
THE LAW OFFICES OF BELLO & MORTON, LLC

184 Main Street Wareham, Massachusetts 02571 · 508-295-2522

November 8, 2021

Mr. Nazih Elkallassi, Chairman
Zoning Board of Appeals of Wareham
Memorial Town Hall
54 Marion Road
Wareham, Ma 02571

RE: Additional Submittal of Stormwater Peer Review and Initial Transportation-Engineering Peer Review for Opposition to 39-20 First Hartford Realty Corp- Special Permit, Variance, & Site Plan Review-3005/3013 Cranberry Hwy- Map 12, Lot(s) B & LC1- Reign Car Wash – Motor Vehicle Service

Dear Mr. Chairman:

As discussed at the October 13, 2021, Zoning Board of Appeals meeting, please find enclosed the following to be added to the record and reviewed by the Board:

- Exhibit A: Initial Transportation- Engineering Per Review Memorandum of 3005 and 2013 Cranberry Highway Massachusetts prepared by Kim Eric Hazarvartian, Principal of TEPP LLC
 - Cited in his letter are several videos we would ask the Board to watch as well.

- Exhibit B: Storm Water Peer Review of Reign Car Wash 3005/3013 Cranberry Highway prepared by Richard R. Riccio III, P.E. of Field Engineering Co., Inc
- Exhibit C: Photographs of the Site taken 10/27/2021, showing flooding and water issues.

In addition, we would like the opportunity to discuss these items at the next Zoning Board of Appeals meeting and take into consideration as they review the Variance, Special Permit for Use and Site Plan review for this project. Thank you for your time.

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Julian A. Morton". The signature is fluid and cursive, with a long horizontal stroke at the end.

JULIAN A. MORTON, ESQ.

Attorney for SoftTouch Car Wash, in opposition

cc. Mr. Charle L. Rowley, PE, PLS
Douglas Troyer, Esq. Attorney for the Applicant
Mr. Kenneth Buckland and Ms. Sonia Raposo, Wareham Planning Office

EXHIBIT A

MEMORANDUM

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Phone (603) 212-9133 and Fax (603) 226-4108
Email tepp@tepllc.com and Web www.tepllc.com

Ref: 1578
To: Nazih Elkallassi, Chairman
Town of Wareham Board of Appeals
Memorial Town Hall
54 Marion Road
Wareham, Massachusetts 02571
From: Kim Eric Hazarvartian, Ph.D., P.E., PTOE
Principal
keh@tepllc.com
Subject: Initial Transportation-Engineering Peer Review
3005 and 3013 Cranberry Highway
Wareham, Massachusetts
Date: November 8, 2021

**INTRODUCTION**

Soft Touch Car Wash has retained TEPP LLC to providing this initial transportation-engineering peer review on the subject matter. TEPP LLC is still in the process of reviewing the application file and may have additional, supplements, or revised comments in the near future.

EXPERT QUALIFICATIONS

Kim Eric Hazarvartian is principal engineer with TEPP LLC. Hazarvartian specializes in transportation impacts of land developments, traffic operations and traffic safety, accident and litigation support. He has consulting, academic, or government-sector experience since 1981 in these and other areas.

Hazarvartian is a licensed Professional Engineer in the Commonwealth of Massachusetts and a certified Professional Traffic Operations Engineer. He holds a Bachelor of Science in Civil Engineering from the University of Kansas, a Master of Science in Civil Engineering from the University of Kansas, and a Doctor of Philosophy in Civil Engineering, specializing in transportation, from the University of Massachusetts at Amherst.

Hazarvartian has served as International Director for Northeastern District (District 1) of the Institute of Transportation Engineers (ITE) as well as Chairman of ITE District 1, President of the ITE New England Section and President of the ITE New Hampshire Chapter. He is also affiliated with the American Society of Civil Engineers, Transportation Research Board, Society of

American Military Engineers, Chi Epsilon national civil engineering honor society and Sigma Xi scientific research society.

TRIP GENERATION

VHB states:

Based on communications with the Proponent, it is expected that the car wash will generate 100 trips (50 entering, 50 exiting) in the peak hours. For comparison, trip generation was also estimated using trip generation rates published in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition for land use code (LUC) 948, Automated Car Wash. The ITE trip generation estimates were much lower at 78 trips (39 entering, 39 exiting) in the weekday evening peak hour and 41 trips (19 entering, 22 exiting) in the Saturday midday peak hour.¹

ITE, *Trip Generation Handbook*, 3rd Edition, suggests collecting local data when the "data plot has only one or two data points (and preferably, when five or fewer)."² ITE, *Trip Generation Manual*, 10th Edition, shows three data points (data collected at three car-wash sites) for the weekday PM-street-peak hour and one data point for the Saturday site-peak hour.³ TEPP LLC notes that thousands of automated car washes operate in the United States.

