

Green Stormwater Infrastructure (GSI) Partners

PWD's Stormwater Plan Review
Compliments and Recommendations for
Continued Improvements

November 2014



Introduction

The Sustainable Business Network of Greater Philadelphia (SBN) is a non-profit membership organization working to build a thriving, local, and sustainable economy in the Greater Philadelphia region through advocacy, relationship-building, and education. SBN formed the GSI Partners in response to Philadelphia's ambitious, innovative, and internationally recognized stormwater management plan, *Green City, Clean Waters*, and the significant economic growth that is projected to result from the public and private investment the plan is catalyzing. SBN supports *Green City, Clean Waters* and its triple-bottom line approach, and firmly believes that the City will see the full success of the environmental, economic, and social goals set forth in this exciting plan.

Despite the inherent strength of *Green City, Clean Waters*, the achievement of these goals depends on significant intention in its implementation, including cooperation and communication between the Philadelphia Water Department (PWD) and the private sector. The Greater Philadelphia area is home to a robust and growing cohort of qualified and innovative businesses whose services and products pertain to green stormwater infrastructure. These businesses are perfectly set up and eager to provide support to ensure the success of *Green City, Clean Waters* and of the local green stormwater infrastructure industry as a whole. It is with a spirit of support and collaboration in mind that the GSI Partners' Plan Review Committee was established and with which it has prepared this report.

The GSI Partners' Plan Review Committee is composed of:
Sara Poindexter, Rodriguez Consulting (Committee Chair)
Scott Weiss, Pennoni Associates (through August 15, 2014)
Jonathan Nuss, David Brothers Landscaping Services
Sylvia Palms, Locus Partners
Holly Shields, Delaware Valley Green Building Council
Jeanne Weber, Philadelphia Green Roofs

Throughout the development of this report, this Committee received additional support from:
Molly Julian, Meliora Design
Michael Connor, The RBA Group

How We Got Here

The GSI Partners finalized our stakeholder-informed strategic plan in March 2014. The process, which included an immersive focus group, one-on-one interviews, and a visioning meeting, spotlighted many topics stakeholders felt were pertinent to the maximized success of *Green City, Clean Waters*. One of these topics was support for the improvement of processes and procedures to better facilitate the approval of greener and more innovative stormwater management practices.

PWD's Stormwater Plan Review was identified as one area for attention, so the GSI Partners formed a Plan Review Committee in March 2014 to support this particular goal. The Committee was given the initial task of helping to identify what is working well with PWD's current Stormwater Plan Review process, unpack where there might be opportunities for improvement, and provide recommendations.

Throughout the months of June, July, and August 2014, the GSI Partners Plan Review Committee developed interview questions, received input and approval of these questions from key PWD staff (see Appendix A1), identified local engineers with experience interfacing with PWD's Stormwater Plan Review, conducted one-on-one phone interviews, and facilitated a focus group.

Participating engineers shared their compliments and recommendations for the Plan Review process based on their experiences over the years. All individual responses were distilled into themes. The recommendations fell into 5 categories: *Communication, Resources and Website, Process, Code and Policy, and Internal and External Coordination*. For a summary chart of the recommendations discussed within this report, please see Appendix A2.

Overall, the Committee engaged 13 engineers from 8 firms, including (but not limited to):

Bohler Engineering,
Hunt Engineering,
Meliora Design,
Pennoni Associates,
The RBA Group,
Ruggiero & Plante Land Design, and
Urban Engineers.

Participating engineers have experience working for residential developers, commercial and institutional clients, the City of Philadelphia and other municipalities, and SMIP grant clients. The firms have cumulatively submitted more than 400 projects to PWD's Stormwater Plan Review, including projects that have been directed through the Green Project Review. This report is a reflection of the positive feedback and recommendations this Committee heard from these experienced engineers.

