

Agenda

- Welcome
- July 2015 Regulation Update
 - Technical Design
 - Procedural
 - Outreach
- Closing

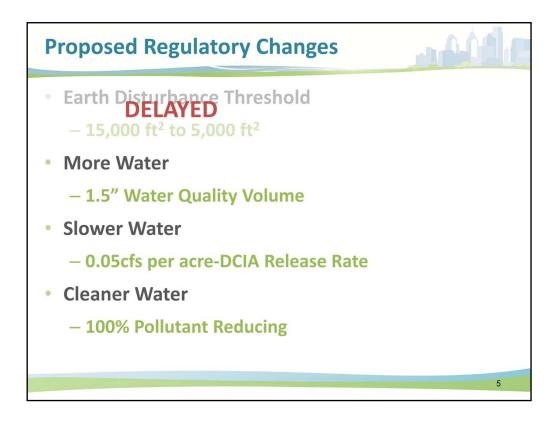
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PWD Development Services Committee

Overview Clarification on Requirements Address feedback from Focus Groups New Compliance Tools Specific Design Criteria

The Technical Design Updates section will provide clarifications on design criteria and requirements planned for change in July, and will discuss feedback received from Focus Groups held since the last DSC meeting. Additionally, new compliance tools are presented that will be introduced in July.



In order to align PWD's Regulations with new Act 167 plans and the requirements of the CO&A, four regulation updates were proposed. The Act 167 plans required the reduction of earth disturbance threshold from 15,000sf to 5,000sf, which has been delayed. The Water Quality Volume increase is proposed to meet the private Greened Acres target while the decreased maximum release rate is proposed based on the treatment rate of Philadelphia's Water Pollution Control Plants. Finally, the increased routing requirement through pollutant reducing practices is proposed to meet the mass capture requirement stipulated in the CO&A.

The routing requirement was previously communicated as a "100% Surface Pollutant Reducing" requirement. This has been refined since the last time the DSC met to a more concise "100% Pollutant Reducing" requirement for all non-infiltrated directly connected impervious area (DCIA).

100% Pollutant Reducing Requirement

- Goal: Decrease the mass of pollutants to waterways
- How its Implemented:
 - Non-infiltrating sites only
 - Existing green SMPs are still preferred
 - **NEW**: Compliance Tools
 - Media Filters & Vegetated Media Filters
 - Effluent Water Quality ≤ 15mg/L TSS
 - Proprietary Products List
 - · Rooftop Runoff Isolation

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The 100% pollutant reducing requirement is focused on reducing the mass of pollutants that reach our waterways, stemming from a new provision in the CO&A. To achieve this goal, runoff from 100% of DCIA that cannot be infiltrated must be treated by a pollutant reducing practice. This new regulation builds on the existing requirement for non-infiltrating sites and can be met with the same SMPs, such as bioretention and green roofs. However, because this new requirement increases the amount of capture (from 20% to 100% capture in the combined sewer area), PWD is expanding the set of acceptable SMPs to include filter SMPs. Proprietary filter SMPs meeting an effluent water quality standard and sand filters meeting PWD minimum design criteria will be acceptable. Stormwater Plan Review staff is actively working with the PWD legal department to provide a list of acceptable proprietary products.

Additionally, PWD is introducing a new pollutant reducing SMP concept called Rooftop Runoff Isolation.

