
PROCEDURES MANUAL FOR DEVELOPERS

CHAPTER 5 –STORM SEWER TAP-IN

Storm sewer 24” x 36” tap-in drawings are required for proposed developments if the:

- Development is greater than one single family residential unit with new sanitary sewer lateral or storm sewer lateral tap(s);

OR

- Development is greater than one single family residential unit with an increase in flow at existing combination sewer lateral or storm sewer lateral tap(s).

OR

- Development is a non-single family residential use proposing to use a new or existing private stormwater connection(s) to a public PWSA owned sewer and/or existing private system connected to the public PWSA sewer system, unless otherwise directed by PWSA.

Any combination, sanitary sewer or storm sewer taps that are being terminated by the customer must be shown on the tap-in drawings (located and stationed as directed). However, if terminating a tap is the only proposed change and no new taps are proposed, then the applicant must complete the Form TERM–Termination Permit and may also have to prepare termination drawings (if directed). Information on the termination-only application can be found at the end of this chapter and in Chapter 3, Tap Terminations. Instructions for preparing the tap-in drawings are provided below.

In addition to following the application procedure described above, the applicant must also obtain an Allegheny County Plumbing Permit and any other State, County, and local approvals as needed. This can be accomplished by contacting the Allegheny County Health Department at 3901 Penn Avenue, Building No. 5, Pittsburgh, PA 15224 (412) 578-8393 and City Planning at 200 Ross Street, 4th Floor, Pittsburgh, PA 15219 (412) 255-2200.

5.1 Tap-in Drawing Basic Guidelines

Tap-in drawings must comply with the following basic requirements.

- Drawing size shall be 24 inches x 36 inches (Landscape).
- Plan views shall be drawn to engineers scale only (typically 1”=20’ or 1”=30’), unless otherwise directed.
- Plan view shall be set to City monumentation and City datum unless otherwise directed.

- Drawing shall be readable and scalable with a north arrow pointing to the top or the right of said sheet.
- Drawing shall include a plan view of the entire site. All existing topographic information shall be shown either 50 percent screened or half-toned.
- Existing building(s) footprint(s) shall be displayed and shall show the address, type of building, number of floors, the square footage of each floor and the total square footage of the building.
- Existing manholes and wyes must be shown by survey stationing. Certain sewer related stationing information can be obtained from most PWSA records.
- Existing sewer mains that will be tapped shall be displayed.
- Proposed location of size of the service line(s) shall be shown. Proposed sewer lateral information is to be shown in bold line weight and text.
- The appropriate scalable plan view, profiles, and details shall be displayed. Examples of the PWSA standard details are included in Appendix E of this Manual.
- Tapping detail(s) and termination detail(s) (if applicable) shall be displayed.
- The summary table entitled “Water and Sewer Flow Data” (see Table 5-1) must be completed by the applicant and shown on each drawing.

**Table 5-1
Water and Sewer Flow Data**

<u>WATER AND SEWER FLOW DATA</u>	
WATER CONSUMPTION	gpd
SANITARY FLOW	gpd
STORM FLOW	cfs
APPLICATION NUMBER (ASSIGNED BY PWSA)	
DEP APPROVAL DATE (ASSIGNED BY PWSA)	

On tap-in drawing display table at 4 inches wide by 3 inches tall.

The tap-in drawing shall show all existing private water and sewer lines connected to the existing property and/or building or servicing the site including abandoned facilities. Any existing service line(s) that will not be reused by the proposed project must be terminated by the owner. The service line(s) must be terminated at the main as per PWSA specifications and standards in a manner acceptable to the PWSA. A new tap(s) will not be provided until all related unused existing services are terminated and witnessed by a PWSA representative. All costs associated with the termination of existing private service lines are the responsibility of the property owner.

Each tap-in drawing must also include an appropriate title block in the lower right-hand corner of the drawing (see Figure 5-1).

**Figure 5-1
Sample Tap-in Drawing Title Block**

ABC DEVELOPERS, INC.			
FIRST AVENUE CONDOMINIUMS			
123 FIRST AVENUE PITTSBURGH, PA 15222			
SCALE:	SHEET	ACCESSION No.	_____
DATE:	_____ OF _____	CASE No.	_____

On tap-in drawing display table at 6 inches wide by 4 inches tall.

