OFF-SITE DRAINAGE ANALYSIS

With the Wayne Property Acquisition Inc. proposal to develop a Wawa Food Market with sale of gas, changes to the existing stormwater management system including an additional basin for storage, water quality, and rate control are proposed.

There is one BMP used to satisfy the storage, water quality, and rate control requirements necessary to support the development in the proposed condition: BMP#01, which is an underground detention basin with an MRC Component.

The site consists of two points of discharge in the existing condition:

DP001 currently receives runoff from the existing parking area which has no stormwater controls. Runoff to this drainage point flows through the site from Northeast to Southwest. DP001 runoff is ultimately received by the existing storm sewer system at the intersection of S Aberdeen Avenue and Midland Avenue.

DP002 receives runoff from a small area of landscaping in the Southeast corner of the site. Runoff to this drainage point flows on to the adjacent residential property, and through said property, before ultimately being received by the existing storm sewer system at S Aberdeen Avenue and Midland Avenue. As shown on the attached Exhibit, this flow path travels through soil types of Made Land/Urban Land (Md / UcB) and Neshaminy-Monalto complex (NmB). Soil type Md / UcB is not assigned an erodibility factor and soil type NmB has an erodibility factor of 0.20. These values can be seen in the chart provided at the end of this narrative.

BMP#01 is proposed to discharge flows off-site by tying in at the existing storm sewer system in S Aberdeen Road via a doghouse manhole. As this BMP is proposing to reduce flow rates and volumes to DP001, no impact is expected to the capacity of the storm sewer system in S Aberdeen Avenue. Since the conveyance will all be discharged via pipe, there will be no surface discharge to Ithan Creek or the right-of-way adjacent to the project site. As no increase in discharge is proposed at this location for storm events up to and including the 10-year/24-hour storm, there is no increase in erosion potential.

Tributary area to DP002 is reduced in the post-development condition, thereby reducing anticipated runoff to adjacent properties. As no increase in discharge is proposed at this location for storm events up to and including the 10-year/24-hour storm, there is no increase in erosion potential.

The proposed tie-in point is a proposed doghouse manhole to be located in S Aberdeen Avenue. This doghouse manhole would result in three total connections. See attached Exhibit for proposed tie-in location.

The tie-in point for the stormwater management system is an existing 18” storm sewer line that is centered on S Aberdeen Avenue. This storm sewer line receives flow from inlets located in the right-of-way of S Aberdeen Avenue, as well as from adjacent developments. Runoff downstream of the tie-in point then flows into another manhole within the street before ultimately discharging to Ithan Creek.

See attached for an Exhibit of the approximate location of all proposed and existing features and drainage patterns. Again, no surface discharge is proposed with these improvements; conveyance will be carried from the project site to the existing system via storm pipe. Area and associated flows tributary to DP002 are being reduced in the post-development condition.

Tables — K Factor, Whole Soil — Summary By Map Unit

Summary by Map Unit — Delaware County, Pennsylvania (PA045)

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Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
NmB	Neshaminy-Montalto complex, 0 to 8 percent slopes	.20	3.5	64.0%
UcB	Urban land, mafic gneiss, 0 to 8 percent slopes		2.0	36.0%
Totals for Area of Interest			**5.5**	**100.0%**