

DATE: January 11, 2012
SUBJECT: PennDOT Storm Water Facility Policies & Guidebook
TO: District Executives
FROM: R. Scott Christie, P.E. /s/
Deputy Secretary for Highway Administration

This time neutral strike-off letter (SOL) replaces SOL # 470-10-03 dated June 24, 2010, and applies to Highway Occupancy Permits (HOP) issued after June 24, 2010. We are updating a number of Publications in order to use consistent terminology (i.e. use of the term “storm water” rather than “drainage”) and introducing the HOP Storm Water Facility Guidebook. This Guidebook (attached) assists in the installation or modification of storm water facilities during the HOP process and includes alternative storm water designs. It will be placed on PennDOT’s website under Highway Occupancy Permits and references the “Co-Applicant Agreement”, an example of which can also be accessed online.

Also attached are replacement sheets to be used to update existing publications. Please remove and destroy replaced sheets:

- Pub. 170, HOP Manual, Chapter 3.8, Construction of Sidewalk, Curb, or Storm Water Facilities, pp 2 through 3, 80 through 81, and 119.
- Pub. 282, HOP Guidelines, Chapter 3.7, Construction of Sidewalk, Curb, or Storm Water Facilities, pp 2 through 3, pg. 5, pp 64 and 65, pg. 91, and pg. 191.
- Pub. 23, Chapter 8.5, Storm Water Maintenance Responsibilities Concerning Municipalities, pp 8-i, 8-10 & 11, and Exhibit 7, Background for Storm Water Facilities Policy, pp 8-22 and 23.

Other chapters of Pub. 23 will be impacted by these terminology changes and will be revised through future updates.

It is vital that District HOP application reviewers continue to meet with applicants and their engineer before design begins, since the HOP policy requires a local government to be a co-applicant for certain types of permits. If the local government does not wish to be a co-applicant the use of alternative storm water designs should be considered. In such cases the private land owner would be the sole HOP applicant.

If you have any questions in regards to the attached policy, please contact Daryl St. Clair, P.E., Acting Director, Bureau of Highway Safety and Traffic Engineering, at (717) 787-7350.

Attachments

4700/DRS/(7-7350/

CC: Pennsylvania State Association of Township Supervisors
Pennsylvania State Association of Boroughs
Pennsylvania State Association of Township Commissioners
Pennsylvania League of Cities and Municipalities
Ronald G. Wagenmann, Transportation Advisory Committee
Natasha Schock, Director, Policy Office
Andy Gordon, Office of Chief Counsel
R. Craig Reed, P.E., Director, Bureau of Municipal Services
Highway Administration Bureau Directors
Assistant District Executives
District Permit Managers
District RMS Coordinators
BOMO & BHSTE Division Chiefs
Mike Dzurko, BHSTE



APPENDIX B4 HIGHWAY OCCUPANCY PERMIT STORM WATER FACILITY GUIDEBOOK



**Pennsylvania Department
of Transportation
December 2011**

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The Storm Water Facility Guidebook provides guidance on who should be the applicant for storm water installation as part of Highway Occupancy Permit work, alternatives to including the local government as an applicant, and how to prepare an agreement between developer and local government should the local government be an applicant.

Why is this guidebook needed?

This guidebook has been prepared to assist designers, local governments, and landowners with projects that require installation of storm water facilities and/or modifications to existing storm water facilities during the Highway Occupancy Permit (HOP) process. A policy addressing such facilities was issued on June 24, 2010, by Strike-Off-Letter (SOL) 470-10-03 (HOP policy). The HOP policy discusses modifications to Chapter 5.1 (Storm Water Facility Maintenance – Responsibility) of PennDOT Publication 282 (HOP Manual) as further revised and updated in December 2011 as set forth herein.

In some instances, the law requires that the local government in which an HOP project is located must be the permittee or co-permittee with the landowner for enclosed surface storm water facilities. The HOP policy provides an avenue to local governments for landowners to fund future maintenance. This guidebook explains the five categories of HOP-installed or modified facilities and which categories require the local government to be a co-permittee.

This guidebook also provides possible alternative storm water designs for landowners and local governments to consider when designing an HOP project to create situations where the local government will not need to be a co-permittee. For those local governments that agree to take on maintenance responsibilities, the HOP policy provides that the landowner is responsible for providing funding to the local government to offset future maintenance costs. In the alternative, a local government may consider requesting security for future costs as part of land development review.

Why is Storm Water Maintenance important?

In previous presentations and policy on the subject matter, “open surface storm water facilities” were referred to as “surface storm water facilities”, and “enclosed surface storm water facilities” was referred to as “subsurface storm water facilities.” Moving forward, to be consistent with the Department’s Maintenance Manual, Publication 23, the Department will use the terms “open surface storm water facilities” and “enclosed surface storm water facilities.”

Identifying storm water maintenance responsibilities is of high importance for every HOP project. The maintenance of storm water facilities is required to achieve the full expected life from facilities and to protect the travelling public from hazards related to ill-performing storm water systems. A functioning storm water infrastructure is critical to support the movement of goods, people, and services on State highways.

The HOP policy is beneficial to all parties, including the state tax payer. It provides an opportunity to have landowners, who are altering land for their purposes, fund maintenance of enclosed surface storm water facilities (as opposed to PennDOT or local governments). Additionally, the policy allows all involved parties an opportunity to provide input towards the ultimate design solution.

Purpose

Who is responsible for Storm Water Maintenance?

The permittee is responsible for maintenance of storm water facilities under an HOP. The term maintenance includes routine maintenance as well as repair, replacement, and reconstruction when necessary.

Quick Definition Reference:

“Local governments”: townships, cities, boroughs, incorporated towns, home rule municipalities, and counties

“Open surface storm water facilities”: Ditches, swales, gutters, roadway crowns, shoulders, and curbs.

“Enclosed surface storm water facilities”: Storm water cross pipes/culverts and parallel pipes/culverts including any attached inlets, headwalls, and end walls.

Section 421 of State Highway Law, 36 P.S. § 670-421, states:

“It is unlawful for any person to discharge sewage or drainage, except surface drainage, on, or within the legal limits of, any State highway.”

State Highway Law & the HOP Policy

Ideally, every new development should retain site development storm water runoff on their property; however, this is not always practical or possible. PennDOT has historically interpreted the surface water drainage allowed under Section 421 of the State Highway Law [see sidebar] to be surface/sheet flow only; concentrating water and directing it into a State highway is not surface drainage and thus not allowed, even by HOP, except in limited circumstances. PennDOT has long recognized an exception to Section 421 for surface storm water facilities draining a proposed driveway because landowners abutting non-limited access highways have a constitutional right of access that may be impeded if drainage at a driveway could not flow onto the highway (Category #1).

For purposes of drainage in connection with driveways and local roads, PennDOT now considers open surface storm water facilities, whether connected to a highway storm water facility or not, as surface drainage under Section 421 and therefore permissible by HOP. This allows applicants other than a local government to be the sole permittee for such open surface facilities (Category #2). PennDOT also now recognizes an exception to Section 421 for local governments due to their public nature, their historic and statutory responsibility for storm water management within their geographic boundaries, and their review and approval of land development plans. These reviews and approvals frequently include storm water management. This allows permits to be issued to local governments for enclosed storm water facilities connected to highway storm water facilities (Category #3) and enclosed storm water facilities draining the highway and/or adjacent properties (Category #4).

PennDOT has the discretion to deny an application to permit modifications to an existing highway storm water system to accommodate an abutting landowner, except as necessary to accommodate the constitutional right of access. PennDOT is only obligated to accept surface/sheet flow under the common enemy rule applicable in Pennsylvania; it is not obligated to accept water that has been collected and channeled for general land development purposes. PennDOT may do so by HOP, however, within its discretion for economy of maintenance as well as supporting land development

Local governments should consider entering into agreements with the landowners developing their land to address future maintenance of storm water facilities. A sample agreement outlining responsibility for maintenance as well as funding and security in that regard can be found by following the link on Page 15 of this guidebook.

Policy References

The policy is consistent with the State Highway Law, PA Code, Title 67, Chapters 441 & 459 and PennDOT’s general maintenance policy. The design of storm water facilities should be completed in accordance with the following publications:

- [PennDOT Publication 584- Drainage Manual](#)
- PennDOT Publication 408- Highway Construction Specifications
- PennDOT Publication 13M- Design Manual 2, Chapter 10
- PennDOT Publication 23- Maintenance Manual
- PennDOT Publication 72M- Roadway Construction Standards
- DEP Protocol Municipal Separate Storm Sewer System (MS4) Storm Water Management Program

The five different storm water facility scenarios identified in the HOP policy are referenced in this HOP Guidebook as Storm Water Facility Categories to be consistent with previous presentation on this subject matter. A summary of each of the storm water categories is as follows:

1. *Open or enclosed surface storm water facilities draining or conveying drainage under a proposed driveway or local road.*

Systems under this storm water facility category are appurtenant to and serve the driveway or local road as opposed to the land being developed. The driveway or local road applicant is the permittee in this situation.

2. *Open surface storm water facilities draining more than a proposed driveway or local road, whether connected to a highway storm water facility or not.*

Systems under this storm water facility category service development of the land in general and typically are not under or directly adjacent to the driveway or local road. They may connect to a highway storm water facility. The driveway or local road applicant is the permittee for these open surface storm water facilities, but local government approval is required if a local ordinance addressing storm water exists. If a local ordinance does not exist, county government should be consulted to determine if there are any county imposed requirements for which approval must be obtained from the county.

3. *Enclosed surface storm water facilities draining more than a proposed driveway or local road and physically or hydraulically connected to an existing or new highway storm water facility.*

Systems under this storm water facility category service development of the land in general and are connected to an existing or new highway storm water facility. The local government must be the applicant or a co-applicant with the landowner for these enclosed surface storm water facilities. An agreement between the landowner and the local government addressing funding for the future maintenance is recommended.

4. *New or modified enclosed surface storm water facilities draining the highway and/or adjacent properties.*

Systems under this storm water facility category service development of the land in general and drain water away from the highway as opposed to Category 3 facilities that drain into the right-of-way. The facilities are often needed due to roadway improvements such as curbing and roadway widening. The local government must be the applicant or a co-applicant with the landowner for these enclosed surface storm water facilities. An agreement between the landowner and the local government addressing funding for future maintenance is recommended.

5. *Enclosed surface storm water facilities not connected to a highway storm water facility.*

Systems under this storm water facility category are not connected to PennDOT's storm water facilities, but cross into PennDOT right-of-way. Either the landowner or the local government can be the permittee for these

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enclosed surface storm water facilities, provided the applicant can demonstrate the system directly or indirectly serves the public and is thus a utility facility.

The co-applicant requirements for local governments of Categories 3 and 4 can be avoided by using one of the “Alternative Designs” outlined in Chapter 2. An HOP would still be required for the installation, but the landowner can be the permittee.

Utility Qualification

To satisfy the conditions of Storm Water Category 5, the property owner must meet the requirements of a utility facility as defined in the PA Code Chapter 459 **Occupancy of Highways by Utilities**. A utility facility is defined as “privately, publicly or cooperatively owned lines, facilities and systems for producing, transmitting or distributing communications, power, electricity, light, heat, gas, oil, crude products, coal, water, steam, waste, storm water not connected to Department storm water facilities, and other similar commodities including fire and police signal systems and street lighting systems, which directly or indirectly serve the public or any part thereof.”

