SAFE AND AFFORDABLE WATER FOR ALL

Policy Recommendations for a More Sustainable Michigan

The Nature Conservancy

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EXECUTIVE SUMMARY

All life depends on water. From the vast conifer forests of the Upper Peninsula, to the spring-fed fens and prairies of southern Michigan, nature here at the heart of the Great Lakes is green and blue and abundant with wildlife because of water.

Nature depends on water, and people depend on water. One of the hallmarks of human civilization, from the earliest records, is the development of infrastructure to access water.

In more recent history, Michigan's progress has depended upon the development of drinking and wastewater systems; dams and flood control; and drainage structures in cities, farmlands and other rural areas.

If Michigan is to thrive in the decades to come, all people must have access to safe, reliable and affordable water and wastewater systems. This protects the foundation of our economies, the vibrancy of our communities and the health of the natural world around us.

However, Michigan faces a growing water infrastructure crisis that threatens the vision of a sustainable and prosperous future. In 2017, the 21st Century Infrastructure Task Force established by Governor Rick Snyder estimated that $800 million in funding need for water infrastructure goes unmet every year—and will increase even further.

And, while multiple best practices and financing options for infrastructure improvements exist, the ability of Michigan communities to take advantage of these opportunities is hindered by outdated water utility business models and other barriers.

In response to this critical issue, with the support of the Fred A. and Barbara M. Erb Family Foundation and the Charles Stewart Mott Foundation, The Nature Conservancy (TNC) and Michigan State University (MSU) set out in 2018 to better understand the characteristics of successful U.S. water infrastructure programs and develop a suite of informed recommendations for Michigan policymakers.

The project, as reflected in this report, consisted of three distinct but related phases: a research phase, a workshop phase and a recommendation phase.

the RESEARCH PHASE

A full description of the research and findings are included in the attached report from PSC:

Lessons from Top-Performing Water Utilities

In September of 2018, TNC retained PSC and recruited an expert advisory committee to identify and examine how successful water utilities across the nation were organizing their business structures to ensure adequate revenue to meet operational and infrastructure needs while also addressing the need to prevent shut-off of critical community services.

We then examined the business models of these utilities to determine if there were certain traits, practices or decisions that underlie their success. The assumption underlying this entire project was that the challenges faced by some Michigan utilities primarily represent business organization issues, and that understanding how successful utilities are structured would provide us insights into a path to sustainable operations.

Drawing on publicly available information and interviews, PSC produced seven case studies of water utilities of varying size and resources that each demonstrated at least one important quality of success. Through this process, they uncovered a set of findings around regulatory, financial and structural practices for water utilities.

These findings include the need for proactive solutions to issues of affordability, the need for better support for water utilities to secure investment in water infrastructure and the importance of regional partnerships to help achieve the necessary economies of scale, as well as the benefits of smart asset management and investment in energy efficiency.

the WORKSHOP PHASE

In the spring and summer of 2019, TNC and MSU convened a group of 32 "Water Fellows" in a series of five workshops to build on PSC's findings and develop a suite of actionable recommendations that could help transition unsustainable water utilities into sustainable business operations. These Fellows represent a diverse and engaged cross-section of stakeholders across environmental, human health, environmental justice, state and local government, business, agricultural and academic sectors, capturing the broad perspective and expertise necessary to identify impactful and lasting solutions.

At these workshops, Fellows heard directly from representatives from the identified water infrastructure systems, who shared the business operations of their systems. Together, the Fellows examined how the approaches used by these systems could address their various concerns and interests, converging around emerging areas of consensus.

The full results and proceedings of the Water Fellows Program are included in the attached report from MSU:

Water Fellows 2019: Water Infrastructure

The potential recommendations that the Fellows put forward were based on the fundamental value of affordable and equitable access to safe drinking water for all Michigan residents, and the most urgent and/or achievable steps to support that value. These steps include communications efforts to address public distrust in state government and better engagement of residents in decision-making, in addition to specific policy improvements.

Throughout the Water Fellows' deliberations, there was an undercurrent of the broader societal challenges our water utilities exist in and are subject to. The Fellows recognized that many of the problems faced by our water systems disproportionately impact low-income communities and communities of color that have faced decades of systematic discrimination. These issues were not adequately considered or always addressed in a thoughtful manner, and the fifth session was added to provide initial training for the Fellows on restorative justice. It will take years of work to address the issues created by generations of structural and individual discrimination, and we hope this final session has helped raise awareness of the need to address what author Wendell Berry has called America's "Hidden Wound."

the RECOMMENDATION PHASE

Upon completion of the Water Fellows program, TNC worked with PSC to synthesize the learnings from the research and the Fellows into a final set of recommendations to Michigan policymakers and residents. The recommendations are drafted with the recognition that many water utilities in Michigan today are sustainable businesses, but changes in community demographics, emerging environmental concerns and other factors beyond their control could change their prospects rapidly.

The recommendations, which are organized into three pillars of action, identify potential structural policy changes designed to help those utilities and households that are struggling today find a path to sustainability, and to create the framework to assist others who find themselves in this situation in the future.

1. Policies that could help utilities transition to more sustainable business models.

2. Policy changes that could better support low income households that struggle to pay their water bills under present utility business structures.

3. Actions Michigan policymakers could take to ensure our rural neighbors have access to safe and affordable drinking water and wastewater services—over 1.1 million Michigan households rely on private wells and/or septic systems, and many of these households are also disproportionately low-income.

We will continue to share these recommendations widely with decisionmakers and parties who are interested or involved in adequate and equitable funding of water infrastructure and/or improving environmental outcomes for freshwater systems.

The full set of finalized recommendations are shared in the attached report from PSC:

Policy Recommendations

The Nature Conservancy and Michigan State University are grateful to the sponsors of this work, the Erb Family Foundation and the C.S. Mott Foundation, for their commitment to this critical issue of equity and sustainability, and in particular program officers Melissa Damaschke of the Erb Family Foundation and Tim Eder of the C.S. Mott Foundation, who participated in the project advisory committee and the Water Fellows program.

If we are to have a future in which both people and nature thrive, and Michigan's water infrastructure is a benefit rather than a burden, the only way we can get there is by taking meaningful, impactful steps forward together.

Unless otherwise noted, all recommendations contained in this report are made by The Nature Conservancy and are not explicitly or implicitly endorsed by partners or participants in any aspect of this project. Any errors or omissions are the sole responsibility of The Nature Conservancy.

The Nature Conservancy

Lessons From Top-performing Water Utilities

Examining the Best Practices in State Regulations and Business Practices for Successful Water Utilities

Updated 06.18.19

PSC

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Glossary

Asset management	The practice of managing infrastructure capital assets to minimize the total cost of owning and operating assets while delivering desired service levels.
Capital	An economic resource, measured in terms of money, that communities use to purchase and invest in what they need (e.g., infrastructure) to provide services (e.g., water services) to their constituents.
Cost of service provision	The operation and maintenance costs of providing water or wastewater treatment services to utility customers.
Customer assistance program	Programs designed to help financially constrained customers maintain access to drinking water and wastewater services. These programs help households address issues with affordability and help protect public health throughout the community. They also help ensure the utility can sustainably provide its core services, price water appropriately, and preserve a broad customer base.
Enterprise fund	A form of accounting that utilizes a separate fund or cost center for a specific purpose. Enterprise funds are generally sustained by revenue generated within a specific entity, like a water or wastewater system.
Finance	Refers to the theory and activity of managing large amounts of money, especially by governments or companies.
Financing	The “two-way” acquisition of money for a program or project. This term is used when the monetary resource need is filled from external, borrowed money where principal and interest are owed to the source of funds. This includes Clean Water and Drinking Water State Revolving Funds provided as loans, municipal bonds, and other sources of monetary resources that require repayment of principal and interest.

Green bonds	This instrument elevates the environmental benefits of infrastructure projects, but is essentially identical to other municipal bonds, with two exceptions: the proceeds of the bond sale are reserved for particular "green" projects, and the city commits to track and report on the environmental benefits (e.g., reduced carbon emissions) of the projects. Green bonds may be general obligation, revenue, project based, or secured by an asset. Green bonds can be used for a range of projects, such as energy-efficiency improvements, renewable energy installation, sustainable waste management, clean transportation, sustainable water management, and climate change adaptation.
Long-term liabilities	Financial obligations of an organization that become due in more than one year. They form a section of the balance sheet that lists liabilities not due within the next 12 months.
Median household income	A common economic indicator, which measures the combined gross income for all household members over the age of 15. "Median" divides the household incomes of a specific group (e.g., residents of a given city or state) into two equal groups: half living above that amount and half living below that amount.
Nonrate revenue	Revenue that is generated from sources other than rates and fees.
Nonrevenue water	Water that that has been produced by the utility and is "lost" before it reaches the customer.
Revenue	The amount of money collected by a utility. Revenue sources for water utility can include water supply fees, volumetric water rate charges, interest income, and nonoperating income (e.g., property leases or contracting services)

Background

Public Sector Consultants (PSC) was hired by The Nature Conservancy (TNC) to examine the ways water utilities are successfully anticipating and meeting the needs of their customers through innovative strategies designed to reduce cost burdens, increase infrastructure investments, and provide services that customers of all income levels can afford. By commissioning this research, TNC hoped to identify a suite of business practices that would inform potential changes that Michigan policymakers could adopt to accelerate investment in upgrading Michigan's water infrastructure while providing affordable services to all residents and businesses.

The need for additional investment in water infrastructure is astounding. The American Society of Civil Engineers (ASCE) graded the nation's drinking water infrastructure as D+ and wastewater infrastructure as a D (ASCE n.d.). The American Water Works Association (AWWA) estimates that it will cost at least $1 trillion to restore and expand the nation's existing drinking water systems over the next 25 years. Wastewater investment will cost another $271 billion (Chang 2017).

Michigan's water utility infrastructure is no different—receiving a D grade for drinking water, C for wastewater, and a D- for urban stormwater (ASCE 2018). Mostly built between 50 and 100 years ago, the state's 1,080 community municipal wastewater treatments systems and 1,390 community water systems are depended on to deliver clean water, safely take away and treat wastewater, and manage urban stormwater runoff. But many utilities are financially strained due to a combination of declining water usage, the changing demographic makeup and economic capacity of local communities, competing priorities for limited financial resources, the shift from federal grants to loans,[1] the historical underinvestment in infrastructure at the local level in general, and the hidden nature of water infrastructure.

> Michigan currently has an $800 million annual gap in water and sewer infrastructure needs, compiled from decades of deferred maintenance and a lack of knowledge on the condition of our water-related assets (21st Century Infrastructure Commission Report 2017).

Money to finance the construction of water infrastructure is not the issue; there is plenty of private (and public) capital available to meet the current water funding gap, but there are significant barriers to connecting appropriate financial resources with communities' ability to afford it (Duke Nicholas Institute 2016). Traditional revenue streams have been inadequate in keeping up with need; these consumption-based user charges can often be financially infeasible for low-income communities.

The questions confronting Michigan today are troubling. If a community can't afford to operate and maintain its water systems, let alone upgrade them, what options exist for that water utility to address infrastructure needs and the lack of revenue resources available to them? And ultimately, who will pay for these infrastructure improvements and with what money?

Through that lens, this report examines the business models of some innovative water utilities and how their state partners have helped or hindered their efforts. It looks at how these utilities design and

[1] After the passage of the Clean Water Act in 1972, the federal government provided grants to local communities to invest in water infrastructure upgrades to meet the requirements of the act. In the 1980s, the support shifted from grants to loans through the State Revolving Loan funds.

implement their rates, ways in which they have found efficiencies, and how they utilize state and federal resources to maximize investment and savings. Additionally, the report looks at what new ways utilities plan for the future while providing reliable and affordable water services for their customers.

To explore this further, PSC layered this research with what is being done across the nation at the local, state, and federal levels to support and accelerate water infrastructure improvements and serve customers. With the support and input from the project advisory team, PSC identified a suite of attributes that the team felt were critical for a water utility to be successful in the 21st century, and then identified water utilities of different sizes and financial resources that were exemplary in attaining at least one of those attributes. The selected attributes are sustainable rate design, customer assistance programs, regional collaboration, efficiency, stormwater management, asset management planning, and internal leadership. This is not an exhaustive list of attributes that could define a well-managed utility, and the utilities that were researched may not excel at all, or even most, of the areas.

Once these attributes were identified, PSC was tasked with identifying, researching, and then conducting interviews with utilities that were excelling in one of those areas and examining how each utility's business model was designed and deployed to support achieving the identified attribute(s). This yielded a snapshot of what some communities and states are doing, either through business or regulatory practices, to excel in the different attributes. The project team fully recognizes that this snapshot is not an exhaustive list; hundreds, if not thousands, of utilities are also being innovative and responsive in meeting the needs of their community.

The overarching goal of this report is to provide a set of findings around regulatory, financial, and structural practices for water utilities that a group of Water Fellows will examine for practicality of implementation in Michigan.

Water Utilities

Based on the criteria outlined above, PSC focused on seven utilities to profile as with more in-depth case studies. A summary of why the utility was chosen is below. The full case studies are appendixes to this report.

Camden County Municipal Utilities Authority (CCMUA), New Jersey

The CCMUA is located in Camden, New Jersey; it serves as the wastewater utility for Camden County. As an independent authority, the CCMUA is responsible for providing 58 million gallons of wastewater treatment per day for 37 municipalities in the region. The CCMUA is leading the nation on rate affordability through smart asset management and innovative ways to address water affordability. Since their inception to today, rates have actually decreased when accounting for inflation. The CCMUA is also focused on community engagement and energy self-sufficiency through the New Jersey Net Zero program, an initiative to achieve net-zero energy use by 2020.

Grand Rapids Water Department, Michigan

The Water Resource Recovery Facility is part of the Environmental Services Department for the City of Grand Rapids; it is responsible for the collection and treatment of 40 million gallons of wastewater each day. The City of Grand Rapids is working to reduce energy consumption and nonoperating revenue through energy-efficiency investments at their Water Resource Recovery Facility. They are also looking at

ways to support regional collaboration in both their drinking water and wastewater systems. The City of Grand Rapids supplies drinking water to municipalities in Kent and Ottawa County, and the Water Resource Recovery Facility has strategically expanded its service territory over the past decade.

Louisville Water, Kentucky

Louisville Water Company—a municipally owned public drinking water utility that serves the Louisville metro region—has been nationally recognized for its ability to deliver world-class drinking water, owning two of only 16 plants in the United States designated with the Phase IV Excellence Award for water quality. As overall water consumption declines, Louisville Water has focused on regionalization, new lines of business and economic development to offset loss of water rate revenue. Additionally, Louisville Water is finding efficiencies in operational cost through an interlocal agreement with Louisville Metropolitan Sewer District (the wastewater utility for the Louisville metro area). The two organizations share information technology staff and training, fleet services, customer service, procurement and communication staff.

Northeast Ohio Regional Sewer District (NEORSD), Ohio

The NEORSD is a regional sewer district that operates as an independent authority with responsibility of handling stormwater management and wastewater treatment services for 63 communities in Northeast Ohio. The NEORSD has several customer assistance programs that offer rate relief for low-income and elderly customers, one-time emergencies, and homeowner repair programs that focus on water and energy conservation. Additionally, through their stormwater management program and Project Clean Lake, the NEORSD is investing in improving and protecting the water quality of the region.

Philadelphia Water Department, Pennsylvania

Philadelphia Water Department is the drinking water, stormwater, and wastewater utility for the City of Philadelphia. An independent ratemaking body, the Water Rate Board, is responsible for establishing and regulating rate and charges for water and sewer services. Philadelphia is the first water utility in the nation to implement income-based rates for their low-income customers, charging a fee between 2 to 4 percent of household income. Additionally, Philadelphia Water focuses on energy efficiency and encourages the development of green infrastructure through their Green City, Clean Waters program.

Stanly County Utility Department, North Carolina

Stanly County Utilities (SCU) is responsible for the distribution of more than 1.5 million gallons of drinking water each day to more than 5,800 homes and businesses in Stanly County. The water provided to consumers is purchased from the City of Albemarle and the Town of Norwood. SCU provides wastewater collection and treatment of more than 360 million gallons of wastewater annual from over 700 customers with approximately 40 miles of collections mains. SCU recently transitioned their rate structure into a full-cost pricing rate design, which is when the water utility charges customers for the actual cost of water service, including the ongoing costs to refurbish, replace, and upgrade the existing assets.

Stevens Point, Wisconsin

Stevens Point is a small municipal water department located in central Wisconsin, providing both drinking water and wastewater services. To reduce the operating and maintenance costs of the utility, the water department has been investing in energy efficiency. Also notable is that municipal drinking water rates are regulated by state public utility commission, which is a unique regulatory model only in Wisconsin.

Noteworthy Findings

Utilities across the nation are looking for ways to reduce costs, maximize efficiency, and ensure their customers can afford the water services they provide. In the research and interviews PSC conducted, key themes emerged around how the utility was structured and the regulatory model under which it operated, the ways in which they were successful in providing rate relief or other customer assistance to their at-risk populations, and how they were positioning their organization to be successful into the future.

Meeting the Needs of the Community

Utilities face challenges in trying to meet infrastructure and environmental demands, particularly because historical underinvestment has resulted in delays in infrastructure maintenance and replacement. As communities in Michigan complete asset management plans and determine their investment schedules, revenue will inevitably need to be increased to properly fund the costs. Utilities must balance this demand with their customers' ability to pay for the service. The water sector faces a paradox—water is underpriced, but it is still expensive (Mehan 2018).

Water is becoming increasingly unaffordable for customers. As discussed in greater detail below, water is the only utility without a state- or federally funded safety net for low-income utility customers, yet it is becoming an increasingly large part of the average household's bills. Water rates rose by 106 percent over the last 30 years, while median household income (MHI) only rose by 61 percent (National Consumer Law Center 2014)**.** In 2015, the typical annual Michigan household water and wastewater expenditure was $911 (UNC Environmental Finance Center 2017). In Detroit, researchers from the University of Michigan found that the average annual expenditure was $1,183, with low-income residents paying, on average, 10 percent of their monthly household income for water services (Rockowitz et al. 2018). The U.S. Environmental Protection Agency (U.S. EPA) defines combined drinking water and wastewater bills as affordable at, or under, 4.5 percent of the median household income.

For low-income households, defining water affordability is not as simple as looking at MHI. Many scholars have questioned if using MHI accurately gauges affordability, especially for low-income households, and have suggested a more qualitative approach, using additional social and economic indicators, to measure affordability (Kane 2018). One of the more serious concerns with the current methodology is it does not measure affordability at the individual household level, but instead measures the community's financial capacity.

A lack of a national water assistance program means that state and local governments must develop and fund assistance programs. For decades, low-income utility customers have benefited from federal telecommunications and energy assistance programs. Unfortunately, while the need clearly exists, there is not an equivalent federal assistance program that helps low-income customers afford their

water and wastewater utility bills. In 2003, and again in 2009, the National Drinking Water Advisory Council recommended that a Low-Income Water Assistance Program be created, like the Low-Income Home Energy Assistance Program (LIHEAP).

One of the most progressive programs in the nation is being implemented in Philadelphia, the first water utility to use income-based rates. For customers under 150 percent of the federal poverty level, the Tiered Assistance Program (TAP) caps monthly bills between two and four percent of a customer's monthly income, with a minimum bill of $12 per month.

Communities are finding creative ways to help low-income communities when state regulations prohibit rate relief for their residents. In New Jersey, municipal and county-owned utilities are prohibited from providing discounted rates based on income. In Camden County, a majority of the low-income population is in Camden, where the CCMUA primary wastewater treatment plant is located (40 percent of the population of the city is below the federal poverty line). To provide more affordable water to that community, the CCMUA developed a host community benefit arrangement that provides a discounted rate for all residents in city. The host community benefit discount is allowable because the basis for the rate discount is not affordability, but instead to recognize the difference in capital, operating, and maintenance costs Camden residents receive versus the outlying communities, who directly benefit from the upkeep of the conveyance system. The discounted rate reduces the residential wastewater rate from $352 a year to $220 a year, regardless of household income.

Moving from reactive to proactive solutions to help customers pay their bills benefits both the customer and the utility. Programs, like the one in Philadelphia, assist customers before they get behind on their water bill, saving the customer and the utility on additional costs, like water shutoffs. The TAP was designed specifically to keep customers in good standing with their water bill with continued access to water and wastewater services. Programs that require a customer to reach a crisis before they can access assistance can be costlier to the utility in the long run and is counterintuitive to creating sustainable payment strategies. Many communities also offer discount programs, where disabled, low-income, or senior customers only pay a set percentage or a flat fee for their water service (see Exhibit 1). These types of programs help households get and stay current on their utility bill, reducing the likelihood of facing shutoff. Additionally, successful programs encourage payment. A 2018 University of Michigan study, 98.6 percent of respondents felt that they should pay something for water service (Rockowitz et al. 2018). Many times, however, the issue arises when people just cannot afford to pay their bill and access to assistance isn't available until they receive a shutoff notice.

