



Department of Public Infrastructure

Jamie Ponte
Commissioner

CITY OF NEW BEDFORD
Jonathan F. Mitchell, Mayor

Water
Wastewater
Highways
Engineering
Cemeteries
Park Maintenance
Forestry
Energy

MEMORANDUM

To: City of New Bedford Planning Board

From: Jamie Ponte, Commissioner, D.P.I.

Date: January 4, 2019

RE: Cumberland Farms – Site Plan
Acushnet Avenue
Plot 130D Lots 117,247, 248, + 447

The Department of Public Infrastructure (DPI) has reviewed the proposed site plan referenced above and offers the following comments:

1. Driveway permits are subject to Traffic Commissions approval.
2. Permits for driveways, sidewalks, sewer and drainage, and water must be obtained from the DPI Engineering Division.
3. The proposed project contains four separate parcels which may have to be combined for zoning purposes.
4. Developer must contact DPI Engineering Division to assign a new address for the proposed building.
5. Driveways to be built in accordance with City of New Bedford regulations and with 4 feet transition curb on both sides.
6. Developer to replace existing wheelchair ramp at the intersection of Ashley Boulevard and Acushnet Avenue.
7. Install trees on grass area along Acushnet Avenue where possible, in accordance with City of New Bedford regulations.
8. Note on Sheets CFGO2.0 and CFGO3.0 referring to the assessor's map 130D must be revised. These lots have been combined. Please contact DPI for additional information.
9. All utilities to be installed in accordance with City of New Bedford standards.

10. Label all existing utilities with the correct size.
11. Any existing water and sewer services to be abandoned are to be capped in accordance with City of New Bedford regulations; water services at the main and sewer services at property line.
12. Developer must provide calculations for stormwater pipe sizing within the project area.
13. Drainage on the northern section of the site must go into the retention/ infiltration system to retain the first inch of runoff per City of New Bedford storm water regulations.
Confirm that the existing retention / infiltration system has the capacity to accept new site run off. All drainage design must meet City of New Bedford storm regulations.
14. Provide detail of the sewer service manhole over the existing 12 inch sewer main. The Engineer should be advised that this is an “over-under” system with the storm drain in the same trench and directly over the sewer.
15. Proposed 2 inch water service for the convenience store is tied into an existing 8 inch water main on an easement north of the site. Since this is a dead end main, the Developer must install a hydrant at the end of the main to routinely flush the main to mitigate water quality issues in the dead end main. Developer shall show proof of easement.
16. Proposed curb stop for the new 2 inch water service for the proposed car wash must be installed 1.5 feet from the granite curb.
17. Water meters to be installed at point of entrance to proposed building in accordance with City of New Bedford regulations.
18. All details must meet City of New Bedford standards.
19. DPI requires a new set of plans to be submitted for review if changes to the design occur.
20. DPI requires a final set of plans to be submitted that reflects all revisions made prior to the start of construction.
21. Developer and site contractor must schedule a pre-construction meeting with DPI prior to the start of construction.
22. Upon completion, Engineer must submit “As Built Drawings “prior to the Certificate of Occupancy being issued.
23. Attached is a copy of the peer review by CDM Smith Inc, of the report titled Cumberland Farms Traffic impact study – 2880 Acushnet Avenue New Bedford Massachusetts prepared by McMahan Associates, Inc. dated November 2018.

CC: Department of Inspectional Services
Environmental Stewardship
Farland Corp.

Attachement

CDM Smith Inc. peer review



260 West Exchange Street, Suite 300
Providence, Rhode Island 02903
tel: 401 751-5360

January 2, 2019

Mr. Jamie Ponte
Commissioner
Department of Public Infrastructure
1105 Shawmut Avenue
New Bedford, Massachusetts 02746

Subject: Draft Peer Review of 2880 Acushnet Avenue, New Bedford, Massachusetts

Dear Mr. Ponte:

In accordance with your request, we have undertaken a Peer Review of the Traffic Impact Study for the development of 2880 Acushnet Avenue in New Bedford. The current proposal includes the construction of a 5,275 square foot Cumberland Farms convenience market, five gasoline pumps (10 fueling positions), and a 2,640 square foot car wash. Access will be provided via two full access driveways on Acushnet Avenue, one north and one south of the signalized intersection of Acushnet Avenue at Ashley Boulevard (Route 18).

We have received a copy of the following documents from your office pertaining to our Peer Review:

- Cumberland Farms Traffic Impact Study – 2880 Acushnet Avenue, New Bedford, Massachusetts prepared by McMahon Associates, Inc dated November 2018
- Site Plan – 2880 Acushnet Avenue, New Bedford, Massachusetts prepared by Farland Corp dated November 7, 2018

Traffic Impact Study Methodology

The analysis and documentation submitted by the Applicant's traffic consultant (McMahon Associates, Inc.) are generally in accordance with accepted industry procedures and standards including the 2014 MassDOT Transportation Impact Assessment (TIA) Guidelines.