Each tap-in drawing must also include the PWSA approval block (see Figure 5-2) to the left of the title block (see sample drawing in Appendix E). The approval block provides the PWSA staff with a space to track the review process.

**Figure 5-2
PWSA Approval Block**

THE PITTSBURGH WATER AND SEWER AUTHORITY

*** APPROVAL FOR:**

_____ NEW WATER TAP, BACKFLOW PREVENTOR,
AND METER INSTALLATION

_____ NEW SANITARY AND/OR STORM SEWER TAP

_____ INCREASE IN FLOW AT EXISTING
SEWER AND/OR WATER CONNECTION

_____ SEWER TAP TERMINATION

_____ WATER TAP TERMINATION

*** DISCLAIMER:**

Signatures / Approval by PWSA are for the physical connection(s) to the water and/or sewer system only.

Responsibility for the design and work depicted by the drawings, including the flow design for the facilities, is by the project Professional Engineer shown by the seal and signature affixed to the drawing. The PWSA does not represent or warrant that the water supply to the facilities is sufficient to support the design demands.

PWSA Project Reviewer certifies that he/she has reviewed the above noted document(s) in accordance with the Authority's established rules and regulations. Based on this review, approval is hereby recommended

Date

_____ PWSA Project Reviewer

Approval

Date

_____ Manager of Development Services

_____ Deputy Director of Engineering

On tap-in drawing display table at 6 inches wide by 8 inches tall.

The approval block contains several options for the type of development proposed by the applicant. The applicant **does not** complete any sections of the approval block. Once PWSA begins review of the tap-in drawings, PWSA will indicate which types of development are applicable.

5.2 Tap-in Drawing Specific Guidelines

Included in Appendix E of this Manual are PWSA standard details relating to sewer tap-ins. The applicant should refer to these details when preparing tap-in drawings and should use only those details that apply to the proposed development. When reviewing the standard details, the applicant is reminded of the following requirements.

- It is encouraged, where feasible to use best management practices (BMPs) to achieve an approved method of surface/stormwater collection, conveyance, detention, and/or retention for stormwater which may minimize or even eliminate the use of PWSA sewer conveyance conduits. Stormwater facilities on private property are usually regulated by other agencies including, but not limited to City of Pittsburgh, Allegheny County Health Department (ACHD), and Pennsylvania Department of Environmental Protection (DEP). The Stormwater Management Officer, located at the Department of City Planning for the City of Pittsburgh (City), can provide more information on private property surface/stormwater detention and retention requirements. Contact information for the City Stormwater Management Officer can be found at the end of Chapter 2. The applicant must also comply with all current county/state stormwater regulations.
- If an existing storm sewer line is present, then the applicant must propose connecting the surface/storm flows from the proposed development to the existing PWSA storm sewer, unless otherwise directed.
- If both existing sanitary sewers and existing storm sewers are present, then the applicant must connect the flows from the proposed development to the appropriate sewers unless otherwise directed. This includes areas where existing combination sewers are intended to become designated storm and/or sanitary sewers in the future as directed by the PWSA.
- If **only** an existing combined sewer is present, then the applicant must propose connecting the flows from the proposed development to the combined sewer with two separate laterals, one for sanitary flows and one for storm flows as per current PWSA regulations, unless otherwise directed.
- Connection of private storm sewer(s) and/or storm sewer lateral(s) to tap PWSA manholes and catch basins/storm inlets and/or related laterals is not permitted.
- Connection to PWSA sewer can be made through an existing wye or through a new approved connection into the PWSA sewer main. If private connection

is proposed to be made through an existing wye, then the location of the existing wye must be shown and stationed to the nearest PWSA manhole on the sewer tap-in drawing(s). Certain existing wye stationing can be obtained from PWSA records/video location of taps. If a new connection is proposed using a new wye, then a detail of the connection must be shown and also stationed as stated above on the sewer tap drawing. New connections must follow current PWSA specifications and standards.