It is important to note that, to varying extents, all utilities have shutoff provisions for nonpayment (Walton 2018). By creating proactive solutions and helping customers afford their bills, utilities don't have to face the moral dilemma of cutting off vital services to households.

EXHIBIT 1. Examples of Affordability Plans that Reduce Water Utility Rates

Utility	Customer Affordability Programs
Northeast Ohio Regional Sewer District	Rate reduction of 40 percent available for customers whose annual income is at or below 200 percent of the poverty level. Homestead credit available to customers aged 65 or older, or under 65 but totally disabled
Philadelphia Water	Income-based rates for those 150 percent or under the federal poverty line
Camden County Municipal Utility Authority	Host community agreement reduces rates for residents of Camden by 40 percent

Setting Utilities Up for Success

Faced with declining water consumption; public and political pressure to ensure water is affordable, national crises that have crippled the public's confidence in water supplies, failing infrastructure, and rising costs, utilities are looking for the most cost-effective ways to pay for maintaining and upgrading their existing drinking water, stormwater, and wastewater infrastructure. While there is certainly no simple solution, there are plenty of ways that utilities and states foster the opportunity for increased investment.

Regardless of changes to state or federal policies, rates will always be the largest part of funding the operations and capital costs of water utilities. Federal funding for utilities has declined significantly since the 1970s. The U.S. EPA once provided over 30 percent of spending on water and wastewater utilities through federal grants and loans. Now, 96 percent of spending on water infrastructure is made at the state and local level, leaving cities and states to bear most of the cost burden of operating the nation's drinking and wastewater systems (Mayors Innovation Project 2019).

The creation of a water authority allows for financial and business decisions of the utility to be insulated from the rest of government's political and fiscal constraints. Local utility boards and authorities are set up to be independent bodies that govern the decisions of a given utility. As such, decisions about asset management, capital investments, and long-term operations and maintenance costs can be done without the additional political pressures elected officials and boards may face. Another benefit is having an oversight entity that focuses solely on the interests of the utility with a separate fund for water fees to pay for water utilities. Water authorities are still held accountable by those who appoint them; in some cases, rate increases are overseen by state regulators.

In Philadelphia, the Water, Sewer, and Storm Water Rate Board sets rates and charges for water and sewer services for the City of Philadelphia. Through independent rate studies, needs assessments conducted by Philadelphia's water department, and public input, the independent body sets rates for up to a five-year period.

By operating as an autonomous authority, the NEORSD takes the information from their rate study and the capital and operating costs to put into place fiscally sound rates, without worrying about other competing revenue constraints within a larger municipal budget. They currently are operating under an 8.3 percent annual rate increase and will have increasing rates for the foreseeable future.

In Wisconsin, water utilities regulation and rates fall under the purview of the Wisconsin Public Service Commission (WPSC). As such, Stevens Point's water utility must submit all rate adjustments and large

construction costs to the WPSC for their approval. The utility manager noted that because the WPSC oversees rate approvals, utilities in Wisconsin have less underinvestment in their utilities. The WPSC also balances needs for investing in specific projects with affordability.

Underresourced rate structures can send incorrect messages about the true cost of operating water and wastewater services. In Stanly County, utility operators found that, by operating as an enterprise fund but relying on general fund transfers in order to operate and maintain the system, customers were being sent inappropriate price signals about the value of their water and wastewater service (U.S. EPA 2005). This can be especially challenging for communities who have historically underinvested in their infrastructure and now face public scrutiny as they attempt to fund infrastructure upgrades.

Legislation and/or regulations need to specifically enable utilities to cover costs for infrastructure and customer assistance investments through revenue. Many communities identified the lack of clarity in regulations as the biggest barrier to establishing more robust customer assistance programs and charging additional fees to cover the cost of establishing stormwater programs. While—in some cases—legislation is clear in prohibiting rates that could discriminate a class of people or explaining what constitutes a fee, most of the time the law is silent or ambiguous. This leaves utilities vulnerable to lawsuits. The NEORSD fought all the way to the Ohio Supreme Court to establish fees for their stormwater program. The program fees, which are based on the amount of impervious surface on a property lot, fund several important watershed protection programs in the region. Opponents argued the NEORSD lacked the proper authority to administer the fee, and that it was not a fee, but a tax. Similar issues have arisen in Michigan around utilities' ability to administer a stormwater fee after the *City of Lansing v. Bolt*[2] Supreme Court decision.

Compared to other states, Michigan underutilizes its revolving loan programs. In the 2018 Report Card for Michigan's Infrastructure, the American Society of Civil Engineers-Michigan suggested one of the ways to raise the state's grade was to redesign the state's Clean Water State Revolving Fund (CWSRF) and Drinking Water State Revolving Fund (DWSRF). Other states have recently reevaluated their revolving loan program offerings, expanding the use of green bonds and qualified project costs to help communities access affordable capital. For example, in fiscal year 2018, all water revolving loans issued by the State of Michigan were set at a 2 percent interest rate for a 20-year loan term and 2.25 percent on a 30-year loan term (MDEQ 2018). In New Jersey, blended interest rates were between 0.67 percent and 0.91 percent for 30-year terms (NJ I-Bank 2018).

[2] In 1998, the Michigan Supreme Court ruled that the stormwater service fee imposed by the City of Lansing was unconstitutional and void on the basis that it was a tax for which voter approval was required and not a valid use fee. The court established three criteria for distinguishing between a fee and a tax: 1) a user fee must serve a regulatory purpose rather than a revenue-raising purpose; 2) a user fee must be proportionate to the necessary costs of the service; and 3) a user fee must be voluntary—property owners must be able to refuse or limit their use of the commodity or service. The court found that the charge failed to satisfy the first and second criteria.

For the CCMUA, the annual debt service payments are lower than the annual savings in electricity and maintenance costs from the new equipment. As a result, the CCMUA was able to undertake green energy improvements without raising rates to their customers (Kricun 2019).

In Ohio, the NEORSD had not utilized the Ohio State Revolving Fund (SRF) program because of how restrictive it was. Recent changes to the program have made it more attractive—such as allowing 30-year loans, bundling projects, and removing restrictions. In the most recent rate period, the NEORSD switched from the traditional bond market to using the SRF for the first time. The use of the SRF bonds is estimated to save $40 million versus funding from the bond market.

As demonstrated in Exhibit 2, other states have funded more projects over the same investment period.

New Jersey Infrastructure Bank (I-Bank)

The I-Bank was reimagined in 2018 to provide low-cost financing for water quality projects across the state of New Jersey using federal CWSRF and DWSRF, I-Bank bond proceeds, and other I-Bank available funds. The following project types were eligible for funding in 2018.

- Drinking water
- Wastewater
- Stormwater
- Runoff control
- Equipment purchases
- Publicly owned landfill construction and closure
- Brownfield remediation
- Open space land acquisition
- Septic system through septic management districts
- Green projects
- Security monitoring
- Asset management

EXHIBIT 2. State Investments Through SRF Programs

State	Total CWSRF	Total DWSRF	Total Investment	Total Projects Funded	Investment Period
Michigan	$4,851,640,000	$980,370,000	$5,832,010,00	918	1989–2018
Pennsylvania	$1,772,448,880	$691,020,300	$8,375,000,000	2,929	1988–2018
New Jersey			$7,460,261,243	1,575	1988–2019
Ohio	$9,188,378,430	$1,530,777,931	$10,719,156,361	3,300	1988–2016
North Carolina	$1,917,906,999	$667,621,533	$2,585,528,532		1988–2018
Kentucky	$1,800,000,000	$402,000,000	$2,202,000,000	418	1988–2018
Wisconsin	$4,637,728,824	$708,040,431	$5,345,769,225	1,496	1991–2018

Planning for the Future

Given the challenges outlined regarding needed infrastructure investments and the ability for a utility to raise rates while keeping water affordable, utilities are looking to find ways to make the necessary capital improvements without creating undue burden on ratepayers. Organizations like the U.S. EPA and the Mayors Innovation Project have recently published separate reports that examine how utilities can pay for water systems in innovative and more efficient ways.

Regional partnerships and integration can achieve the economies of scale needed for utilities to successfully cover the full cost of services provided. Partnerships and regional collaborations can mean a range of different options from shared contracts and services to consolidating entities. Utilities and the state will have to determine what options are best for them, but scholars agree

that regionalization has the potential to improve the quality of water and wastewater services while providing positive economic and financial outcomes for communities (Harvell et al. 2019). A recent US Water Alliance report highlighted the need for regional collaboration as one its 7 Big Ideas for a One Water for America Policy Framework (2017). Regionalization can mean a spectrum of solutions, including increased cooperation, shared services, collaboration, and consolidation.

In Camden County, all wastewater moves through 150 miles of collection pipe owned by the authority to the treatment plant operated by the CCMUA. The shift from smaller treatment plants to one plant serving the entire county allows for necessary infrastructure upgrades to be made.

As Grand Rapids creates new systems for tracking water quality, it is intentionally designing the information technology to be expandable and accessible for their neighboring communities. Additionally, Grand Rapids is including its wholesale customers and industrial users in the upfront design for the new treatment technology they are investing in for per- and polyfluoroalkyl substances (PFAS) and other chemicals.

The Grand Valley Regional Biosolids Authority, a partnership between the City of Grand Rapids and City of Wyoming, was created to handle the treatment and manage of biosolids in a way that meets both communities' triple bottom-line approach to the reuse of biosolid materials. This approach, which examines the social, environmental, and financial management of the material, ensures that the material is handled in environmentally safe manner and that material could be sold and reused to create additional revenue for the two communities. By partnering, the two cities were able to achieve the economies of scale needed to make the project financially successful.

If policymakers want to support regional efforts, regulations and policies need to be clear in incentivizing the creation of regional partnerships. The State of North Carolina provides Merger/Regionalization Feasibility grants to support utilities as they study the advantages of regional economies of scale in management, access to capital, and capacity of water and wastewater treatment facilities. This program enables entities to investigate the feasibility of voluntary merger/regionalization options.

The state of Kentucky has a bold vision for the regional delivery of drinking water and wastewater. In 2000, the Kentucky enacted legislation to promote regional cooperation and water system consolidation with a goal of connecting every resident to public drinking water and wastewater services. Senate Bill 409 established community-based planning for drinking water infrastructure statewide under the direction of the Kentucky Infrastructure Authority (KIA). KIA serves as a clearinghouse for federal and state funding of drinking water projects, including the SRF program, as well as state grant and loan programs authorized by the Kentucky Legislature. Additionally, Kentucky established 15 regional water planning and management councils. Annually, each regional council identifies drinking water system needs in their area. Projects are developed for these areas using a 20-year planning horizon, and they are prioritized on a regional basis with input from water providers and elected officials. KIA then develops a statewide priority list, and projects are selected for funding (ASCE Kentucky 2019).

The Ohio Environmental Protection Agency (Ohio EPA) is making $50 million available at a 0 percent interest rate for regionalization projects through their Water Pollution Control Loan Fund (WPCLF) in fiscal year 2019. The focus of this interest rate discount is 1) to reduce the number of incapable/failing waste water treatment plants that have a permitted discharge or 2) to eliminate community-wide failing

household sewage treatment systems. In either case, the incapable system or community-wide unsewered systems must be decommissioned (Ohio EPA 2018). Additionally, the Ohio EPA intends to direct approximately $15 million in principal forgiveness funds to regionalization projects in 2019. A maximum of $4 million in principal forgiveness will be available for each regionalization project. Zero percent interest loans will be available for the balance of the project.

As water consumption falls, utilities are positioning themselves for the future and focused on expanding their nonrate revenue. In its 2017 annual report, Louisville Water highlighted its focus on finding alternative sources of revenue and expanding wholesale water sales to reduce the fiscal impacts of falling water consumption. A small but important part of additional revenue came from a new five-year contract with HomeServe USA, comprising a five-year period for home warranty services and bringing in additional annual revenue estimated at $900,000.

Utilities are investing in energy efficiency to reduce overall operations cost and potentially lessen the burden on ratepayers. One of the most effective ways to reduce overall operating costs is through investments in energy-efficiency measures that through upfront capital investments can produce long-term savings through a reduction of energy consumption. Electricity use accounts for 20 to 40 percent of the operating budgets for wastewater utilities and approximately 80 percent of drinking water processing and distribution costs (EPA 2013).

For utilities, this can mean reducing nonrevenue water (water that is lost in the distribution system); focusing on energy-efficiency measures; and capturing and reusing the nutrients, energy, and water collected at wastewater treatment plants). For example, Philadelphia Water Department's Utility Wide Strategic Energy Plan looks to maintain a stable energy footprint by increasing energy efficiency at their facilities, reducing greenhouse gas emissions by 50 percent by 2030, and increasing renewable energy generation and resource recovery at their facilities through anaerobic digestion of waste sludge (PWD 2017).

Stevens Point municipal wastewater utility has realized 90 percent savings in their energy costs by replacing air compressors with newer, more efficient models as well as installing a water-to-water heat exchanger, which allows methane-generated hot water to be utilized to heat three of their buildings.

Cost savings can also be found by improving the efficiencies for individual homeowners within the utility's service delivery, many times through customer assistance programs. These programs focus on conservation education, water-saving devices, and financial assistance with leak repairs (National Consumer Law Center 2014). In the NEORSD, some customer service programs are provided by a third party. In addition to providing water utility support, these programs offer customers additional wraparound services that connect them with energy and water conservation programs. These services include replacing leaking or running toilets and faucets, installing home weatherization equipment, and undertaking other energy-efficiency measures. These programs provide additional long-term savings to their customers through a reduction in overall water consumption.

Utilities can manage costs through smart asset management. In Camden, the CCMUA has focused on keeping rates affordable for all through cost efficiencies and proper asset management that maximizes preventative maintenance and timely replacement of capital equipment. This has resulted in a reduction in rates of over 40 percent (in inflation-adjusted dollars) over the past 23 years.

In Grand Rapids, the Water Resource Recovery Facility (WRRF) is facing increasing loads due to the growth in industrial users' discharges (particularly from the robust growth of the beer brewing industry). To address this issue, the City is investing in a local pipeline that will be available for surcharge for customers that manages flow at peak times. Additionally, the City has built a biodigester system that will take the methane produced for the biodigester and use it to power some of the City's buildings. The project cost approximately $38 million, but this will not impact rates. According to the City, the project is expected to reduce operating costs of the WRRF, lowering solids volumes by 20 percent, producing electricity savings of $600,000, and allow for some heat recovery The operating cost reductions will be slightly higher than the cost of the system (Grand Rapids 2019).

Organizational leadership is critical to utilities' success. One of the traits that each of the interviewed utilities PSC shared was leadership and vision of the organization. For example, leadership at the NEORSD was focused on diversity, equity, and inclusion efforts as part of their effort to ensure the utility reflected the makeup of the region it served. As explained in its 2017 Statewide Water and Wastewater Infrastructure Master Plan, the North Carolina Water Infrastructure Authority noted: "The long-term viability of any critical infrastructure system, no matter how resilient and sustainable it is, will ultimately rely on the human and organizational stewardship the infrastructure system receives."

Next Steps

As discussed earlier in the report, this work will serve as the basis of discussion for a group of Water Fellows, brought together by Michigan State University, to discuss water infrastructure and water utility policy recommendations. The recommendations will be shared with policymakers in Michigan as a suite of ways infrastructure investments could be supported and accelerate in the state.

Appendix A: Case Studies

PSC researched seven utilities across the nation, identifying how each utility's business model was designed and deployed to support one or more of the following attributes: sustainable rate design, customer assistance programs, environmental justice, regional collaboration, efficiency, stormwater management, asset management planning, and internal leadership.

Camden County Municipal Utility Authority

Camden County, New Jersey

Introduction

The Camden County Municipal Utility Authority is located in Camden County, New Jersey along the Delaware River. The county consists of 226 square miles and 37 local municipalities (CCMUA n.d.c). The county has over 500,000 residents, according to the 2017 American Community Survey (ACS) estimates, with approximately 15 percent of residents living in the city of Camden (U.S. Census Bureau. n.d.a). The CCMUA was originally chosen due to its leadership in rate design and consolidation, but during our research, PSC also found that Camden County is also a leader in environmental justice issues. Each priority research topic is discussed in more detail below.

Governance Structure

The CCMUA is a public authority that was established by the Camden County Board of Chosen Freeholders in 1972. The authority was created to plan for and treat wastewater within the county in compliance with the Federal Clean Water Act (CCMUA n.d.b). Nine commissioners oversee the authority, which acts as an autonomous entity, separate from county government. The CCMUA commissioners are appointed by the county freeholders, who, in turn, appoint the authority's executive director. The authority primarily uses the New Jersey State Revolving Fund (SRF) in combination with rate revenues to support the total capital, operating, and maintenance costs of the utility. The CCMUA will occasionally bond for smaller capital projects only if there is an immediate need to be met where the SRF loan process would not provide funding in time (CCMUA, pers. comm. 2019). The CCMUA owns and maintains the treatment facility in Camden County and the local municipalities own the 135 miles of pipes and 27 pump stations which convey the water to the plant (CCMUA n.d.c). A snapshot of the CCMUA is shown in Exhibit 3 below:

EXHIBIT 3. CCMUA Snapshot

Metrics	Figures
Drinking water (gallons per day, or gpd)	N/A
Sewer treatment (gpd)	58 million
Population served (people)	500,000
Rate and fee revenue	$84,011,697
Other revenue	$6,212,979
Capital construction	$11,768,556
Cost of service provision	$38,030,058
Long-term liabilities	$152,775,701
Total miles of infrastructure	Sewer: 135

Metrics	Figures
Sewer rates (quarterly)	$88 per household
Water rates	N/A
Stormwater fees	N/A

Sources: CCMUA 2018; CCMUA n.d.c; CCMUA n.d.d

Sustainable Rate Design

The CCMUA charges a flat rate of $220 per household per year in Camden City and $352 per household per year in the surrounding county areas (CCMUA n.d.d; Kricun 2019). City residents are charged a lower rate because they do not benefit from the conveyance infrastructure necessary to bring wastewater from other portions of the service region to the treatment plant; therefore, they do not pay for the infrastructure (CCMUA, pers. comm. 2019). The flat rate has only increased by $15 since 1996, increasing at substantially less than the rate of inflation. If the 1996 fee of $337 increased at only the rate of inflation, the CCMUA would currently charge customers approximately $549 in 2019 (Bureau of Labor Statistics n.d.; Kricun 2019). The CCMUA has been able to maintain stable rates primarily by choosing projects where the annual debt service is lower than the operation and maintenance cost savings. Two main factors contribute to this scenario:

1. The authority regularly upgrades its equipment to lessen maintenance costs and maximize efficiency.
2. The authority is able to take advantage of a robust SRF with a low interest rate to perform capital upgrades.

The New Jersey SRF loan funding is provided by two sources, the New Jersey Department of Environmental Protection and the New Jersey Environmental Infrastructure Trust. The combination of these two funding sources and their individual funding and interest rate stipulations allows the overall interest rate for SRF loans to fall between one-quarter to one-half of the market rate (State of New Jersey n.d.).

Customer Assistance Programs

As mentioned above, Camden City pays a lower flat rate than the surrounding county. This is because the city receives a benefit for hosting the wastewater treatment plant, titled the “host community benefit”. While the State of New Jersey does not allow water utilities to consider rates based on affordability because these rates may be discriminatory, the host community benefit discount is allowable because the basis for the rate design is not water affordability. The CCMUA made the case that a significant portion of the operating and capital costs do not benefit Camden City, so the city should not be billed for these costs. A secondary impetus for lowering the city treatment rate was income disparity between the city and the county (CCMUA, pers. comm. 2019). The county of Camden has a household median income of approximately $65,000, and the median income for residents in the city of Camden is approximately $26,000 (U.S. Census Bureau n.d.a). The host community benefit allows the CCMUA to charge city residents less for wastewater treatment (CCMUA, pers. comm. 2019).

Regional Collaboration

When the CCMUA was originally created, Camden County contained over 50 different wastewater treatment plants. Each town ran and maintained its own individual treatment plant, and multiple municipalities had more than one plant (CCMUA, pers. comm. 2019). Before the current regional

structure was put in place, the local municipal treatment plants were processing more wastewater than they were originally designed for, discharging 45 million gallons per day of inadequately treated sewage into the natural bodies of water in Camden County (CCMUA n.d.c). In 1986, the region's wastewater infrastructure began to consolidate, eliminating all individual municipal treatment plants except the one located in the city of Camden. This plant became the single treatment plant for the county. It was upgraded, along with the county conveyance infrastructure, in order to process the additional flow from the entire service region (CCMUA, pers. comm. 2019). The CCMUA now treats 58 million gallons of sewage per day at the Camden plant and has reduced bacterial pollution by 90 to 95 percent since the regional wastewater facility began operations (CCMUA n.d.c).

