



Heather Shank
City Planner

CITY OF CONCORD

New Hampshire's Main Street™
Community Development Department

Planning Board

June 16, 2020

Project Summary – Major Site Plan

Project: Rail Yard Mixed Use Development (2021-25)
Property Owner: P&M Realty of Concord, LLC
Address: Langdon Avenue
Map/Block/Lot: 7913Z/41, 792Z/70, and 792Z/71

Determination of Completeness:

Determine this application complete and set the public hearing for the July 21, 2021, Planning Board meeting. As part of the motion, indicate that the project does not meet the criteria for a Development of Regional Impact (DRI), per RSA 36:55.

Project Description:

The applicant is proposing a phased mixed-use development for property located Langdon Avenue in the Opportunity Corridor Performance (OCP), Urban Transition (UT), Medium Density Residential (RM), and Residential Open Space (RO) Districts. The proposed development includes six, 3-story residential buildings (192 units) with associated club house, and 2 commercial buildings. The Applicant is also requesting a Conditional Use Permit to allow for the construction of less parking spaces for the residential units than is required.

The Applicant has contemporaneously submitted a Major Condominium Subdivision Plan, which includes the creation of 5 condominium land units. This Major Site Plan application addresses the residential and commercial developments proposed on Land Units 2, 3 and 3A. Land Unit 1 is currently developed with a climbing gym, which will remain. Land Units 4 and 5 uses have not been specified. Any future development on Land Units 1, 4, and 5 will require a separate Site Plan Application.

Project Details:

Zoning: Opportunity Corridor Performance (OCP), Urban Transition (UT), Medium Density Residential (RM), and Residential Open Space (RO)

Existing Use: Vacant

Propose Uses: Land Unit 2: Multi-family Residential
Land Unit 3: Commercial Mixed-Use
Land Unit 3A: Parking lot for Land Unit 3 use

Required Parking:	Residential: 396 spaces	Commercial: 248 spaces
Proposed Parking:	Residential: 300 spaces*	Commercial: 251 spaces**
	*Conditional Use Permit requested, see Section 2 below	
	**Parking spaces are provided on a separate condominium unit, see note 4.2 below	

1. General Comments

- 1.1 The following comments pertain to the 45-sheet site development plan set titled “The Rail Yard, Langdon Avenue, Concord, New Hampshire” prepared by Nobis Group, dated May 19, 2021; architectural plans and elevations for residential buildings prepared by Ed Wojcik Architect, Ltd., dated May 19, 2021; and, architectural plans and elevations for commercial buildings prepared by Warrenstreet Architects, dated May 18, 2021.
- 1.2 Architectural Design Review (ADR) is required for the Major Site Plan application. The Applicant went before the ADR Committee at their June 1, 2021, meeting for initial design review. The ADRC provided comments with regards to pedestrian circulation, streetscape, and building materials and design. The Committee also requested that the Applicant consider adding a green space or some other pedestrian/visual connection to the open space west of the residential development. The Applicant is scheduled to return for ADR review at the July 6, 2021 meeting.
- 1.3 The applicant went before the Conservation Commission at their April 10, 2019 meeting for a Major Impact Dredge & Fill application for proposed impacts to 31,765 sf of wetlands. As part of the wetlands impact review, the Commission reviewed a concept plan for the entire site, and provided comments. The Commission expressed concern relative to impacts of stormwater runoff, snow melt, salt, and roof runoff to the sensitive bluff area and ravine. The wetland scientist representing the applicant explained that the snow will be put into a treatment area or into a basin, or removed, or placed in a designated area.

The Commission also recommended pulling the development further back from the bluff area and recommended less parking. The also added that it would be a nice place for a trail.
- 1.4 See comments from the Engineering Division in a separate memo, dated June 9, 2021, and traffic study review comments from VHB in a memo dated June 2, 2021.

2. Conditional Use Permit(s)

- 2.1 The Applicant is requesting a Conditional Use Permit (CUP) in accordance with Section 28-7-11(b) of the Zoning Ordinance (ZO) to allow for the construction of fewer spaces than is required for the multi-family residential development within Land Unit 2. The Applicant is proposing to construct 288 spaces (1.5 spaces per unit) where 384 (2 per unit) is required per the ZO.
- 2.2 Please see the attached narrative provided by the applicant describing how the criteria of the applicable sections of the Ordinance are met, including Section 28-9-4(b) (4) (ZO), which states the criteria for the Planning Board decision.
- 2.3 While staff is supportive of the reduction in impervious surface, ***staff cannot support approval of the CUP as currently designed.*** A large drainage system is proposed in the location of the future parking spaces. The Applicant shall provide a separate drainage plan or detail showing how the drainage for the site will work if the Planning Board requires the parking spaces be built in the future. In order for the Board to approve the CUP, the Applicant must demonstrate that the

proposed future parking spaces can be constructed without additional approval.

3. Comprehensive Development Plan (CDP) Amendment

3.1 The Planning Board granted conditional Comprehensive Development Plan approval at their April 21, 2021 meeting, with the condition that the Applicant address comments to the satisfaction of Planning and Engineering Staff. The Applicant submitted a revised CDP as part of the Site Plan Application. This Section addresses comments that remain to be addressed. New comments are added under separate sections of this report.

