PRINCETON STORMWATER UTILITY FEASIBILITY STUDY: PHASE I FINDINGS

MUNICIPALITY OF PRINCETON, NJ

PREPARED FOR:
Municipality of Princeton
ATTN: Princeton Council
400 Witherspoon Street
Princeton, NJ 08540

PREPARED BY:
Princeton Hydro, LLC/WSP
P.O. Box 3689
Trenton, NJ 08629
908-237-5660
PrincetonHydro.com

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TABLE OF CONTENTS

PRIMARY AUTHORS
Clay Emerson, PhD, PE, CFM – Princeton Hydro
Dana Patterson – Princeton Hydro
Elizabeth Treadway – WSP
James Barbis, PE – WSP

INTRODUCTION

In 2021, the Municipality of Princeton, with support from the Princeton Council and Mayor, elected to evaluate Princeton's need for, and ability to create, a fee-based Stormwater Utility. Recognizing that Princeton's stormwater infrastructure includes 313 identified stormwater outfalls, 118 miles of municipal roadways, an estimated 10,000 non-outfall stormwater structures, and an estimated 120 miles of stormwater piping, Princeton's Infrastructure and Operations Department decided to further study this opportunity, which became available as an option to New Jersey municipalities in 2019 via the New Jersey Clean Stormwater and Flood Reduction Act (Act).

The Municipality of Princeton released a Request for Proposals to hire a qualified consultant to conduct a phased, comprehensive Stormwater Utility Feasibility Study ("Study"). The Study is phased, and each phase provides a useful product. If it is the decision of Council to not perform all four phases of the scope, the work conducted under each Phase does provide value to Princeton as each phase builds on the work of prior phases.

The four phases of the scope for this Study are:

- **Phase I: Programmatic Review and Equity**: *the evaluation of the existing stormwater infrastructure operation and maintenance practices, review of recent/projected capital project needs and baseline costs provided by Princeton, and determination of how revenue is generated today. Based on impervious area analysis, evaluation of how revenue generation shifts from a general fund, primary tax resource to a fee generated resource.*
- **Phase II**: **Public Outreach and Rate Structure:** *the development and implementation of a public education program and the framework, prepare a defensible rate structure to fund the forecasted stormwater program by a proposed utility.*
- **Phase III: Implementation Plan:** *the exploration of the benefits and costs of creating a dedicated, fee-based funding source to implement BMPs; identify and implement required activities to ensure State and Federal regulatory compliance; coordinate infrastructure improvement projects; educate and engage the community in water quality stewardship; and provide incentives for the community to adopt eligible/acceptable BMPs and green stormwater infrastructure that more effectively manage stormwater runoff.*
- **Phase IV: Implementation Support:** *technical assistance for the implementation of the process including any recommendations that have been requested by Princeton.*

Princeton awarded and contracted Princeton Hydro and WSP (formally Wood) (herein deemed the "Princeton Hydro Team") to conduct a phased, comprehensive Stormwater Utility Feasibility Study. Princeton Hydro, a well-known local water resources engineering small business focused on stormwater management, and WSP, an international firm with decades of stormwater utility experience, teamed up to provide Princeton with unparalleled experience in stormwater program design and stormwater utility feasibility, fee development, and program implementation.

The Princeton Hydro Team embarked on Phase I of the Study with Princeton staff starting in mid-2022. The results summarized in this report include the findings, deliverables, and recommendations of the Princeton Hydro Team from Phase I. The phased approach outlined by the RFP provides the Council with the opportunity to review each phase of the Study and make an informed decision to either progress with the next phase of the study or not. The purpose of this report is to provide the Council with a summary of the Phase I efforts and assist the Council with their decision to move into Phase II.

PHASE I OVERVIEW

The Princeton Hydro Team and Princeton Staff kicked off Phase I with the goal of completing the following critical outcomes:

1. Evaluation of Current Services Summary
2. Identification of Unmet Needs and Preliminary Discussions on Future Initiatives
3. Analysis of Data Sources for Fee Allocation
4. User Fee Rate Options and Potential Impacts Report
5. Analysis of Revenue Generation
6. Go-No-Go Decision for Phase II

An overview of the Phase I project goals and task are provided in Figure 1 (below).

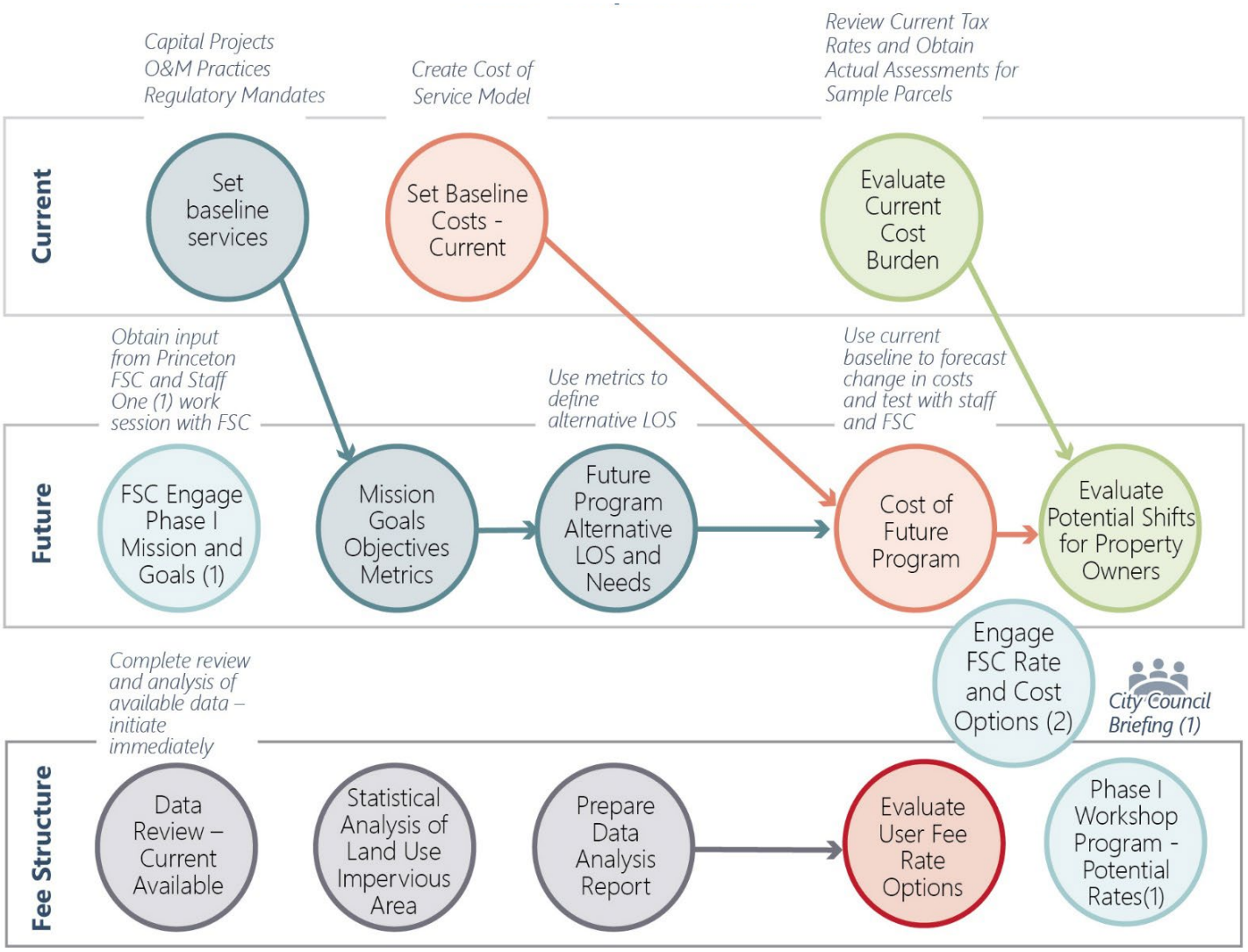

Figure 1: Phase I Tasks and Outcomes

PROJECT TEAM & STAKEHOLDER EFFORT

PRINCETON STORMWATER UTILITY STEERING COMMITTEE

The Study's kick-off meeting was held in-person on June 22, 2022 at the Princeton Municipal Building at 400 Witherspoon that included representatives from the Princeton Hydro Team and Princeton staff (herein referred to as the "Princeton Stormwater Utility Steering Committee" or "Steering Committee"). The group reviewed the Phase I goals and timeline and set the expectations for project roles and communication. Princeton staff made it clear that while it is important for the process to move as quickly and efficiently as possible, there was no specific deadline to meet. The schedule would be dependent on the Princeton staff and other stakeholder's availability for meetings and turnaround time on the review of prepared materials. Thoroughness of analysis was emphasized as a key goal.

The Princeton Hydro Team gathered general information from the Steering Committee about Princeton's current stormwater program. A comprehensive questionnaire was developed and distributed to the Steering Committee prior to the kick-off meeting. This questionnaire is an attachment to this report (see *Attachment A*). The questions were designed to establish an understanding of the municipality's current stormwater program as part of the stormwater program status and future needs review. Additionally, a "Document Request" including a preliminary list of materials to inform the Study was provided to staff.

Key takeaways from the kick-off meeting are provided below:

1. Princeton's Stormwater Program spans multiple departments, and the approach for management is currently more reactive than proactive. Staff would prefer to take a more proactive approach.
2. Flooding is a recurring issue in many parts of the municipality and is a primary concern. This includes both localized flooding due to clogged inlets and damaged pipes as well as riverine flooding.
3. There is a $4 million backlog in culvert replacement; funds are competing with infrastructure work. There is a need for additional projects (e.g., streambank stabilization project on the Stonybrook) in addition to the culvert replacement work.
4. Soils within the municipality are not conducive for infiltration with shallow depth to groundwater and bedrock in many places. In addition, there are relatively fine-grained soils with low permeability, making on-site stormwater management challenging in many locations.
5. Princeton is currently undertaking an inventory of inlets/outfalls/outlets. In the future, a map of the drainage areas going to these assets will be completed.
6. Princeton uses the "SeeClickFix & Access Princeton" programs to log calls about flooding or drainage issues and adds each call to the SeeClickFix database.
7. The current impervious surface data that is publicly available for Mercer County is not sufficiently accurate for purposes of user-fee analysis per parcel. It is in the best interest of Princeton to invest in having updated data that provides a fair and equitable assessment. Creating the impervious area data in GIS to be used throughout the process was recommended by the Princeton Hydro Team. It is critically important for documentation of a fair and equitable estimation of rainfall runoff generation, a principle mandated in the Act. Princeton will review a proposal for manually digitizing impervious surface data from the team.
8. The team brainstormed a list of external stakeholders and community representatives to include in Phase I (which would later be termed the "Princeton Stormwater Focus Group"). This would consist of about 15-20 people who represent different industries, stakeholders, and groups within and surrounding Princeton.

An agenda and minutes from this meeting are provided in Attachment B.

PRINCETON STORMWATER FOCUS GROUP

Involving key stakeholders and the public early and often in a collaborative and constructive fashion can result in a balanced process, and should Princeton elect to move forward, a smooth implementation of a Stormwater Utility Program. While a full-blown stakeholder engagement effort is planned for Phase II, it is critical to begin the conversation with key players in a community during Phase I. It is for this reason that a strategically formed "Princeton Stormwater Focus Group" was created to bring in community, nonprofit, academia, and business leaders representing a variety of voices. Engagement with key stakeholders and partners during the initial phase of this program assessment reinforces the transparency of the process, building strong support and community-wide engagement and understanding, as well as identification of pitfalls early so that issues can be mitigated as needed.

Princeton Stormwater Focus Group participants included members from the Flood and Stormwater Commission, Princeton University, Princeton Housing Authority, HOA Representatives, Friends of Princeton Open Space, The Watershed Institute, The Hun School, local property owners, and others that were identified by Princeton staff. Engaging this group enabled each to provide initial input and guidance early in the process of prioritization of the program. This feedback ultimately will create the foundation for all other areas of feasibility analysis.

Two Princeton Stormwater Focus Group (SFG) meetings were held during Phase 1 (April 26, 2023, and June 13, 2023). A mission statement and ground rules (see *Attachment C*) were provided to set expectations for participation. It was made clear to the participants that the SFG role is for information gathering and feedback. For each meeting, the Princeton Hydro Team prepared an agenda and sent materials out to the attendees ahead of the meetings. Providing background material in advance proved helpful and likely led to deeper engagement. The meeting agenda, minutes, and PowerPoint presentation from each meeting can be found in Attachment C.

Both meetings had a great turnout of SFG stakeholders who were very engaged in the discussion. The Princeton Hydro Team presented an overview of the stormwater utility process and preliminary finding from Phase I during each meeting. Participants were taught how a stormwater utility fee is calculated and how impervious surface is delineated. There was a robust discussion following the presentations at each meeting. Feedback and discussions shared by participants was considered during programmatic and organizational reviews.

Many participants were very interested in the concept of a stormwater utility as a funding mechanism to sustain stormwater management program efforts in Princeton. They recounted several areas that regularly incur flooding, have water quality issues, and need proactive stormwater management. There was significant discussion around the new MS4 Permit requirements and the additional resources that Princeton needs in order to comply, including the addition of staff to conduct the required activities (e.g., street sweeping). They were very interested in the idea of a credit program, which is a requirement of the Act, should a stormwater utility be established. There were many ideas for the types of green infrastructure that could be included in this credit program (e.g., green/blue roofs, naturalization/forestation of properties). There were some questions regarding whether private landowners who are already managing stormwater would need to contribute to the fee, and it was clarified that they would be required to, however, could likely get a reduction via a credit program.

When information was shared about the current program and estimated annual costs, the SFG discussed how the total program cost has shifted overtime, what the estimated costs are for the increased needs for MS4 compliance, and how many staff will need to be added to meet the level of service required. During Phase I discovery, information was captured through staff interviews to identify deficiencies. If Phase II is authorized, a future forecast will be prepared in a detailed cost model. The overall conclusion, with general consensus of the SFG, is that revenue capacity must increase to address the system needs.

One element of the Phase 1 analysis focused on answering several key questions:

- ★ *Who (i.e., what landowners) contribute revenue in support of stormwater services now?*
- ★ *Who will contribute revenue under a user-fee based stormwater utility?*
- ★ *What is the impact of utility implementation on property owners in Princeton, generally?*

The Princeton Hydro Team completed an analysis of land use distribution and current property tax generation by land use class. The second step included analysis of Impervious area distribution for all non-single-family-residential properties and a statistical sample of the single-family-residential properties. The impervious area analysis is used to address the impact of a user-fee utility on properties.

The SFG has provided a background report on the land use analysis. This analysis (see *Attachment B*) answers the key questions posed on current and future revenue contributions. During the second SFG meeting, for the discussion on the land use distribution and impacts of a change in revenue method, the SFG by consensus recognized that the shift to a stormwater utility has the potential to be a more equitable process of who pays for stormwater management. The following was considered in the meeting:

- There was a discussion about whether sidewalks and roadways should be included in a user fee, and it was conveyed that this would ultimately be a policy decision that Princeton will have to make.
- It was clarified that some agricultural land is to be exempt per the Act.
- There was concern about whether public housing authorities and tenants would be able to afford this fee.
- SFG members asked if property taxes would decrease if a stormwater utility fee was implemented and it was clarified that this would be a decision made by the Princeton government.
- Participants were interested to know what the approximate fee per month would be for Princeton residential property owners, however an accurate answer to this question could only be calculated in the potential Phase II of the Study.

The SFG was very engaged, asking questions about the process and what it means for their community. A general consensus of the SFG members is a willingness to continue to serve on the SFG should the process move forward with consequent phases.

PROGRAM REVIEW

The Princeton Hydro Team worked closely with Princeton staff to review the existing stormwater program and current needs in order to establish a baseline understanding of the current stormwater management program.

To complement the questionnaire, interviews were conducted by phone with each staff member on the Princeton Stormwater Utility Steering Committee. The information collected during this process was critical to the programmatic and organizational reviews. Many discussed future program needs including capital improvement program needs outlined in Princeton's Master Plan, Green Building and Environmental Sustainability Element, and Princeton Climate Action Plan. Additionally, a major theme in the conversation was the new requirements that Princeton must meet for their MS4 permit compliance, which went into effect on January 1, 2023, and the associated increased level of service that will be required for compliance.

After reviewing all the questionnaire data, interview response, and available reports, the current level of service to design, implement, operate, and maintain the existing stormwater collection and conveyance system and stormwater treatment was used to document personnel effort and general operating costs. The focus was on maintenance practices, infrastructure management, regulatory requirements, stormwater management ordinances, and relevant aspects of redevelopment agreements. A report ("Summary of Princeton's Current

Programs in Stormwater Management") was provided to the Steering Committee members for review and to the SFG, documenting a summary of the existing level of services (see *Attachment D*).

An estimate of the annual stormwater management program costs was developed, using staff-generated percentage-of-effort and current operating budgets. The estimate for Level of Service for stormwater is $760,000 per year, including fully burdened personnel and operating expenditures. These expenditures include, but are not limited to:

- Mapping costs - mandate of MS4 permit
- Engineering – driven by local regulations
- MS4 permit compliance activities and reporting
- Drainage system reactive maintenance such as blockage removal
- Street sweeping
- Sewer staff support for pipe cleaning

Based on the Phase I review, both staff and the Princeton Hydro Team concluded that infrastructure investments and routine operations are not sufficiently staffed or funded to comply with new permit requirements, invest in minor or major capital projects, and through a shift over time, a more proactive maintenance strategy. Examples of needed investments include:

- → Capital funding major maintenance, rehab, reconstruction
- → MS4 permit compliance
- → Master Plan to provide town-wide hydraulic analysis
- → New Public Works facility
- → Flood reduction and mitigation
- → Integration of resiliency planning

Overall, the analysis determined that revenue capacity must increase in order to address Princeton's systematic needs for stormwater. As identified in the current operations analysis, additional staff are needed in Public Works (sewer operations and public works field services) and in Engineering, including additional equipment to address the investment needs. In Phase II, a prioritization analysis of the program would be developed, and a detailed cost of service would be prepared, along with a 10-year forecast of future investments in capital and operations.

ORGANIZATIONAL REVIEW

In Princeton, stormwater management is the responsibility of several municipal departments and staff. When considering addressing stormwater services needs and challenges, it is important to understand how improvements can be supported, or not, by existing Princeton staff. As part of this phase, the Princeton Hydro Team reviewed the existing organization and staffing that handle stormwater management functions. During the interviews mentioned above, we discussed issues and challenges in stormwater services to be provided for various departments. The organization diagram (Figure 2) captures participation by various staff units as well as external organizations that play a role in stormwater management program delivery today.

The Summary of Princeton's Current Programs in Stormwater Management report also includes a summary of organizational roles of current municipal departments and services related to stormwater (*see Attachment D*).

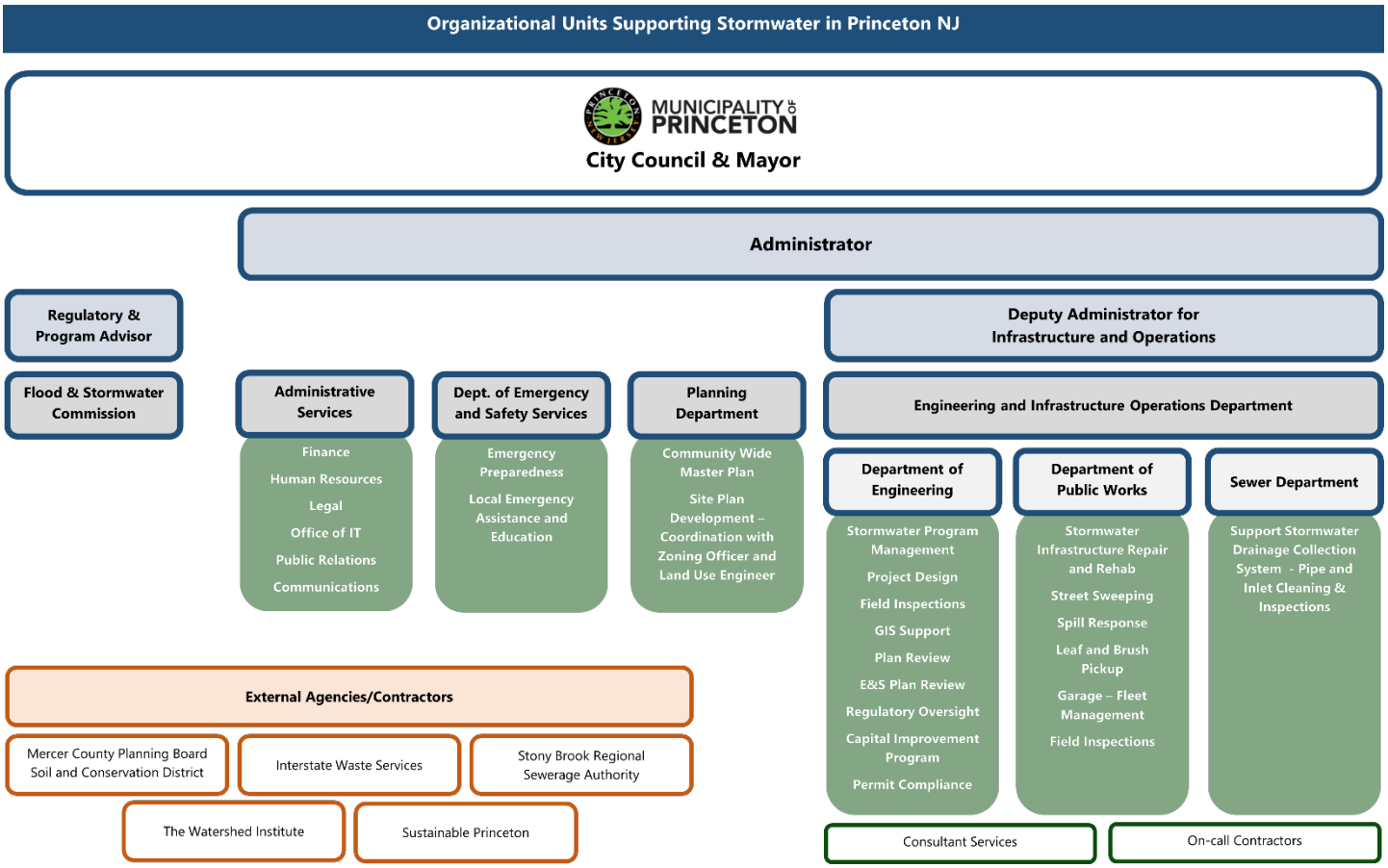

Figure 2: An organization diagram of staff units and external organizations that play a role in Princeton's stormwater management program

We have included "Deliverables Timelines - 2023 MS4 Tier A Permit" document provided by NJDEP (see *Attachment E*), which was distributed to the SFG. This document identifies each permit requirement by subject matter, designating if the requirement is a modification, unchanged from previous permit, or new. The timeline provides compliance schedules for each mandate, based on the effective date of January 1, 2023.