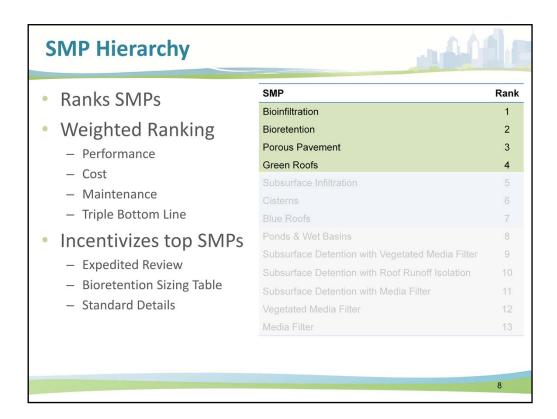
Rooftop Runoff Isolation

- Clean Rooftops are Pollutant Reducing SMPs
- 0.05cfs Release Rate Still Applies
- Qualifying Criteria
 - Non-vehicular area
 - Not mixed with untreated runoff
 - Combined Sewer System only

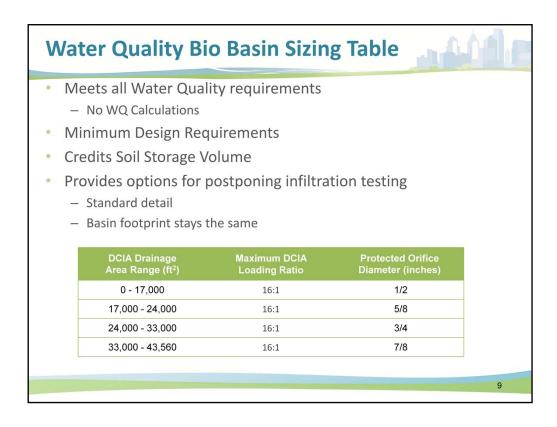
Rooftop Runoff Isolation stems from the concept that runoff from some areas is cleaner than others. Recognizing this, PWD has identified that clean rooftops produce runoff that is not heavily polluted and can therefore be considered a pollutant reducing SMP.

Rooftop Runoff Isolation will serve as a pollutant reducing SMP and is still applicable to the 0.05cfs/ac-DCIA release rate requirement in the combined sewer area.

In order to qualify for Rooftop Runoff Isolation, roof areas must be non-vehicular (e.g. not the top floor of a parking garage) and must not be commingled with other non-treated runoff. Rooftop Runoff Isolation is not applicable in the separate sewer area because there are no treatment plants available; runoff in the separate sewer area therefore needs a different level of treatment.

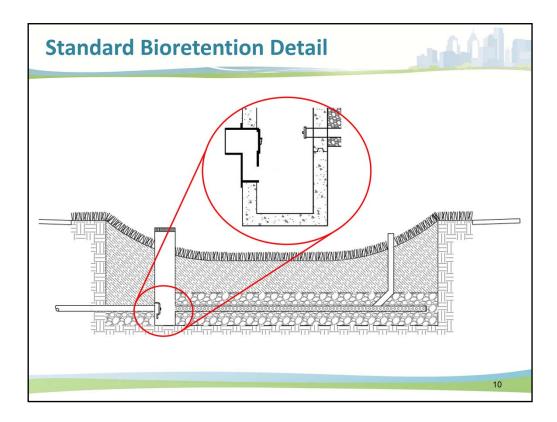


Another tool PWD has prepared for July is the SMP Hierarchy. This tool has been developed to help PWD understand and communicate the order of preference for all SMPs. PWD has used the SMP Hierarchy to formulate incentive-based policies that promote the use of high-performance and cost-effective stormwater management approaches that more effectively achieve the goals of the Green City, Clean Waters program. The top four SMPs have been incentivized with the expansion of expedited reviews, standard details that will be available in the guidance manual and on our website in CAD formats, and a sizing table for bioretention/bioinfiltration SMPs.



The bioretention sizing table was created to simplify the review process for bioretention basins and facilitate the expanded expedited reviews. The table represents the boundaries of multiple requirements and regulations. For example, the basins were sized using the maximum 16:1 loading ratio, the orifice was selected to meet the maximum release rate of 0.05cfs/acre-DCIA, and the side slopes were assumed to be the maximum-allowed 2:1. Due to these assumptions, no water quality calculations will be required for basins that use the standard bioretention detail and follow the table. Calculations showing compliance with the Flood Control, Channel Protection, or Public Health and Safety Rate will be required.

