

MEMORANDUM

DATE: June 11, 2021

TO: Ms. Jean M. Bubon, AICP
Sturbridge Town Planner

Rebecca Gendreau
Conservation Agent

CC: file

FROM: John P. Shevlin, P.E.

RE: **Definitive Subdivision Plan Submittal &
Notice of Intent Application
Fiske Hill Estate-REVISED SUBMISSION
30 Main Street/20 Fiske Hill Road
Sturbridge, Massachusetts
(Pare Project No. 21001.00)**

PROJECT DESCRIPTION

Pare Corporation (Pare) has been provided responses to our January 14, 2021, review letter pertaining to a Definitive Subdivision Plan Submittal & Notice of Intent Application for Fiske Hill East Realty Trust for the construction of a five-lot mixed use (residential and commercial) cul-de-sac subdivision on the site located at 30 Main Street and 20 Fiske Hill Road. This review is being performed on behalf of the Planning Board ("Board") and the Conservation Commission. As part of the response, Pare has been provided the following for review:

Pare has been provided the following information for review:

- Pare Corporation 1/14/21 Peer Review Response Letter, dated May 27, 2021 prepared by McClure Engineering, Inc.
- EcoTec, Inc.'s 1/28/21 Preliminary Peer Review Response Letter, dated May 27, 2021 prepared by McClure Engineering, Inc.
- Definitive Subdivision Plan "Fiske Hill East" – 30 Main Street & 20 Fiske Hill Road, Sturbridge, Massachusetts owned by: Fiske Hill Realty Trust – 97 Arnold Road, Fiskdale, MA 01518. Plan date November 11, 2020 with a latest revision date of May 28, 2021. Plans prepared by McClure Engineering.
- Stormwater Management Report dated November 11, 2020 with a latest revision date of May 27, 2021 from McClure Engineering, Inc.
- Traffic Impact Study dated August 2020 (no revision date) by AK Associates





Pare offers the following comments pertaining to the review of this submission and our site review.

Traffic Impact Study, dated August 2020 (no revision date):

The project consists of the development of a parcel of land consisting of five lots totaling 134+/- acres to construct a multi-use development.

- **New Comment: Please put revision date on report for clarification of the latest documents.**

1. *Project Description*- There is a description of the access to driveways, parking, and garages, the 40'ROW and 20' paved road? It appears this description is from the previous study for the site.

Applicant responded that the description describes driveway, parking, garages, 40' ROW and 20' paved road which is related to the future potential Senior Housing Community Development of lot 3. This is confusing. For the project description the applicant should provide a description that describes the overall development and the access road into the site. The description should be similar to Section I.C in the Stormwater Management Report. What has been provided is not indicated on the plans.

2. *Project Description*- States emergency egress/access is proposed through an existing access easement granted from Southbridge. Please clarify-other documentation states "the roadway is not proposed to loop out to Fiske Hill Road in an effort to protect the historic and scenic qualities of Fiske Hill Road, even though by doing so it would eliminate the need for a waiver for the proposed length..." No other documents indicate emergency access/egress although it should be considered/discussed. Please clarify.

Applicant has verified that the emergency egress/access will be proposed through Lot 3 via a gated 12' wide gravel access road to Idlewood Street in Southbridge and this will need to be approved by the Sturbridge and Southbridge Planning Boards during the permitting phase of Lot 3. I believe Sturbridge is in concurrence. I would assume that if Southbridge has granted easement they are too and that the process through the Planning Board is a formality.

3. *Figure 1*- Please revise title for the figure.

Revised as noted

4. *Study Area Roadway Network* – Applicant has stated that the study area was determined in consultation with the MassDOT District 3 Traffic Engineer.

Applicant has stated that study area was determined through coordination with MassDOT in 2007. I assume the study area would not change. No further action is necessary.

5. *Traffic Volumes*- Due to COVID-19 pandemic, counts from 2007 were used. MassDOT Growth rates were used to expand traffic to 2020 conditions. The growth rates used were the Average Annual Growth Rate factor provided by MassDOT Data Management System. The average growth rate based on the method is .0034/year or 0.0442 over a 13-year period.

The applicant also provided counts from a nearby count station for the years 2013 to 2019. The yearly fluctuations in those volumes are :



- 2013-2014 +.055/year
- 2014-2015 +.011/year
- 2015-2016 +.0244/year
- 2016-2017 +.011/year
- 2017-2018 -.004/year
- 2018-2019 --.08/year

It appears that these numbers are very inconsistent. If you average the volumes a 0.0029/year factor is calculated, which is close to the Annual growth factor being used. The factor adjustment is acceptable.

