Robust Stormwater Design Supports Larger Regional Plan

675 E. SWEDESFORD ROAD
PRESENTED BY PAUL LEPARD, RLA, PP
675 E. Swedesford Road

Owner/Developer: Equus
Architectural rendering by D2 Groups
Tredyffrin Township
Chester County
Tredyffrin Township Watershed Map
History of Trout Creek Stormwater (TCS) Overlay

- In 2010, the Township commissioned a watershed analysis to identify areas of concern. The Walker Road culvert among others was identified as a priority concern.
- The Township then embarked on formulating a zoning amendment to advance strategic stormwater improvements while recognizing the area is also within a prime real estate development corridor.
- The culmination of the Township’s work resulted in the adoption of the TCS Overlay in 2012 to address the stormwater priorities within the watershed.
TCS Land Use Incentives

- Permits restaurants, hotels, and parking structures
- Age targeted housing consisting of SF detached, SF attached, twins and townhouses permitted
- Public stormwater improvements are included within the lot area
- Increases non-residential building height
- By-right residential density is increased by 2.3 times
- Office parking rate reduced to 4/1000 (vs. 5/1000)
- Parking space size reduced to 9’ x 18’
TCS Zoning Bonuses

- By-right residential density is increased by 4.5 times
- Subject to locational criteria, non-residential building height can increase by 28’
- Non-residential uses, impervious may increase 10%
- Residential uses, impervious may increase 5%
- 50% of a green roof area may be credited toward impervious coverage
TCS Stormwater Requirements

STANDARD

• Reduce Post-Condition 2 and 5 year peak to the 1-year Pre-Condition (Meadow).

• Recharge, evapotranspirate, and/or provide on-site capture and reuse of total volume generated by the post-development 2-year storm.

• Exceed the baseline peak rate controls requirements by at least 25%.

• Demonstrate compliance with rate and quantity reductions identified within the Trout Creek Stormwater Study (Regional Basin and rate/volume reduction for the 2 and 100 year storms).

WITH BONUSES

• Exceed the baseline peak rate controls requirements by at least 50%.

• For every 1SF of impervious increase above the by-right coverage limit, 2SF of porous pavement is required.
Arcadia/Equus Composite Site Plan
Wayne Glen
Stormwater Improvements

- Regional basin
- Bioretention
- Surface infiltration basins
- Porous pavements

Owner/Developer: Arcadia Land Company
Wayne Glen
Stormwater Performance Summary

- Manages post-development 2-year/24-hour storm volume on-site.
- Substantially exceeded the TSC reduction requirements for the 1, 2, 5 and 10-year storms.
- Exceeded TSC reductions for the 25-100 year storms.
- 5 acre Regional Basin provides 37 ac. ft of storage for detaining the 2-100 year storms.
- Meets targeted rate reductions for the 2 and 100 year events per Trout Creek Stormwater Study.

Owner/Developer: Arcadia Land Company
675 E. Swedesford Road

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675 E. Swedesford Road
Stormwater Improvements

- Bioretention/infiltration basins
- Subsurface infiltration basins
- Porous pavements
- Soil Amendments
- Native Planting Credits
675 E. Swedesford Road
Rain Garden Design Prototypes
675 E. Swedesford Road
Rain Garden/Wet Meadow Plantings

Bouteloua gracilis "Bonde Ambition"
Bonde Ambition Blue Grass

Andropogon gerardii "Black Mountain"
Black Mountain Bluegrass

Carex pennisetum
Pennisetum Sedge

Sichuantherium scoparium "Milo Blue"
Blue Heaven Little Blue Stipa

Sporobolus heterolepis
Prairie Dropseed

Schizachyrium scoparium "Twilight Zone"
Twilight Zone Little Blue Stipa

Panicum virgatum "Summer Sunrise"
Summer Sunrise Switchgrass
675 E. Swedesford Road
Stormwater Performance Summary

- Manages post-development 2-year/24-hour storm volume on-site.
- Substantially exceeded the TSC reduction requirements for the 1, 2, 10, 25 & 50 year storms.
- Exceeds the TSC reductions for the 5 and 100-yr storms.
Stormwater Design = Win/Win

- Addressed the concerns of the community
- Had the support of the Township officials
- Provided incentives for property development
- Resulted in an innovative solution to an otherwise challenging problem

Thank you for your time!