5.3 PWSA Water Quality Requirements

The following regulations for private stormwater connections to PWSA sewers are designed to comply with the current Pennsylvania Department of Environmental Protection's suggested guidelines for stormwater quality as expressed in the current edition of the Pennsylvania Stormwater Best Management Practices Manual (BMP Manual) (<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-68851/363-0300-002.pdf>). Chapter 3, Section 3.5 of this manual states "Achieve an 85 percent reduction in post-development particulate associated pollutant load (as represented by Total Suspended Solids [TSS]), an 85 percent reduction in post-development total phosphorus loads, and a 50 percent reduction in post-development solute loads (as represented by NO₃-N), all based on post-development land use." Any structural or nonstructural methods of achieving the stormwater quality guidelines above are acceptable, provided that appropriate documentation and worksheets from the Pennsylvania Stormwater best Management Practices Manual are submitted to PWSA and found to verify the claimed performance after review. All surface drainage areas except for unoccupied elevated roof space must be captured and treated. All structural and nonstructural water quality designs must meet the following requirements:

- Design must capture grit/silt, floatable debris and/or other pollutants as noted in these specifications or as directed.
- The device must be detailed on the plans and all certified pertinent sizing information, options, weirs, orifices, settings, flow capacity, etc. must be noted. PWSA reserves the right to request design certification from an engineer registered in Pennsylvania.
- Provide documentation of required approval(s) by other private and/or government agencies.
- The property(s) owner(s) must provide a signed statement outlining the maintenance requirements as stated by the manufacturer and/or designer and agreeing to accepting responsibility for this required private maintenance. PWSA reserves the right to request a recorded copy of this document.

Due to the congested nature of development within the City of Pittsburgh, many sites will be required to use water quality filters and/or hydrodynamic devices as standalone units. If the surface drainage area excluding unoccupied roof space is less than 5000 ft², PWSA

may grant approval to use inlet filter bags designed for permanent installation and/or maintenance. However, they must meet the same stormwater quality requirements. Water quality filters and/or hydrodynamic devices and/or inlet filter bags must meet the following minimum requirements:

- 85% total suspended solids (TSS) removal with a mean particle size distribution of 50 microns or smaller. It is assumed that removal of the smaller particles will result in the desired nitrogen and phosphorus removal.
- Design must not release previously captured pollutants during high flows or when in need of maintenance.
- Design must capture above noted grit/silt, floatable debris and/or other pollutants as directed.
- The device must be detailed on the plans and all certified pertinent sizing information, options, weirs, orifices, settings, flow capacity, etc. must be noted.
- The property owner(s) must provide a signed and/or legally recorded statement/agreement outlining the maintenance requirements as stated by an approved manufacturer and agrees to accepting responsibility for this required private maintenance.
- The stormwater quality device must be located where it is accessible for PWSA inspection and/or for maintenance by the owner
- PWSA may request test results from an independent source.

Other private BMPs that work well in an urban environment are predominantly based on subsurface storage detention and/or retention, which are usually located beneath parking lots, landscaping, or other surface features. The surface feature may or may not be part of the BMP.

In its simplest form, subsurface storage consists of an excavated area filled with crushed stone which stormwater is directed to. The reservoiring water fills the void space between the individual stones. Perforated pipes and/or proprietary structures are often added to increase the storage capacity. The excavation is lined with geotextile to deter fine soils from entering the storage space.

Stormwater **retention** refers to runoff which is kept onsite and usually allowed to infiltrate into the existing earth. This is preferred over stormwater detention, but site conditions may limit the ability to infiltrate stormwater. Percolation testing should be done to verify the site conditions during design and the area protected from compaction damage during construction activities if stormwater retention is proposed.

Stormwater **detention** refers to the storage and slow release of stormwater. This minimizes the peak flow rate in the storm sewer and/or receiving body of water. Most BMPs are designed to retain a portion of the stormwater and detain the remainder.

The Pennsylvania DEP BMP Manual has many more specific BMPs based on the general concepts above, such as Pervious Pavement with Infiltration Bed, Infiltration Basin, Infiltration Trench, and Rain Garden. The BMP Manual also includes BMPs based on other concepts which are well adapted to an urban environment, such as Vegetated Roofs and Runoff Capture & Reuse. Many companies have developed proprietary versions of BMPs which may also be used, provided they are compliant with current local, state, and PWSA regulations. As long as sound design principals and methodologies are used, BMPs may be mixed, matched, modified, and linked together. Also refer to current municipal and Allegheny County guidance and regulations for additional information.

5.4 Administrative Checklist

The applicant is required to submit the Administrative Checklist with the Application. Submittals received without a completed and signed checklist will be returned to the applicant. A copy of the Administrative Checklist is included in Appendix A.

5.5 Technical Checklist

The applicant is required to submit the sewer tap-in drawings Technical Checklist along with the drawings. Submittals received without a completed and signed checklist will be returned to the applicant. A copy of the Technical Checklist is included in Appendix F.

