

Derry Township

Stormwater Management Study — 2nd Phase

December 9, 2008



[BUILDING RELATIONSHIPS.
DESIGNING SOLUTIONS.]

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I. EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

Flooding and stream bank erosion problems have become more common in Derry Township due to the significant levels of development that have been experienced over the last few decades. The frequency and magnitude of these problems will likely continue to increase unless stricter controls are implemented on new development. Likewise, solving the existing problems will require implementation of a number of structural controls designed to increase the capacity of the existing streams and storm sewer systems or to capture storm runoff and control its release to a rate that will not overload downstream systems.

SHORT TERM GOALS

Preventing the existing flooding and erosion problems from being exacerbated will require incorporating additional requirements into the Township's zoning, subdivision and land development, and floodplain regulations. Foremost among these requirements is to implement the control guidelines contained in the Pennsylvania Department of Environmental Protection's *Stormwater Best Management Practices Manual*.

MEDIUM AND LONG TERM GOALS

This report contains recommendations for solving the seventeen (17) most significant flooding and erosion problems in the Township. Table 1 lists the implementation priority, locations, and the estimated design and construction costs for implementing the recommended solutions at each problem area.

**TABLE 1
IMPLEMENTATION PRIORITY FOR RECOMMENDED SOLUTIONS**

IMPLEMENTATION PRIORITY	LOCATION	ESTIMATED SOLUTION COSTS
1	Mill Street / Cherry Drive	\$1,249,200
2	Cocoa Avenue / Governor Road	\$595,280
3	Cocoa Avenue between Elm and Areba	\$286,280
4	Forest Avenue, Clark and Sand Hill Roads	\$139,060
5	Hershey Park Drive – Shopping Center	\$1,045,500
6	Wood Road at Bullfrog Valley Road	\$345,160
7	East Chocolate Avenue	\$27,540
8	Sunset Drive	\$310,800
9	Lucy Avenue	\$68,860
10	Mill Road Underpass	\$72,160
11	Palmdale Park and Route 422	\$449,430
12	West Chocolate at Swatara Avenue	\$34,280
13	Route 422 / 322 Interchange	\$648,190
14	Norfolk Southern RR near Sipe Avenue	\$423,760
15	Bindnagle Road	\$297,110
16	Highmeadow Camp Parking Lot	\$144,300
17	West Mansion Road	\$2,100,000
	TOTAL COST	\$8,236,910

Table 2 identifies the type and number of structures that would be benefited by the recommended solutions. "Structures Benefited" is a relative term and no distinction is made on the value of the structures, which could be a single-family residence, a

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condominium or apartment building, a business or factory, or even an athletic field. For single-family residences, the count only includes the primary house, not any out-buildings (e.g., garage). For three locations (Priority Area Nos. 10, 12 and 14), there are no buildings benefited. The impact at these locations is only street and field flooding.

**TABLE 2
PROBLEM TYPE AND STRUCTURES BENEFITED FOR RECOMMENDED SOLUTIONS**

PRIORITY NO.	LOCATION	PROBLEM TYPE	RESIDENTIAL	COMMERCIAL/ INDUSTRIAL	OTHER
1	Mill Street / Cherry Drive	F	16	5	-
2	Cocoa Avenue / Governor Road	F, E	7	3	-
3	Cocoa Avenue between Elm and Areba	F	9	-	2
4	Forest Avenue, Clark and Sand Hill Roads	F	12	-	-
5	Hershey Park Drive – Shopping Center	F	-	2	-
6	Wood Road at Bullfrog Valley Road	F, E	-	-	1
7	East Chocolate Avenue	F	-	1	-
8	Sunset Drive	F	13	-	-
9	Lucy Avenue	F	-	1	-
10	Mill Road Underpass	F	-	-	1
11	Palmdale Park and Route 422	F	-	-	2
12	West Chocolate at Swatara Avenue	F	-	-	1
13	Route 422 / 322 Interchange	F	-	-	1
14	Norfolk Southern RR near Sipe Avenue	F	-	-	-
15	Bindnagle Road	F	1	-	-
16	Highmeadow Camp Parking Lot	F, E	-	-	1
17	West Mansion Road	F	-	1	2

PROBLEM TYPE: F = Flooding E = Channel Erosion

A traditional cost-benefit assessment could not be made for the priority areas because there is no information available on damage estimates for prior flooding events. Assessed property values could be used; however, this would be very misleading since flooding on a parcel that does not impact a structure (house, store, factory, etc.) would have a low damage value compared to flooding that damages the structure.

Due to the severity of the problems, it is recommended that Priority Area numbers 1 through 9 be considered as Medium Term Goals and 10 through 17 as Long Term Goals.

A survey was conducted of possible sources of grants or low-interest loans that could be used to fund the design and construction of the recommended facilities. The PA H2O Act has the greatest potential for funding some or all of the recommended facilities. However, that grant program, and several others, requires a match of funds or the equivalent value of in-kind services (e.g., land purchase, etc.). While all options for funding the recommended solutions will be considered, one option would be to seek support from commercial, industrial, and institutional entities that would benefit from implementation of the recommended facilities. Table 3 is a list of those entities that would benefit and could possibly become partners in the projects through monetary contributions or donation of needed land area.

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**TABLE 3
POSSIBLE FUNDING PARTNERS FOR RECOMMENDED SOLUTIONS**

PRIORITY NO.	LOCATION	POSSIBLE PARTNERS*
2	Cocoa Avenue / Governor Road	Milton Hershey School
3	Cocoa Avenue between Elm and Areba	Derry Township School District
5	Hershey Park Drive – Shopping Center	Pizza Hut (E. Catalone) McDonalds Corp. Milton Hershey School
6	Wood Road at Bullfrog Valley Road	Milton Hershey School
7	East Chocolate Avenue	Hershey Office LP
8	Sunset Drive	Peifer Brothers
9	Lucy Avenue	Robert Welsh
13	Route 422 / 322 Interchange	Milton Hershey School
14	Norfolk Southern RR near Sipe Avenue	Norfolk Southern RR Hershey Foods
15	Bindnagle Road	Milton Hershey School
16	Highmeadow Camp Parking Lot	Milton Hershey School
17	West Mansion Road	Hershey Chocolate Corp. Hershey Entertainment

*NOTE: Possible partners are identified as the property owners of benefited commercial, industrial, or institutional property.