Environmental Justice

The CCMUA has two primary goals concerning environmental justice: (1) to lower utility costs for lower income communities and (2) to provide community service for the city of Camden. The CCMUA continues to push for the state to allow permissive water affordability rates, but in the current legal system, the authority was able to lower rates in the city of Camden through the host community benefit; this allows the utility to support one of the region's most vulnerable communities. Additionally, the CCMUA provides multiple community services projects to the city through the Camden Collaborative Initiative (CCI). The CCI is a partnership between governmental, nonprofit, private, and community-based organizations to address environmental issues in Camden City (CCMUA n.d.a). To date, the CCI has conserved 100 acres of land in the city, created five riverfront parks, planted 60 rain gardens, planted 5,000 trees, set up 200 rain barrels, and created 200 green jobs for park and garden maintenance (Kricun 2019).

Key Findings

Throughout our research, PSC identified actions that contributed to the success of each utility that was interviewed. The following are the key findings from the CCMUA:

- The CCMUA has kept wastewater rates stable since the mid-1990s by generating operating efficiencies and taking advantage of a relatively low-interest SRF.
- Although state statute prohibits the low-income customer assistance programs funded by rate revenue, the authority was able to create a water affordability program for some of its low-income residents through a host community agreement benefit agreement.
- Regional consolidation allowed the CCMUA to combine a number of struggling wastewater treatment systems within the county into an efficient regionalized system. The CCMUA is now able to generate operating efficiencies throughout the system that enable them to keep utility rates low, benefiting customers of the system.

Grand Rapids Municipal Water Department

Grand Rapids, Michigan

Introduction

Grand Rapids is located within Kent County in the western portion of Michigan's Lower Peninsula. The city has a population of approximately 200,000 people and covers a geographic region of 44.4 square miles (U.S. Census Bureau n.d.b). The City of Grand Rapids provides water services to various municipalities in Kent and Ottawa Counties, serving approximately 280,000 customers over 137 square miles in total (City of Grand Rapids n.d.d). The City also provides more limited wastewater services throughout the same service region. The City of Grand Rapids was primarily chosen as a region of study due to planned and existing energy-efficiency technology that reduces overall utility costs. Grand Rapids also has a unique view on regionalization and shared service agreements with other neighboring municipalities. Each priority research topic is discussed in more detail below.

Governance Structure

Drinking water and wastewater treatment services are provided by the City of Grand Rapids, and the utility services operate as enterprise funds (City of Grand Rapids, pers. comm. 2019). The Grand Rapids municipal water utility has a utility advisory board (UAB), which reviews the water system rates, policies, and additional fees before making recommendations to the Grand Rapids City Commission. The commission then has the decision-making authority to approve or decline the UAB's recommendations. Each of the seven customer communities[3] that receive water or wastewater treatment services from the City of Grand Rapids as well as the City itself are represented on the UAB. Wholesale communities[4] are not represented on the board, and contracts for rates are negotiated on a case-by-case basis (City of Grand Rapids n.d.d).

Customer rates are evaluated on an annual basis and a water/sewer rate study report is generated with recommendations for future rate increases. The UAB takes into account operation, maintenance, capital improvement costs, and a three-year average of billed volume use when generating water and wastewater treatment rates (City of Grand Rapids November 2018). In 1998, the State of Michigan issued a mandate to the City of Grand Rapids to eliminate all combined sewer overflows (CSOs) by 2019. Project construction began in 1991 on a sewer improvement project designed to eliminate all CSOs and was completed in 2015, four years before the state-mandated deadline. In order to complete this project, the City bonded heavily during the economic downturn beginning in 2008, due to the decreased cost of bonding during the recession (City of Grand Rapids n.d.c; City of Grand Rapids pers. comm. 2019). Infrastructure construction on the sewer improvement project also generated jobs during the recession for the City of Grand Rapids and the surrounding communities. The recession allowed the city to utilize relatively low-cost bond options, but even during normal economic conditions, the city utility generally prefers to use municipal bonds instead of the SRF. The is primarily because the City can access bonds at

[3] Customer communities: areas outside of the Grand Rapids city limits that the water system serves.

[4] Wholesale communities: municipalities that the City of Grand Rapids sells water to who mange their resident's water bills and accounts.

interest rates similar to the SRF and avoid the additional costs and paperwork associated with submitting an adequate application for SRF funding. Also, the city projects do not fit into the current scoring priorities for the SRF (not disadvantaged or large enough projects) (City of Grand Rapids, pers. comm. 2019). A snapshot of the City of Grand Rapids is shown in Exhibit 4 below:

EXHIBIT 4. Grand Rapids Snapshot

Metrics	Figures
Drinking water (gpd)	33.1 million
Sewer treatment (gpd)	40.3 million
Population served (people)	280,000
Rate and fee revenue	$99,978,140
Other revenue	$1,531,538
Capital construction	$24,004,642*
Cost of service provision	$49,575,337
Long-term liabilities	$447,823,681*
Total miles of infrastructure	Sewer: 915 miles Water: 1,178 miles
Sewer rates (monthly)	Service charge based on meter size plus a commodity charge per million gallons
Water rates (monthly)	Service charge based on meter size plus a commodity charge per 100 ft3
Stormwater fees	N/A

*Includes all business-type activities including water and sewer systems (81.44 percent of business-type expenses), parking services (16.46 percent of business-type expenses), and other services (2.10 percent of business-type expenses).
Sources: City of Grand Rapids December 13, 2018; City of Grand Rapids, n.d.d.

Consolidation

The Grand Rapids water system provides drinking water and wastewater treatment services to multiple retail and wholesale customers. The City often partners with other municipalities in the region to provide water services or to implement specific projects. For example, Grand Rapids partnered with the City of Wyoming, Michigan, to create an authority to treat biosolids for the two communities. The Grand Valley Regional Biosolids Authority was created to generate efficiencies between the two systems while maintaining treatment capacity. Both cities were expecting large investments into their biosolid facilities due to regulatory changes and aging infrastructure (City of Grand Rapids n.d.a). After the authority was created, construction included storage tanks and a dewatering facility at the Grand Rapids treatment plant and the installation of two pipelines from Wyoming to Grand Rapids, allowing Wyoming to pump a portion of its waste to the upgraded treatment plant in Grand Rapids (McDilda 2010).

The City of Grand Rapids makes a conscious effort to look at future planning around wastewater treatment with a regional perspective to identify where efficiencies can be generated for the region. Grand Rapids is not necessarily seeking out other municipal utilities to consolidate with but expands where and when such a move makes sense and offers solutions to neighboring communities. Grand Rapids realizes that it is not sustainable for each municipality in the region to provide its own drinking water and treat its own wastewater. Because of this, the City looks at the bigger regional problems and provides service on a regional level where feasible (e.g., PFAS treatment and information technology sharing).

Sanitary and Stormwater Management

The City of Grand Rapids is continually looking for efficiencies to lower system operating costs. The current wastewater treatment plant functions using real-time controls for energy efficiency. Ammonia levels are measured at the end of the treatment process, and blower capacity is adjusted accordingly, generating energy efficiencies by reducing consumption. The City is also constructing a biodigester that will tie into the current wastewater treatment plant. Waste will be recycled through the biodigester in order to produce energy that will be used to power a portion of the treatment plant's infrastructure (Watson 2017). There are also plans to take gases from the biodigester and put them through a cleaning system in order to produce a clean power source for compressed natural gas vehicles and generate renewable identification numbers[5] (RINs) (U.S. EPA n.d). Beyond the energy sector, Grand Rapids also strives to generate efficiencies with other capital improvement projects as well through integrated asset management. Through experience, the utility has learned that when completing large capital projects, such replacing pipes, there are often other costs associated with each project. The City often looks for efficiencies when completing capital projects by looking at the other associated cost such as roads, gutters, drains, and vegetation replacement (City of Grand Rapids, pers. comm. 2019). By combining capital projects with other planned infrastructure upgrades, the City of Grand Rapids can realize efficiency savings.

Key Findings

Throughout our research, PSC noticed key findings that contribute to the success of each utility that was interviewed. The following are the key findings from the City of Grand Rapids municipal water utility:

- The Grand Rapids municipal water utility does not utilize the SRF because the costs of applying outweigh the benefit of the loan when compared to municipal bonds.
- The utility is constantly looking for ways to generate cost efficiencies throughout its service region. This ranges from electricity savings and power generation to efficiently planned capital improvement projects.
- Grand Rapids looks for regional consolidation opportunities to partner with additional municipalities in or around its service region. The utility realizes that it is not efficient for each local municipality to provide water services to such a small geographic region.
- Integrated asset management allows the City to evaluate all infrastructure within the city and ensure maintenance and replacement of infrastructure is aligned for maximum efficiency and savings.

[5] RINs are credits used for compliance with the EPA's Renewable Fuel Standards Program.

Louisville Water Company

Louisville, Kentucky

Introduction

The City of Louisville is located in the northern region of Kentucky along the Indiana border. The Louisville Metro area consists of over 600,000 people in 325 square miles bordering the Ohio River (U.S. Census Bureau n.d.c). Louisville Water Company began water operations in 1860 and provides water to the City of Louisville and portions of Bullitt, Hardin, Nelson, Oldham, Shelby, and Spencer Counties in the surrounding areas. Louisville Water was chosen due to its top-tier water provision and as an example of regional service consolidation. Each priority research topic is discussed in more detail below.

Governance Structure

Louisville Water is governed by a six-member Board of Water Works. Board members are appointed by the Mayor of Louisville, and the mayor also serves as an ex officio member on the board. Board members serve staggered four-year terms with no limits, but no more than three of the appointed members may be from the same political party. The company is a component of the Louisville/Jefferson County metro government. Although a legally separate entity, the metro government is the sole shareholder of Louisville Water stock, allowing the company to be represented as a component unit of the municipal government. Louisville Water provides water and fire services in lieu of taxes and operates as an enterprise fund (Louisville Water n.d.c). The company's finances are reported a business-type activity for the municipal government in accordance with enterprise fund accounting. Louisville Water provides 120 million gallons of water per day through 4,200 total miles of pipe and continues to expand its service region through partnering with neighboring communities. Customer rates are generated using a monthly service charge based on meter size in addition to a monthly tiered commodity charge based on use per 1,000 gallons. An additional service area charge may also be added to a customer's bill if water must be delivered at a higher elevation (Louisville Water 2018). A snapshot of Louisville Water is shown in Exhibit 5 below:

EXHIBIT 5. Louisville Water Snapshot

Metrics	Figures
Drinking water (gpd)	117 million
Sewer treatment (gpd)	N/A
Population served (people)	~1 million
Water revenue	$167,862,000*
Other revenue	$16,703,000
Capital construction	$90,987,337
Cost of service provision	$74,029,418
Long-term liabilities	$358,650,143
Total miles of infrastructure	4,200
Sewer rates	N/A

Metrics	Figures
Water rates (monthly)	Retail: a monthly service charge based on meter size plus a tiered commodity charge per 1,000 gallons and an additional elevated surface surcharge if applicable Wholesale: a monthly service charge based on meter size plus $1.97 per thousand gallons up to 150 million gallons and an elevated surface surcharge if applicable.
Stormwater Fees	N/A

*Louisville Water generates additional revenue through fees not reflected in this figure
Sources: Louisville Water 2018; Louisville Water n.d.c

Service Collaboration

Louisville Water has partnered with the Louisville Metropolitan Sewer District (MSD) to create the One Water effort with the purpose of generating efficiencies while increasing revenues and level of service. The One Water Advisory Committee consists of executive leadership from both utilities who operate under an interlocal agreement to implement shared service opportunities. A One Water board oversees the effort and is made up of two representatives from Louisville Water, two from MSD, and one from the Louisville Metro Mayor's Office. Louisville Water and MSD share staff and collaborate in six functional areas: IT staff and training, fleet administration, customer service, procurement, communications and education, (Louisville Water n.d.c). The two entities also share a combined water bill for water service and sewer charges. MSD and Louisville continue to remain separate entities but share assets to generate efficiencies and identify revenue opportunities. (MSD n.d.). This relationship began when Mayor Greg Fischer created a seven-member advisory committee specifically designed to examine the future of the MSD in conjunction with Louisville Water. The Louisville Utility and Public Works Advisory Group, as the committee was named, examined a variety of factors, including industry trends in other cities and potential partnerships between MSD and Louisville Water. The task force report led to the One Water effort described above (Louisville Water n.d.b).

Regional Partnerships

Since Louisville Water's inception in 1860, the company has expanded its service region to provide water to not only the City of Louisville, but six additional surrounding counties. Louisville Water is also a contract operator for water treatment facilities outside of its retail service area. The company continually looks for opportunities to provide regional service and collaborate with municipal partners. For example, in May 2017, Louisville Water began delivering water to Hardin County Water District No. 2, which marked the completion of a collaborative project to provide wholesale water to the county. Louisville installed four miles of water main through Bullitt County to connect to the 11-mile connection built off of the district's existing infrastructure to the Hardin-Bullitt county line. A pumping station was also constructed as part of the project. The additional infrastructure that was constructed to connect Louisville Water to Hardin County has increased the level of service available for Bullitt County, generating project efficiencies. In addition, in 2019, Louisville Water will complete a pipeline expansion to the City of Shelbyville, located east of Louisville, which mirrors its previous efforts with Hardin (Louisville Water n.d.c). Revenue from wholesale water in 2017 was $4.9 million and has helped to offset the decline of retail consumption.

Alternative Revenue

Like many utilities, Louisville Water has been experiencing a trend of decreasing water sales. In the past 20 years, water consumption has declined 20% while the number of customers has increased 20%. In 2017, water consumption fell by 43 million gallons, marking the lowest overall regional water consumption since 1969. Louisville Water is focused on potential solutions to water usage decline, including regionalization and the addition of alternative revenue streams. Regionalization focuses on wholesale water sales to additional geographic regions, which rose by 8.1 percent in 2017. Other operating revenue focuses on generating additional service revenue, and now accounts for $16.7 million in revenue. Currently, the company has a partnership with HomeServe for emergency repair services and is preparing to pilot a provisional patented water fountain filter. Louisville Water has also increased its water rates to help offset decreased water use (Louisville Water n.d.c).

Rate Affordability

Louisville Water maintains one of the lowest water rates in the country compared to many other large metro areas—primarily through alternative rate development and regionalization opportunities. In addition, Louisville Water offers a customer assistance program to help ratepayers who may not be able to afford their water or sewer bill (Louisville Water n.d.a). The Louisville Water Foundation granted nearly $269,000 to customers in need of assistance in 2018 (Louisville Water Company pers. comm. 2019). The foundation was created in 2014 as a separate nonprofit entity and continues to be partially funded through Louisville Water (Louisville Water. n.d.c). In addition, the assistance program is also funded by direct grants, MSD, and HomeServe USA, an independent company that provides emergency home repair services in the region (HomeServe n.d.). The program is administered through three organizations: the Association of Community Ministries in Jefferson County, the American Red Cross in Oldham County, and the Multi-Purpose Community Action Agency in Bullitt County. Customers are eligible for up to $100 off their water or sewer bill, but the full balance of the bill must be paid. The program administration organizations often use matching funds to assist customers whose financial need exceeds $100 (Louisville Water n.d.a).

Marketing "Liquid Assets"

Louisville Water markets water as a "liquid asset" for business throughout the company's service region and uses this campaign to promote economic development in Louisville. Fifteen bourbon distillers currently use Louisville's water in their production process, and the company partners with distilleries and economic development groups to highlight its connection to the community's success (Louisville Water Company pers. comm. 2019). Often, Louisville Water will provide water during economic development trip to cities like Atlanta, Georgia and Dallas, Texas and serve it alongside a Kentucky bourbon. Louisville Water has a long history of promoting local business through water provision in the area, and distillers have been using Louisville Water as far back as 1880. Louisville Water participates in community marketing activities to support local businesses, including bourbon-related events and other attractions where water is served. Louisville Water also advertises the company's award-winning water through Louisville pure tap®, the company's trademarked tap water signature customer education effort. This includes a sponsored 5k run and 90 branded water fountains and bottle filling stations throughout the city, many in strategic locations like the airport, convention center, distilleries and hotels (Louisville Water n.d.c).

Key Findings

Throughout our research, PSC identified actions that contributed to the success of each utility that was interviewed. The following are the key findings from Louisville Water:

- Louisville Water is consistently looking for ways to generate cost saving efficiencies. This is one of the primary reasons that the company began the One Water effort to share services and identify revenue opportunities with Louisville MSD.
- Louisville Water generates increased revenue through regionalization by providing wholesale water to a growing number of regional municipalities. The company increased their regionalization efforts more recently due to declining water sales—leading to an increased need to generate additional revenue through unconventional means.
- Louisville Water has made a conscious effort to promote economic development and business growth within its community and is often an active partner in business where drinking water plays a key role. The company is also exploring potential revenue generating opportunities in other geographic regions, which aligns with its strategy to create unconventional revenue sources.

Northeast Ohio Regional Sewer District

Northeast Ohio

Introduction

The Northeast Ohio Regional Sewer District is located along the southern shoreline of Lake Erie centered around Cleveland, Ohio. The district provides wastewater treatment to nearly all the city of Cleveland and all or portions of 61 suburban communities in Cuyahoga, Lake, Lorain and Summit Counites. The service area includes more than 350 square miles, 330 miles of sewer, and a 420-mile regional stormwater system, making the district the largest wastewater treatment provider in the state of Ohio (NEORSD n.d.b). The NEORSD maintains three treatment plants serving more than one million residents in Lake Erie drainage basin (NEORSD n.d.e; NEORSD, pers. com. 2019). The NEORSD was chosen as a case study because of its regional approach, its stormwater management program and its overall approach to wastewater management. The NEORSD also offers a variety of water affordability programs to meet the needs of its customers. Each priority research topic is discussed in more detail below.

Governance Structure

The NEORSD was created in 1972 via a court order from the Cuyahoga County Court of Common Pleas in response to local influences and declining city-owned treatment facilities. The district was created as a subdivision of the State of Ohio in accordance with Chapter 6119 of the Ohio Revised Code. (NEORSD 2017; State of Ohio 1971). The district's service region crosses municipal boundaries; it is similar to a conventional school district or library board in that it operates outside of a single government entity (NEORSD, pers. comm. 2019). Construction of new interceptors has allowed the district to enlarge its service area and provide wastewater treatment to additional communities as municipalities take their individual treatment plants offline and turn them into pumping stations. This has allowed the district to grow from its original 38 municipalities and the City of Cleveland to the 62 member communities it serves today (NEORSD 2017). The NEORSD consists of two subdistricts: the City of Cleveland and the areas of the district outside of the city. The district is governed by seven trustees who each serve a five-year term and are appointed by various city or county officials as follows:

- Two are appointed by the mayor of the City of Cleveland
- Two are appointed by the Suburban Council of Governments, which comprises representatives of all the suburban communities in the NEORSD service area
- One is appointed by the Cuyahoga County executive
- One is appointed by the authority subdistrict with the greatest sewage flow; currently the mayor of the City of Cleveland
- One is appointed by the authority of the subdistrict with the greatest population; currently the Suburban Council of Governments (NEORSD n.d.f).

The district relies on four primary funding sources for capital improvement projects, operational costs, and maintenance costs: a traditional wastewater treatment rate, a stormwater fee, municipal bonds, and loans through the Ohio State Revolving Fund (NEORSD, pers. comm. 2019). The traditional sanitary treatment rate is set by a seven-member board of trustees and currently charges a monthly rate based on actual water consumption in millions of cubic feet (MCF)[6] plus a monthly base charge. Since 2016, rates

[6]MCF is equal to 1,000 ft^3 or 7,480 gallons.

have been increasing by approximately 7 percent[7] on an annual basis, an upward trend scheduled to continue until at least 2021.

The NEORSD conducts a long-range financing plan for operating and capital budgets. The five-year plan for the period between 2017 and 2022 includes nearly $1.5 billion in capital project expenditures. A snapshot of the NEORSD is shown in Exhibit 6 below:

EXHIBIT 6. NEORSD Snapshot

Metrics	Figures
Drinking water (gpd)	N/A
Sewer treatment (gpd)	246.4 million
Population served (people)	1 million
Rate and fee revenue	$341,312,962
Other revenue	$2,567,476
Capital construction	$744,323,178
Cost of service provision	$250,747,432
Long-term liabilities	Municipal bond debt $1,084,356,169 Ohio Water Pollution Control Loan Fund: $515,685,142 Net Pension liability: $77,659,205 Other Long-Term Liabilities: 400,000
Total miles of infrastructure	Sewer: 330 miles Stormwater: 420 miles
Sewer rates (monthly)	Base Charge: $6.35 City of Cleveland: $94.15 per MCF Suburbs: $95.05 per MCF
Water rates	N/A
Stormwater fees	Tiered rate structure based on ft^2 of impervious surface

Sources: NEORSD 2018; NEORSD n.d.b; NEORSD n.d.g

Stormwater Management

The NEORSD also charges a stormwater utility fee to fund its Regional Stormwater Management Program, which focuses on maintaining and upgrading the regional stormwater system (culverts, pipes and stream sections), constructing projects to address flooding, and implementing a community cost-share program to support community-specific projects. The stormwater fee is charged on a monthly basis and is calculated using the square footage of impervious surface located on a property unit. The 2018 and 2019 fee schedules are identified in Exhibit 7 (NEORSD n.d.g).