1. Staff recommended pathways within the site be 6 ft to 8 ft in width. The applicant has provided 5 ft wide sidewalks and 4 ft wide paths internal to the residential development. Staff recommends holds the recommendation to provide at least a 6 ft wide path, but at a minimum all walkways should be 5 ft in width.
2. Staff recommended the pathway between the two 12-unit residential buildings extend across the access drive and connect through the 2 new commercial sites to extend safe pedestrian connectivity throughout the development. The Applicant has not provided the connection, and in addition has removed the pathway between the residential buildings and the sidewalk on the internal street adjacent to these residential buildings. These revisions are not in the spirit of the original approval as the revised plan has eliminated pedestrian access and changed the character of the street. Staff holds the original recommendation, and recommends that the sidewalk be shown as depicted on the conditionally approved CDP.
3. Staff recommended parallel parking spaces be added in front of the two 12-unit residential buildings. The parking spaces were added; however, on the opposite side of the drive. Staff recommends that the parallel parking be located on the same side of the street for safety and access.
4. Previous Staff discussions focused on the creation of an urban streetscape with a pedestrian oriented corridor that weaves the residential and commercial uses into a cohesive neighborhood development. Staff feels that the revised CDP has gone in the opposite direction and has separated the residential and commercial uses. Staff recommends that the Applicant reconsider the orientation of the entrances to the commercial buildings and the two 12-unit residential buildings to create along the internal street.

3.2 Staff recommends that the applicant provide cross-sections and elevations showing the pedestrian corridor between the residential and commercial developments.

4. Site Layout, Grading and Drainage Comments

- 4.1 The site plan only labels the phases of the residential development. The applicant shall provide additional phasing information for the commercial development. Further, per Section 11.10 of the Site Plan Regulations, the applicant shall provide timing for phasing. Note that no phase shall exceed two years in duration. In no case shall any proposed phasing plan in total exceed six years.
- 4.2 The proposed parking for the commercial building is shown on Land Unit 3A. As this has been identified as a separate condominium unit, a note shall be added to the plan indicating that the parking with Land Unit 3A is required to meet the requirements for the commercial use within Land Unit 3 and cannot be developed otherwise.
- 4.3 The temporary turnaround for Phases 1 and 2 is not in compliance with the previously agreed upon location approved by the Fire Department. Please revise.
- 4.4 The phasing limits for the residential development cut through the proposed internal pathways. Please indicate how the pathways will be laid out if Phase 3 does not occur prior to the completion of Phases 1 and 2.

- 4.5 As noted in Section 3 above, staff recommends that internal pathways be enlarged to at least 5 ft in width, with 6 ft preferred.
- 4.6 During the ADR meeting, it was recommended that a berm and some other barrier be constructed to buffer the rail line. The Applicant indicated that evergreens will be planted as a buffer. This is not shown on the landscape plan. Please revised plans to show structures and/or vegetation proposed to buffer the rail line.
- 4.7 The conditionally approved CDP showed a sidewalk along the east side of the entry drive (between the rock climbing gym and the commercial development). This sidewalk has been removed. Staff recommends that a sidewalk be constructed in this location, as previously approved.
- 4.8 The fence line between the residential development and the marsh area has been shifted further east than what was shown in the original CDP. At the ADR meeting, committee members recommended a visual and pedestrian connection between the marsh and the residential development. Staff recommends that the applicant reconsider the location of the fence, and address the recommendations of the ADRC in this location.

5. Landscape Comments

- 5.1 The Applicant has proposed using species that are identified as invasive/prohibited, are on the NH invasive watch list, or have invansive tendencis. The applicant shall replace the following species: *Berberis thubergii*, *Euonymus kiautschovicus*, *Miscanthus sinensis*, *Acer ginnala*, and *Pyrus calleryana*. Given the proximity of the South End Marsh, staff recommends replacement with native species that support wildlife and pollinators.
- 5.2 A large variety of plantings have been selected for the development, including species that require more maintenance. Staff recommends the Applicant simplify the plant list and select species that are native, hardy, and drought resistant. Given that the project is for affordable housing, a more resilient landscape scheme would be more appropriate to cut back on maintenance costs.
- 5.3 Please provide a standard plant schedule on the Landscape Sheet. The format provide has a lot of superfluous information and makes it difficult to quickly reference and review the plan.
- 5.4 There are several errors in the spellings and botanical nomenclature in the plant schedule. Please review and revise.
- 5.5 Rhododendrons are incorrectly identified as accent trees. Chock cherry and White spruce are incorrectly identified as a large deciduous tree. Please revise.
- 5.6 Per the information provided, 19 trees are required in Phase 5B. Only 12 trees are shown, but the table says 52 trees are provided. Please revise to meet the requirements.

6. Technical Review Comments

- 6.1 The Land Unit acreage shown on the CDP does not match the acreage on the Condominium Plats, please revise.
- 6.2 The temporary fencing should not be shown on the CDP since it is not a permanent site improvement.

7. Off-site improvements

- 7.1 Please refer to the Engineering staff recommendations for several off-site improvements to Langdon Avenue to improve pedestrian and bicycle safety, as well as addressing traffic concerns.

Planning staff supports the recommendations from Engineering.

- 7.2 Planning staff recommends issuing credits to the Transportation Impact Fee to cover the cost of the off-site improvements. The final design and credits will be resolved prior to final approval of the Major Site Plan application.