SBN's GSI Partners recognize PWD's ongoing efforts to facilitate the implementation of GSI projects, including making the Plan Review process more accessible, consistent, and predictable for engineers and developers. We believe that these efforts will be increasingly important as regulations continue to tighten and as demand for green stormwater infrastructure and on-site stormwater management continues to increase. As such, we encourage PWD to continue their good work, and offer our ongoing support in these efforts. SBN's GSI Partners present this report with that support in mind.

Accolades

The GSI Partners' Plan Review Committee heard numerous and sincere compliments from participating engineers regarding PWD staff, notable improvements to the Stormwater Plan Review process, and resources currently available.

PWD staff was consistently acknowledged for their professionalism and customer service, and was credited with making PWD one of the best city agencies to work with. Changes in management at the Philadelphia Water Department, especially the Manager of Stormwater Plan Review who was lauded for her management capabilities, were credited with many of the recent improvements to the Plan Review process. PWD is encouraged to continue moving Plan Review in this positive direction. Engineers voiced appreciation for the Plan Review Management's openness to in-person and phone conversations, especially when clarification on comments is desired. These conversations can be more valuable than the comments themselves. Several engineers also voiced appreciation for Plan Review Management's openness to engaging a technical reviewer in the conceptual stage for more complex projects.

Participating engineers indicated that the Plan Review process has undergone improvements beginning in 2008, with the most significant improvements occurring in 2011. Engineers noted faster review times, especially in Conceptual Review, and credited the online ERSA submission as having streamlined the process significantly. The online form acts as a helpful checklist for all necessary documentation. Additionally, engineers noted improvements in communication on all levels: between conceptual staff and submitting engineer, between technical staff and submitting engineer, and between the conceptual and technical review teams.

Many of the resources PWD's Plan Review Department currently offers were noted as being valuable, especially the walk-in hours, both "Top 10" lists, and the Plan Review Website. The Guidance Manual was also cited as a helpful tool for newer and more experienced engineers alike.

PWD's Stormwater Plan Review's leadership, provision of resources, and recent improvements to the process establish a clear intention on the part of PWD to effectively facilitate GSI project implementation. The following recommendations are focused toward this effort and in support of PWD's continued initiative in this direction.

Recommendations

Through this committee's engagement process, five areas in PWD's Stormwater Plan Review were identified as opportunities for improvement: *Communication, Resources and Website, Process, Code and Policy, and Internal and External Coordination*. For each topic, this report presents the challenge, why it is a problem, and offers recommendations. SBN's GSI Partners present these recommendations in support of PWD's continued good work as well as their ongoing efforts to improve the Plan Review process.

Communication

As noted above, our panel of engineers applauds PWD's improvements to communication on all levels, but notes there is still room for continued improvement regarding the consistency of information communicated by different reviewers, communication of updates or changes to the Plan Review process, and updates to the website including new and revised documents.

Participating engineers noted inconsistencies in technical review in terms of both quality and quantity of comments from reviewers. Some engineers cited receiving new comments in second and third rounds of review despite having the same reviewer for each round. Other engineers noted that, depending on the reviewer assigned, comparable projects will receive different degrees of review (one reviewer might only make a handful of comments, while another for a comparable project, will give dozens). One engineer referenced past projects reviewed by a different person in each round of review. These inconsistencies have led to frustrating experiences and to some engineers perceiving certain Plan Reviewers to be inexperienced and/or inflexible. Engineers acknowledged their own learning curves for project submissions as well as an understanding that there will always be some degree of personal difference from reviewer to reviewer in terms of orientation to detail and interpretation of the guidelines. However, overall consistency in approval processes such as Stormwater Plan Review is important for both the project's schedule and the engineer and developer's allotted budgets for the review phase. We recommend further standardizing the review process to minimize inconsistencies. One possible strategy is the implementation of standard review comments, supplemented as needed with a narrative. Additional quality assurance and quality control procedures that would also create a more consistent foundation for the review process are discussed in the Process section of this report.

