

November 10, 2017

Amanda L. Stearns
Land Use Policy Specialist
Town of Falmouth
271 Falmouth Road
Falmouth, ME 04105

Subject: Homestead Farms Contract Zone Traffic Peer Review

Dear Amanda:

In accord with your request, T.Y. Lin International (TYLI) has conducted a traffic engineering peer review of the proposed Homestead Farms Contract Zone project located off Route 100. The peer review was based upon the following materials:

- Traffic Impact Study, Homestead Farms Subdivision, Sebago Technics, September 22, 2017
- Concept Sketch of the Homestead Farms Subdivision, Sebago Technics, October 6, 2017
- Route 100/26 Progress Print Design Plan Set, MaineDOT, September 21, 2017

The following outlines our comments.

1. The project is estimated to generate 142 vehicles entering and exiting during the Weekday AM peak hour and 159 vehicles entering and exiting during the Weekday PM peak hour. The estimate was based upon data from the publication Trip Generation, Institute of Transportation Engineers. I find the estimate and methods to be reasonable.
2. The projected trip generation estimate would require a MaineDOT Traffic Movement Permit.
3. The Traffic Study intersection analysis was based upon traffic counts conducted in 2014. For the purposes of the Contract Zone analysis, I find the 2014 data to be acceptable. I would note that traffic counts would likely need to be updated in conjunction with the MaineDOT Traffic Movement Permit.
4. Trip distribution for site trips was based upon existing traffic volume information and I find it to be reasonable.
5. A capacity analysis was conducted at the Gray Road/MTA Exit 53/Hannaford, Gray Road/Leighton Road, Gray Road/Mountain Road/Falmouth Road intersections. The following summarizes my specific comments:

- Gray Road/MTA Exit 53/Hannaford – This intersection is projected to operate at acceptable overall levels of service with the northbound Gray Road approach operating poorly during the PM peak hour (both with and without the proposed project). This location would be included in a MaineDOT Traffic Movement Permit study and would likely be required to investigate mitigation strategies to address the substandard level of service conclusion noted in the analysis. The Town could either wait for the TMP process to take place or seek an understanding of possible mitigation improvements at this time for contact zone approval considerations.
 - Gray Road/Leighton Road – This intersection is projected to have failing levels of service, both with and without the proposed project, and with the proposed Route 100 improvements. Similar to the previous intersection, this location would be included in a MaineDOT Traffic Movement Permit study and mitigation strategies would need to be considered. I would note that the level of service conclusions are based upon a traffic signal timing plan that is not optimized. The applicant should revise the analysis to optimize signal timing. If the outcome of the optimization is continued substandard levels of service, the Town could either wait for the TMP process to take place or gain an understanding of improvements at this time. My suggestion would be for the Town to determine if any additional improvements above the Route 100 Design would be appropriate.
 - Gray Road/Mountain Road/Falmouth Road – This location is projected to operate at acceptable levels of service following project build-out. I have no further comment.
6. The applicant should provide vehicle queue estimates for the Gray Road intersections with Leighton Road and Mountain Road/Falmouth Road to ensure the Route 100 Improvement Project will provide adequate turn lane storage lengths following project build-out.
7. The Gray Road/Mountain Road/Falmouth Road intersection is classified as a High Crash Location per MaineDOT criteria. The applicant should provide an assessment of current crash patterns to confirm that the proposed Route 100 Improvements will mitigate the identified pattern. The applicant should also provide crash data along Route 100 from MTA Exit 53 through the Leighton Road intersection.
8. The applicant conducted an analysis of the proposed site driveways with my comments noted below.
- The Gray Road southerly driveway is projected to have failing levels of service, caused by traffic back-ups from the Leighton Road intersection. As noted previously, the applicant shall optimize the signal timing at the Leighton

Road intersection, which may reduce blockage of the southerly driveway. A revised analysis should be provided.

- The Gray Road northerly driveway is projected to operate at an acceptable level of service. I have no further comment.
- The Mountain Road driveway is projected to operate at an acceptable level of service. I have no further comment.

9. The applicant should clarify if sight distance at the proposed Mountain Road driveway can meet Town standards with vegetation removal.

10. I have reviewed MaineDOT left-turn lane warrants for northbound Gray Road at the site driveways. The methods provided is based upon a roadway with speeds of 40 MPH (the posted speed is 35 MPH – methods are not provided for speeds less than 40 MPH). Based upon my review of traffic volumes provided by the applicant, a left-turn lane is warranted at the northerly driveway. The southerly driveway may warrant a left-turn lane and the applicant should provide an opinion on need. Lastly, the applicant should provide an assessment of storage requirements for left-turn lanes into the project site.

11. The applicant should note if single lane approaches to Gray Road are adequate at the site driveways.

12. The applicant is proposing what appears to be a neighborhood traffic circle at the internal site intersection. I generally support this type of intersection configuration given its traffic calming and safety benefits. I would note that further design details would be required as part of a comprehensive review, particularly if the Town will be maintaining the roadway and for acceptable emergency access and large vehicle maneuvers (buses, delivery trucks, etc.).

Please contact me if you have any questions.

Best regards,

T.Y. LIN INTERNATIONAL



Thomas A. Errico, PE
Senior Associate / NE Traffic Engineering Director