MS4 discharges all of the outlets should be identified for location elevation and diameter. Refer to detailed comments on the proposed Stormwater Management System below.

The site is located in the FEMA flood hazard zone. The flood zone is the AO Zone with a flood height of 3 feet. To the south side of the site the zone is mapped as EL 10.

- [2] The plans include Landscaping Plans. I defer to the Board regarding proposed landscaping and plantings. This section requires data on location, type number and dimensions of proposed landscape plantings. There are lists of species by number type and size. The Board may want this aspect reviewed by a qualified professional Landscape Architect.
 - [3] There are no existing natural features as the area was previously developed.
 - [4] The plans include existing contours at 1 foot intervals, which exceeds requirements but is desirable for a relatively level site as exists on these parcels. There are also some spot grades indicating existing elevation. More spot grades should also be provided, in particular in the Paragon Boardwalk portion of the project. The highest part of the site is along Nantasket Avenue where the elevation is 13 +/- at the sidewalk/existing building, excepting portions of the mini-golf higher features. The sidewalk slopes east to the roadway. The rest of the site slopes to the west toward George Washington Boulevard. There are existing low areas on-site near George Washington Boulevard and through the long strip parallel to the DCR parking lot. There are also variable high and low points within the mini golf course that are mostly indicated. More data on how the water feature works may be required to assess existing drainage. Refer to comments under Stormwater below for information on the drainage system.
- (b) This section requires a Narrative description of the project, including site planning, architectural, landscaping, traffic, parking pedestrian circulation, utilities, drainage flooding (including sea level rise), wastewater disposal, solid waste disposal, lighting, signs, environmental protection and aesthetic considerations.

Minimal narrative information was provided in the Application Request letter. A Project Narrative for stormwater was included in the Stormwater Report. I recommend a more detailed narrative addressing required data as discussed in

other sections be provided. Data on traffic generation has been provided and is provided under separate cover.

This aspect of the review utilizes a portion of the Hull Planning Board Site Plan Review Check List as it is the basis for the Narrative. I recommend that the Applicant provide a Narrative responsive to the Checklist requirements and this Section of the Bylaw.

Required Submissions:

- The Board should determine if more narrative data will be required. The Board should consider data on operations as well as other impacts to abutting properties.
- The site plan indicates most of the data required. I note that the survey plan of the site varies from prior submissions in some locations. There should be more data on easements. One easement is not on the plan but is in the deed and was on the plan for the parking submitted to the Conservation Commission.
- Architectural Plans including the elevations, floor plans, etc. have been included and are under review by the Design Review Committee. The Board should review this aspect, which is outside of my engineering review.
- Landscape Plans have been provided and appear to be complete. The Board should determine if review by a qualified Landscape Architect will be required.
- There is a plan on the Cover Sheet at 1"=1000' and a more detailed plan at 1"=100'. There is sufficient data to orient the site to the surroundings.
- A photogrammetric plan has not been provided as required.
- There are topographic plans in the set. Refer to specific comments in other sections.
- There are utility plans in the set. Refer to specific comments in other sections.
- There are drainage/stormwater plans in the set as well as a stormwater report. Refer to specific comments in other sections.
- Parking is tabulated on Sheet C200. Refer to comments under NBOD parking.

Requested Submissions:

The Board should determine if additional data as listed in the Checklist will be required. Specifically the following are listed as data that may be requested.

- Development impact study.
- Isometric line drawing.
- Site model.

An Attachment B checklist specific to the NBOD has also been submitted. This aspect is covered under the above sections as the data required overlaps with other requirements. I do note the following that should be addressed or discussed with the Board.

- Internal Pedestrian Circulation – There are several passageway easements that would be eliminated by the project. In addition, it is likely that access through the site from the DCR parking lot to the beach side would be desirable and there is a partial easement on the deed and in prior plans that appears to provide this access. I recommend a description of internal and external pedestrian access be discussed.
- Open space and landscaping. There is a mix of public and private outside open space proposed.
- Stormwater:

The project is subject to DEP Stormwater Regulations as it is in a coastal resource area and will require a Notice of Intent. I have listed the requirements below based on the DEP Standards. A Notice of Intent for part of the project has been issued but no work on this part of the site has been performed to date.

