

Derry Township

Stormwater Management Study — 2nd Phase

December 9, 2008



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

HRG CONTACT INFORMATION

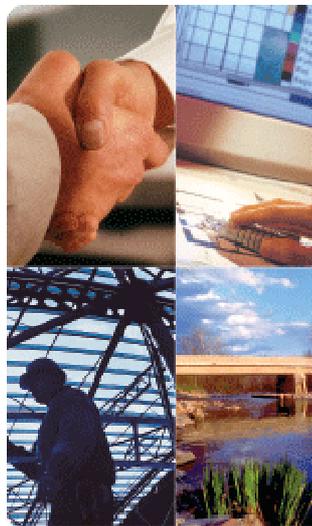
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**BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.**

PRIORITY AREA NO. 16 – HIGHMEADOW CAMP PARKING LOT

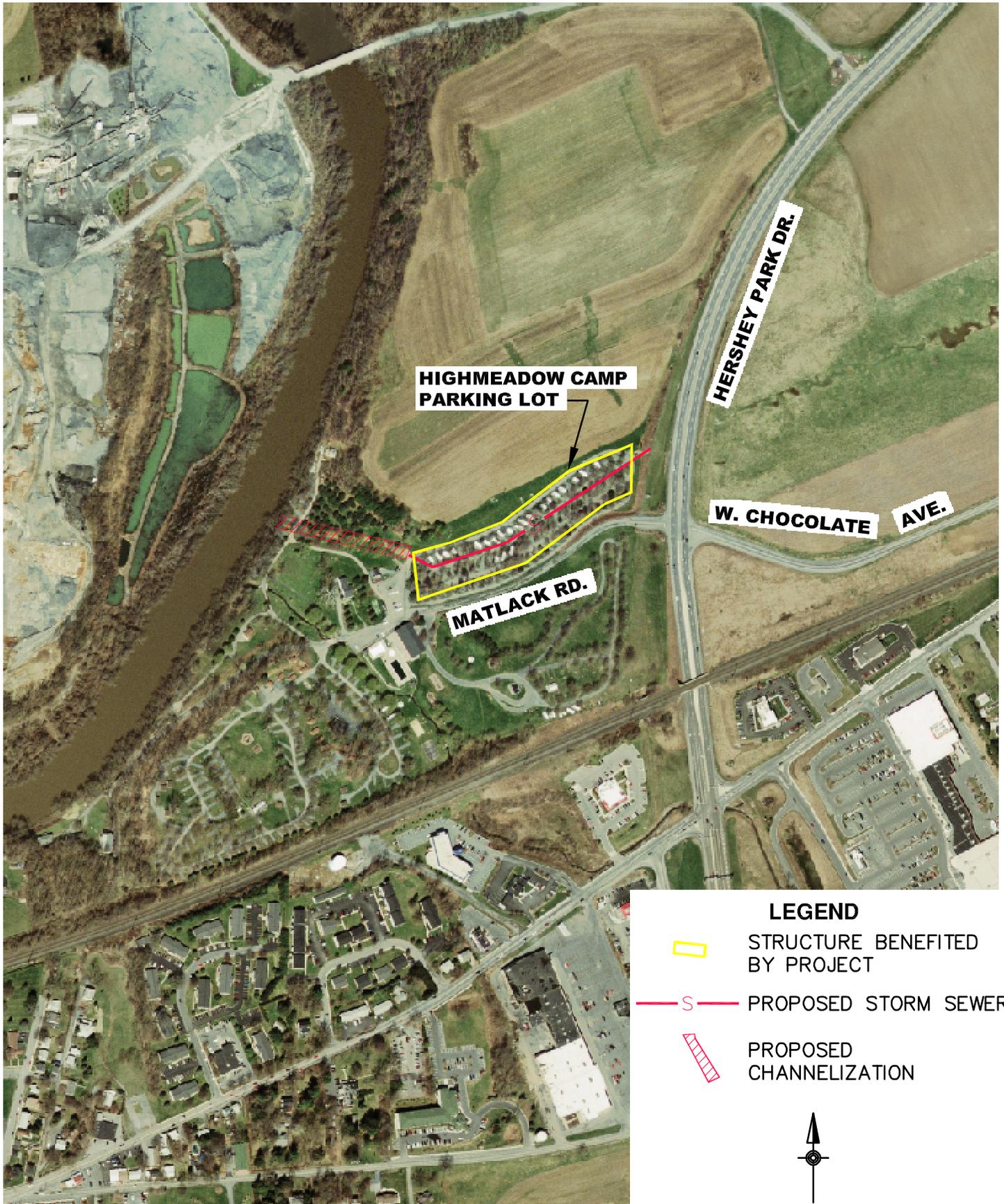
The unnamed tributary to Swatara Creek that flows through the parking lot of the Highmeadow Campground has a drainage area of 0.61 square miles. The stream channel and parking lot, shown on Drawing No. 16, flood during severe rain events and the channel has been eroding due to increased runoff rates from the upstream area. Table 24 summarizes the estimated peak discharges for the design events.