Drainage Release

Obtaining an HOP does not insulate a permittee from liability for impacting downstream owners. Consideration must therefore be given to how open channels and other storm water facilities affect adjacent properties. A drainage release (PennDOT Form M-947) is required from downstream property owners by the HOP applicant for any work increasing, changing or otherwise affecting the volume and/or flow of water over the downstream property, as calculated by using the appropriate design storm outlined in Design Manual 2. An easement or other agreement could also be acceptable to PennDOT. Additional information can be obtained by contacting the local PennDOT Permit Unit.

Cross-Government Application

Sometimes development occurs within one local government that results in storm water facilities being installed within the boundaries of a neighboring local government. If this situation occurs, the local government in which the development occurs may apply under the policy for drainage outside of its boundaries in the neighboring local government.

Developer’s Responsibility:

The onus is ultimately on the developer to meet local government ordinances, including storm water ordinances



1.1 Storm Water Facility Category #1

Description: *Open or enclosed surface storm water facilities draining or conveying drainage under a proposed driveway or local road.*

Permittee: *Driveway/local road applicant.*

Agreement: *Not Applicable.*

Examples: *Driveway pipes, culverts, ditches, swales and/or associated surface and enclosed surface facilities under or directly adjacent to the driveway or local road that serve only to drain the driveway or local road.*



Figure 1.1.1- Pipe conveys water under driveway from storm water feature



Figure 1.1.2- Culvert conveys water under driveway.



Figure 1.1.3- Storm water sheet flow across private driveway

Examples of Category #1

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1.2 Storm Water Facility Category #2

Description: *Open surface storm water facilities draining more than a proposed driveway or local road, whether connected to a highway storm water facility or not.*

Permittee: *Driveway/local road applicant.*

Agreement: *Not Applicable.*

Examples: *Ditches, curbing, culverts, swales and inlets servicing development of the land in general and typically not under or directly adjacent to the driveway or local road.*

Examples of Category #2



Figure 1.2.1- Storm water conveyed by parallel ditch along road.

Category Assumption:

The ditch was installed to convey site drainage from the abutting property and not highway drainage



Figure 1.2.2- Storm water conveyed by parallel ditch along road.

CHAPTER 1- Storm Water Facility Categories

If the capacity of an existing storm water facility is compromised by increased surface water not from the State highway, PennDOT is authorized under Sections 411 and 420 of the State Highway Law to take appropriate action against the private property owner or local government that caused or failed to prevent the capacity issue, as its issuance authority extends beyond the right-of-way where work may have an adverse effect on the State highway. Capacity is defined as the maximum expected quantity of water, created by a design storm, arriving at a particular location. The applicant is responsible for providing engineering calculations with the Highway Occupancy Permit application that confirm the open channel is able to adequately retain storm water runoff from additional development.

Overflow From Adjacent Land

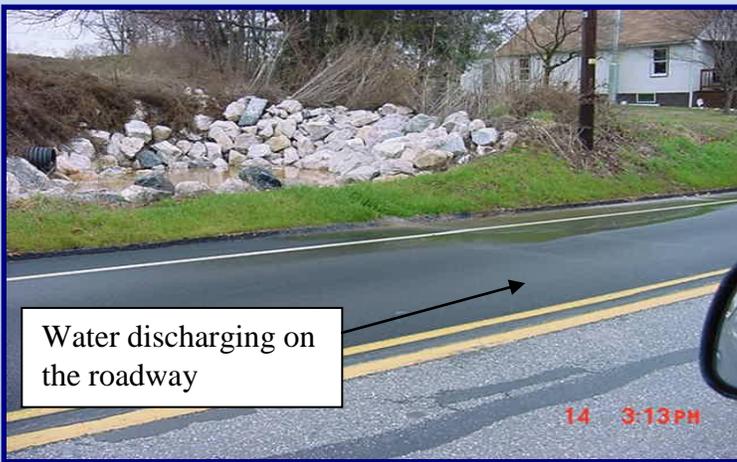


Figure 1.2.3- A photo of storm water that is not adequately retained and overflow water ponds on the roadway surface.

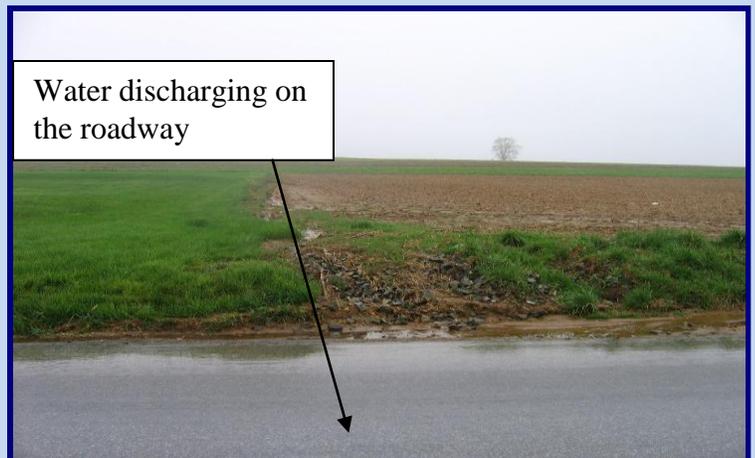


Figure 1.2.4- A photo of storm water that is not adequately retained and overflow water runs off onto the roadway surface

CHAPTER 1- Storm Water Facility Categories

1.3 Storm Water Facility Category #3

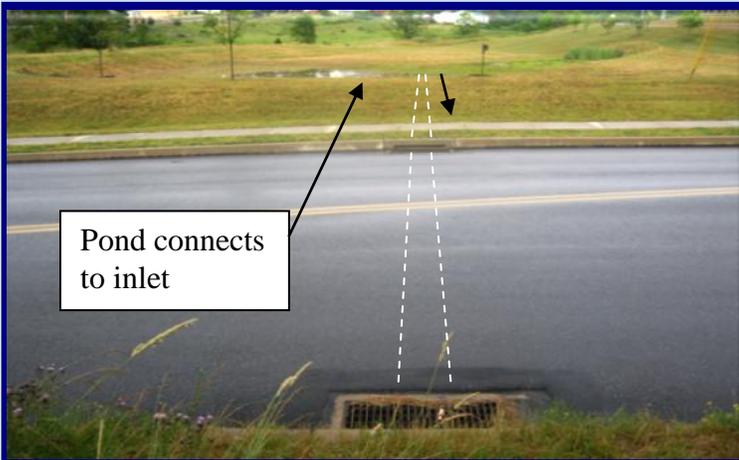
Description: *Enclosed surface storm water facilities draining more than a proposed driveway or local road and physically or hydraulically connected to an existing or new highway storm water facility.*

Permittee: *Local government or local government and landowner as co-applicants.*

Agreement: *Recommended.*

Examples: *Pipes servicing development of the land in general and typically not under or directly adjacent to the driveway or local road.*

Examples of Category #3



Category Assumption:

A cross pipe existed without inlets prior to development.

Figure 1.3.1- Site storm water directed into PennDOT Right-of-Way through enclosed surface storm water facilities tied into an existing inlet which is part of a larger storm water system.



Figure 1.3.2- Site storm water directed into PennDOT Right-of-Way through enclosed surface storm water facilities tied into an existing inlet which is part of a larger storm water system.

1.4 Storm Water Facility Category #4

Description: *New or modified enclosed surface storm water facilities draining the highway and/or adjacent properties.*

Permittee: *Local government or local government and landowner as co-applicants.*

Agreement: *Recommended.*

Examples: *Enclosed surface storm water facilities created due to the installation of curbing along the highway. This category also includes “city inlets,” which are inlets that are placed under the sidewalk and inside of the right-of-way, but drain the highway.*

Examples of Category #4



Figure 1.4.1- New enclosed surface storm water installed with curb gutter as part of widening for right turn lane.

Category Assumption:

The turn lane was installed by developer and the curb/curb gutter is assumed to be required by ordinance.



Figure 1.4.2- New enclosed surface storm water installed with curb gutter as part of widening for left turn lane.

CHAPTER 1- Storm Water Facility Categories

1.5 Storm Water Facility Category #5

Description: *Enclosed surface storm water facilities not connected to a highway storm water facility.*

Permittee: *Property owner or local government.*

Agreement: *Not applicable for property owner but recommended when local government is the applicant.*

Examples: *Pipes servicing development of the land in general that are independent of highway storm water facilities.*

Examples of Category #5

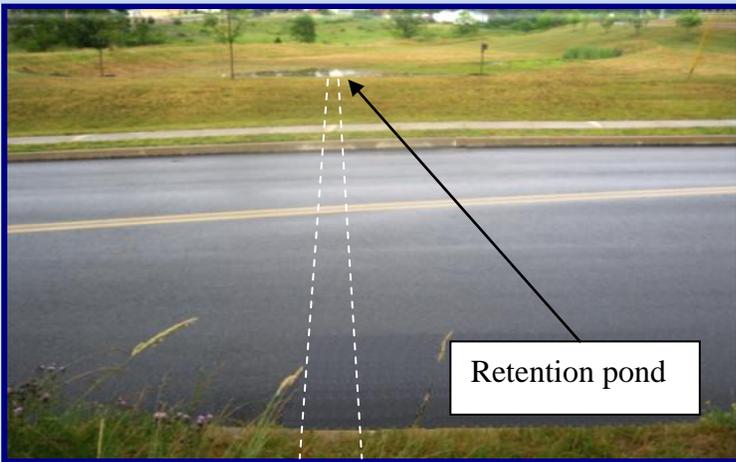


Figure 1.5.1- An example of an enclosed surface storm water facility that drains a retention pond but does not connect to a highway enclosed storm water facility

Category Assumption:

There was no existing cross pipe prior to development.

Local governments may not desire to be an applicant for storm water facilities connected with the development of land abutting a highway. The local government may have limited funding or a limited maintenance crew to utilize for the long-term upkeep of the storm water facilities. PennDOT recognizes these concerns and does not want to hinder development based on the resources of the local government. This is why the HOP policy provides for the placement of ultimate financial responsibility on the landowner when a local government is a co-permittee. Another way to address the long-term maintenance concerns of local governments is to explore alternative storm water designs, preferable early in the design process.

For private development, the use of alternative storm water designs will not require the local government to be a HOP co-applicant. In such cases, the private land owner would be the sole HOP applicant. This section details several storm water design alternatives that can reduce the number of land developments where the local government is required to be a permittee for an HOP. Refer to the PennDOT Drainage Manual (Publication 584), Chapter 14 - Post-Construction Storm Water Management for more information on storm water alternatives. It is important to note that the alternative designs may not apply in all circumstances. Section 14.5 further discusses impervious disconnection.



CHAPTER 2- Alternative Storm Water Designs

2.1 Sample Alternative for Category 3 Projects

Disconnect enclosed surface storm water feature from site.



Figure 2.1.1- Conventional installation where enclosed surface storm water facility connects to highway storm water facility

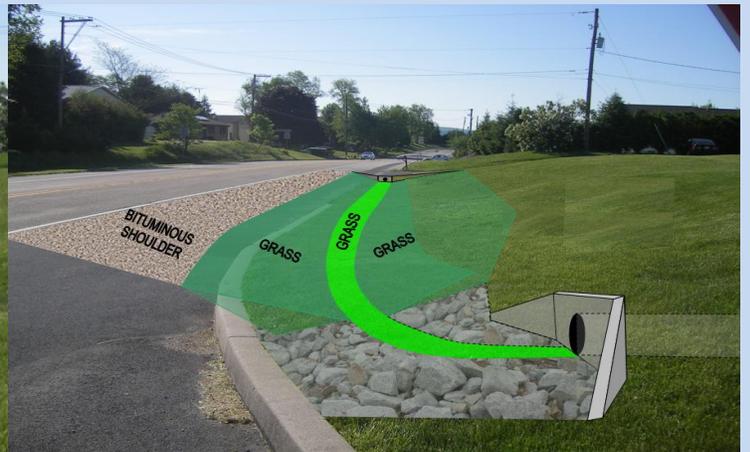


Figure 2.1.2- Alternative installation that utilizes an open surface channel

2.2 Sample Alternative for Category 4 Projects

Eliminate concrete curb gutter and widen road with shoulder and parallel ditch.