Another challenge related to the communication theme was regarding dissemination of PWD changes to policy and/or procedure, available resources, qualifications and eligibility requirements for each review path (especially for Green Project Review), documentation needed, etc. Some engineers indicated that they don't always feel "in the loop" regarding changes to policy and/or procedure despite their frequent interactions with PWD and the Stormwater Plan Review team, and that they would benefit from more communication on these topics.

Participating engineers had questions in reference to the qualifications and process for a Green Project Review, noting that the Green Project Review section in the Stormwater Guidance Manual is in need of enhancement in both of these areas. Engineers asked for the opportunity to identify their own projects for the Green Project Review at the conceptual stage. A clearer Green Project Review section in Guidance Manual and a checklist of the documents required for submission would allow engineers to be more proactive about compiling the necessary documentation instead of relying on PWD staff to inform them that a particular project qualifies after the initial conceptual submittal. These changes would facilitate an increase in the number of projects submit to Green Project Review, which in turn supports the goals of *Green City, Clean Waters*.

Additionally, it was apparent from our conversations that not every participating engineer was aware of the existence of the same resources (forms on the website, processes such as the front- and back-loaded review to be discussed in the Process section, additional staff support from the Plan Review team, etc.).

We encourage PWD's continued efforts improve external communication about policy and procedural updates as they relate to Stormwater Plan Review as well as available resources. This communication will be more and more important as stormwater regulations tighten, demand for GSI increases, experienced engineering firms grow, and new firms emerge. Clear, accessible, and up-to-date information will better facilitate the implementation of GSI projects by reducing engineers' confusion and the time they spend seeking clarification, as well as time spent by PWD providing it on a case-by-case basis.

One strategy to improve external communication about additions or changes to available resources as well as policy and procedural updates as they relate to Stormwater Plan Review, including Green Project Review, is to hold an annual briefing or seminar targeted at firms with experience interfacing with Stormwater Plan Review along with firms who are new to the Stormwater Plan Review process. Convening these firms would facilitate communication and allow PWD Plan Review staff and the attending firms to engage with each other in a new way. SBN's GSI Partners offer to host this seminar with PWD's Stormwater Plan Review management team as presenters. We suggest that the first seminar be timed to follow the finalization of the current updates to the Plan Review process. SBN's GSI Partners invites a discussion with PWD's Plan Review Management to explore this idea further. For the sake of reference through the remainder of this report, we will refer to this recommended convening as the PWD Stormwater Plan Review Seminar.

Resources and Website

PWD offers many useful resources, many of which are housed on the Plan Review Website. Despite the website being a treasure trove of information and being cited as valuable to participating engineers, accessing the information is challenging, even for experienced users. Additionally, as noted above, it seems that not every engineer is equally aware of all of the resources that PWD has made available, including those that can be found on the website. Both new and experienced users would benefit significantly from website improvements.

This Committee recommends that PWD redesign/overhaul the Plan Review Website's landing page and subsequent internal pages to improve navigation so that all users can better identify what resources and documents can be found in a given section of the website, and which documents are for what purpose (see Examples 1 and 2 below).

This committee's engagement process has also highlighted the need for updates to documents that are

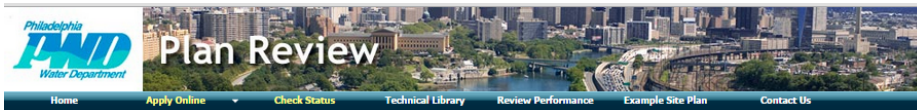
currently hosted on the website so that they accurately reflect current submission requirements, guidelines, and other considerations. We are aware that PWD is currently revising Checklist “A”, which was frequently referenced in the conversations about web resources. Participating engineers noted their desire to have Checklist “A” updated to reflect current submission requirements for such design items as proposed stormwater management systems, drainage, utilities, etc. The dates on a few other documents indicate that they have not been reviewed or updated in several years. For example, the Stormwater Plan Reviewer Guidelines appear to be dated June 25, 2009. One engineer noted that while this sheet is very helpful, it is no longer a comprehensive guide, and so would be a much more valuable resource if it was updated.