DEP STORMWATER MANAGEMENT REGULATIONS:

The DEP Stormwater Management Regulations consist of ten standards, which apply to projects that are subject to approval of the Conservation Commission unless otherwise exempted. This section of the correspondence lists the standards and identifies whether the submittal complies, does not comply or if additional information is required to demonstrate compliance. The site is proposed as a partial redevelopment and would have an increase in impervious area over current conditions. The increased impervious area is required to fully comply with the standards.

Standard 1 – Untreated Stormwater

This standard requires that the project not result in point sources of untreated runoff and that runoff not result in erosion or sedimentation.

There would not be any new point source discharges as the system connects to existing storm sewer systems. The existing system outlets should be identified and surveyed. Some treatment of surface runoff from paved areas is proposed for the pavement. A combination of catch basins, proprietary treatment units and subsurface infiltration systems are proposed for paved parking and access areas only. The courtyard areas would be treated in the infiltration systems and pretreatment is proposed through a proprietary unit for each courtyard. There would be no treatment for the building roof.

This Standard may be met under partial redevelopment conditions. I recommend more data on the roof as all runoff receives some treatment and there are no new point source discharges. Refer to comment under other Standards.

Standard 2 – Post Development Peak Discharge Rates

This standard requires that the peak rate of discharge does not exceed pre-development conditions and that the design would not result in off-site flooding during the 100-year storm. System designs should comply with the DEP Handbook for stormwater management systems. The project is in the coastal zone and a waiver from this requirement could also be requested, but has not been requested at this time. The site is in the FEMA flood hazard zone both the AE (depth 3 feet) and AO EL 10. Under DEP this would be considered Land Subject to Coastal Storm Flowage (LSCSF).

According to the Stormwater Checklist a waiver from this standard has not been requested for land in the Coastal Flood Zone. The existing storm drain near the former kart track discharges to a tidal water body and the other systems would also although the outlet locations have not been specified, one is listed as based on record plans. There is no requirement to control the peak rate of runoff in tidal locations if this requirement is waived by the Conservation Commission. This submission does not request a waiver from this Standard.

I recommend that the DPW or DCR as applicable comment on the proposed storm sewer connection to the public system. As noted all outlet locations should be surveyed and indicated on the plans. It is unclear if there are other permits required to connect to these drains as the pipe location and any other connections to the pipe have not been fully identified. It is anticipated that all of the outlet pipe pass through DCR property. As noted the location of the outlets will need to be determined in the field.

Existing Conditions:

I request that any future submissions include full size to scale watershed plans. It is not feasible to measure areas to confirm the calculations. I note the following issues with the existing conditions analysis:

- Insufficient data has been provided to demonstrate that runoff from the western side of the site discharges to the pipe identified as DP 3. The roadway pitches to the west and although there is an overflow pipe in the water feature much of the runoff would flow to the roadway and to a catch basin near the intersection with Wharf Avenue.
- It is unclear how the roofs discharge. If there are central collection and discharge points they should be identified. If roofs have external downspouts or drains these locations should be identified and could impact watershed areas. This applies to all buildings including the easterly building. Runoff in part of the east appears to be to the southerly abutter for a small strip and potentially part or all of the building.
- Impervious paved areas are overestimated in both areas 1A and 3A.
- The overall analysis limits should be equal in both the existing and proposed cases.

- There appears to be flow from the DCR property at the west end into the site that should be accounted for as it may impact post development flows.

The calculations assume soils are Hydrologic Soil Condition (HSG) B soils. This has been previously accepted on prior submissions and appears to be a reasonable assumption. Soil cover conditions used in the analysis also appear reasonable based on my observations, except as noted above relative to impervious areas.

Proposed Conditions:

The proposed design includes piping through the proposed building. All piping within the building is subject to the plumbing code. It is unlikely that HDPE pipe would be acceptable for a building of this size and use. A qualified mechanical engineer will need to design the piping within the building, including manholes, etc., which could require modifications to the system.

