Draft submission as it relates to:

PL 115-270, America's Water Infrastructure Act of 2018

Title IV – Other Matters

Subtitle A – Clean Water

Section 4101. Stormwater Infrastructure Funding Task Force

(a) IN GENERAL.—Not later than 180 days after the date of enactment of this Act, the Administrator of the Environmental Protection Agency shall establish a stormwater infrastructure funding task force composed of representatives of Federal, State, and local governments and private (including nonprofit) entities to conduct a study on, and develop recommendations to improve, the availability of public and private sources of funding for the construction, rehabilitation, and operation and maintenance of stormwater infrastructure to meet the requirements of the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.).

(b) CONSIDERATIONS.—In carrying out subsection (a), the task force shall—

(1) identify existing Federal, State, and local public sources and private sources of funding for stormwater infrastructure; and

(2) consider—

…

(B) how the source of funding affects the affordability of the infrastructure (as determined based on the considerations used to assess the financial capability of municipalities under the integrated planning guidelines described in the Integrated Municipal Stormwater and Wastewater Planning Approach Framework, issued by the Environmental Protection Agency on June 5, 2012, and dated May, 2012), including consideration of the costs associated with financing the infrastructure.

1. Introduction

Section 1 of this Report discusses at length the various types of funding sources that are and could be used for the management of stormwater operations and infrastructure. In addition, that section also presents an overview of the key barriers municipalities face in obtaining the requisite funding for effective stormwater management.

This section of the Report focuses on how the various sources of funding affect the following three aspects of a municipality's stormwater management capabilities and affordability:

(i) ***Financial Capability:*** Overall financial capability of a municipality in delivering adequate stormwater Levels of Service (LOS) within its jurisdiction;

(ii) ***Infrastructure Affordability Economies or Efficiency:*** Ability to effectively manage the stormwater system infrastructure; and

(iii) ***Customer Affordability:*** The nature of impact the various types of funding sources exert on the customers of the system

2. Definitions

To assure consistent use of terms in this section, the task force has included the following key definitions:

a. ***Municipal Stormwater*** is "surface water runoff from public lands in urban areas, typically collected in municipal separate storm sewer systems [MS4] consisting of drains, pipes, and ditches, and conveyed to nearby streams, rivers, lakes, estuaries, basins, wetlands and oceans carrying with it a variety of urban pollutants."[1]

b. ***Municipal Separate Storm Sewer System (MS4)*** refers to a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that is owned or operated by a State, city, town, borough, county, parish, district, association, or other public body designed or used for collecting of conveying storm water which is not a combined sewer and which is not part of a Publicly Owned Treatment Works [POTW]. There are 7,550 MS4 stormwater permittees in the United States, including more than 6,500 cities. Communities with MS4 stormwater permits serve more than 80% of the U.S. population or approximately 263 million people.

c. ***Phase I Municipal Stormwater Regulation*** (hereafter, Phase I) refers to the 1990 Phase I regulation that require medium and large cities or certain counties with populations of 100,000 or more to obtain NPDES permit coverage for their stormwater discharges. There are approximately 855 Phase I MS4s covered by 250 individual permits (https://www.epa.gov/npdes/stormwater-discharges-municipal-sources).

d. ***Phase II Municipal Stormwater Regulation (Phase II)*** refers to the 1999 Phase II regulation that requires small MS4s in U.S. Census Bureau defined urbanized areas, as well as MS4s designated by the permitting authority, to obtain NPDES permit coverage for their stormwater discharges. Phase II also includes non-traditional MS4s such as public universities, departments of transportation, hospitals and prisons.. There are approximately 7,000 Phase II MS4s are covered by statewide General Permits, however some states use individual permits (https://www.epa.gov/npdes/stormwater-discharges-municipal-sources)..

e. ***Combined Sewer System*** *(CSS)* refers to a system of conveyance that carries and conveys both sanitary sewage and stormwater flows in the same pipe, to a POTW. CSSs serve approximately 43 million people in approximately 1,100 communities nationwide (from EPA 832-B-97-004).

[1] Guidance for Municipal Stormwater Funding. National Association of Flood and Stormwater Management Agencies and the US EPA, pp. 1-1 to 1-2 (January 2006). Found on our sharepoint site at https://usepa.sharepoint.com/sites/OW_Work/efab_stormwater_finance_task_force_/Shared%20Documents/Background%20Material/2006_Guidance%20for%20Municipal%20Stormwater%20Funding_NAFSMA_National.pdf

3. The Assessment Framework

The task force acknowledges that affordability should include a discussion of both 1) an assessment of the financial capabilities of the municipality – consistent with the EPA's Financial Capability Assessment Framework for Municipal Clean Water Act Requirements[2] as well as 2) the impact to the ultimate source of ongoing funding: the household or customer. Much has been previously published on both and will be referenced throughout.

3.1 The Framework

Therefore, to objectively assess the three aspects of *Financial Capability; Infrastructure Affordability; and Customer Affordability,* in the context of local municipal stormwater management, it is imperative to first define an assessment framework. The assessment framework, the task force defined, focuses on:

1. Identifying the types of stormwater conveyance systems and the distribution of responsibilities for stormwater management services within a municipal jurisdiction;
2. Evaluating the current capabilities of a municipality in rendering stormwater management services; and
3. Determining the mechanisms municipalities use to fund, on an ongoing basis, the various obligations including operations & maintenance (O&M), regulatory compliance requirements, capital program planning and implementation, and execution for infrastructure management, and overall human capital management.