Prepared by: BAF

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CITY OF CONCORD
New Hampshire's Main Street™
Community Development Department

David Cedarholm, PE
City Engineer

MEMORANDUM

TO: Beth Fenstermacher, Assistant City Planner
FROM: Gary Lemay P.E., Associate Engineer
DATE: June 8, 2021
SUBJECT: Major Site Plan Review, The Rail Yard, Langdon Ave;
Map 792Z, Lot 71; (2021-024)

The Engineering Services Division (Engineering) has received the following items for review:

- *Site Plan*, The Rail Yard, prepared by Nobis Group, dated May 19 2021 (received on May 20, 2021)

As a supplement to any comments offered by the Planning Division, Engineering offers the following design related comments. **With subsequent submissions, the applicant should provide a response letter that acknowledges or addresses each of these comments and discusses any additional changes to the plans.**

Site Plans

Existing Conditions Plan

1. The City would like to see the 30' wide drainage easement adjusted at the eastern portion of the site to be aligned over the existing 36" RCP drainage pipe.

Notes and Legend

2. The following notes should be added to the plan set, unless already included:
 - a. All work shall be performed in accordance with the City of Concord's Construction Standards and Details (latest edition), and City standards shall take precedence in case of any details or plans in conflict.
 - b. All utilities shall be installed underground in accordance with Section 25.02(1) of the Site Plan Regulations.
 - c. Upon completion of construction the contractor shall submit as-built drawings to the Engineering Services Division prior to issuance of a Certificate of Occupancy.

- d. The contractor shall set up a preconstruction meeting with the Engineering Services Division to discuss construction requirements, site inspections, associated fees, schedules, etc.
- e. The contractor shall obtain a Demolition Permit from the Code Administration Division for the removal of the existing building(s).
- f. The contractor shall obtain an Excavation Permit from the Engineering Services Division for work within the ROW.
- g. The contractor shall obtain Utility Connection Permits from the Engineering Services Division for the proposed water service, sewer service, and storm drain connection(s). Individual permits will be required for each connection.
- h. The contractor shall obtain a Driveway Permit from the Engineering Services Division for the proposed driveway.
- i. A Temporary Traffic Control Plan (TTCP) will be required for all work in and adjacent to the City ROW that will require lane closures. The TTCP should be submitted to the ESD for review and approval a minimum of two weeks prior to the construction activities that require the lane closure(s).

Comprehensive Development Plan

- 3. Please label Langdon Avenue on the plan.

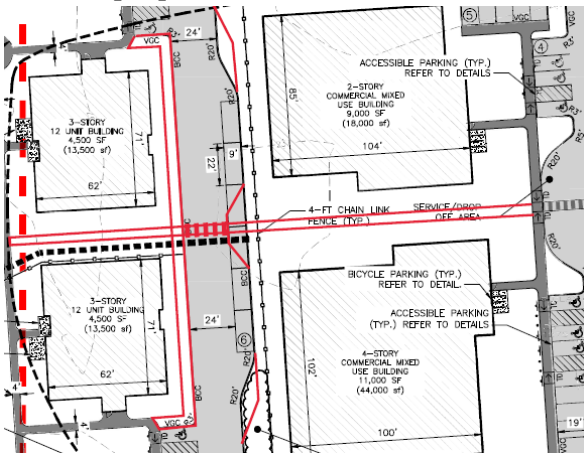
Demolition Plan

- 4. Please ensure the plans reflect and note the proper use of thrust blocks and rodding per City specs on abandoned line stubs.
- 5. Please revise the plans to also see the removed drain line from CB 1275 blocked off/plugged in the manhole at MH 8941.

Site Plan

- 6. The temporary turnaround at the termination of the parking area appears to be well over 1,000 feet from Langdon Avenue. Previous discussions with the Developer, Engineering, and Fire had discussed a temporary "T" or "Y" turnaround closer to the area where the dumpsters are located that would allow fire apparatus to safely navigate in and out of the site.
- 7. Please revise the drawings to reflect that all sidewalks are 5 feet wide, exclusive of curbing, per Site Plan regulation 21.05. Some of the proposed sidewalks are currently only 4 feet wide. Where integrated concrete curbing is used, we typically assume a 6" curbing width, meaning the total width should be 5.5 feet.

8. The City would prefer to see a 5-foot-wide striped bike lane on each side of Langdon Avenue instead of a 4-foot-wide bike lane. Lanes should generally be striped as 11- or 12-feet wide.
 - a. Please confirm that the existing passage and access easements for Langdon Avenue provide the developer the ability to strip and maintain markings along the full length of Langdon Avenue.
9. A previous iteration of the plans showed a sidewalk connection between the residential buildings and the proposed commercial mixed-use buildings; see markup below for a potential layout, as Engineering would prefer to see a pedestrian connection between the two proposed areas.



10. With the exception of access drives, the City does not want new infrastructure built over the easement as it will make long-term maintenance (e.g., spot repairs, excavation, replacement) difficult and more expensive. This site plan includes plans to rebuild new infrastructure (pavement, curbing, landscaping) on the 30-foot-wide drainage easement to the City. Given the unique nature and history of this site, the City is willing to accept the proposed infrastructure encroaching on the drainage easement if the developer will agree to video camera (for condition) and line the portions of pipe crossing the property as part of the project. This will provide assurance to Engineering and General Services that the risk of needing to repair the line in the foreseeable future would be minimal.
11. Please elaborate on why the landscape strip is not maintained along the full length of Langdon Avenue. Engineering would prefer to see that strip maintained along the full length of Langdon Avenue unless there is a reason it should be eliminated. Landscape strips can provide snow storage to reduce plow wash covering sidewalks in the winter.
12. Engineering would like to see the landscaping strip expanded to 6-feet-wide.
13. Other than the entrance from South Main Street, there is no proposed curbing along Langdon Avenue. The existing slopes appear to pitch runoff from Langdon Avenue across the proposed sidewalk, creating potential winter icing concerns. Please modify

the grading or consider adding curbing to protect the proposed sidewalk from Langdon Avenue runoff.