A key feature of this table is the option to postpone infiltration testing until construction. By adhering to the sizing table, basin footprint and major components will remain the same whether or not the system can infiltrate. The only change will be the opening of an orifice in the underdrain cap. The ability to postpone infiltration testing will provide certainty for the applicants and the opportunity to save on the cost and site disruption associated with infiltration testing.



This draft bioretention sample detail illustrates the key design features of a bioretention/bioinfiltration basin including the capped underdrain (highlighted in the expanded view). The minimum requirements set in the standard detail should be used in conjunction with the Bioretention Sizing Table. Note that capped underdrains will be required in bioretention and bioinfiltration basins.

This detail is applicable to both bioinfiltration and bioretention basins (i.e. both infiltrating and non-infiltrating scenarios). The only difference between infiltrating and non-infiltrating scenarios is whether or not an orifice will be drilled into the center of the underdrain cap. If required, the orifice will be sized per the Bioretention Sizing Table to provide an outlet to drain the stormwater below the required release rate of 0.05cfs/acre. Infiltration testing can therefore be postponed until construction because this retrofit is so minor. Using a flexible SMP design can eliminate the review complications associated with infiltration testing.

Comprehensive Field Investigation Reduce the need to retest Design flexibility Altered Testing Methods NEW: Cased Borehole Percolation tests no longer accepted Lowered minimum infiltration rate to 0.4 in/hour Improved guidance in Manual Standard infiltration testing log

PWD recognizes that many projects cannot make use of PWD's expedited review and postponed infiltration testing. Accordingly, PWD is also working to improve the guidance and procedures for infiltration testing associated with projects following the standard design/review path.

The testing procedure, testing methods, and guidance will be updated to facilitate a more comprehensive field investigation. The comprehensive field investigation will provide the designer with some flexibility if they need to move an SMP slightly or raise the bottom of an SMP without the need to perform additional infiltration testing. The addition of the case borehole method will allow applicants with active sites or buildings on site to still test during the design phase and not delay testing until construction, which reduces the risk and uncertainty of the SMP design.

The minimum infiltration rate has been lowered to 0.4in/hr to allow more projects to infiltrate.

	Command	July 2015
	Current	July 2015
Water Quality Volume	1.0"	1.5"
Water Quality Rate	0.24 cfs/acre	0.05 cfs/acre
WQ Treatment: MS4	100% Volume Reducing	100% Pollutant Reducing
WQ Treatment: Combined	20% Volume Reducing	100% Pollutant Reducing
Minimum Orifice Diameter	3 inches	1 inch
Surface Loading Ratio	10:1	16:1
Subsurface Loading Ratio	5:1	8:1
Bioretention Soil Volume Credit	None	20% Void Space
Minimum Infiltration Rate	0.5 in/hr	0.4 in/hr
Disconnection Practices	No Changes	

This table provides an overview of the main technical changes proposed for July 2015. The first four rows outline the proposed regulation changes. The shift from Volume-Reducing to Pollutant-Reducing reflects the increase in tools available for this requirement.

The minimum orifice diameter of 1" applies to traditional "unprotected" orifices. The "protected" orifices use in the bioretention standard detail have a minimum diameter of 0.5". The maximum loading ratios for subsurface infiltration and surface practices will increase, thereby reducing the footprint required of the related SMPs. Starting in July, PWD will also credit soil storage volume in bioretention basins, further increasing the efficiency with which these highly-preferred SMPs can be designed.

Even though the Water Quality Volume is set to increase in July, PWD design requirements for disconnection practices will remain the same.