3.2 Types of Stormwater Systems and Implications

The task force notes an important distinction between *MS4 and CSS,* as each have similar obligations under the federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500), commonly known as the Clean Water Act (CWA), and its related amendments.

In the context of this task force's efforts, it is important to recognize that stormwater is discharged not only through MS4 conveyance infrastructure but also discharged via CSS conveyance infrastructure. The characteristics of each of these two systems impose unique levels of service and infrastructure management burdens and obligations, and consequently exert differing levels of financial capability, and infrastructure and customer affordability impacts.

[2] USEPA. "Financial Capability Assessment Framework for Municipal Clean Water Act Requirements (November 24, 2014). https://www.epa.gov/sites/production/files/2015-10/documents/municipal_fca_framework.pdf

Excessive wet weather (stormwater) flows in a CSS could trigger combined sewer overflows (CSOs), where the untreated combined stormwater and sanitary sewage is directly discharged to surface receiving waters without the benefit of even primary treatment. Consequently, the environmental responsibilities and exposure to regulatory mandates such as the Long Term Control Plan (LTCP) requirements for CSS can be vastly more expensive as measured in both operating expenses and capital commitments necessary to eliminate CSOs.

Excessive wet weather flows affect MS4s as well in a number of ways, including flooding, habitat degradation, streams and channel erosion, and other significant water quality issues such as sedimentation and pollution resulting from stormwater runoff.

It is evident that the magnitude and nature of wet weather impact varies between the CSS and MS4 conveyance systems, and therefore a common concern among both of these systems is the significant financial investment that is involved in the management of wet weather flows. Further, the distinction between the CSS and MS4 systems is also important because the integrated planning framework established in the CWA also recognizes the differences as part of the overarching principles in how the U.S. Environmental Protection Agency (EPA) aims to work with communities to achieve the goals of the CWA.

Typically, funding for CSSs management is "covered" by wastewater fees. Funding for MS4s management, the subject of this task force, is "covered" by a variety of sources as described in Section 1; however, there is no consistent or reliable funding mechanisms in place for many municipalities. Regardless of the types of systems and funding mechanisms, customer affordability and the understanding of the need for these services are critical in issues that need to be addressed.

3.3 Distribution of Stormwater Responsibilities

The task force has observed that there are significant differences among municipalities with respect to the distribution of stormwater management and regulatory compliance responsibilities. The differences in governance and management responsibilities can primarily be attributed to the institutional framework established by the state in which the municipality is located, as well as local and regional stormwater needs. The distribution of responsibilities can affect affordability by creating situations where there is overlapping responsibilities and limited accountability for program implementation.

For example, in some municipalities, such as in Philadelphia, PA, or Newark, NJ, the water/sewer utility, a department within the City, is responsible for managing all aspects of stormwater management including LTCP/National Pollutant Discharge Elimination System (NPDES) and MS4 regulatory compliance, both CSS and MS4 types of stormwater infrastructure, and all associated O&M requirements, including green infrastructure initiatives.

However, in other municipal jurisdictions, an independent authority such as DC Water may be responsible for managing stormwater flows in the CSS and separate sanitary sewer systems, while the municipality, in this case the District of Columbia, through its Department of Energy and Environment, is responsible for all MS4 requirements. Even in a municipality that has only a MS4 system and separate sanitary sewer system, the stormwater management responsibilities may be distributed between a water/sewer utility, a Department of Public Works, and for example a Department of Transportation.

In addition, in some municipal jurisdictions, the U.S. Army Corp of Engineers, may supports the implementation of stormwater management related projects by providing funding and technical assistance.

It is our view that the citizens of the municipality and stormwater system operators/managers may have contrasting views as to how to define the risks associated with the needs of stormwater infrastructure, specifically as it relates to flooding. Most often, the team that manages and operates the system is tasked with specific pollution control and water quality responsibilities as stipulated in the NPDES permit, and the consequences associated with recurring or egregious non-compliance. In contrast, residents and business owners in the community are more keenly aware of the risks and impacts from sheer volumes of flooding, most often from pluvial flooding.[3] To narrow the scope, we distinguish between pluvial and fluvial because generally fluvial flood control infrastructure is, in the task force's view, most often not the responsibility of the municipality but perhaps by a regional, state or even federal entity such as the Army Corps of Engineers.

4. Financial Capability and Affordability Assessments Suggest moving this down below the section on governance and financial reporting

In the following subsections, we discuss the task force's assessment of the three key aspects of municipal stormwater funding – the *Financial Capability; Infrastructure Affordability; and Customer Affordability. In order to provide context for the discussion of community financial capabilities, issues related to the governance and financial reporting of stormwater service functions is outlined.*

4.1 Stormwater Service Governance and Financial Reporting (revised from Financial Capability of Municipalities)

[3] *Pluvial flooding* is flooding caused by more precipitation and/or runoff in the immediate area than the stormwater system is capable of immediately handling.
Fluvial flooding is flooding caused by a body of water that has been impacted by events such as large volumes of, and/or prolonged precipitation either in the immediate nearby area or, possibly upstream;, tidal events; or failures of protective infrastructure.

