Assessing Affordability and Financial Capacity to Implement NPDES MS4 Permits

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ENVIRONMENTAL FINANCE CENTER

EPA CSO GUIDANCE (1997)

- Residential indicator
  - Cost Per Household
  - Median Household Income

- Financial capacity indicator
  - Debt indicators – bond rating and overall net debt as percent of full market property value
  - Socioeconomic – unemployment rate and median household income
  - Financial Management – property tax revenue collection rate and property tax revenues as percent of full market property value

EPA Guidance Financial Capability Matrix

Permittee Financial Capability Indicators Score	Residential Indicator (Cost Per Household as a % of MHI)		
(Socioeconomic, Debt and Financial Indicators)	Low (Below 1.0%)	Medium (1% - 2%)	High Above 2%)
Weak (Average below 1.5)	Medium Burden	High Burden	High Burden
Medium (Average between 1.5 and 2.5)	Low Burden	Medium Burden	High Burden
Strong (Average Above 2.5)	Low Burden	Low Burden	Medium Burden

* United States Environmental Protection Agency, "Combined Sewer Overflows: Guidance for Financial Capability Assessment and Schedule Development," EPA 832-B-97-004, February 1997. P.41

EPA INTEGRATED WATER PLANNING (2012)

- A voluntary process for "...identifying efficiencies in implementing requirements that arise from distinct wastewater and stormwater programs, including how best to make capital investments."

- "Affordability" is not a term used within the framework, but the eight principles include suggesting the plan "[e]valuate and address community impacts and consider disproportionate burdens resulting from current approaches as well as proposed options."

LITERATURE REVIEW

AWWA report (2013) - MHI is a poor indicator of economic distress; does not capture impacts across diverse populations; income levels not usually clustered around median; "snapshot" that does not account for the historical and future trends of a community's economic, demographic, and/or social conditions

Alternative indicators – income quintiles, percentage households receiving public assistance, percentage customers eligible for water affordability programs, water service delinquency rates, needs for reinvestment in infrastructure

NACWA (2013) - suggests aligning the principles of integrated planning into the financial capacity assessment using three proposed elements:

- Water-quality based project prioritization
- Cash-flow forecasting
- Analysis of burden

PENNVEST - .25% of MHI for stormwater loans

CURRENT VIEWS ON WATER AFFORDABILITY

American Water Works Association: "Given variations in local economic conditions, compositions of the customer base, and community values, defining affordability must be done at the local level."

"Is Our Water Affordable?," authors Jon Davis and Joe Crea corroborate this idea: "Any one-size-fits-all guidance on what constitutes affordable water service is going to be inappropriate when applied to most local considerations."

http://efc.web.unc.edu/2019/04/22/challenges-and-innovations-current-and-future-states-of-water-affordability/

MS4 Community Demographic Overview

MS4 Permittee	Population Estimate 2017	Median Household Income (2017 dollars) 2011-2015	Persons in Poverty, percent	Persons 65 years and over, percent	Households, 2013-2017
Anne Arundel County	573,235	$94,502	6.10%	14.40%	205,395
Baltimore County	832,468	$71,810	8.30%	16.80%	312,859
City of Baltimore	611,648	$46,641	22.40%	12.80%	239,791
Montgomery County	1,058,810	$103,178	7.00%	14.90%	369,242
Prince George's County	912,756	$78,607	8.60%	12.80%	306,694

COMPONENTS OF A STORMWATER PROGRAM

- **Capital Projects**
- **Operations and Maintenance**
- **Public Education and Involvement**
- **Technical Support**
- **Engineering and Planning**
- **Regulation and Enforcement**
- **Administration**
- **Billing and Finance**

STORMWATER SYSTEMS

| County	Miles of stormwater pipes	No. Of inlets	Land area (sq miles)
Anne Arundel	990	37,000	415
Baltimore County	1450	51,370	598
City of Baltimore	1100	53,000	81
Montgomery County	1100	38,000	491
Prince George's County		65,195 (inlets, manhole, outfalls)	483

THEMES FROM PERMITTEE MEETINGS

- Fiscal process and allocation are not the only barriers to meeting MS4 permit requirements.

- The focus on local TMDLs is important for stakeholders and appropriations moving forward.

- Certainty about pollution reduction credits would help with forecasting costs.

- Operations and maintenance needs are a looming financial issue and not yet fully accounted for in budgets.

- The need for a comprehensive analysis of water service budgets and capacity is apparent with various departments doing work that could or should count toward watershed restoration as a whole.

SUMMARY

- Current cost information is not comprehensive of full stormwater system.

- Operation and maintenance will be an increasing share of stormwater budgets over time.

- Each permittee is in a slightly different situation regarding provision of water services (drinking, waste, storm) so no true apples-to-apples comparison.

- A need to benchmark.

- A need for other indicators/parameters.

- This is a beginning.