[7]This increase is based on an annual increase in both the monthly base charge and the per MCF charge for sanitary treatment. Rates also differ slightly based on subdistrict, where the City of Cleveland has lower rates by $1.05 on average for the per MCF rate. This trend is decreasing on an annual basis, with a planned difference of .30 cents in 2021, down from $1.80 in 2016.

EXHIBIT 7. 2018–2019 NEORSD Stormwater Fee Schedule

Type of Property		Impervious Surface Area (ft^2)*	2018	2019
Residential	Tier 1	Less than 2,000	$3.09	$3.09
	Tier 2/Base	2,000–3,999	$5.15	$5.15
	Tier 3	4,000 or more	$9.27	$9.27
	Homestead	Any size	$2.07	$2.07
Nonresidential		Per ERU[8], or 3,000 ft^2	$5.15	$5.15

Source: NEORSD n.d.g

Property owners are encouraged to make changes or improvements to their property that reduce the amount of runoff leaving their property. Homeowners who install rain barrels, plant rain gardens, or do other repairs are eligible for a fee credit or reduction in what they are charged.

The stormwater fee was originally implemented in 2010 by the board of trustees and was upheld in the Ohio Supreme Court in September 2015, based on the definition of stormwater in the same act that created the district. Wastewater is defined as both stormwater and sewage in Ohio law, giving the NEORSD the jurisdiction to implement a fee and provide services related to stormwater (NEORSD 2017; State of Ohio 1971).

Water Affordability Programs

The NEORSD has a variety of water affordability programs for low-income customers or customers who need one-time support. The homestead program provides a 40 percent rate reduction for customers aged 65 or older whose annual household income is less than $33,500. In place of the homestead program, customers can received the same 40 percent rate reduction through the affordability program if their annual income is at or below 200 percent of the federal poverty rate. To support customers who have been impacted by a major life event, the district offers financial assistance of 50 percent of a customer's sewer bill, for up to $300 total, through their Crisis Assistance Program.

NEORSD uses a third party for a portion of the service region to provide additional home repair services. As part of this service, homeowners may also be eligible for sewer or plumbing repair once every two years. The plumbing/sewer repair program is income based and supports customers in the district's service area with emergency repair needs. This service also connects homeowners with other wraparound services from other utility providers, such as energy and weatherization services (e.g., home insulation or refrigerator replacement). This service connects homeowners with the basic home repairs that not only make the home more efficient but save both the utility and the homeowner money in the long run by eliminating costly leaks. Owner-occupied one-, two-, three-, and four-family residential units are eligible for the Summer Sprinkling Program. This program uses the customers average winter water use rates for the summer billing cycle to compensate for home water use that does not contribute to the home's sewer system (NEORSD n.d.c).

[8] Equivalent residential unit, equal to 2,600 ft^2.

Innovative Sanitary Management

In 2010, the NEORSD entered in to a CSO Long-Term Control Plan with the U.S. EPA. This plan is being implemented through Project Clean Lake, a 25-year project that is predicted to reduce the total volume of raw sewage discharged into Lake Erie from 4.5 billion gallons to 494 million gallons on an annual basis, at a cost of approximately $3 billion. The program includes significant storage and treatment plant enhancements, including increasing treatment capacities and lower-energy treatment technology. The program will also fund significant green infrastructure investments with the goal of reducing the long-term costs of the program while enhancing neighborhoods and rebuilding communities (NEORSD n.d.a). The project is scheduled for completion in 2036 and will capture 98 percent of wet weather flows in the combined sewer system (NEORSD n.d.a).

Key Findings

Throughout our research, PSC identified key actions that contributed to the success of each utility that was interviewed. The following are the key findings from the NEORSD:

- Ohio state law allows the sewer district to charge a fee to address stormwater concerns throughout its service area. However, the fee was difficult to implement and eventually went to the Ohio Supreme Court to be confirmed.
- The NEORSD currently provides five water affordability programs that align with multiple customer needs. This includes low-income and senior customers and customers struggling with one-time life events. The Summer Sprinkling Program is available to residents based on household size.
- The NEORSD is a regional collaborative set up outside of the county or municipal governments with the single goal of wastewater treatment throughout northeast Ohio. This allows the district to focus on its mission and goals absent of other municipal government concerns.
- The NEORSD cites a competent leadership team as a primary component of the utility's success and growth.
- The NEORSD is currently focusing on employee attraction and retention best practices, including diversity and inclusion as well as career path and succession planning. These aspects are the key to any well-run organization.

Philadelphia Water Department

Philadelphia, Pennsylvania

Introduction

The city of Philadelphia is located along the southeastern portion of the Pennsylvania state line, directly across the Delaware River from Camden County, New Jersey. The City of Philadelphia Water Department (PWD) supplies water to the City of Philadelphia and portions of Bucks County, directly northeast of Philadelphia. PWD also provides wastewater services to the city and ten additional municipalities and authorities throughout Montgomery, Delaware, and Buck Counties. The water and wastewater systems serve approximately 1.7 million and 2.2 million people respectively (PWD n.d.a). In addition to water provision and wastewater treatment services, the PWD also charges each property within the city a stormwater management fee to build and maintain the public stormwater infrastructure (PWD n.d.b). PWD began providing water system service in 1801 as a city utility and the drinking water service area has grown to approximately 130 square miles. The wastewater service area totals 360 square miles distributed between the city and the surrounding suburban areas. The city of Philadelphia, Pennsylvania was chosen as a region of study due to its innovative income-based water rate structure and the recently adopted stormwater rate design. (PWD n.d.a).

Governance Structure

The PWD is a municipal water utility owned and operated by the City of Philadelphia. The department is responsible for maintaining the city's water supply and stormwater system, as well as maintaining the city's sewage system and wastewater treatment plants. As stated in the city charter, an independent ratemaking body is responsible for determining and regulating the service region's rates for drinking, sewer and stormwater services. The Water Rate Board was established in 2014 and replaced the PWD as the rate-setting entity for the department's service region. The City's water enterprise fund is used to provide water, sewer, and stormwater services on a user charge basis (City of Philadelphia 2018). PWD is a cost-of-service utility, meaning that the total system revenue requirements are allocated to users of the system in proportion to services received. The Water Rate Board holds a process of meetings and hearings where both city officials and members of the public can provide input to generate adequate rates for the operation of the department (PWD n.d.e). Rate design and affordability programs are discussed later in this summary. A snapshot of the PWD is shown in Exhibit 8 below:

EXHIBIT 8. Philadelphia Water Snapshot

Metrics	Figures
Drinking water (gpd)	546 million
Sewer treatment (gpd)	Unavailable
Population served (people)	Water:1.7 Sewer: 2.2
Rate and fee revenue	$713,730,000
Other revenue	$12,642,000
Capital construction	$513,314,000
Cost of service provision	$427,424,000
Long-term liabilities	$1,929,647,000

Metrics	Figures
Total miles of infrastructure	Sewer: 3,657 Water: >3,000
Sewer rates (monthly)	Service charge based on type and size of the meter plus a tiered quantity charge based on use. An additional surcharge is added for wastewater above a pre-determined BOD and SS threshold.
Water rates (monthly)	Service charge based on type and size of the meter plus a tiered quantity charge based on use.
Stormwater fees	• Residential: Stormwater management fee of $13.73 plus a collections fee of $1.80 • Nonresidential: See Exhibit 9 below

Sources: PWD n.d.a; PWD n.d.d; City of Philadelphia 2018

Rate Structure

For drinking water, PWD collects a monthly service charge based on the size and type of the meter; it also collects a tiered quantity charge measured in MCF. Sewer charges are set up in the same manner, with an additional surcharge for wastewater received into the system based on excess of a predetermined levels of biochemical oxygen demand (BOD)[9] and suspended solids (SSs)[10]

The department also charges a stormwater management service fee with a billing and collection fee in the city of Philadelphia, which totals $15.53 for residential properties. Commercial property stormwater fees are charged based on the total gross surface area and impervious surface area for each property unit. The current rates as of September 1, 2018, are .701 cents per 500 square feet of property surface area, $5.304 per 500 square feet of impervious surface area, and a flat rate of $2.34 for billing and collection services. Fees are laid out in Exhibit 9 below (PWD n.d.c). The stormwater fee is used to maintain and upgrade the current stormwater infrastructure used to capture rainwater to decrease flooding and CSOs with the goal of decreasing pollution (PWD n.d.f).

EXHIBIT 9. City of Philadelphia Nonresidential Stormwater Rates

Effective Date	Gross Area ($/500 ft^2)	Impervious Area ($/500 ft^2)	Billing and Collections Fee
July 1, 2016	$0.61	$4.70	$2.88
July 1, 2017	$0.63	$4.91	$2.89
Sept. 1, 2018	$0.70	$5.30	$2.34

Sources: PWD n.d.b; PWD n.d.c

Affordability

In 2015, the City of Philadelphia decided they needed a new way to provide customer assistance programs to their low-income residents. Moving from traditional assistance programs that provided a rate discount or emergency shut-off help, in 2017 Philadelphia became the first municipality in the nation to offer a tiered assistance program (TAP) based on income. The program is unique in that bills for water, wastewater, and stormwater services are structured based on the individual household income rather than

9 BOD measures the amount of dissolved oxygen used by aerobic microorganisms when decomposing organic matter in water.

10 SSs are small solid particles that remain suspended in water.

usage. Low-income households at150 percent of the federal poverty line or lower can qualify for the program, which requires them to pay two to four percent of their total household income. Lowest-income bracket residents will have a minimum bill of $12 per month. Customers do not have be delinquent on their bills to apply and qualify. Additionally, customers who have a higher income, but have experienced a hardship, may still be eligible.

While customers are enrolled in TAP, payment may not be required on past due amounts and all past due amounts are suspended during program participation. After a customer has made 24 on-time full payments, prior penalties and past due amounts are waived.

Prelaunch estimates on revenue impact were estimated at $18 million for the 2018 fiscal year. Postlaunch revenue losses for fiscal year 2018 were estimated to be $3.9 million. TAP is being paid for via a surcharge on customers' water and wastewater bills (split 41/59 percent, respectively). In the first year of the program, 7,500 applications were submitted for the program, and 4,610 were enrolled in TAP. Combined, these customers owed over $15 million to the water department. Philadelphia estimates that 60,000 customers are eligible for the program.

Key Findings

- The Water Rate Board provides the customers of the water department to provide input when making changes to water, stormwater, or sewer rates within the city. This allows city departments to collaborate with the public in order to provide the citizens a voice in the process, but also generate adequate rates to cover the cost of water services.
- The stormwater fee provides the City of Philadelphia a funding stream to reduce pollution through decreasing flooding and CSOs.
- The Tiered Assistance Program is based on income, not consumption. The program allows for predictable charges for low-income household.

Stanly County Utilities

Stanly County, North Carolina

Introduction

Stanly County is located in the central eastern portion of North Carolina. The county consists of about 395 square miles, and is home to just over 60,000 people (U.S. Census Bureau n.d.d). Stanly County Utilities (SCU) is the primary provider of drinking water to the county and provides wastewater collection and treatment to certain portions of the region, with wastewater treatment facilities located in towns of Badin and Oakboro (SCU N.C. n.d.a). Stanly County was chosen as a region of study due to the relatively small size of the service population, as well as SCU's transition from dependence on the local units of government for funding into a full-cost pricing rate design.

Governance Structure

SCU is a municipally owned authority that currently operates as an enterprise fund. The county is governed by a seven-member commission, which also sets the annual water and sewer rates for SCU (Stanly County, N.C. n.d.a). SCU provides 1.5 million gallons of drinking water to more than 5,800 properties within Stanly County on a daily basis. The service region consists of three water systems: Stanly County, the Greater Badin Water and Sewer District, and the Piney Point Water District (Stanly County, N.C. n.d.b; Stanly County pers. comm. 2019). In addition to providing drinking water to the three-service region, SCU also provides wastewater treatment services to approximately 700 customers through 40 miles of conveyance infrastructure (SCU n.d.a). SCU strives to promote economic development throughout the community and expand the reach of the drinking and wastewater service regions on an annual basis (Stanly County, N.C. 2017; SCU, N.C. n.d.a).

The official acquisition policy reads as follows: "SCU will, as the opportunity arises, consider the acquisition of other water systems that can be incorporated into the SCU system" (Stanly County, N.C. 2005). While performing a rate study in 2005, SCU set a number of objectives, including using water and wastewater services as an incentive for economic development (U.S. EPA 2005). A snapshot of SCU is shown in Exhibit 10 below:

EXHIBIT 10. SCU Snapshot

Metrics	Figures
Drinking water (gpd)	>1.5 million
Sewer treatment (gpd)	985,626
Population served	Sewer: 700 customers Water: 5832 units
Rate and fee revenue	$4,488,195
Other revenue	$22,841
Capital construction	$5,928,537*
Cost of service provision	$4,222,773
Long-term liabilities	$4,512,567*
Total miles of infrastructure	Sewer: 40 Water: Unavailable
Sewer rates (monthly)	$8.19 per 1,000 gallons with a $16,38 minimum sewer charge

Metrics	Figures
Water rates (monthly)	Residential: • $23.03 for <2,000 gallons • $11.79 per 1,000 gallons >2,000
Stormwater fees	N/A

*Includes all business-type activities for the county, including water and sewer activity and airport operations.
Sources: Stanly County, N.C. 2017; SCU, N.C. n.d.a; SCU N.C. n.d.b

Rate Design

In 2005, SCU began an overhaul of its rate structure in order to become self-sufficient. The end goal of the rate design was for operating revenues to fully cover drinking and wastewater operating costs and fund future capital improvement projects. In the past, SCU was dependent on a variety of monetary sources, including the county general fund, grants, and low-interest loans to cover various operating and capital improvement costs. Often, county general funds are tapped for multiple public services, and the utility was competing with other county priorities to subsidize its rate revenue. Dependence on other sources of revenue was deemed unsustainable for the future. This was partially due to the fact that customers do not, on the whole, use water efficiently; therefore, subsidizing water bills using county general funds was sending utility customers incorrect price signals concerning the value of their water (U.S. EPA 2005). The SCU has since increased water rates and limited the number of decreasing rate blocks in order to become self-sufficient; a ten-year rate comparison from 2005 to 2015 is shown in Exhibit 11 below. An operating reserve fund has also been created to expand water services in Stanly County. According to the Stanly County budget for fiscal year 2018–2019, a 2 percent rate increase was instituted to ensure that funds are available for future debt service, operation and maintenance costs, and capital improvement projects (Stanly County, N.C. 2018). In addition to the tiered rate structure for drinking water, the County also charges a flat rate sewer charge of $8.19 per 1,000 gallons, with a minimum sewer charge of $16.38.

EXHIBIT 11. Stanly County Residential Water Rates, Ten-year Comparison

Flow (gallons)	2015 Monthly Rates	2005 Monthly Rates
<2,000	$19.69	$16.58
2,001-10,000 (per 1,000 gallons)	$10.09	$7.73
10,001-20,000 (per 1000 gallons)	$10.09	$5.31
>20,000 (per 1000 gallons)	$10.09	$2.37

Sources: Stanly County, N.C. 2017; U.S. EPA 2005

Key Findings

Throughout our research, PSC identified key actions that contributed to the success of each utility that was interviewed. The following are the key findings from the SCU:

- While Stanly County is not necessarily trying to bring on additional customers, the SCU is continually thinking about connecting to the surrounding areas and creating a broader drinking and wastewater network. This regional mindset allows the SCU to generate service efficiencies by expanding its service region.
- The SCU chooses its rate levels to entirely cover the utility's costs, including operation, maintenance, debt service, and future capital projects. The primary recommendation from the 2005 study commissioned by the County was to revise the water rate structure from a decreasing block schedule to an increasing or consistent schedule.

Stevens Point Water, Sewer, and Stormwater Department

Stevens Point, Wisconsin

Introduction

Home to 26,293 people, Stevens Point is located in central Wisconsin, bordering the Wisconsin River (U.S. Census Bureau n.d.e.). A municipal water department provides drinking water, wastewater treatment, and stormwater services throughout the approximately 16 square miles of the city (City of Stevens Point n.d.g; U.S. Census Bureau n.d.e.). The city's drinking water infrastructure currently contains 141.5 miles of water main, which provides an average of 6.6 million gallons of water (City of Stevens Point. n.d.a).

The City of Stevens Point has been providing water to its residents since the early 1920s, evolving over time to also provide wastewater treatment, and eventually maintain a municipal separate storm sewer system (MS4). The City of Stevens Point was chosen due to planned and implemented innovative energy efficiency programs for processing wastewater. The city is also unique in that the Wisconsin Public Service Commission (WPSC) plays a large role in setting drinking water rates for local water provision units (WPSC n.d.). Each priority research topic is discussed in more detail below.

Governance Structure

The City of Stevens Point provides drinking water, wastewater treatment, and stormwater services primarily within the municipal boundaries of the city, with minor exceptions (City of Stevens Point n.d.g; City of Stevens Point, pers. comm. 2019). Stevens Point's water utilities operate as enterprise funds, and the water, sewer, and stormwater rates account for the operation of each system respectively (City of Stevens Point 2016). The municipal water utility began providing water to city residents in 1922 after purchasing the water supply system from the Stevens Point Water Company and transferring the water source from the Wisconsin River to a groundwater supply (City of Stevens Point n.d.c). A state order in 1940 that required all sewage to receive primary treatment resulted in the City also providing wastewater treatment services. Since then, Stevens Point has made various additions to the system, including multiple efficiency mechanisms to manage the system resources as efficiently as possible (City of Stevens Point n.d.b; City of Stevens Point, pers. comm. 2019). The City also maintains and operates a MS4 to manage stormwater within its service area (City of Stevens Point n.d.e).

The City of Stevens Point is the only community interviewed where a state entity approves the local drinking water utility rates; the WPSC establishes and approves drinking water rates for water provision entities within the state of Wisconsin. This partially serves as a mechanism to ensure that the individual water utilities charge rates that will support operation, maintenance, and future capital costs in an efficient manner. According to the WPSC, the rate-setting process addresses "cost recovery, affordability, economic development, resource sustainability, and other community-specific factors" (WPSC n.d.). While the WPSC plays a large role in setting rates for drinking water, the commission does not regulate wastewater treatment or stormwater rates and fees; however, the City of Stevens Point uses a similar rate setting structure for its stormwater and wastewater treatment systems to ensure consistency across its services. The process to initiate a rate adjustment request begins with the local water provider. This

means that the cities or other water provision units still play a crucial role in rate setting. They must be able to evaluate their own rate structures and take into account inflation, increased operating costs, or future capital improvement costs (City of Stevens Point, pers. comm. 2019). A snapshot of the Stevens Point Water, Sewer, and Stormwater Department is shown in Exhibit 12 below:

EXHIBIT 12. Stevens Point Snapshot

Metrics	Figures
Drinking water (gpd)	6.6 million
Sewer treatment (gpd)	3 million
Population served (people)	26,293
Rate and fee revenue	$9,461,475
Other revenue	$143,913
Capital construction	$1,376
Cost of service provision	$4,519,587
Long-term liabilities	$18,427,876*
Total miles of infrastructure	Sewer: Unavailable Water: 141.5 miles Stormwater: Unavailable
Sewer rates (quarterly)	A service charge plus: • In town: $132 flat rate plus $3.82 per 100 ft^3 • Out of town: $162 flat rate plus $4.78 per 100 ft^3
Water rates (quarterly)	A service charge plus: • Residential: $1.40 per 100 ft^3 • Multifamily Residential: $1.45 per 100 ft^3 • Nonresidential: tiered starting at $1.50 per 100 ft^3 for the first 10,000 Ft^3
Stormwater fees	An annual or quarterly fee based on the size of the household unit. For buildings with over three units, the stormwater fee is calculated using the total impervious surface area in ft^3.

*The long-term liabilities obligations are for the city's business-type activities as a whole and also includes transit and airport debt.
Sources: City of Stevens Point 2016; City of Stevens Point n.d.a; City of Stevens Point n.d.d; City of Stevens Point n.d.f; U.S. Census Bureau n.d.e.

Energy Efficiency

The Stevens Point Wastewater Plant treats an average of 3 million gallons per day while generating 90 percent of the utility's electricity. The plant also provides heating and cooling services for multiple municipal water buildings (City of Stevens Point n.d.b; City of Stevens Point, pers. comm. 2019). Beginning in 2003, the utility began to focus on plant upgrades that would generate increased efficiency and energy conservation for the wastewater treatment system. The system upgrades began with installation of new grit removal and fine screening equipment to process incoming solids more efficiently. The grit removal equipment was paired with replacing the plant air compressors responsible for moving the settled solids from the primary clarification tanks to the anerobic digesters. The existing compressors were replaced with lower horsepower, energy-efficient models to realize electricity use cost savings. The wastewater treatment plant currently has two anaerobic digestors, and the City is in the process of constructing a third. A water heat exchanger allows methane generated during anerobic digestion to heat water, which is then utilized to provide heat for three buildings on the wastewater treatment center's campus. A heat pump has also been installed that utilizes the heating and cooling of the effluent water to

regulate the temperature of the wastewater treatment center lab and office building (City of Stevens Point n.d.b; City of Stevens Point n.d.f). The City is currently in the process of converting one of the two exiting sludge storage tanks into an anerobic digestor to create additional methane. That methane will be burned in a biodrier to create class A biosolids. The department also installed a photovoltaic solar array on top of the utility garage, which generates electricity for the utility's campus (City of Stevens Point, pers. comm. 2019). Through these upgrades, the City of Stevens Point is focused on operating as efficiently as possible and using the wastewater treatment plant's combined resources to generate increased efficiencies, decreased cost, and increased revenue.