Also, seasonal factors were also applied that are in conformance with MassDOT standards and are acceptable.

Truck percentages were provided from the count station. Were trucks counted as part of the applicants turning movement counts for comparison. Can actual count data performed by applicant be provided with the report.

Applicant stated that truck percentages were from count station. No other feedback is necessary from these comments. The adjusted traffic volumes provided are acceptable.

6. *Sight distances* – Sight distances are typically based on a speed study and the 85th percentile speed. The applicant uses the posted speed limit. Based on the sight distances available at the proposed driveway, even using the 85th percentile speed, the sight line measurements will exceed the design speed.

No further action is necessary.

7. *Accidents*- Crash data was obtained from the MassDOT Crash Data Base. Based on the number of crashes summarized in the analysis, there does not appear to be a history of crashes at the Main Street/Fisk Hill Road intersection or the Main Street/Wallace Road intersection.

No further action was necessary.

8. *Site Generated Traffic* – Trips were generated using the ITE Trip Generation Manual 10th edition. The land uses and the trips projected for the daily trips, the weekday a.m. peak and p.m. peak and Saturday peak, appear accurate. All three peak periods were evaluated.

No further action was necessary.

9. *Trip Distribution and Assignment*- The trip distribution was based on existing traffic patterns. The distribution of traffic provided in Figure 3 is accurate.

No further action was necessary.

10. *Site Access and Circulation* – The proposed roadway width is 24 feet with a 50-foot right-of-way. Based on the descriptions within the Subdivision Regulations, the roadway should be classified as a Major Street and the right-of-way width should be 60 feet and the roadway pavement width should be 32 feet. The narrower right-of-way and travel way is allowed if it is determined that the result will be the preservation of trees and other vegetation and will be consistent with the location and character of the subdivision. The applicant is requesting a waiver to preserve vegetation and minimize the total proposed impervious area on site, both of which make for less surface water



runoff and encourages a less intrusive stormwater management system design. Based on the number of trips proposed to generated, the speeds of vehicles anticipated and the restrictions of any parking on the road, Pare is in agreement with the 24 foot width. With this width, however, and the proposed uses, the addition of an emergency access road should be discussed and considered to be included in the design.

It is stated that the access driveways pavement width is 20'. Where is this on plans? Stated that each unit will have off-street parking for two vehicles which will eliminate on-street parking. Emergency access/egress is described again. Is this confirmed. Please clarify?

The road width has been revised to 28' as requested by the Planning Board. The right-of-way width has been increased to 52' as to allow for 12" of buffer between the back of the proposed sidewalk and the edge of the right-of-way. The supporting design calculations have been revised to reflect the new design layout.

The portion of the description which describes driveways, parking, garages, 40' ROW, and 20' paved road is related to the future potential Senior Housing Community Development which is not shown on the plans or part of this review.

As stated in Comment 2 above, emergency egress/access will be proposed through the future Senior Housing Community development of Lot 3, which would provide emergency access via a gated 12' wide gravel access road to Idlewood Street in Southbridge. This access will need to be approved by the Sturbridge and Southbridge Planning Boards during the permitting phase of Lot 3.

11. *Traffic Operations*- Applicant reviewed existing (2020) conditions and Future (2027) No-build and Build conditions.

No further action is necessary.

Did the applicant consider any future development in the adjoining Town that may impact the volumes?

Applicant has responded that future developments in both Sturbridge and Southbridge were considered. None are shown. It is assumed that no significant developments were identified, and that future development/growth is included in the growth factor. Please confirm.

Revise Table 4. Some of the column headers should be revised for example Existing Conditions Saturday Peak should be 'SB' not '0.04' and Main Street at Wallace Road for No-Build and Build conditions should be 'NB' not 'SB'.

Table 4 has been revised as noted. No further action is necessary.

For the Main Street at Fiske Hill Road Saturday Peak No-Build Condition the Southbound Movement should be LOS B not LOS C.

Revised as noted. No further action is necessary.

For Future No-Build Conditions, a couple of the movements (Main Street at Fisk Hill Road Saturday Peak Southbound Movement reduced from LOB B to LOS C and Main Street at Wallace Road PM Peak and Saturday Peak reduce from LOS C to LOS D). Even with the reduction, the LOS D is still considered acceptable and the increase in delays is minor.



No further action is necessary.

When comparing the No Build 2027 to the Build 2027, the only reduction in LOS is for the Main Street at Fiske Hill Road Saturday Peak Southbound movement which reduces from LOS B to LOS C. As stated above, LOS C is still an acceptable LOS.

No further action is necessary.