AFFORDABILITY

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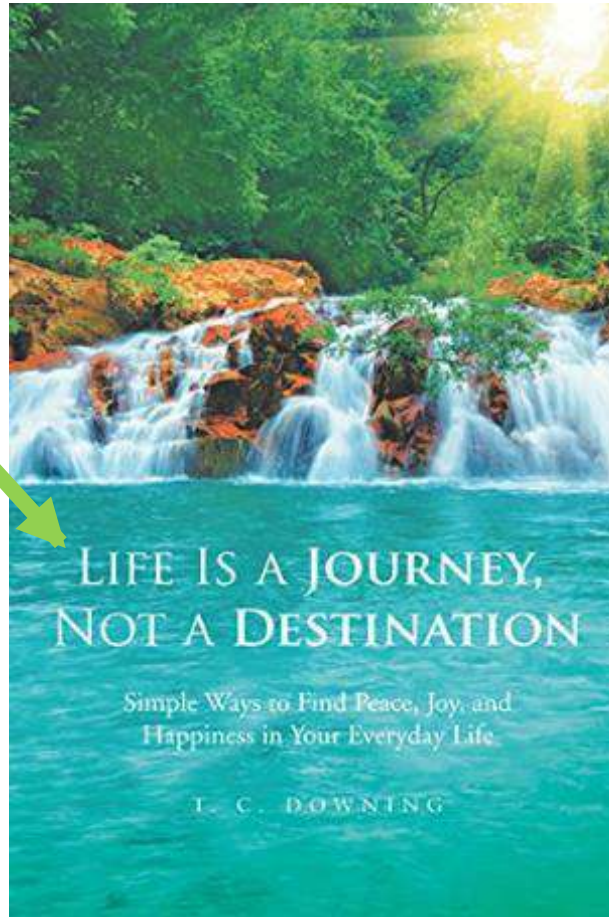
AFFORDABILITY

The EFC researched existing water service affordability literature, including relevant Environmental Protection Agency (EPA) documents, and developed a draft matrix including three considerations:

Household Cost as a percent of:

- Median Household Income
- Low-Income Brackets

Key Socioeconomic Parameters

Financial Capability Indicators

MAPPING FINANCIAL CAPACITY TO AFFORDABLE

Financial capacity of municipalities is the ability to take on debt, generate revenue, or otherwise cover cost of services.

For stormwater- a new water infrastructure need – how do we do this?

What to include in metrics if we are assessing affordability vs budget and financial assurance planning?

AFFORDABILTY = ~~FIANANCIAL CAPACITY~~

1. The affordability assessment is not based on the municipal 5-year implementation costs alone within the Financial Assurance Plan (FAP).

2. Affordability estimates the current (and potential expected) burden of total water service/utility expenditure by households.

3. Costs of implementation are being covered by multiple revenue sources.

4. Costs within the FAP may not include long term maintenance costs or other costs to support the stormwater program.

5. The data captured in the matrix will help assess the long-term sustainability of stormwater funding through recognition that the cost of implementation (and subsequently operations and maintenance) are pulled (pooled) from multiple sources and that all of these costs need to be teased out and tracked to measure affordability to households.

CROSS MAPPING DATA – FIRST STEPS

Affordability for average residential customer:

How are your customers characterized?

What is the median household income of the customer?

(Why Median vs Mean?)

The Census website is a wealth of information based on certain Census blocks/County - does this meet your service area?

How are costs per household distributed for services? Water related?

CROSS MAPPING DATA – FIRST STEPS

Start to collect data!

MHI – Does this really characterize your service area?
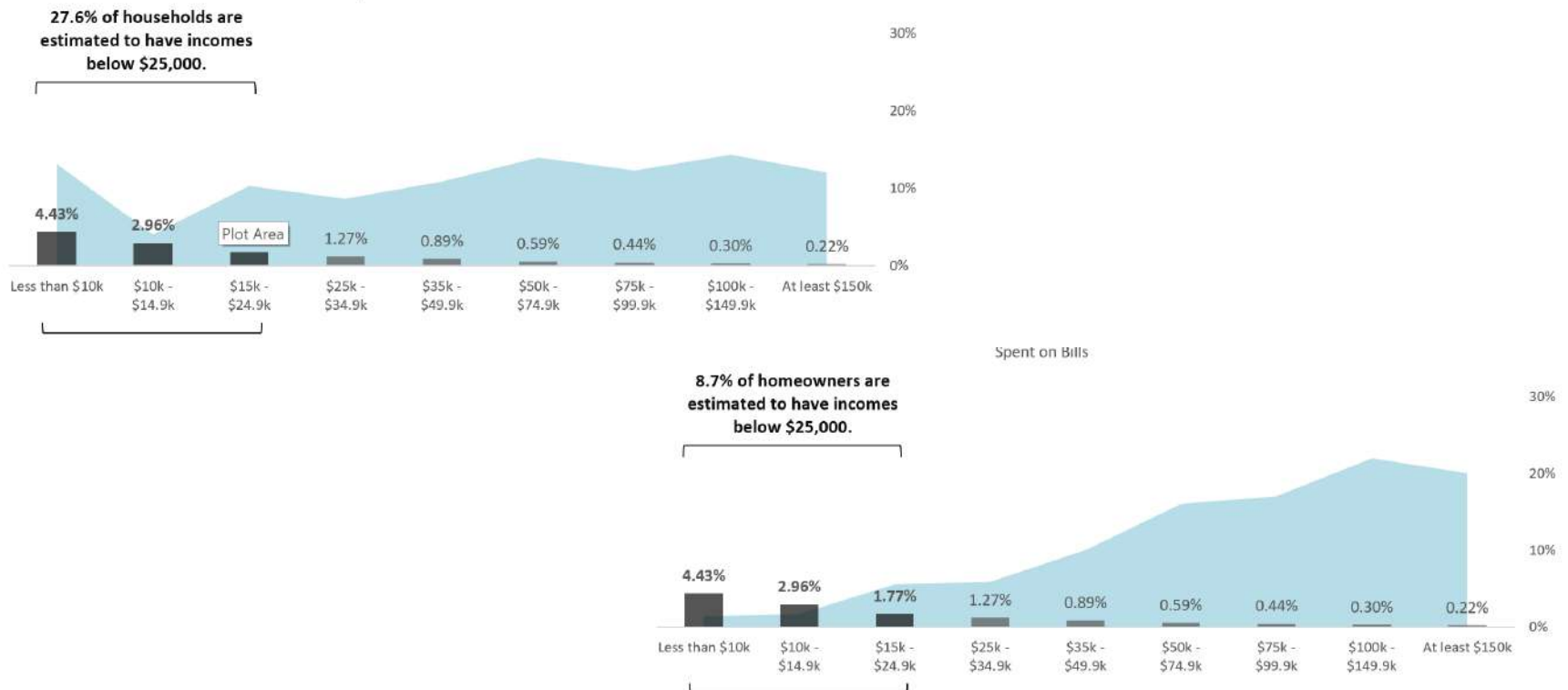
# of households in service area? Multiple categories?