14. There is typically at least 4 feet of separation between crosswalks and stop bars. The stop bar from the site onto Langdon Ave appears to be flush with the crosswalk; please revise accordingly.
15. Please note there is an existing fire hydrant on South Main Street near the proposed new crosswalk and tipdowns; please include this in the plans to ensure there is no conflict.
16. The City is requesting crosswalk warning signs be placed on the approaches to the new crosswalk on South Main Street; please incorporate these into the plans. There should be signs on both sides of the posts, meaning two posts with four signs total.
17. The crosswalk across South Main Street should be 8 feet wide; please revise accordingly.

Grading and Drainage Plan

18. Please ensure there is appropriate access to maintain the outlets of each of the stormwater retention ponds on site. Access seems somewhat difficult given the current gradings around the outlets.
19. City Construction Standards, section 6.03 (F) require rigid foam insulation for storm drain installations with less than 3 feet of cover; please confirm if and where insulation may be needed for the proposed storm drain system, as well as adding a detail for insulating storm drain pipes. Please review the alternative loading dock plan for this requirement as well.
20. The perimeter drainage system around the site is proposed to maintain a 0% slope around the entire site. This does not comply with City of Concord minimum slopes for stormwater drainage systems (0.003 for 12" pipe, down to 0.0012 for 24" pipe). Engineering understands this is an intentional design component for the drainage system, however this brings up several concerns that should be addressed.
 - a. Please include a set of drainage profile plans similar to the sewer and water utilities to better describe the proposed stormwater management system.
 - b. The City has concerns about the long-term maintenance of a system built to zero slope over such a long pipe length. How will sediment accumulation and other debris be removed from the system? How will the system be built to ensure there are no bellies or sags in the pipe?
21. Please add a sheet to the plan set (or modify an existing sheet) showing where test pits were taken on the site for the purpose of groundwater elevation information. Please include details on groundwater elevations around each of the proposed stormwater ponds.

22. What is the expected groundwater elevation around each of the detention ponds? The proposed elevations are considerably lower than the existing grade. How will water control be handled if the pond and liner need to be constructed into the groundwater table?

Sewer Utility Plan

23. How will sewer slopes from the building (on the order of 7-9%) tie into the building sewer (typically at 2%). Will special fittings be used, or will the building sewer be sloped steeper than normal to make a gradual transition to the required slopes?
24. Please confirm there is 6 feet of cover over the sewer line near the clubhouse where there is paved area; if paved and there is less than 6 feet of cover insulation will need to be added.

Construction Details

25. Please include a construction detail showing a profile view for each of the detention ponds showing the inlet, outlet, forebay, liners, and elevations for other key elements for each pond.
26. Please provide a drainage profile showing key elevations for the subsurface stormwater detention galleries and the tie-in to the City stormwater system, including the material/depth underneath the subsurface infiltration system and the stormwater treatment BMP ("Jellyfish") where it ties into the City drainage system.

Stormwater Management Plan

27. Please review the stormwater management plan for the site to ensure compliance with Site Plan Regulation 22.07(3). There appear to be two locations (POI 1, PO4) where the 25-year post-development flows are slightly higher than the pre-development flows.
28. The 2- and 10-year volumes are greater for post-development conditions than pre-development at POI 1 and POI 4. Per Site Plan Regulation 22.07(3), off-site flow volumes should not exceed pre-development volumes for the 2-year or 10-year storm.
- a. Engineering encourages the applicant to explore alternative infiltration options for roof runoff, and would support a waiver for minimum groundwater separation (Site Plan Regulation 22.07(2)) for roof-related infiltration.
29. Engineering would like additional information on the design and performance of the proposed "Jellyfish" stormwater treatment units, particularly as they outlet into the City's drainage system.
- a. Will these units capture and treat the WQV (first 1" of rainfall)?
 - b. How will system performance be maintained over time, and what are the impacts to (and safeguards for) the City's stormwater system if maintenance of these units is deferred by the property owner?

- c. Are these systems compliant with the NH DES Stormwater Manual requirements?
- 30. Please provide an electronic version of the HydroCAD files for Engineering to review as part of subsequent submissions. Engineering reviews the files to understand and check modeling assumptions, infiltration rates, etc.
- 31. The Stormwater Management Plan should include a maintenance and operations plan, per Section 22.05 of the Site Plan Regulations. Please revise the stormwater management plan to meet this requirement.