Key Findings

Throughout our research, PSC identified key actions that contributed to the success of each utility that was interviewed. The following are the key findings from the City of Stevens Point:

- The WPSC reviews and regulates local drinking water provision rates to ensure that the amount charged is adequate to cover utility costs. The City of Stevens Point is a collaborative partner in this process.
- Stevens Point has been generating efficiencies wherever possible since for almost two decades and continues to look for opportunities to generate efficiencies using new technology and innovative solutions.
- The goal for the utility is not necessarily to pursue energy efficiency; rather, it is to use all of the resources at its disposal to operate as efficiently as possible as a whole. For example, burning methane during the biosolids creation process does increase energy use, but it will also increase overall plant efficiency by creating class A biosolids that the plant will not have to pay to dispose of.

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Water Fellows 2019: Water Infrastructure

Joan B. Rose and Erin A. Dreelin
Michigan State University

"The questions confronting Michigan today are troubling. If a community can't afford to operate and maintain its water systems, let alone upgrade them, what options exist for that water utility to address infrastructure needs and the lack of revenue resources available to them? And ultimately, who will pay for these infrastructure improvements and with what money?"

-Public Sector Consultants,
Lessons from Top-performing Water Utilities

The Goal of the 2019 Water Fellows Workshop was to Recommend State Action to Assist Water Utilities

The 2019 Water Fellows Workshop Series was part of a larger project, *Water Infrastructure Funding: Developing Recommendations for Policy Makers in Michigan*, which was led by The Nature Conservancy (TNC) with funding from the Fred A. & Barbara Erb Family Foundation and the C.S. Mott Foundation. The project addressed the critical needs for improvement of and investment in water infrastructure in Michigan. Prior to the Water Fellows workshops, Public Sector Consultants (PSC) provided background research to summarize the current situation in Michigan and case studies that explore potential approaches used by other utilities outside of Michigan which have led to efficiency and improved community relationships. This work set the stage for the Water Fellows series. Our goal for the Water Fellows workshop series was to build on existing experience, knowledge, and expertise to develop recommendations for the state that could be implemented in Michigan and would enable evolution of Michigan utilities toward future aspirations.

Approach: The Water Fellows Workshops

Michigan State University (MSU) coordinated with TNC, a project advisory committee (see appendix 1), and Public Sector Consultants (PSC) to identify and convene a group of Water Fellows representing a cross section of stakeholders with interests in water systems and infrastructure, including individuals representing environment, human health, environmental justice, state and local government, business, agriculture, and academia. Our original target was to have 20-24 Fellows, but due to a high response rate, the program was run with 36 Fellows (see Appendix 1). The Fellows convened four times between April 12 and May 24, 2019 for half-day workshops. The MSU team led the Fellows through a process to develop actionable recommendations for the state. Each of the workshops had a specific goal and the discussions and resulting outputs are summarized in the following sections:

- Workshop 1: Creating a shared vision for water utilities
- Workshop 2: Learning from Top Performers

Workshop 1: Creating A Shared Vision for Water Utilities

The goal of the first workshop was to introduce the project and participants, begin building community among the Fellows, address guiding assumptions, and kick off the work of the series.

The Fellows listened to two presentations to provide a foundation for their discussions:

- Water Utility of the Future: Can We Get There from Here? Dr. Janice A. Beecher, Michigan State University
- Michigan's Water Utilities: What Can We Learn from Top Performers? Jon Beard, Public Sector Consultants

The key discussion item for the workshop was focused on establishing a guiding vision for the group. Several key ideas emerged from the PSC report and the speakers' presentations. The report and speakers presented ideas about "top performers" and "utilities of the future." These concepts both capture the idea that a sustainable water utility is an integral part of a vibrant community, offers affordable services for low income community members, and is able to make current and future investments in infrastructure as needed. Being a top performer is not just a simple matter of having necessary funds; it requires vision, leadership, and using a set of criteria that enable water systems to become a "utility of the future."

In order to develop recommendations to improve water infrastructure in the state, the first step was to elicit from the Fellows a clear, and common, vision for what characteristics a "top-performing" utility should have. Through small table discussions, the fellows finished the following sentence: "A utility of the future is…." The Fellows' discussion was captured by note-takers and after the report-out from each group a word cloud of the key ideas to spur additional discussion among the Fellows was created (Figure 1).

Figure 1. Word cloud showing the key characteristics that a utility of the future should possess based on the Fellows' discussion.

The key ideas from the Fellows' discussion were collated and the Fellows' vision for utilities of the future began to emerge (Figure 2). There was overlap in the characteristics identified by Dr. Beecher. In particular, both identified stewardship, trustworthiness, strong governance, and innovation as key characteristics. The role of the state in enabling this future view was yet to be addressed.

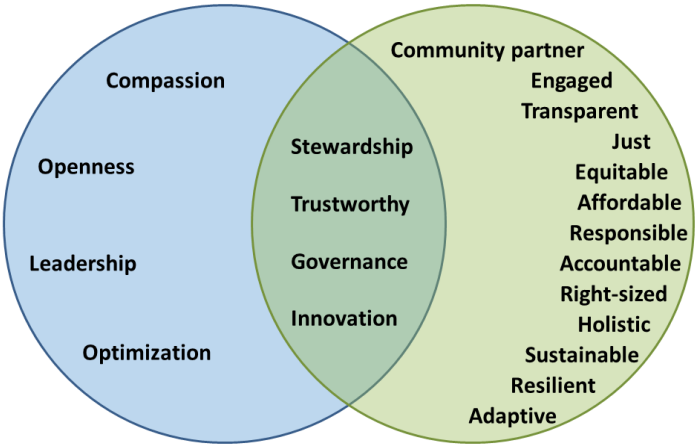

Figure 2. Key characteristics of utilities of the future as described by Dr. Jan Beecher (blue) and the Water Fellows (green).

Workshop 2: Learning from Top Performers

Following the first workshop, the MSU team proposed a list of definitions for key words that were central to the Fellows' discussions (see text box and Appendix 2). At the start of the second workshop, the Fellows reviewed the definitions and their feedback was captured in order to develop a common understanding of the terminology to assist in the discussions to follow. The summary of outputs from workshop 1 (Figures 1 and 2) was presented to provide an additional opportunity for the Fellows to give their input. Based on these discussions, the vision was further refined and the characteristics were grouped by major three major themes (Figure 3).

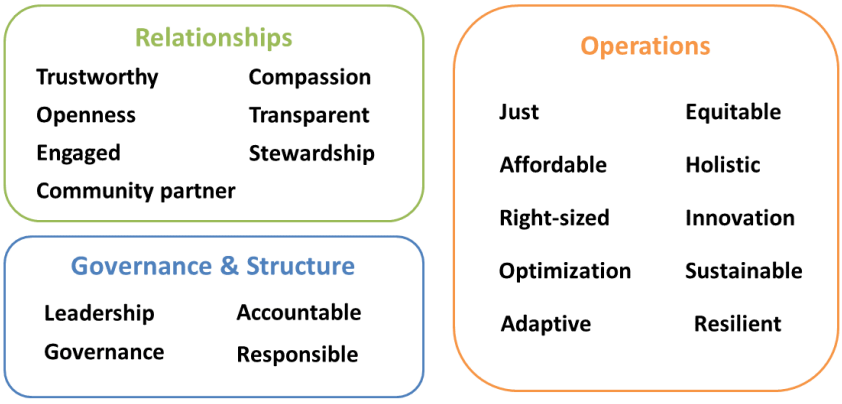

Figure 3. Refined vision for characteristics of utilities of the future organized by main themes.

The second workshop featured speakers from three top-performing utilities:

- Steve Hubbs, Retired, Louisville Water Company
- Kyle Dreyfuss-Wells, Northeast Ohio Regional Sewer District
- Andy Kricun, Camden County Municipal Utilities Authority

These utilities were chosen based on the work of PSC and input from the advisory committee. Speakers were asked to address the following questions:

- Describe the governance/oversight/decision making process for your utility
- How do you communicate with/stay in contact with your customers?
- How has your State been most helpful to you?
- What do you wish they would do differently?
- If you could change one thing that would most help your utility be successful, what would that be?
- Where is the biggest opportunity for water utilities going forward?
- What is the biggest threat/risk?

After the presentations on these model communities, the Fellows began to identify potential actions that the state of Michigan could implement to create and/or foster utilities of the future. The following questions were discussed:

- What ideas have you heard so far that are feasible for enabling utilities of the future in Michigan?
- Why? What makes them feasible?

The discussion was captured at each table to begin a list of potential recommendations. In addition, the Fellows were asked to submit additional recommendations online. The fellows generated 29 recommendations for the group to consider, which are summarized in Table 1 in no particular order of priority or importance. The full list of recommendations, which includes additional details from the Fellows for the items submitted online, is provided in Appendix 3.

Affordability
Original definition: The ability of individual customers to pay for water and sewer services to meet their basic needs while maintaining the ability to pay for other essential costs.

Fellows working definition: all people should have affordable access to drinking water services while maintaining the ability to pay for other essential services, such as food and shelter. In addition, the group was clear that no one should be denied access to safe drinking water.

Funding vs Financing
Funding for water and other infrastructure comes from one of two sources: taxpayers or ratepayers.

The term "financing" is used when the monetary resource need is filled from external, borrowed money where principal and interest are owed to the source of funds. This includes the Clean Water and Drinking Water State Revolving Funds provided as loans, municipal bonds, and other sources of monetary resources that require repayment of principal and interest.

Equity: Equity is a measure of the fairness of both the distribution of positive and negative outcomes as well as the process used to arrive at particular social decisions.

See Appendix 2 for citations and revisions.

Table 1. Proposed recommendations from the Fellows.

Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems
Create a state-level regulatory commission or governing body to oversee utilities
Change state law to facilitate use of funds for affordability programs
Identify best practices and share information among utilities
Promote inter-utility collaboration
Enable utilities to share data
Pass state legislation requiring annual reporting on water utility rate setting and costs
Provide diversity, equity & inclusion training to utilities
Increase efficiency and maximize use of existing capacity
Engage local communities
Offer affordability programs
Eliminate connection fees
Consolidate systems
Change rate structures- Ensure just and reasonable rate structures for drinking water and wastewater
Require permits to ensure sewer/treatment system can handle additional loads
Require permits to document that existing capacity can't meet demand before approving construction of new capacity
Encourage more research on public health risks
Increase accessibility to water testing for residents/homeowners
Create and implement education programs for customers: water quality, conservation, affordability
Set standards for quality and testing of bottled water
Host quarterly funding forums to share information and discuss opportunities for collaboration
Implement Green Tax Credit for residents who for participate in green infrastructure programs and education for water conservation.
Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle
Adopt state-wide sanitary code
Adopt legislation authorizing stormwater utility fees consistent with Bolt decision and encourage incentivizing green infrastructure
Expand Stormwater, Asset Management, and Wastewater (SAW) grants- additional funds, more communities, follow up grants to implement
Support water bills already introduced in Michigan Senate (SB 240, SB 241, SB 242, SB 243) by engaging committee members and calling for committee hearings.
Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination
Create a non-profit entity to be a one-stop shop for utility related assistance programs.

Workshop 3: Screening Potential Recommendations

Following workshop 2, definitions of key terms were revised based on the Fellows' feedback and workshop 3 began with a discussion of the revised definitions to see if a consensus-based definition for each term could be developed. The group came to consensus on all but affordability (Appendix 2). Although the group did not reach consensus, there was one area of convergence. The group agreed that the concept of affordability should address an individual's ability to pay for water services while still

maintaining the ability to access other essential services, such as food and shelter. In the previous workshop, Fellows suggested including the ability of the utility to maintain its services as a part of the definition of affordability. However, when presented a combined definition the group decided to keep them separate. There was disagreement about whether the affordability definition should explicitly address low-income customers versus being open-ended to be more inclusive. In addition, there were concerns over whether to address the cost of service and optimization of services. Some Fellows desired an explicit statement that "water is free", but others were concerned about possible implications for what utilities could or should charge for water services if this statement was included. There was also no agreement on how best to address power differentials and historical harm. At the end of the discussion, it was agreed that although the group did not reach consensus, the discussion on recommendations could move forward with a working understanding that all people should have affordable access to drinking water services while maintaining the ability pay for other essential services, such as food and shelter. In addition, the group was clear that no one should be denied access to safe drinking water.

The Fellows discussed several ideas on how to address broken trust. A key recommendation was to focus on clear and transparent communication among local government, state government, and the public. Fellows discussed several possible means to assist with communication.

- Creating a community advisory committee,
- Identifying a trusted, neutral community member to facilitate communications, and
- Using communities that are doing well in Michigan as models for struggling areas.

The Fellows also noted the general distrust in state government in many communities. They recommend that the state government needs to acknowledge that distrust exists and in order to restore trust they need to communicate, be transparent, and truly engage citizens so that citizens have a significant voice in decision-making for their own communities.

The main activity and discussion topic for the third workshop was screening potential recommendations. The Fellows generated 29 recommendations through their discussions and homework. Through a guided process, the Fellows used a screening exercise to narrow down the potential list of recommendations (Figure 4). Fellows were asked to consider whether each recommendation passed through a series of filters. Fellows were also allowed to group or combine recommendations. If the Fellows could answer yes to the following questions, the recommendation (or cluster of grouped recommendations) could pass the filter:

- Does the recommendation address our concerns?
- Does it enable our vision of a utility of the future?
- Does it meet our working definition of affordability?
- Is it actionable by the state government?
- Is it feasible?

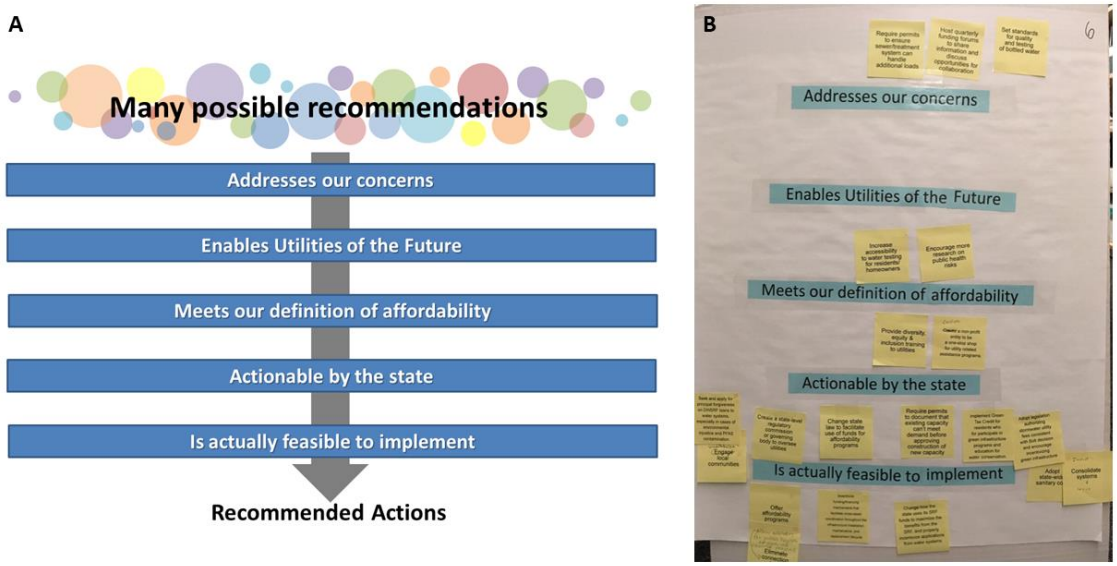

Figure 4. Fellows screened recommendations based on whether they met the conditions of a series of filters (A). An example of results from the screening exercise (B).

Following the workshop, the average number of filters each recommendation passed through during the screening was calculated. A score was awarded to each recommendation (0-5) based on how each group sorted the recommendations and then these were summed to calculate a total score. The following recommendations were above the median based on both calculations:

- Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems
- Create a state-level regulatory commission or governing body to oversee utilities
- Change state law to facilitate use of funds for affordability programs
- Pass state legislation requiring annual reporting on water utility rate setting and costs
- Provide diversity, equity & inclusion training to utilities
- Increase efficiency and maximize use of existing capacity
- Offer affordability programs
- Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle
- Expand Stormwater, Asset Management, and Wastewater (SAW) grants- provide additional funds for more communities and follow up grants for implementation
- Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination

These recommendations were then reorganized based on the vision and how Fellows clustered recommendations (Figure 5).

Relationships

- Provide diversity, equity & inclusion training to utilities

Governance & Structure

- Create a state-level regulatory commission or governing body to oversee utilities
- Pass state legislation requiring annual reporting on water utility rate setting and costs
- Increase efficiency and maximize use of existing capacity

Operations

- **Financing & Funding**
  - Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems
  - Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle
  - Expand Stormwater, Asset Management, and Wastewater (SAW) grants- additional funds, more communities, follow up grants to implement
  - Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination
- **Affordability**
  - Change state law to facilitate use of funds for affordability programs
  - Offer affordability programs

Figure 5. Top recommendations organized by vision and how the Fellows clustered recommendations.

Workshop 4: Converging on Top Recommendations

The goal for the final workshop was to finalize a list of recommendations for the state. The areas where there was consensus based on the screening exercise were reviewed (Figure 5). The Fellows' discussion then quickly moved to areas where there was divergence. There were two types of divergence noted based on the previous workshop results: 1) several groups of Fellows passed the recommendations through many filters, while others passed them through few filters, and 2) no trend in how Fellows screened the recommendations. The Fellows reconsidered these divergent results and discussed the recommendations again to see if they should be included as the group moved forward. The recommendations discussed during this session were:

- Facilitate collaboration via information sharing
- Engage local communities
- Eliminate connection fees
- Encourage more research on public health risks

Many Fellows commented that the state government is already facilitating collaboration, information sharing, and research. The Fellows viewed the state role in these activities as providing guidance on best practices and incentives to local communities. Many fellows considered the "engage local communities" recommendation to be directed toward the local utility, not the state government. Again, the state could provide guidance to the local government but would not play a role in engaging the community directly. The Fellows viewed "eliminate connection fees" as part of affordability programs. In addition, the Fellows recognized that connection fees should be distinguished from reconnection fees.

During this fourth workshop, the Fellows were also asked to reconsider several ideas from the top-performing utilities. Colleagues at TNC proposed one idea from each of the model communities:

- Camden: Give residents a reduced rate for being sited near a wastewater treatment plant

- Louisville: Operate utility as a private company owned by the city
- Ohio: Cooperate with other utilities/cities to operate infrastructure

A live poll was run using PollEverywhere to gauge whether the Fellows liked or disliked these ideas (Table 2). The ideas from Camden and Ohio were viewed positively by the Fellows. Fellows found Camden's approach of creating a host community benefit to take into account the front-line costs communities have to bear an appealing idea. They also were very positive about this mechanism as one means to address environmental justice. In the Ohio example, Fellows responded positively to the idea of coordination and use of a OneWater approach. There were concerns, however, related to who bears the burden of costs and how cooperative agreements are implemented. Few Fellows responded positively to the Louisville case, mainly because the Fellows did not view this as transferrable to Michigan and because of concerns over privatization.

Table 2. Fellows' responses to the question "Do you like this idea?" for each of the three ideas from top-performing utilities.

Idea	Yes, I like it	No, I don't like it
Camden: Give residents a reduced rate for being sited near a wastewater treatment plant	96% (n=23)	4% (n=1)
Louisville: Operate utility as a private company owned by the city	29% (n=7)	71% (n=17)
Ohio: Cooperate with other utilities/cities to operate infrastructure	87% (n=20)	13% (n=3)

Finally, the emergent recommendations were discussed from the screening exercise at the third workshop. Fellows were asked to identify who at the state takes action, what the specific action(s) needed to move the recommendation(s) forward is/are, and if the recommendation is low-hanging fruit and/or seen as a higher priority given the screening approach that was used. Fellows were asked to be as specific as possible when identifying actions and actors for the recommendations. Fellows could name any recommendation as low-hanging fruit, but each group of Fellows was only allowed to choose one recommendation as a high priority. The Fellows were given the upper ten recommendations to work with (Figure 5), but could choose to add any of the recommendations from top-performers or the four recommendations covered during the divergent results discussion. Given the time, groups of Fellows were assigned a different set of recommendations to start with to ensure that every recommendation was discussed by at least one group of Fellows. Complete results from the exercise are summarized in Appendix 4.