Princeton, under the 2018 MS4 Permit, was designated as a "Tier A" community and the effective date of compliance for Princeton has a number of key compliance activities that are one-time requirements such as having a website dedicated to stormwater with links to all materials in one location. Other requirements are ongoing but modified. Triannual street sweeping is modified to include all segments of roads owned or operated by Princeton that have storm drain inlets discharging to surface waters. This is an increase in one additional sweeping cycle. Additional annual sweeping for roads that do not have storm drain inlets is a further modification.

A new mandate requires Princeton to detect and repair erosion along roads owned or operated by Princeton, as well as the inspection and maintenance of shoulders, embankments, ditches, and soils to reduce erosion. This is a significant change in the level of service that must be operational by January 1, 2024. This requirement impacts staffing resources to perform duties to inspect, identify issues, repair, and sustain roadway shoulder integrity. Current staff resources are fully engaged in other elements of infrastructure management, and options to meet the mandate require either reprioritization of services, reduction in other services, or addition of new resources.

A full impact assessment of the permit changes is an example of an important task in Phase II of the development of a 10-year forecast for services, developing a prioritization matrix and financial analysis.

POLICY DEVELOPMENT

As part of the feasibility process, a number of policy decisions need to be addressed during the development and implementation of a stormwater utility as part of Phase II. Examples include rate structure options, exemptions, credits, financing methods, and ordinance modifications. The Princeton Hydro Team developed a technical memo titled, "Municipality of Princeton Stormwater Program Funding and Rate Options Summary" (Summary) which examines the funding mechanisms currently available to Princeton to support a stormwater management program (see *Attachment F*).

Rate Structure Policy: The industry of stormwater utility development has changed over time, developing rate structures that increase the equity of cost distribution. As requested, the report outlines a variety of options. Over the past 50 years of stormwater utility implementation, the rationale for user fee programs is solidly based on impervious area as the standard of practice for distribution of cost. Depending on the rate methodology used, cost allocation shifts based on the rate unit chosen. For example, when a fixed unit value (e.g., billing unit of 500 square feet of impervious area) is used compared to an equivalent rate structure (e.g., a billing unit based on the median impervious area of single-family-residential parcels which is 2450 square feet of impervious area), revenue generation typically shifts more burden to non-single-family-residential parcels. Depending on the density of development and other factors, the shift can be very dramatic between land use categories.

Sensitivity to issues of equity in rate structures is a key consideration in establishing the recommended option. The Act requires that the distribution of costs through user fees must be based on a *fair and equitable* approximation of the proportionate contribution of stormwater runoff from any real property. Fair and equitable are terms that are often defined by the individual property owner and interpreted to concepts of comparative equity.

A stormwater utility user fee rate study is the foundation for policy development and is part of implementation strategy. Should Princeton Council choose to move to Phase II, important policy decisions will be made that have significant implications for the selected measure of the billing unit and the calculated rate. The Summary (see *Attachment F*) includes a range of policies that ultimately impact the structure of the program and user fee, as well as the stormwater fee rate.

LAND COVER ANALYSIS

In order to analyze potential user fee cost allocation of stormwater services detailed and accurate information regarding impervious cover, land use, and parcel-based property data are required. Initially, publicly available impervious area data from Mercer County (Impervious Surface data – 2015) was evaluated to determine if the data could be useful in this effort. At a macro level, the data quality for impervious area analysis appeared to be of sufficient quality, but at the all-important parcel level, the digitization of impervious area features was neither accurate nor precise enough to be used for the utility feasibility evaluation.

After discussion with Princeton staff, it was agreed that the publicly available data will not suffice for the utility evaluation and that a digitized impervious surface database was developed for all non-single-family residential. Additionally, a quasi-random, statistically representative sample of 360 single-family residential parcel impervious area was captured and analyzed. This sample represents approximately 5% of the total single-family residential parcels within the municipality.

Using the principle of a fair approximation of use, historically, stormwater utility rates have been based on the "billing unit" concept of equivalency. In Princeton, based on the representative statistical sample of 360 single-family residential parcels, the median impervious area was determined to be 4,590 square feet. This median value was used to convert all other properties' impervious area (commercial, multi-family, industrial, educational, and institutional land uses) into an equivalency value called a "billing unit" or "equivalent residential unit" (ERU). It is important to note that the distribution of impervious area coverage among the single-family residential parcels was highly skewed and therefore suggests that a tiered approach would be more equitable. This is a policy decision that shall be revisited in a future phase.

This analysis sought to visualize the distribution of land use types in Princeton (Figure 3). The data shows that an overwhelming majority of properties are classified as residential (76%).

The Princeton Hydro team prepared a Data Analysis Technical Memo, specifically for Princeton Hydro staff, explaining the data sources, methodology, and process for the land cover digitization. It illustrates the evaluation of available data sets and how newly created data sets for Princeton can facilitate an accurate fee calculation/structure for the development of a potential stormwater utility. This memorandum also outlines additional data analyses which are recommended to support Princeton's consideration of a stormwater utility.

EQUITY OF CURRENT STORMWATER COSTS

Following the detailed land cover analysis, the Princeton Hydro Team sought to understand who currently contributes revenue to Princeton for general municipal purposes including stormwater management. To answer this question, the current year tax revenue was aggregated by the assigned land use code (Figure 4).

The next step analyzed how the current contribution of revenue might shift should a municipal stormwater utility be implemented. Using impervious area as a proxy, the impervious area for all non-single family residential properties, including public roads and sidewalks, was manually digitized from recent aerial photography. Using land use codes, the total impervious area for each category of land use was compared to the tax revenue

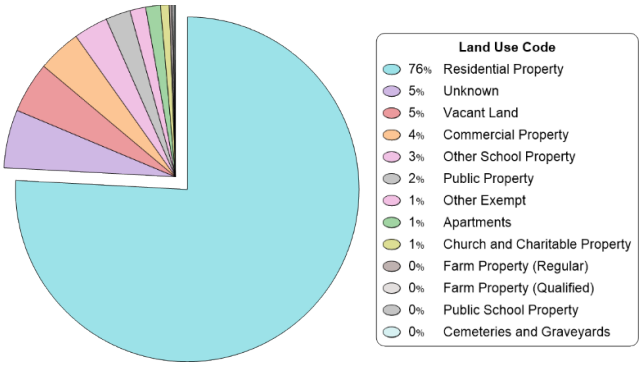

Figure 6: Pie chart of the total land use codes in Princeton.

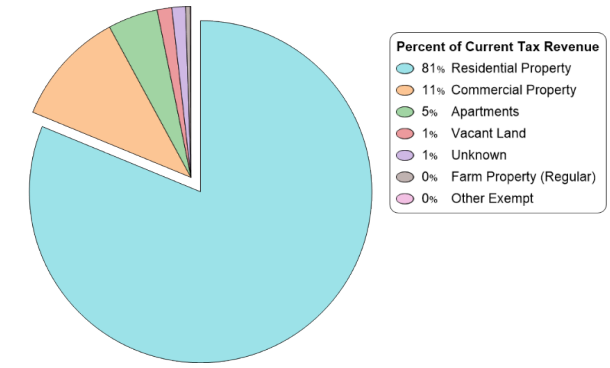

Figure 6: Pie chart showing distribution of current municipal tax revenue contribution.

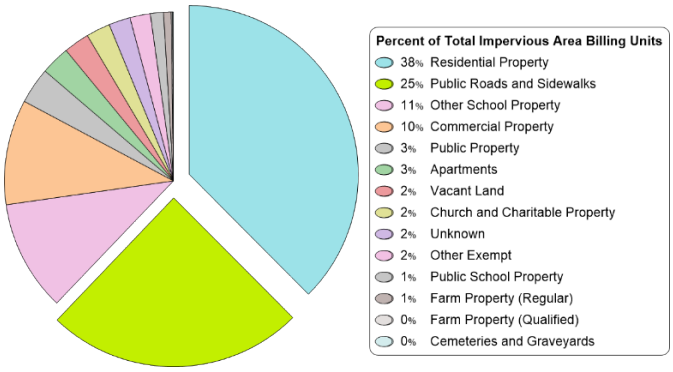

Figure 6. Pie chart of the distribution of billing units (i.e., impervious area) among the land use codes, including impervious area within the rights-of-way.

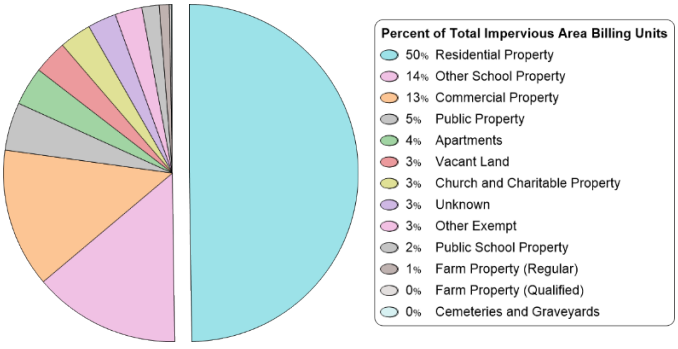

Figure 6: Pie chart of the distribution of billing units (i.e., impervious area) among the land use codes, excluding impervious area within the rights-of-way.

distribution to identify potential shifts of the financial burden (Figure 5, Figure 6). A more detailed explanation summarizing the results of this analysis was prepared, "Background on Data Analysis and Revenue Generation," which was distributed to the SFG (see *Attachment G*).

The effort to delineate the impervious surface for all public roads and sidewalks within Princeton was a request from Princeton staff and a significant undertaking. As illustrated in Figure 5, public roads and sidewalks make up 25% of the total impervious area in Princeton (by billing units). Including public roads and sidewalks as a land use category that will be responsible for a paying into the stormwater utility program will ultimately be a policy decision by Princeton. However, conducting the digitization of this layer and having the data available will enable Princeton to weigh the impact of that decision. However, for the illustrative purposes, the impervious area associated with the public roads and sidewalks was simply removed from the total in order to summarize the data depicted in Figure 6.

As is illustrated in Figure 3, the residential property class represents 76% of all parcels in Princeton. Residential property class contributes the highest aggregate total in supporting general revenues of Princeton at 81% with commercial property being the second highest at 11%, as shown in Figure 4. Under the stormwater utility, using the Equivalent Residential Unit (ERU) billing unit value, the residential property class is assigned 38% of the total billing units and commercial property class is assigned 10%, as shown in Figure 5. "Other School Property" does not contribute to local tax-based revenue for stormwater; however, under a potential stormwater utility this class of property would be assigned 11% of the billing units. A Sankey diagram highlights the shift in contributions for each category from tax revenue to a stormwater utility (Figure 7).

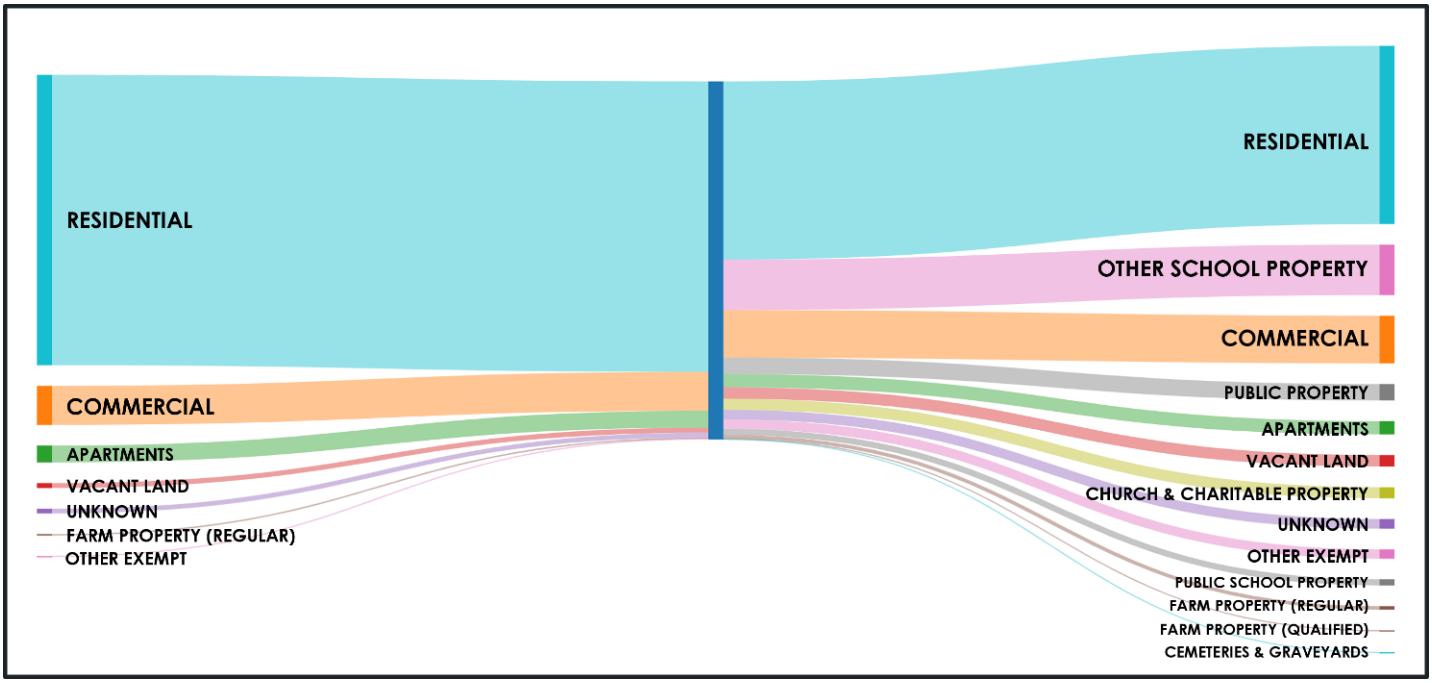

Figure 7: Sankey Diagram highlighting the shift from current tax revenue to a stormwater utility fee.

PHASE I CONCLUSIONS

As a result of the Phase I Study, the Princeton Hydro Team has been able to dive into the details for how Princeton manages stormwater and begin the conversation with community leaders about the Stormwater Utility Program process. Significant effort was put into the digitization of the impervious surface layer, which provides a more accurate understanding of the current land cover and provides a new data asset for the Princeton Engineering and Public Works Departments. After a thorough review of documentation and many discussions with Princeton staff and community stakeholders, Princeton now has a solid understanding of the current stormwater program's level of service as well as a good understanding of their future needs. In addition to the backlog of stormwater improvement projects, there is a looming need for an increased level of service due to the MS4 Permit requirements that Princeton is expected to comply with over the next five years. Regardless of the source, an increased revenue stream will be required to meet these needs.

The SFG, which represented a variety of voices from the Princeton community, was very engaged in the Phase I process, offering insight and feedback on the process during our in-person discussions. The group identified the need for an increased level of service for stormwater management and were very interested in the concept of a stormwater utility as a funding mechanism to sustain stormwater management program efforts in Princeton. Additionally, the SFG by consensus recognized that the shift to a stormwater utility has the potential to be a more equitable process of who pays for stormwater management.

Phase II of the Study will answer several of the outstanding questions raised by Princeton staff and the SFG. In Phase II, a prioritization analysis of the program is developed, and a detailed cost of service is prepared, along with a 10-year forecast of future investments in capital and operations. The analysis will provide rate options with a draft rate model and impact analysis for a stormwater utility program. It also includes the development of a public outreach plan and embarking in a robust stakeholder engagement process, including public meetings, workshops, and continued meetings with the SFG. Additionally, important policy decisions will be made by Princeton that have significant implications for the selected measure of the billing unit and the calculated rate.

In summary, Phase I has provided valuable community-specific information related to the potential formation of a user fee stormwater utility for Princeton. While the robust public outreach efforts outlined in Phase II of the RFP have yet to be completed, Phase I has initiated a targeted public outreach program through the formation of the SFG and two informative and productive meetings with the group. All of this information will serve as a solid foundation for the continuation of Princeton's stormwater utility feasibility study into Phase II should the Council decide to move forward.

ATTACHMENT A:
INFORMATION QUESTIONNAIRE

PRINCETON STORMWATER UTILITY STUDY
PROGRAM QUESTIONNAIRE

The following questions are designed to help to get a better understanding of the Municipality's current stormwater program as part of the stormwater program status and future needs review. The questions are divided into six main areas and are designed to serve as a supplement to interviews with Municipality staff that Princeton Hydro Team will be conducting in the near future.

Directions to Respondents
Please answer only those questions for which you feel qualified to respond. There may be some areas in which you feel you are not qualified to respond. If you do not feel qualified to answer a specific question, leave the question unanswered or simply insert the name and office of the individual you feel is best qualified to address the question. Your responses should be as detailed as needed to provide a clear snapshot of Municipality activities. Do not hesitate to include or reference reports, documents, etc. with your response.

Name:
Position:
Date:
Contact Information:

A. Administration, Finance, and Program Development

A1. Organization and Responsibility. Describe who is responsible for the Municipality's activities/programs in the following stormwater-related areas. Add information on any additional service areas that stormwater staff performs.

- General Program Administration (overall program leadership, staff assignments, budget planning, grant applications, indirect cost accounting, hiring support, legal advice):

- Stormwater Quality Management (watershed planning, water quality monitoring and assessments, BMP retrofit planning):

- Engineering (design criteria and standards, field inspections, in-house design versus contract management):

- Operation and Maintenance (routine drainage system maintenance, street sweeping, emergency maintenance/response, BMP inspections, spill response):

- Regulation and Enforcement (e.g., development plan review, NPDES compliance and reporting, TMDL implementation plans, code enforcement, E&S controls, floodplain management):

- Capital Improvements (major construction projects, minor construction projects, land acquisition, capital project oversight):

- Data Management (GIS, BMP inventories, complaint tracking, reporting databases):

- Public Outreach and Education (brochures, website content, outreach event support, public forums):

- Other:

A2. Financial Overview. What are the basic financing methods used to support stormwater management in the Municipality? What is the breakdown among real estate taxes, development fees, bond sales, special assessments or revenue sources?

A3. Utility Charge Structure. Does the Municipality presently charge schools, public hospitals, state and other government agencies, churches, other non-profit charitable organizations, state or federal buildings or properties for water, sanitary sewer, and trash services? If so, are there any exceptions or exemptions?

A4. Utility Finance. Does the Municipality's utilities issue revenue bonds for capital improvements or other purposes? What is their bond rating?

A5. Utility Delinquencies. What is the delinquency rate for property taxes, water and sewer utility charges? Are these increasing or decreasing? What percentage of charges is written off as bad debt?

A6. Bonding Health. What is the Municipality's general obligation bond rating? How much uncommitted general obligation bonding capacity exists?

A7. Issues Affecting Utility Implementation. Other than general hesitancy about increasing fees or taxes, are there any issues ongoing that may impact the ability of the Municipality to support a change in stormwater funding?

A8. Program Planning. What master plans constitute the Municipality's future-oriented stormwater management efforts? Are they up-to-date? What plans are now underway to change, add to, or in any way impact any existing stormwater programs or activities?