**TABLE 24
PRIORITY AREA NO. 16 – ESTIMATED PEAK DISCHARGES**

DRAINAGE AREA (SQ. MI.)	PEAK DISCHARGE (CFS) FOR INDICATED RETURN FREQUENCY EVENT			
	2.33 YEAR	10 YEAR	50 YEAR	100 YEAR
0.61	65	220	477	621

The recommended solution for this priority area, illustrated on Drawing No. 16, is to enlarge the existing storm sewer under the parking lot and enlarge and stabilize the channel between the parking lot and Swatara Creek. Flooding of the parking lot due to backwater from Swatara Creek will not be prevented by the recommended channel work, but smaller storm events will be contained within the channel banks. To avoid flooding from Swatara Creek, the parking lot would have to be relocated to higher ground.

The estimated cost for the channelization work for this priority area is \$144,300.



LEGEND



STRUCTURE BENEFITED BY PROJECT



PROPOSED STORM SEWER



PROPOSED CHANNELIZATION



File name: Y:\24\2484\2484022\2484022.dwg\CV\Problem Area - Aerial Mapping.dwg Layout:Layout16 Jan 13, 2009 - 11:03am ablin



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**DERRY TOWNSHIP
STORMWATER MANAGEMENT STUDY
PRIORITY AREA NO. 16
HIGHMEADOW CAMP PARKING LOT**

DAUPHIN COUNTY

PENNSYLVANIA

PROJ. MGR. - MSB
DESIGN- ATB
CADD-
CHECKED-
SCALE- 1" = 500'
DATE- 11-4-08

DRAWING NO. 16
SHEET NO. 16 OF 17
PROJECT 2484.0429

PRIORITY AREA NO. 17 – WEST MANSION ROAD

The location of this priority area is illustrated on Drawing No. 17. Spring Creek flows in a northwesterly direction between Route 422 and the Norfolk Southern railroad just east of the Hershey Chocolate Plant. The area of the watershed draining to the railroad embankment is approximately 18.9 square miles. Table 25 summarizes the peak discharges for this drainage area.

TABLE 25
PRIORITY AREA NO. 17 – ESTIMATED PEAK DISCHARGES

DRAINAGE AREA (SQ. MI.)	PEAK DISCHARGE (CFS) FOR INDICATED RETURN FREQUENCY EVENT			
	2.33 YEAR	10 YEAR	50 YEAR	100 YEAR
18.9	770	1,810	3,517	4,507

There are two large culverts that convey the stream under the railroad embankment. Over the years, the Hershey Chocolate Company has constructed several pipe crossings above the stream. These crossings contribute to a reduction in flow capacity for the culverts during major storm events. There are also several road crossings downstream of the railroad embankment that tends to reduce the flood carrying capacity of the stream. However, the greatest contributor to the flooding problems is the encroachment of buildings and other structures by the Hershey Chocolate Company and Hershey Park. Years ago, Spring Creek was channelized, most likely for aesthetic reasons as much as for erosion or flood control, and the floodplain areas were developed in the vicinity of the Chocolate Plant.

Removing the structures that have been built in the floodplain is most likely not feasible at this time. Therefore, the recommended solutions for this priority area are 1) to re-route the pipes that cross the stream so that they no longer block the entrance to the railroad culverts, 2) to replace the downstream road crossings with bridges that have greater flow capacity, and 3) investigate locations to develop flood control ponds upstream of Route 422. Drawing No. 17 shows the locations where existing culverts and bridges are to be replaced. One possible pond site has been identified between East Chocolate Avenue and Crest Lane on the Milton Hershey School Campus. However, this site could require considerable earthmoving and could eliminate large areas from future agricultural use.

The estimated cost for the recommended system is \$2,100,000. This cost estimate does not include land acquisition costs.

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LEGEND

-  STRUCTURE BENEFITED BY PROJECT
-  PROPOSED BRIDGE IMPROVEMENT
-  PROPOSED FLOOD CONTROL POND



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**DERRY TOWNSHIP
 STORMWATER MANAGEMENT
 IMPLEMENTATION STUDY**

**STORMWATER PROBLEM AREAS
 PRIORITY AREA NO. 17
 WEST MANSION ROAD**

PROJ. MGR. - MSB
DESIGN- ATB
CADD-
CHECKED-
SCALE- 1" = 500'
DATE- 11-4-08

DRAWING NO.
17
SHEET NO.
17 OF 17
PROJECT 2484.0429