All groups of Fellows identified "**Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems**" as a high priority recommendation. All of the groups identified the Department of Energy, Great Lakes, and Environment (EGLE) as a main actor for implementing the recommended actions. Some of the Fellows also identified the governor, Treasury, or legislature.

The specific actions identified by each group of Fellows were:

- Review SRF, review tax credits, ability to use low interest loans, examine barriers to sending out grants and loans to communities in a timely & efficient manner
- Lower interest rates and use multiple interest rates
- Lower interest rates, maximize principal forgiveness/raise the cap, eliminate interference of federal cap on grants
- Have to develop prioritization process, gather data about other SRF programs, revise the SRF criteria
- Change in policy. Change is possible since the funding is supported by the federal government and user guidelines could be updated by the state

The only recommendation not identified as low-hanging fruit by at least one group of Fellows was "Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle." The recommendations with the highest number of groups identifying them as low-hanging fruit were:

- Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems (all groups, n=5)
- Require annual reporting on water utility rate setting and costs (n=3)
- Create a state-level regulatory commission or governing body to oversee utilities (n=2)
- Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination (n=2)
- Provide diversity, equity & inclusion training to utilities (n=2)

Recommended Actions

The following is a summary of key understandings and recommendations that emerged from the Fellows' discussions and activities:

- **Affordability**. While further discussion is warranted, a working understanding was reached that all people should have affordable access to drinking water services while maintaining the ability pay for other essential services, such as food and shelter. In addition, the group was clear that no one should be denied access to safe drinking water.
- **Lack of Public Trust.** To address this issue, focus is needed on clear and transparent communication among local government, state government, and the public. State government must acknowledge that distrust exists and in order to restore trust they need to communicate, be transparent, and truly engage citizens so that citizens truly have voice in decision-making for their own communities. Possible means to assist with communication include creating a community advisory committee, identifying a trusted, neutral community member to facilitate communications, and using communities that are doing well in Michigan as models for struggling areas.
- **Areas for State-Level Action.** The Fellows reached consensus on need for consideration of the following State-level actions to better support and enable the desired utilities of the future:

To address utility operations…

- Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems
- Increase efficiency and maximize use of existing capacity
- Offer affordability programs
- Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle
- Expand Stormwater, Asset Management, and Wastewater (SAW) grants- additional funds, more communities, follow up grants to implement
- Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination

To address Governance and Structure…

- Create a state-level regulatory commission or governing body to oversee utilities
- Change state law to facilitate use of state revolving funds for affordability programs
- Require annual reporting on water utility rate setting and costs

To address Relationships…

- Provide diversity, equity & inclusion training to utilities

As previously mentioned, the recommendation that the Fellows recognized as a high priority was focused on changing how the state uses its SRF funds to maximize the benefits from the SRF and properly incentivize applications from water systems.

The Department of Energy, Great Lakes, and Environment (EGLE) was identified as the key State actor for working towards taking action. The Governor, Treasury, and Legislature were also identified as having key roles in moving actions forward.

Equity & Implicit Bias

Throughout the process, some Fellows discussed a need for recommended policies to be rooted in a process that was inclusive and equitable to all Michiganders no matter the race, ethnicity, gender, socioeconomic status. During the first four workshops, this lens was not applied by the majority while discussing and developing recommendations. At the very end of the fourth workshop a racist comment was made during a personal accounting of growing up with racism. None of the participants or facilitators were able to condemn or discuss the use of this derogatory term or the implications of racism at the time this story was told. Many discussed the comment after the workshop, and some worked to organize a training for Fellows and facilitators to better understand racism, implicit bias, and prejudice. Implicit bias is an unconscious association, belief, or attitude toward any social group. Unintentionally, it affects people's behavior and decisions. For Water Fellows who are engaged in creating or informing policies, this could and has created disparate impacts on groups of people.

Epilogue: Workshop 5

At the end of Workshop 4, Fellows agreed that one more workshop was necessary to finalize the recommendations. After polling the Fellows, the organizers hosted the workshop on September 9, 2019. Not all Fellows were able to attend this additional workshop; only 53% of Fellows were in attendance. The morning session of Workshop 5 focused on racism, implicit bias and prejudice to help the group recognize and address bias and privilege in ourselves and as a group. Dr. Imani Michelle Scott led the morning session (see Appendix 6 for materials).

In the afternoon, Fellows focused on finalizing the recommendation regarding the SRF fund. The Fellows began this afternoon session by discussing what key considerations from the morning session they should bring to the work of the group. Fellows commented that the morning session represented a long term effort, both collectively and individually, to address historical racism. They also discussed how the use of the "Is feasible to implement" filter in the sorting exercise (summarized above under Workshop 3) may have resulted in the group dropping recommendations addressing bias and racism because many in the group did not think that it was something that was within the scope of the original task and goal for the Fellows. Others commented on the recommendations and what they viewed as missing elements, these included specifically addressing rural water issues; diversity, equity, and inclusion; and community engagement. The discussion ended with agreement among the group that work going forward would benefit from viewing the recommendations through a lens of equity, inclusion, and justice.

The Fellows then moved on to a panel discussion with Paul McDonald (Chief Financial Officer, Michigan Department of Environment, Great Lakes, and Energy) and Andy Kricun (Camden County Municipal Utilities Authority), one of the earlier speakers from Workshop 2. Both discussed the SRF and their view of potential ways to improve the use of the funds to advance the vision of utilities of the future. The fellows then moved into small group discussion and were asked to address who the main audience for their recommendation was and how they would improve the top recommendation. Three of the four tables reported that they kept the state as their main audience for their recommendation. These tables discussed several improvements to the SRF for Michigan:

- Explicitly state that Michigan should use the SRF funds to address affordability;
- Engage communities, particularly small communities, to build their capacity to apply for and use SRF funds;
- Get input from communities on how to prioritize awarding of funds; and
- Make it easier for communities to pay back loans.

Overall, the discussion at these three tables can be summarized by one of the last tables to report out: "Change how the state uses its SRF funds to ensure that all people have access to safe, clean, affordable water." The fourth table did not agree with the previous three tables. They expressed feeling that the Fellows got to these recommendations without enough discussion and there was no buy-in from the group. They believed that affordability is paramount to all other recommendations.

Summary

Many Michigan communities – large, small, urban and rural - are struggling to replace or upgrade water infrastructure and ensure that all Michigan residents have access to safe, affordable drinking water. The expanding PFAS crisis, the water tragedy in Flint and the water shutoffs in Detroit are emblematic of the depth of the challenge and the need to ground public policies in concerns for equity, develop training, and support programs that truly re-invest in our communities. This is about public health and the hope is that the information and many discussions around these topics will result in actions that benefit all Michigan residents and begin to address contamination threats and water rates that are currently unaffordable by many. Other communities have found solutions and exemplary approaches are available.

The Water Fellows of 2019 were individuals representing environment, human health, environmental justice, state and local government, business, agriculture and academia but who all are passionate about the work they do, about Michigan, about water and about justice. Difficult topics were often discussed and while there are many resources and previous reports, the work is just beginning and will be ongoing.

Through the work of the Water Fellows 2019 the attributes of a Michigan utility of the future were identified and a number of recommendations were articulated. At the end of the process, Fellows participated in a training to better understand how their biases and prejudices unintentionally create inequitable policies. Some of the strategies discussed to address this included:

- Reviewing the recommendations identified by the Fellows during the process to address any bias and/or prejudices.
- Confronting and dismantling the social, political, and economic systems that benefit only some while oppressing and marginalizing others with support for ongoing work by individuals, groups and by the Water Fellows in general.
- Inviting and when needed, making resources available for more people affected by the policies under discussion so that they are included in the process and deliberations. A greater diversity of people are needed for executive steering committees so that equity and biases can be addressed from the beginning in order to help mitigate against disparate impacts on groups of people.

In addition, one of the key recommendations to emerge from the discussions was revising how the state uses its SRF funds to ensure that all people have access to safe, clean, affordable water. While changes to the SRF are actions that are implementable, action is needed at the state level to address the development of an affordability program.

Appendices:

1. List of Fellows and advisory committee
2. Definitions- original and amended
3. Full list of recommendations from Fellows' homework
4. Summary of "Getting Specific" exercise from May 24 workshop
5. Notes from the Fellows workshops
6. Materials from Workshop 5: resources from Dr. Scott

Appendix 1: 2019 Water Fellows, Advisory Committee, and MSU Team

2019 Water Fellows

The individuals listed below participated in the Water Fellows workshops. Their listing below is not an endorsement of any specific recommendations.

Name	Organization
Richard Ackerman/Donna Givens	Eastside Community Network
Russ Bellant	We the People of Detroit
Mary Brady-Enerson	Clean Water Action
Joe Bush	Ottawa County Drain Commissioner
Emily Carney	Michigan Senate
Steve Daunt	Michigan House of Representatives
Dan Eichinger	Michigan Department of Natural Resources
Amy Epkey	Michigan Department of Natural Resources
Frank Ettawageshik	United Tribes of Michigan
Molly Flanagan	Alliance for the Great Lakes
Jason Geer	Michigan Chamber of Commerce
Kelly Green	Michigan Department of Environmental Quality
Marcy Hamilton	Southwest Michigan Planning Commission
Peter Hammer	Damon J. Keith Center for Civil Rights
Linda Hilbert	Consumers Energy
Charlotte Jameson	Michigan Environmental Council
Brad Jensen	Huron Pines
James Johnson	Michigan Department of Agriculture and Rural Development
Travis Jones	Greenstone Farm Credit Services
Michael Kelly	The Conservation Fund
Liz Kirkwood	For the Love of Water
John LaMacchia II	Michigan Municipal League
Teresa Lark	Mid-Michigan Environmental Action Council
Nick Leonard	Great Lakes Environmental Law Center
Christy McGillivray	Sierra Club
Jessica Moy	Michigan Infrastructure Council
Tim Neumann	Michigan Rural Water Association
Wendy Ogilvie	Lower Grand River Organization of Watersheds
Sylvia Orduno	People's Water Board Coalition
Scott Piggott	Michigan Farm Bureau
Cyndi Roper	Natural Resources Defense Council
Alicia Smith/Jill Ryan	Freshwater Future
Krista Szafranski	United Auto Workers
Amy Trotter	Michigan United Conservation Clubs

Advisory Committee

Name	Organization
Jon Beard	Public Sector Consultants
Janice Beecher	Michigan State University
Richard Bowman	The Nature Conservancy
James Clift	EGLE
Melissa Damaschke	Erb Family Foundation
Erin Dreelin	Michigan State University
Tim Eder	C.S. Mott Foundation
Monica Lewis-Patrick	We the People of Detroit
Julie Metty-Bennett	Public Sector Consultants
Maggie Pallone	Public Sector Consultants
Joan Rose	Michigan State University
Brian Steglitz	City of Ann Arbor Water Treatment Manager

MSU Water Fellows Team

Name	Organization
Joan Rose	MSU Department of Fisheries & Wildlife
Erin Dreelin	MSU Department of Fisheries & Wildlife
Melissa Downs	MSU Department of Fisheries & Wildlife
Jan Urban-Lurain	Spectra Data and Research

Appendix 2: Definitions

Water Fellows: Defining Key Terms
April 26, 2019

In order to make sure we're all using the same language, we need to clarify some terms:

Affordability
The ability of individual customers to pay for water and sewer services to meet their basic needs while maintaining the ability to pay for other essential costs.[1]

Funding vs Financing
Funding for water and other infrastructure comes from one of two sources: taxpayers or ratepayers.[2]

The term "**financing**" is used when the monetary resource need is filled from external, borrowed money where principal and interest are owed to the source of funds. This includes the Clean Water and Drinking Water State Revolving Funds provided as loans, municipal bonds, and other sources of monetary resources that require repayment of principal and interest.[3]

Equity
Equity is a measure of the fairness of both the distribution of positive and negative outcomes as well as the process used to arrive at particular social decisions.[4]

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[1] Davis, J.P. & Teodoro, M.P. 2014 (4th ed.). Financial Capability and Affordability. In Water and Wastewater Finance and Pricing (G. Raftelis, editor). New York: Taylor & Francis.

[2] Beecher, J. 2018. Michigan at a Crossroads: Potential for Economic Regulation of Michigan's Water Policy Brief for the Incoming 2019 Gubernatorial Administration. MSU Extension. Available online at http://ipu.msu.edu/wp-content/uploads/2018/12/Policy-Brief-for-the-Incoming-2019-Gubernatorial-Administration.pdf

[3] PSC Fellows Report 2019

[4] Gleick, P.H. 1998. Water in crisis: Paths to sustainable water use. Ecological Applications 8:571-579.

Water Fellows: Defining Key Terms
May 10, 2019

In order to make sure we're all using the same language, we need to clarify some terms:

Affordability

The ability of low-income customers to pay for quality, reliable water-related services to meet their basic needs for healthy lives while maintaining the ability to pay for other essential costs, such as food and shelter. [5] Affordability also includes the ability of the utility to sustain high quality, reliable water-related services for all of its customers in order to maintain public health and wellbeing.

Funding vs Financing

Funding for water and other infrastructure comes from one of two sources: taxes or fees. [6]

The term "**financing**" is used when a monetary resource need is filled from external, borrowed money where principal and interest are owed to the source of funds. This includes the Clean Water and Drinking Water State Revolving Funds provided as loans, the USDA Rural Development loans, municipal bonds, and any other sources of monetary resources that require repayment of principal and interest. [7]

Equity & Environmental Justice

Equity is a measure of the just and fair distribution of positive and negative outcomes as well as the process used to arrive at particular social decisions.[8] For the purposes of operationalization and measurement, equity in health can be defined as the absence of systematic disparities in health (or in the major social determinants of health) between social groups who have different levels of underlying social advantage/disadvantage.[9]

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. This goal will be achieved when everyone enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process to have a healthy environment in which to live, learn, and work.[10]

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[5] Modified from Davis, J.P. & Teodoro, M.P. 2014 (4th ed.). Financial Capability and Affordability. In Water and Wastewater Finance and Pricing (G. Raftelis, editor). New York: Taylor & Francis.

[6] Modified from Beecher, J. 2018. Michigan at a Crossroads: Potential for Economic Regulation of Michigan's Water Policy Brief for the Incoming 2019 Gubernatorial Administration. MSU Extension. Available online at http://ipu.msu.edu/wp-content/uploads/2018/12/Policy-Brief-for-the-Incoming-2019-Gubernatorial-Administration.pdf

[7] Modified from PSC Fellows Report 2019

[8] Modified from Gleick, P.H. 1998. Water in crisis: Paths to sustainable water use. Ecological Applications 8:571-579.

[9] Braveman & Gruskin. 2003. Defining equity in health. Journal of Epidemiology & Community Health 57:254-258.

[10] https://www.epa.gov/environmentaljustice

Appendix 3: Full list of recommendations from Fellows' homework

Reminder of our goal: By the end of this series, we want to have recommended actions for the state to implement that enables creation/operation of utilities of the future

Your assignment: Your challenge is to identify an existing issue or opportunity and a feasible action to overcome it or make it happen. You are welcome to work in pairs or teams. Post your responses here by May 3rd. We will discuss your ideas at the May 10 workshop.

Note on Appendix: Submissions from Fellows are separated by a line.

Barrier: No statewide rate setting structure or oversight to address equity in cost allocation, rate design, and utility efficiency. Michigan is only one of six jurisdictions that do not regulate water utilities (along with the District of Columbia, Georgia, Minnesota, North Dakota, and South Dakota). (Beecher. *Potential for Economic Regulation of Michigan's Water Sector: Policy Brief for the Incoming 2019 Gubernatorial Administration*. 2018).

Feasible Action: explore national examples of successful statewide regulatory commissions that oversee rate structures, manage systemic water affordability problems, tackle integrated water asset management and strategic energy management for water utilities, and secure diverse financing options for ongoing capital improvement, maintenance and repairs.

Challenge: Communities/utilities lack knowledge about funding/financing opportunities. There are also challenges in getting the different funding/financing mechanisms to align given multiple different sources.

Action: Quarterly regional funding forums. Held regional across the state to include all local funding agencies in the applicable regions and representatives from the local utilities. Not only could funding opportunities be presented but a discussion could be held that illustrates all upcoming (5 yr, 10yr) proposed projects in the region to help identify collaborative opportunities. For example, a watershed organization working on a stormwater project could potentially 'piggy back' on a traditional SRF project in the region. This could also represent a good opportunity for local utilities to coordinate and collaborate with one another on sharing of resources, i.e.., a region or county purchases a vac truck that could be shared with surrounding utilities. Consolidate work to bid out projects together, obtain funding under one agency, saving on costs.

Challenge: Alternative Funding Options (residential grants/payment plans)-Many residents are carrying the burden of high storm water and sewage fees and overall high water bills. This could be a lack of education regarding how to reduce the usage of water (water conservation) or a leak that has not been reported. Some residents may even have rain gardens and other green development that provides benefit to the governing structure as well as the surrounding neighbors however there are no credits.

Action: Greening Tax Credit reflecting a percentage of financial responsibility reduction for the resident for participation in green infrastructure programs and water quality education for water conservation.

Creation of community water affordability education campaign for water conservation and identifying water affordability advocacy to build residential voice.

Opportunity: Michigan is unique in its definition of "integrated" asset management – intersecting traditional silos to explore asset management across transportation, water, utilities, and telecommunications (21st Century Infrastructure Commission/Infrastructure Asset Management Pilot). Project savings of 30-40% (anecdotal) have been recognized when cross-asset infrastructure management was employed.

Action: Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle.

Barrier: There is a lack of transparency and public access to information within water utility ratemaking. It can be difficult for residents or the public to get documentation on overall costs for drinking water, sewer, and stormwater, what debt burdens the utilities have, and how costs are being allocated among customer classes.

Feasible Action: Legislation requiring annual reporting on water utility rate setting and costs. Explore how other states that don't have state regulatory authority over water utilities handle transparency in ratemaking.

Barrier: The EPA has estimated that Michigan needs to spend $13.05 billion over the next 20 years to maintain and improve the state's drinking water infrastructure alone. While the financial need is large, Michigan has struggled to get drinking water systems to apply for loans from the drinking water state revolving fund (SRF). This is partially because the state has historically set the interest rate for loans from the SRF at 2.0%, which is on the high end of the spectrum when compared to interest rates in other states. Additionally, Michigan doesn't use its SRF to meet the needs for disadvantaged communities, where drinking water infrastructure costs are creating pressures on residents.

Action: While States must comply with the federal Safe Drinking Water Act in setting terms for funding distributed via its SRF, States are provided with a significant amount of discretion in designing the specifics of the program. These terms are typically set in an intended use plan, that is prepared annually and submitted to the EPA. Michigan could amend its future intended use plans to maximize the benefits from the SRF, and properly incentivize applications from water systems. This could include a lower base interest rate (Michigan's base interest rate of 2.0% is fairly high), as well as more funds available for disadvantaged communities in the form of principal loan forgiveness (Michigan only made approximately 20% of its 2019 grant available for principal loan forgiveness, while other states offer 30% or more).

Issue/Opportunity: Utilities of the Future are forward-thinking, innovative water utilities that are providing resilient value-added service to communities, particularly in community engagement, watershed stewardship, and recovery of resources such as water, energy, and nutrients (MWEA). A need exists to support water sector workforce development and training to ensure the future viability of this

critical workforce. A generation of utility operators will be retiring soon. Innovative programs and resources are needed to help utilities attract and maintain a qualified and diverse water utility workforce to be able to provide clean, reliable water services.

Feasible Action: A transformation needs to occur of the internal utility culture to understand and support technology and innovations in management and operations. Community engagement and authentic partnerships are necessary for success when operating outside of the traditional scope of services of the utility. Work on water equity begins with meeting people where they are, socially, financially, and environmentally. Operators need to be educated and trained on all levels so that all water systems are part of the larger infrastructure discussions. Share and apply results of studies that have advanced equitable water management. Build cross-sector learning teams of utilities, community organizations, local government, environmental groups, and other stakeholders.

In addition to the items that we discussed last week, one thing I hope that the final report recognizes is that water infrustruce, if addressed in a vacuum, does not solve the larger problem of how our municipalities function. Systematic disinvestment through the state not fully funding revenue sharing and one of the most restrictive property tax systems in the country are crippling our municipalities ability to provide adequate services for their residents. Even if we are able to create a utility of the future, without recognizing that significant reforms around how we fund and invest in our communities, there will be many challenges that could impede the success of the utility.

Issue/Opportunity: When thinking about the utility of the future we must identify capacity that currently exists in our systems and maximize the use of that capacity to the greatest extent possible before creating new capacity.
Feasible Action: Put into place a system of checks and balances that will help identify where capacity exists and requires consideration of using that capacity before issuing permits to build new capacity.

Opportunities:
Michigan Legislature adopts legislation authorizing stormwater utility fees consistent with Bolt decision and encourages incentivizing green infrastructure.