Streamlined ERSA Application Customized application based on applicability Identify Project for an Expedited Review Online Status Updates and Website Log-On Fully searchable & Mobile Friendly Resources as Web Content Communication – contact us! Web-Based Manual

The ERSA Application is being reworked to distinguish between the three main types of applicability: Conceptual Review, Exemption Review, and Stormwater Retrofit, with Exemption including demolition projects. The application questions will be customized based on the project information provided so that only questions relevant to that type of project will be asked. Additionally, as requested in the January/February Focus Groups, the application will include a field for the applicant to indicate if they would like to apply for an expedited review. Determining a project's eligibility for expedited review at this early stage can avoid time spent on a redesign later in the review process. The upcoming Focus Groups in May will walk through both the new application and website

The new Plan Review website will include the ability for designers to create a unique log-in to check the status of their projects.

Resources will be organized to be fully searchable and easily accessible on the web. Hyperlinks to additional resources will be provided within the body of the manual as well.

The website will show all of the lines of communication available for the development community get in touch with Stormwater Plan Review in one place: in-person meetings, walk-in hours, contact numbers, e-mails etc. If an owner or an engineer has questions, PWD encourages the applicant to reach out through whatever medium is most convenient.

Finally, the revised Manual will be fully web-based and mobile-friendly, with options for printing.

How to use the new manual Online Platform Searchable web content Links connect related content Focus Group in May will walk through manual in more detail Manual Tour Functionality Target for release June 1st

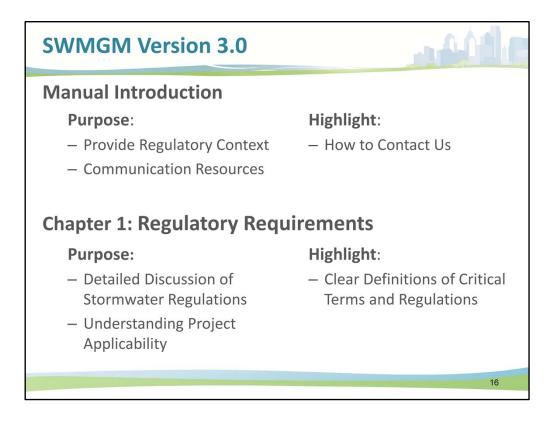
PWD originally anticipated making targeted revisions only to the Manual to accommodate the regulation updates and process enhancements. Once the revision process began, however, PWD realized a larger opportunity existed to re-organize and clarify content throughout the entire Manual, focusing on clarification of policies and process. In addition to updating content, significant attention was given to improving existing resources and guidance within the Manual in response to general feedback, user interviews and focus group suggestions.

Another significant improvement is the web-based Manual platform, which ensures searchability and ease of linking between Manual sections and external resources.

The Focus Groups in May will provide a tour of the web-based Manual and demonstrate functionality on the web.

PWD is targeting a Manual release date of June 1st, allowing users to familiarize themselves with the July 1 Regulations and the associated procedural improvements.

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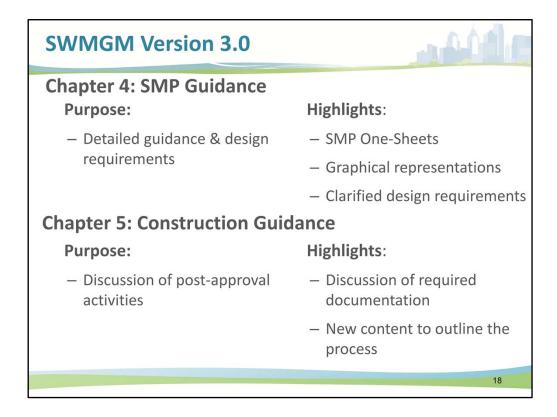
Based on feedback from user interviews, PWD will provide a Manual Introduction to provide an executive summary of the regulatory context for the Stormwater Regulations and provide an overview of the Manual. Special attention was given to the avenues in which the development community can get in touch with Stormwater Plan Review.

Chapter 1 provides a detailed discussion of the PWD Stormwater Regulations and connects the Regulations and their associated requirements to project applicability. Although detailed, this discussion includes clear and concise definitions of the Regulations and critical terms to promote better understanding of applicability factors.