There should be a pipe capacity analysis of the entire system together with data on the roof drainage. Although some of this may be deferred to the final building plans. Since piping of the runoff in and out of the building in several locations is proposed, it is critical to design a pipe network that will have adequate capacity without back up into the building. As the site discharges to a flood zone, how the pipes and other aspects of the system will function in flood events should be addressed. This is not a significant concern with the open parking areas, but is a concern within a building. The building code requires floor drains be connected to the sanitary sewer and back-ups or overflows of the storm sewers would then impact the sanitary sewer.

The design utilizes infiltration in all storm events. The DEP Regulations and as noted on page 5 of the DEP Checklist for Stormwater Report, requires either 4 feet of groundwater separation or a mounding analysis for all infiltration systems. Although some data has previously been submitted to the Conservation Commission on the parking area in the former rail road bed, no data on mounding has been provided in this submittal. I note that recent data from DEP Northeast Region does not allow infiltration in subsurface systems as a means of rate control. This has not been the practice for other projects in Town but may need to be considered given recent data I have received.

More data on soil conditions, including groundwater is required. For locations near the coast typically testing is performed at high tide to determine maximum seasonal high water as required by DEP. Testing has been performed in the open parking lot in the former rail road bed and was witnessed by this office. It does not appear that any other testing has been performed. I recommend additional testing be performed and that any testing performed be witnessed by an agent of the Town.

Based on my observations the outlet pipe for the drainage systems would be underwater at some tide stages. The design uses a fixed tailwater elevation at the outlet pipe of 4.83. It is unclear how this elevation was determined. I recommend data on typical annual higher tides be provided. The analysis may not need to be revised to account for all extremes but water from an annual higher high tide should not backflow into the systems. It should take an extreme storm to impact flow into the system from the rising tidal waters.

Additional data is required to demonstrate compliance with this Standard. The Applicant could also request a waiver from this Standard.

Standard 3 – Recharge to Groundwater

The design would result in an increase in impervious area. Recharge of runoff to address the loss of infiltration through the increase in impervious area is required.

A Soils Map and supporting soil data from the Natural Resource Conservation Service (NRCS) has been provided. Soil evaluations, witnessed by this office were performed in the proposed open parking lot area to the east side of the site. These logs were not included in the submission. There are some partial test pit logs but they are incomplete and appear to only identify the ground water elevation and it is unclear the timing of the work relative to tides. I recommend that additional soil testing be performed to determine soil conditions, at the location of proposed subsurface infiltration systems P1A and P3A. DEP requires soil evaluations under proposed infiltration systems. I recommend confirmatory inspections be performed at the system location during construction if the project is approved. Soil testing should include determination of seasonal high groundwater as well as soil textures, etc. Groundwater separation is required to be 2 feet to the bottom of proposed infiltration systems and no on-site data to justify groundwater separation for P1A and P3A has been provided, although it is assumed that, subject to suitable soils, that similar conditions would be encountered. I recommend any testing be witnessed by an agent of the Town. As a previously disturbed area it is unclear if suitable soils are present, filled salt marsh was encountered in the former railroad bed.

This Standard could be met as the adequate recharge volume is provided, but soil testing for P1A and P3A is required. I recommend that the above recommendations be considered by the Board if the project is approved.

Standard 4 – 80% TSS Removal

This standard requires that runoff be treated to remove 80% of total suspended solids (TSS) prior to discharge. Specific treatment measures should comply with the DEP Handbook. As a partial redevelopment it is only required to improve conditions where existing systems remain and not to fully comply with the Standard.

The following systems are proposed:

Deep Sump Catch Basin – The design incorporates deep sump catch basins in parking and access areas. I note that there are also many landscape basins, which would not be credited with TSS removal as they do not comply with the DEP Handbook design for deep sump catch basins and are linked, i.e. not off line, in several locations. To receive TSS removal credit catch basins are required to receive ¼ acre (10,890 square feet) of impervious area or less. All proposed deep sump catch basins would meet this requirement. Catch basins would receive 25% TSS removal credit. TSS removal credit for catch basins should not be included for subareas 1B, 3D and a portion of Off-1A where work is proposed in the DCR roadway.