Figure 2.2.1- Conventional installation

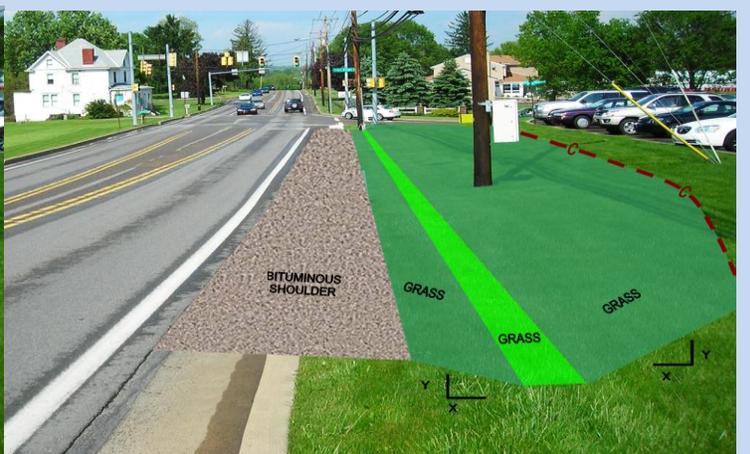


Figure 2.2.2- Alternative installation that utilizes an open surface channel

2.3 Sample Alternative for both Category 3 and 4 Projects

Install curb cut to redirect storm water off the roadway to an infiltration trench off the right-of-way



Figure 2.3.1- Conventional installation



Figure 2.3.2- Alternative installation directs water to an infiltration trench off the right-of-way without the use of inlets and enclosed storm water facilities

3.1 Co-Applicant Agreements

Description: *Agreement for maintenance of enclosed surface storm water facilities installed in PennDOT right-of-way and/or connected to PennDOT storm water facilities between property owner and local government. This applies to Storm Water Facility Categories 3, 4 and 5.*

Property Owner: *Responsible for design, construction, future maintenance, repair, replacement and reconstruction costs associated with the enclosed surface storm water facilities. Agree to indemnify the Local Government.*

Local Government: *Has the right to review and make request to the proposed design of the enclosed surface storm water facilities before submission to PennDOT. Agree to be the applicant or co-applicant for the HOP for the enclosed surface storm water facilities. Property Owner to provide funding to the local government as specified by HOP condition to offset future maintenance costs associated with the enclosed surface storm water facilities.*

A sample agreement can be found [here](#).

Pipe selection and design life is also a critical element for the local government to review to ensure the storm water facilities provided by the developer will not need immediate replacement. Refer to Appendix C for a pipe selection and design life chart.



3.2 Security Options for Local Government

Description: *At the **sole discretion** of the Local Government, Property Owner may be required to provide security for the construction, maintenance, and indemnity obligations concerning the enclosed surface storm water facilities in the form of (a) **Escrow Account** or (b) **Bond** in a form and amount satisfactory to the Local Government. Refer to Appendix B for sample calculations if Escrow, Bond, and Lump Sum amounts.*

- 3.2.1. Escrow – deposit of funds into an account to be held by the Local Government in the developer’s name in an interest bearing segregated account.
 - a. Example includes a one-time payment (initial sum) to maintain enclosed surface storm water features.
 - b. Similar to escrow accounts that Local Governments use for impact fees or traffic signal maintenance.
- 3.2.2 Bond – posting of a construction and maintenance bond and naming the Local Government as obligee.
 - a. Example includes a one-time payment (bond price) to maintain the enclosed surface storm water features.
 - b. Similar to municipal bonds where regular coupon payments would be used by Local Government.
- 3.2.3 Letter of Credit (LOC) – deposit of funds into an account similar to an Escrow. Please see the PennDOT Irrevocable Letter of Credit Form [M-950L](#) for an example of a LOC for a PennDOT HOP.
- 3.2.4 Lump Sum – a one-time payment made to the local government when they don’t want the burden of a security payment. The fee should take into account the anticipated cost of the future improvements.
- 3.2.5 Additional types of security may be accepted by the Local Government.
- 3.2.6 Additional worksheets could be developed to calculate annual payments or match the Local Government’s current acceptable practices for providing security.



APPENDIX A

TABLE 1 – SUMMARY OF RESPONSIBILITY WHERE PROPERTY OWNER IS APPLICANT FOR HOP				
<i>Storm Water Category</i>	<i>Scenario</i>	<i>Local Government Responsibility</i>	<i>Department Responsibility</i>	<i>Driveway/Local Road Applicant Responsibility</i>
Category 1	Open and enclosed surface storm water facilities draining or conveying drainage under a proposed driveway or local road.	None	Issue HOP to applicant	Apply for HOP and maintain storm water facility
Category 2	Open surface storm water facilities draining more than a proposed driveway or local road, whether connected to a highway storm water facility or not.	Approve	Issue HOP to applicant with local government approval	Apply for HOP and maintain storm water facility
Category 5	Enclosed surface storm water facilities not connected to a highway storm water facility	Option to apply for HOP	Issue HOP to applicant or local government	Apply for HOP if deemed to directly or indirectly serve the public & maintain storm water facility

APPENDIX A

**TABLE 2 – SUMMARY OF RESPONSIBILITY
WHERE LOCAL GOVERNMENT IS APPLICANT FOR HOP**

<i>Storm Water Category</i>	<i>Scenario</i>	<i>Local Government Responsibility</i>	<i>Department Responsibility</i>	<i>Driveway/Local Road Applicant Responsibility</i>
Category 3	Enclosed surface storm water draining more than a proposed driveway or local road and physically or hydraulically connected to an existing or new highway storm water facility.	1) Apply for HOP individually, <i>or</i> 2) Apply as co-applicant with driveway/local road applicant	1) Issue HOP to local government, <i>or</i> 2) Issue HOP to local government & driveway/local road applicant	Financially responsible for maintenance of storm water facility(ies)
Category 4	New or modified enclosed surface storm water facilities draining the highway and/or adjacent properties.	1) Apply for HOP individually, <i>or</i> 2) Apply as co-applicant with driveway/local road applicant	1) Issue HOP to local government, <i>or</i> 2) Issue HOP to local government & driveway/local road applicant	Financially responsible for maintenance of storm water facility(ies)
Category 5	Enclosed surface storm water facilities not connected to a highway storm water facility	Option to apply for HOP	Issue HOP to applicant or local government	Apply for HOP if deemed to directly or indirectly serve the public & maintain storm water facility

APPENDIX B

Figure 2 - Bond Example Worksheet

Yellow values are user inputs from the agreement.

DRAINAGE FEE ESTIMATING WORKSHEET - BOND		AGREEMENT NO.
COUNTY		
MUNICIPALITY		
SR-SEGMENT-OFFSET		
APPLICATION/PERMIT NO.		
APPLICANT/PERMITTEE		
User Inputs		
3 # OF INLETS	UNIT PRICE	50 LIFE CYCLE FOR AGREEMENT
1 # OF MANHOLES	\$ 2,848.00 \$ 8,544.00	2.54% APPROXIMATE INFLATION
2 # OF ENDWALLS	\$ 3,900.00 \$ 3,900.00	4.50% NOMINAL ANNUAL INTEREST RATE
300 LF OF STORM PIPES	\$ 1,750.00 \$ 3,500.00	
	\$ 75.00 \$ 22,500.00	
ACTUAL CONSTRUCTION COST \$ 38,444.00		
9/28/2010	AGREEMENT DATE	TOTAL
INLET CLEANING	CYCLE	UNIT PRICE
CLEANING CLOGGED INLET	1	\$ 44.30 \$ 132.90 \$ 132.90 \$ 3.38
PIPE CLEANING EVERY	5	\$ 203.33 \$ 609.99 \$ 122.00 \$ 3.10
PIPE REPLACEMENT EVERY 50 YEARS	5	\$ 5.93 \$ 1,779.00 \$ 365.80 \$ 9.04
	50	\$ 63.44 \$ 19,032.00 \$ 380.64 \$ 9.67
		SUBTOTAL \$ 991.34 \$ 25.18
		COUPON PAYMENT (CASHFLOW) \$ 1,016.52
		BOND PRICE \$ 24,344.56

This worksheet can be found at: [link](#)

APPENDIX C

Table 3 – Pipe Selection and Design Life

ALTERNATE PIPE SELECTION CRITERIA BASED UPON LOCATION OF DRAINAGE PIPES

LOCATION OF DRAINAGE PIPES		TYPES OF PIPE		NO. OF ALTERNATES REQUIRED
Cross Drains Under Pavement, Shoulder, or Between Curbs; Parallel Storm Sewers Under Pavement or Between Curbs	Fill*	Interstate/ Arterials	Collectors/ Locals	2
	< 0.6 m (< 2 ft)	100 Years Life (Pipes 1, 2, 5 & 7)	50 Years Life (Pipes 1 & 3 thru 7)	
	0.6 m - 4.6 m (2 ft - 15 ft)	100 Years Life (Pipes 1, 2, 5 & 7)	50 Years Life (Pipes 1 & 3 thru 7 & 8)	
	> 4.6 m (> 15 ft)	100 Years Life (Pipes 1, 2, 5 & 7)	100 Years Life (Pipes 1, 2, 5 & 7)	
Parallel Storm Sewers Outside of Pavement or Curbs	50 Years Life (All pipes in LEGEND)			3
Cross Drains Outside of Pavement, Shoulder or Curbs (Cross Drains in Medians, etc.)	50 Years Life (All pipes in LEGEND except 9)			3
Combination Storm Sewer and Underdrain and Other Special Drainage System	100 Years Life*	Pipe 2, open joint, & perforated pipes 5 & 7		2
	50 Years Life**	Fill * < 0.6 m (2 ft)	Pipe 3, open joint, & perforated pipes 4, 5 & 7	3
Fill * ≥ 0.6 m (2 ft)		Pipe 3, open joint, & perforated pipes 4, 5, 7 & 8		
Slope Pipes	50 Years Life (Pipes 4 thru 9)			2
Side Drains (Driveways, etc.)	25 Years Life (All pipes in LEGEND)			3

Separate tables are provided for fill height requirements. Utilize those tables for determination of minimum and maximum fill requirements. Specified minimum fill heights are applicable to pipes under pavement or between curbs. Specified maximum fill heights are applicable to all installations.

- * Fill is defined as the material from the top of the pipe to the riding surface, including the pavement structure.
- * For pipes under pavement or between curbs on Interstate/Arterials.
- ** For pipes other than under pavement or between curbs on Interstate/Arterials.

LEGEND (Types of Pipe)

1. DIP = Ductile Iron Pipe.
2. RCP (Type A) = Reinforced Concrete Pipe, heavy duty.
3. RCP (Type B) = Reinforced Concrete Pipe, normal duty (1200 mm (48 in) max).
4. CGSP = Corrugated Galvanized Steel Pipe.
5. CASP = Corrugated Aluminized Steel Pipe.
6. CCGSP = Coated (Polymer) Corrugated Galvanized Steel Pipe.
7. CAAP = Corrugated Aluminum Alloy Pipe.
8. TP (Group I, II, III, IV or VI) = Thermoplastic Pipe, Group I, II, III, IV or VI (1500 mm (60 in) max). Thermoplastic Pipe Groups are defined in Publication 408 Section 601.
9. TP (Group V - Corr PE) = Thermoplastic Pipe, Group V - Corrugated Polyethylene (900 mm (36 in) max). Thermoplastic Pipe Groups are defined in Publication 408 Section 601.