SWMGM Version 3.0 Chapter 2: Submission, Review and Approval Purpose: Highlights: Comprehensive Review Flow Charts Communicate **Process Information** Review Paths and Phases - Clarity of Review Paths and Expedited Review Phases Submissions **Chapter 3: Site Design and SWM Integration** Highlights: Purpose: SMP Hierarchy and Design Integrating Stormwater Management into a Strategies **Development Site** Comprehensive Infiltration **Testing Guidance**

Chapter 2 provides a single resource for the submission, review and approval of projects applicable to the Regulations. Although this usually entails the construction of SMPs, not all applicable projects will involve stormwater management. Although most of this content is familiar to DSC members, PWD has improved the way reviews are discussed in order to bring clarity to a sometimes detailed and complicated process. These improvements include the discussion of "review paths" and "review phases." PWD understands that this information has not been clear to date and is actively working to clarify these processes. For example, simplified flow charts point users to particular sections based on where they are in the process, complementing the more detail information offered in the text.

Chapter 3 discusses PWD's preferred design process to integrate stormwater management into a development site. At previous DSC's PWD has presented on the concept of an SMP Hierarchy, identifying the department's preferences based on several evaluation metrics. This chapter provides detailed information regarding the ranking factors and an SMP Hierarchy table. In addition to the hierarchy, Chapter 3 includes comprehensive infiltration guidance and discussion of design strategies for meeting the Regulations.



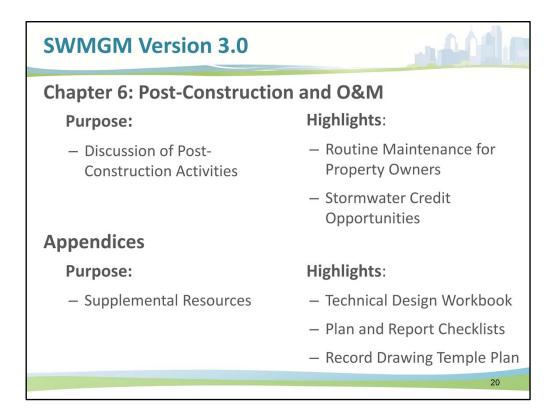
Chapter 4 reflects the rankings of the SMP Hierarchy and provides detailed guidance on design requirements and recommendations as well as graphical representations of SMPs and SMP features. In addition to day-lighting internal policies, PWD spent a significant amount of effort in making a clear distinction between requirements and recommendations — a common request from the development community, designers in particular. As a result of user interviews, PWD is including an "SMP One-Sheet" that summarizes key advantages and limitations associated with each SMP. The one-sheet is meant to be a simplified resource that promotes discussion between the designer and developer.

Chapter 5 provides a discussion of post-approval activities associated with construction and project close-out. Although the procedures and documentation required during the construction process are not changing, PWD thought they deserved a place in the Manual. As a result, the primary audiences for this section include designers and contractors.

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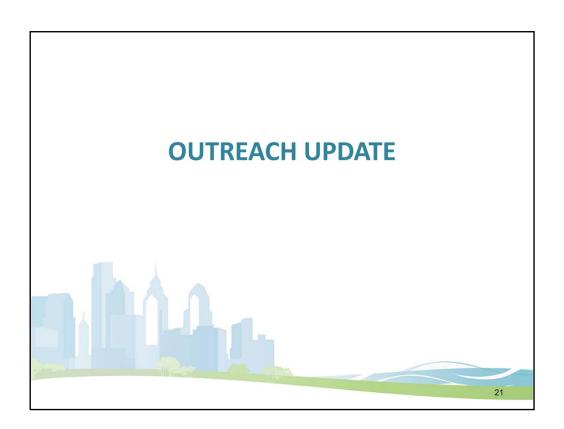


Example graphic from Chapter 4: SMP Guidance.