Such significant differences in the distribution of stormwater service responsibilities among municipal jurisdictions, discussed above, exert a direct influence on the overall financial viability and affordability aspects of stormwater management, as the nature of funding and cost recovery mechanisms differ significantly.

As noted in Section 1, there are a myriad of options available to municipalities to raise money that can be invested into stormwater infrastructure. Each has advantages and disadvantages, as previously cited.

In contrast to drinking water, whereby about one-sixth of the population is served by investor-owned utilities, private systems or other non-governmental entity and the remainder by municipalities, stormwater is an entirely municipally-owned and usually a municipally-operated service. However, many municipalities still rely on Home-Owner-Associations or property owners for the maintenance of stormwater facilities. Although the ultimate environmental compliance goals are generally aligned from city to city (at least for Phase I and Phase II communities) the financial accounting treatment – which provides transparency into the financial capabilities – can vary from one community to another. Further, because of the recommended basis of presentation for municipalities, the accounting treatment may not always align with the operating requirements and environmental stewardship responsibilities associated with stormwater.

Specifically, the differences in management and governance have direct implications for stormwater funding and financial reporting of stormwater service provision, as follows:

- *General Government:* When stormwater management responsibilities lie within the purview of a general government, such as within the public works or streets & transportation department, the primary source of funding may be annual funding provided by general tax revenues. In such a structure, there may not be any "dedicated source of funding" for stormwater management. This governance and funding structure usually produces audited financial statements with a modified accrual basis of presentation that does not include a balance sheet with assets and liabilities and a statement of revenues over expenditures that does not incorporate depreciation (common, but typically not enough funding is allocated for stormwater services);
- *Water/Sewer or Stormwater Utility Department:* When stormwater management responsibilities lie within the purview of a Water/Sewer utility within the municipality, the primary source of ongoing funding is provided by user rates and charges. In such cases, again some utilities such as Philadelphia, PA, Portland, OR, Wilmington, DE, Chesterfield County, VA, have a distinct impervious area based "stormwater user fee" to recover the costs associated with stormwater management. In other cases, such as in New York city, where the New York Department of Environmental Protection (NYYDEP) is responsible for water,

sewer, and stormwater management, the stormwater management costs are recovered entirely through just sewer user charges. This structure typically is associated with financial accounting more typical for an enterprise, using an accrual basis of accounting that does include an income statement and balance sheet (less common, and most user rates do not adequately cover the stormwater needs).

- *Independent Authority:* If stormwater management responsibility lies within an independent municipal authority or separate political subdivision, stormwater funding may have to rely on either the taxing authority or its own rates and charges (rare).

As far back as 1999, the Governmental Accounting Standards Board (GASB) paved the way for what was then a fairly landmark shift to the way public sector entities produce financial reports by way of Statement 34. In speaking to infrastructure, GASB recommended that capital assets, including infrastructure assets ("long-lived capital assets that are normally stationary in nature and normally can be preserved for a significantly greater number of years than most capital assets. Examples of infrastructure assets include roads, bridges, tunnels, **drainage systems** [emphasis added], water and sewer systems, dams, and lighting systems. Buildings, except those that are an ancillary part of a network of infrastructure assets, should not be considered infrastructure assets for purposes of this statement."[4]). GASB encouraged asset management later in Statement 34 when it said, "Infrastructure assets that are part of a network or subsystem of a network (hereafter, eligible infrastructure assets) are not required to be depreciated as long as two requirements are met. First, the government manages the eligible infrastructure assets using an asset management system that has the characteristics set forth below; second, the government documents that the eligible infrastructure assets are being preserved approximately at (or above) a condition level

> A network of assets is composed of all assets that provide a particular type of service for a government. A network of infrastructure assets may be only one infrastructure asset that is composed of many components. For example, a network of infrastructure assets may be a dam composed of a concrete dam, a concrete spillway, and a series of locks.
>
> A subsystem of a network of assets is composed of all assets that make up a similar portion or segment of a network of assets. For example, all the roads of a government could be considered a network of infrastructure assets. Interstate highways, state highways, and rural roads could each be considered a subsystem of that network.
>
> If a government chooses not to depreciate a subsystem of infrastructure assets based on the provisions of this paragraph, the characteristics of the asset management system required by this paragraph and the documentary evidence required by paragraph 24 [which leaves documentation to professional judgment] should be for that subsystem of infrastructure assets.
> The condition level should be established and documented by administrative or executive policy, or by legislative action.
> Condition assessments should be documented in such a manner that they can be replicated. Replicable condition assessments are those that are based on sufficiently understandable and complete measurement methods such that different measurers using the same methods would reach substantially similar results. Condition assessments may be performed by the government itself or by contract.