Additionally, this Committee heard specific suggestions for additional resources that would be valuable to add to the website:

1. Downloadable standard review notes and standard plan details (preferably as CAD files).
2. Individually downloadable charts, figures, checklists, etc. that are currently only found in embedded in the Guidance Manual (preferably as .pdf files).
3. A separate downloadable checklist for Technical Review that would indicate what plan sheets are required with a project submission. For example, Checklist “B” states, “Please ensure the north arrow is included on ALL plan sheets,” however, it is not specified anywhere what plan sheets are required.
4. A downloadable checklist of eligibility requirements for Green Project Review.
5. A downloadable checklist of submission requirements for Green Project Review (see Communication section).
6. Downloadable flowcharts that explain the process and timeline for Conceptual Review, Technical Review, and Green Project Reviews.

This Committee also recommends PWD communicate the availability of a professional engineer for discussions on complex or technical comments as well as what steps would be needed to initiate a request. A few engineers indicated they have greatly appreciated this additional support when it was needed and found it to be a resource, but it was apparent that not all participating engineers were aware that they could make this request.

Investing the time into making wayfinding easier, updating existing documents and resources, and adding new resources will support the engineering firms on record with the submittal process. Increasing awareness of the excellent resources that are available will help reduce confusion and time spent by engineers seeking clarification, and time spent by PWD providing it. Additionally, as one of many strategies to better facilitate the implementation of greener stormwater management projects, we support efforts to clarify and further promote the Green Project Review process. SBN’s GSI Partners recommend including a component on navigating the Plan Review website as well as Green Project Review requirements and process in the proposed annual Stormwater Plan Review Seminar mentioned above.



City of Philadelphia Stormwater Management Guidance Manual

The Philadelphia Stormwater Management Guidance Manual has been created to assist developers in meeting the requirements of the Philadelphia Stormwater Regulations. The manual is intended to lead developers through the requirements and expectations of PWD in terms of stormwater management. The manual provides guidance for the entire site design process, beginning with initial site design considerations, through the post-construction stormwater management plan submittal elements, and ultimately the acquisition of stormwater plan approval. Tools are provided to assist in completion and submittal of a stormwater management plan consistent with the intent of the City. They include flowcharts to guide the developer through the process, worksheets to assist with calculations, and checklists to ensure the plan is complete. These tools work together to address stormwater management on the development site from concept to completion.