Barracuda Proprietary Treatment Unit – Barracuda units are proposed to treat runoff from the parking and access drive areas prior to discharge to a subsurface infiltration system. These units are reported to provide 50% TSS removal and documentation has been provided that justifies this removal rate as approved by a TARP member, New Jersey DEP. I recommend that the Board credit these types of system with 50% TSS removal. The credits for these systems are discretionary and they are a pre-treatment system only.

Subsurface Infiltration System. – These systems are credited with 80% removal. I note that the parking lot design approved by the Conservation Commission included an “isolator row” that facilitates maintenance and is a low cost feature during construction. I recommend that these be added back to the design. As noted additional soil testing is required for systems P1A and P3A.

Under partial redevelopment requirements this Standard may be met but further justification that other options with greater treatment cannot be implemented for the proposed roof should be provided.

Standard 5 – Higher Potential Pollutant Loads

Not applicable, this use would not be considered a Land Use with Higher Potential Pollutant Load (LUHPPL).

Standard 6 – Protection of Critical Areas

The existing stormwater system discharges to the bay, which is a shellfish growing area and an ACEC. The site would be considered a Critical Area under the Regulations.

The submittal recognizes that the site is in a critical area. The design includes BMP's appropriate for this type of critical area as listed in the DEP Handbook.

Subject to other comments this Standard would be met.

Standard 7 – Redevelopment Projects

The work proposed would be a partial redevelopment under the Stormwater Regulations. Volume 3 Chapter 2 of the Stormwater Handbook describes requirements for Redevelopments.

The design proposes to comply with all Standards although there is no treatment of the proposed roof. I note that roofs do not require pretreatment but treatment is required. The submittal should provide an evaluation of available alternatives that could be implemented on the site relative to the roof. The submission should discuss alternatives and why they are not suitable for this site. Based on my review there are limited options but it is the Applicant's responsibility to present their case.

More supporting documentation is required to demonstrate compliance with this Standard.

Standard 8 – Erosion/Sediment Control

This standard requires that a plan for construction phase runoff and associated potential for erosion and sedimentation be developed as an integral part of the project.

The submittal includes a written Construction Period Pollution Prevention and Demolition and Erosion Control Plans. I recommend a more comprehensive construction plan that includes erosion and sediment controls as well as staging data, maintenance of access etc. This site has extensive construction, including within the DCR property and abuts developed uses. It is important to describe how the site will be constructed, worker parking, staging areas, stockpile areas, etc. Some data on construction is identified on the plans.

The plans should indicate all proposed sediment and erosion control measures and include details for various measures proposed. I also recommend that a construction fence be installed to protect the site from unauthorized access and define the limit of work.

I recommend that the data provided be responsive to the DEP Stormwater Checklist. The project is over the 1 acre of disturbance threshold and a NPDES permit and SWPPP would be required. This aspect could be deferred to a later date, but I recommend no work commence until the SWPPP has been submitted and approved by the Town.

Additional data is required to comply with this standard.

Standard 9 – Operation and Maintenance Plan

An Operation and Maintenance Plan (O&M) was included with the Stormwater Report as required under this Standard.

The O&M should include a separate plan with the location of the various stormwater BMP's, snow storage locations if applicable, etc. The following comments address specific aspects of the O&M:

Catch Basins – Catch basin inspection and maintenance complies with DEP requirements.

Barracuda Proprietary Units – The submittal includes the manufacturer's maintenance manual and meets requirements.

Cultec Subsurface Chambers – The O&M includes the Cultec Separator rows, which are recommended, but are not indicated on the plans. Provided these are added to the plans and details at the appropriate locations this would comply with DEP requirements.

I note that the Architectural plans do not indicate any gutters or downspouts, which are listed in the Report. The O&M is satisfactory relative to maintenance but these remain to be designed.

The plans should identify where snow will be stored on-site.

There is an infiltration basin listed but no such basin is proposed and should be eliminated from the O&M. The Stormwater outfalls will need to be identified. It is unclear who would be responsible as some may include DCR connections. This aspect will need to be addressed.

I recommend that the above comments be incorporated into the O&M.