[4] GASB Statement 34, paragraph 19. Found at http://www.gasb.org/cs/ContentServer?site=GASB&c=Document_C&pagename=GASB%2FDocument_C%2FGASBDocumentPage&cid=1176160029121

established and disclosed by the government. To meet the first requirement, the asset management system should:

a. Have an up-to-date inventory of eligible infrastructure assets
b. Perform condition assessments of the eligible infrastructure assets and summarize the results using a measurement scale
c. Estimate each year the annual amount to maintain and preserve the eligible infrastructure assets at the condition level established and disclosed by the government.[5]

The Louisiana state Division of Administration spoke for the vast majority of public sector entities across the U.S. when it recommended in 1999 that the state "…choose the alternative, to depreciate the capitalized infrastructure assets. We feel that this is the most cost effective approach for reporting since there would not be any significant burden involved in depreciating the infrastructure assets once they have been identified and capitalized. The schedules of capitalized infrastructure assets would simply include a column to compute the amount of annual depreciation. Under the modified approach, the capitalization requirements are the same as under the depreciation alternative. However, the cost and effort to follow the requirements of the modified approach would be significant and therefore more of a burden than depreciating the infrastructure assets. In addition, with the uncertainty of state funding to cover the additional costs of maintaining the state's infrastructure at specified condition levels as prescribed in the modified approach, it is possible that the state would have to revert to the depreciation alternative at some point in the future and face a qualification in the year we fail to maintain at the designated level." [6]

To date, less than 10% of the roughly 42,158[7] units of government are estimated to be using the modified approach. Municipal finance officials already face burdensome reporting and financial statement preparation requirements that greatly inhibit their ability to produce independently audited financial statements within in much better than 120 to 180 days from the end of the previous fiscal year. Assuming infrastructure assets have an expected useful life typically of ten to thirty years, this completely ignores changes over time in inflation, labor, building materials and technology and potentially introduces a very material gap between "book value" and replacement cost. In a 2017 piece of research, RBC Capital Markets noted, "A comprehensive inventory of public assets is a critical prerequisite to identifying opportunities to create new value."[8] Reliance instead on a depreciation-based, historical cost reckoning of infrastructure

[5] *Ibid*, paragraph 23 and related footnotes, which are copied into the sidebar for reference
[6] "Infrastructure Reporting." Louisiana Division of Administration report to GASB 34. available at http://www.doa.la.gov/osrap/library/gasb34/infrastructure%20reporting.pdf
[7] U.S. Census Bureau report G12-CG-ORG. Government Organization Summary Report: 2012. (September 26, 2013). Summary data that identified 38,910 general purpose governments. Excludes special and school districts but does also include 3,248 special districts categorizes as 'drainage and flood control'.
[8] Unlocking Value from Public Assets: Leveraging Private-Sector Expertise to Generate New Public Benefits. RBC Capital Markets and HR&A Advisors. (Summer 2017). Pg . 46.

assets rather than an assessment that explicitly correlates asset condition to financial value not only introduces public policy-making risk but also makes it more challenging to establish a baseline financial capability assessment.

4.2 Financial Capability Assessment

Financial capability assessment (FCA) are distinct from various measures of household or individual customer affordability (discussed below) insofar as an FCA relates to the ability of a community (or permittee) to finance infrastructure investments. For a broad array of purposes, EPA has used a static, two-phase methodology to conduct FCAs. Phase I involves calculation of a Residential Indicator (RI), which examines the average per household cost of services relative to a benchmark of 2% of service area-wide Median Household Income (MHI). Phase II involves the calculation of a Financial Capability Index (FCI) that is a simple arithmetic average of scores for six economic indicators: (1) bond rating, (2) net debt as a percentage of full market property value, (3) MHI, (4) local unemployment, (5) property tax revenues as a percent of full market property value, and (6) property tax collection rate within a service area. A higher FCI score suggests relative economic strength; a lower FCI indicates weak economic conditions and relatively lower financial capability.

EPA's existing FCA guidance has been subject to extensive review and critique (add ftnte) for a variety of reasons that are particularly resonant for application to stormwater related infrastructure financing. For example, the diversity of governance structures and financial reporting protocols noted above make even baseline evaluation of current funding complicated. Financing stormwater infrastructure is often less straight-forward than the issuance of revenue bonds assumed to be available in EPA guidance. And, profound complexities may be involved in assigning residential vs. non-residential flow contribution responsibilities required in EPA's matrix methodology.

Emerging concepts to address the limitations of EPA's current FCA methodology also have the potential to improve evaluation of community financial capabilities to fund stormwater infrastructure (though the diversity of governance configurations will continue to impose complexities). For FCAs, these concepts call for a direct evaluation of community (or communities in cases where stormwater services involve multiple jurisdictions) financing capacity through cash-flow analyses. Current and potential new methods for funding stormwater infrastructure would require explicit recognition (rather than being subsumed within general government financial reporting). Projected tax or fee cost impacts on individual households and non-residential entities may be calculated and gauged in relation to various income metrics (e.g., median and lowest quintile, gross and disposable). Financial capabilities would be assessed in terms of the community's ability to fund O&M expenses and capital spending given tenable annual adjustments to stormwater-dedicated tax and fees. The pace and magnitude of these tax

or fee increases would be established by reference to new measures of household or individual customer affordability as discussed below.

In fact, explicit inclusion of stormwater service costs within the rubric of FCA for water resource management (whether using cash-flow analyses or historically used methods) may represent an important advance in FCA methodology that has historically focused on community capabilities to finance water or wastewater infrastructure improvements. By including stormwater (and, in fact, all water resource management) costs, a more complete representation of community burdens may be cast. Doing so may help avoid the historic tendency to consider stormwater as an afterthought with respect to evaluations of community financial capabilities.

[POTENTIAL RECOMMENDATION – Modify NPDES / MS4 permit reporting requirements to facilitate conduct of recommended FCA methodology changes (specifically cash flow analyses, using EPA prescribed templates).]