ITE, *Trip Generation Handbook*, suggests collecting local data when the "weighted standard deviation for the average rate is greater than 55 percent of the average rate." ITE, *Trip Generation Manual*, does not show a weighted standard deviation for with Saturday site-peak hour.⁴

ITE, *Trip Generation Manual*, shows the following calculated trip generation for an automated care wash (land use 948) with a floor area of 6,830 square feet: 208 vehicle-trips comprised of 104 in and 104 out for the Saturday site-peak hour.⁵ ITE, *Trip Generation Handbook*, suggests collecting local data when considering this calculation.

ITE, *Trip Generation Manual*, states that the "sites were surveyed in the 1990s and 2000s in New Jersey, New York, and Washington."⁶ The car wash is being proposed in 2021, and it also includes about 20 free vacuum-cleaner stations, which could potentially attract additional traffic.

¹ VHB, Memorandum, Proposed Car Wash, Wareham, Massachusetts (Watertown, Massachusetts), page 7.

² ITE, *Trip Generation Handbook*, 3rd Edition (Washington DC, September 2017), page 26.

³ ITE, *Trip Generation Manual*, 10th Edition (Washington, DC, September 2017), Volume 2, Data, Services (Land Uses 900-999), pages 385 and 386.

⁴ ITE, *Trip Generation Manual*, Volume 2, Data, Services (Land Uses 900-999), page 386.

⁵ ITE, *Trip Generation Manual*, Volume 2, Data, Services (Land Uses 900-999), page 384.

⁶ ITE, *Trip Generation Manual*, Volume 2, Data, Services (Land Uses 900-999), page 381.

Tunnel washes are stated to have the potential to process 217 cars during an hour, 1,500 cars in a day, and 50,000 cars in a month.⁷ 217 cars processed during an hour would be comprised of 217 cars in plus 217 cars out, for a total of 434 vehicle-trips.

TEPP LLC comments that significant underestimation of trip generation could invalidate traffic-impact analysis.

SITE ACCESS

The proposed site plan for 3005 and 3013 Cranberry Highway shows a driveway at the extreme eastern limit of its frontage along Cranberry Highway.

3015 Cranberry Highway is immediately east of 3005 and 3013 Cranberry Highway. 3015 Cranberry Highway includes a KFC/Taco Bell fast-food restaurant. 3015 Cranberry Highway has its driveway near the western limit of its frontage.

The result is that the driveways for the two sites are in very close proximity to one another. This is not recommended to due to inherent traffic conflicts and safety concerns. Vehicles will be turning and accelerating out of 3005 and 3013 Cranberry Highway at the same location where vehicles will be decelerating and turning into 3015 Cranberry Highway. The proximity of the signalized intersection and U-turn facility along Cranberry Highway to the west adds complexity.

The applicant should also address the likelihood of vehicles exiting the car wash tracking and water and causing icing that would exacerbate the conditions described above.

TEPP LLC comments that this segment of Cranberry Highway has been subject to flooding in the past. Appropriate mitigation of such flooding, relative to the Cranberry Highway reconstruction projects and the proposed site plan, is important to adequate traffic operations and safety during weather events.

PARKING

The applicant should clearly differentiate between parking spaces and vacuum spaces. The applicant should also confirm that the number of dedicated parking spaces, not vacuum spaces, will appropriately provide for parking demand.

⁷<https://www.youtube.com/watch?v=grard7HzClQ>, <https://www.youtube.com/watch?v=XsmziJtrxsI>, and <https://www.youtube.com/watch?v=K11oLYMWC90>.

EXHIBIT B

November 8, 2021
Project No. 2440

Nazih Elkallassi, Chairman
Town of Wareham Board of Appeals
Memorial Town Hall
54 Marion Road
Wareham, MA 02571

Subject: **Stormwater Peer Review**
Reign Car Wash
3005/3013 Cranberry Highway
Wareham, Massachusetts

Dear Mr. Elkallassi,

At the request of our client, Mr. Steven MacDonald, we have reviewed the stormwater management system design and stormwater report for compliance with applicable Rules and Regulations as well as the Massachusetts Stormwater Handbook. We have also reviewed the meeting tapes of the presentations to date as well as correspondence between the applicant's engineer and the Town of Wareham's peer review consultant. As you are aware, the major components of the stormwater management system include three infiltration basins that have been designed to retain and infiltrate stormwater runoff back into the underlying soils in order to reduce the rate of runoff of stormwater from the property in the subject storm events.