Chapter 6 is similar to Chapter 5 in that existing policies and procedures regarding post-construction operation and maintenance are new resources within the Manual. The discussion of post-construction activities includes routine maintenance for property owners, and directs users to more detailed maintenance information. Once projects have completed construction, they may be eligible to apply for stormwater credits and Chapter 6 provides a brief discussion and additional resources to facilitate a credit application.

The Appendices have been reorganized as supplemental resources to the Manual content. Appendices include revised technical worksheets, which have been consolidated into a single workbook as a result of Focus Group feedback. The workbook has been updated to reflect the new Regulations for July 1st and have been improved to eliminate glitches and promote connectivity between worksheets. Another Appendix includes plan and report checklists to ensure complete submissions by specifying what must be included for different review paths and review phases. For example, the PCSMP submission checklists indicate plan sheet requirements, PCSMP Report requirements, and infiltration testing report requirements. Also included as an Appendix is a sample record drawing template.



Focus Group Feedback

- "Provide more access to reviewers"
- Pre-application meetings are always an option
- NEW: Notification emails when review begins
- NEW: Required in-person meetings for complex designs
- "Reviews vary based on reviewer experience and interpretation"
 - Internal meetings ensure consistency among reviewers
 - Complex projects are assigned to staff with adequate experience
 - NEW: Design Guidance Checklist in Manual Appendix
- "Projects with pending ownership changes have O&M issues"
 - Conditional Approvals for projects with pending ownership transactions

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In January and February, PWD held two duplicate Focus Groups to solicit feedback on technical requirements and procedural improvements planned for July 2015. This slide describes feedback PWD heard during the Focus Group events, as well as feedback received through other venues like the DSC. For each, a description of existing protocols and procedures is discussed, as well as new ideas for improvements.

Pre-application meetings are always an option for the applicant, and PWD encourages these meetings. Pre-application meetings can be requested at any time.

To ensure the applicant has a clear path of communication with review staff, the assigned Technical Reviewer will now notify applicants by email upon starting the review. Applicants are encouraged to contact their reviewer for a status update, or to offer additional information about their project that may inform the review.

To reduce the back-and-forth of submittals, PWD will now require in-person meetings during PCSMP review for projects that require a large amount of revisions or are particularly complicated.

PWD strives for consistency among all staff. All Technical Reviewers use the same compliance checklist when analyzing projects. Further, staff use standardized comments when drafting review letters. To further ensure consistency, review staff also meet internally to regularly discuss project designs and reviews.

PWD recognizes that more complex designs may warrant higher levels of technical experience and projects are assigned to senior staff as appropriate.

Feedback indicated that it would be helpful to make available the checklists that staff use to analyze project compliance. PWD will share this checklist in the new Manual Appendix. This checklist can be used as a tool for the designer to verify a design meets all relevant requirements prior to submission.

Finally, for cases where the O&M Agreement cannot be finalized during the review, PWD will continue to offer the option for Conditional PCSMP Approvals. PWD recognizes that property transactions can take place post-approval and once construction begins. It is important that the ultimate property owner to be aware of their maintenance responsibilities, and accept and execute the O&M. To facilitate this, PWD will grant Conditional PCSMP Approvals for O&M finalization to be completed during construction on a case-by-case basis.

"A status update option would be helpful" NEW: Website log-on, with links to projects and meeting request form "Improve coordination within PWD" NEW: Dedicated Manual section about other PWD reviews "Reach out to the development community more frequently" NEW: Yearly seminars and update presentations "PWD should reward exceptional projects" Stormwater Pioneers program implemented

With the new website and user log-on, PWD also plans to rework the check status option. Upon log-in, users will be able to see all their associated projects, check the status of review, and request a meeting.