Expand SAW grants - additional funds, more communities, follow up grants to implement (especially where public health is at risk because of failing infrastructure)

Michigan Legislature adopt a statewide sanitary code

Ensure just and reasonable rate structures for drinking water and wastewater with shutoff protections, resources to assist those in poverty, and transparency in rates, shutoffs, finances, non-revenue water, etc.

<u>(1) Existing issue or opportunity:</u>
(a) There are several Michigan introduced water bills for statewide affordability, shutoff protection, decriminalization, decreased reconnection penalties.

- Senate Bill 240 (Sen. Alexander): Provides for the development of a low-income water residential affordability program, in which water rates would not exceed a certain percentage of one's household income.
- Senate Bill 241 (Sen. Chang): Creates the Water Shutoff Protection Act, which protects seniors, families with children, people who are seriously ill or disabled, and pregnant women from shutoffs, and specifies information and timelines for shutoff notices.
- Senate Bill 242 (Sen. Irwin): Decriminalizes reconnecting water service due because of a shutoff due to inability to pay.
- Senate Bill 243 (Sen. Wojno): Decreases penalty of reconnecting water service from five-year felony to a civil infraction for first or second offense, and a misdemeanor for third offense. This offense is currently a five-year felony.

https://senatedems.com/chang/news/2019/03/22/michigan-senators-fight-for-clean-affordable-water/

Feasible action:
(b) Support and promote this legislation by engaging committee members and calling for committee hearings.

(2) Existing issue or opportunity:
(a) Concerns have been raised about costs and responsibilities to implement MDEQ's revised Lead and Copper Rule to promote the Safe Drinking Water Act. This lawsuit exemplifies the formal challenge https://www.oakgov.com/water/Documents/LCR%20Complaint%20package.pdf

However, the EPA has determined that Drinking Water State Revolving Fund (DWSRF) allocations can be used to pay for private lead service line replacement.
https://www.epa.gov/sites/production/files/2018-09/documents/memo_-_clarification_of_dwsrf_eligibility_of_service_line_replacement_on_private_property.pdf

Feasible action:
(b) Seek and promote the use of DWSRF loans to Michigan water systems for full lead service line replacement (i.e., including private lead service lines).

(c) Seek and apply for EPA or State of Michigan principal forgiveness on DWSRF loans to water systems, especially in environmental injustice municipalities across the state, namely, former Emergency Manager cities (Detroit, Flint, Highland Park, Pontiac, Benton Harbor. Hamtramck, Ecorse, Allen Park).

(3) Existing issue or opportunity:
(a) PFAS contamination is a serious problem for the Safe Drinking Water Act and the Clean Water Act protections among residents in several areas of Michigan. The EPA allows for use of DWSRF grants for the treatment and remediation of wells, and the creation of new systems for.
https://www.epa.gov/drinkingwatersrf/dwsrf-eligibilities

Feasible action:
(b) Promote to prioritize and allocate immediately DWSRF grants to PFAS contaminated communities.

(c) Seek and apply for EPA or State of Michigan principal forgiveness on DWSRF loans to address PFAS contamination.

Problem: Assistance is needed for safe access to water
Feasible Action: Creation of a non-profit entity to be a one-stop shop for utility related assistance programs. In addition to private fund raising, add the created non-profit to the Michigan Voluntary Contributions Schedule (requires legislative action). 10 are allowed and 9 were listed on the 2018 Michigan 4642 form.

Opportunity: Drinking water issues related to PFAS are popping up in smaller communities where there is sometimes not a water utility and residents are on well/septic. This issue may be a motivator to create a better system for the future and some of these communities are essentially a blank slate to truly design the right "water utility of the future" and do it right. The challenge to this is that, with the small size and rural character of many of these communities, there is somewhat of a capacity gap and meeting local needs is difficult.

Feasible action: Creation of an effective incentive program (or assist communities with better access to an existing program) to help small rural communities make the shift now to a more centralized water system, using the current issue of PFAS as one good reason to initiate that program and more aggressive approach toward helping communities.

Issue/Opportunity:
The Water/wastewater industry currently has dual problems facing it today and that is an aging infrastructure and aging workforce of which these problems are magnified in smaller utilities. An average age of certified water operators is 57 years old and wastewater is 56. The challenges for small utilities is how do they address these issues with a declining population in their communities and with smaller populations how do they get the revenue to pay for the infrastructure improvements along with being able to employ competent staff to run their systems and keep affordable rates for their residents.

Feasible Action:
Create an incentive program for small utilities to join together and create regional utilities. Maybe a way to increase grant opportunities for these communities for these utilities to become utilities of the future.

Issue/Opportunity: We need to accelerate the pace of water infrastructure upgrades and repairs while also addressing toxics that are contaminating drinking water sources. The water utility of the future will not be successful without additional state and federal dollars and without ensuring affordability programs that address unaffordable rate structures.

Feasible Actions: 1) Sell revenue bonds to raise capital for infrastructure upgrades. Federal and state statutes allow SRF programs to issue bonds, deposit the proceeds in the SRF, and pay the debt services out of the SRF's future revenues. 2) Convene stakeholders to identify additional revenue sources that will supplement revenue bond sales. 3) Develop a unified campaign to secure these resources.

Water Affordability and Transparency

State level oversight for multi-jurisdiction water utilities

- Rates need to be approved by Public Service Commission, another governing body, or an elected body (if board of utility is elected, shouldn't need to go through PSC/added layer)
- Hard headed assessment of rates and financing of utilities, not just review
- Make sure there is oversight, place to appeal on rates outside the courts
- Along with this, strengthen guidelines around ratemaking to ensure it is based on operational costs
- Detailed line item budgets need to be widely and publicly available
- Wholesale and retail rates subject to review for multi-jurisdictional systems
- Also publish these rates for each community (transparency to make clear wholesale and retails charges for all communities)
- Rate considerations should include liabilities and costs of host community for water and wastewater treatment facilities
- Equitable cost sharing of overall systems, especially in shared regional systems
- Clarity around how water flows, where water is coming from, functionality of system, etc.
- Transparency of infrastructure

Funding and support from state and federal governments:

- At least partially funded to decrease burden on ratepayers to maintain affordability
- Financing options from state/fed with low rates to allow utilities/cities to better be able to afford improvements/needs
- Especially for state/federal mandates (stormwater, lead/copper rule, etc.)
- Explanation of conditions and shared responsibility for why those conditions exist
- Resources beyond funding too: shared research data, assistance from state/fed level experts, trainings for utility decision-makers on issues/mandates/best practices

Water Quality

Oversight of permitees for water discharges (Thinking U.S. Ecology)

- In granting permits, have to ensure the sewer/treatment system can handle the contaminants, that contaminants will no negatively impact workers or contaminate the system in a bigger way,

Encourage, through state agencies and universities, more research on public health risks from raw water sources and distribution system conditions

- Broaden distribution and accessibility of research data
- Incorporate utility research data into broader research
- Incentivize/support utility participation with academic institutions and agencies in broader research on water conditions, emerging contaminants, and other water data

Accessibility to water testing for residents/homeowners (not saying free)

- Need to regain trust/confidence in tap water and water system
- Promote filtration systems

Education and promotion of healthy water-related behaviors

- Issues around what is being dumped at household level (into drains and onto lawns)
- Chemical use and disposal for municipalities and households
- Use of tap water over bottled water

- Use of green infrastructure to help filter contaminants

Standards for bottled water

- Quality standards/testing

MUNICIPAL WATER LIENS ACT
123.166 Discontinuing service or instituting action for collection; invalidation or waiver of lien; **rate discount or hardship program**.
Sec. 6.
To maximize collection of revenues owed for provision of water and sewage services a municipality may:
(a) A municipality may D discontinue water service or sewage system service from the premises against which the lien created by this act has accrued if a person fails to pay the rates, assessments, charges, or rentals for the respective service, or may institute an action for the collection of the same in any court of competent jurisdiction. However, a municipality's attempt to collect these sewage system or water rates, assessments, charges, or rentals by any process shall not invalidate or waive the lien upon the premises.
(b) For the protection of public health and welfare and to assure all customers have access to water and sewage services develop a rate discount or hardship program. The municipal water or sewage system shall design an appropriate application and shall set appropriate standards for who shall qualify for the program.

THE HOME RULE CITY ACT
117.5e Municipal water or sewage system; annual audit; public hearing before proposed rate increase; **rate discount or hardship program**.
Sec. 5e.
A municipal water or sewage system established by a city incorporated under this act which serves more than 40% of the population of the state shall:
(a) Be audited annually by an independent auditor designated by the legislative auditor general. No charter provision shall require an annual local audit for the same period. The auditor shall be paid by the system. The results of the annual audit shall be made available to the public in compliance with Act No. 442 of the Public Acts of 1976, being sections 15.231 to 15.246 of the Michigan Compiled Laws. The annual audit shall be submitted to the governing body of each city, village, or township served by the system and to the legislature before December 1 of each year. Each city, village or township served by the system shall be audited annually by an independent auditor. The auditor shall be paid by that city, village, or township served by the system. The results shall be made available to the public.
DRAFTDRAFTDRAFT
(b) Hold at least 1 public hearing at least 120 days before a proposed rate increase is scheduled to take effect. Each hearing shall be conducted in compliance with Act No. 267 of the Public Acts of 1976, being sections 15.261 to 15.275 of the Michigan Compiled Laws. Notice of the time, date, and place of each hearing shall be given in the manner required by Act No. 267 of the Public Acts of 1976, shall be prominently printed in a daily newspaper of general circulation within the area, and shall be mailed to each city, village, or township served by the system not less than 30 days before each hearing. A final vote by the governing body of the city to implement a proposed rate increase shall not be taken until the hearings provided for in this

subdivision are concluded and the results of those hearings are considered by the city's governing body. This section shall not be construed to impair the obligations of a contract. A city shall not be required to hold a public hearing before the establishment of a water or sewer rate which is necessary for debt retirement under outstanding bond obligations.

(c) For the protection of public health and welfare and to assure all customers have access to water and sewage services, a municipal water or sewage system[shall] develop a rate discount or hardship program. The municipal water or sewage system shall design an appropriate application and shall set appropriate standards for who shall qualify for the program

Appendix 4: Summary of "Getting Specific" exercise from May 24 workshop

Recommendation	Who at the state takes action?	Specific action(s) to move forward	Low hanging fruit?	High priority?
1: Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems	2: EGLE, Treasury	2: Review SRF, Review tax credits, ability to use low interest loans, examine barriers to sending out grants and loans to communities in a timely & efficient manner	Tables: 2, 3, 4, 5, 6	Tables: 2, 3, 4, 5, 6
	3: Executive branch, EGLE department director	3: Lower and multiple interest rates		
	4: administrative [executive]	4: lower interest rates, maximize principal forgiveness/raise the cap, eliminate interference of federal cap on grants		
	5: EGLE, Legislature	5: Have to develop prioritization process, gather data about other SRF programs, revise the SRF criteria		
	6: EGLE	6: Change in policy? Change is possible since the funding is supported by the federal government and user guidelines could be updated by the state		
23: Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle	2: Governor and cabinet, MDOT, EGLE, Treasury, staff of cabinet members, collaboration with academic institutions	2: Executive orders, task force to examine possibilities to arrange meetings between utilities for work planning. Investigate programs used in other states, research in public health tradeoffs/outcomes	Tables:	Tables:
	4: Legislative, EGLE, MDOT, DHHS, Infrastructure council			
	5: Legislature, internal departments	5: Go through review to determine legalization, review existing grant programs, coordinate asset management		

26: Expand Stormwater, Asset Management, and Wastewater (SAW) grants- additional funds, more communities, follow up grants to implement	2: Administrator of federal funds at state level, appropriations, EGLE	2: Designating certain academic institutions as leads in particular regions of state, technical assistance in grant applications and project management, run informational meetings about SAW grant requirements and eligibility, establish a contact person/hotline by region, integrate regional land use planning	Tables: 5	Tables:
	4: Legislation and/or ballot			
	5: Legislature	5: Get another bond, redo budget, prioritize in budget		
28: Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination	2: EGLE	2: Definitions of environmental justice, make sure it applies across the state and not just Detroit	Tables: 4, 5	Tables:
	3: No one at the state can act on this			
	4: EGLE	4: Maximize what can be claimed from federal gov in annual contingency plan, maximize principle forgiveness to disadvantaged communities		
	5: EGLE, Legislature	5: Expand forgiveness, increase funding for SRF		
3: Change state law to facilitate use of funds for affordability programs	3: Legislature	3: Authorize state low-income programs to address Bolt Decision	Tables: 5	Tables:
	4: Legislature, possibly refer to ballot	4: Constitutional amendment? Declare water utility property as Renaissance zone for state property reimbursement; All regional water utilities need host community agreement		
	5: Legislature	5: Develop state-wide program through legislation funded by ongoing stream of revenue from rate payers, general fund		
11: Offer affordability programs (Tables 4 & 5 combined with 3)	3: Legislature	3: Create affordability programs	Tables: 5	Tables:
	4: HHS, legislature	4: Push a bill through via a coalition and lobbying to establish statewide program; income based rate structures		

2: Create a state-level regulatory commission or governing body to oversee utilities		2: Champions at all levels, state level ombudsman	Tables: 2, 6	Tables:
	3: Legislature	3: Create legislation (unlikely to go anywhere)		
	4: Legislature	4: Find bipartisan support to co-sponsor bill on this		
	6: Legislature	6: Develop coalition to move forward, Identify a group to champion the initiative and present it to the legislative branch, Create a council to identify priorities and move the ideas forward. The council should design an approach of rates evaluation and report on the process; Determine the type of the regulatory body needed / identify the support systems		
7: Pass state legislation requiring annual reporting on water utility rate setting and costs	3: Legislature	3: In progress, bill pending	Tables: 3, 4, 6	Tables:
	4: Legislature	4: Find bipartisan support and don't water down bills		
	5: Legislature (enact), EGLE (implement)	5: Draft and pass legislation, make the reports available to the public, what information is needed in reports		
	6: Legislature	6: Create coalition/council (see Rec.2 above); Created will propose a narrative about required details of the reports the reports, Create a council that evaluates rates increase and generate the report on the process applied		
9: Increase efficiency and maximize use of existing capacity	3: Executive branch	3: Identify excess capacity for helping to locate new business/growth	Tables: 6	Tables: 5
	4: Locally-handled with EGLE oversight	4: Make a state level timeline for asset management plans (budget issue?); State can convene into budget issues		
	5: Legislature (permitting through EGLE)	5: Identify the permits, administrative rules, have the executive branch identify existing capacity. Build legislative support, Identify opportunities with grants		

	6: EGLE	6: Create incentives for achieving efficiency e.g. financial support, low rates on loan; Support initiatives for installing new meters / provide incentives or replacing water main to reduce non-revenue water; SRF could include incentives to support programs described above		
8: Provide diversity, equity & inclusion training to utilities	4: Civil rights commission	4: Develop curriculum; you can't work until you finish equity training, redo training on a schedule	Tables: 4, 6	Tables:
	5: Labor, EGLE	5: Build this into best practices manual, outreach, institutional training		
	6: EGLE	6: Integrate into grant/loan programs; Provide a continuing education for all operators and associate this training with a mandatory certification; Incentivize the process and include the training statistics in requirements before providing funding; Develop a program associated with the office of inclusion and diversity in EGLE to promote this issues across all water utilities in the State		

Appendix 5. Notes from the Fellows Workshops

Water Fellows Workshop
12 April 2019
Meeting Notes

Table 1

Lunch Discussion Notes: A Utility of the Future is...

- Optimized
  - We defined this as: You get the quantity of water when and where you want it
- Trustworthy
  - Limited trust in institutions as a whole
  - Utilities need to *earn* that trust. Perhaps boil water advisory in Philadelphia (or Camden?) that John mentioned in his talk.
  - Water bills are very opaque
- Well-informed
  - Utilities must do a lot of planning based on limited information. However, limited water capacity might limit growth in the future
  - Without the right information and planning you won't be able to set rates appropriately
- Water-energy nexus: 80% of costs of water are energy related
  - Considering coordinating water and energy projects/improvements
  - Great Lakes Basin may be a huge place for potential growth in the future, but needs work to be able to provide water
- Conscientious of land-use planning
  - Avoid dead-zones in city planning
- Values-based in a community
  - Community and utility values and/or priorities should align.
  - Address spatial structural racism
- Key words/phrases:
  - **Business vs. service provider**
  - **Community participation**
  - **Trustworthy and Transparent**
  - **Empowering engagement**

Other Notes:

- Water is free
  - Costs are associated with treatment and distribution
  - How do we help ensure access of water? Is water a right?
- Regional cost savings from combining systems
  - What planning could be done to sync up decentralized systems?
- How do you equitably pass debt on to the next generation of water users?

Table 2

Lunch Discussion Notes: A Utility of the Future is...

- **Transparent.**
    - Huge disconnects between regional systems and townships. They aren't as coordinated and don't know what is there.
    - Knowing where the capacity is.
- Creating a communication infrastructure. **Sharing knowledge.**
- **Affordable**
    - <u>No more shut-offs</u>
    - Shutting off the water may affect the quality of your neighbors
    - Our state doesn't have any help for people paying their water bills (there is help for other necessary elements like electricity, etc)
    - In our state, we shut off water if bills aren't paid. Ex: single family home, water shut off, kids are taken away, bill gets bigger, she's losing her property, etc.
    - Maybe water as a right isn't the right terminology but we need to think about it differently than we do right now (fire departments aren't charged for hydrants)
- **Including stormwater and individual systems (one water)** in the discussion, people don't think of it as a utility so including it in the future would be very helpful
    - One water, and using the right language
    - We don't think about water as much here, oh we will just drill a well (Parchment had ~100 wells in a one mile radius right next to a community water system)
    - It's never a problem until it is a problem
    - Zone and land use is a challenge
- The SAW (Stormwater Asset Management and Wastewater) program has helped communities refocus and made them think about things differently. SAW needs more money. **Incentives.**
- Have to talk about our private systems (private wells and septic systems)
- Failing septic systems in the state Michigan and not really any help from the government
    - Have to have a local point of sale ordinance
    - Revolving loan fund in Bay County?? Three years to pay it back
- Bottling companies take a lot of our resources and they don't pay for it
    - We want to charge them but we don't want to charge Bells or Founders or nuclear power plants
- How can the state encourage regionalization?
    - Financial incentives
    - If we knew our neighboring community had capacity
-
- Don't just fix a problem, why is there a problem
    - Raw sewage going into Lake St. Clair

Other Notes:

- We are the highest number in the country for percent of population using wells/private sources (25% of our population)
    - They will not want to hook up to public systems, Kentucky's solutions won't work here
    - Surprising that Kentucky is 98% on public systems (doesn't seem like this is accurate), maybe water tanks

- How are we going to pay for these things, and maybe we are not? We aren't going to be able to come to an agreement? So instead how are we going to best deal with this scarcity?
    - The inertia is there to do nothing.
- We don't have a good handle as a state about where capacity exists
- Mortgages in Detroit is still shockingly low, there are certain blocks that have grown but it is not enough to make up for the lost population. Single family home areas were hit the hardest
    - Detroit went to some stormwater fee? Based on impervious services, incentives to install infrastructure
    - DWSD local agency administers the storm water program, the permit is shared with the Great Lakes Water Authority (Detroit's infrastructure has been leased to GLWA)
    - Incentives might not be enough? Average citizen and legislators don't like the idea of paying for their rain
    - **Sometimes the language we use becomes an obstacle**. For example, rain tax is something that citizens and legislators alike do not want to hear.
        - Oakland can't get the storm water policy to pass because they hear stormwater utility and they hear rain tax. They don't talk about the merits of it because they interpret what they hear.

Table 3

Lunch Discussion Notes: A Utility of the Future is...

- **Self-sustaining**
    - Socially and environmental
- Better funded on all levels, prioritize spending to upgrade infrastructure & to protect Great Lakes, wetlands, etc.
- Honest in description of the actual needs
    - Record projected needs with actual to date spending
    - Honesty in WHY we have these needs, and the value of the needs
    - What is the cost of NOT doing upgrades vs the cost of doing it
        - Demonstrating savings of upgrades will make it an easier sell
- In position to innovate, but not confusing innovation with efficiency
    - Very efficient right now bc we have to be
    - Everyone is waiting for someone else to innovate bc they don't want to be the first to do it
        - Need to start taking risks in small or mid-sized communities to see what works
- Intellectual capacity of people to man/operate utility of the future, how to get people to get the training to become competent operators of the utilities
- Engaging with the community, and having a more concrete community service component -- not just when a utility needs to upgrade or fix something.
    - More transparency and trust in the people working for the water utility
        - Hire people from within the community/surrounding communities so there is increased communication and more trust in the needs of the system
    - Increase the feeling that the utilities are protecting community interests rather than fighting the community interests
        - COMPASSION---proper messaging
        - Better crisis communication -- less fear, but more trust

- **Resilient**
    - *****Environmental**** ability to recover from crisis events/climate change
        - Financial resiliency after climate crises.
    - Reuse and Recycling
- Equitable and Just systems, **holistic management.**
    - Who is operating the system
    - Distribution of the goods.
- Has a sustainable rate/revenue system to maintain future investments and processes.
- **Depoliticized rate systems**/utility systems → we know there is a problem, and the problem needs addressing
    - We know there needs to be more tax dollars put into the system, not a secret
    - Put community needs in the hands of the community (Community advisory boards?)
        - Meaningful engagement, not just complaints
    - Elevate the voice of the utility operators in discussions of management of the systems
- **Adaptive, innovative, and creative system**

Other Notes:

- $2 million dollar system in Petoskey, thanks to the Native tribe in town, rate restructuring, increased use of treated and recycled wastewater → could this be a model and/or be scaled up for larger systems
- How can we slam water conservation principles when we have a perceived abundance of resources here in MI (when this is actually not necessarily true).
- Proportionality component is the toughest part of coordinating/setting up stormwater systems
    - Legislatable, but from that point you get into policies of taxes vs fees
- State hasn't lived up to other commitments, e.g. obligations with revenue sharing, roads, police etc,
    - Increases the tax burden on the local level, poor management of overall state general fund in terms of prioritization.
- Michigan relative tax rate has very much declined, infrastructure was built in richer days. Revenue/taxes has fallen, but the perceived tax still seems high, even though its not → leads to infrastructure falling apart
    - Increase the understanding that the money for infrastructure upgrades has to come from somewhere.

