



**Planning & Development**  
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**Memo**

Date: January 11, 2019

To: Planning Board

From: Michael G. Livingston, Town Engineer/Planner

Re: Fire Substation – Drainage Review  
Tax Map 40, Lot 9-EXE

**Background:**

The development proposal is for a new fire substation to be located on the partially developed portion of the existing Public Works Facility located off of North Berwick Road.

**Materials Submitted:**

- Site Development Plans (12 sheets)
- Stormwater Analysis by Darrin B. Stairs, PE of Stantec, dated 12-17-18
- Pre-development Watershed Plan WS-1
- Post Development Watershed Plan WS-2

**Analysis Review:**

**General Comments –**

- HydroCAD software used for modelling – good
- Current rainfall data set used – good
- Soils information used – good
- Pre vs Post basin areas are consistent – good
- Analysis point of existing culvert at Route 9 good
- Comparison Table and Conclusions provided

**Pre-Development Comments –**

- Basin limits appear accurate
- Surface conditions appear accurate
- Travel paths well modelled
- Log Cabin Lane “berm” well modelled as a pond
- Analysis point, existing 24” culvert also well modelled as a pond

**Post Development Comments –**

- Proposed basin limits appear accurate
- Proposed surface conditions appear accurate
- Travel paths are reasonable. S1C second path could be split into two (varying slopes) but average of both at 2% - OK

- **\*\***R1 (12" culvert) is over capacity at all storm events and should be modelled as a pond to make sure the entrance apron does not get flooded.\*\*
- P1 (berm at Log Cabin Lane) predicts flow over the Lane but reduced by 0.3 feet (25 year) compared to pre-development conditions
- P2 (Drip Edge Filter) models well at all storm events
- P3 (Detention Pond) models well at all storm events
- Analysis Point (24" culvert) has reduced peak elevations at all storm events (2.15 feet at 25 year event)

Results:

The analysis projects significant reductions in peak stormwater runoff at all storm events.

Conclusion:

The stormwater analysis meets or exceeds Town requirements. The sizing/capacity of the 12 inch culvert needs to be checked/ addressed.