4.3 Infrastructure Affordability Economies (or Efficiency)

A. Cost Containment and Efficiencies - Highlight some of the key "value-adds" of efficient stormwater management and their impact on affordability, remind Congress and its constituents that there is an "upside" to stormwater management
B. Lower costs through proactive management
C. Execution economies through leveraging / economies of scale
D. Mitigation of public health & safety risks (i.e. loss of life, property, population, jobs and tax base)
E. Potential for multi-objective initiatives (e.g. FEMA's CRS leading to homeowners insurance discounts)
F. Building objective, apolitical cost/benefits to help communities prioritize their limited financial and other resources (asset and risk management?)

4.3.1 Infrastructure Affordability Evaluation

The critical challenges with respect to Stormwater Infrastructure Management (whether the infrastructure pertains to a CSS or a MS4) in a municipality are "Funding Availability"; "Funding Adequacy" and "Timeliness of Funding". In the spectrum of "no dedicated funding" on the one extreme to "adequate funding" on the other extreme, the task force finds that the various municipalities fall in different points in the spectrum. For example, the national Black & Veatch stormwater survey and other State level stormwater water surveys indicate that utilities cite "lack of funding availability" as their highest ranked challenge with respect to timely infrastructure investments.

The need of stormwater capital infrastructure investments stem from diverse needs including need to enhance and/or maintain existing drainage capacity; flood mitigation; repair and rehabilitation of aging infrastructure, coastal resilience, climate resilience, and community needs. In the context of CSS communities with consent decree requirements to mitigate CSOs, the pressure on stormwater infrastructure investments such as tunnel type gray infrastructure and/or need to enhance pumping and wastewater treatment capacities, can be significant.

Therefore, in the context of capital infrastructure investment, when evaluating the implications of various funding sources on infrastructure affordability, the following key factors must be considered:

- **Sufficiency** – Provides a measure of the total revenue that a municipality is able to generate from a combination of one or more funding sources
- **Stability/Sustainability** – Assesses the ability of the combination of funding sources to adequately position for immediate term and long term sustained infrastructure management and potential growth in storm water infrastructure investments. These criteria also measure the sustainability of the revenue source (e.g., reliability and stability of acquiring grant funds, project or program specific applicability, etc.).
- **Acceptability** – Evaluates the acceptability (benefits and risks) of the option by the municipality, as well as internal and external stakeholders. Many funding options require internal SWD or City concurrence, or potentially voter approval, and need to be weighted for likelihood of acceptance and additional administrative burden to the City.

4.3.2 Impact of Funding Source on Infrastructure Investments

4.3.2.1 External "Funding" Sources

4.3.2.1.1 Grants

- Value: State and federal grants can provide a valuable source of capital investment funding, as grants essentially provide money that a municipality does not have to recover from its customer base, either through taxes or through user fees and charges.
- Challenge: However, the certainty and availability of grants is often beyond a municipality's control as they are often project/program specific and highly competitive. This can make it difficult to budget and plan for reliable and consistent future funding for capital improvement programs (CIP). Grants typically require matching funds of a different "color of money" (e.g., can only match state funds with non-state, such as federal or local or private), and the amount of required local match can vary widely, from as low as a few percent to half of a project's costs. This requires stormwater management agencies to either have sufficient dedicated local revenue to make grant funding a meaningful option or

apply for other pots of funding to generate sufficient match. This, in addition to the costs to apply for and manage grants, make this a challenging source of funding to reliably build into one's long-term funding strategy.

- Solution: Local research is required on storm water grants (such as Proposition 1E: Disaster Preparedness and Flood Protection Bond Act, Proposition 84: Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act, and Proposition 1: Water Quality, Supply, and Infrastructure Improvement Act, Caltrans CIAs, Community Development Block Grants [CBDGs], etc.) to assess their amounts, administrative and application burden, and fund matching requirements.

4.3.2.1.2 Loans

- Value: A variety of specific Federal and State level funding solutions are available. The example of the most recent initiative in Federal loan program includes the Water Infrastructure Financing and Investment Act (WIFIA) and the various States that offer loans including the State Revolving Fund (SRF) loans, and Land Conservation Loans (LCL) for stormwater management in particular and wastewater in general.
- Challenge: However, the availability, probability, and horizon for this funding source varies greatly per region and by State. Even, if these types of loans are adequately available to municipalities within a State, the municipality must have a funding mechanism to repay the principal and interest on these loans.
- Solution: Enhancing the availability of various low interest stormwater specific loans and a focused policy to provide attractive "zero interest loans" to communities that demonstrate greater inter-municipal collaborate regional level stormwater capital projects and/or greater public-private partnerships could provide the benefit of not only supporting infrastructure affordability but also demand collaboration and cooperation among various municipal and non-municipal entities.

4.3.2.1.3 State Product Impact Fees

- Value: State Product Impact Fees are a potential revenue source for municipalities. State Product Impact Fees can be applied to products contributing to environmental impacts (e.g., zinc in tires) to fund storm water and flood risk management activities.
- Challenge: However, statewide coordination would be needed and this funding option has a long horizon for realizing potential contributions depending on program maturity.

4.3.2.1.4 Incentives (explicitly financial or regulatory credits)

4.3.2.2 Internal "Funding" Sources

4.3.2.2.1 Stormwater miscellaneous fees

- Value: Various miscellaneous fees such as stormwater plan review fees, permit fees, inspection fees, and any other special assessment fees could all provide some sources of funding in a municipality
- Challenge: However, these types of internal funding sources may provide some very minimal revenue for offsetting some of the O&M costs associated with plan review and permitting activities, but no funding for capital infrastructure investments.