B. Physical Drainage Problems, Erosion, and Water Quality

B1. Drainage Complaints. Approximately how many stormwater/drainage related complaints do you receive in an average year? How are complaints tracked and handled? What is the response procedure? What is the most common type of complaint (i.e., road, yard, home, etc.)?

B2. Water Quality Complaints. About how many water quality (stormwater and streams) complaints do you receive in an average year? How are complaints tracked and handled? What is the response procedure? What is the most common type of complaint?

B3. Flooding. How would you characterize typical flooding problems in the Municipality? Are these generally related to undersized systems, poor operability, system aging, clogged systems, damaged systems, large events, etc.? Are they in open or closed conveyances? Feel free to make reference to specific system components or geographical locations.

B4. Flooding – Extent of Service. To what degree will the Municipality provide support services to private property owners experiencing flooding. (Never? Only if the source is from a public-right-of way, technical assistance only, etc.)

B5. Erosion. Are there areas in the Municipality experiencing severe erosion problems? What are the predominant causes of erosion problems?

B6. Project Identification. Is there an effective way to translate water quality, flooding, and erosion problems into capital improvement projects? Describe the process you follow. (Area studies; master plans)

B7. Impact. How directly do the problems noted above impact people? Are there specific examples of issues that have not been addressed to date? Is there

significant exposure to personal hazard or risk of significant property damage due to flooding, erosion, or water quality impairments?

B8. Safety Concerns. Have drainage conditions ever posed a problem for fire, police or emergency vehicles by flooding major transportation routes or contributing to poor driving conditions? Where? Have there been any other safety concerns related to flooding or conveyance structures?

B9. Sanitary System. Have there been any water quality-related health or safety problems due to leaking/overflowing sanitary systems, septic system malfunction, etc.? How are cross-connections or other potential contamination issues handled? Are there drivers emanating from the sanitary system within the current stormwater program that may need to be addressed with additional resources?

B10. Limits. What are the major constraints, if any, on responding in a timely manner to complaints or correcting flooding, water quality and/or erosion problems?

C. Planning, Design, and Engineering

C1. Design Criteria. What types of design guidance, design criteria documents or software packages do local engineers use? What are the Municipality's policies (written or unwritten) relating to stormwater design criteria (BMP requirements, LID, buffers)?

C2. Technical Studies. What types of technical studies exist that describe the stormwater system and identify quality, quantity and/or erosion problems? Has a Municipality-wide stormwater master plan been completed or is currently underway?

C.3 Data Management. How is information on the existing system stored? Is there a GIS layer with system components (conveyance, treatment, inlets, outlets, stream, etc.) that is updated regularly? What other types of stormwater-related data are available (BMPs, impervious area, land use, on-going construction sites)?

C4. Design. Does the Municipality use in-house staff to plan and design stormwater system components or BMPs? Are outside consultants used to support system design work? How many design projects are typically handled in a year?

D. Operations and Maintenance

D1. Basic Scope and Operation. What portions of the stormwater conveyance system are maintained by Municipality staff (i.e., catch basins, minor streams, ditches, etc.)? What activities are done on a routine basis (please provide schedule and activities, if available)? Who performs this maintenance? How many field crews work on stormwater projects?

D2. Priorities. Is the conveyance system routinely and/or periodically maintained, or is maintenance driven mainly by complaints? How is maintenance prioritized? What is the emergency response capability?

D3. Inspections. Who performs BMP inspections? How are identified problems resolved and tracked (work order system, regional assignments, added to a backlog list)?

D4. Street Sweeping. Does the Municipality have a street sweeping program? If so, what is the level of service provided? Does the Municipality own and maintain its own sweeping equipment (type of sweeper)?

D5. Budget and Manpower. What is the level of manpower, organization, equipment and budget for each organizational unit in the Municipality that performs maintenance (Streets or roadway crew, Parks, other)? Is any maintenance work performed under contract (i.e., remedial, catch basin cleaning, minor reconstruction)?

D6. Limits. In your opinion, are there any major constraints to meeting the demands of effectively operating and maintaining the existing system (resources, legal, financial, etc.)?

E. Regulation and Enforcement

E1. Development Process. Describe the development process as it relates to approving grading and drainage plans. What permits are required, and when? Who manages the Erosion & Sediment Control program? What site inspections are performed, when and by whom?

E2. Written Guidance. Describe the documents, policies, checklists, etc., which govern all aspects of stormwater management (i.e., ordinances, regulations, written policies, etc.).

E3. Authority. Who establishes and enforces stormwater related regulations? What enforcement actions or penalties are available?

E4. Other Government Levels. Describe the role, if any, of regional, State or Federal government in the Municipality's stormwater management program as it relates to flood control, erosion, drainage system operation, and environmental quality. Are there any cooperation agreements in place?

F. Capital Improvements and Expenditures

F1. Stormwater CIP. Describe the Municipality's capital improvement program for stormwater management. Is there an existing approved CIP? How are these projects financed?

F2. CIP Needs. What is the expected level of need for major or minor capital improvements in relation to the Municipality's overall stormwater system needs for the next 5-10-20 years? That is, what is the backlog of unmet project needs? What are the main drivers for the capital improvement program (aging infrastructure, expansion, under sizing, etc.)? Does the Municipality have an established protocol for prioritizing capital needs?

F3. Land Acquisition and Easement. Describe the Municipality's land acquisition or easement program as it relates to stormwater management projects. Who manages the program and how are acquisitions typically funded? Are all easements mapped? Are there BMPs or other infrastructure that aren't within easements?

G. Community Interest

G1. What organizations, businesses, and/or nonprofits are active in the town and should be included the stormwater utility feasibility process?

G2. What are some local places of gathering that would be good spots to disseminate information?

G3. Where do Princeton Residents go for town-related news or information (town website, local newspapers, social media accounts, etc.). Please be as specific as possible.

Please add any additional information about the Municipality' stormwater program that you believe may be relevant as we assess the current stormwater management program and identify potential resource demand.

ATTACHMENT B:
KICK-OFF MEETING AGENDA & MINUTES

Municipality of Princeton
Municipal Building
400 Witherspoon Street
Princeton, NJ 08540-3496

AGENDA

June 22, 2022, 1 PM - 3 PM
Municipality of Princeton

I. Introductions + Roles
   A. Municipality of Princeton
   B. Princeton Hydro + Wood Team

II. Methods of Communication & POC

III. Review of Scope

IV. Review of Timeline

V. Overview of Current Program
   A. Program Overview
   B. Drainage Issues / Problem Areas
   C. Infrastructure Needs
   D. Regulatory Permit / Water Quality Issues

VI. Vision for Stormwater Fee

VII. Data Request

VIII. Stakeholder Engagement
   A. Princeton Internal Contacts
   B. Local NGOs
   C. Business Associations
      1. Princeton Merchants Association
      2. Princeton-Mercer Chamber of Commerce
   D. Local Community Leaders

IX. Next Steps
   A. Next Meeting Date
   B. Action Items

Municipality of Princeton

Municipal Building
400 Witherspoon Street
Princeton, NJ 08540-3496

Invited Attendees:

Andrew Filippi, PE, Sewer Engineer, Sewer Department

Chris Torres, Foreman, Princeton Public Works

Christina Rothman-Iliff, Digital Media Manager of Access Princeton

Dan Van Mater, Public Works Director

Daniel Weissman, LUE, Municipality of Princeton

Deanna Stockton, PE, Deputy Administrator/Municipal Engineer, Engineering Department

Dominick Itzi, Sewer Operations Manager

James Purcell, PE, Land Use Engineer, Engineering

Department Justin Lesko, Acting Planning Director/Senior

Planner Sandra Webb, Chief Financial Officer

Clay H. Emerson, PhD, PE, CFM, Princeton Hydro

Dana Patterson, Princeton Hydro

Roy Messaros, PhD, CFM, PWS, Princeton Hydro

Elizabeth Treadway, Wood

James Barbis, PE, Wood

Erin Endicott, Wood

Municipality of Princeton

Municipal Building
400 Witherspoon Street
Princeton, NJ 08540-3496

Meeting Notes: Princeton Stormwater Utility Feasibility Study Kick-off

Date: June 22, 2022 at 1 PM **Meeting at:** 400 Witherspoon Drive, Conference Room B

Meeting Attendees:

Andrew Filippi, PE, Sewer Engineer, Sewer Department
Daniel Weissman, LUE, Municipality of Princeton
Deanna Stockton, PE, Deputy Administrator/Municipal Engineer, Engineering Department (via phone)
Dominick Itzi, Sewer Operations Manager
James Purcell, PE, Land Use Engineer, Engineering Department
Justin Lesko, Acting Planning Director/Senior Planner
Clay H. Emerson, PhD, PE, CFM, Princeton Hydro
Dana Patterson, Princeton Hydro
Roy Messaros, PhD, PE, CFM, Princeton Hydro
Elizabeth Treadway, Wood
James Barbis, PE, Wood
Erin Endicott, Wood

The meeting commenced at 1:15 PM.

I. Introduction + Roles:

Each person introduced themself and project roles were discussed.

II. Methods of Communication & POC

- For the project, copy Andrew Filippi, Deanna Stockton, Jim Purcell on communications with Princeton.
- Clay Emerson will serve as the team POC. Elizabeth Treadway and/ or James Barbis from Wood can be cc'd.
- Agreed to use Microsoft Teams for document sharing & communication. Wood will set this site up.

III. Review of Scope of Work

Phase 1: This phase really looks at system needs, funding requirements for properly maintaining programs, looking at increase/improvement of Level of Service (LOS). Projected annual budget and rough breakdown of costs. Overarching theme is "what is the compelling reason to do this"; looking at methodology, tools, data, financial system support, billing system support. Can then move forward to the elected body to move forward to Phase 2. Limited initial public input process is now included in Phase 1. What does the public say about why change has to occur? Really beginning to understand the pulse on where Princeton stands.

Deanna Stockton explained that NJDEP is really helping Princeton with the resiliency emergency rule that they

are looking at now and the need to address more frequent storms. This will be coming down through the rulemaking process. Clay Emerson added that there is momentum with this and NJDEP is looking at mid-summer for the release. He mentioned that the public in Princeton is well informed. James Barbis said Phase 1 is the foundation of this process that will be built off of moving forward. Everyone is informed prior to moving forward in the process to the next phases.

IV. Review of Timeline

Six months (EOY) is the estimated timeline for Phase 1 completion. Andrew added that there are no specific deadlines that Princeton needs to meet.

V. Overview of Current Program

Jim Purcell:

- SeeClickFix & Access Princeton: If they get a call about a flooding or drainage issue, they put it into the SeeClickFix database.

Deanna Stockton: System overview

- Stormwater management is spread across multiple departments:
- Engineering side combined: infrastructure + operations (Deanna oversees)
- Disconnect between MS4 permit implementation between Engineering and Public Works that they are currently working to correct
- Harry's Brook is an issue in everyone's backyard and the watershed is fully contained in Princeton and outfalls to Carnegie lake. Currently mapping portions of this watershed upstream from the detailed FEMA mapping extent.
- They are currently more reactive rather than proactive on the system.
- Backlog on $4 million in culvert replacement that needs to be done; funds are competing with other infrastructure work.

Andrew Filippi: Flooding concerns

- Primary concern is flooding (clogged inlets and pipes) as well as riverine flooding (Harry's Brook, Stony Brook) more severe storms increase.
- Water quality: Has not changed in terms of new issues arising; same ongoing issues.
- Princeton is an old community; the vast majority of the development was done before there were any stormwater rules in place.

Deanna:

- There are some areas that do not have any drainage infrastructure and have property damage as a result.
- Soils in the municipality are generally not conducive for infiltration with shallow depth to groundwater and bedrock in many places and relatively fine-grained soil with low permeability.

Jim Purcell: Princeton Boro and Township Consolidation

- Boro and Township consolidated 9 years ago. Boro had more robust infrastructure than the township. Some streets have drainage and then cross old boro lines and there will be no drainage. This is even true with curbs to no curbs.
- Currently undertaking inventory of system (inlets), and getting the entire system is ongoing (95% on inlets, 85% on outfalls/outlets)

Deanna Stockton: Subdivision issues

- Some subdivisions were designed so that there was not a drainage system other than a low point in the backyards and the soils are not great for drainage. Complaints but there are not many options as there is no easement and they would have to put in a pipe in the backyard.

Andrew Filippi: Current Mapping

- Princeton has a good handle on county culverts/pipes (10% of municipal culverts/pipes mapped currently, hoping to get to 100% by EOY). With the ongoing inlet mapping they are collecting size, material, location, connectivity. Georeferencing, but not explicitly referencing age. Anything not accurately located will be surveyed so the locations will be accurate (x,y,z).
- In the future, will develop drainage areas going to these areas, but not part of the current process.

Elizabeth asked if this was a direct inspection or desktop activity: Initial stage is desktop, for now, but eventually some will be inspected (inlets via MS4 permit) or failures.

James Barbis asked if Princeton is actively replacing any storm sewer. Response: Yes, along with the road projects. Princeton does not have a specific program in place to replace them. Princeton did have a drainage repair program last year. $4 million in waiting infrastructure to be replaced: mainly culvert projects; four culverts to be replaced and a fifth on NJDOT list. There is also the need for a streambank stabilization project on the Stony Brook: Quaker Road (Short) between Mercer Road and Rt. 206.

Jim Purcell explained the big picture goals: Stormwater mitigation; Princeton has not developed any projects yet. A subcommittee of the FSC is looking at how they can do larger scale stormwater mitigation for properties/applications that cannot meet the rules. This will also be used as flood mitigation. One potential location for stormwater mitigation is Grover Park.

Clay Emerson: In a built-out community, this may be one of their only tools especially if developers cannot meet the regs on site. Not many communities in NJ are doing this yet. The team will be giving Princeton a survey to dive deeper into this process and will help our team get an idea of the systems in place.

VI. Vision for Stormwater Fee

Overall vision and ideas:

- Princeton desires to take a more proactive approach, rather than reactive.
- Stormwater mitigation

- In 2017, Princeton instituted more strict stormwater management rules: 400 sq ft of impervious surface must be treated on site. In 2020, updated to include retention of stormwater WQV onsite. This method adds work for everyone because Princeton needs to check in annually to make sure that it is maintained. Whether it is a self-certification, etc. Princeton is not sure if this gives them the "bang for the buck" they are looking for. A stormwater utility could be beneficial to help reach these goals; rather than being punitive it could be a more well received approach. Princeton can come to an equitable position among all property users, as only those who are improving property are currently getting hit with this requirement.
- Princeton feels it is important to look back to give credit to property owners for what they have done already on their property.
- They have to manage a 2-year storm; routing through green infrastructure
- Two ordinances:
    - Small and Large Projects: outside of purview of NJDEP regs
        - Large is +5,000 sq ft
    - Minor development + major development go in front of a board of jurisdiction (planning/zoning). More stringent than NJDEP. >5,000sq ft.; 1 acre of disturbance

- Have a lot of projects that take place under redevelopment plans, and sometimes stormwater management is negotiated. In some instances developers are willing to do more.
- They use "woods in good condition" as the baseline.
- Princeton has relatively poor soils and has trouble getting infiltration; especially an issue with single family homes. Design is a huge burden, including construction of rain gardens. It is more expensive to get designed than it is to actually implement. Interested in neighborhood/ regional projects approach.

Regional Approach:

- On a regional scale, the Stony Brook area is at the intersection of 5 other municipalities, so what they are doing upstream is really impacting Princeton. The Watershed Institute is hosting regional meetings to engage municipalities in the Stony Brook Watershed. Princeton is interested in looking at a regional stormwater utility approach. However, they don't really talk to Montgomery in Somerset County; not a huge contribution to them, not a lot of impervious surface.
- Elizabeth Treadway: You have complete control of a stormwater utility when there is only one municipality. When there are many municipalities involved, politics can get in the way and must all come to the table with a like mind. It can be done, but it is a lot harder. And longer-term planning. Takes significant public will.
- Jim Purcell requested that the team look at the regional approach and describe the +/- for this approach. They will need to present this to their municipal body so want to be able to explain this was evaluated.
- All three watersheds are uniquely different from each other. One includes Mountain Lakes Dam. Harry Brook has multiple tributaries surrounded by impervious surfaces. Elizabeth Treadway added that we

might be able to negotiate around a project basis, rather than a utility basis. Much easier; everyone sees boundaries.

- Elizabeth added that if our team can understand what you'd like us to evaluate, it helps us understand the pros and cons, and be able to tell the story. If we know what questions might arise (i.e. equity, rate structures), we can help be able to prepare for the response, and address the questions early.

NJDEP conflicting guidance on Stormwater Utility Fee Grouping:

- As it reads currently on NJDEP's website, we cannot group properties based on land use. We cannot charge a group of properties a fee or even do a tiered system.
- Princeton Hydro via NJ Future reached out to NJDEP for clarification, and they were literal in their response: They want each property to be assessed per sq foot (no ERU system).
- Our team would like Princeton's approval to go back to NJDEP to get more clarity on this issue. We don't want to spin our wheels before we start the data crunch in Phase 1.
- Elizabeth explained that NJDEP cannot rule by guidance as it will not stand in court. She believes the guidance reads as lack of understanding; proportionality defined as exact sq ft on each parcel instead of by land use.
- Elizabeth warned that lawsuit could entail if this is not worked out. NJDEP could sue Princeton for not having a legitimate Stormwater Utility or property owner could sue Princeton for not following NJDEP's guidance.
- Would like to have a meeting with Nancy (NJDEP) + Brianne Callahan (NJ Future) to discuss this on Princeton's behalf. It is the biggest risk out there that has not yet been tested. Princeton can join if they would like to. No need to bring in the Mayor or legal team at this point in the process; keep it technical. Jim Purcell would like to participate.
- Princeton mentioned that there is an assumption that they are not including roadways in their SWU rate structure.

VII. Data Request

GIS Layers/Data Available

- Buildings outline but no other impervious is available.
- Road centerlines were updated to remove paper streets.
- Good LiDAR from Mercer County
- Have NearMap imagery but not NearMap impervious area; significant cost that they did not move forward on as part of their package. NearMap has flown 3x per year since 2015. Highly accurate, high-resolution imagery. Princeton can share login information with the team. They have AI intelligence that goes based on leaf-on-leaf-off that creates impervious surface layers. It is a good high level or medium level estimation but likely not good enough for stormwater utility billing purposes.
- Have about 8,000 parcels in Princeton
- The Mercer County impervious layer is from 2015 and is not that accurate. It would be worthwhile to invest in this data source even if it needs cleanup. Whatever data we use, we would lock it in now and

use that data through the whole process (all phases), so it does not need to be re-done at a later phase.

- Princeton would like to get the cost of manually digitizing impervious surface data from the team.
- Princeton has an offline copy of the data to use as something to have full ownership of the data.
- Having the best data is one of the most important parts of the process; it will also be held in court.

SeeQuickFix

- Princeton will share the tracking spreadsheet so we can see residential requests history

Local Ordinances

- Have a "Stormwater" page on a website that has relevant ordinances available for download.

Primary flooding areas are mapped out via GIS.

VIII. Stakeholder Engagement

The team brainstormed a list of potential people to include in the process. Group agreed to call the internal group (Princeton Staff + Consultant) the **Stormwater Utility Steering Committee.** Group agreed to call the larger group that includes external/community representatives the **Princeton Stormwater Utility Advisory Committee**.

Stormwater Utility Steering Committee *(Internal)*

- Include list of Princeton Staff invited to kick-off meeting
- Finance and DPW
- Sustainable Princeton – Communications arm, Climate Action Plan Focus
- Princeton Environmental Commission - Karen Symbol, Tammy Sands
- Board of Health
- Department of Recreation
- Planning Board – Louise Wilson

Princeton Stormwater Utility Advisory Committee *(External)*

This should be about 15-20 people, a core group with representation from various industries and groups within and surrounding Princeton.

- Flood Stormwater Commission (quasi-internal); Include reps from FSC Sub committee only, not entire committee
    - Sub Committee
        - Dan Van Abs
        - Scott Silvers?
        - Andrew
        - Jim Purcell
    - Group is 90% watershed institute affiliated; don't represent entire Princeton community

- Princeton University
- Commercial Improvement Area
- Senior Resource Center
- Local Property Owners
    - Paul Shore – Local property owner drains to Harry's Brook, very focused former NJDEP
    - Harriet Brown - Local property owner
    - Jennifer Tonga (sp. ?) (gallop/mercer) - Local property owner
    - Maria Rowada (sp. ?) (clover) - Local property owner
    - Sarah (sp. ?) (92 bullock) Local property owner
    - Linden Lane resident representatives
- 12 HOAs
- David Cohen – Community Groups by neighborhood
- Environmental groups
    - Friends of Open Space
    - The Watershed Institute
- Affordable Housing Groups:
    - Princeton Community Housing
    - Princeton Housing Authority
    - Princeton Community Village
- Faith-based groups:
    - Nassau Presbyterian Church (Pastor) – pushing for regs downtown; This group also engages with the Jewish community
- Schools
    - Private schools:
        - Sacred Heart
        - Princeton Day School,
        - Steward County Day School
    - Charter schools
    - Public schools
    - Home schools
    - School of International Studies
    - Math school
- Business Associations:
    - Princeton Business Partnership – PBP – formed under state guidelines for special improvement districts
    - Princeton Merchants Association (unclear if this will go away with formation of PBP)
    - Princeton Mercer Chamber of Commerce
- Improvement District
    - 15-member board; the President is head of a development company.
- Medical Groups
    - Some of the medial buildings are actually owned by developers (Jamie Herring)
    - Princeton Medical Group
    - These groups are contributors to runoff in headwaters of Harry's Brook

Summary of stakeholder discussion: We have about 20 different types of groups here. We recommend picking a representative from each type to join the Stormwater Utility Advisory Committee. We want to hear what they value from your government to protect their properties and aspects from the community. Our team can use all different types of techniques to gather information. Princeton will take a deeper look at this list, narrow it down, and send the list of contacts to the team.