NOTES:

1. Select pipes with specified years life based on the type of drainage installation, class of highway and fill height (cover). The years life indicated (100, 50 and 25) are approximate expected service lives.
2. Pipe alternates may be eliminated for the following reasons: (1) unstable support, (2) high impact and concentrated loading, (3) high embankments, (4) limited clearance, (5) steep gradients, (6) high acidity to alkalinity of soils and water or other corrosive elements, (7) high erosive forces or (8) for other pertinent reasons.

APPENDIX D

LOCATING SAMPLE AGREEMENT ON THE INTERNET

STEP 1 – Navigate to PennDOT’s [home page](#).

STEP 2 – Select **More Links** along left side.

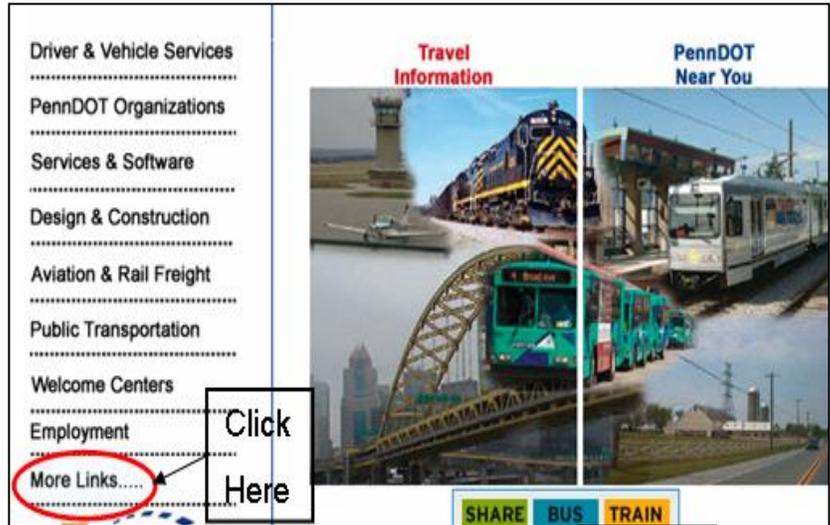
STEP 3 – Scroll down to middle of page.

STEP 4 – Select [Highway Occupancy Permits \(HOP\)](#)

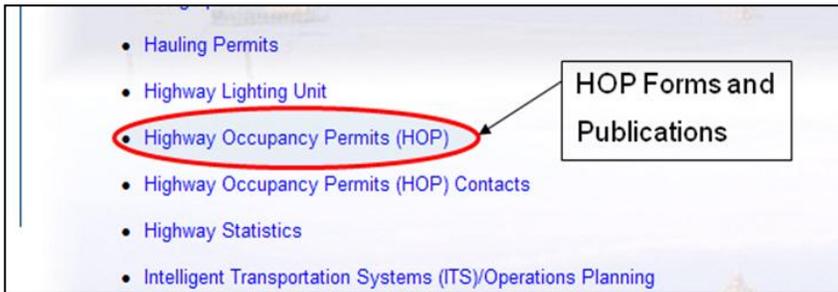
STEP 5 – Scroll down to bottom of page.

STEP 6 – Select [Model Municipal/Land Owner Subsurface Storm Water Facilities Agreement](#).

STEP 7 – Save to local network.



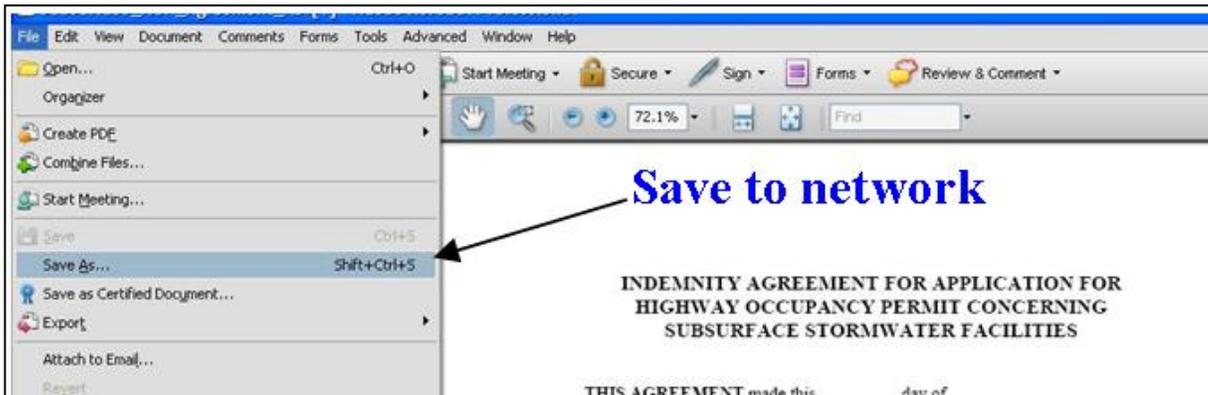
Step 2



Step 4



Step 6



Step 7

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determined will then serve as the basis for the remuneration requested from the property owner.

2. Drainage Structures. -- In order to conform to Title 23, Code of Federal Regulations (CFR), applicants for a permit may not be permitted to encroach or install structures on the right-of-way unless:
 - a. It is in the “public interest”, and
 - b. The encroachment will not impair the highway (as defined) or interfere with the safe and free flow of traffic and drainage.

Both conditions must be satisfied; it is not permissible to allow right-of-way occupancies solely for the convenience of the permittee. Also, do not allow abutting property owners to occupy highway right-of-way with their site improvements if there are reasonable alternatives.

FHWA may allow the placement of rock-lined ditches from an adjacent property to highway drainage systems provided there is compliance with other requirements (e.g., available system capacity). However, a proposal for other encroachments (including pipes and end treatments) must document that the two conditions cited above are satisfied. If this justification is not included with the permit application, promptly return the application to the applicant as incomplete.

Consistent with Regulation 441, permits will not normally be issued for occupancy of any limited access highway by drainage structures which alter or connect with a PENNDOT drainage facility. In special cases, PENNDOT, with the written approval of the FHWA, may make exceptions.

An application for a drainage facility not altering or connected to a Department drainage facility that proposes to occupy limited access right-of-way must be consistent with the Design Manual, Part 5, as specified in Chapter 459.

Construction of Sidewalk, Curb, or Storm Water Facilities

Free Permits will be issued in the name of a local government for the construction or modification of sidewalk, curb or storm water facilities being installed at no additional cost or expense to PennDOT. Local governments are townships, cities, boroughs, incorporated towns, home rule municipalities, and counties. The Department may also issue a permit to an individual property owner for the construction of such structures within its property frontage limits provided the permit is recorded. A local government may impose additional requirements upon a property owner for the construction of curbs and sidewalks provided that they do not conflict with the Department's standards. (See Chapter 5.1 – Storm Water Facility Maintenance – Responsibility for additional guidance on who shall apply for certain storm water facility modifications).

Curbs and sidewalks are to be designed and installed consistent with Sections 630, 676 and 694 of Publication 408, Roadway Construction Standards RC-64M and RC-67M, and Design Manual, Part 2, Chapter 6. Also see Section 416 of the State Highway Law.

Storm water facilities are to be designed and installed consistent with applicable provisions of Design Manual, Part 2, Chapter 2; the Maintenance Manual, Chapter 8.5; Publication 408 and Roadway Construction Standards RC-30M thru RC-46M. Also see Sections 417 and 421 of the State Highway Law.

Applications to construct or modify curb, sidewalk or storm water facility will be reviewed by District staff to determine the effects on safety, capacity, existing utility facilities and compliance with the Americans with Disabilities Act (ADA).

If the proposed sidewalk, curb or storm water facility would have an adverse effect on safety or capacity, the application will not be approved.

If the proposed sidewalk, curb or storm water facilities would have an adverse effect on highway drainage or change the rate, volume, or quality of storm water runoff, the Permittee will be required to (1) construct all remedial storm water facilities, (2) assume all future maintenance obligations of the storm water facilities, and (3) record the permit.

If the proposed sidewalk, curb or storm water facility will require the relocation of any utility facility, the applicant must submit written acknowledgment from all affected Utilities that the Utilities agree to relocate to the location designated on the plans at no additional cost to PennDOT.

Following are regulatory references relating to drainage. (Also see State Highway Law, Sections 417 and 421.)

1. Chapter 441:
 - a. 441.3 (g) – Drainage control plan...
 - b. 441.3(h) – Drainage release.
 - c. 441.4 (f)(1) – Recording...
 - d. 441.6 (6) – Altering drainage prohibited.
 - e. 441.6 (12) – Maintenance.
 - f. 441.6 (15) – Damage to highway.
 - g. 441.10 – Penalties and enforcement actions.
2. Chapter 459:
 - a. 459.1 – Utility facility definition.
 - b. 459.7 (5) – Altering drainage prohibited.
 - c. 459.7 (14) – Maintaining structure or facility.
 - d. 459.7 (16) – Damage to highway.
 - e. 459.11 – Penalties and enforcement actions.

Storm Water Facility Maintenance -- Responsibility

Authority. PennDOT has statutory authority to maintain adequate highway storm water (State Highway Law, 36 P.S. Section 670 - 417) and to regulate the use of State highways (State Highway Law, 36 P.S. Section 670 - 420; 67 Pa. Code Section 441.2). Refer to Chapter 8 of the Maintenance Manual for additional information related to maintenance responsibilities.

Pipe culverts placed under a driveway to accommodate the property owner enables safe vehicular access without adversely affecting highway storm water. If the driveway did not exist, a pipe culvert would not be necessary to maintain highway storm water. Pipe culverts can become blocked and cause more potential problems than driveways with swales. Use swales, where feasible, across driveways. If swales are not feasible, pipes may be allowed.

Pipe culverts placed under a driveway benefit the property owner as well as the traveling public. A pipe culvert can reduce the property owner's cost of maintaining the driveway. Maintenance of a pipe culvert installed under an access is the property owner's responsibility (under Regulation 441.6(12)). Although PennDOT may initially install a pipe culvert under a driveway as part of a construction or maintenance project, it is primarily the *property owner's responsibility* to maintain the pipe culvert just as it is primarily the property owner's responsibility to maintain safe sight distance and to remove snow from the driveway. These responsibilities are not limited to "permitted" driveways; thus, whether or not a valid permit exists does not alter the fact that the owner is responsible for access maintenance.

Persons owning property abutting a State highway have a constitutional right of reasonable (i.e., safe and operationally sound) access to public roads. However, along with this right there is also a responsibility to provide continued safe and operationally sound access to motorists and a responsibility not to adversely affect the rights thru-traffic has to safe and operationally sound highway movement.

Of course, if a nonfunctioning pipe culvert is creating or has the potential to create a hazardous roadway condition, PennDOT may, after appropriate notice, take action to eliminate the hazard (and invoice the property owner for all costs under Program 612, using the applicable Object Codes). Under Regulation 441.10, PennDOT has the authority to remove, sever or block drainage structures constructed or altered without a permit or in violation of the regulations.