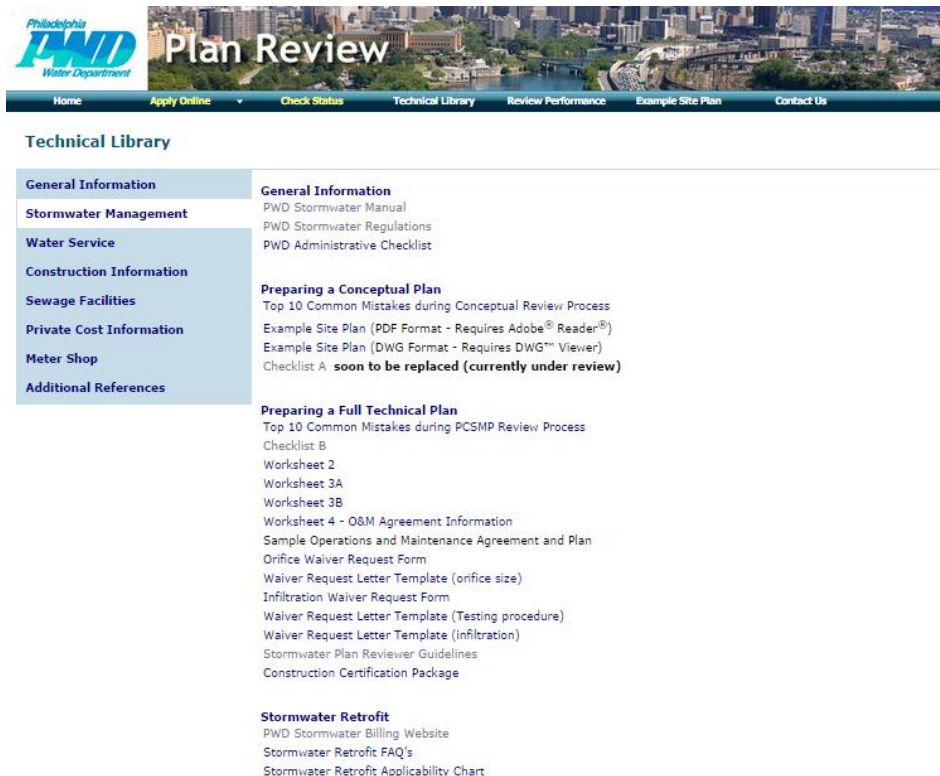
Download the Full Manual

Full Manual (PSMGH V2.1.pdf) (revised February 10, 2014) 33MB

Download the Manual By Section

Cover	<1MB
Preface	<1MB
Table of Contents	<1MB
Chapter 1	<1MB
Chapter 2	<1MB
Chapter 3	<1MB
Chapter 4	<1MB
Chapter 5	<1MB
Chapter 6	5MB
Chapter 7	14MB
Chapter 8	1.5MB
Appendices All	13MB
Appendices A-C	<1MB
Appendix D	11MB
Appendices E-F	<1MB
Appendices G-J	13MB

Example 1: It would be beneficial to include chapter titles or other indicators/descriptors of what content users can expect to find in each chapter. These descriptions can easily be paraphrased from the introductory paragraphs found in each separate chapter. “Chapter 4: Integrated Site Design – This section sets forth recommended site design procedures for comprehensive stormwater management, and includes structural and nonstructural controls.” (image: PWD’s Plan Review website: www.pwdplanreview.org/StormwaterManual.aspx; captured October 3, 2014)



Example 2: It would be beneficial to include titles for each checklist and worksheet, similar to how Worksheet 4 is noted as the O&M Agreement Information. (image: PWD’s Plan Review website: www.pwdplanreview.org/RequirementsLibrary.aspx#; captured October 3, 2014)

Process

Despite praise for the significant improvements to PWD’s Stormwater Plan Review processes made in recent years, there are still areas that would further improve project flow and shorten review times, especially in Technical Review.

As noted in the Communication section above, engineers experience inconsistencies between technical reviewers regarding quality and quantity of comments. They have received new comments on the second or third round of review, causing a delay in project schedule and an increase in design budget to accommodate unforeseen comments late in the review process. To promote consistency and efficiency, it is recommended that in addition to the development of standardized comments (noted in the Communication section), each comment letter be given a general review by either a supervisor or peer prior to being issued.

Another recommendation that would support reduced review times, especially for technical review, was to inform applicants of the availability of a technical reviewer in the conceptual plan review phase for more complex or unique projects. A few engineers voiced their appreciation for the occasions where PWD’s Plan Review team made this accommodation. Engineers would benefit from knowing that

technical reviewers are available earlier in the process.

This Committee heard requests for two degrees of conceptual review: one less detailed review for zoning-only approvals and one more detailed (more technical) review for construction projects. This Committee believes that this process might currently exist in the “front” and “back-loaded” review options. If this is the case, this Committee encourages increased promotion of the availability of the “front” and “back-loaded” review options. The annual Stormwater Plan Review Seminar suggested above would be a perfect forum to promote and elaborate on these options.