4.3.2.2.2 Stormwater utility fees

By way of illustration, below is the beginnings of a framework for review of alternative stormwater funding sources and financing methods. This could be the basic structure for a narrative discussion or abbreviated in the form of one or two tables (likely with a decent amount of text for each entry). While I do think it is important to have common criteria for each funding source and for each financing method, the criteria could vary between sources of funding and financing methods. My point here is that we have an opportunity to delineate an assessment framework (perhaps specific to the affordability issues to be addressed in Section 2) and then craft text that would enable readers to gauge the relative merits of different sources and financing methods across a common set of criteria. One thought (if this makes any sense) would be to flesh this type of template out at our session on the 15th.

	Funding Sources					Financing Methods			
Criteria	Grants	SW Utility Fees	Impact Fees	Misc. Fees		Revenues	LI Loans	Muni Bonds	Private Equity
Availability / Costs									
Scalability									
State / local legal challenges									
Community Financial Capability impacts									
HH affordability impact									

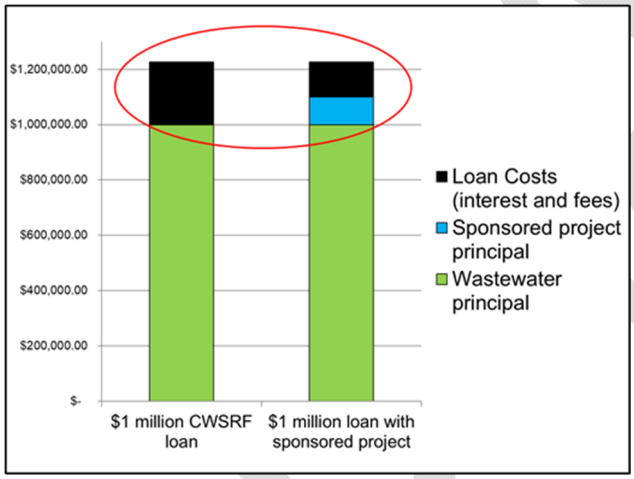
Distributional Impacts									

Other Case Studies

I don't know if you want this here or elsewhere – feel free to move:

The Iowa SRF program has funded stormwater projects in a way that doesn't impact user fees is through the Water Resource Restoration Sponsored projects program. CWSRF projects can use up to 1% of the interest they would have paid the SRF program on their infrastructure loan for a non-point source project. The SRF program allows approximately $100,000 per $1 million SRF loan to be used for water quality projects. Through this overall interest rate reduction, the utility's ratepayers do not pay any more than they would have for just the wastewater improvements.

Stormwater projects including permeable paving, bioswales, rain gardens, streambank restoration and soil conservation projects on agricultural lands have been funded. Approximately $50 million for these projects have been approved for funding. (I can provide specific examples for several cities)



4.3.2.3. Customer Household Affordability

Customer or household affordability refers to extent to which individuals or households can pay for service costs without facing undue hardship. In the context of water and wastewater services, these hardships may include various costs associated with challenges in paying service bills including even service interruptions. For stormwater services, such customer affordability issues may manifest less explicitly or dramatically, but nevertheless are important considerations for stormwater finance policy development. And, as with Financial Capability Assessment, both how household affordability is measured, and what constitutes burdensome levels of cost are

being reconsidered as concerns rise about water affordability across all water resource-related services.

Historically, EPA has measured water and wastewater service cost affordability largely in terms of how estimates of annual household costs compared to Median Household Incomes(MHI) as reported by US Census data. EPA's historically used FCA matrix methodology may render a determination of "High Burden" for communities household costs are in excess of 2 percent of MHI. Logically, though rarely done, this same methodology may be applied to evaluation of stormwater service costs – especially (or at least more easily) if such costs are explicitly calculable by reference to stormwater utility rates or fees rather subsumed within general government funding sources. The historic underfunding of stormwater management costs (even if recovered through separately established fees and charges) means that stormwater management costs are unlikely to be deemed as currently imposing an undue burden using historically applied metrics referencing MHI.

Emerging concepts related to household water affordability measures (like those for FCAs) offer new measures and methodologies for assessing water resource management costs beyond reference to MHI. Costs as a percentage of lowest quintile income is advocated for its focus on the economically disadvantaged; costs as a percentage of a measure of disposable incomes is advanced as a means to gauge whether households will face undue substitutions of health care, food or other essential services. Most importantly, these concepts call for inclusion of stormwater management related costs (whether incurred via separate charges or through general taxes and fees) in the pantheon of claims imposed on households for water resource management services.

Will draw on existing research including recent AWWA/WEF/NACWA white paper on a more two dimensional approach to the cost burden to the household (residential indicator + some assessment of income distribution).

Additional Criteria, Metrics and Concepts – consideration of new and re-emphasis of existing relevant ones

- Economic efficiency
- Reliability
- Applicability across systems of different sizes
- Other metrics and concepts?