Standard 10 – No Illicit Discharges

The required certification from the owner of the property should be provided. The Checklist identifies that it will be provided prior to any discharge to the system. As a partial redevelopment it is required to inspect and identify discharges from the existing buildings typically, but in this case no existing features are to remain. As noted the existing stormwater outlets and any connections to remain, one existing connection would remain through the site at a minimum are required to be identified. It is unclear if any sanitary sewers cross the site as all of these are required to be indicated. This data should be provided.

- Wastewater – Public sewer is available to the site. The proposed sewer connection would connect to the existing sewer main. The plans specify size

of pipes, and inverts, but some are record data not surveyed. The existing system should be surveyed for elevations, etc. Data on the proposed system is included. I note that the grease trap is only 2 feet from the building foundation and the oil/water separator is only 1 foot off of the foundation. These may not be feasible to construct without interfering with the foundation of the building. These would also be subject to the plumbing code being within 10 feet of the building. The DPW should review the proposed connections.

- Solid Waste Disposal – A trash area and location for loading is proposed in the west end of the building and a loading space for a trash truck is just outside the building on the west side. I recommend that more description be provided relative to how the proposed area will function.
- Lighting and Signage – The site plans indicate some light locations. A photogrammetric plan has not been provided. I recommend data on lighting be provided to the Board. No signage is indicated on the Plans. I recommend more specific data on signage should be provided.
- Environmental Protection – As noted the project will require a Notice of Intent filing and an Order of Conditions (OOC) from the Conservation Commission. Although an OOC has been issued for the parking previously, the plans have changed and more impacted area is proposed with this project and a new filing will be required. The major environmental issues relate to flooding and stormwater treatment.
- Views – I defer this issue to the Board as it is not an engineering issue.
- Design Compatibility with Surrounding Development - I defer this issue to the Board as it is not an engineering issue.

410-4.2 Floodplain District Use and Development

The locus is in this District.

- A. Purpose, no engineering comment required.
- B. Discusses State Regulations. The project will need to be filed with the Conservation Commission and comply with all state regulations.
- C. Definitions, no engineering comment required.
- D. Use Regulations.
 - (1). This section would apply. The project is partially in the AO zone and based on the plans there would be limited areas for bypass of floodwaters except at the east and west ends of the site. The Applicant should discuss this requirement.

410-5.1 Dimensional Requirements and Intensity Regulations

It is my understanding that the NBOD supersedes the requirements of this section.

410-5.2 Parking and Loading Requirements

The Board will need to make a determination regarding the applicability of this section. I have listed the requirements assuming it applies subject to issues in the NBOD as noted.

A. Table 55

This aspect of the project is subject to NBOD requirements as discussed above under 410-3.12 J.

- B. The parking spaces provided comply with dimensional requirements. Parking dimensions are 9 feet wide by 20 feet long as required. The access aisle is 22 feet. I note that inside the building has varying aisle widths with the tightest point being 17 feet. Six handicap spaces are proposed in the building.
- C. The proposed design has parking in the 10 foot front setback from George Washington Boulevard. There would be a minimal of 3 feet from the parking to the side lot lines, although the paved berm is within 3 feet along the northern side at the easterly section of the former railroad bed area.
- D. It is proposed to pave the parking area as required. The loading area(s) is internal to the site and would not block a sidewalk. As noted, I recommend that it be demonstrated how trucks will access the loading area and dumpsters. As noted how other deliveries, etc. would occur should be discussed. A photogrammetric plan should be provided together with proposed lighting details, if any are proposed in the parking area.
- E. Screening Requirements – There are more than 5 spaces, this section would apply. Screening is required along the street fronts and side lot lines. I recommend that the Board review screening. This section requires screening dense screening of specific heights for protection of abutting properties. The submittal should document the percentage of interior parking lot landscaping.

I appreciate the opportunity to assist the Planning Board on this project and hope that this information is sufficient for your needs. This report is for the Hull Planning Board and associated land use agencies only and provides no engineering, planning or other advice that may be relied upon by any party or agency other than the client. If you have any questions please do not hesitate to contact me.

Very truly yours,
Chessia Consulting Services, LLC

John C. Chessia, P.E.

JCC/jcc