Lastly, based on feedback from a few participating engineers, we recommend giving attention to increasing the number of post-construction submittals and stormwater fee credit applications for stormwater retrofit projects. Our understanding is that these reviews determine the stormwater fee credits a site will receive, and so benefit the property owner with credits as well as PWD with greened acres. As a strategy to increase the number of submittals and stormwater credit applications, SBN’s GSI Partners recommend increasing promotion of stormwater credits and the post-construction review process as a necessary next step to receiving credits. A few suggestions for how to accomplish this are as follows:

1. Leverage annual Stormwater Plan Review Seminar.
2. Provide clear accessible information outlining the post-construction submittal procedure and requirements/approval process on several platforms, including the Plan Review website and PWD’s main website.
3. Following online ERSA submission, conceptual review approval, and/or technical approval, provide automatic prompts for post-construction review, directing the customer to contact the Credits Unit at the time of construction completion.

Code and Policy

When discussing projects that experienced challenges, some engineers expressed their desire for the expansion of and/or more flexibility within the current code and policy. The code is perceived to be written for landlocked infill projects despite inherent and significant variations from site to site, and therefore does not always facilitate the greenest, most vegetated approach. For example, trail projects experience challenges under the current code, particularly in reference to requirements for what can be disconnected, pavement removal, and tree placement.

Additionally, submitting engineers don’t always agree with how some reviewers interpret policy. Engineers committed to green stormwater infrastructure and the vision outlined in *Green City, Clean Waters* expressed their frustration with reviewers who rigidly interpret the policy seemingly without considering the policy’s objective, which has led to oversized SMPs and additional project cost. One example noted was in reference to Stormwater Plan Review’s policy to require static storage of the entire water quality volume above the lowest outlet in the bio-retention area for lined systems,

regardless of the release rate of the outlet structure or of the design intent of that bio-retention area (i.e. if this bio-retention system is part of a series that includes additional volume-reducing practices).

It is important that code and policy are written to facilitate the greenest most vegetated approach to stormwater management, and that reviewers interpret the code and policies in a way that supports the greenest and most vegetated practices whenever possible. We understand that code and policy are complex topics and that these interviews were only able to skim the surface of the challenges and frustrations in these areas, so we recommend further attention to code and policy to ensure that they are written and interpreted to best facilitate the greenest and most vegetated practices whenever possible. To support this end, the GSI Partners Plan Review Committee is considering exploring these topics next and welcomes conversation with PWD to unpack these topics further.

Internal and External Coordination

While intradepartmental coordination is noteworthy within the PWD Stormwater Division, improved coordination between PWD departments and between PWD and other City Departments is recommended to further improve the review process. For private costs in particular, increased coordination efforts between such departments as Plan Review, Watersheds, Design, Sewer, and Drinking Water were identified as a critical request.

It was also noted that coordination within the Stormwater Division can be further improved by continuing to cross-train conceptual and technical review staff, as well as exploring the possibility of assigning one reviewer to the life of a project throughout the review process, especially for complex projects.

Furthermore, recommendations were made to enhance the process between PWD and other City Departments, and include:

1. Better alignment of guidance documents such as the Green Streets Manual and the Complete Streets Manual
2. Creation of a City position for Permit Experts/Facilitators to assist the development community in navigating development requirements of all City departments
3. Inclusion of the Stormwater Ordinance in the Zoning Code, or otherwise increase awareness of the ordinance if it already exists.

This Committee is aware that these latter 3 recommendations would likely require the involvement and coordination of other City departments. Improved alignment of City departments remains an important issue to SBN's broader membership base, and these interviews reinforced the importance of this topic to the local business community. SBN's Policy Committee, in tandem with the GSI Partners' Advocacy Committee, is currently developing an agenda with which to engage the 2015 mayoral candidates.

Improved alignment of City departments is one the issues SBN is discussing. SBN will update PWD as our agenda develops further.

