

Belcrest Center SWM

Belcrest Center is an infill mixed use site located on WMATA property at the Prince George's Plaza Green Line METRO line. Loiederman Soltesz Associates (LSA) compared the new Storm Water Management Regulations to the current Stormwater Management regulations and the following is the effect on the project.

The current regulations used underground Storm Water Management and two SWM ponds. These three devices were used to control channel protection volume or the one year storm event. The water quality volume for the site was treated with the use of storm filter devices due to the high ground water. Stormwater management had to be evaluated globally for the entire site. However since the WMATA station was already built and operating it limited the stormwater management improvements that could be accomplished. The site is approximately 90% impervious.

Storm filters and the new pond are discouraged if the new regulations were imposed on this project. The new regulations would result in a project that would have to treat 13.3 acres of 90% impervious area. Based on calculations performed by LSA and in order to use the new regulations the project would need to provide a total of 14% in Open Space as a minimum requirement and given the site conditions an additional 2% of the site is likely to be necessary to allow for construction for a total of 16% of the site area. Therefore an additional 6% of first floor GLA would be lost for the site. Under these conditions all non impervious space would have to be utilized for bioretention or similar devices thus eliminating all active and passive recreational areas. The above has not accounted for control of storm events greater than the one year storm which will be required to go underground.

Finally, in addition to the 6% of GLA above, the Stormwater Management costs would be driven upwards to satisfy the requirements as identified above. Given that the site was being served by underground retention, the increase in SWM construction costs would be approximately 1%, however Landscape maintenance costs would be driven upwards by an additional but significant unknown amount.

The new SWM design criteria are based on treating for quality and quantity close to the source of the stormwater by using nonstructural practices. The newly required bioretention facilities are limited in size to 0.5 acre, preferably designed to pickup only impervious area. The facilities are supposed to store up to the 1 year storm (2.6") in media and open storage before passing the rest of a storm event into a storm drain system. Under perfect circumstances, the water will be infiltrated or evapotranspired prior to the next storm. The use of Green roofs and porous pavement can contribute to the reduction in size of these facilities but don't eliminate the need. However, the new regulations assume the facilities will act as designed and that they are properly maintained. Because they are such small facilities, if they fail or are not maintained, they will be unable to store any runoff and the site will act as if there is no SWM provided. Current regulations have an intrinsic control that allows for reduced maintenance and still provide the necessary function. The advantage with a pond is that it will drain down after each storm event and then can handle another storm within 24 -36 hours. It has a better fail safe setup.

Given that all systems fail eventually, even with proper maintenance, it is likely that the small one year event style facilities will not function as well as the larger traditional SWM features and therefore less environmental benefit can be associated with the new regulations.

RECAP: Density Loss –

Residential – 16 units or \$217,600 of NOI capped at 7%	\$3,108,600
Retail – 9,600 sf or \$252,000 of NOI capped at 7%	\$3,600,000
Office – 19,500 sf or \$330,000, capped at 7%	\$4,714,300
Cost increase – 2% or \$120,000, capped at 7%	\$1,714,300
Total Loss of Value =	\$15,708,600

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