Where storm water structures (other than a pipe culvert under a minimum use driveway) are permitted in PennDOT right-of-way or are permitted to connect to PennDOT storm water facilities, the Permit shall state that the permittee is responsible for future maintenance of the storm water structures being installed (see Permit Condition Code #388). Permits that allow the above types of storm water facilities need to be recorded.

It is recommended that every new land development project be designed to retain the site development storm water runoff or a design that does not require storm water to be directed to the State highway right-of-way. However, this is not always possible and PennDOT is faced with site development storm water designs that are directing and discharging storm water toward and within the State highway right-of-way.

In addition, many municipalities, by ordinance, require, as part of the local land development process, the installation of curbing along the site frontage adjacent to a State highway. Often when curbing is introduced, there is a need to manage storm water via the installation of enclosed surface storm water facilities. PennDOT prefers the design of storm water systems through the use of open ditches and cross pipes which reduces the cost of highway projects and future maintenance.

New land development should be designed to ensure that the quantity and volume of storm water directed onto the State highway right-of-way is properly managed. PennDOT is not obligated to issue a highway occupancy permit for the use of its right-of-way for storm water purposes, but may do so in such situations within its discretion for economy of maintenance as well as supporting land development. Permits related to new land development may be issued to private applicants if for open surface storm water facilities. Permits for enclosed surface storm water facilities connecting to highway storm water facilities shall be issued to a local government or a local government and the private owner of the new land development as co-applicants. This policy applies to permits being issued after June 24, 2010. Exceptions may be granted from PennDOT's Central Office for land development plans approved before June 24, 2010. Condition Code #389 should be used if there is a private co-applicant. Permits for enclosed surface storm water facilities not connected to highway storm water facilities can be issued to public or private applicants if they can be defined as a utility facility under Pa Code, Title 67, Chapter 459. Local governments are townships, cities, boroughs, incorporated towns, home rule municipalities, and counties.

Additional guidance, broken into five different scenarios, indicating who the permit applicant shall be for a particular type of proposed storm water facility within PennDOT right-of-way is as follows:

1. **Storm water facilities draining or conveying drainage under a proposed driveway or local road.**
 - a. Permittee – driveway/local road applicant.
 - b. Examples – driveway pipes, culverts, ditches, swales and/or associated open and enclosed surface storm water facilities under or appurtenant to the driveway or local road that serve to drain the driveway or local road or convey drainage under the driveway or local road.

- 2. Open Surface storm water facilities draining more than a proposed driveway or local road, whether connected to a highway storm water facility or not.**
 - a. Permittee – driveway/local road applicant.
 - b. Examples – ditches, curbing, swales and inlets servicing development of the land in general and typically not under or appurtenant to the driveway or local road.
 - c. Local government approval is required if a local ordinance addressing storm water exists. If a local ordinance does not exist, county government should be consulted to determine if there are any county imposed requirements for which approval must be obtained from the county. [As a matter of policy for local coordination purposes.]
 - d. PennDOT is not required to allow use of its right-of-way for this general land development storm water; but may do so within its discretion for economy of maintenance as well as supporting land development.

- 3. Enclosed surface storm water facilities draining more than a proposed driveway or local road and physically or hydraulically connected to an existing or new highway storm water facility.**
 - a. Permittee – local government or local government and landowner as co-permittees. [The local government may pass responsibility onto landowner through land development process.]
 - b. Examples – pipes servicing development of the land in general and typically not under or appurtenant to the driveway or local road.
 - c. PennDOT is not required to allow the use of its right-of-way for this general land development storm water; but may do so within its discretion for economy of maintenance as well as supporting land development.
 - d. The following conditions shall be added to the permit if there is a private co-applicant (Condition Code #389):
 1. STORM WATER FACILITIES INSTALLED BY THIS PERMIT ARE THE PRIMARY RESPONSIBILITY OF THE LOCAL GOVERNMENT TO CONTINUALLY MAINTAIN OR REPLACE.
 2. LANDOWNER CO-PERMITTEE IS RESPONSIBLE FOR PROVIDING FUNDING TO THE LOCAL GOVERNMENT TO OFFSET FUTURE MAINTENANCE COSTS ASSOCIATED WITH THE PERMITTED STORM WATER FACILITY(IES).
 - e. Maintenance responsibilities under the permit only apply to the storm water facilities installed as part of the permit.
 - f. A local maintenance indemnity and funding agreement (co-applicant agreement) is recommended to be recorded so that the agreement will legally bind any subsequent owner of the property serviced by the facility.

- 4. New or modified enclosed surface storm water facilities draining the highway and/or adjacent properties.**
- a. Permittee – local government or local government and landowner as co-permittees. [The local government may pass responsibility on to developer through land development process.]
 - b. Examples – enclosed surface storm water facilities created due to the installation of curbing along the highway. [This scenario is different from scenario three because the facility is draining the highway and/or adjacent properties rather than the landowner's property.]
 - c. PennDOT is not required to allow the use of its right-of-way for this general land development storm water; but may do so within its discretion for economy of maintenance as well as supporting land development.
 - d. The following conditions shall be added to the permit if there is a private co-applicant (Condition Code #389):
 - 1. STORM WATER FACILITIES INSTALLED BY THIS PERMIT ARE THE PRIMARY RESPONSIBILITY OF THE LOCAL GOVERNMENT TO CONTINUALLY MAINTAIN OR REPLACE.
 - 2. LANDOWNER CO-PERMITTEE IS RESPONSIBLE FOR PROVIDING FUNDING TO THE LOCAL GOVERNMENT TO OFFSET FUTURE MAINTENANCE COSTS ASSOCIATED WITH THE PERMITTED STORM WATER FACILITY(IES).
 - e. Maintenance responsibilities under the permit only apply to the storm water facilities installed as part of the permit.
 - f. A local maintenance indemnity and funding agreement (co-applicant agreement) is recommended to be recorded so that the agreement will legally bind any subsequent owner of the property serviced by the facility.
- 5. Enclosed storm water drainage facilities not connected to a highway storm water facility.**
- a. Permittee – landowner or local government. [These are utility facilities under Pa Code, Title 67, Chapter 459.]
 - b. Examples – pipes servicing the development of the land in general that are independent of highway storm water facilities.
 - c. The system must be deemed to directly or indirectly serve the public or any part thereof. §459.1(definition of utility facility). [This is an easier determination if the permittee is the local government.]

The above scenarios have been developed in view of several circumstances: Section 421 of the State Highway Law, 36 P.S. § 670-421, which indicates: "It is unlawful for any person to discharge sewage or drainage, except surface drainage, on, or within the legal limits of, any State highway"; the constitutional right of access held by landowners abutting non-limited access highways; the public nature of local governments as well as their historic and statutory responsibility for storm water management within their geographic boundaries and their review and approval of land development plans, which frequently include storm water management; Pa Code, Title 67, Chapter 441 and

Chapter 459; and the Department's Maintenance Manual, Department Publication 23, Chapter 8.

Asset Management of Cross Pipes

Storm water maintenance responsibilities will be recorded in the Roadway Management System (RMS) along with other Systematic Techniques to Analyze and Manage Pennsylvania Pavements (STAMPP) inventory and condition data as defined in Publication 73, the Drainage Condition Survey Field Manual. Use a "0" for non-PennDOT maintained, and a "1" for PennDOT maintained cross pipes. This will allow the facility to be plotted on the straight-line-diagrams. Field data is expected to be available in the RMS database for input after January 2010.

New cross pipe information shall be provided to the District RMS Coordinator when other highway occupancy permit (HOP) pavement related data is provided through the Pavement History Update Policy implemented in March 2009. *Publication 282 Highway Occupancy Permit (HOP) Guidelines*

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- b. The encroachment will not impair the highway (as defined) or interfere with the safe and free flow of traffic and drainage.

Both conditions must be satisfied; it is not permissible to allow right-of-way occupancies solely for the convenience of the permittee. Also, abutting property owners will not be allowed to occupy highway right-of-way with their site improvements if there are reasonable alternatives.

FHWA may allow the placement of rock-lined ditches from an adjacent property to highway drainage systems provided there is compliance with other requirements (e.g., available system capacity). However, a proposal for other encroachments (including pipes and end treatments) must document that the two conditions cited above are satisfied. If this justification is not included with the permit application, it will be promptly returned to the applicant as incomplete.

Consistent with Regulation 441, permits will not normally be issued for occupancy of any limited access highway by drainage structures which alter or connect with a PENNDOT drainage facility. In special cases, PENNDOT, with the written approval of the FHWA, may make exceptions.

An application for a drainage facility not altering or connected to a Department drainage facility that proposes to occupy limited access right-of-way must be consistent with the Design Manual, Part 5, as specified in Chapter 459.

Construction of Sidewalk, Curb, or Storm Water Facilities

Free Permits will be issued in the name of a local government for the construction or modification of sidewalk, curb or storm water facilities being installed at no additional cost or expense to PennDOT. Local governments are townships, cities, boroughs, incorporated towns, home rule municipalities, and counties. The Department may also issue a permit to an individual property owner for the construction of such structures within its property frontage limits provided the permit is recorded. A local government may impose additional requirements upon a property owner for the construction of curbs and sidewalks provided that they do not conflict with the Department's standards. *(See Chapter 5.1 – Storm Water Facility Maintenance – Responsibility for additional guidance on who shall apply for certain storm water facility modifications).*

Curbs and sidewalks are to be designed and installed consistent with Sections 630, 676 and 694 of Publication 408, Roadway Construction Standards RC-64M and RC-67M, and Design Manual, Part 2, Chapter 6. Also see Section 416 of the State Highway Law.

Storm water facilities are to be designed and installed consistent with applicable provisions of Design Manual, Part 2, Chapter 2; the Maintenance Manual, Chapter 8.5; Publication 408 and Roadway Construction Standards RC-30M thru RC-46M. Also see Sections 417 and 421 of the State Highway Law.

Applications to construct or modify curb, sidewalk or storm water facilities will be reviewed by District staff to determine the effects on safety, capacity, existing utility facilities and compliance with the Americans with Disabilities Act (ADA).

If the proposed sidewalk, curb or storm water facilities would have an adverse effect on safety or capacity, the application will not be approved.

If the proposed sidewalk, curb or storm water facilities would have an adverse effect on highway storm water or change the rate, volume, or quality of storm water runoff, the Permittee will be required to (1) construct all remedial storm water facilities, (2) assume all future maintenance obligations of the storm water facilities, and (3) record the permit.

If the proposed sidewalk, curb or storm water facilities will require the relocation of any utility facility, the applicant must submit written acknowledgment from all affected Utilities that the Utilities agree to relocate to the location designated on the plans at no additional cost to PennDOT.

Following are regulatory references relating to drainage. (Also see State Highway Law, Sections 417 and 421.)

1. Chapter 441:
 - a. 441.3 (g) – Drainage control plan...
 - b. 441.3(h) – Drainage release.
 - c. 441.4 (f)(1) – Recording...
 - d. 441.6 (6) – Altering drainage prohibited.
 - e. 441.6 (12) – Maintenance.
 - f. 441.6 (15) – Damage to highway.
 - g. 441.10 – Penalties and enforcement actions.

2. Chapter 459:
 - a. 459.1 – Utility facility definition.
 - b. 459.7 (5) – Altering drainage prohibited.
 - c. 459.7 (14) – Maintaining structure or facility.
 - d. 459.7 (16) – Damage to highway.
 - e. 459.11 – Penalties and enforcement actions.

Turnpike Permits

Under Act No. 61 of 1985, Section 19(b), PENNDOT is required to approve the Pennsylvania Turnpike Commission's plans and specifications for construction on the Pennsylvania Turnpike by contract. These items are approved by the Bureau of Design as well as affected Districts.