PWD's updated Guidance Manual will include new information about other development reviews happening at PWD. Information including unit contacts, web links, and manual resources will be provided to help an applicant navigate other PWD unit reviews, including Act 537 Sewage Facilities Planning, Private Cost, and Water/Sewer Connections. PWD will also include more information, including a checklist, about what PWD unit reviews are needed to obtain PWD sign-off on a Building Permit application.

As new Regulations and procedural changes are implemented, adjustments may be needed to ensure success. More specifically, policy changes may be necessary as a result of project reviews, and PWD recognizes that formalizing and documenting policies can help future projects with compliance. PWD plans to clearly capture improvements and updates on the new website. Further, PWD is planning to institute yearly seminars for the development community where small changes in policy or requirements can be outlined. PWD is also investigating a quarterly update to an established email listserv to share updates.

PWD is excited to recognize the great work of private development. With the Stormwater Pioneers program, implemented in November 2014, PWD is acknowledging projects that demonstrate innovation and excellence by property owners, developers, and designers to improving the environment and reducing stormwater runoff. When the DSC last met, PWD announced the first Stormwater Pioneers awardee: Stanley's True Value Hardware on Ridge Avenue. PWD's second Stormwater Pioneer award is planned for Spring 2015.

Outreach to date

- Established website: www.PhillyWatersheds.org/StormwaterRegulations
- Two Stormwater Regulation Focus Groups
- Email blasts:
 - Leaders of industry associations, advocacy organizations, partners, government entities
 - Contacts in Plan Review database 2400+
 - ERSA automated emails
- Presentation to the Developers Workshop
- 3rd Party notification: ASCE, BIA, SBN, PA-APA, GPAR

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PWD created an online resource for up-to-date information about the Stormwater Regulations update, at www.PhillyWatersheds.org/StormwaterRegulations.

In January and February, PWD held two duplicate Focus Groups to solicit feedback on technical requirements and procedural improvements planned for July 2015. As a result, PWD was able to connect with representatives from most of the engineering firms in the city. The feedback heard at the focus groups has informed PWD's regulation and process changes. This feedback was discussed at the DSC, and a full summary can be found at www. phillywatersheds.org/stormwater regulations.

PWD released several email notifications in January, including a notification to the 2400+ contacts in the Plan Review database, to announce the changes planned for July. Applicants submitting new projects will also receive automated messages with a reminder about the regulations update and a link to the website.

Other industry organizations have also shared information about the update on behalf of PWD through website content and newsletters.

Outreach Plan

- Planned presentations:
 - SBN, BIA, AWRA in April and May
 - Open to additional presentations
- Email blast with additional updates April
- Focus Group May 7th and 8th
 - Presentation about content changes in Manual
 - Preview tour of the new Plan Review website
- Information Sessions in June, and beyond
- Next DSC late May info session preview

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PWD is planning several outreach events over the next three months. These include a presentation at the Sustainable Business Network GSI Partners Quarterly meeting on April 21st, a presentation for the American Water Resources Association PMAS on May 13th, and a presentation sponsored by the Business Industry Association and Fox Rothschild on May 13th. PWD is interested in additional outreach opportunities – please contact PWD if you are interested in scheduling a presentation event.

In April, PWD will release another round of email notifications to share additional updates about July 1. Comments and questions about the update can be submitted to PWD at any time by emailing PWD.PlanReview@phila.gov, or by completing a comment form on the regulation update website.

In May, PWD will hold another round of Focus Groups to share a preview of the Guidance Manual and new Plan Review website. DSC members were offered the opportunity to sign-up for the Focus Group during the meeting, and can also sign-up by contacting PWD.

In June, PWD will begin to hold information sessions that will fully detail all the changes planned for July 1. In these sessions, PWD plans to review the regulatory changes, including finalized technical design criteria, new policies and procedures, Manual structure, and website navigation. PWD will offer a preview of this presentation in late May to the DSC.

A continuous feedback loop is critical to the success of the update. PWD plans to hold a DSC meeting and another round of Focus Groups in the Fall to solicit comments and ideas.