5. Recommendations

A. Discuss a succinct set of options for additions, enhancements, key changes, where applicable to:
   i. Existing Funding Types/Sources
   ii. Special Grants for Stormwater Utility (user fee program) development (indicate that developing the stormwater utility/user fee program is not the problem, but gaining endorsement and support from local elected officials
   iii. Special technical assistance for Public Education/Outreach and Local Elected Official Outreach (including information for local elected officials and Board members on the benefits of stormwater and the need to fund it – maybe opportunities to discuss/engage with NACO, US Conference of Mayors, National League of Cities, ICMA, etc.)
   iv. Non-monetary actions that Congress can consider/enact
B. Indicate the cost/benefit of suggested solutions where applicable
C. Consider recommendations that may be targeted to Small, Medium, and Large municipalities (and not a one-size fits all type recommendations)
D. Discuss aspects that could not be covered in this scope of assessment & recommendations but must be addressed in a follow-on EFAB initiative

EPA should consider updating the *CSO – Guidance for Financial Capability Assessment and Schedule Development* (EPA 832-B-97-004), 1997, and include sections addressing Stormwater Financial Capability Assessments, given the unique requirement and political realities of stormwater funding.

Federal Grant Funds – Challenges for Green Infrastructure

Stormwater agencies in California are increasingly moving toward green infrastructure solutions to meet water quality requirements. Some of this will occur on private property through new and redevelopment triggers, but an increasing amount will be implemented in public rights-of-way, capturing, treating, and infiltrating stormwater in streets prior to entering subsurface piping systems. Stormwater agencies are challenged in California to create utilities and generate sufficient revenue streams to implement these improvements on their own, especially given the significant cost of retrofitting existing urban environments. Local agencies are finding that green infrastructure is often better implemented in conjunction with other planned investments, such as complete streets, and bicycle, pedestrian, and streetscape improvements, as a means of creating integrated solutions that address multiple issues and programs, as well as enabling cost-sharing as a means to implement what can be very expensive projects. These integrated solutions are essential for driving down the cost of meeting stormwater regulatory requirements, but require capitalizing on green infrastructure's numerous benefits. Federal funds are a potential source for

making these projects happen; there are, however, numerous challenges in utilizing federal funds, especially transportation funds, at the local level for integrating green infrastructure into applicable projects as detailed in the following paragraphs.

1. There are many federal grant programs that have some connection to one or more of the many benefits that come from green infrastructure implementation, such as adding to the urban forest, reducing incidences of flooding, reducing urban heat islands, improving water quality, building resilience under a changing climate, increasing urban greening, recharging groundwater, etc. Many of these funding sources are referenced on EPA's Green Infrastructure website. It is very challenging, however, for local agencies to pursue a wide variety of grants that may have a relationship to green infrastructure, but for which it is not the primary driver, priority, or allowable expense, especially in the context of integrating green infrastructure with other investments, such as complete streets/bike and pedestrian improvements. For example, an urban forestry grant focused on increasing urban tree canopy may be a potential funding source for green infrastructure, but is unlikely to pay for integrated bike and pedestrian improvements. **The siloed nature of the various federal funding sources creates a significant barrier to implementing integrated projects.** An alternative approach would be to consolidate funding from a variety of sources that have a connection to or that seek an end benefit of green infrastructure and create a flexible funding program specifically focused on integrated green infrastructure/transportation improvements. The Partnership for Sustainable Communities might be an existing means for achieving such an approach – rather than each of the three partners offering their own funding opportunities focused on their own priorities, offer joint funding to achieve integrated solutions across agency priorities.
2. Matching requirements – All grants typically require some level of local match. Federal transportation funds generally require at least an 11.47% match, and often 20%. As referenced above, California's 1996 voter-approved Proposition 218 amended the State constitution in regard to local government finances, a significant impact being that stormwater agencies or special districts need voter approval for any new or increased fees, resulting in few and generally underfunded stormwater utilities across the state. **As such, local agencies will typically be unable to provide the required matching funds via stormwater funds and will have to use other sources.**
3. State Revolving Funds are another potential source of funding for green infrastructure and stormwater management, however, as detailed above, **the voter requirements on stormwater utilities has severely limited the availability of revenue streams for repayment of loan funds.**
4. **Some federal grant programs from U.S. EPA, such as the 319(h) and 205(j) grant programs, do not allow funds to be used for permit compliance.** As stormwater agencies move into the realm of developing long-term green infrastructure plans leading to multi-decadal implementation of distributed green infrastructure systems, the question of "what

constitutes permit compliance" becomes much less clear. In addition, historical progress on major water quality issues has included substantial infusions of federal funds, such as for building wastewater treatment plants in previous decades, so perhaps use of funds for compliance needs to be revisited in the context of rethinking our urban drainage systems.