Please review Figure 5. The traffic volume heading southbound at the Fiske Hill Road/Main Street intersection is 639 vehicles per hour (94+545), while at the proposed site entrance the volume is reduced to 570 vph (489+81). That is a reduction is 69 vehicles per hour (11% of the volume) - please justify. Likewise, northbound, just north of site, the volumes are 430 vph but at the Fisk Hill Road/Main Street intersection the northbound approach has 497 vph (13%). Please review all of these volumes and the analysis.

After further review of the volumes and the number of businesses and access to the roadways, Pare is in acceptance of the volumes provided. No further action is necessary.

The results of the analysis provided for the proposed site roadway with 2 lanes indicates that the intersection operates at LOS C during the AM Peak Hour, and LOS D during the PM and Saturday Peak Hour. With the two lanes exiting and the sight distance, the intersection should operate satisfactorily. Please verify after reviewing and responding to previous comment that the numbers and the analysis is accurate.

Based on coordination with MassDOT, the exit from the site has been revised to a single southbound lane at the intersection with Main Street. MassDOT has concerns with sight lines with a two-lane exit. MassDOT reviewed the traffic analysis provided to them and found that with one lane the intersection will operate at an acceptable level. The analysis shows a maximum queue length of 72' (app. 4 cars) on the driveway approach, which is felt to be typical for a non-signalized intersection.

Pare requested in Comment 13 below that the applicant review striping on Main Street in the area of the proposed site driveway and modify as necessary. MassDOT also requested that a left-turn lane warrant be reviewed for the roadway from Main Street. Based on counts, the volumes exceed the left-turn lane warrants of the MassDOT Project Development and Design Guide. Through consultation with MassDOT, a left turn lane into the site has proposed. Slight widening of the roadway pavement will be necessary.

12. *Findings:* The applicant states that the intersection of Main Street and the driveway will operate at LOS 'B' with two lanes exiting. The analysis indicates that the intersection will operate at LOS C during the AM Peak, LOS D during the PM Peak and LOS D during the Saturday Peak. Please verify.

See response No. 11 above.

13. *Conclusions and Recommendations:* Pare is in agreement that vegetation and no addition of any features such as signage or landscaping should be installed at the site driveway that would impact the sight lines.

No response necessary.

Pare is in agreement that a two-lane exit should be implemented to improve the LOS at the intersection.



See comment 11 above.

The applicant should review striping on Main Street in the area of the proposed site driveway and modify as necessary.

See comment 11 above.

STORMWATER MANAGEMENT REPORT

1. *Introduction*- The applicant does a good job with the Scope of Analysis, the Site Description, and the Proposed Conditions.

The proposed conditions have been revised with the new roadway section. No further action is necessary.

2. *Hydrologic Analysis* – The information and analyses performed pertaining to this section are complete. The results of the analyses indicates a decrease in post peak rate runoff at all five analysis points for the 2, 10, 25 and 110-year, 24-hour storm event. Analysis provided is acceptable.

With the new layout, the stormwater design still results in a decrease in the peak rate runoff at the five analysis points. Also, the design of the basin exceeds the volume necessary for a 100-year storm event.

3. *Stormwater Standards* –
 - *Standard 1-Computations to Show that Discharge Does not Cause Scour or Erosion*- Met. Velocities at outfalls are within acceptable range to prevent scour. Riprap pads are provided at outfalls. Please provide a detail on plans for the pads detailing size of pad and stone size.

No further action is necessary.

- *Standard 2- Peak Rate Attenuation* – Met. Post-development discharge rates do not exceed pre-development peak discharge rates.

No further action is necessary.

- *Standard 3 – Recharge*- This standard is met with the proposed basin.

No further action is necessary.

- *Standard 4 – Water Quality*- Met. The applicant has met this standard based on the water quality volume analysis, the TSS removal calculations and the proposed “Long Term Operation and Maintenance Plan provided.

No further action is necessary.

Standard 5 – Land Uses with Higher Pollutant Loads - NA. Pare agrees that the proposed land use is not a High Potential Pollutant Load development.

No further action is necessary.



- *Standard 6 – Critical Areas*- NA. Pare agrees that this development will not discharge to a Zone II or Interim Wellhead Protection Area of a public water supply and storm water will not discharge to any other critical area.

No further action is necessary.

- *Standard 7 – Redevelopment* - Pare is in concurrence that the site is not considered a redevelopment and that all of the pertinent standards will be met.

No further action is necessary.

- *Standard 8 – Construction Period Controls*- Met. A plan for inspections, the need for an EPA-NPDES Stormwater General Permit and an Erosion and Sediment Control Plan have been provided or identified and are found to be acceptable.

No further action is necessary.