Once the list is established, we will set a meeting date for the Stormwater Utility Advisory Committee kick-off meeting. There was a discussion about using the first week of August for this meeting, as Andrew Filippi is on vacation in late July. However, Princetonians leave during the summer and historically don't schedule during this time. This may have to be scheduled in early September to maximize attendance. The meeting can be held at the Suzanne Patterson Center in Princeton.

IX. Other Points of Interest

Master Plan Development & Timing

- The update to the Princeton Master Plan process is going on right now and is expected to be done by June/July 2023.
- Climate Change Vulnerability Planning is now required by the state and Princeton might be the first to do it. Relevant components include Stormwater Management Element, Utility Element, Green Building and Sustainability Element, Combined Conservation & Open Space Element
- The second Master Plan Steering Committee meeting will be on June 29th and Justin Lesko can share the timeline/schedule after that meeting. Would be good to discuss any overlap and expertise between the two efforts.

X. Action Items:

- Princeton Hydro will set up a meeting with NJDEP to discuss the stormwater utility guidance issue.
- Princeton Hydro to send Princeton program questionnaire.
- Princeton Hydro/Wood will provide a fee for manually updating impervious surface layer.
- Andrew Filippi will continue to provide more information as per the data request.
- Wood will set up a Microsoft Teams site for document sharing & communication and share with team.
- Princeton will narrow down a list of stakeholders with contact information for the Stormwater Utility Advisory Committeeso that we can move forward with getting a meeting scheduled this summer with the core group.
- Set a meeting date for the Stormwater Utility Advisory Committee kick-off meeting.
- Clay Emerson will connect Andrew Filippi with our GIS lead Christiana Pollack.
- Princeton will share the tracking spreadsheet for SeeQuickFix so we can see residential requests history.
- Justin Lesko to share updates to Master Plan timeline/efforts with this team following the June 29th steering committee meeting.

The meeting concluded at 3:15 pm.

ATTACHMENT C:
STORMWATER FOCUS GROUP: MISSION, MEETING AGENDAS, MINUTES, AND POWERPOINT PRESENTATIONS

Municipality of Princeton

Municipal Building
400 Witherspoon Street
Princeton, NJ 08540-3496

Mission of the Princeton Stormwater Focus Group (Phase 1)

The Princeton Stormwater Focus Group (SFG) is established to engage community members to discuss and provide feedback to staff . The SFG will meet twice during Study Phase 1. Key discussion topics include:

1. Stormwater related problems, needs, and issues within the Municipality.

2. Priorities for stormwater services in the Municipality.

3. Level and extent of stormwater services, investment in the capital improvements program, approach to water quality protection, minor and major flooding in the community and other key program policies that will guide the stormwater management program.

4. Policy options on stormwater funding mechanisms.

5. A financial strategy for long term sustainability of stormwater infrastructure management and water quality protection measures.

Ground Rules for Participation in the Focus Group

Having ground rules will make meetings more efficient and pleasant for everyone, as members provide feedback. The following set of simple ground rules is only a suggestion and have been proven effective in other settings.

- Speak your mind, actively participate.
- Listen carefully, be willing to be persuaded by others' ideas.
- Come prepared (do your homework) so you share a common understanding and have the facts.
- Be willing to spend the time needed to provide input.
- Be open to other ideas as there are many valid viewpoints.
- Consider Princeton's needs as well as the needs of the people or interests you represent.

Municipality of Princeton

Municipal Building
400 Witherspoon Street
Princeton, NJ 08540-3496

Stormwater Focus Group Meeting #1

April 26, 2023
4:30 pm to 6:30 pm

Community Room
400 Witherspoon St, Princeton, NJ 08540

AGENDA

4:30 Welcome and Introductions .....Deanna Stockton, PE
Deputy Administrator / Municipal Engineer

4:45 Overview of Stormwater User Fee Feasibility Study .....Princeton Hydro Team
- What is a Stormwater User Fee
- Study Process

5:15 Overview of Current Stormwater Programs .....Andrew Filippi
Princeton Hydro Team

5:45 Discussion .....Focus Group Members

- Problems, Needs, and Issues in Stormwater Management
- Priorities for Stormwater Management in Princeton

6:25 Future Meeting Logistics .....Princeton Hydro Team

6:30 Adjourn

Municipality of Princeton

Municipal Building
400 Witherspoon Street
Princeton, NJ 08540-3496

Meeting Notes: Stormwater Focus Group Meeting 1

Date: April 26, 2023 at 4:30 PM

Meeting at: Community Room, Municipal Bldg.

Subject/purpose

Stormwater Utility Focus Group Meeting #1

Attendees:

Dr. Dan Van Abs
Louise Wilson
Keith Fitzgerald
Jenny Ludmer
Paul Schorr
Yichuan Li
Natalie Shivers
Denis Castañon
David Harding
Felicia Spitz
Michael Chaykowsky (not present)
Matthew Bouldin (not present)
David Wetherill (not present)
Scott Sillars
Barbara Prince
Annarie Lyles
Mike Pisauro
Ed Truscelli
Linda Gilmore
Aubrey Haines
Stephen Kaplan
Emily Goldman
Jamie Herring (not present)
Kristen Appelget (not present)
Wendy Mager (not present)
Reginald Wright Jr. (not present)

Princeton Staff:
Deanna Stockton, PE
Jim Purcell, PE
Andrew Filippi, PE

Consultant Team:
Dr. Clay Emerson, PE, CFM
Dana Patterson
James Barbis, PE
Elizabeth Treadway

Discussion:

After a welcome by Deanna Stockton of Princeton, introductions were made by each attendee, identifying interests and community representation as appropriate. The study team provided an overview of the Princeton Stormwater Focus Group role and basic ground rules (slides 3 and 4) for the meetings. The Project Team was introduced (slide 6) noting that Jamie Feinstein (Princeton Hydro) was not able to attend the meeting.

Background on stormwater utility financing was reviewed, noting that nationally, the history of utility financing for stormwater began in the early 1970s and continues today with utilities in over 40 states (slide 8). New Jersey local agencies were empowered to establish a stormwater utility through legislation enacted in 2019 (slide 9) known as the New Jersey Clean Stormwater and Flood Reduction Act (the Act). To date, several local agencies are evaluating the opportunity, but a stormwater utility has not yet been adopted in New Jersey. It was pointed out that the Act identifies who may adopt utility financing, the type of land use that is exempt from charges, and the mandate that a system of credits be included in the financing structure (slide 10).

Question: How do credits work?
Response: A credit is related to the level of services provided by the utility and includes credits to property owners who maintain and operate a stormwater system that complies with state and local stormwater regulations. For example, a Best Management Practice (BMP) for treatment of

water quality may receive a credit, the value of which is typically based on the level of service funded by the utility fees dedicated to water quality.

A general review of a stormwater utility's components pointed out that a user fee is for a specific service and is collected based on proportional use or demand for public drainage management. This is structured similarly to a water or sewer utility user fee. User fee revenue is expended to benefit properties throughout the municipality and the amount of the charge to a specific parcel can be reduced based on adopted credit policy. The revenue collected can only be expended for the services dedicated to stormwater and drainage management. (slides 12 and 13) The services that can be funded with user fee revenue for stormwater include all types of activities from capital projects to public education, including compliance with the NJPDES (New Jersey Pollutant Discharge Elimination System) permit mandates, administration, matching funds for grants and loans, and overall drainage system operation and maintenance (slide 15).

The Stormwater Focus Group was provided with a reference website established by New Jersey Future (https://stormwaterutilities.njfuture.org). The website offers a broad range of information on utility financing, planning, implementation, and other key topics. A key to the process for utility creation is a feasibility study in which a broad range of policy, needs, and operational planning occurs. The current study for Princeton is focused on answering questions regarding the need to effectively deliver stormwater related services (slides 17 and 18). The standard for establishing the stormwater utility rate structure is impervious surface as the "meter" for equitable distribution of costs to property owners and is legally defensible based on historical use as best practice. The required revenue and the distribution of impervious area are the two primary elements used in the calculation of rates. It was noted that Princeton currently has a sanitary sewer user fee in place, which is based on water meter usage.

Options for a credit policy were reviewed (slide 19), focusing on private investments in stormwater management that assist in reducing the long-term needs for public services.

The current Princeton Stormwater Utility Feasibility Study is setup in four phases, with Phase 1 focused on current costs and programs, needs, and priorities for the future; distribution of impervious area (completion of a new impervious area map of the Municipality); and an evaluation of who currently pays for services and how that would change in a utility structure (slides 21-22). In each phase of the study, a decision will be made by the Council on whether to complete the following phase of work. The Stormwater Focus Group plays a key role in defining community priorities and offering feedback to the study team on policy options (slide 23). All four phases of the Feasibility Study were reviewed (slides 24-27).

Question: Are approved development plans being used to create the impervious area map?
Response: Not now. Should the utility be adopted, a review of new development that has occurred since the aerial imagery was captured (2022) will occur to verify any land use changes a potential fee adjustments.

Question: Is watershed capacity considered in setting rates?
Response: The correlation of demand for public drainage services, after many years of study and analysis, is linked to impervious area concentrations. Without human activity leading to urbanization, the need for public stormwater management would not be a priority. Human activity impacts natural systems. The correlation between impervious area and the amount of runoff that must be managed has been well established in the industry.

Question: Will topographic features be considered in the rate structure and cost allocation?

Response: No, impervious area is the meter. The rate structure is typically not based on a runoff coefficient per parcel basis. The purpose of the "meter" for stormwater is to provide fairness and equity in the rates. For example, property value does not have a high degree of correlation to the need for stormwater services; all property benefits from effective stormwater management services and the fairness of the rate structure are focused on a factor that represents the need. Land use or zoning classification is not an effective method for rate structure because of the variability in what a land use code may include. Conditions on site are brought into the equation in the credit program.

The discussion shifted to a review of stormwater management in New Jersey and in Princeton. Key drivers for increased financing for stormwater management are both statewide (slides 29 to 31) and local (slides 32 to 35). Staff noted the impacts of extreme weather events such as Hurricane Ida when 18 water rescues were performed along with mandates to incorporate green infrastructure for water quality improvements. Flash flooding creates streambank erosion resulting in increased impairment. The recently renewed Municipal Separate Storm Sewer System (MS4) permit requires expanded activities such as street sweeping, stream protections, inlet cleaning, and other activities. Public Works currently provides maintenance services for the drainage network and key capital projects have been identified. Needs and priorities exceed the financial resources made available currently to Engineering and Infrastructure Operations. Solving drainage issues that result in flooding, potential property damage, and/or threats to infrastructure operation will take more resources.

Various priorities have been identified by staff. These include the permit mandates, the expansion of green infrastructure to address runoff, maintenance of the infrastructure, enforcement of standards and inspection of various systems, flood mitigation, and public education. The members of the Focus Group were asked to provide their thoughts on priorities and needs in stormwater management for Princeton. The comments are generally summarized below:

- Current development standards are impacted by soil and land conditions. It is hard to infiltrate runoff. Can other options be considered such as underground storage or regional solutions? General response: studies and master planning are needed, which require sufficient resources to effect change. Princeton staff also noted that Princeton already has some of the strongest land use rules in the state which go beyond what NJDEP requires for development.
- There was a question on whether a stormwater utility fee would cover only municipal stormwater systems or also private. It was clarified that the fees collected can only be used to maintain public amenities. Private properties would still have to pay the user fee even if they are also maintaining their stormwater systems. Maintenance for those systems is mandated by NJPDES MS4 permit requirements. However, privately maintained systems can be good candidates for the credit program.
- How much is wildlife impacting water quality and what can be done? Do they impact hydrology? General response: there are limitations on what the Municipality can do to address the presence of wildlife but to address the impacts, means/methods would have to be evaluated.
- Use/create incentives to keep lawn and tree groves in place. Open space can help with runoff.
- Options such as the use of recreation areas such as ballfields could be used for underground storage. Princeton University is pursuing these solutions. Regional

solutions for storage/release of stormwater should be in the toolbox of solutions for larger rainfall events.

- Permit compliance (for both developers and for the municipality) is getting more expensive. Consider ways to incorporate innovation in solutions. Options used in the past may need to be reconsidered. For example, the City of Philadelphia uses "blue roofs" for storage of rainfall with a slow release over time. Be open to innovation to make the built environment more "absorbent."
- It was also recommended for those with ideas specifically around land use/development to bring it up to Princeton's Planning and Zoning boards. The Planning Board is undergoing a Master Plan update (2nd draft) and some ideas presented may be relevant to this process.
- Regionalize solutions when possible – upstream activities (or lack thereof) cause local issues. Partner, when possible, to address more watershed impacts that are not Princeton-only.
- Integrate stormwater solutions and innovation into development ordinance. Make the development requirements more effective. Use the utility resources to study and model solutions.
- Enforcement tools should be strengthened when failures of private systems occur.
- Water quality permit mandates should be met. Use utility to fund services as needed for Princeton to comply.
- All stormwater operational and project costs should be funded through the utility. The mandate to improve water quality requires more resources. The state is looking for compliance and has the authority to levy fines. Key is to meet mandates as set out in the permit.
- Currently, Princeton does not have a dedicated source of funding or staff for stormwater related activities; it comes from the municipal general budget and can change year to year. And only 20% of the total tax dollars goes to the municipal general budget.
- A stormwater utility could fund both water quantity (i.e., reduce flooding) and water quality (i.e., reduce nutrient/pollutant runoff) improvements, which are targeted under the NJPDES MS4 Permit. Can also use the stormwater utility funds as leverage (in the form of match) to get more external funds (grants and loans).
- Capture all costs. If staffing is an issue, identify what needs to be funded and let the public know.
- What will change in the sweeping program? Increased frequency and streets/roads not previously included will be swept (those without curb and gutter).
- Do streets need to be "curbed?" Can curbs be removed and provide more runoff from roads to soak into the road ditches and shoulders? A general discussion focused on the tradeoff between channelizing flow using curbs and the impacts of runoff into ditches and yards. Both require maintenance and engineering analysis to ensure effective management of the runoff.
- For stormwater management activities, can a partnership be developed with volunteer organizations that maintain trails such as assisting with a bridge repair or replacement? General response is "yes" and funding in the utility can provide

those additional resources. Currently staff are limited in the budget/funding available.

Next steps:

1. Logistics: The Stormwater Focus Group concurred that late afternoon and mid-week is a suitable time for participating in the group.
2. The Project Team will be completing an analysis of impervious area mapping.
3. Current cost and potential future costs will be captured, and analysis completed on who currently pays for the current expenditures. An analysis of who will pay under a utility structure will also be completed.
4. The Project Team will put together a list of acronyms relevant to this process and share it with the group.
5. The Project Team will share links to websites and references discussed in the meeting.
6. Council will have a work session with the Project Team after the second Focus Group meeting.
7. The second Focus Group meeting will occur before the end of June, in approximately four to six weeks. There will be additional materials provided before the second meeting. Members are asked to review and come prepared to discuss. Once confirmed, the next meeting date and time will be sent out to the full list via email.

The meeting adjourned at 6:30 PM.

Municipality of Princeton

Municipal Building
400 Witherspoon Street
Princeton, NJ 08540-3496

Stormwater Focus Group Meeting #2

June 13, 2023
4:30 pm to 6:30 pm

Princeton Senior Resource Center
101 Poor Farm Road, Princeton, NJ 08540

AGENDA

I.	Welcome and Introductions	4:30 PM
II.	Recap of Stormwater Utility Feasibility Study Process	4:40 PM
III.	Stormwater Utility Feasibility Study Preliminary Findings	4:45 PM
	a. Summary of Current Stormwater-related Costs and Expenditures	
	b. Digitization and Land Use Type Analysis Results	
	c. Equity and Rate Structure Options	
IV.	Questions & Discussion	5:30 PM
V.	Next Steps	6:15 PM
VI.	Adjourn	6:30 PM

Municipality of Princeton

Municipal Building
400 Witherspoon Street
Princeton, NJ 08540-3496

Meeting Notes: Stormwater Focus Group Meeting 2

Date: June 13, 2023 at 4:30 PM **Meeting at:** Princeton Senior Resource Center

Subject/purpose

Stormwater Utility Focus Group Meeting #2

Attendees:

Barbara Prince
Dan Van Abs
Ed Truscelli
Emily Goldman
Felicia Spitz
Jenny Ludmer
Jamie Herring
Keith Fitzgerald
Linda Gilmore
Louise Wilson
Michael Pisauro
Natalie Shivers
Paul Schorr
Scott Sillars
Stephen Kaplan

Annarie Lyles (Not Present)
Aubrey Haines (Not Present)
David Harding (Not Present)
David Wetherill (Not Present)
Denis Castanon (Not Present)
Matthew Bouldin (Not Present)
Michael Chaykowsky (Not Present)
Reginald Wright Jr. (Not Present)
Yichaun Li (Not Present)

Consultant Team:
Dr. Clay Emerson, PE, CFM
Dana Patterson
James Barbis, PE
Elizabeth Treadway

Princeton Staff
Deanna Stockton, PE
Andrew Filippi, PE

Discussion:
The meeting commenced at 4:38 PM.

I. Welcome and Introductions

Each person in the group introduced themselves and reviewed the ground rules.

Dr. Clay Emerson, PE provided a recap of the Stormwater Utility Feasibility Study Process, which was covered in the first meeting. He described how the impervious surface is measured and how the fee is calculated (Rate = Required Revenue / Impervious Coverage).

Elizabeth Treadway reviewed the timeline for this process and the goals of the first phase of the Stormwater Utility Feasibility Study. They reviewed the current program and cost in order to identify the needs, mapped impervious areas, and the project team will evaluate who pays for service and who might pay in a potential user fee system. In Phase 2, which will be decided by the Council, the project team will do a more in-depth analysis of the program and rates. There is more public involvement in the next phases, and the Stormwater Focus Group will continue to participate in this process.

A clarification was asked if the Stormwater Focus Group would be making any type of recommendation at the end of this meeting, and it was clarified that the group will provide insights, ideas, concerns, and ultimately, Princeton Staff will make a recommendation to the Council for a vote.

Stormwater Utility Feasibility Study Preliminary Findings

Summary of Current Stormwater-related Costs and Expenditures

The project team found that there is insufficient staff in order to meet the needs; including the requirements under the new MS4 Permit. These challenges were shared by staff with the project team during interviews. MS4 Permit has shown there needs to be a shift away from reactive maintenance and to a proactive approach with investment. Capital will be a long term investment; minor repairs and major improvements.

The project team reviewed all the different cost activities at a high level (the detailed cost model will be built in Phase 2) and had discussions with staff to evaluate for all types of operations (sewer, engineering, public works, etc.). Operationally, stormwater falls nearly everywhere, both physically and throughout the municipality departments (admin, etc.). The preliminary findings found that $760,000 is the estimate spent on personnel and operating expenditures per year.

- Q: Do you have a sense if this total has shifted over time?
  A: Generally, the cost and requirements have increased. However, how much has not been quantified.

- Q: Looking at the list for the new MS4 permitting requirements, there is a heavy lift for creating the documents, (i.e. mapping), won't the costs be upfront and over time reduced?
  A: For some tasks, yes, they are upfront, but a lot of them are ongoing (street sweeping). Even mapping needs to be maintained overtime and it is continuous, albeit some may reduce, but this is focused on a long-term commitment. Generally, the MS4 demands more specific effort overtime.

There was a discussion about what is not getting done in the municipality. In most municipalities, capital funding is used for major maintenance, rehabilitation, and/or reconstruction. Stormwater drainage systems can be out of sight and out of mind until there is an issue, which can trigger awareness of why the system is not working correctly. Public works are often underfunded.

- Q: Should the slide include anticipated # of new full time employees?
  A: We know there is a need for a dedicated crew in PW and Sewer, however we have not yet done the calculation to quantify this. In Phase 2, this will be answered in more detail.

- Q: $30M infiltration abatement, wouldn't that be under the wastewater?
  A: There is a portion of this that is driven by SW and when we build the cost model, we will break that out.

- Q: As part of the phase 2 pricing option, there is old, poorly constructed, that was not meant to last for 100s of years.. Will this be looked at realistically?
  A: Yes, that will be reviewed in Phase 2.

