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MEMO

TO: Town of Skaneateles – Planning Board
Janet Aaron, Town Supervisor
Howard Brodsky, Town Planner
Scott Molnar, Town Attorney

FROM: John Camp, P.E., CFM, CPESC, CPSWQ

RE: **Small-Scale Stormwater Management Guidelines**
Facility Sizing

This memo should be read with reference to the "Small-Scale Stormwater Management Guidelines" memo by C&S dated June 25, 2018. In that memo, several options for stormwater treatment at individual lot development were outlined. This memo contains recommendations for demining sizes of stormwater management facilities. Sizing was determined based on formulas presented in the NYSDEC's Stormwater Management Design Manual, which can be found at: http://www.dec.ny.gov/chemical/29072.html . This calculation is the Water Quality Volume (WQv) as referenced in Table 4.1 of the current version of the manual. The chart on this page contains the results of several versions of the WQv calculation using 1 inch of rainfall depth and assuming a 1.5-foot deep stormwater management facility. The length and width shown in the table should be measured at the bottom elevation of the facility. For lot sizes and ISC's that fall between the data points, a linear interpolation can be used. For a more customized sizing procedure, please see the next section of this memo.

Stormwater Management Facility Sizing for Small-Scale Development

LOT SIZE (ac)	ISC (%)	SW FACILITY LENGTH (ft)	SW FACILITY WIDTH (ft)
0.25	10	5	15
0.5	10	8	25
1	10	10	30
1.5	10	13	40
2	10	15	45
0.25	15	6	18
0.5	15	10	30
1	15	12	37
1.5	15	15	45
2	15	17	52

For a more customized approach, the following formula can be used:

$$WQv = \frac{(0.05 + 0.009 * I) * A}{12}$$

Where:

WQv = Water Quality Volume (ft^3)
I = Impervious Surface Coverage (%)
A = Site Area (ac)

Once the WQv is determined, the stormwater management facility should be designed based on the following:

- The depth should typically be a minimum of 1.5 feet and a maximum of 3 feet – certain exceptions could be considered
- The length to width ratio should be 3:1 or longer – this will promote a longer "residence time" for runoff in the facility
- The side slopes should be 3:1 or flatter – this will allow for more convenient mowing and should allow better establishment of turf grasses in and around the facility
- The facility should be located in the lowest practicable area of the lot – this will maximize the area of land that drains to the facility
- The facility should include underdrains where feasible, unless it can be shown that they would not be necessary
- Where a stabilized outfall is present, an outlet structure would be desirable.
- The facility design can include a planting plan OR can be shown with turf grass – this will allow the designer to consult with the owner to determine the scenario in which the facility is most likely to be maintained
- As the drainage area approaches 2 acres, consideration should be given to overflow spillways
- As the drainage area approaches 3 acres, alternate facility designs should be considered

It is likely that alterations and additions to these guidelines will be considered as more facilities are constructed in the Town.