All submittal items except for the review fee must be submitted electronically as outlined in the Introduction of this Manual. The review fee and any original signed documents can be delivered to the PWSA office or mailed to the following address:

Pittsburgh Water and Sewer Authority
Penn Liberty Plaza I
1200 Penn Avenue
Pittsburgh, PA 15222
Attn: Engineering and Construction

5.6 Review of Tap-in Drawings

Before the PWSA will review the tap-in drawings, the following prerequisite conditions must be satisfied:

- The applicant shall have submitted a PWSA Request Form for Water and Sewer Availability (see Chapter 1).
- The applicant shall have submitted a complete PWSA Water and Sewer Use Application (see Chapter 2).
- If applicable, DEP Sewage Facilities Planning Module must be under review and/or approved.
- The PWSA Water and Sewer Use Application has been approved by all agencies listed on the Application.

- The applicant has submitted an Administrative Checklist and a Technical Checklist.

The sewer tap-in drawings will initially undergo an administrative review. If the drawings are determined by PWSA to be administratively complete, then the PWSA will conduct a technical review of the drawings and related information.

Refer to the Introduction of the Manual for a description of the review process and discussion of review fees.

Once PWSA grants final approval of the tap-in drawings, PWSA will contact the applicant in writing stating that the final review of the tap-in drawings is complete. The letter will request that the applicant submit one set of 24 inches x 36 inches (Landscape) mil thick, double-matte, archival quality, permanent, reproducible Mylar drawings. PWSA will review the Mylars submitted by the applicant. Once PWSA approves the Mylars, PWSA will contact the applicant with the calculated amount owed for any tapping, connection, or customer facilities fees. PWSA can provide an electronic and/or hard **copy** of the approved Mylars for the applicant's records, when the permit is picked up.

The applicant has several forms to complete in order to finalize the approval process. Contact the PWSA permit counter at (412) 255-2443 to arrange for completing these forms and paying the required fees. The additional forms are as follows:

- Form GEN–Customer Application.
- Form SWR–Sewer Lateral Connection.
- Form TERM–Termination Permit (if applicable).

Samples of the forms are provided in Appendix D.

5.7 Tapping, Connection, and Customer Facilities Fees

There are currently no tap-in/conveyance fees associated with storm connections. See Chapters 4 and 6 regarding fees for sanitary sewer and water taps.

PWSA's current policy on sewer connections is that the customer is responsible for excavating, connecting the service lateral (including the wye if directed) at the PWSA main line as per PWSA specifications and standards, and installing the private service lateral from the PWSA main to the property and/or building to be served. PWSA must be notified at least three working days in advance for inspection of tap installation on the sewer main. (see 5.8 below)

A connection fee is currently not charged by the PWSA for connecting to the public sewer because the customer typically makes the physical connection(s). Currently, a customer facilities fee can be charged by the PWSA for inspecting the installation of the new service lateral connections. All fees must be paid before sewer service is established.

5.8 Tap-in Procedure

Be advised that for obvious reasons, PWSA cannot allow the tap to be made until the Application (see Chapter 2) is signed by PWSA, DEP approval has been granted and all other required parties and the sewer tap-in drawings are approved by PWSA. After final PWSA approvals, the applicant must notify PWSA Operations Division three working days in advance of the proposed actual connection date. **A PWSA inspector must be on site during the connection procedure and backfilling of pipe sewer zone.** Notification point of contact is the Sewer/Service Section at (412) 231-0891 or (412) 231-0892.

5.9 References

City of Pittsburgh Zoning Code Article III, Chapter 906: Environmental Overlay Districts
<http://library.municode.com/index.aspx?clientId=13525&stateId=38&stateName=Pennsylvania>

City of Pittsburgh Zoning Code Article VI, Chapter 915: Environmental Performance Standards
<http://library.municode.com/index.aspx?clientId=13525&stateId=38&stateName=Pennsylvania>

Allegheny County Health Department Plumbing Code, Article 15, Chapter 11: Storm Drainage <http://www.achd.net/legal/legal.html>

Pennsylvania Stormwater Best Management Practices Manual
<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-68851/363-0300-002.pdf>

City of Pittsburgh Stormwater Management Website
<http://www.city.pittsburgh.pa.us/main/html/stormwater.html>