Andrew added: Lots of sins of the past that we have to make up as a community. Installing more GI, as they get constructed, they have to be maintained, and that maintenance duty will further increase our costs. Revenue capacity must increase to address system needs. Who should pay and on what basis?

- Q: Can private landowners conduct inspections?
  A: Yes, that is an option for some communities, but even in those situations the municipality serves an oversight and review role. Generally, performing spot checks to ensure land owners are meeting inspection requirements.

- Q: Why aren't the building inspectors part of this committee?
  A: Princeton staff here can definitely talk about this from an engineering process; the ordinances, regulations, etc that are required to meet these requirements.
- A: Deanna added that the building dept does not create any of the regulations; their job is to confirm that it is in compliance with the codes and regulations that the engineering department reviewed.

- Further comment about when a smaller house is replaced with a larger house with a more impervious surface, how is that being addressed?

- Deanna said that they look at it from a SW perspective; for Sewer; they need to do a video inspection? Andrew added that it is not based on age, but instead condition; and pipes are replaced if it is in poor condition.

- Andrew added that we are representing the engineering department; the building inspectors are not approving the plans for stormwater; the engineering department is doing this.

- Comment about groundwater recharge and stormwater capacity into the ground. There is a benefit from GSI that goes beyond just when it is raining; but continues to benefit post-rain events due to the recharge.

Digitization and Land Use Type Analysis Results

The study team looked at the municipal parcel data, recent aerial images, and answered key questions outlined in the document that was shared with the focus group. The parcel data is broken into land use codes; and the goal of this task was to get a handle on the impervious surface areas.

For the non-single family parcels; each one was manually delineated. For residential, there are 6-7,000 parcels, so a different method was utilized. Dr. Emerson provided a few different examples of land uses. For commercial property, the team looked at each parcel and manually traced the impervious cover removing things like planters, etc. Dr. Emerson provided an example of a parking lot in the town. The boundaries are traced in by hand, digitized also. The next example shown was "Church and charitable property," which were also hand traced to show the impervious cover.

- Q: If the parcel had a green roof or pervious pavement, would it be treated as impervious?
  A: Yes, at this stage. However, if this was the case, this could be as a credit and would go through the process to reduce it. There are actually some green roofs in Princeton.

For single family residential parcels, the team selected a representative sample (360 parcels or 5%). The process is very similar to the impervious delineations. The team used a minimum width (6 ft) to satisfy the impervious cover for linear features (i.e. sidewalk) for the purposes of this analysis. The 360 single family residential parcels were selected from all over the municipality; some are on larger lots; some are on smaller. The sample had a similar distribution as the lot areas; which is more representative than a random sample.

- Comment: The 6ft would eliminate the majority of Princeton sidewalks since they are under 6ft.
- Comment: Princeton has a trend of redevelopment where smaller homes are turning into larger homes. Is age considered?
  A: We focused on the parcel size, not the impervious size.
- Q: Is 5% an adequate sample size statistically?
  A: Yes, that is what has been used in other places, and has been shown to provide a statistically relevant sample size.
- Q: Was the recharge area included in the representative sample?
  A: The focus was on the impervious cover because it is readily measurable. Nearly all the SWU use impervious cover as the proxy.
- Q: Is there a sense of the impervious space of the sample that we took? What is the breakdown of impervious cover on those homes (i.e. house, driveway, pool).
  A: No, we only measured all the impervious cover that met capture specifications.
- Comment: Because significant impervious cover is driveway, the housing authority should be part of this and require impervious driveways.
- Andrew: Has been involved in similar studies in PA and delineated at the impervious surfaces by type (driveway, roof, etc) and tried to incorporate that into a billing structure; and at the end of the day they found it was wasted effort because the differences they saw were insubstantial.
- Q: For the parcel selection, within the parcel sized groups, was there some type of random selection?
  Yes.
- Comment: Please include a legend in the maps in the future.
  Yes, this image (single family residential parcel) was for demonstration purposes only.

Dr. Emerson shared a histogram of the 360 single family residential parcels. The median parcel is 4,590 square feet. One takeaway from this analysis is that it might be in the best interest of Princeton to have some tiers for ERUs, and that is something that will be decided by Princeton in Phase 2 of the study.

Next, we looked at the distribution of land uses in Princeton. There are many different types and sizes across the municipality. The majority of parcels (76%) are classified as residential. Residential properties include single and two family; anything beyond this (condo, etc) are not considered residential, they are considered apartments.

The team looked at who currently contributes revenue to Princeton for general municipal purposes including stormwater management. 81% is coming from residential properties. It took a

significant effort to map the portions of municipality that are not on a parcel: Public Roads and Sidewalks along with private roadways that are NOT within a parcel boundary.

- Comment: Did not take into account sidewalks and roads when doing the calculations. When she built in Princeton 10 years ago, they forced everyone to put in a sidewalk. Which does not allow for a continuous sidewalk. Are we going to continue to add to the impervious surface or has this stopped?
  A: Deanna said they have to go to the land use staff and find out what the current policy is. The municipality can also ask for an off-tract improvement to do an overall project. She will find an update.
- Q: Can this sidewalk be taken out?
  A: From a stormwater fee perspective, this is under 6ft, so that would likely not count toward the total impervious surface area.
- Typically these areas are not included in stormwater utilities because they are covered by capital improvements.
- Q: While the university does not pay taxes, it does make a voluntary contribution that goes into the general fund yearly.
  A: Such revenue is not reflected in the summary of revenue contribution percentages.
- Q: For private roads that the university owns, would that be included in the impervious surface that the university owns?
  A: Yes, they are included in the analysis now, however that could be a policy decision as to whether or not to include them in the fee.

How might the current contribution of revenue shift should a municipal stormwater utility be implemented? Roads and sidewalks are usually removed, so both pie charts were provided. Without it, the residential proportion is estimated to be 50%.

- Q: I thought agricultural land was exempt in the SWU act? Why is it included here?
  A: Whether these qualify for exemption in the act, we are not able to tell yet. However, the amount is very small, and would not have a significant impact if this is removed.
- Q: What are public lands and who would pay into this?
  A: Public lands are owned by the municipality primarily. Yes, the government agencies would pay into this for their public land.
- Q: Sidewalks and roads be exempt?
  A: We believe that is what they said; but they will likely be exempt. Comment: It is essentially redistributed.
- Q: Whether the municipalities would pay the bill? Comment on if the municipality was paying a water or sewer utility, then they would pay the bill and it would come out of the general fund.
- Q: Do feds have to pay these fees?
  A: Yes. However, if federally owned lands are charged, then ALL like entities must be charged. Cannot exclude just feds or just municipality. Under utility law, you cannot write yourself an exclusion.
- Q: [From Sankey graph] All of the people on the right hand side would have to pay the fee, but not all would benefit from the services provided from it. A commercial company would provide this fee, but they also have to pay for their own property.

A: All the users on the right would actually likely benefit from it. All the users would use the roads, etc. to get from point A to point B. The funds would not go directly to the users to manage SW on the parcel.

- Comment: the overall benefit is improving the public safety of the region.
- Comment: We have a dead end property; with a basin; that is a private road.
- Response, you are using all the roads to get to that property and benefit from sustaining water quality as a quality of life condition.
- Comment: Other communities have implemented grant programs to help offset the costs to manage SW and improve your property.

II. Questions & Discussion

- Q: Do you look at this as a net increase in taxes or separate additional fees relevant to the offset of what the current tax dollars are doing?
  A: There is an unmet need currently. Whether the specific users would benefit? Would the average residential property be paying more post utility? We don't know. Right now they are paying more than their fair share currently, however if the level of service increases, that could increase the total cost. However, that is currently unknown. If you maintain the current level of service, with the unmet need, the average residential property will be paying less under a stormwater utility.
- Comment: With the utility, this will help meet the unmet need and also help it be more equitable.
- Comment: To sell this to the community, there are different parts. 1. There is a re-balance of payments; 2. Tax numbers + add'l fees, the cost that the town has is X, that will be covered by the new revenue sources. In order to sell it to the community, we need to explain how everyone is benefiting from a stormwater program funded by a utility. The 3 or more processes.
- Comment: This is a policy decision for the administration. They don't have to reduce the taxes if the SWU is implemented. In Phase 2, a policy issue is whether to continue funding current level of service with current revenue. If these baseline costs are funded by a user fee, the Council will decide how to address the change in general funding. For example, they might want to build up the tax based revenue for other things.
- Comment: On the F&SWC, when the RFP SOW was created, they discussed if people are not convinced that something needs to be done about stormwater, then the discussion of the SWU is irrelevant. If we cannot make a convincing case that the unmet needs should be met, then this process goes away.
- Comment: When this goes to the public, it is important to explain the MS4 permitting and the magnitude of capital projects and maintenance that need to be completed.
- Comment: When it comes to flooding, the unmet needs are only going to keep rising, due to climate change, etc.. The Focus Group agrees on the point of needing to communicate stormwater program needs for increasing LOS for stormwater. Fairness and shared costs are important principles to communicate.

- Comment: For the stakeholders and taxpayers; it looks like a benefit. For a property that contributes a large portion of the tax revenue but is a small portion of the users, the shift needs to be explained in terms of the cost-benefit analysis.
- Comment: If you have a large capital expenditure, and you don;t have the funding, you might have to bond it, and how much would that cost? Scenarios such as this can be modeled in Phase 2 within the financial forecast.
- Comment: Equity aspect of this needs further consideration. From the public housing authority POV, we don't have money. So what are we talking about in terms of a utility fee? Cannot pass this on to the affordable housing tenants. What can be done here?
- Comment: A casual property owner might say "you want to increase my taxes but don't want to call it a tax". Is there a cost to implementing this because there is a cost to implementing this? As part of the HOA there are 6 condo buildings with 108 units, stacked on top of each other. When you look down on this, there could be 20 property owners in one? Do you get down to that level of detail?
- A: Yes. We get down to the level of detail. We consider the entire parcel measured impervious area and then establish a billing policy - bill a homeowner association and let that organization decide how to pass on to owners, or calculate total charges due and divide equally among all owners, sending an individual bill to each.
- Q: They all have parking lots, how do you bill that?
  A: In Phase 3, we get down into an excruciating level of detail and the billing mechanisms are policy decisions on how it is distributed; sit down with everyone involved so that the billing agency can track it. All commonly owned land is included in the overall impervious area and either charged to the homeowners association (condo association) or divided among all owners.
- Q: What are we talking about ballpark wise for a residential unit?
  A: To say there is a national number is hard to say because every community is different and it does not tell you much. We will tell you exactly what will be done for Princeton here. Average national rate is $6/month. But in other places, like Florida, it could be $30 a month. It depends on what you want your level of service for stormwater to be. For example, should there be a grant program to assist property owners to install treatment on their lot? The rate per billing unit might go up with such a program. Phase 2 will be the next step where we determine the cost and where Princeton wants to be. And then, we distribute charges after that is determined.
- Comment: If you design a program with good incentives, it will be well received.
- Q: Do you have a capital plan / look ahead of what needs to be done?
  A: I would assume the fee would include some capital projects, however it is reactive. Last week, the inland flood rules were released and will be in the bulletin by next month, so that will change how we look forward to projects.
  Also, this is based on what we can manage with our current staffing. Andrew did an exercise with the council to just "catch up" on sewer projects. For stormwater, we don't even have the analysis completed, but it is underway.
  Under phase 2, we will determine what is needed.
- The 7-year capital program look ahead accounts for the fact that we know we will have a limited budget; it's not what Princeton actually wants to get done; just reactive to what needs to get done. The $760k estimate of current expenses is not reflective of what is needed, especially with the new permit requirements.

- Q: Will we have an idea of the magnitude of the total cost in Phase 2?
  A: Yes
- Q: What is the timetable for all four phases?
  A: We do not have a set timeline established for all the phases. Multiple years. We have not started the significant stakeholder engagement parts yet; 29 meetings for Phase 2, which takes a lot of time.
- Q: Is there a permitting process timeline for this?
  A: No, not for the utility. There are timelines for meeting the MS4 permit requirements, but that will happen whether or not the utility is established.
- Q: What are the highest value added costs for projects? What can we build into projects moving forward? Where is the $ spent most efficiently? This will be an important question to answer and explain to the public.
- Q: Can we have a list of potential projects that people might see as they are "getting" from this? The 7-year outlook for capital can be provided.
- Comment: It would be great to have real life examples that show what a minimal cost this is, say from PA, and not a noticeable change, but great benefit. Second, people keep talking about addressing Quaker Road flooding; however we will not notice any difference in the next 20 years, but SWU is still a better way to reallocate funds.
- Comment: We cannot promise that it will reduce flooding anywhere.
- There are two different types of flooding: Nuisance flooding, collapsed pipe, etc. not as dangerous, but more of an inconvenience; and significant flooding like Harry's Brook.
- Andrew added; we will not solve big storm flooding, but if we can improve groundwater recharge and improve runoff rates, then small and medium storm issues will be better, theoretically. Our priorities might be health and safety / not big bang for the buck projects.
- James added that if you have a utility, you can begin to plan ahead and create a ranking system for the projects to look at it holistically for planning purposes, and include H&S/Water Quality, etc.
- Q: Financial factors for types of utility: Funds should go into a separate interest bearing account that is for a SW only.
  A: Yes, that is a requirement of the act.
- Q: Is the project team making a recommendation to the council?
  A: No: We are taking into account all of the recommendations and providing feedback to staff.
- Comment: Should be taking a tiered approach; and also the credit program are key parts of this. Have examples already figured out of these types of costs showing real examples of how the credit program reduced the fee.There is also a competitive nature here, so if they find out that other states like PA are already doing it. They might be more likely to support it.
- Comment: If we could be the first in NJ, then that would be a driver too.
- Comment: Emphasize on public participation throughout that process.
- Comment: If we can include mitigation projects that people can do in their own yards, it allows them to be more proactive.

III. Next Steps

There will be a Council workshop on July 10th that the project team will present the results of Phase 1. Following that, the Council will vote to make an official decision on whether to move to Phase 2. If Phase 2 moves forward, the group will likely meet again in September at the earliest.

The meeting adjourned at 6:36 PM.

ATTACHMENT D:
SUMMARY OF PRINCETON'S CURRENT PROGRAMS IN STORMWATER MANAGEMENT

Summary of Princeton's Current Programs in Stormwater Management

Stormwater Utility Feasibility Study
Stormwater Focus Group

OVERVIEW

Throughout New Jersey, communities like Princeton face pressures to manage their stormwater permit requirements, nuisance flooding locations, surface water quality issues, and an overall need to upgrade their aging **M**unicipal **S**eparate **S**torm **S**ewer **S**ystem (MS4) infrastructure. To meet the needs of the National Pollutant and Discharge Elimination System (NPDES) – **MS4** Permit (N.J.A.C. 7:8), the updated Stormwater Management Rule (N.J.A.C. 7:8), and other stormwater needs (i.e., Total Maximum Daily Load (TMDL) mandates, infrastructure improvements, etc.), communities are examining their current financial policies and identifying additional financial sources.

Traditionally, municipalities allocate funds from their general fund to implement stormwater management activities. This approach means stormwater management services must compete with other community priorities, such as police and fire services, planning and zoning, parks, public works activities, etc. Using a general fund, without increasing taxes or receiving annual supplemental grant funding, can lead to a reduction of funding for established municipal programs over time. Further, overall annual general fund budget adjustments may not guarantee that the funding will be shifted in a manner to meet the ongoing stormwater program needs.

In comparison, a successful stormwater program is one that proactively maintains existing stormwater assets, improves upon the quality of water in both the regional and larger watersheds, and maintains compliance with regulatory requirements. A stormwater utility is one way of providing the necessary resources required to proactively respond to meet the stormwater programs needs in an equitable fashion.

In 2022, Princeton initiated a Stormwater Utility Feasibility Study to evaluate the feasibility of establishing a dedicated revenue stream to fund all elements of the stormwater program. Phase I of Princeton's Stormwater Utility Feasibility Study will identify and document the level of effort and funding expended historically for stormwater management activities. Additionally, an understanding of current and future levels of service and operating policies will be considered to support discussions on necessary operational and capital improvements for stormwater services to address needs of the community and regulatory compliance.

LOCATION & COMPOSITION

Princeton is in the northeastern part of Mercer County, New Jersey and is approximately 18 square miles (approximately 11,456 acres). As of 2021, it has a population of 30,872 (2021 Population Estimate, U.S. Census Bureau) and is a mix of resdential, instutional, educational, and commercial land use. Princeton is located within commuting distance via public transit to both New York City and Philadelphia, which influenced development activities in recent decades. Additionally, it sits at the downstream end of the Stony Brook Watershed, and therefore, is heavily influenced by upstream activities.

DRAINAGE BASINS

Princeton sits within the larger Raritan River Basin. The Stony Brook and the Millstone River are the two major tributaries that flow through it, which drain to the Raritan River, ultimately emptying into Raritan Bay. Its smaller tributaries include Harry's Brook, Van Horne Brook, Bedens Brook, and Cherry Run.

The 38.6-mile-long Millstone River provides drinking water to a substantial portion of Central New Jersey. It begins in Monmouth County and flows through Mercer County into Somerset County. Almost three quarters of its length is paralleled by the Delaware and Raritan Canal. In Princeton, Carnegie Lake Dam impounds the Millstone River's main stem and there are more than one dozen tributaries that flow into the river. Its two main tributaries are the Stony Brook and Harry's Brook.

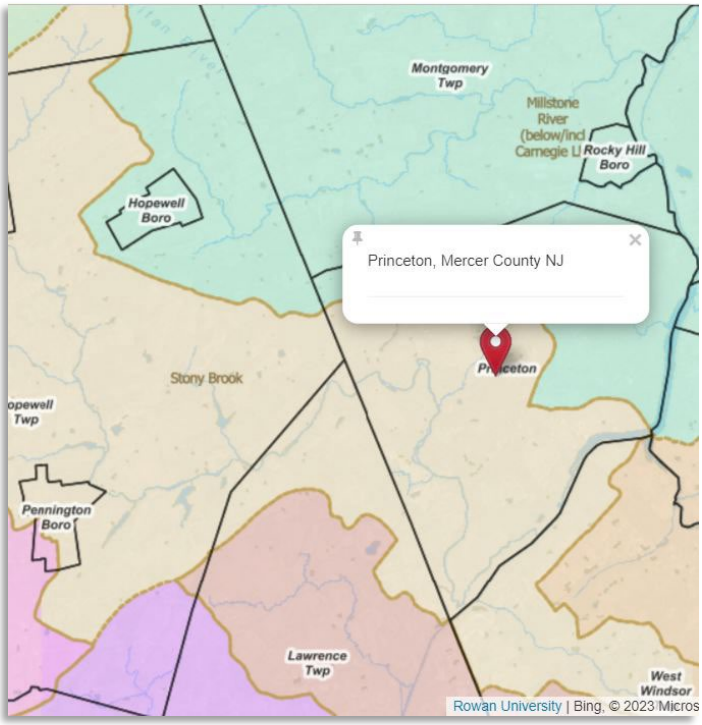

Figure 1 Watershed Map of Princeton

Stony Brook

Stony Brook is the largest tributary that flows into the Millstone River *(see tan area on Figure 1)*. It flows through neighboring Hopewell Township, Pennington Borough, East Amwell Township, and West Amwell Township. It flows through the western and southwestern portions of the municipality, primarily in residential neighborhoods and adjacent to open space parks.

Harry's Brook

Harry's Brook runs from the Princeton Ridge region in the north of Princeton, south through the Princeton Shopping Center, downtown Princeton, and the surrounding residential areas before flowing into Carnegie Lake near Shady Brook Lane *(see green area on Figure 1)*. Harry's Brook Watershed has a history of periodic flooding with heavy precipitation events as documented by the Watershed Institute, news coverage, and staff experience.

UNDERSTANDING THE STORMWATER PROGRAM'S EXISTING LEVEL OF SERVICE

To better understand current stormwater program costs in Princeton, the Project Team reviewed a variety of background documents, developed a questionnaire on all elements of stormwater management, and conducted video phone interviews. The questionnaire was used to capture current conditions, policies, level of service, and potential changes in stormwater management. It was provided to staff prior to interviews conducted over two weeks from December 8, 2022, through December 16, 2022. This exploratory effort targeted current levels of effort and spending relative to the stormwater program. The following information summarizes data gathered.

Organizational Roles: Current Municipal Departments and Services Related to Stormwater

There are many departmental units in Princeton that have a role in stormwater management. Each department that plays a significant role in stormwater management is listed below in alphabetical order:

Access Princeton – Access Princeton administers the SeeClickFix system for residents and others. This allows for the reporting of non-emergency issues. In addition, it provides an avenue for Princeton to conduct surveys, answer inquiries about municipal services and communicate information from the departments. Information sharing occurs via digital, print and in person methods. News about construction, meetings and other topics is disseminated on the municipal website, social media platforms, flyers and through a subscription-based list.

Administration – Administration oversees all activities. Annual budgets, capital plans and new staff position requests for stormwater services as well as revenue and expenditures are evaluated and reviewed by the Administration staff. While daily operations for stormwater management are carried out in other departments, Administration serves a coordinating role for the stormwater program (along with all other services) with the public.