Standard 9- Operations and Maintenance Plan- Met. A plan has been provided along with an O&M Compliance Statement and Inspection & Maintenance Reports. All are acceptable.

No further action is necessary.

- *Standard 10- Illicit Discharges to Drainage System* – Met. This standard is addressed in the O&M Plan.

No further action is necessary.

MISCELLANEOUS COMMENTS

1. The basin has been redesigned so it will not be within the No Disturbance Line and minimized in wetland buffer area.

With the new design, the basin has been revised and redesigned to accommodate the new roadway design. The basin will be constructed outside the 25 foot No Disturb Line but within the 50 foot No Build Line. The design has been revised with the addition of a small raingarden for additional water quality treatment per the request of the Conservation Agent.

2. Have areas been identified for temporary stockpiles, spoil areas, and temporary drainage.

Plans have been revised on Sheet C-6 to show temporary stockpiles, spoil areas and temporary drainage.

3. Cul-de-sac is proposed to be 1,030 linear feet and it is stated that it is necessary to create frontage within the Rural district. The 1,030 foot cul-de-sac will require a waiver from the 500 foot length allowed. It is understood that this waiver has been approved for other subdivisions in Town. Based on the proposed uses, this length is not considered an issue if an emergency access is provided for the Senior Housing Community from Crestwood Drive in Southbridge and if the emergency rescue departments approve.

The waiver for the length has been approved and the emergency access road as part of the development on Lot 3 is being planned.



4. Has the Water Department weighed in on the extension of the water main and the dead-end being proposed?

After further coordination with the Water Department, the plans have been revised to loop the line through to Fiske Hill Road.

5. Applicant has provided a 3/16 inch per foot cross-slope for the sidewalks. The subdivision regulations call for a 3/8 inch per foot cross slope. Based on ADA requirements, the plans as shown are acceptable.

Plans have been revised as noted.

6. Curbing being provided is bituminous concrete. Has this been reviewed and approved by the Department of Public Works?

It is our understanding that the applicant has coordinated with the DPW and Cape Cod Berms have been approved within the site. In front of the site, MassDOT is requiring vertical granite curbing. Plans have been revised accordingly.

7. Per the regulations, if only one sidewalk is to be installed, hydrants should be on the opposite side of the street. There are three hydrants being installed. The middle one is in an area where there is only one sidewalk and it is being placed on the side with the sidewalk. The other hydrants where there are sidewalks are proposed on the same side as the middle one. This location appears to be acceptable but should be confirmed with the Water Department.

Sidewalks and hydrants have been revised. No further action is necessary.

8. On the Typical Water Main Trench Section, the bed is labelled as 6 inches. Subdivision regulations require 12 inches.

Detail has been revised accordingly. No further action is necessary.

9. Is there a reason as to why the sidewalks are not continued along both sides of the roadways? With proposed uses in the development, it may be advantageous to continue them on both sides to eliminate road crossings. Please clarify.

Sidewalks have been revised to be on both sides of the roadway. No further action is necessary.

10. Subdivision regulations (Section 13, A. 2) state that the sidewalks in commercial and industrial areas are to be 6 feet wide. Four-foot sidewalks are proposed. A waiver should be requested for this.

Sidewalks are proposed to be 6 feet wide. No further action is necessary.

11. Four-by-four-inch welded wire mesh or equal is to be installed at driveways. Plans call for 6x6xW3xW3.

Detail has been revised. No further action is necessary.

12. Waivers:



Applicant is requesting the following waivers:

- The plan should show individual trees of 10-inch diameter or greater within 50 feet of the proposed right-of-way. There are many trees greater than 10" which would make difficult to identify on the plans. The applicant has stated that they have tried to minimize impacting vegetation and have supplemented areas where trees are being removed with new vegetation. Pare concurs with this request.
- Scale of Index Sheet is acceptable to Pare.
- Centerline radius (175') is less than what is required (200'). Pare takes no exception with layout.
- Right-of-way width and roadway width are described above.
- Cul-de-sac length is described above.
- Pipe cover on drainage pipes at CB1 and CB2 in the vicinity of Main Street are 24" where 36" is required. This was done to capture runoff from going to Main Street. Because of grades we find this request acceptable.
- Proposed water line is 6". This matches existing water line on Main Street.
- Sidewalks are discussed above.

As stated by the applicant all waivers have been approved except for the road width of 24 feet. A 28-foot-wide roadway has been approved for a waiver and the center line radius has been revised to eliminate the need of a waiver. No further action is necessary.

We are ready and available to discuss these comments at the next Planning Board meeting. In the meantime, if you have any questions or comments, please feel free to reach out to me.