Pennsylvania Turnpike Commission related work within State highway right-of-way is authorized by a Highway Occupancy Permit, issued by the affected District.

Storm Water Facility Maintenance -- Responsibility

Authority. PennDOT has statutory authority to maintain adequate highway storm water (State Highway Law, 36 P.S. Section 670 - 417) and to regulate the use of State highways (State Highway Law, 36 P.S. Section 670 - 420; 67 Pa. Code Section 441.2). Refer to Chapter 8 of the Maintenance Manual for additional information related to maintenance responsibilities.

Pipe culverts placed under a driveway to accommodate the property owner enables safe vehicular access without adversely affecting highway storm water. If the driveway did not exist, a pipe culvert would not be necessary to maintain highway storm water. Pipe culverts can become blocked and cause more potential problems than driveways with swales. Use swales, where feasible, across driveways. If swales are not feasible, pipes may be allowed.

Pipe culverts placed under a driveway benefit the property owner as well as the traveling public. A pipe culvert can reduce the property owner's cost of maintaining the driveway. Maintenance of a pipe culvert installed under an access is the property owner's responsibility (under Regulation 441.6(12)). Although PennDOT may initially install a pipe culvert under a driveway as part of a construction or maintenance project, it is primarily the *property owner's responsibility* to maintain the pipe culvert just as it is primarily the property owner's responsibility to maintain safe sight distance and to remove snow from the driveway. These responsibilities are not limited to "permitted" driveways; thus, whether or not a valid permit exists does not alter the fact that the owner is responsible for access maintenance.

Persons owning property abutting a State highway have a constitutional right of reasonable (i.e., safe and operationally sound) access to public roads. However, along with this right there is also a responsibility to provide continued safe and operationally sound access to motorists and a responsibility not to adversely affect the rights thru-traffic has to safe and operationally sound highway movement.

Of course, if a nonfunctioning pipe culvert is creating or has the potential to create a hazardous roadway condition, PennDOT may, after appropriate notice, take action to eliminate the hazard (and invoice the property owner for all costs under Program 612, using the applicable Object Codes). Under Regulation 441.10, PennDOT has the authority to remove, sever or block storm water structures constructed or altered without a permit or in violation of the regulations.

Where storm water structures (other than a pipe culvert under a minimum use driveway) are permitted in PennDOT right-of-way or are permitted to connect to PennDOT storm water facilities, the Permit shall state that the permittee is responsible for future maintenance of the storm water structures being installed (see Permit Condition Code #388). Permits that allow the above types of storm water facilities need to be recorded.

It is recommended that every new land development project be designed to retain the site development storm water runoff or a design that does not require storm water to be directed to the State highway right-of-way. However, this is not always possible and PennDOT is faced with site development storm water designs that are directing and discharging storm water toward and within the State highway right-of-way.

In addition, many municipalities, by ordinance, require, as part of the local land development process, the installation of curbing along the site frontage adjacent to a State highway. Often when curbing is introduced, there is a need to manage storm water via the installation of enclosed surface storm water facilities. PennDOT prefers the design of storm water systems through the use of open ditches and cross pipes which reduces the cost of highway projects and future maintenance.

New land development should be designed to ensure that the quantity and volume of storm water directed onto the State highway right-of-way is properly managed. PennDOT is not obligated to issue a highway occupancy permit for the use of its right-of-way for storm water purposes, but may do so in such situations within its discretion for economy of maintenance as well as supporting land development. Permits related to new land development may be issued to private applicants if for open surface storm water facilities. Permits for enclosed surface storm water facilities connecting to highway storm water facilities shall be issued to a local government or a local government and the private owner of the new land development as co-applicants. This policy applies to permits being issued after June 24, 2010. Exceptions may be granted from PennDOT's Central Office for land development plans approved before June 24, 2010. Condition Code #389 should be used if there is a private co-applicant. Permits for enclosed surface storm water facilities not connected to highway storm water facilities can be issued to public or private applicants if they can be defined as a utility facility under Pa Code, Title 67, Chapter 459. Local governments are townships, cities, boroughs incorporated towns, home rule municipalities, and counties

Additional guidance, broken into five different scenarios, indicating who the permit applicant shall be for a particular type of proposed storm water facility within PennDOT right-of-way is as follows:

- 1. Storm water facilities draining or conveying drainage under a proposed driveway or local road.**
 - a. Permittee – driveway/local road applicant.
 - b. Examples – driveway pipes, culverts, ditches, swales and/or associated open and enclosed surface storm water facilities under or appurtenant to the driveway or local road that serve to drain the driveway or local road or convey drainage under the driveway or local road.

- 2. Open Surface storm water facilities draining more than a proposed driveway or local road, whether connected to a highway storm water facility or not.**
 - a. Permittee – driveway/local road applicant.

- b. Examples – ditches, curbing, swales and inlets servicing development of the land in general and typically not under or appurtenant to the driveway or local road.
 - c. Local government approval is required if a local ordinance addressing storm water exists. If a local ordinance does not exist, county government should be consulted to determine if there are any county imposed requirements for which approval must be obtained from the county. [As a matter of policy for local coordination purposes.]
 - d. PennDOT is not required to allow use of its right-of-way for this general land development storm water; but may do so within its discretion for economy of maintenance as well as supporting land development.
- 3. Enclosed surface storm water facilities draining more than a proposed driveway or local road and physically or hydraulically connected to an existing or new highway storm water facility.**
- a. Permittee – local government or local government and landowner as co-permittees. [The local government may pass responsibility onto landowner through land development process.]
 - b. Examples – pipes servicing development of the land in general and typically not under or appurtenant to the driveway or local road.
 - c. PennDOT is not required to allow the use of its right-of-way for this general land development storm water; but may do so within its discretion for economy of maintenance as well as supporting land development.
 - d. The following conditions shall be added to the permit if there is a private co-applicant (Condition Code #389):
 - 1. STORM WATER FACILITIES INSTALLED BY THIS PERMIT ARE THE PRIMARY RESPONSIBILITY OF THE LOCAL GOVERNMENT TO CONTINUALLY MAINTAIN OR REPLACE.
 - 2. LANDOWNER CO-PERMITTEE IS RESPONSIBLE FOR PROVIDING FUNDING TO THE LOCAL GOVERNMENT TO OFFSET FUTURE MAINTENANCE COSTS ASSOCIATED WITH THE PERMITTED STORM WATER FACILITY(IES).
 - e. Maintenance responsibilities under the permit only apply to the storm water facilities installed as part of the permit.
 - f. A local maintenance indemnity and funding agreement (co-applicant agreement) is recommended to be recorded so that the agreement will legally bind any subsequent owner of the property serviced by the facility.
- 4. New or modified enclosed surface storm water facilities draining the highway and/or adjacent properties.**
- a. Permittee – local government or local government and landowner as co-permittees. [The local government may pass responsibility on to developer through land development process.]

- b. Examples – enclosed surface storm water facilities created due to the installation of curbing along the highway. [This scenario is different from scenario three because the facility is draining the highway and/or adjacent properties rather than the landowner's property.]
- c. PennDOT is not required to allow the use of its right-of-way for this general land development storm water; but may do so within its discretion for economy of maintenance as well as supporting land development.
- d. The following conditions shall be added to the permit if there is a private co-applicant (Condition Code #389):
 - 1. STORM WATER FACILITIES INSTALLED BY THIS PERMIT ARE THE PRIMARY RESPONSIBILITY OF THE LOCAL GOVERNMENT TO CONTINUALLY MAINTAIN OR REPLACE.
 - 2. LANDOWNER CO-PERMITTEE IS RESPONSIBLE FOR PROVIDING FUNDING TO THE LOCAL GOVERNMENT TO OFFSET FUTURE MAINTENANCE COSTS ASSOCIATED WITH THE PERMITTED STORM WATER FACILITY(IES).
- e. Maintenance responsibilities under the permit only apply to the drainage facilities installed as part of the permit.
- f. A local maintenance indemnity and funding agreement (co-applicant agreement) is recommended to be recorded so that the agreement will legally bind any subsequent owner of the property serviced by the facility.

5. Enclosed surface storm water facilities not connected to a highway drainage facility.

- a. Permittee – landowner or local government. [These are utility facilities under Pa Code, Title 67, Chapter 459.]
- b. Examples – pipes servicing the development of the land in general that are independent of highway storm water facilities.
- c. The system must be deemed to directly or indirectly serve the public or any part thereof. §459.1(definition of utility facility). [This is an easier determination if the permittee is the local government.]

The above scenarios have been developed in view of several circumstances: Section 421 of the State Highway Law, 36 P.S. § 670-421, which indicates: “It is unlawful for any person to discharge sewage or drainage, except surface drainage, on, or within the legal limits of, any State highway”; the constitutional right of access held by landowners abutting non-limited access highways; the public nature of local governments as well as their historic and statutory responsibility for storm water management within their geographic boundaries and their review and approval of land development plans, which frequently include storm water management; Pa Code, Title 67, Chapter 441 and Chapter 459; and the Department’s Maintenance Manual, Department Publication 23, Chapter 8.

Asset Management of Cross Pipes

Storm water maintenance responsibilities will be recorded in the Roadway Management System (RMS) along with other Systematic Techniques to Analyze and Manage Pennsylvania Pavements (STAMPP) inventory and condition data as defined in Publication 73, the Drainage Condition Survey Field Manual. Use a "0" for non-PennDOT maintained, and a "1" for PennDOT maintained cross pipes. This will allow the facility to be plotted on the straight-line-diagrams. Field data is expected to be available in the RMS database for input after January 2010.

New cross pipe information shall be provided to the District RMS Coordinator when other highway occupancy permit (HOP) pavement related data is provided through the Pavement History Update Policy implemented in March 2009. *Publication 282 Highway Occupancy Permit (HOP) Guidelines*

APPENDIX “B” SERIES

APPENDIX B -- Recommended HOP Application Process

APPENDIX B1 -- HOP Project Scoping Meeting Checklist

APPENDIX B2 -- TIS Scoping Meeting Criteria

APPENDIX B3 -- TIS Scoping Meeting Checklist

APPENDIX B4 -- HOP Storm Water Facility Guidebook

**CHAPTER 8
DRAINAGE AND DRAINAGE SYSTEMS**

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8.5 STORM WATER MAINTENANCE RESPONSIBILITIES CONCERNING MUNICIPALITIES AND UTILITIES

Purpose

Storm water system maintenance has proven complex and contentious throughout PennDOT's history. Commonwealth statutory and common law has proscribed shared responsibility for the land constituting the State highway right-of-way, which includes shared storm water system responsibility. These responsibilities vary among municipality types as specified in the law.

This policy statement is intended as guidance to PennDOT maintenance staff, not as a binding norm. Statements made herein about the maintenance responsibilities of PennDOT and municipalities are not intended to admit or acknowledge ownership of storm water facilities by PennDOT or any municipality and any such admission or acknowledgement is hereby expressly disclaimed.

See Exhibit 7 entitled "Background for Storm Water Facilities Policy."

Definitions

"Capacity": The maximum expected quantity of water, created by a design storm that can be accommodated at a particular location (inlet, ditch, etc.) Capacity design standards are located within Chapter 10 of Design Manual Part 2, Publication 13M.

"Structural Conditions" An enclosed surface storm water facility's strength, structural integrity, plasticity, and fracture toughness. Structural conditions for maintenance purposes include natural deterioration, structural failure, and exceeded design life.

"Surface water drainage": Water from rain that lies or flows on the surface of the earth.