Conclusion

The City's adoption of *Green City, Clean Waters* has positioned Philadelphia as the national leader in urban stormwater management. Locally-based industry professionals are poised and eager to support the advancement of the plan and its triple bottom line goals. Through GSI Partners' stakeholder engagement, one area identified as being an opportunity to increase facilitation of green stormwater infrastructure projects was PWD's Stormwater Plan Review. Based on feedback from locally-based engineers with experience with the Stormwater Plan Review process, the GSI Partners recommends improvements in five key areas: *Communication, Resources and Website, Process, Code and Policy, and Internal and External Coordination*. Improvements in these areas would work to continue to support the local engineering community, their clients, PWD, and the City, all with the shared goal of ensuring the full success of *Green City, Clean Waters*. SBN's GSI Partners and this Committee ask that PWD use this report and its recommendations to inform their continued good work and ongoing efforts to improve the Stormwater Plan Review process and facilitate green stormwater infrastructure projects in the City. SBN's GSI Partners and this Committee invite a meeting with PWD mid-November to discuss this report and answer any questions that may arise. SBN's GSI Partners looks forward to this and future conversations with PWD on these and other key topics that will help amplify the success of *Green City, Clean Waters*.



Appendix

A1

Plan Review Interview Questions

1. How many projects have you/your company submitted to PWD Stormwater Plan Review?
2. On behalf of what industry have you/your company submitted plans? (Select all that apply)
 - Developer
 - Property Owner
 - Landscape Architect/Architect
 - Engineer
 - Other _____
3. PWD Stormwater Plan Review has undergone changes over the years. What changes have you noticed? (Select all that apply)
 - Length of time a plan spends in Conceptual Review
 - Length of time a plan spends in Technical Review
 - Communication between Conceptual Review staff and you
 - Communication between Technical Review staff and you
 - Communication between Conceptual and Technical Review staff
 - Technical design criteria
 - Communication about the technical design criteria
 - Other _____
4. When did you begin to see these changes? (Select all that apply)
 - 2005-06
 - 2007-08
 - 2009-10
 - 2011-12
 - 2013-present
 - I haven't experienced any changes.
5. Which of the following PWD Stormwater Plan Review resources are you aware of and/or have taken advantage of? (Select all that apply)
 - PWD's Top 10 common mistakes during the conceptual review process
 - PWD's Top 10 common mistakes during the technical review process
 - PWD's Stormwater Management Guidance Manual
 - PWD's Conceptual Review Team Leader
 - PWD's Technical Review Team Leader
 - PWD Stormwater Plan Review website
 - Walk-in hours
 - Other _____
6. How often do you refer to the Stormwater Management Guidance Manual, and what sections do you find to be most useful?

7. What resources do you think are missing from the Plan Review website that would be helpful to have provided?
8. Please briefly describe a project you have submitted that was approved with little to no challenges.
 - a. What do you attribute this to?
9. Please briefly describe a project you have submitted that was approved, but experienced challenges.
 - a. What do you attribute this to?
10. What is your experience with overall communication with Plan Review staff?
 - a. Conceptual?
 - b. Technical?
 - c. What is your experience with the consistency of comments/feedbacks/remarks from different each round of review?
 - d. How many rounds of review (both conceptual and technical)?
 - e. Did you interface with the same/different person each time?
11. What is your experience with/what is their average response time?
12. What thoughts/suggestions do you have for how to further improve the Stormwater Plan Review Process, especially the Green Project Review (aka Green fast Track)?
 - a. i.e. PE to review all comments before returned; one PE for life of project in plan review
 - b. X-train conceptual and technical reviewers so one reviewer for life of project in plan review
13. What last thoughts/comments do you want to share?



Appendix

A2

Summary of Stormwater Plan Review Interview Results

Accolades

PWD's Plan Review staff is professional and provides excellent customer service:

1. Staff is open to conversation (face-to-face and via phone) for clarification on comments, etc.
2. The Stormwater Plan Review management team is very helpful.
3. Management is open to having a technical reviewer available in the conceptual stage for more complex projects.

