

Water Quality Volume for Proposed Rain Garden Building

Sawing High Climbers, Route 341, Warren

2/1/2020

Water Quality Volume:

$$WQV = \frac{(1'')(R)(A)}{12}$$

where:

WQV = water quality volume (ac-ft)

R = volumetric runoff coefficient = $0.05 + 0.009 * I$

I = percent impervious cover*

A = site area in acres

For Area draining to Rain Garden:

I = 33.9 percent (calculated based on proposed conditions)

R = $0.05 + 0.009 * 33.9 = 0.36$

A = 0.27 acres

$$WQV = [(1) (0.36) (0.27)] / 12$$

$$WQV = 0.008 \text{ ac-ft}$$

$$WQV = 353 \text{ ft}^3$$

Rain Garden Volume Required:

$$V = 353 \text{ ft}^3$$

Storage Volume of Rain Garden

Elevation	Contour Area	Incremental Storage	Cumulative Storage
504	200		
505	637	419	419

WQV Provided:

419

Therefore, sufficient volume has been provided in regards to Water Quality Volume (WQV.)