"Subsurface water drainage": Water from beneath the surface of the earth. See Section 8.7 of this Chapter, entitled "Subsurface Water Drainage".

"Surface storm water facilities": Roadway crown, shoulder, curbs, gutters, drop inlets, storm drains, ditches/swales and pipes/culverts.

"Open surface storm water facilities": Ditches, swales, gutters, roadway crowns, shoulders, and curbs. See Section 8.2 of this Chapter, entitled "Surface Water Drainage."

"Enclosed surface storm water facilities": Storm water cross pipes/culverts and parallel pipes/culverts including any attached inlets, headwalls, and end walls. See Section 8.6 of this Chapter, entitled "Pipes, Culverts, Inlets, Endwalls."

"Subsurface storm water facilities": Pipe underdrains, pavement base drains, subgrade drains, and combination storm sewer and underdrains. PennDOT is generally responsible for these facilities as identified in Section 8.7 of this Chapter, entitled "Subsurface Water Drainage".

"Projected curblines": The extension of an existing curblines across an intersection or short uncurbed section between curbed sections.

Limited Access Highways in all Municipalities

Surface storm water facilities installed solely to remove storm water from limited access highways are PennDOT's responsibility.

State-maintained Bridges in all Municipalities

PennDOT is responsible for bridge storm water facilities, except as provided by agreement or order of the Public Utility Commission.

Highway Occupancy Permits in all Municipalities

Under sections 411 and 420 of the State Highway Law of 1945, any storm water facility installed under a highway occupancy permit (HOP) is the responsibility of the permittee to maintain. PennDOT does not assume responsibility for the maintenance of storm water facilities, curbing, or sidewalk installed by HOP. Detailed policy regarding storm water facility HOPs is located within PennDOT Publications 170 and 282. See also Section 8.4 of this Chapter, entitled "Driveways and Drainage Problems."

Agreements in All Municipalities

Legal agreements may exist that establish maintenance responsibility for storm water facilities. These agreements may be for specific facilities or for all facilities within an area. Maintenance of such facilities is as assigned in the agreement.

One type of legal agreement is an Agility Agreement based on intergovernmental cooperation language found in Act 57, 1998. PennDOT's Agility Program Guidelines are found within Publication 23, Chapter 23.

The National Pollutant Discharge Elimination System (NPDES) program and other laws also support the ability to enter into legal agreements with local governments to maintain storm water facilities.

Combination Systems in all Municipalities

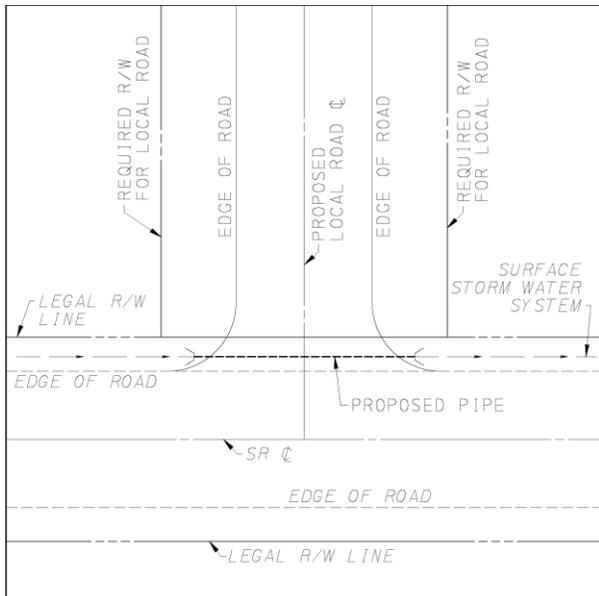
Storm water facilities that incorporate any type of sanitary waste water treatment prior to discharging are the responsibility of the local government or other public or private owner to maintain. Some local governments may have combined storm water and sanitary sewer facilities as part of their storm water systems. PennDOT will not be responsible for

maintaining any part of a combined storm water and sanitary sewer facility under any circumstance.

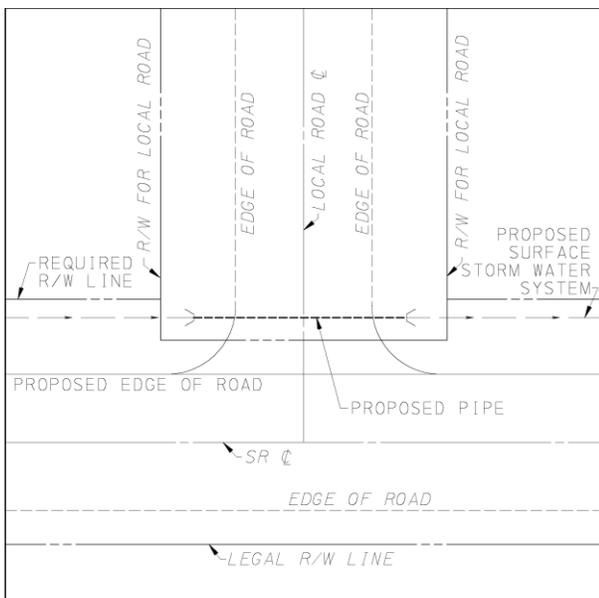
Intersecting State and Local Roads in all Municipalities

The following policy should be followed in maintaining and replacing enclosed surface storm water facilities parallel to state highways within state right-of-way at intersections with municipal roads. As noted below, there are three categories to be considered.

1. **Category One** involves an existing state road and a local government agency building or reconstructing a local road, or accepting a local road from a developer. Section 36 P.S. 670-420(b) clearly provides that "the Secretary may issue permits for the opening of streets and driveways onto state highways.... on terms and conditions established in department regulations...." If a newly constructed or reconstructed local road must traverse a drainage area to access a state highway, the drainage must be properly controlled and any changes in storm water runoff must be addressed. Accordingly, the HOP shall require the municipality to design, construct and maintain any and all affected storm water appurtenances subject to any agreement with the developer and in accordance with the Publications 170 and 282.

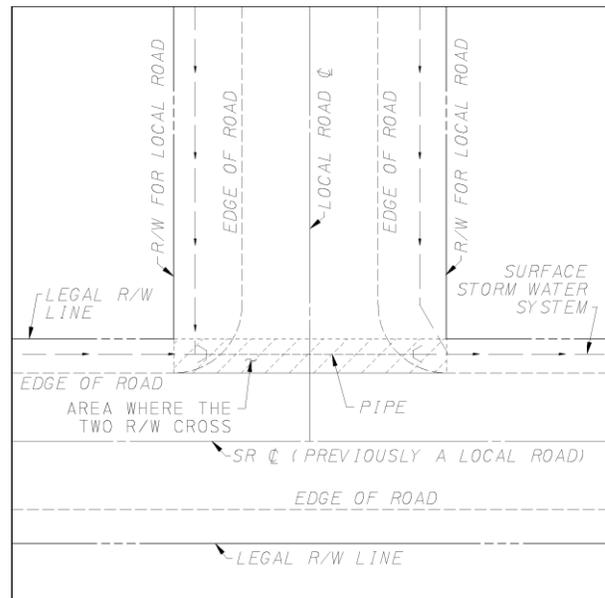


2. **Category Two** involves an existing local road and the construction or reconstruction of a state highway. If the state highway, for its proper drainage, requires the placement of a cross-pipe under the existing local road, PennDOT bears the responsibility for installing the cross pipe and for maintaining it consistent with the policies outlined below on enclosed surface storm water facilities in townships and cities, boroughs and incorporated towns, depending on the location of the facility.



3. **Category Three** usually involves two roads which were built by a local government and, by

statute, the state assumed jurisdiction of one of these two intersecting roads. Under these circumstances there is joint jurisdiction and responsibility over the intersection area. The state right-of-way includes the paved cartway on the state road and the associated drainage swales. The local right-of-way includes the paved cartway on the local road and the associated drainage swales. The area where the two rights-of-way cross does not become the sole right-of-way of the state. If a cross-pipe serves both the state and local road and there exists joint responsibility for the maintenance of this cross-pipe, an agreement may be reached with the local government to cooperate in the joint maintenance of the cross-pipe under the Agility Program or by separate agreement.



Open Surface Storm Water Facilities in Cities, Boroughs and Incorporated Towns

PennDOT’s maintenance responsibility for open surface storm water facilities is between curblines (actual or projected), including inlet grates in the roadway surface. PennDOT will not perform any maintenance beyond the curblines except to maintain the structural integrity of the highway, such as slopes, walls, etc.

If the capacity of an open surface storm water facility is compromised by upgrade surface water drainage not from the State highway, PennDOT reserves the right to take appropriate action against the private party or local government that caused or failed to prevent the capacity issue.

Open Surface Storm Water Facilities in Townships

PennDOT will maintain all open surface storm water facilities within the right of way, including inlet grates in the roadway surface.

Districts are encouraged to use grass swales when possible rather than curbing. Curbing is not always necessary, particularly in areas of unrestricted right-of-way and topography. Depending on physical limitations, shoulders can be designed to accommodate pedestrians and bicyclist, if necessary, using wider, flatter areas and dedicated bike lanes. Sidewalks can also be set back from the roadway as to eliminate the need for curbing and its associated enclosed surface storm water facilities

When an enclosed surface storm water facility is opened, the District must report the change to the Bureau of Maintenance and Operations (BOMO). BOMO will maintain a list of these changes.

If the capacity of an open surface storm water facility is compromised by upgrade surface water drainage not from the State highway, PennDOT reserves the right to take appropriate action against the private party or local government that caused or failed to prevent the capacity issue.

Work outside PennDOT Legal Right of Way

PennDOT will not perform storm water maintenance activities outside the legal right-of-way, except to exercise rights granted under the "Ditch and Drainage Act," 36 P.S. 670-417, to re-establish drainage flow. Once drainage flow

is established, maintenance activities will cease, except for any continuing obligations imposed by environmental permitting. When performing activities off PennDOT right-of-way, employees or contractors must follow the procedures set forth in Section 8.3 of this Chapter, entitled "Authorization to Enter Private Property for Drainage Activities."

Enclosed Surface Storm Water Facilities in Cities, Boroughs and Incorporated Towns

PennDOT does not maintain enclosed surface storm water facilities within cities, boroughs and incorporated towns. This includes inlets below grates, cross pipes/culverts, parallel pipes/culverts, headwalls and endwalls unless PennDOT has assumed maintenance by agreement, or has installed facilities located in 1st or 2nd Class Cities.

Street cleaning and sweeping at and along curb lines (actual and projected) is considered to be a drainage function of cross and parallel pipes within the curb section. The Department, through past practice or agreement, may sweep these sections but is not obligated to do so.

If there is an emergency condition involving public safety where the integrity of the road surface has been compromised due to the failure of a local government to maintain an enclosed surface storm water system, PennDOT may correct the condition and bill the local government for the cost of the work.

PennDOT's discretionary authority to install enclosed surface storm water facilities in 1st and 2nd Class Cities must be exercised in a limited manner and only if the City agrees to future maintenance, in writing.

Enclosed Surface Storm Water Facilities in Townships

Maintenance activities may occur under four circumstances: deficiencies relating to structural conditions; lack of capacity; routine

maintenance; and emergency repairs. PennDOT will maintain enclosed surface storm water facilities of the state highway within townships for structural conditions, but not lack of capacity.

1. **Structural conditions.** PennDOT's responsibility for deficiencies relating to structural conditions includes the repair and replacement of inlets below grates, cross pipes/culverts, parallel pipes/culverts, headwalls and endwalls for structural condition reasons unless the township has assumed maintenance by written agreement or HOP, a combination or system with treatment facilities is involved, or there is joint responsibility at intersecting roads.