PWD's Plan Review process itself has undergone improvements beginning in 2008, with significant improvements occurring in 2011. Changes noted as being improvements include:

1. faster review times, especially for conceptual review and
2. communication (between conceptual staff and submitting engineer, between technical staff and submitting engineer, and between the conceptual review team and the technical review team)

PWD offers very helpful resources, including:

1. walk-in hours,
2. both "top 10" lists,
3. the Plan Review Website, and
4. the Guidance Manual itself (for engineers newer to Plan Review as well as for engineers who have more experience with Plan Review)

Recommendations

Communication

1. Continue to make improvements regarding the consistency of information communicated by different reviewers and communication of updates to Plan Review processes, procedures, and resources available
 - a. Implement standard review comments, supplemented as needed with a narrative
 - b. Provide engineers with the opportunity to identify their own projects for the Green Project Review at the conceptual stage.
 - i. Expand the Green Project Review section in Guidance Manual
 - ii. Clarify qualifications and eligibility requirements
 - iii. Provide a checklist of the documents required for submission
2. Partner with SBN's GSI Partners to host an annual Stormwater Plan Review Seminar to facilitate improved external communication on policy, process, and resources
 - a. Resources that currently exist and how they can be best used
 - b. Resources that have been added or changed
 - c. Availability and explanation of front- and back-loaded review options
 - d. Current policies and procedures as well as updates, especially those that relate to Stormwater Plan Review, including Green Project Review.

Resources and Website

1. Update Plan Review website to make wayfinding easier for new and experienced users.
 - a. Redesign/overhaul the Plan Review Website's landing page and subsequent internal pages to improve navigation so that all users can better identify what resources and documents can be found in a given section of the website, and which documents are for what purpose
 - i. Indicate Guidance Manual chapter titles and worksheet names to support easier navigation
2. Update existing resources and add additional resources.
 - a. Recommended improvements to existing resources:
 - i. Update documents that are currently hosted on the website so that they accurately reflect current submission requirements, guidelines, and other considerations
 - b. Recommended additional resources:
 - i. Downloadable standard review notes and standard plan details (preferably as CAD files).
 - ii. Individually downloadable charts, figures, checklists, etc. that are currently only found in embedded in the Guidance Manual (preferably as .pdf files).
 - iii. A separate downloadable checklist for Technical Review that would indicate what plan sheets are required with a project submission. For example, Checklist "B" states, "Please ensure the north arrow is included on ALL plan sheets," however, it is not specified anywhere what plan sheets are required.
 - iv. A downloadable checklist of eligibility requirements for Green Project Review.
 - v. A downloadable checklist of submission requirements for Green Project Review (see Communication section).
 - vi. Downloadable flowcharts that explain the process and timeline for Conceptual Review, Technical Review, and Green Project Reviews.
3. Communicate the availability of a professional engineer for discussions on complex or technical comments as well as what steps would be needed to initiate a request.

Process

1. Continue to improve project flow and reduce review times, especially in Technical Review.
 - a. Standardize comments (noted in the Communication section)
 - b. Implement peer or supervisory review of each comment letter prior to its issue
2. Communicate the availability of a technical reviewer in the conceptual plan review phase for more complex or unique projects
3. Increase promotion of the availability of "front-" and "back-" loaded review options.
4. Increase the number of post-construction submittals and stormwater fee credit applications.
 - a. Leverage annual Stormwater Plan Review Seminar.
 - b. Provide clear accessible information outlining the post-construction submittal procedure and requirements/approval process on several platforms, including the Plan Review website and PWD's main website.
 - c. Following online ERSA submission, conceptual review approval, and/or technical approval, provide automatic prompts for post-construction review, directing the customer to contact the Credits Unit at the time of construction completion.

Code and Policy

1. Put attention to code and policy to ensure that they are written and interpreted to best facilitate the greenest and most vegetated practices whenever possible.

Internal and External Coordination

1. Continue efforts to improve coordination within the PWD Stormwater Plan Review division.
2. Continue efforts to improve coordination between PWD departments (ie. Plan Review, Watersheds, Design, Sewer, and Drinking Water), especially as it relates private costs.
3. Improve coordination between PWD and other City Departments (ie. Streets, L+I, etc.)