Annual average costs per household (past 5-yrs) – how will this data be collected?

Water? Stormwater?

CROSS MAPPING DATA – FIRST STEPS

Affordability for low income customers

How is income distributed? Does MHI characterize it or is it "bi- modal"?

CITY EXAMPLE

Affordability for Low-Income Customers		
	Households <$25,000 [2] Percent (percent population)	1.88% (18.9) - 4.7% (11.8)
	Renter-occupied <$25,000 [2] Percent (percent population)	1.88% (8.7) - 4.7% (1.4)

What is the story here? Why are there almost 19% of households <$25,000 in income?
Who are the majority of 8.7% (renters <25,000)

Newark is a…..anyone??

So 4.7% of MHI is "water" burden based on average annual cost for the total percent of the population that is a) under $25K and b) under $25K and a renter

SOCIOECONOMIC

Many parameters can help tell the story of your municipality

1)Unemployment

2)Percent below poverty level

Two parameters that help distinguish the community and characterize what the burden may be.

CITY EXAMPLE

Key Socioeconomic Indicators

	Newark, DE in 2017	Delaware in 2017	United States in 2017	Key:
Median Household Income	$54,590	$63,036	$57,652	If any value for
% Unemployment	2.5%	4.0%	4.1%	Newark, DE is
% Not in the labor force	47.9%	37.8%	36.6%	shown in red, its
% of all people with income below poverty	5.3%	12.1%	14.6%	value is 'more
% with Social Security income	28.9%	34.0%	30.6%	stressed' than the
% with Supplemental Security income	2.9%	4.3%	5.4%	state and national
% with cash public assistance income	2.0%	2.3%	2.6%	averages.
% with Food Stamp/SNAP benefits	6.9%	12.1%	12.6%	

Source: U.S. Census Bureau's American Community Survey, obtained from American FactFinder, Income tab, Selected Economic Characteristics table from American Community Survey

ADDITIONAL FINANCIAL CAPACITY

This is a general measure to gauge where the municipality is in reference to the capacity to raise additional funds though bond avenues.

Permittee Financial Capacity Indicator benchmarks and their ratings					
	Debt indicators [1]		Strong	Mid-range	Weak
		Bond rating GO bonds^	AAA-A (S&P) Aaa-A (Moody's)	BBB (S&P) Baa (Moody's)	BB-D (S&P) Ba-C (Moody's)
		Bond rating - Revenue bonds^^	AAA-A (S&P) Aaa-A (Moody's)	BBB (S&P) Baa (Moody's)	BB-D (S&P) Ba-C (Moody's)
		Net debt as a % of FMPV^^^	Below 2%	2–5%	Above 5%
	Financial management indicators [1]				
		Property tax revenues as % of FMPV^^^	Below 2%	2–5%	Above 5%
		Property tax revenue collection rate^^^	Above 98%	94–98%	Below 94%

CITY EXAMPLE

Permittee Financial Capacity Indicator benchmarks and their ratings				Strong	Mid-range	Weak
	Debt indicators [1]			Strong	Mid-range	Weak
		Bond rating GO bonds	AA2 (Moodys)			
		Bond rating - Revenue bonds	NA			
		Net debt as a % of FMPV	4.55%			
	Financial management indicators [1]					
		Property tax revenues as % of FMPV	<1%			
		Property tax revenue collection rate	98.20%			