General Comments

- 32. The print copies provided appear to have several text blocks that were printed as solid black rectangles on many sheets. This did not appear to be an issue in the electronic copies. Please make sure any future print copies do not have this issue.
- 33. Construction phasing shall consider and minimize impacts to neighboring properties on Langdon Avenue. The final approved plan sets should provide additional detail on how operations to the other properties that access through Langdon Avenue will maintain temporary access and minimize disruptions to their operations.
- 34. Please include turning movement templates showing that a fire truck can navigate around the full site without encroaching on any parking spaces or running over curbing.
- 35. Engineering does not agree with the concept of using the shoulder of South Main Street in lieu of a dedicated turn lane, as this may present a hazard to bike traffic relying on the shoulder to protect them from passing cars. We would like to have a further discussion with the Applicant about turn lane options, as well if this may create a need for additional pedestrian crossing safety measures as the turn lane would increase the size of the crossing over South Main Street.
- 36. The proposed buildings will have the following addresses. Please add these to the plan view within or adjacent to each building:
 - a. The 2-story commercial mixed used building having 9,000 SF (18,000 sf) will have the address of 14 Langdon Avenue.
 - b. The 4-story commercial mixed used building having 11,000 SF (44,000 sf) will have the address of 16 Langdon Avenue.
 - c. The westerly 3-story 12 unit building 4,500 SF (13,500 sf) will have the address of 18 Langdon Avenue.
 - d. The easterly 3-story 12 unit building 4,500 SF (13,500 sf) will have the address of 20 Langdon Avenue.
 - e. The westerly 3-story 36 unit building 12,300 SF (36,900 sf total) will have the address of 22 Langdon Avenue.

- f. The easterly 3-story 36 unit building 12,300 SF (36,900 sf total) will have the address of 24 Langdon Avenue.
 - g. The westerly 3-story 48 unit building 16,700 SF (50,100 sf total) will have the address of 26 Langdon Avenue.
 - h. The easterly 3-story 48 unit building 16,700 SF (50,100 sf total) will have the address of 28 Langdon Avenue.
 - i. The clubhouse 2,500 SF will have the address of 30 Langdon Avenue.
37. The plans prepared by Ed Wojcik should be revised to reflect different unit / apartment numbers:
- a. Sheet A-1: Please revise the 48-unit bldg. floor plans so that units 1 through 16 are 101 through 116 on the first floor; units 17 through 32 are 201 through 216 on the second floor; and 33 through 48 are 301 through 316 on the third floor.
 - b. Sheet A-3: Please revise the 36-unit bldg. floor plans so that units 1 through 12 are 101 through 112 on the first floor; units 13 through 24 are 201 through 212 on the second floor; and 25 through 36 are 301 through 312 on the third floor.
 - c. Sheet A-5: Please revise the 12-unit bldg. floor plans so that units 1 through 4 are 101 through 104 on the first floor; units 5 through 8 are 201 through 204 on the second floor; and 9 through 12 are 301 through 304 on the third floor.
38. The official E-911 address location (and mailing address if the tenants do not utilize a Post Office Box) will be a Langdon Avenue number as assigned above with a specific Unit Number, for example 22 Langdon Avenue, Unit 101; 22 Langdon Avenue, Unit 307; 28 Langdon Avenue, Unit 207, etc.
39. The plans prepared by Warren Street Architects may need to be revised to reflect different units in the 2-story and the 4-story commercial mixed buildings given the addresses of 14 Langdon Avenue and 16 Langdon Avenue, respectfully.
- a. As of now, Sheet A111 and Sheet A112 show the first floor through the fourth floor, but they do not show individual offices or units on each floor.
 - b. The individual offices or units should be labeled in a similar fashion as the residential buildings: 101 through 104, or however many units on the first floor; 201 through 204, or however many units on the second floor; 301 through 304, etc., on the third floor; and 401 through 404, etc., on the fourth floor.
40. Prior to final Engineering approval of the design plans, a fire protection engineer shall provide, on their letterhead, a document certifying that the new proposed water service line is adequately sized and designed for the proposed site conditions, including addressing whether domestic water is also tapped off of the same line.

State/Federal Permits

The project will require the following state and/or federal permit(s) associated with the site design:

- EPA Construction General Permit – Notice of Intent
- NHDES Alteration of Terrain Permit
- NHDES Sewer Connection Permit

A copy of the permit(s) should be submitted to the City once they are issued.

Post-Approval/Pre-Construction Items

The following items will need to occur prior to the start of construction (unless otherwise noted). Prior to engineering sign-off on the building permit, the applicant/contractor shall:

- a. Set up a pre-construction meeting with the Engineering Services Division to discuss construction requirements, site inspections, associated fees, schedules, etc. Any Engineering permits will not be authorized (unless explicitly stated otherwise) until final revised plans have been submitted and approved to the satisfaction of Planning and Engineering.
41. A Demolition Permit will be required from the Code Administration Division for removal of the existing building(s).
42. The following permit(s) will need to be obtained from the Engineering Services Division:
 - a. Driveway Permit
 - b. Encumbrance Permit (for work that will encumber the ROW, public sidewalks, and/or metered parking spaces)
 - c. Excavation Permit (for work within the ROW or on City easements)
 - d. Utility Connection Permits (sewer and water services; storm drain connections)
43. The contractor shall submit a Temporary Traffic Control Plan (TTCP) for all work in and adjacent to the City ROW that will require lane closures or occur adjacent to the edge of road. (submit to Engineering for review and approval a minimum of two weeks prior to the pre-construction meeting)
44. Establish a performance surety (letter of credit, or cash deposit) for site stabilization. The surety amount for this project has been set at \$135,000 based on a 13.25 ac disturbance area. The surety shall be established prior to scheduling the pre-construction meeting.
45. Establish a performance surety (bond, letter of credit, or cash deposit) for work within the right-of-way and proposed public improvements. An engineer's cost estimate, based on the current NHDOT weighted average unit prices, should be submitted a min. of two

weeks prior to scheduling the pre-construction meeting. The surety shall be established at least one week prior to the pre-construction meeting.