Engineering Department – The Engineering Department is the lead department on MS4 compliance, annual reporting, and infrastructure planning and mapping. There are 10 full-time employees involved in delivering the following services.

- Review development and site plan applications for stormwater management;
- Inspect non-Municipal infrastructure construction projects for compliance with specifications and code;
- Perform the floodplain management role;
- Manage consultants;
- Participate in budgeting and prioritizing major stormwater repair and new capital infrastructure projects, and;
- Perform AutoCAD drafting.

Because Princeton's stormwater regulations are more stringent than those of NJDEP (New Jersey Department of Environmental Protection), proposed projects require compliance review. This department works closely with the Sewer Department and Public Works Department (DPW) to plan for and maintain the stormwater system.

Finance Department – The Finance Department is responsible for the day-to-day financial operations of Princeton. The current process involves an annual budget and a five-year plan.

Police Department/ESU – The Police Department/ESU's involvement in the stormwater program includes responding to health and safety emergencies caused by flooding. Their response may include closing off flooded roads, reporting flooding or other storm related hazardous conditions to the local emergency alert system. Their role in water quality permit compliance includes notifying appropriate staff and/or departments if they encounter activities which could be of concern relative to MS4 permit. Awareness of and reporting activities that impact the drainage system integrity (e.g., motor vehicle accidents, spills) supports water quality protection as well. Princeton engages the public, education, and business communities on risk mitigation strategies during major storm events to reduce injuries, fatalities, and the need for rescue operations.

Planning Department – The Planning Department has two full time employees and supports the stormwater program from a broader perspective. In their role for community planning, they are tasked with observing, documenting, and altering the patterns of development activities and growth in Princeton. A comprehensive Community Master Plan update occurring in 2023 will include a review and update of the stormwater portion, currently an Appendix adopted as the Stormwater Management Master Plan, a mandate of the MS4 permit. In addition to the community-wide planning effort, the Planning Department, in coordination with key members of the Engineering Department, performs pre-design reviews, plan reviews, zoning issue reviews, and overall land use reviews of development site plans. These reviews are performed in coordination with the Zoning Department and DPW. The Director of Planning works closely with the Planning Board Coordinator and the Historic Preservation Department.

Public Works Department (DPW) – The Public Works Department is responsible for operating and maintaining the stormwater infrastructure within Princeton with an estimated 25-30% of their time dedicated to maintenance of infrastructure. Drainage system cleaning and repair impact the overall capacity to effectively manage runoff flows and compliance with the new MS4 permit obligations targeting physical infrastructure. The staffing and overall public works operations are under review and will address the new MS4 permit requirements.

In addition to the operations and maintenance responsibilities, DPW performs stormwater related repair projects as needed. These are done in conjunction with the Engineering Department and Sewer Department. On-call contractors may be brought in when in-house resources are unavailable, or the scope warrants additional resources.

It is from staff experience and knowledge of the system that DPW can pre-plan response actions when a significant rainfall event is forecasted. Staging barriers along roadways where historical intersection flooding has occurred is a proactive measure used. Completing field checks to determine if areas that have had drainage blockages need immediate cleaning (such as headwalls) is another preplanning effort that may be undertaken.

Like many communities, Princeton has become more proactive in addressing impacts of such storms as storm frequency and intensity increases. Instituting such emergency measures are not long-term, ideal solutions to reduce intense storm impacts.

Street sweeping, brush and leaf collection, roadside ditch cleaning, and snow removal are elements of MS4 permit compliance and parts of the overall stormwater program. DPW staff have not yet seen significant workload impacts from installation of new green infrastructure best practices. However, such systems have not been inspected to determine what the status and need is for ongoing maintenance. Because available staff time is limited, BMPs are being added, and facility complexity is growing, additional personnel will be needed to perform inspections and carry out needed repairs.

Sewer Department – The Sewer Department addresses the engineering and operational oversight of the sanitary and storm systems, with limited staff availability or funding to support either system effectively. Within the approximately 10 full-time employees, there are no dedicated stormwater crews. Periodic efforts (once or twice per month) are dedicated to maintaining the stormwater system, creating a need for staff time ranging from a few hours to a few days. These activities include performing CCTV (closed circuit television) inspections and jetting of lines prior to capital projects.

Tax Assessor – The Tax Assessor compiles all property data in a primary dataset. Parcel information from this office is incorporated into the mapping efforts regarding type of property (e.g., residential or commercial). The tax bill carries other fees for service such as wastewater charges.

Zoning Department – The Zoning Department consists of a Zoning Officer and unlike many local governments, is separate from the Planning Department. Site plans are reviewed by this department in coordination with Engineering staff.

Renewed MS4 Permit and New Compliance Requirements

Princeton is required to comply with federally mandated and New Jersey DEP (Department of Environmental Protection) issued MS4 Permit. NJDEP renewed the permit with additional compliance standards effective on January 1, 2023. Princeton has been regulated as a designated MS4 permittee since the early 2000's. Annually, Princeton prepares a status report that is provided to the state covering efforts undertaken for the previous year. The current permit is effective for the period 2023 through 2027. It includes modified and new compliance requirements and associated timelines for each element. A summary of these changes, published by NJDEP, is attached to the end of this document for reference. The summary outlines the enhanced and additional practices, responsibilities, and actions that Princeton's Engineering Department, DPW, and other units will undertake continuously to maintain conditions and remain in compliance.

Princeton annual reports document several deficiencies, and it is acknowledged that the current staffing and associated budget has not been sufficient to meet the permit requirements. NJDEP has noted past permit compliance issues. These include elements such as failure to comply with reporting to Mercer County granted variances or exceptions to local ordinance conditions, lack of a prioritized list of outfall pipes for pipe-stream scouring remediation and failure to train employees as mandated. When identified, Princeton is required to take corrective action and report on the status.

Under the new permit conditions, Princeton is responsible for ensuring that private stormwater infrastructure is maintained by increasing inspection activities and enforcing the new regulations. Princeton will have to create, communicate, and train staff in the new standard operating procedures and document all compliance in reports. GIS-based mapping of the existing infrastructure is an additional requirement, which will aid in Princeton's planning for and prioritizing improvements.

Frequency of street sweeping is an example of the increased MS4 permit mandates. The number of times streets are required to be swept has increased from two to three times per year for most Princeton streets, while streets without curbs or gutters need to be swept once per year. This equates to an up to 33% increase in labor hours

over the current effort for the sweeping program. For permit compliance for annual MS4 reporting, DPW will document tasks completed and other stormwater-related tasks.

Additional and/or more frequent staff training, education of the public, facility upgrades, storm system mapping, and new pollutant modeling and study efforts must be addressed. These requirements place an increased burden on what are already limited resources.

Maintenance Efforts (Public and Private Best Management Practices)

Stormwater Best Management Practices (BMPs) maintenance of public facilities is provided by either DPW or by contracted services depending on the nature and scope of work. Most BMP (Best Management Practice) facilities are privately owned and operated; however, there are publicly owned and maintained BMPs. Work is currently underway to incorporate these facilities into Princeton's GIS (Geographical Information System) inventory of stormwater-related features. Princeton is currently building an inventory of the pipes, inlets, and other structures associated with their system through digitizing existing construction plans and as-built drawings, surveying existing infrastructure, and digitizing as-built drawings when new capital work is completed. This will allow the data to be more readily accessible to staff in all departments who may be using the data to make capital program and other decisions.

There are several additional efforts/expenditures carried out to ensure effective performance of the drainage system. They include the following.

- ✓ *Inlet Inspections and Maintenance*: These inspections occur semi-regularly and maintenance could be bolstered by additional staff and/or a reduction in brush collection time allocations. In the past, Public Works found it necessary to bring in contracted labor to keep up with some maintenance tasks.
- ✓ *Pipe Inspections*: Pipe inspections (using closed circuit television or CCTV) occur in the design phase of capital projects with in-house equipment within the Sewer Department to determine what repair / replacement work is necessary.
- ✓ *Drainage Ditch Maintenance*: Currently many areas do not have a piped drainage system and the roadside ditches must be cleaned and maintained. Drainage ditch maintenance is a target of the new conditions in the MS4 permit and as noted, this requirement will require additional infrastructure maintenance staff. Recommendations will be developed regarding staffing needs.
- ✓ *Pipe Repair*: Currently, pipes are evaluated for repairs in immediate advance of a street project. This limited approach impacts effectiveness in sustaining the performance of the pipe network. A more proactive program where pipes are regularly inspected, and repairs prioritized and aligned with street program or addressed immediately based on risk of failure is a more effective best practice for long-term operation. The inventorying and GIS mapping of the existing system as required by the new MS4 permit aids in establishing baseline data and tracking issues and risk.

Effective as of March 2021, a new stormwater management ordinance requires that any new development, including single-family residences that add 400 square feet or more of new impervious surface, manage stormwater runoff using green infrastructure stormwater management practices. These privately owned BMPs require an Operations and Maintenance (O&M) Manual as well as a deed restriction to be executed with the approval process for installation or final inspection. For all major and minor developments, and for all small (>400<5000 sf of new impervious area) and large (>5000 sf) projects, a final inspection is made by the Land Use Engineer prior to issuance of a temporary or final certificate of occupancy.

O&M requirements are verified through a certification process by the property owner. Municipal staff may inspect these installations at any time. Beginning in March 2021, after adoption of Ordinance 2020-39, there are 131 approved engineering projects that have small scale green infrastructure requirements.

Current Level of Service

Data from fiscal year 2022 was reviewed to understand the current level of stormwater management program spending. This data includes a breakout of projects and staff by cost or time spent attributed to stormwater. The final cost documentation shall be categorized in five service areas.

- ✓ **Capital Projects** – This includes projects that are typically contracted out but could be performed by municipal forces. These are projects that improve, rehabilitate, or otherwise construct facilities that are stormwater management related. Capital Plan forecasts a 5-year period, is adopted in the May to July period annually. The Annual Operating Budget authorizes expenditures for a 1-year period, adopted in March or April and preceded by a temporary budget from January until adoption. Department heads submit annual budget requests in August. Administration and Finance make necessary adjustments, and the draft budget is presented to the Council Finance Committee for review.
- ✓ **Planning & Permitting Compliance** – This includes efforts related to planning for projects or permits as well as costs for permit compliance (including fees and public outreach efforts).
- ✓ **Personnel** – This includes costs related to human resources; specifically, the percentage of time/salary that is devoted to stormwater activities. For this study, it includes staff operating within the DPW, Sewer Department, and Engineering Department.
- ✓ **Maintenance** – This includes projects or efforts that seek to maintain existing facilities or structures. It can include minor repairs, mowing operations, street sweeping, for example.
- ✓ **In–house Projects – This includes projects undertaken by municipal forces (i.e., DPW).**

Next Steps in Program/Services Revenue and Cost Evaluation

A review of current expenditures and anticipated costs relating to stormwater over a five-year period will be evaluated and a summary will be prepared. The review will look at the current costs and sources of funding for stormwater management, to the extent that the information is readily available. This includes how resources currently distributed are generated and how potential fees paid by users may impact property owners. This analysis will be discussed in the second meeting of the Stormwater Focus Group.

ATTACHMENT E:
DELIVERABLES TIMELINES - 2023 MS4 TIER A PERMIT"

Deliverables Timelines - 2023 MS4 Tier A Permit

Permit Citation	Description	New, Modified, or Unchanged from 2018 MS4 Tier A Permit	Included in Tier B	Compliance Schedule for Existing Tier A's	Compliance Schedule for New Tier A's
IV.A.2. Stormwater Pollution Prevention Plan Requirements	Submit an updated SPPP electronically to the Department	Modified	No	EDPA + 3 months	EDPA + 12 months
IV.B.1. Public Involvement, Participation, & Notice	Comply with applicable State and local public notice requirements	Unchanged	Yes	EDPA	EDPA
IV.B.2. Municipal Stormwater Webpage	Develop a dedicated stormwater webpage that contains links to all materials listed in IV.B.2.a. in one place	Modified	No	EDPA + 3 months	EDPA + 12 months
IV.C.1. Local Public Education and Outreach	Implement a Public Education and Outreach Program	Unchanged	Yes	EDPA	EDPA
IV.D.1. Construction Site Stormwater Runoff	Obtain Construction Activity NJPDES Stormwater General Permit or individual permit for construction site stormwater runoff activities	Unchanged	No	EDPA	EDPA
IV.E.1. Post Construction Stormwater Management in New Development and Redevelopment	Comply with N.J.A.C. 7:8 - develop, update, implement and enforce the following: a Stormwater Management Program to address post construction stormwater runoff, a Municipal Stormwater Management Plan (MSWMP), a Stormwater Control Ordinance (SCO), and if applicable, a Mitigation Plan; the same individual may not design AND review stormwater management projects	Modified	Yes	EDPA	EDPA
IV.F.1.a. Community Wide Ordinances (pre-existing)	Adopt and enforce ordinances for proper management of Pet Waste, Wildlife Feeding, Litter Control, Improper Disposal of Waste, Yard Waste, and Private Storm Drain Inlet Retrofitting	Unchanged	No	EDPA	EDPA + 12 months
IV.F.1.b. Community Wide Ordinances (new)	Adopt and enforce ordinances for proper management of Salt Storage Ordinance and Tree Ordinance	New	No	EDPA + 12 months	EDPA + 12 months
IV.F.2.a.i. Triannual Street Sweeping	At least once every 4 months, sweep all segments of roads owned or operated by the permittee and have storm drain inlets that discharge to surface water	Modified	No	EDPA + 12 months	EDPA + 12 months

Deliverables Timelines - 2023 MS4 Tier A Permit

IV.F.2.a.ii. Annual Street Sweeping	At least once per year, sweep all segments of roads owned or operated by the permittee that do not have storm drain inlets that discharge to surface water	Modified	No	EDPA + 12 months	EDPA + 12 months
IV.F.2.a.iii. Storm Drain Inlet Labeling	Label all permittee owned or operated storm drain inlets that do not have permanent wording cast into the structure of the inlet if they are adjacent to municipal streets, within plazas, parking areas, maintenance yards or other permittee ancillary activities	Unchanged	Yes	EDPA	EDPA
IV.F.2.a.iv. Storm Drain Inlet Retrofitting	Retrofit or replace all municipal storm drain inlets within the standards set forth in permit Attachment B	Modified	Yes	EDPA + 59 months	EDPA + 59 months
IV.F.2.a.v. Storm Drain Installation	All storm drain installations must include a catch basin or other BMP designed for solids collection	New	No	EDPA	EDPA
IV.F.2.a.vi. Herbicide Application Management	Restrict application of herbicides to prevent them from being washed into the waters of the State and to prevent erosion caused by de-vegetation (previously 'Roadside Vegetative Management' in Tier A permit Attachment E)	Modified	No	EDPA	EDPA
IV.F.2.a.vii. Excess De-Icing Material Management	Within 72 hours after the end of storm events, conditions permitting, remove piles of excess salt and de-icing materials that have been deposited during spreading operations on all streets and parking areas owned or operated by the permittee	New	No	EDPA	EDPA
IV.F.2.a.viii. Roadside Vegetative Waste Management	Ensure proper pickup, handling, storage, and disposal of wood waste and yard trimmings generated by the permittee	New	No	EDPA	EDPA
IV.F.2.a.ix. Roadside Erosion Control	Detect and repair erosion along roads owned or operated by the permittee and inspect and maintain the stability of shoulders, embankments, ditches, and soils along these roads to ensure that they are not eroding and contributing to the sedimentation of receiving waters	New	No	EDPA + 12 months	EDPA + 12 months
IV.F.3.a.i. Storm Drain Inlet Inspection	At least once per year, inspect ALL storm drain inlets owned or operated by the permittee	Modified	Yes	EDPA	EDPA
IV.F.3.a.ii. Storm Drain Inlet Cleaning and Maintenance	Develop, update, and implement a storm drain inlet cleaning and maintenance program	Modified	Yes	EDPA	EDPA

Deliverables Timelines - 2023 MS4 Tier A Permit

IV.F.3.a.iii. Catch Basin Inspection	At least once per year, inspect 1,000 or 20% of the total number of catch basins (whichever is greater) rotating the schedule to ensure all catch basins are inspected at least once every 5 years	Modified	Yes	EDPA	EDPA
IV.F.3.a.iv. Catch Basin Cleaning	Develop, update, and implement a catch basin cleaning and maintenance program	Modified	Yes	EDPA	EDPA
IV.F.3.a.v. MS4 Conveyance System Inspection and Cleaning	Develop, update, and implement an MS4 conveyance system inspection, cleaning, and maintenance program, e.g., ditches and pipes	New	No	EDPA	EDPA
IV.F.3.a.vi. Stormwater Infrastructure Inspection	Inspect all stormwater infrastructure (excluding those in IV.F.3.a.i. through v.) at least 4x per year and after each rainstorm exceeding 1"	New	No	EDPA	EDPA
IV.F.3.a.vii. Stormwater Infrastructure Maintenance	Perform maintenance on all stormwater infrastructure (excluding those in IV.F.3.a.i. through v.) per approved maintenance plans or more frequently as needed to ensure proper function and operation	New	No	EDPA	EDPA
IV.F.4. Inspection and Maintenance of Stormwater Facilities Not Owned or Operated by the Permittee	Develop, update, implement, and enforce a program to ensure adequate long-term cleaning, operation, and maintenance of stormwater facilities not owned or operated by the permittee that are not subject to conditions of another NJPDES stormwater permit and constructed after February 7, 1984	Unchanged	Yes	EDPA	EDPA
IV.F.5.a. BMPs and SPPP forms for each Municipal Maintennace Yard (MMY) and Other Ancillary Operation	Implement applicable BMPs for activities listed in permit section IV.F.5.b. through r at each municipal maintenance yard and ancillary operation site owned or operated by the permittee; include each site and corresponding materials and activities in the SPPP	Modified	No	EDPA	EDPA + 12 months
IV.F.5.b. Site Inspections	Conduct monthly site inspections and maintain logs	Unchanged	No	EDPA	EDPA + 12 months
IV.F.5.c. Inventory List	Maintain a list of all materials and machinery which could be a source of pollutants in a stormwater discharge	Unchanged	No	EDPA	EDPA + 12 months
IV.F.5.d. Container Labels	Properly label all containers	Unchanged	No	EDPA	EDPA + 12 months

Deliverables Timelines - 2023 MS4 Tier A Permit

IV.F.5.e. Spill Kits	Conduct cleanups of spills immediately after discovery using dry cleaning methods	Unchanged	No	EDPA	EDPA + 12 months
IV.F.5.f. Bulk Liquid Storage	Provide secondary containment of aboveground storage tanks containing bulk liquid materials	New	No	EDPA + 12 months	EDPA + 12 months
IV.F.5.g. Fueling Operations	Establish, maintain, and implement BMPs to address vehicle fueling, receipt of bulk fuel deliveries, and inspection and maintenance of storage tanks	Unchanged	No	EDPA	EDPA + 12 months
IV.F.5.h. Discharge of Stormwater from Secondary Containment	Discharge stormwater accumulated in a secondary containment area as needed following visual inspection for contaminants	Unchanged	No	EDPA	EDPA
IV.F.5.i. Vehicle/Equipment Maintenance and/or Repair	Maintain vehicles and equipment to prevent exposure of pollutants to stormwater	Unchanged	No	EDPA	EDPA
IV.F.5.j. Wash Wastewater Containment	Manage equipment and vehicle washing activities to prevent unpermitted discharges of wash wastewater to storm sewer inlets or to surface or ground waters of the State	Unchanged	No	EDPA	EDPA
IV.F.5.k. Salt and Other Granular De-icing Material Storage and Handling	Store salt and other solid de-icing materials in a permanent structure; establish, maintain, and implement salt and de-icing material storage and handling BMPs	Unchanged	No	EDPA	EDPA + 36 months
IV.F.5.l. Aggregate Material, Wood Chips, and Finished Leaf Compost Storage	Store aggregate materials, wood chips, and finished leaf compost in a manner that minimizes stormwater run-on and pollutant run-off	Modified	No	EDPA	EDPA + 6 months
IV.F.5.m. Cold Patch Asphalt Storage	Store cold patch asphalt in a permanent structure or on an impervious surface and covered	New	No	EDPA	EDPA
IV.F.5.n. Street Sweepings and Storm Sewer Clean-out Material Storage	Store street sweepings, storm sewer and catch basin clean-out materials, stormwater basin clean-out materials and other similar materials up to 6 months in a manner that controls leachate and stormwater run-on or run through	Unchanged	No	EDPA	EDPA + 6 months