Peer Review

We have reviewed the Cumberland Farms Traffic Impact Study and Site Plan, and offer the following comments:



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Study Area

The study area presented in the Traffic Impact Study includes the adjacent signalized intersection of Acushnet Avenue at Ashley Boulevard (Route 18) and the proposed site driveways.

The study area should be expanded to include the unsignalized intersections of Acushnet Avenue at Belair Street and Acushnet Avenue at Bowles Street. These two intersections are located less than 100 feet from the proposed northern site driveway and may be impacted by the proposed driveway operations.

The study area should also be expanded to include the signalized intersection of Acushnet Avenue (Route 18) and Phillips Road. The signalized intersection is located approximately 500 feet north of the proposed northern site driveway. A review of the queue length at this intersection should be completed. Additionally, MassDOT TIA Guidelines Section 3, Part I C. states: "Intersections (to be assessed by approach) or roadway segments where site-generated trips increase the peak hour traffic volume by a) five (5) percent or more or b) by more than 100 vehicles per hour should be included in the study." As such, the approaches of this intersection should be reviewed to determine if they are increased by five (5) percent or more as a result of the proposed site generated trips.

Existing Conditions

The turning movement counts were conducted at the signalized intersection of Acushnet Avenue and Ashley Boulevard (Route 18) on Tuesday, April 10, 2018 from 7:00am to 9:00am and from 2:00pm to 6:00pm. Based on a review of the New Bedford public school calendar and list of federal holidays these counts were conducted on a "typical" weekday.

The applicant's traffic consultant should conduct turning movement counts at intersections added to the study area.

The MassDOT TIA Guidelines Section 3, Part II I. state the following requirements for transit service frequency: "Transit routes, stops, passenger loads (when available), frequency of service, and service operating hours shall be documented." Some of these requirements are not included in the "Multi-Modal Accommodations" section of the Traffic Impact Study. The "Multi-Modal Accommodations" section should also be updated to include a discussion of the pedestrian facilities within the study area, including crosswalks and pedestrian traffic signal equipment.

Crash Summary

When determining the number of crashes at each intersection, the intersection limits should extend to capture the back of the queue length. For example, the southbound intersection limits for the Acushnet Avenue at Ashley Boulevard (Route 18) intersection should be approximately 490 feet; please address.



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MassDOT TIA Guidelines Section 3 Part III, F. states the following requirements for safety analysis, "Calculation of the study area intersection(s) and segment(s) crash rates, as applicable, using the standard MassDOT Crash Rate Worksheet are required." Crash rate worksheets should be provided.

In addition, the crash records should be expanded to include the intersections added to the study area as noted above.

Additional Field Review – Critical Gap Acceptance

The critical gap acceptance time provided in the Highway Capacity Manual and used in the capacity analyses software is 6.9 seconds for a right-turn and 7.5 seconds for a left-turn onto a four-lane roadway. The applicant's traffic consultant conducted observations at Belair Street to determine the minimum gap drivers are willing to accept when making a left or right turn onto Acushnet Avenue. Based on this review, the critical gap acceptance for the capacity analysis for this proposed development was decreased to 6.5 seconds.

Please provide a narrative documenting the methodology, acceptance and rejection of gaps, and analysis for determination of the critical gap acceptance for this proposed development, to ensure conformance with industry standards.

Please provide a comparison of the capacity analyses results by approach with and without the modification to the critical gap acceptance time.

Future Conditions

A one (1) percent per year growth rate was used to project 2018 existing traffic volumes to 2025 traffic volumes. This growth rate appears reasonable for the proposed development. The traffic volume associated with the proposed 15 single-family-home development on Phillips Road was included as part of the background traffic growth.

Site Generated Traffic

In Table 2 in the Cumberland Farms Traffic Impact Study, the convenience/gas trips during the weekday morning peak hour should be 141 "out" and 281 "total", please revise.

Land Use Code (LUC) 948 Automatic Car Wash has a small sample size and is based on only one study; an alternative rate based on traffic counts from similar sites should be used. Additionally, LUC 948 only provides rates for the weekday afternoon peak hour, not the weekday morning peak hour.

In addition, actual data collection should be performed at the Cumberland Farms installation adjacent to the intersection of Shawmut Avenue and Hathaway Road to confirm the ITE LUC 960



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accurately represents Cumberland Farms super convenience center activity in New Bedford. The site generated traffic volume should be updated as needed.

Trip Distribution/Assignment

The overall north/south percentage distribution of arrival and departure of the site-generated traffic volumes appear reasonable.