PennDOT may, where it is feasible and safe, remove, reconstruct, or replace deteriorated parallel pipes with appropriate grass or similar swales or other alternative drainage designs in accordance with all storm water management requirements. PennDOT will notify the Township in writing 30 days in advance of replacement, if feasible, in order for the Township to properly assess and comment. If the township does not desire the piping to be replaced by a grass swale, the township must assume complete maintenance responsibility for the parallel pipes by HOP or legal agreement. The abutting land owner can be a co-applicant on such an HOP. The complete maintenance responsibility assumed by the township will be limited to the facilities that PennDOT would have otherwise replaced with a grass or similar swale or other alternative designs. Both PennDOT and the Township will make every effort in good faith to resolve any disputes over the feasibility and safety of these alternatives.

Districts must determine enclosed surface storm water facility replacement needs based upon safety concerns to the traveling public and the integrity of the surface of the highway; the willingness of the local government and abutting property owners to partner; and the priority of roadway resurfacing needs under the Transportation Improvement Program (TIP) and County Maintenance Surfacing Improvement Program.

2. **Lack of capacity.** Townships are responsible when cross or parallel pipes must be repaired or replaced due to lack of capacity. A repair or replacement due to lack of capacity shall mean the repair or replacement of enclosed surface storm water facilities because the facility can no longer accommodate increased storm water flows from upstream development that occurred since the roadway was established and the storm water facility originally installed. The owners or occupiers of property abutting those facilities shall be required to maintain their storm water on their property or repair or replace the facility, thus requiring an HOP. Lack of capacity does not include failures that occur during storm events that exceed design intensity and duration standards as defined in Publication 13M. Such capacity issues usually arise when storm water issues are not properly addressed in the land development process or where a property owner has altered drainage courses on their property which cause a re-direction or increased flow towards the highway.

3. **Routine maintenance.** Routine maintenance involves, as necessary, removal of leaves and other obstructions from and at the enclosed facilities, and may involve street cleaning and sweeping. It does not include the repair or replacement of enclosed surface storm water facilities for structural conditions. Routine maintenance of enclosed surface storm water facilities may be addressed under PennDOT's Agility Program. If the Agility Program is not used, the past practice of the township and PennDOT with respect to those facilities will determine who is responsible for routine maintenance.

4. **Emergency repairs.** If there is an emergency condition involving public safety or where the integrity of the road surface has been compromised due to the failure of a township to maintain an enclosed surface storm water system for which it is responsible, PennDOT may correct the condition. PennDOT reserves the right to bill the township for the associated costs if it gave prior notice to the township.

8.6 PIPES, CULVERTS, INLETS, ENDWALLS

Highway maintenance activities that are generally performed by Department Forces and are associated with pipes, culverts, inlets, and endwalls include the following:

- 1) Cleaning pipes and culverts (Activity 711-7314-01).
- 2) Cleaning inlets and endwalls (Activity 711-7311-01).
- 3) Repair and/or replacement of inlets and endwalls (Activity 711-7321-01).
- 4) Replacement of pipes and culverts (Activities 711-7324-01 and 711-7324-02).

The Department's objective is to maintain the above referenced structures in a condition to efficiently carry away collected surface and/or subsurface water.

Surface water that does not drain from the roadway surface and the shoulder or subsurface water that reaches the roadway during periods of freezing weather can produce icy spots. Such icy spots can be a problem, particularly when they occur on an otherwise clear or dry roadway and motorists will not expect to encounter them. The best corrective measure is prevention. The locations of icy areas should be documented so that they may be repaired later. Chapter 4 provides guidance for treating and signing such locations as a temporary remedy.

The importance of maintaining and installing drainage facilities to preclude the formation of icy spots should not be overlooked.

Annual inspections should be made after the snow and ice season and routine inspections after heavy rains. These inspections are a very important part of preventative maintenance. Department maintenance employees should watch for signs of drainage problems or failures whenever they travel the roadways. Inlets and endwalls should be checked to determine if any structural repair work is necessary. Frames and grates should be properly seated. Pipe culverts should be checked for condition of pipe, alignment of inlet and outlet ditches and for blockages.

Necessary repairs to concrete and masonry structures should be made as required to provide structurally sound units. Replacement of inlets and endwalls should be made in accordance with Section 605 of Publication 408 (2000) and Standard Drawings RC-31M and RC-34M.

Culverts should be kept reasonably clean and unobstructed. Obstructions and sediment deposits should be removed as quickly as practical. Inlet and outlet channels should be properly aligned and maintained so that culverts can function to capacity. Often the inlet channel needs realignment to prevent sedimentation. Areas around culvert inlets and outlets should be controlled to limit vegetation and permit free flow of water.

It may be necessary to clean debris from a channel or natural water course beyond the right-of-way line to keep rains from washing material into a culvert inlet. Written permission should be obtained from the property owner before entering private property to clean up debris. (Reference discussion in previous section on Authorization to Enter Private Property).

Clogging of pipe by silt, leaves or other debris is a common occurrence. The solution for the leaves and other debris is frequent cleaning. If silting continues to occur, consideration should be given to determining the cause or source of the erosion and stabilizing where appropriate to preclude the introduction of silt and debris to the drainage system.

Scour at inlet ends of pipe is caused by turbulence that results when more water is collected at the inlet than can rapidly be discharged by the pipe. When water collects at the inlet end of pipe culverts, the cause should be determined as soon as possible and the necessary correction should be made promptly to preclude culvert failure. If the ground is not protected a headwall, pipe end section, or riprap should be installed.

Scour at outlet ends of pipe is caused by fast, uncontrolled discharge of a volume of water into an outlet channel that is easily eroded or from a pipe whose discharge elevation is not compli-

EXHIBIT 7

Background for Storm Water Facilities Policy

The Department has historically implemented a curb-to-curb maintenance policy as to State highways based on the provisions of the State Highway Law of 1945, 36 P.S. §670-101 et seq., relating to designation of local roads as State highways. Responsibility was divided between the Department and the local government through which the State highway traverses. The underlying legal provisions are tied to the type of municipality in which the State highway is located (i.e. a city, borough, town, or township). The State Highway Law refers to State highways in townships as the Rural State Highway System.

The statutory provisions in the State Highway Law of 1945 can be summarized as follows:

- a. Cities of the 1st and 2nd Class: Section 542 of the State Highway Law of 1945, 36 P.S. §670-542, provides that the Department's maintenance responsibility does not include "the curbing and footways" of any adopted State highway or the responsibility "to remove snow or keep streets clean." In addition, "repairs and maintenance shall be of such type as shall be determined by the secretary." If necessary, the Department, pursuant to section 543 of the State Highway Law, 36 P.S. §670-543, can elect to construct "storm water conduits, drains and gutters, culverts, bridges, viaducts and retaining walls, curbing and recurbing . . . excepting water pipe and sanitary sewers." Because items installed pursuant to the Department's discretionary authority will be the Department's future responsibility to maintain, the Department has always exercised that authority in a limited manner, and the policy has always been that storm water drainage facilities should not be installed unless the City has agreed to future maintenance, in writing.
- b. Cities of the 2nd A and 3rd Class: Section 522 of the State Highway Law of 1945, 36 P.S. §670-522, provides that the Department's maintenance responsibility is limited to the areas "between curb lines as established at the time of the passage of the act by which the street was designated a state highway" or where the Secretary of Transportation otherwise designates the curb lines. "Repairs and maintenance shall be of such type as shall be determined by the Secretary." Also, according to section 521 of the State Highway Law, 36 P.S. §670-521, in these cities the Department's responsibility does not extend to "maintenance, construction, reconstruction or resurfacing of said streets other than the base and surface courses" or to "any structure of any kind or character whatsoever," including "storm and sanitary sewers."
- c. Boroughs and Incorporated Towns: Section 513 of the State Highway Law of 1945, 36 P.S. §670-513, gives the Secretary of Transportation the power to determine the width and type of maintenance activities the Department will perform. The Department's maintenance policy has therefore always excluded maintenance of storm and sanitary sewers in boroughs.
- d. Townships: Section 502 of the State Highway Law of 1945, 36 P.S. §670-502, gives the Secretary of Transportation the power to determine the width, type, and location of any state highway it constructs or improves, and to determine the types of maintenance activities the Department will perform. The Department's policy in townships has been to limit maintenance responsibility for municipal storm and sanitary sewer systems to the greatest extent possible, maintaining systems necessary only to support the function of the highway.

EXHIBIT 7

The control of storm water within their jurisdictions has long been a function of local governments. Legal authority for the construction and maintenance of storm water drainage facilities, including highway storm water drainage facilities, has traditionally been separate from the legal authority that enables construction and maintenance of roads themselves. For example: (a) the Act of May 24, 1901, P.L. 294, and the Act of April 28, 1899, P.L. 104, both related to municipal construction of sewers and drains; (b) the Act of June 13, 1836, P.L. 551, related to establishment and maintenance of drains and ditches necessary to carry water off roads; and (c) 53 P.S. §57401 et seq., of the current First Class Township Code, and 53 P.S. §§67320 and 67701 et seq., of the current Second Class Township Code relate to storm water facilities. Storm water is addressed in the Municipalities Planning Code, 53 P.S. §10503, and is part of all municipal planning and private land development approvals. In addition, the Storm Water Management Act, 32 P.S. §680.1 et seq., was enacted in response to the impacts of accelerated storm water runoff resulting from land development in the state. It requires counties to prepare and adopt watershed-based storm water management plans and requires local governments to adopt and implement ordinances to regulate development consistent with these plans.

In 2007, the Pennsylvania State Transportation Advisory Committee (TAC), consisting of members from the legislature, the public and state agencies, studied and issued a report entitled Storm Water Facilities on State Highways. The TAC report recognized that the management of storm water on state highways is a complex issue. Legally, cities and boroughs have the responsibility for maintenance of storm water facilities along State highways, and Department policy requires townships to maintain storm water systems as well. It also recognized that the Department's policies for the maintenance of state highways have their roots in the State Highway Law of 1945, which is the basis of the Department's curb-to-curb maintenance policy.

The TAC report recommended that the General Assembly enact legislation to enable the establishment of special purpose municipal authorities to allow for the collection of appropriate fees to adequately maintain storm water facilities along State highways. Key attributes such as ease of fee collection, maintenance and administrative capabilities and other factors should be considered in establishing such entities. Legislation furthering the recommendations of the TAC report has not been introduced to date.

The Department's drainage maintenance policy is reflected in Appendix C to Chapter 7 of this manual, page 5 through 7 of the findings in the TAC report, and the Department's Drainage Manual. The 2011 modifications to Section 8.5 of this manual are not intended to alter the Department's legal interpretations as reflected in these documents or the Department's policies relating to municipalities other than townships. The 2011 modifications were implemented only to alter the types of maintenance activities the Department will perform in townships.

The assumption of responsibility for the structural condition of most enclosed facilities in townships does not alter the requirement that local governments must be the applicant for and responsible for the maintenance of enclosed surface drainage facilities under Highway Occupancy Permits issued pursuant to the State Highway Law and PennDOT Publications 170 and 282, as revised by Strike-off Letter 470-10-3, dated June 24, 2010. This is required in view of Section 421 of the State Highway Law, 36 P.S. §670-421, and the local government can address responsibility with the abutting landowner as part of the land development process. A model agreement between a local government and property owner for maintenance responsibilities in relation to facilities within State highway right-of-way is located on PennDOT's website and can also be requested from PennDOT's Bureau of Highway Safety and Traffic Engineering's Central Permit Office (717)-787-7350.