Deliverables Timelines - 2023 MS4 Tier A Permit

IV.F.5.o. Construction and Demolition Waste, Wood Waste, and Yard Trimmings	Store construction and demolition waste, wood waste, and yard trimmings~~,~~ temporarily in a manner that minimizes stormwater run-on and pollutant run-off	Modified	No	EDPA	EDPA + 6 months
IV.F.5.p. Scrap Tires	Store scrap tires in a covered container or enclosure to prevent exposure to stormwater	New	No	EDPA	EDPA
IV.F.5.q. Inoperable Vehicles or Equipment	Store inoperable vehicles or equipment temporarily provided drip pans are utilized and monthly inspections are conducted for leaks and filled drip pans	New	No	EDPA	EDPA
IV.F.5. r. Refuse Containers and Dumpsters	Ensure dumpsters and refuse containers that are exposed to stormwater are covered at all times	New	No	EDPA	EDPA
IV.F.6. SPC Training	SPCs attend mandatory Department training once per permit cycle	New	No	EDPA + 36 months	EDPA + 36 months
IV.F.7. Annual Employee Training	Train individuals responsible for implementation of the stormwater program permit conditions that apply to their job duties	Unchanged	No	EDPA	EDPA + 12 months
IV.F.8. Stormwater Management Design Review (SWMDR) Training	Ensure that all individuals that review and approve stormwater management designs for major development projects on behalf of the permitee for compliance with the Stormwater Management rules at N.J.A.C. 7:8 complete the training provided by the Department at least once every 5 years	Unchanged	No	EDPA	EDPA + 12 months
IV.F.9. Stormwater Management Rule Amendment Training	Ensure that all individuals that have completed the Department SWMDR course also complete any Department training courses related to Stormwater Management rule amendments	New	No	Within 12 months from adoption of 7:8 rule amendment	Within 12 months from adoption of 7:8 rule amendment
IV.F.10. Municipal Board and Governing Body Member Related Training	Ensure that all individuals serving on the municipal board and governing body watch the Department training videos once per term	Unchanged	No	EDPA	EDPA + 6 months
IV.G.1. MS4 Mapping	Develop, update, and maintain an MS4 Infrastructure Map; review annually, update as needed, post on the permittee's stormwater webpage, and submit electronically to the Department	New	No	EDPA + 36 months	EDPA + 36 months

Deliverables Timelines - 2023 MS4 Tier A Permit

IV.G.2. Stream Scouring	Develop, update, and implement a program to detect, investigate, and control localized stream scouring from stormwater outfalls owned or operated by the permittee via inspections of 100 outfalls per year or 20% of the total number of outfalls (whichever is greater)	Modified	No	EDPA	EDPA + 12 months
IV.G.3. Illicit Discharge Detection and Elimination	Develop, update, implement and enforce an ongoing Illicit Discharge Detection and Elimination Program via inspections of outfalls owned or operated by the permittee via inspections of 100 outfalls per year or 20% of the total number of outfalls (whichever is greater)	Modified	No	EDPA	EDPA + 12 months
IV.H.1.d. Watershed Improvement Plan - Phase 1	Prepare the Watershed Inventory Report and submit it to the Department; conduct semi-annual public information sessions	New	No	EDPA + 36 months	EDPA + 36 months
IV.H.1.e. Watershed Improvement Plan - Phase 2	Prepare the Watershed Assessment Report and submit it to the Department; conduct public information sessions	New	No	EDPA + 48 months	EDPA + 48 months
IV.H.1.g. Watershed Improvement Plan - Phase 3	Prepare the Watershed Improvement Plan Report and submit it to the Department; conduct public information sessions; implement plan and review it every 2 years	New	No	EDPA + 59 months	EDPA + 59 months
IV.I. Additional Measures	Incorporate measures the Department requires to address TMDLs, regional stormwater management plans, or Water Quality Management Plans	Unchanged	Yes	per NJDEP implementation schedule	per NJDEP implementation schedule
IV.J. Recordkeeping	Retain copies of all records related to the MS4 permit for at least 5 years; make available to the Department upon request	Unchanged	Yes	EDPA	EDPA
IV.K.a. Annual Report	Submit the Annual Report and Certification to the Department via the MSRP Annual Report service through the Regulatory Services Portal by May 1st each year	Unchanged	Yes	EDPA	EDPA
IV.K.b. Supplemental Questionnaire	Submit the Supplemental Questionnaire to the Department by attaching it to the MSRP Annual Report by May 1st each year	Unchanged	No	EDPA	EDPA

ATTACHMENT F:
MUNICIPALITY OF PRINCETON STORMWATER PROGRAM FUNDING & RATE OPTIONS SUMMARY

Municipality of Princeton
Stormwater Program
Funding and Rate Options Summary

Stormwater Utility Feasibility Study - Phase I

Review of Princeton's Stormwater Program Funding Options

This summary examines the funding mechanisms available to Princeton to support a stormwater management program. The background information provided shall assist Princeton in determining the right mix of funding methods and policies to achieve Princeton's target level (and extent) of service for the stormwater program. Issues highlight funding equity (linking revenue sources with revenue purpose) and funding adequacy (the ability of a potential source to produce a sufficient and stable revenue stream). Revenue generation methodologies are defined by the capacity to fund an entire program (primary sources), and those with the capacity to fund specific program elements (secondary sources).

While there are several potential secondary sources of revenue, there are only two commonly recognized primary sources of revenue for stormwater management that are available to Princeton. These are the General Fund, supported primarily through real estate transfer taxes and real property tax, and a user fee for service. As a result, after considering how secondary sources can fund specific program elements, Princeton's major options for primary stormwater funding include the following:

1. Maintain the status quo (same level of service and funding sources);
2. Redistribute General Funds from other programs to fund stormwater management services at a level to meet current and future resource needs;
3. Raise additional General Funds through property taxes and dedicate to stormwater management services to meet current and future resource needs; and/or
4. Implement a dedicated fee for service (similar to wastewater charges) as the primary source of revenue to support current and future stormwater resource needs.

A. Overview of Stormwater Funding Mechanisms

Stormwater funding mechanisms for primary cost coverage, commonly used by local governments in New Jersey, include taxes (e.g., on property, real property sales), exactions, special assessments, and service fees (sometimes also termed user fees or service charges). Each has a different underlying philosophy that guides the structure of the funding mechanism and the use of the revenues.

Funding mechanisms can also be distinguished as *ad valorem* or *non-ad valorem*. Ad valorem simply indicates that the revenue basis is a function of value. By contrast, non-ad valorem is associated with or conditioned upon the performance of an act, the engaging in an occupation, or the enjoyment of a privilege. The following is a brief overview of the funding mechanisms.

Table 1: Summary of Princeton's Common Funding Methods

Taxes	Most general purpose local governmental functions are primarily funded through taxes that generate general revenue. For example, an ad-valorem property tax is often imposed upon real property based on its value. The purpose is to provide revenue to defray the expenses of general government, as distinguished from the expense of a specific function or service. It is not necessary for a tax to have a demonstrable association with any particular purpose or function. Taxes are for municipal purposes without program designation. Dedicated tax policies can play a key role in many municipalities by resolution of the elected body, setting aside a specific percent of property tax for a special purpose. Special purpose tax resolutions can be amended to change or eliminate a dedicated revenue program. Housing and Open Space programs are an example of a dedicated tax purpose.
Exaction	An exaction, or excise tax, is associated with franchise rights and development-related activities or impacts. Over many years, the term has come to mean and include any tax that is not an ad-valorem tax. An example is a franchise fee on a cable utility. The franchise tax/fee is based on the privilege of running wires along public rights-of-way, rather than any assessment of the value of the information transmitted. However, like other taxes, the ultimate use of the revenue does not need to be associated with its source.
Special Assessment	The essential characteristic of a special assessment is that it must confer some direct and special benefit to the property being assessed. A special assessment is based on the premise that the property assessed is enhanced in value at least to the amount of the assessment. Like service fees, special assessments are intended for a specific purpose rather than simply as a revenue generating mechanism. Assessments may be based on property value (ad valorem) or other factors (non-ad valorem) such as frontage along a street for a sidewalk improvement or a proportional share for length of pipe to extend sewer service lines.
Service Fee/ Stormwater Utility	A service fee, often referred to as a stormwater utility fee, is for charges that are related to the cost of providing drainage management services and facilities. User fee funding establishes dedicated resources not authorized for other government purposes. Dedicated enterprise accounting provides a mechanism for receipt and allocation of multiple revenue sources for stormwater management only (e.g., grants). A stormwater service charge rate methodology sets the appropriate fees and charges.

As mentioned earlier, the stormwater funding options available are "primary" and "secondary." Primary methods are those that have the capacity to support the entire program, while secondary methods are applicable to special needs or situations but are not capable of funding a full program.

Table 2: Primary and Secondary Stormwater Funding Mechanisms

Primary Funding Methods	Secondary Funding Methods
General Fund Appropriations Stormwater Service Fees (Stormwater Utility Fees)	Other Service Fees (e.g., inspections) Special Assessments Special Improvement Districts Federal and State Funding/Grants/Loans Development Exception Charges General Obligation and Revenue Bonds

Local governments across the United States have used all the funding mechanisms to some degree. Legislative and/or charter authority and the mission and priorities in each community have guided the selection of a preferred approach. There is no single funding mechanism that is best for every setting. Some funding sources are better suited to operations and maintenance (fees), while others are used strictly for capital improvements (bonds). Adequate, consistent funding of a stormwater program is the most important factor for long-term success for the delivery of services to the community.

B. Grants – Opportunities for Infrastructure Project Funding:

Grant funding for capital projects is considered a key revenue component for many communities. Grants can require local funding for a "match" that may be as much as 50% of project costs depending on the granting agency's terms and conditions. There are financing sources that provide no-interest loans or provide for loan forgiveness methods that functionally changes a loan to grant.

Federal Grants and Loans

1. The Infrastructure Investment and Job Act (IIJA), **Public Law 117-58,** passed in 2021, focuses attention on stormwater through several existing and new programs, targeting local investment in infrastructure. It is important to track each grant/loan program as rules and regulations are issued and filing dates occur. At the Federal level, many opportunities are managed by the Environmental Protection Agency (EPA) for stormwater and through FEMA, USACE and NOAA for hazard mitigation and management.

- **PL 117-58**: State Revolving Fund: The Act increased the available funding for water/wastewater/stormwater project funding for the traditional State Revolving Fund programs. These are low-cost loans, with some grants. Stormwater projects are eligible for these funds; however, competition is a challenge. The New Jersey Water Bank is a partnership between the New Jersey Infrastructure Bank (I-Bank) and the New Jersey Department of Environmental Protection. This partnership serves the communities and citizens of New Jersey by funding sewer, stormwater and drinking water projects. The New Jersey Water Bank finances projects through low interest loans for water infrastructure improvements. Two revenue sources are used: the Federal State Revolving Fund (SRF) as well as the State's matching funds through State appropriations, and loan repayment in combination with interest earnings. This initiative has created an opportunity for the Water Bank to participate in innovative ways to promote sound land use, while simultaneously improving water resources. The process for application is online, streamlining the effort to submit eligible projects. Further information regarding this finance opportunity is available at https://www.nj.gov/dep/dwq/mface.htm.

- **PL 117-58**: Clean Water Infrastructure Resiliency and Sustainability Grants established in the IIJR is a targeted program, with a funding of $25 million a year. Stormwater projects are often focused on establishing or maintaining community resiliency, with particular benefit for those projects that address mitigation of flood waters.

- **PL 117-58:** EPA will oversee the Stormwater Reuse Municipal Grants funded at $280 million a year with a mandate to support green infrastructure projects.

- **PL 117-58:** Disaster Relief Fund (DRF) for pre-disaster hazard mitigation assistance under FEMA's Building Resilient Infrastructure and Communities grant program is part of the $6.7 billion for flood mitigation assistance. $1billion is targeted specifically for pre-disaster hazard mitigation. This funding does include a cost-benefit study when applying and information can be found at: www.fema.gov/grants/guidance-tools/benefit-cost-analysis

- **PL 117-58:** Increased NOAA funding supports inland mapping and flood mitigation grants as well.

- **PL 117-58: STORM Act** – Safeguarding Tomorrow Through Ongoing Risk Mitigation is fully funded at $500 million over 5 years. The focus is climate-impact mitigation which address flood mitigation and building/creating resilient infrastructure.

2. Federal Emergency Management Agency (FEMA) Grants

- **Flood Mitigation Assistance (FMA) Program –** This FEMA program provides funds for planning and projects to reduce or eliminate the risk of flood damage to buildings that are insured annually under the National Flood Insurance Program.

- **Hazard Mitigation Grant Program (HMGP) –** This FEMA program provides funds annually for hazard mitigation planning and projects. Hazard Mitigation Assistance grants are provided to states, local, tribal, and territorial governments. This funding is authorized with a Presidential Major Disaster Declaration as requested by the Governor and the funding made available to the applicant is generally 15% of the total federal assistance amount provided for recovery and is determined by an approved FEMA Hazard Mitigation Plan.

- **BRIC – Building Resilient Infrastructure and Communities –** This is a competitive grant program, initiated in FY20 and managed by FEMA. BRIC replaces the Pre-Disaster Mitigation Program and is authorized by Section 203 of the Stafford Act as amended. The purpose of the grant program is to shift away from recovery to a proactive investment in community resilience. Applicants must apply on a yearly basis. The program encourages public infrastructure projects, especially projects incorporating nature-based solutions along with the adoption of building codes designed to protect structures.

3. State of New Jersey

- Agencies may apply for additional funding from the Water Quality Restoration Grants for Nonpoint Source Pollution Program for various stormwater projects. Further information regarding this grant opportunity is available at NJDEP-Division of Water Monitoring and Standards.

- The Department of Environmental Protection has adopted a Water Infrastructure Investment Plan (WIIP) with the potential receipt of close to $1 Billion from the Infrastructure Act as well as an additional $300 million of the American Rescue Plan Act (ARPA). It is anticipated that the funding through these two federal Acts will be managed through the clean water and drinking water state revolving funds. The New Jersey Water Bank administers these funds.

The Intended Use Plan is available online at this link: https://www.nj.gov/dep/wiip/project-lists.html, which provides an overview of the focus and priorities for the current and future Fiscal Year. A summary of the Plan is attached.

C. Stormwater Service Fees (Stormwater Utility)

Service fees are becoming an increasingly popular source of dedicated stormwater funding throughout the United States and Canada. In 2019, New Jersey passed the Clean Stormwater and Flood Reduction Act (Act) that empowers local agencies to create and operate a stormwater utility to fund a wide range of public services in stormwater management. The Act defines who is eligible, exemption requirements, principles for revenue generation, and implementation procedures. A number of local agencies have undertaken a feasibility study similar to the current Princeton project.

The general principle applied to utility fees is that the rate methodology must be fair and reasonable with resultant charges that bear a substantial relationship to the cost of providing services. However, the local government has a great deal of flexibility in attaining such objectives in the context of local circumstances. When stormwater user fee rates have been legally challenged, the courts have tended to apply "judicial deference" to the decisions of locally elected officials. Under judicial deference, the courts do not intervene unless a plaintiff can demonstrate that the rate structure and implementation decision was arrived at arbitrarily and capriciously or that the result of the decision discriminates illegally.

Stormwater service fees provide a stable revenue because it is dedicated to stormwater services only. Service fee rate methodologies result in a balanced allocation of the cost of services and can provide an opportunity to shift a portion of the community's current stormwater management program costs from the General Fund. Service fee rate structures are designed to distribute program costs based on a correlation between the need for a public drainage system based on the presence of impervious area features. Without development where population concentrates into a community, stormwater runoff is managed by absorption and evaporation along with sustainable concentrated flows into streams and rivers.

It is the concentration of population that generates a need for a publicly managed program and infrastructure to protect property, public health, and safety of movement. Intensity of land use activities that interrupt the ability of the land to handle the runoff links the need for stormwater management to land development. Over the past 50 years of stormwater utility implementation, the rationale for user fees is solidly based on impervious area as the standard of practice for distribution of cost.

A stormwater utility user fee rate study is the foundation for policy development and is part of implementation strategy. Should the Princeton Council choose to undertake Phase 2 of the current project, important policy decisions will be made that have significant implications for the selected measure of the billing unit and the calculated rate. Table 3 includes a range of policies that ultimately impact the structure of the program and user fee, as well as the stormwater fee rate. All these policy decisions are considered as part of a rate study and are addressed in Phase 2 of the Feasibility Study.

Table 3 – Policy Issues Impacting Stormwater Utilities

Policy Decisions Affecting Utility Rate and Structure

1. **Program:** Will all, or only part of the current program/service elements identified in the program evaluation be shifted to the stormwater utility?
2. **General Fund:** Will the stormwater utility be used to pay for services received from the GF such as general overhead? (Indirect Cost Allocation)
3. **Special Fees and Other Revenues:** What additional revenue sources will be used, or created, to support stormwater program functions (existing or future increases in fees for erosion and sediment control; fees for inspection of private BMPs; grants, etc.)?
4. **Financial Factors:** What is the fund balance test that must be maintained by the stormwater utility ? Is interest earned by the cash generated from the utility credited to the stormwater utility? What is the "bad debt" factor (based on history of collecting fees)? Are fund balances appropriated in the following year?
5. **Reserves:** Will an emergency reserve be established to address catastrophic system failures? What level of operating reserve will be maintained?
6. **Bonds:** Will bonded debt or short-term bank financing be used to pay for the capital improvements program?
7. **Rate Allocation:** What is the basis for the rate? Impervious area? Other factors? Are there unique circumstances that must be accounted for in allocating the fee (e.g., diversity in housing types and impervious coverage ratios)?
8. **Exemptions:** Will exemptions be established other than those legally mandated?
9. **Credit Policy:** Will credits be adopted for those private properties that provide a public service (i.e., privately owned stormwater management facilities that treat and/or detain stormwater from a specific site or sites) under the program? Will the program only recognize credits related to real world benefits, or are soft benefits (such as public education) grounds for credits?
10. **Billing:** What portion of the billing administrative costs will be funded by the stormwater utility? What portion of customer service costs are funded?
11. **Rate Policy:** Is there a goal that the rate be held constant for 3 years? Or 5 years? Or will the rate be adjusted annually based on fiscal analysis of revenue vs. expenditures?
12. **Bill Receipt:** Who will receive the bill, owners, or current utility customers (such as renters and leasers)?

The basic areas of the Project structure address public involvement, governance, program of services, financial policies, and cost projections, as well as a refinement of data used to develop a master account file. Upon completion of the Phase 2 feasibility analysis, the Council will be provided with the findings and recommendations developed and analyzed in detail, at which time they may proceed with implementation (Phase 3) or end the process.

Rate Structure Options:

The most common stormwater utility rate structures are described below. For other details, New Jersey Future maintains a website that provides significant background documentation. (Stormwater Utilities | New Jersey Future (njfuture.org)

Equivalency structure: Generally referred to as an "Equivalent Residential Rate" or "Equivalent Rate Unit" structure establishes a common analysis to a land use, such as residential parcels. A value is set for the average or median value of impervious area for residential properties and all other land uses are evaluated to determine how many residential units of impervious area are on each parcel. For example, if the median impervious area for residential parcels is determined to be 2000 square feet, all other parcels are analyzed to determine how many houses are represented on each parcel. (e.g., 20,000sf of impervious area on a gas station would be equivalent to 10 houses). This rate structure has been used across the US and Canada. Each residential property is billed one (1) unit of cost.

Equivalency structure with modifiers: Building off the analysis of the equivalent rate structure, modifiers are used to refine the residential charge, improving the equity of cost distribution. Most common is to assign the parcels in this land use category to tiers, based on a correlating factor. To add a rate modifier, analysis of the correlation of the proposed unit of measure is completed to ensure that the underlying principle of cost distribution is supported. Data on lot size is one approach used to create tiers within the single-family residential land use. Condominiums, townhomes, and apartments are not included in this modification. For example, Tier 1 is charged .5 billing unit, Tier 2 is charged 1 billing unit and Tier 3 is charged 1.5 billing units.

Intensity of development: This rate structure requires significant data of the built upon area on all parcels. It evaluates the built upon area (impervious) as well as the amount of open space (pervious). This increases the complexity of analysis. With the imposition of water quality mandates at the local government level, the concept of pervious property as a reduced burden on local stormwater services has lost favor in rate structure development. The concept that runoff from pervious property is "clean" and is a minimal burden has been discussed at length within the industry.

Fixed Unit impervious area: this rate structure is occurring more frequently and requires measured impervious area for each parcel regardless of land use. Similar to fees charged for water or solid waste collection, a fixed unit is established, and all parcels are charged on that basis (e.g., by container for solid waste; by 100 cubic meters for potable water, by 500 square feet of impervious area for stormwater.) Data for each parcel is maintained using a common factor (impervious area) and the unit for cost distribution is determined by applying the unit rate times the amount of units assigned to each parcel. For example, a home with 5500sf of impervious area would be charged 11 units time the rate-per-unit. Data availability to maintain a rate structure based on measured impervious area is the key. The cost to obtain, analyze and assign billing units has dropped over time, making this rate option attractive.

ATTACHMENT G:
BACKGROUND ON DATA ANALYSIS AND REVENUE GENERATION

PRINCETON STORMWATER FOCUS GROUP
Meeting #2, June 13, 2023

Background on Data Analysis and Revenue Generation

Data analysis of land use, current revenue generation, and potential shifts of revenue burden through a user fee are elements of Phase 1 of the Stormwater Utility Feasibility Study. The study team analyzed existing municipal data and created supporting Geographic Information System (GIS) datasets for use in answering the following three key questions.

