

# Memorandum:

**To:** Juliet Hodge, Director of Land Use & Planning  
**From:** Steve Masalin, Public Works Director/Town Engineer  
**Date:** August 8, 2022  
**Re:** 1682 & 1686 CT Route 12 (Appl. PZ #22-13SITE)

INVESTIGATION REPORT

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I have reviewed the plans and stormwater management report for the subject application. I have the following comments.

1. The Town's Drainage Ordinance (#300-017) is not included as a governing regulation in the application. The requirements of this ordinance must be met. More specific direction to this end follows:

- a. Part 3, Section 1, Standards for Hydrologic Models. The drainage area covered by this development is identified as 6.65 acres. The ordinance stipulates use of the rational/modified rational method as a general rule for activity of this size. The rational method has been used the drainage system hydraulics (Appendix D), but for overall site hydrology, the applicant cites the SCS method (TR-55 in the narrative, though TR-20 is identified in the individual calculation runs in Appendix B).

The Drainage Ordinance is flexible and allows departure from the general rules. Either the rules should be followed (i.e., use of the rational method) or the applicant should provide rationale for departure from the rules and clear up any disparities that exist in the documentation, which may simply be editorial.

- b. Part 3, Section 2, Para B, Detention Basin Structural Design. Subparagraph specifies preference for complete evacuation of a detention basin within 12 hours of the end of the rainfall event. The broader spirit of timely elimination of standing water is expressed. Though the hydrographs show a cessation of discharge flows just beyond 24 hours. This appears to coincide with a water elevation at the top of the weir in OCS-1 (i.e., 52.5 feet). Based on a basin floor elevation of no higher than 48-ft gradeline depicted, this appears to leave a considerable volume of standing water to infiltrate for some unspecified time after this. It is therefore unclear when complete evacuation is estimated to occur, but certainly it would be considerably beyond 24 hours, much less 12 hours.

By of associated concern, based on stormwater drainage system elevations, it appears that during and after larger storm events, water will back up and remain in the site discharge/basin inlet piping all the way back to CB-1. Depending on the infiltration rate in the basin, this would seem to promote potential for progressive pipe siltation through inadequate self-flushing.

- c. Note: We grant that the Town's drainage ordinance is outdated in certain ways, and thus we are open to design features that reflect newer and prevailing guidelines. One example is baseline rainfall intensity data. The applicant has used the up-to-date information, which overrides the ordinance guidelines.

Also, though the Town requires us of stormwater piping no smaller in diameter than 15", minimum full-flowing velocity of 2.5 fps, and minimum pipe slope of 0.5%, these does not apply to infrastructure that will remain under private ownership.

2. Plans & Stormwater Management Report.

- a. Appendix A: Figure 3 (FEMA Flood Insurance Rate Map) is illegible.
- b. Appendix D: The calculated storm flows exceed the 10-year storm full flow capacities cited for Pipes 1 and 2.
- c. Disparities Between Drainage Plans and Stormwater Management Report Appendix D. There are a number of miscellaneous minor editorial inconsistencies in values (particularly pipe length) that are relatively insignificant, but the following are notable and should be reconciled.

	Plans	Report Profiles/Table
12" Downspout Collection Pipe (10)	155 feet	130.3 feet
CO-1 Invert	52.57	52.44
CO-1 TF Elevation	55.97	53.19
CO-3 TF Elevation	55.63	53.09

- d. According to internal records, a separate water service lateral was installed for 1686 Route 12. The applicant may want to investigate further to confirm this, as it may offer a better alternative to water supply service than reuse/extension of the existing service at 1682.