- a. Engineering can provide a template spreadsheet for calculating this surety upon request.
46. Advanced deposit for site construction inspection fees (initial deposit amount determined by Engineering based on the project schedule and estimated services, final inspection fee to be adjusted based on actual services rendered). A project schedule and itemized cost estimate should be submitted a minimum of two weeks prior to scheduling the pre-construction meeting for use in establishing the deposit amount. The deposit shall be submitted at least a week prior to the pre-construction meeting.
 - a. Please contact Engineering for a spreadsheet to estimate the initial fee deposit (this is only an estimate as the fee will be based on actual time spent by Engineering inspectors for this project).
 47. Water and Sewer Investment Fees will need to be paid (as part of the utility connection permit process).
 48. Retaining wall design drawings (stamped by a licensed structural engineer) should be submitted to Engineering for proposed retaining walls that are greater than 4 feet high. In addition, walls greater than 48 inches require a Building Permit from the Code Administration Office.
 49. Shop drawings/submittals should be submitted to Engineering for the proposed water, sewer, and drainage improvements, and for the proposed improvements within the ROW.
 50. Prior to the construction of any future site improvements the applicant/owner should consult the Planning Division to determine if Site Plan Approval will be required.
 51. Prior to issuance of a Certificate of Occupancy (CO), the contractor shall submit as-built drawings that are to the satisfaction of Engineering. A copy of the as-built drawing requirements can be provided upon request.



June 2, 2021

Ref: 52430.23

Ms. Beth Fenstermacher, PLA, LEED AP
City of Concord Assistant Planner
41 Green Street
Concord, NH 03301

Re: Traffic Engineer Peer Review
Proposed Mixed-Use Development – Langdon Avenue

Dear Ms. Fenstermacher,

Vanasse Hangen Brustlin, Inc. (VHB) has conducted a peer review of the May 2021 Traffic Impact Assessment prepared by Stephen G. Pernaw & Company, Inc. for a proposed mixed-use development to be located along the south side of Langdon Avenue east of South Main Street (NH Route 3A) in Concord, New Hampshire. The proposed build program consists of 192 apartment units in 6 buildings and 66,000 square feet of office space in 2 buildings. Access is proposed to be provided via two unsignalized driveways on Langdon Avenue, with the western driveway providing access to the residential component and the eastern driveway to provide access for the commercial component. VHB has reviewed the traffic study for consistency with standard engineering practice and methodologies, including City of Concord guidelines and requirements, as applicable. This peer review letter has been prepared to outline concerns and recommendations on the traffic study.

Introduction

The subject site is bordered by South Main Street to the north and Langdon Avenue to the east. These sections of South Main Street and Langdon Avenue are under City of Concord jurisdiction. Therefore, local review and approvals are expected to be required for the proposed mixed-use development project with respect to traffic. In accordance with Section 32.01 of the City of Concord's Site Plan Regulations, a traffic study is required for land development projects that are expected to generate more than 200 vehicle trips per day and more than 20 vehicle trips per hour.

As presented in Table 1 of the Traffic Impact Assessment, the proposed development is projected to generate 1,770 vehicles per weekday, 180 vehicles per hour during the weekday AM peak hour, and 162 vehicles per hour during the weekday PM peak hour. Therefore, the estimated trip generation for proposed development satisfies the City's requirement for the preparation of a traffic study (Site Plan Regulations, Chapter 5, Section 32.01). A meeting was held with the development team and City officials on April 12, 2021 to define the scope (parameters and methodologies) to be used within the traffic study.

Engineers | Scientists | Planners | Designers

2 Bedford Farms Drive
Suite 200
Bedford, New Hampshire 03110
P 603.391.3900
F 603.518.7495



Existing Conditions

Study Area

The traffic study evaluated the traffic impacts of the proposed development at the South Main Street and Langdon Avenue unsignalized intersection. Institute of Transportation Engineers (ITE) methodologies¹ and New Hampshire Department of Transportation (NHDOT) guidance² suggest that an intersection should be evaluated when site trips are projected to experience a noticeable increase in peak hour traffic volumes (i.e., ≥ 100 vehicles). The rationale is that an increase of 100 vehicles per hour could impact the vehicular operations on an intersection approach. A safety or capacity deficiency may require the study of a project's impacts at an intersection even if that intersection is projected to experience less than 100 peak hour site trips.

Comment 1: Based on the trip-generation and distribution projections detailed within the Traffic Impact Assessment and as reflected on the Site Generated Traffic Volumes network provided in the Appendix, the proposed development is estimated to increase traffic volumes on an intersection approach beyond the South Main Street and Langdon Avenue intersection by 66 vehicles per hour or less during the weekday AM and weekday PM peak hours. Therefore, the study area appears to be reasonable and consistent with the scope developed during the April 12, 2021 meeting.

Existing Traffic Volumes

The 2021 Existing traffic volumes were developed by collecting traffic counts in April 2021 during the weekday AM peak period (7-9 AM) and weekday PM peak period (3-6 PM).

Comment 2: VHB finds the traffic counts and the time periods to be acceptable.