It is unlikely, however that site generated traffic traveling southbound on Acushnet Avenue would by-pass the northern site driveway to turn left at the signalized intersection and then left into the southern site driveway. Similarly, it is unlikely that site generated traffic traveling northbound on Acushnet Avenue will bypass the southern site driveway to use the northern site driveway. It is also unlikely that site generated traffic exiting the site from the southern site driveway would turn right on to Acushnet Avenue and turn right at the signalized intersection to proceed northbound on Acushnet Avenue when the northern site driveway would avoid the signalized intersection. Similarly, it is unlikely that site generated traffic exiting the site from the northern site driveway would turn left on to Acushnet Avenue and turn left at the signalized intersection to proceed southbound on Acushnet Avenue when the southern site driveway would avoid the signalized intersection. Please justify the trip assignment methodology or revise accordingly.

Traffic Operations Analysis

The Weekday Afternoon Peak Hour LOS, Delay, and V/C summary table included in Appendix J of the Cumberland Farms Traffic Impact Study should include the critical movement for Acushnet Avenue at the site driveways; the delay and Level of Service for the vehicles turning left into the driveways.

Please provide the queue storage capacity for each approach and indicate when side streets are anticipated to be blocked by the queue lengths.

The traffic operations analysis should be expanded to include the intersections added to the study area as noted above.

Site Access and Circulation

The applicant should submit a plan depicting the fuel tanker truck and typical delivery vehicle(s) entering the site, circulating, and exiting the site, including where the fuel tanker will park when fueling and where the delivery vehicle(s) will park when unloading.

Parking spaces 9 and 10 are in close proximity to the dumpster, maneuverability into/out of these spaces may be difficult. The proposed use of the building is high-turnover where people will be



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parked for a brief period of time. The limited turnaround space in the parking area near the dumpsters can cause conflict between drivers and pedestrians. Please address.

It is anticipated that the southern site driveway will be blocked by the 50th and 95th percentile north-westbound queue during both the weekday morning and afternoon peak hours. This may prohibit vehicles from turning left into the southern site driveway and could cause vehicles to backup into the signalized intersection of Acushnet Avenue at Ashley Boulevard (Route 18), creating a potentially unsafe condition. Access management of this driveway should consider left turn prohibition.

The queue storage at the northern site driveway is at an awkward angle; modification to the exit area should consider inclusion of 10-foot wide left- and right- turn lanes or extension of the double yellow centerline such that exiting vehicles do not encroach on the entrance.

The northern site driveway is located between two closely spaced unsignalized intersections, Acushnet Avenue at Belair Street and Acushnet Avenue at Bowles Street. It is our understanding that the driveway locations were established to provide as much distance from the signalized intersection as possible; unfortunately shifting these access points may exacerbate operations at the unsignalized intersections. Please provide a revised design or justification for leaving the design as submitted.

There is a stop bar, but no stop sign shown at the north and south site driveways. Please add signs accordingly.

No parking signs should be placed along the curb lines in the southeastern parking areas (across from parking spaces 30 through 35 and 36 through 40) to prohibit parallel parking.

The New Bedford Zoning Regulations Appendix C Table of Parking And Loading Requirements require the inclusion of one loading space.

Intersection Sight Distance

To verify that sight distance measurements were in conformance with the latest edition of the AASHTO manual, "A Policy on Geometric Design of Highways and Streets" it is requested that intersection sight distance lines be illustrated on the Site Plan to confirm said sight lines will not require private property modifications such as tree trimming/removal. The plans do not currently illustrate the sight lines and they should be added.

Summary

Based on our review of the Cumberland Farms Traffic Impact Study, we find that the study has been prepared in general accordance with accepted industry standards and procedures. We do however





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recommend the proponent address the following issues due to site specific concerns related to safety and traffic operations in the vicinity of the proposed Cumberland Farms:

- Increase the study area to include Acushnet Avenue at Belair Street, Acushnet Avenue at Bowles Street, and Acushnet Avenue (Route 18) at Phillips Road
- Provide a description of the existing pedestrian facilities
- Update the intersection limits included in the crash summary
- Provide a narrative documenting the critical gap acceptance methodology
- Update the trip generation rates with actual field data and methodology
- Address site access and circulation concerns, and update the design as needed
- Illustrate the intersection sight distance on the site plan

Comments will be provided on the proposed mitigation based on the revised Cumberland Farms Traffic Impact Study and Site Plans once the comments above have been addressed.

We appreciate the opportunity to provide the City of New Bedford with these peer review services. Please do not hesitate to call if you have any questions relative to our review of the traffic-related issues associated with the proposed development.

Sincerely,

A handwritten signature in blue ink that reads 'Lisa Sherman'.

Lisa Sherman, PE, PTOE
Project Manager
CDM Smith Inc.

c: Manuel Silva, Deputy Commissioner
Shawn Syde, City Engineer
Rebecca Hall, Kevin Johnson, CDM Smith