Following review of the plans and supporting calculations we offer the following comments related to the stormwater management system design that should be considered in the review and approval of the project:

1. It is our understanding that the applicant has performed test pits in the areas being proposed for infiltration basins on the project site. The Massachusetts Stormwater Handbook recommends a minimum of three soil samples/tests in each infiltration basin to confirm infiltrative capacity and groundwater conditions beneath each basin. This does not appear to have been done in Infiltration Basin 1 and 3. It was also mentioned in the documentation provided that there was oxidation color, which may be an indication of seasonal high groundwater, in one of the test pits at elevation 7.5, but that this wasn't consistent with the other test pits so it was disregarded as an indication of seasonal high groundwater. The Town may wish to have a representative witness test pits to confirm the groundwater determinations performed by the applicant.
2. Regardless of the final determinations of seasonal high groundwater on the site, in accordance the Massachusetts Stormwater Handbook, a mounding analysis is required when the vertical separation from the bottom of an exfiltration system to seasonal high groundwater is less than four (4) feet and the recharge system is proposed to attenuate the peak discharge from a 10-year or higher 24-hour storm.
3. Infiltration basins do not provide a minimum of one foot of freeboard in the 100-year storm event as recommended in the Massachusetts Stormwater Handbook.
4. The Massachusetts Stormwater Handbook recommends a minimum 15' wide access bench around infiltration basins to facility maintenance of the basin. This does not appear to have been provided on any of the basins. Additionally, it appears that access for maintenance to the southerly side of infiltration basin 3 would require a permanent access easement from the adjacent property owner as encroachment onto the adjacent property would be likely.
5. The Massachusetts Stormwater Handbook recommends that the side slopes of the infiltration basins be no steeper than 3:1 to allow for proper stabilization, ease of maintenance and better public safety. None of the infiltration basins are designed with side slopes that meet this requirement.
6. Infiltration Basin 1 has an overflow spillway that will direct runoff towards Cranberry Highway. According to the calculations, this overflow spillway will be triggered in all storm events other than the 2-year storm. Applicant should consult with MassDOT to determine if this is acceptable or modify the design as necessary.
7. Based on the latest grading plan available for review, it would appear that a portion of the runoff from the site driveway will flow directly towards Cranberry Highway. In our experience permitting projects with MassDOT, this would not be permitted and a trench drain or additional grading would be necessary to intercept any runoff leaving the site.

8. Surface runoff from the parking areas and areas where the vacuum stations are proposed will flow directly to a sediment forebay in advance of the infiltration basins which will consist of crushed stone bottoms. Given the proposed use of the property as a car wash with numerous vehicles being parked outside and entering and exiting the site, there would be greater potential for spills of oils or other hazardous materials onto the pavement which could directly enter the groundwater without any potential for containment in the proposed stormwater management system.

The Massachusetts Stormwater Management Handbook recommends that project proponents design pretreatment BMPs to pretreat runoff before stormwater reaches the infiltration basin. For Critical Areas, land uses with potentially higher pollutant loads, and soils with rapid infiltration rates (greater than 2.4 inches/hour), pretreatment must remove at least 44% of the TSS. This site has soils with rapid infiltration rates and the use could be considered a land use with potentially higher pollutant loads, therefore the proponent should be providing a minimum of 44% TSS Removal prior to discharge to the infiltration basins. This is not accomplished with solely the sediment forebays being provided.

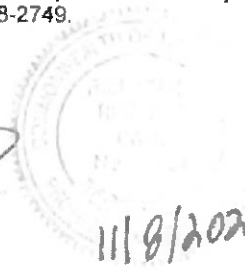
Appropriate TSS Removal is also critical to the functionality of the infiltration basins with regards to flood control. With an increased TSS load into the infiltration basins, there will be greater opportunity for the suspended solids to "blind" the soils at the bottom of the basins, minimizing the potential for infiltration into the underlying sandy soils. The infiltration into the underlying soils is the main function of the basins for flood control and if this function is impaired, on-site (and potentially off-site) flooding could occur. In an area with known flooding concerns, the functionality of these infiltration basins is critical and every measure should be taken to maintain their continued functionality, including maximum pre-treatment of the runoff prior to discharge.

9. Two of the three infiltration basins are not equipped with an emergency overflow spillway and none of the basins include a drawdown device to allow draining of the basin for maintenance as necessary. Given the minimal amount of pre-treatment currently proposed, frequent maintenance of the bottom of each infiltration basin will be necessary to keep them functioning properly.
10. No provisions for snow storage/snow removal appear on the site plans. No snow should be plowed directly into the areas designated for stormwater management.
11. A portion of the stormwater management system relies on an off-site drainage system. Has the owner of the off-site drainage system signed off on the application as a property owner? This feature is critical to the design and functionality of the stormwater management system and authorization from the adjacent property owner should be provided during the site plan review process. Maintenance of the off-site drainage system should be included in the operation and maintenance plan for this project to ensure its continued functionality.

It is our opinion that the comments discussed above should be resolved prior to approval of the project. If you would like us to review further revisions to the plans or have any questions on our comments, please feel free to contact me at our Mattapoisett Office at (508) 758-2749.

Very truly yours,
Field Engineering Co., Inc.


Richard R. Riccio III, P.E.
Project Manager


11/8/2021

CC: Charles L. Rowley, PE, PLS
Attorney Jillian Morton

EXHIBIT C