Future Conditions

No-Build Traffic Volumes

In accordance with Sections 32.08.14 and 32.08.15 of the City of Concord's Site Plan Regulations, the impact of site-generated traffic within the study area is to be evaluated under opening year conditions and opening year plus 10 years conditions. As documented in the Traffic Impact Assessment, 2023 was used to represent opening year conditions and 2033 was used to reflect opening year plus 10 years conditions. Traffic volumes on the roadway network during these design horizons would include existing traffic, new traffic due to normal traffic growth, and traffic related to developments by others that are

¹ Institute of Transportation Engineers. Transportation Impact Analyses for Site Development: An ITE Proposed Recommended Practice. Washington, DC. 2010.

² Bollinger, Robert E. Inter-Department Communication. New Hampshire Department of Transportation, Bureau of Traffic. 17 Feb. 2010.



expected to be completed within these future conditions (i.e., background developments). The 2023 and 2033 No-Build traffic volumes were developed based on the following:

- A 10.0% seasonal adjustment factor was applied to the April 2021 traffic counts to represent peak-month traffic volumes.
- A 1.0% compounded annual growth rate was applied to the 2021 peak-month traffic volumes.
- A 21.0% and a 14% coronavirus disease 2019 (COVID-19) adjustment factors were applied to the weekday AM and weekday PM traffic volumes, respectively, to account for lower traffic volumes associated with the pandemic.

Comment 3: Traffic on a given roadway typically fluctuates throughout the year depending on the area and the type of roadway. An average of the seasonal factors from NHDOT Group 4 Averages (Urban Highways) between 2017 and 2019 was used to account for seasonal fluctuation in the April 2021 traffic counts. VHB finds this methodology acceptable in developing peak-month traffic volumes.

Comment 4: Based on a comparison of historical traffic volumes along South Main Street north of Maitland Street between 2016 and 2020, the Traffic Impact Assessment determined that traffic volumes have been increasing by approximately 0.9% annually. To provide a conservative (worse-case) analysis, the traffic study used a 1.0% compounded annual growth rate to account for background traffic increases. VHB finds this methodology acceptable.

Comment 5: Due to the COVID-19 pandemic, traffic volumes may not be representative of normal travel conditions on New Hampshire roadways. As documented in the traffic study, a comparison of 2018 pre-pandemic peak-month traffic volumes along South Main Street north of Maitland Street was made to 2020 peak-month traffic volumes. This evaluation determined that traffic volumes are 21.0% lower during the weekday AM peak hour and 14% lower during the weekday PM peak hour. As such, the future traffic volumes within the traffic study were upwardly adjusted accordingly to account for the pandemic influenced traffic patterns. VHB finds this methodology reasonable.

Build Traffic Volumes

Trip Generation

To estimate the volume of traffic to be generated by the proposed development, trip rates published in the ITE Trip Generation Manual were reviewed. Land Use Code 221 (Multifamily Housing [Mid-Rise]) was used for the proposed apartments and Land Use Code 710 General Office Building) for the proposed office space.

Comment 6: Based on a review of the March 2021 Comprehensive Development Plan prepared by Nobis Group (provided in the Appendix of the Traffic Impact Assessment), the 192 unit apartment development would be located within Land Unit 2, a 48,000 square office building would be located within Land Unit 3, and an 18,000 square foot office building



would be located within Land Unit 4. Since the two office buildings will be isolated and not related to each other (i.e., different tenants and separate parking areas), ITE methodologies suggest calculating trip-generation estimates for each of the office building independently.³ VHB finds the trip-generation methodologies for the apartment units and the office space to be acceptable.

Trip Distribution

As documented within the traffic study, the weekday AM and weekday PM peak hour site trips were distributed along the adjacent roadway network based on existing traffic patterns.

Comment 7: VHB finds this methodology to be acceptable.

Intersection Analyses

Capacity analyses were performed for the study area intersections with the 2021 Existing, 2023 and 2033 No-Build, and 2033 No-Build and Build traffic volumes during the weekday AM and weekday PM peak hours based on the concepts and procedures in the Highway Capacity Manual (HCM) 6th edition using the *Trafficware Synchro Software* computer program.

Comment 8: As shown on Table 3 of the Traffic Impact Assessment, the proposed development is shown to have a noticeable impact (i.e., increases of 10.0 seconds or more) on the Langdon Avenue approach to South Main Street during the weekday AM and weekday PM peak hours.⁴ These increases result in the degradation of the levels of service for the 2023 Build weekday AM peak hour (LOS C to LOS D), the 2033 Build weekday AM peak hour (LOS C to LOS E), and the 2033 Build weekday PM peak hour (LOS C to LOS D).

As detailed in Section 32.08.19 of the City of Concord's Site Plan Regulations, improvements are required to provide acceptable operating conditions (LOS D or better) within the study area. Since the Langdon Avenue westbound approach is shown to drop two service levels (from LOS C to LOS E) and result in a noticeable delay increase (19.7 seconds) during the 2033 Build weekday AM peak hour, the Applicant should coordinate with City of Concord officials in determining appropriate mitigation measures to offset the traffic impacts at this intersection (see Comment 9).

Auxiliary Turn Lane Analysis

In compliance with Section 32.08.16 of the City of Concord's Site Plan Regulations, City officials requested during the scoping meeting that the traffic study include an auxiliary lane warrant evaluation to be

³ Institute of Transportation Engineers. Trip Generation Manual, 10th ed. Washington, D.C. 2017.