5. Federal transportation funds have primarily been consolidated under the FAST Act. FAST requires federal development of Performance Management measures, including national performance goals for safety, infrastructure condition, congestion reduction, system reliability, freight movement and economic vitality, environmental sustainability, and reduced project delivery delays. Of those, environmental sustainability implies consideration of water quality impacts from transportation infrastructure and vehicles; however, delving deeper into that performance goal, it is clearly focused only on air quality impacts of mobile emission sources. **This is an overall concern with the federal transportation funding programs – there is little recognition of the water quality impacts of runoff from transportation infrastructure, due to both vehicle-related pollutants (e.g., copper from brake pads, zinc from tires, PAHs from combustion, etc.) and numerous pollutants from adjacent land uses (e.g., trash, pesticides, nutrients, bacteria, etc.).**
6. Title 23 of the US Code relates to highways – Section 328 under that code says *environmental restoration and pollution abatement to minimize or mitigate the impacts of any transportation project funded under this title (including retrofitting and construction of stormwater treatment systems to meet Federal and State requirements under sections 401 and 402 of the Federal Water Pollution Control Act) may be carried out to address water pollution or environmental degradation caused wholly or partially by a transportation facility.* This section further goes on to limit such expenditures to no more than 20 percent of the total cost in cases where a transportation facility is undergoing reconstruction, rehabilitation, resurfacing, or restoration of the facility. This section was added in 2005 as a modification to the National Highway System Section 103(b)(6) and Surface Transportation System Section 133(b).
7. **Federal transportation funding requirements are complicated** – the environmental clearance requirements create the most significant hurdle, project programming has numerous processes, procedures, and tight deadlines for project delivery, and, as a result, agencies in the San Francisco Bay Area will generally not pursue federal funding for projects less than $250,000. It's simply not worth the hassle for smaller projects. Smaller agencies are especially challenged to provide staff resources necessary to meet all of the federal requirements, limiting the pool of agencies that are able to take advantage of the various pots of federal funding.
8. Under the FAST umbrella, the pots of funding that are most relevant to local agencies for transportation projects with which green infrastructure could likely be integrated include:
    a. Surface Transportation Block Grant Program (STP): Provides an annual average of $10 billion nationwide in flexible funding that may be used by States and

localities for projects to preserve or improve conditions and performance on any Federal-aid highway, bridge projects on any public road, facilities for non-motorized transportation, transit capital projects, and public bus terminals and facilities. With regard to a nexus to green infrastructure, STP funds can be used for environmental restoration and pollution abatement. Specifically, *environmental restoration and pollution abatement to minimize or mitigate the impacts of any transportation project funded under this title (including retrofitting and construction of stormwater treatment systems to meet Federal and State requirements under sections 401 and 402 of the Federal Water Pollution Control Act (33 U.S.C. 1341; 1342)) may be carried out to address water pollution or environmental degradation caused wholly or partially by a transportation facility.* Given that it is not entirely clear whether this only means environmental impacts of the project or environmental impacts beyond the project area that might be treated by a green infrastructure installation in a downstream location, it would be helpful to clarify this provision.

b. Congestion Mitigation and Air Quality Improvement Program: Provides an annual average of $3.3 billion nationwide in flexible funding to State and local governments for transportation projects and programs to help meet the requirements of the Clean Air Act. Funding can be used for projects that shift traffic demand to nonpeak hours or other transportation modes, increase vehicle occupancy rates, or otherwise reduce demand. **This is a source of funding for bike and pedestrian projects; however, focus is air quality improvement and congestion mitigation and does not specify water quality improvement or mitigation as an eligible use.**

c. Transportation Alternatives: Provides approximately $800 million annually nationwide. This is a subset of STP funds, providing funding for transportation alternatives, including bicycle and pedestrian projects, Safe Routes to Schools, and environmental mitigation, including stormwater pollution prevention. **Appears to be the primary source of federal transportation funds that could clearly be used for integrated bike/pedestrian and GI projects.**

9. In the Federal Support Letter for the Green Infrastructure Collaborative, the Department of Transportation does not appear to make any commitments toward revising funding programs, eligibility criteria, or allocations to better accommodate green infrastructure.
10. Another source of federal transportation funds is the BUILD grant program, which is a budget appropriation, and not part of FAST. The 2019 funding round includes $900 million. This pot of funds does specifically call out green infrastructure as an eligible activity, under the "Environmental Sustainability" primary selection criteria (*The Department will consider the extent to which the project improves energy efficiency, reduces dependence on oil, reduces congestion-related emissions, improves water quality, avoids and mitigates environmental impacts and otherwise benefits the environment,*

including through alternative right of way uses demonstrating innovative ways to improve or streamline environmental reviews while maintaining the same outcomes. The Department will assess the project's ability to: (i) reduce energy use and air or water pollution through congestion mitigation strategies; (ii) avoid adverse environmental impacts to air or water quality, wetlands, and endangered species; or (iii) provide environmental benefits, such as brownfield redevelopment, ground water recharge in areas of water scarcity, wetlands creation or improved habitat connectivity, and stormwater mitigation.) The challenge is that this is a highly competitive program, intended to fund transformative transportation projects, many of which in past rounds have received tens of millions of dollars in funding, necessitating a highly integrated planning and project approach that incorporates green infrastructure into major transportation efforts to be competitive. Stormwater projects on their own are not likely to compete.

11. In general, transportation funds are focused on issues other than stormwater. Therefore, project solicitation packages from state, regional, and countywide transportation agencies often don't mention stormwater or green infrastructure, there are typically no extra points provided in competitive scoring criteria for incorporating green infrastructure, and green infrastructure projects on their own, even though potentially allowable under certain pots of federal transportation funds, are unlikely to compete with strictly transportation-focused projects. In addition, although federal transportation funds may originate with greater levels of flexibility on how funds can be used, as they get allocated through the state, regional, and county levels, other priorities and restrictions are often placed on the funds, limiting the types of projects eligible for funding. For example, in the San Francisco Bay Area, in an effort to meet state-mandated GHG reduction targets, the regional transportation agency is limiting the geographic area in which certain transportation funds can be used, focusing on Priority Development Areas that will accommodate housing and jobs around transit, as well as the types of projects that can be funded, focusing on active transportation (bike/ped) to support reduced vehicle usage.