1. **What is the distribution of land use types in Princeton?**
   A detailed analysis of Princeton's current parcel data based on each parcel's land use code assignment was completed to answer this question.

2. **Who currently contributes revenue to Princeton for general municipal purposes including stormwater management?**
   To answer this question, the current year tax revenue was aggregated by the assigned land use code.

3. **How might the current contribution of revenue shift should a municipal stormwater utility be implemented?**
   Using impervious area as a proxy, the impervious area for all non-single family residential properties, including public roads and sidewalks, was manually digitized from recent aerial photography. Using land use codes, the total impervious area for each category of land use was compared to the tax revenue distribution to identify potential shifts of the financial burden.

These questions are addressed later in this document, however, before these questions could be answered, a statistically based representative sample of single-family residential parcels was developed. This sample of 360 parcels represented approximately 5% of the total number of single-family residential parcels in the municipality. For each of the selected parcels, the impervious area was manually delineated. Statistics from the analysis of this representative sample could then be developed. The median value of impervious coverage for these single-family residential parcels was then used to set a "billing unit" of impervious area. Using the principle of a fair approximation of use, historically, stormwater utility rates have been based on the "billing unit" concept of equivalency.

The median impervious area value determined from the representative sample of single-family residential parcels is then used to convert all other properties' impervious area (commercial, multi-family, industrial, educational, and institutional land uses) into an equivalency value. For example, if the median impervious area value for single-family residential parcels is 2,000 square feet and a commercial property has 20,000 square feet of impervious area, it would have an equivalent impervious area coverage of 10 single-family residential units (billing units).

Hypothetically, if this example rate methodology was chosen by Princeton, each single-family residential parcel would be charged a single billing unit and all other parcels would

be billed based on equivalent units. In Princeton, based on the representative statistical sample of 360 single-family residential parcels, the **median impervious area was determined to be 4,590 square feet.** The histogram displayed below shows the distribution of impervious area across the 360 single-family residential parcels.

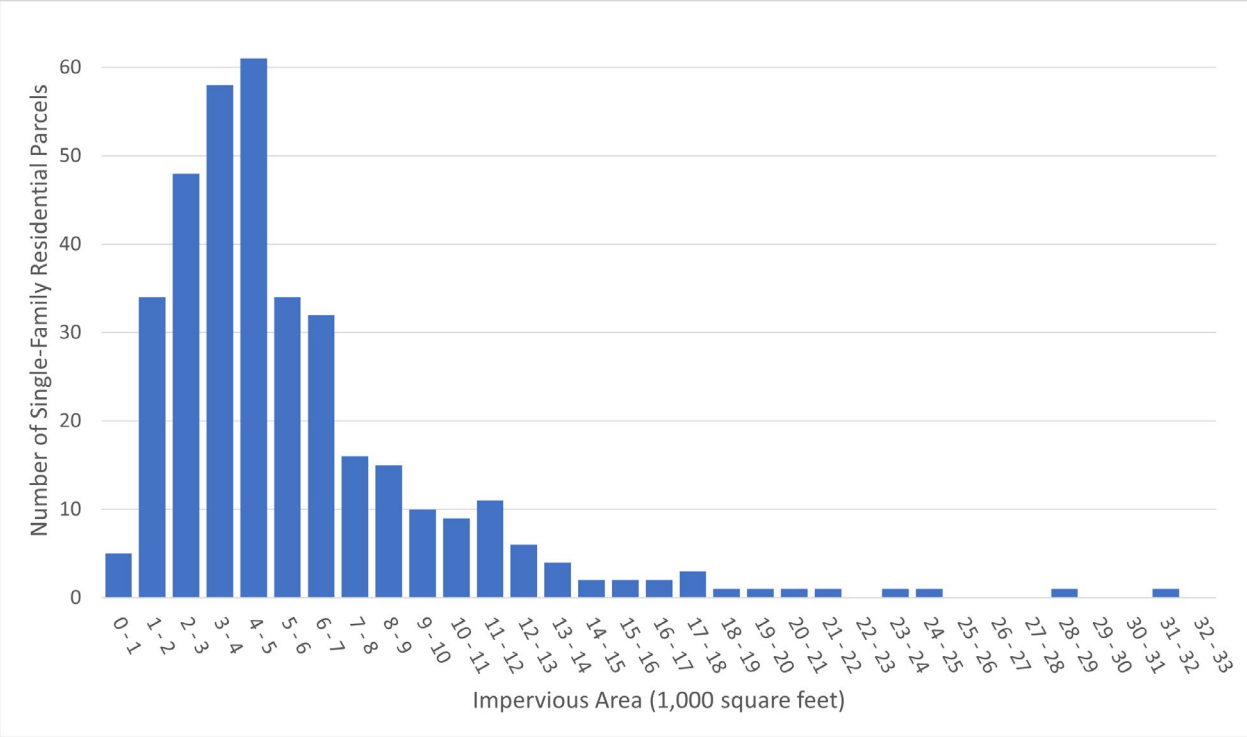

Figure 1. Histogram of 360 single-family residential parcels.

Although it is not a primary consideration at this stage of the study, the highly skewed distribution of impervious area coverage among the single-family residential parcels suggests that a tiered approach would be more equitable. A tiered approach would entail two or more "tiers" or groups of single-family residential parcels on which a user fee would be based. Therefore, should Princeton decide to move forward into Phase 2 of the feasibility study, the analysis of single-family residential parcels should pursue such options to improve the equity in cost allocation as is discussed in the following section.

Role of Data in the Development of Stormwater Utility Rate Policy:
With improvements in Geographical Information Systems and the increasing availability of spatial data, many communities which have stormwater utilities in place have improved and refined their mapping data for impervious area and consequently refinements in rate structures have occurred. A tiered rate structure for single-family residential parcels is more prevalent today, where the entire universe of single-family residential parcels is grouped into tiers, using factors such as lot size or primary residence first floor square footage. Establishing tiers is considered a refinement of equitability.

In the past decade, mapping of impervious area for all parcels within the corporate boundaries is occurring more frequently as the cost of data capture has decreased, providing the ability to measure impervious area for every parcel to set a fixed square-

foot billing unit value, such as 100, 500, or 1,000 square feet of impervious area regardless of land use.

The New Jersey Clean Stormwater and Flood Reduction Act provides flexibility to use a rate structure that can be supported by data to address the fairness and reasonableness tests. One method is not necessarily "better" than another; cost allocation methods are typically based on the available data as long as the allocation policy adopted supports these principles. The New Jersey Department of Environmental Protection outlines various potential approaches to rate structure on their Stormwater Utility Guidance webpage, including both a standard Equivalent Residential Unit and a Tiered Rate Structure (www.nj.gov/dep/dwq/SWU_fees_and_credits.html).

Applicability to Princeton:
An equivalency calculation for revenue distribution was then compared to the current revenue method based on tax value to determine who (which parcels/land codes) currently contributes to general fund revenue for stormwater. The impervious area data mapped provides a foundation for evaluating how the same current services could be paid for in the future using a potential stormwater utility user fee.

What is the distribution of land use types in Princeton?
This question is central to the understanding of how a potential stormwater utility might function in Princeton. A relatively straightforward review of the municipality's parcel-based land use code provides a summary of the distribution of various land use codes throughout the municipality. The chart below summarizes assigned land use codes and the percentage of parcels that are classified with each code.

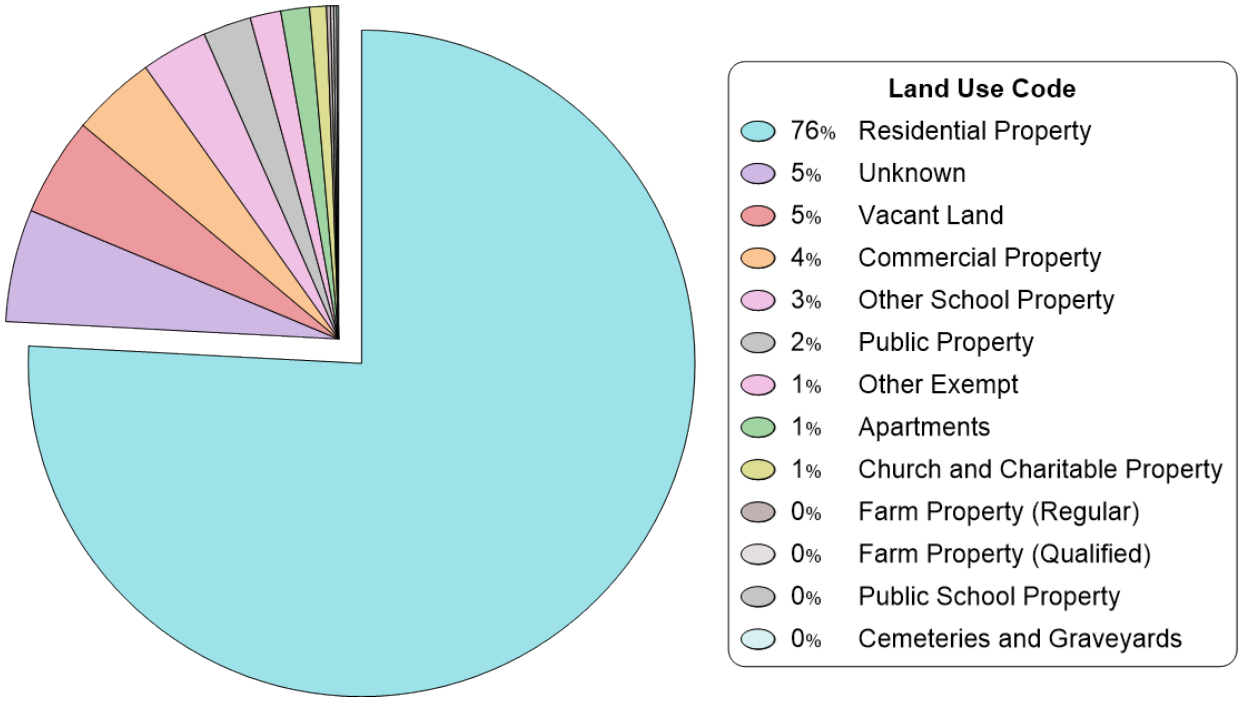

Figure 2. Pie chart the total land use codes in Princeton.

In Phase 2 of this feasibility study, evaluation and analysis of land use will be further refined. The land use code "Unknown" is an example of clarification that would be required at that time. The inclusion of the land use code "Public Roads and Sidewalks" was used to identify roads and sidewalks located within public rights-of-way. However, the ultimate inclusion of this additional land use code represents a policy that staff and Princeton Council will consider when/if the detailed rate model and assignment of billing units is undertaken.

Who currently contributes revenue to Princeton for general municipal purposes including stormwater management?

The municipal parcel data provides a valuation of land and improvements as well as a current year tax charge. Using the same land use code classifications, the following chart identifies the total percent of current year tax for each of the parcel land use codes.

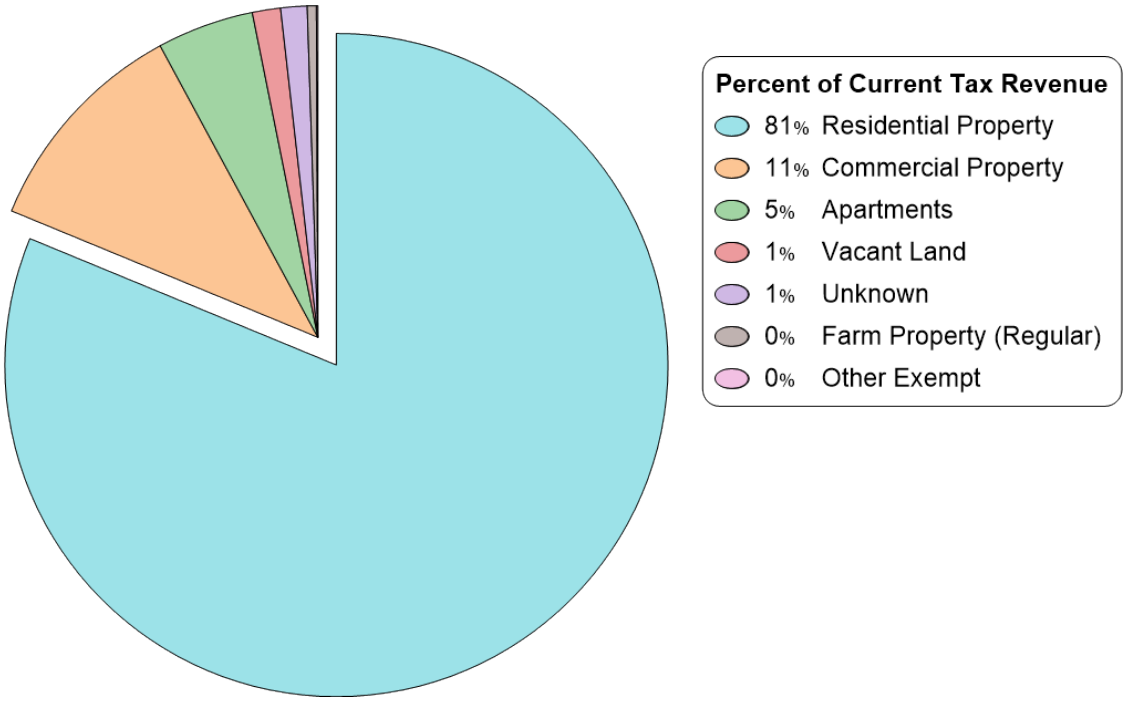

Figure 3. Pie chart showing distribution of current municipal tax revenue contribution.

How might the current contribution of revenue shift should a municipal stormwater utility be implemented?

Data was analyzed for impervious area distribution by land use code. The median impervious area of 4,590 square feet from the sample of single-family residential parcel was used as the representative billing unit value. Total impervious area for each land use category was divided by the median value (4,590 square feet) to calculate the distribution of billing units among the various land use codes. The following chart illustrates the distribution of billing units in Princeton. As noted previously, the land use code "Public Roads and Sidewalks" identifies roads and sidewalks located within public rights-of-way.

However, the ultimate inclusion of this additional land use code represents a policy that staff and Princeton Council will consider when/if the detailed rate model and assignment of billing units is undertaken.

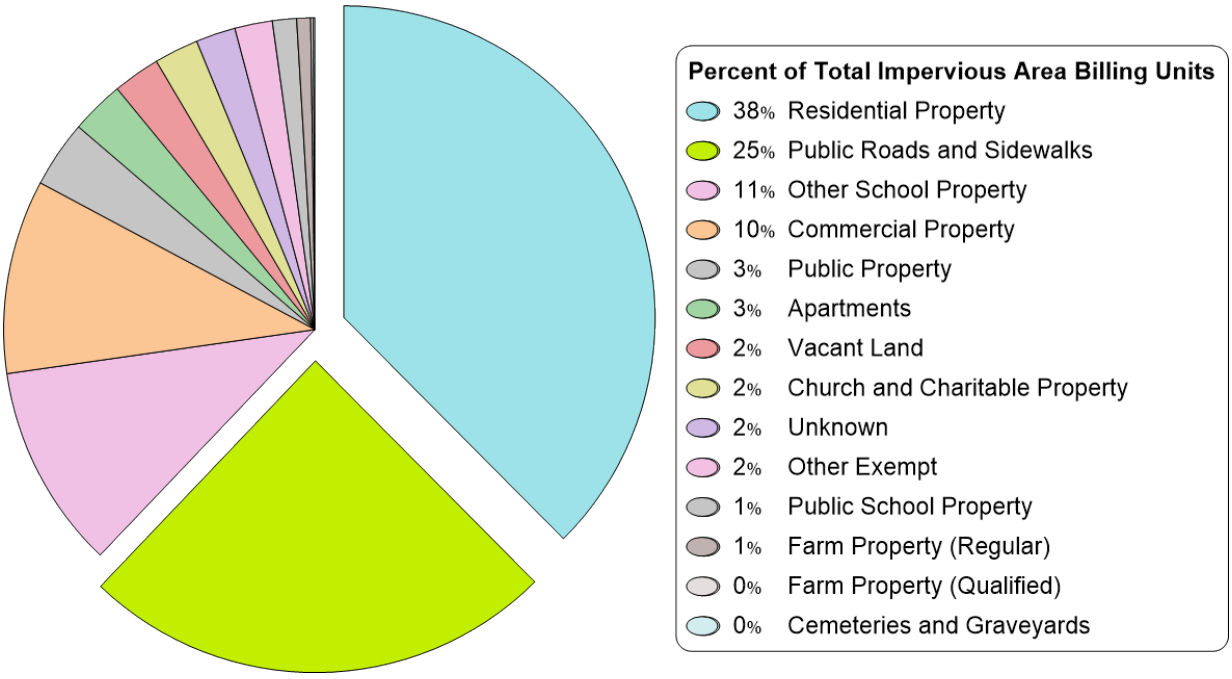

Figure 4. Pie chart of the distribution of billing units among the land use codes, including impervious area within the rights-of-way.

Should the "Public Roads and Sidewalks" (located within public rights-of-way) not be included, the distribution of impervious area billing units among the remaining land use codes is reflected in the chart below.

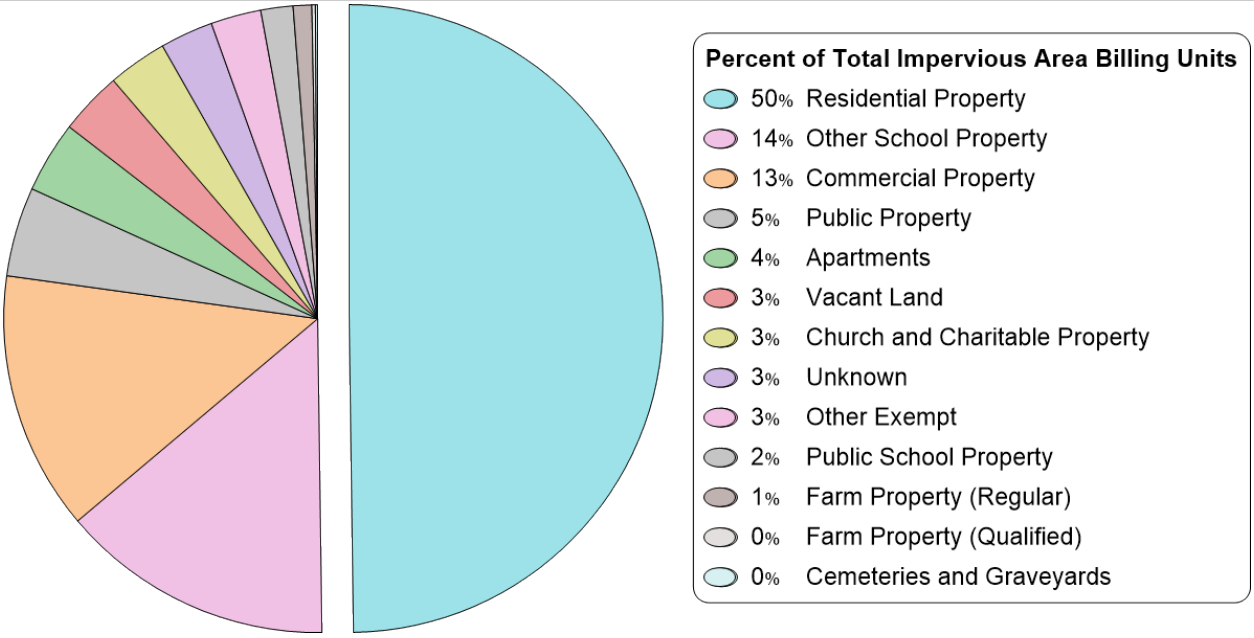

Figure 5. Pie chart of the distribution of billing units among the land use codes.

General Observations:
The principles set forth in the legislation for allocation of costs are best represented through the use of impervious area as the rate base. In addition to the Clean Stormwater and Flood Reduction Act itself, the New Jersey Department of Environmental Protection has developed guidance which also recommends reliance on impervious area as the basis for the development of an equitable rate structure. This option was analyzed using the distribution of billing units based on the median impervious area of the single-family residential parcels value applied to all property classes.

The cost burden by land use code shifts from taxable-only to all properties and includes public property owned by the municipality, properties owned by Princeton University, churches and charities, and public schools. User fees applied to publicly owned lands and nonprofits are included in payment of fees unless they are specifically excused by local or state legislation.

One land use category that is universally removed from charges is public roads and sidewalks in public rights-of-way. This roadway and sidewalk exclusion policy has been applied throughout the U.S. and Canada. The primary concept is that the drainage infrastructure is an integral component of the roadway (curb, gutter, inlets, catch basins, ditches, underground pipe, etc.) and is the recipient of the revenue. Other publicly owned impervious areas (buildings, parking, hardened trails) are typically not excluded from fees for service. Impervious area data was captured for the public roads and sidewalks, however, a policy decision on inclusion in the rate base would only be made during Phase 2 of the feasibility study.