⁴ 2023 weekday AM = 14.5 seconds, 2033 weekday AM = 19.7 seconds, 2033 weekday PM = 13.3 seconds.



conducted at the South Main Street and Langdon Avenue intersection.⁵ Accordingly, the traffic study describes that left-turn treatment is warranted along the South Main Street southbound approach, no right-turn treatment is needed along the South Main Street northbound approach, and a single-lane approach is adequate on the Langdon Avenue westbound approach. Although the South Main Street southbound approach meets the warrants for a left-turn lane, the traffic study states that “there is adequate distance between the double-yellow centerline and the edge of pavement on South Main Street for through vehicle to bypass any left-turning vehicles destined for Langdon Avenue.”

Comment 9: Based on preliminary measurements from aerial imagery, the South Main Street southbound approach to Langdon Avenue is approximately 19 feet wide between the centerline and the curb that includes an 11-foot wide travel lane and an 8-foot wide paved shoulder.⁶ The shoulder provides a clear zone between the southbound travel lane and the existing curb, sidewalk, utility pole, and fire hydrant located along the west side of South Main Street. In addition, the existing shoulder could be used for bicycle travel and on-street parking (there are no signs posted to restrict parking). The presence of the catch basins may be indicative of potential puddling in the area. As documented within NHDOT’s Policy Relating to Driveways and Access to the State Highway System, a typical by-pass shoulder would be between 10 and 12 feet in width with the appropriate tapers (Figure XIII: Typical By-Pass Shoulder).



⁵ Bonneson, James A. and Michael D. Fontaine. Evaluating Intersection Improvements: An Engineering Study Guide. National Cooperative Highway Research Program Report 457. Washington, DC: TRB, 2001.

⁶ Image is from Google Maps – Street View Images.



In the absence of constructing a South Main Street southbound left-turn lane, the Applicant should provide traffic engineering support that the 8 foot wide shoulder is adequate to accommodate the volume of existing and projected truck volumes along the South Main Street corridor and at Langdon Avenue to bypass southbound left turning trucks onto Langdon Avenue. Should such justification be unavailable or deemed unacceptable, the Applicant should work with City of Concord officials in designing and constructing a South Main Street southbound left-turn lane at Langdon Avenue or a standard by-pass shoulder with the appropriate dimensions and clear zones.

Elements of a Traffic Study

The specific requirements in the preparation of a traffic study are defined in Chapter 5, Section 32.08.6 of the City's Site Plan Regulations. In addition, the April 12, 2021 scoping meeting was held to identify any additional information that would be required to be provided within the Traffic Impact Assessment. The following information appears to have been omitted from the Traffic Impact Assessment and should be provided to the City of Concord for review.

Comment 10: As per Section 32.08.16 of the City of Concord's Site Plan Regulations, the traffic study should include supporting information on the number of parking spaces required and proposed for the mixed use development.

Comment 11: Based on Sections 32.08.6 and 32.08.16 of the City of Concord's Site Plan Regulations, the traffic study should include a sight distance analysis at the proposed site driveways and at the South Main Street intersection with Langdon Avenue. Although a statement was provided in the Traffic Impact Assessment that "[field] observations confirmed ample stopping sight distances (SSD) currently exist looking left and right from the Langdon Avenue approach to South Main Street," there seems to be a typographical error as this definition is referencing the conditions for intersection sight distances (ISD).⁷ In addition, the photographs provided in the Appendix of the Traffic Impact Statement show the sight lines associated with the ISD and not the SSD.

Therefore, the Applicant should conduct and document a sight distance evaluation that would compare the existing sight lines to the minimum requirements as established by the American Association of State Highway and Transportation Officials (AASHTO) for SSD and ISD. This sight distance assessment should be performed at the Langdon Avenue intersections with the proposed site driveways and with South Main Street.

⁷ The SSD is the minimum distance required for a vehicle traveling at a certain speed to safely stop before reaching a stationary object in its path (i.e., an approaching South Main Street motorist looking toward the site driveway). The ISD is provided on minor street approach to allow the drivers of stopped vehicles a sufficient view of the major roadway to decide when to enter the major roadway (i.e., from the Langdon Avenue approach looking to approaching South Main Street vehicles).



Comment 12: In accordance with Section 32.08.17 of the City of Concord's Site Plan Regulations, the traffic study should identify the increased daily travel volumes and percent on each roadway segment in the vicinity of the site development.

Findings

In general, the traffic study was developed in accordance with the City of Concord's Site Plan Regulations (Section 32.08: Traffic Impacts and Traffic Studies), NHDOT guidance, and standard traffic engineering practice. As detailed within this traffic peer review document, improvements should be considered at the South Main Street and Langdon Avenue intersection to offset the traffic impacts associated with the proposed development (i.e., increases in delays over 10.0 seconds and degradation in operations from LOS C to LOS E). In addition, there are some components of Chapter 5, Section 32.08.6 of the City's Site Plan Regulations that have been omitted and should be provided (parking, sight distance measurements, and daily traffic volumes on the adjacent roadway network).

Please do not hesitate to contact us if you have any questions or if we can be of any further assistance.

Sincerely,

Vanasse Hangen Brustlin, Inc.

A handwritten signature in blue ink that reads "Jason R. Plourde".

Jason R. Plourde, P.E., PTP

Transportation Systems Team Leader
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