Table 4

Lunch Discussion Notes: A Utility of the Future is...

- **Transparency and Accountability**
    - **More information available that is accessible and UNDERSTANDABLE**
        - **Remove obscuring language and plans**
    - **General public education**
- How communities connect/how they should connect
    - Alternative wastewater system
- Bringing rural communities into the fold
- Matching perception with actual information/facts

- More intergovernmental negotiation help for small rural communities (more volunteers in small local governments than actual career politicians which lack the skills necessary to contribute)
    - Human Capacity
- How do we pay for communities drowning in PFAS/other contaminates which do not have enough local revenue to deal with the emerging issues
- How you layer communities
- Committed to notions of racial equity and public health
- Ensure regionalization/racialization doesn't happen (Gerrymandering of the utilities)
- **Address spatial-structural racism**
- Address environmental threats (should help address other things than just clean drinking water)
- Not-Private
- Affordable and Sustainable
- Investing in public good and services
- State responsibility that all people have access
- Overall/overarching regulatory structure in the state(s)
- **Must have Funding (Non-magical solution) - beyond rates**
    - **remove barriers to help take care of people more - make it easier for more communities to access state and federal funds**
- **Guaranteed access to clean, safe, affordable water as a public trust**
- **Appropriately scaled utilities for the community it serves**
    - **No one size fits all**

Other Notes:

-

Table 5

Lunch Discussion Notes: A Utility of the Future is...

- Canada, they don't leave with economic they leave with social and environmental Triple bottom line, triple approach.
- Equity issues because of foreclosures, tax bills, gentrification problems, very hard issues that people are having.
- Tax foreclosure and home foreclosure and the problem hasn't changed. Great lakes water authority takes away from people that lives inside the city, you have elected officials but who put people over these authorities
- Regulators always look at the economic value and not social, is it reflecting cost services, the state has to make a decision to share those costs
- People are making decisions have very hard impact on legacy debt, how do you move forward when you are paying the problem of the past
- Suburbs have to share the cost, should be a regional share of the burden
- Taking on the burden on half of the region
- Elevation, distance from the supplying plant, multi factor system: has 15 elements to it. Would invite every community to talk about the interests of the community, the customers was happy with it, but it seems to be lost. KWA?

- What was the education and what does it need to look like. What went into that over history to cost this disparity of cost. It should come to revenue sharing overtime, we need to get a common understanding to move forward.
- How historical FHA policy require segregation of black people, wealth, health, disparity, look at the systematic systems are broken down, the remedy has to be making the finances whole in Detroit
- The policy has to embedded the knowledge of rural change
- Back in the 80s the systems were addressed by grants
- Control development of agriculture, examine the development of growth, geography wise and how the economy and population will occur
- Low income and high income split creates the cost problem. The solution need to recognize the people of on private and public, rates going up on urban areas, people will move out, should be an equal burden across. Understanding the scale of the issue.
- Diversity on the council, the age and the time matters.
- What government does, government use to be invest in the infrastructure. Sharing history is meaningful is important. We are facing water scarcity and water quality issues
- Had to build big because the amount of people. Guidance for the future can't resolve that until you know the history
- The exact same thing is happening in rural areas. understanding history and justice understanding empathy on how we got here
- Rates are cheaper in suburbs, it must be a negotiation.

Other Notes:

- **Stewardship: Equity/justice**
- **State of Accountability, Affordability, Governance, Responsibility**
- **Funding model: Master plan**
- **Sustainability/resilience**
- **Infrastructure utilization**
- **Education and shared understanding**

Table 6

Lunch Discussion Notes: A Utility of the Future is...

Other Notes:
Discussion before 10 AM:
What concerns you most about creating sustainable, resilient water utilities is ….

- The scope of the challenge: fixing what we know how to fix and finding solutions to problems we aren't sure we understand yet (e.g. pharmaceuticals / microplastics, etc)
- Scarcity of resources to provide clean water at all times and conditions to homes and communities
- The cost of investment that prohibits flexibility, this is in priorities with other priorities
- The complexity and cost of the solution
- Upgrading and monitoring the infrastructure to provide clean and safe drinking water to the utilities customers
- Providing a system of governance and financing that creates a truly creative imperative that prioritises clean, safe, affordable drinking water as we adapt to climate change and political instability

Noted on Panel discussion questions:

- Was tribal water systems included in the study? Yes, EPA database is being used to curate the database used for selecting communities involved
- How utilities make themselves valuable to their community
- How are debits for utilities managed to provide funding resources availability for other investment Have you examined the role :: disparity, role, and investigating other communities that are involved?
- Detroit not a consolidated systems and that is creating differences in costs /// Current costs are being compounded to cover costs across the board /// Price elasticity
- Example of a model used in Philadelphia What are good examples of transparency for rates design and cost affordability / translating to the core user?
- Framework that could provide reporting structures/ responsible water utilities $270 billions investments needs in infrastructure and how climate change is going to affect costs? Stormwater infrastructure mitigating costs?? Service security for water utilities? Are there solutions to resolve blending? How is this investment being discussed?
- County Drain commissioner: Currently thinking about water aquifer recharge? Focusing on the deep aquifer? Water systems for irrigation? What are contributions for municipalities, communities, town and others?
- Michigan State is supplied by mostly by groundwater, while others are supplied from surface water systems - 40% are served by wholesale systems? All systems are viable, whether small or bigger
- Water conservation, population shift? Rate design? Declining populations - 1% per year, but rates are still going higher / less financially viable/ Conservation efficiency/ capital cost for the long run//
- Michigan - 700 people in Detroit from 2 million - Do not rebuilt the systems of tomorrow, based on yesterday problem / What are the best practices in all utility categories
- Climate change with more rainfall events -- how do we harden our water systems? How neighborhoods inter-connected are related / Managers of today have to think about systems of capacity / Wastewater could be one area of improvement
- Current Michigan has a high bill to pay for water/ infrastructures compared to the overall economic status of the State, any thoughts? Provide support to existing systems to address the capacity of other systems
- MI population growth is stagnant - land use vs investments in cities or communities or still move to funded cities
- Being proactive and engaging with water utilities at local level or engagement between communities and water utilities / Needs a proactive leader and become effective
- Legacy debit / regional utilities .. how to address the issue of utility regulations: Figuring out debits solution instruments /
- Observations & comments: Elements of impatient “Water racism this country has experienced” Prospects of the projects and how to get MI there
- Part of the solution has to include rural systems / avoid to focus on general large utilities, but also include rural communities or private wells and septic systems / We have revenues, but we lack values and these could be improved into a useful application

Lunch Discussion session 11:30 AM: A utility of the future is ….

- **One water concepts : water** is interconnected and utility of the future has to consider all aspects of water here in Michigan e.g. you cannot ignore septic systems and focus on cities only, what does changing climate means to water, surface water .. holistic view and how we are addressing all the interconnections, pollution …. Inclusion of rural and urban utility systems

- Should be interactive with communities, help educate communities and customers what it involves to include customers. This lack of connectivity leads to poor management of infrastructures
- For all the best practices presented, do we know how they fit in MI regal framework? What are the major issues associated with the adaptation of these practices
- Rates are in part controlled by individualism of each municipality, lack of including customers
- Small systems are affected by utility controls, how do we address issues of contamination
- Governance as it applies to human needs such as water lacks public inputs, this leads to lack of consideration of the majority users / services users since water is a "human right"
- Lack of preventive maintenance leading to services outage, while if this would be done could lead to achieving a sustainable and financially viable system for the future and also ensure that investments are being put back to improving the systems
- Rates development should involve all community members and transparence about water infrastructure costs and get a community vote about budgets needs / **community education** about infrastructure / costs & budgeting
- Disconnection about funding water infrastructure due to high administrative and maintenance costs
- Disconnection between city population growth and water supply needs. Future utilities should rethink this challenge
- Industrial usage rates are different from homeowners charges, utilities should strike a balance for all users to afford water rates
- Understanding how a **"water system"** is defined by different ownership and territories to promote best management practices across regions / municipalities
- We need a level of collaboration, **accountabilities to utilities**, individual, community & how all these rights are respected and accounted for to define the utility of the future
- **Trusted water partner** with customers / citizens/
- **Survive political instability and climate**
- Public trust & Democratic
- Training utilities to be good communicators

###

Water Fellows Workshop
26 April 2019
Meeting Notes

Table 1

Lunch Discussion: What ideas have you heard that you think are feasible for enabling utilities of the future in Michigan? Why?

- **What is the state of Michigan's responsibility when it comes to the water utilities and helping non-viable utilities?**
    - Separate water utilities and solutions based on viability
        - Some water utilities are not viable business and may be need

        - Some utilities need to be updated so they do not become non-viable
    - Consolidation (Not regionalization)
        - Waiving connection fees?
        - Sharing resources
- **How do you change the mentality here in Michigan? What's the carrot?**
    - Behavior based incentives
        - Interest Rates (SRF)
        - Special trainings
- **How do you start the "leadership" needed to change?**
    - Balance how much politics are influencing decisions
        - Removing politics (Removing the turnover cost of new politicians and their effects on the utility)
        - Creating a Separate board that oversees utility
        - Better Leadership
    - Utilities and communities working together
        - Active part of the community
        - Representatives from the community participating with utility
    - Get Legislatures wanting the solutions that our out of state leaders are sharing
        -

Other Notes:

-

Table 2

Lunch Discussion: What ideas have you heard that you think are feasible for enabling utilities of the future in Michigan? Why?

- Combined the utilities that was discussed and figure out the best practices of all 3, reinvesting into the infrastructure. He asked how often does the utilities get together
- (Kyle Dreyfuss-Wells – speaker) answered and said it happens utility conference every year to talk about best practices.
- (Steve Hubbs – speaker) target are for the smaller utilities, the bigger problem is with the smaller population and not the bigger population. Get together 2-3 times together, no regulators and no press, just them getting together and it was very impactful.
- Training to deal with the issues that we discussed this morning. People not understanding the customer based and the issues that they faced. Be sure to include a program for that encouraged individually for utilities individually and state training. A racial, equity training.
- (Steve Hubbs – speaker) said that this should be required and mandatory.
- The regulators should also get these types of training as well. A number of crisis that looks at socioeconomic backgrounds that should be addressed.
- We need the affordability programs but how do we get them. A tax that need to be voted on.

Other Notes: Summary

- Training, to meet the environmental justice issues to add adequate training as part of the licensing as an incentive to getting it done, racial equity and low income
- Water affordability, changing state law or attorney general opinion
- Efficiency of the operations, it's not on the smaller utilities radar. Reach out to smaller utilities about real water, not much funding.

Table 3

Lunch Discussion: What ideas have you heard that you think are feasible for enabling utilities of the future in Michigan? Why?

- **Non-revenue water route [Speaker - Andy Kricun added].**
    - Regional charges more for resources, thus provide a one-time fund to find where the non-revenue water is.
    - In the long term, this is a good pay off. (Use asset management to persuade).
    - This is one of the low-hanging fruits.
- **# 1. Transparency on data.**
    - Utilities can have access to all the data. Michigan allow the utilities to share the data. Share the data.
    - Capital cost of applying the techniques/ equipment needed to gather such data.
        - E.g., Smart meters. [Andy Kricun - speaker] *Might want to find out where the non-revenue water is at first place before any smart meters.*
    - How to get the data? Might be a huge lift on the money?
    - Form an agency/ organization/ something above the water utilities to facilitate the discussion and enable the transparency of data sharing among groups.
    - Customers pull out the data and throw the utilities
- **#2. Hookup to public water when needed.**
    - Michigan has 1400 public water utilities. How to consolidate these systems at some point.
    - [Other concerns] Michigan is the No. 1 private well owner state as well. Not even in Upper Peninsula (e.g., area in Parchment Kalamazoo, ~1000 (?) wells). Over half of the well owners have little interest in joining the public water systems. How to achieve this?
- **#3. Redesign/ recreate the discussion on how to develop a rating system more meaningful for everyone**.
    - No water shutoffs.
    - [Andy Kricun - speaker] Flat price for the first ### gallons then elevated price. [Fellows] comment that this is hard to do as MI utilities vary greatly from each other.
    - Redo the water bill based on property structure.
        - Drinking water side- flat rate for the first e.g., 200 gallons and a higher premium for above that;
        - For sewage, type of properties for price (combined sewage for unit price).
    - Suburb VS the city. The equity; how better billing

        - Bill based on flow (flat on gallons- some feels this isn't a good idea for sewage, as the stormwater blend in; others point out this is how the current billing systems adopted);
        - Impartial panel to look into the water price for metro versus suburb (disparities in water rates);
        - The price disparity prevents people to effectively communicate (as money and payments were involved).
- Hold polluters countable and use the money for utilities. Difference between commercial and non-commercial use. [Andy Kricun (speaker)- supplemental environmental thing in New Jersey; 1 square mile, 27 contaminated sites, Camden (?).]
- Enforce the laws we have.
    - Corporators get around the regulations.
    - Inequity is the money.
    - Toledo as a bad example, wastewater just discharged into the river.
- Future initiative
    - Local, state, federal, be clear on each's responsibilities. Education is important (right now the legislation is doing a good job, with examples).
    - Individual legislator normally knew very well only in his/ her own area. Immediate needs of two people do not necessarily align.
    - Building on the previous note, challenge to see the larger picture.

Other Notes:

- On the training program. How to bringing in students? How to build these topics into the curriculums and trainings into the education system/ programs?
- 2At state level, what are the things can be done right now.

Table 4

Lunch Discussion: What ideas have you heard that you think are feasible for enabling utilities of the future in Michigan? Why?

- Reducing operations costs on the energy side/space
    - Great programs that might be available to water, e.g biodigesters.
    - Renewable energy?
    - Standby rates
        - Have to pay to be ready to use the system at any moment, but this is a fairly low cost
- Non-rate ways to drive down costs
- Inter-utility collaboration
    - Take inspiration from Cleveland's Housing Network
    - Become public health advocates
    - One stop shop

    - Non-profit assistance
    - Right kind of collaboration could increase skill sharing
        - All persons have access plus increased efficiency
        - Only so many efficiencies within one system, look outside of it to continue increase in efficiency
    - Take the conversation beyond water, look at water issues
    - Proactive vs reactive assistance built in
- Bring more compassion back into the system
- <u>Change how we use our SRF program</u>
    - Northeast Ohio saved $41 million by going to SRF instead of the bond market
    - Raising cap on loan forgiveness
    - More like a grant than a loan
    - More flexibility in use of the money
    - Low interest rates
    - In Ohio and New Jersey there's waiting list for SRF funds, in MI there were no applications
        - Change our system to reflect the functioning systems
    - This is a low hanging fruit with big results if we can update the SRF system
    - Less political than a legislative shift
- Increase accessibility for both low income & rural communities
    - Look at the issue as a collaborative fix between rural and urban rather than pitting them against each other.
- Proactive affordability program like Cleveland's housing networks.
- <u>Community benefits and tying them into these decisions</u>
    - Bring the communities into the conversation with more intense, person to person outreach.
    - Partner organisations can help be the mouthpiece

Other Notes:

- All of the other systems had a catalyst driving change, what is ours??
    - Rate hikes are completely politicized here
- How do we incentivize creativity in the utility systems?
- Bring the conversation from far reaches to find creative financing in unexpected places
- Better skills in grant writing
    - Nurture these skills
- Job creation connected to infrastructure
    - Think bigger in terms of maintenance or management
        - Across the state make sure that people are onboarding into these programs so they can see themselves in these programs
- Proactive vs reactive shutoffs/affordability programs
- Shift in the weight/urgency of water equity crises

Table 5

Lunch Discussion: What ideas have you heard that you think are feasible for enabling utilities of the future in Michigan? Why?

- Going through the legislature presents significant roadblocks for feasibility and speed of any project.
- Different utilities are at vastly different levels in terms of technology/other. It may be important to get struggling utilities up to speed before focusing on improving utilities that are doing well.
- What can be done to extend best-practices to smaller scales?
- State support of regionalization of small utilities might be very helpful to get info about best practices to smaller utilities
- Inclusion of diverse perspectives is likely to increase the feasibility of projects

Key Ideas

1. Focus on affordability
    a. Compensation for those most affected (Camden, NJ example)
2. Incentivising participation
    a. Stress value of social capital not just finances
    b. Identify best practices in MI *before* needing legislation
3. Regionalization
    a. Pass best practices regionally, not just to large utilities

Other Notes:

- New state administration (perhaps any administration) is slow to take a stance on issues
    - 2018 Lame duck session had pretty serious and negative impacts
- Speakers discussed some great projects: Which of these might work in MI? Are there legal/other reasons those won't work in MI?
- Bolt decision is a single legal decision. Communities could challenge it, but are hesitant to be sued. Legislation could spell out and codify a statewide standard (and was introduced again recently?).
- Water industry is contained in many silos (e.g. drinking water and wastewater separate), even with focus on "one water" approach
- Few (but still some) utilities operate as private companies
    - LWC is an interesting example: can dividends be applied to projects *other* than water? Can they be applied to other city functions?

Table 6

Lunch Discussion: What ideas have you heard that you think are feasible for enabling utilities of the future in Michigan? Why?

- Understanding what types of institutional structures are best for facilitating rate discussions and transparency
    - Michigan is 1 of 6 states that doesn't have a state-wide entity looking at these rates to provide awareness
    - Improving the relationships with ratepayers

    - Public service commission (PSC) is feasible for the future and needed
        - Local control, uniqueness of each community (desired level of service) and other factors-some are more feasible to address than others
- **MPSC (Michigan Public Service Commission) model with local control (identifying the level of service the community wants)**
    - True cost of service model where an independent body comes in and determines the rates
    - More helpful to have one unit, than hundreds of individuals
    - Buy-in from the community, and some oversight
        - Separates the politics
- **Reforms to the state revolving fund**
    - Lower interest rates
    - Louisville is able to get loans under 1%, which is a policy decision
    - Ultimately this would be executive and legislative
        - You have to make the revolving fund competitive with the private market
        - The environment is tax-averse because we don't adequately describe the *value* associated with the service and the cost of ownership
        - Budget hearings don't provide you with where the money is going and why-and community benefits aren't even part of the discussion
            - Rates have quintupled in Detroit but nobody knows where the additional money is going
            - People need to understand what has happened structurally as to why these inequities have occurred
- **Authorize through statutes within their rate making structures the ability to have affordability programs based on criteria.**
    - How do you structure it
- Cross-assets: how do we work with energy companies
- How do we define feasible?
    - Within the next 5 years, identify political barriers to change

Other Notes:

- It's always the people, the shift in culture, the willingness to do it
- Power and money is political-we are going to continue to have problems with affordability
- Rate hearings: antagonistic spaces because decisions have already been made so the public feels like they really have no say
    - Chair commissioner only took 30 minutes to answer questions which isn't allowed for public hearings, and the hearings are heavily policed
    - Needs to find better ways to engage ratepayers
- People want stabilization, the ones that have stayed in bad conditions are the ones least capable of moving. Who are these different customer classes we need to address.

###

Water Fellows Workshop
10 May 2019
Meeting Notes

Table 1

Mid-point check in 1: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes = 2
- Thumbs-down= No= 0
- Thumbs-middle= Maybe= 5

Question: What struck you the most in the previous two workshops?

- Local leadership. Utilities found workaround and establish local leaderships to tackle the challenges. Not the government- state provides limited recommendations (comment: relationships between local people and state government role);
- Camden, using other funding and resources, as an exemplar (from the other table, not raising water rate for 15 years);
- State chime in in a certain way (positive view compared to the first comment).

Update to Vision: feedback on clusters
You should listen for key points, areas of consensus, areas of divergence:

- All participants on this table agreed with the clusters (7 people).
- No specific comments raised by this table.
- NOTE FROM SCRIBE: On "Our vision for utilities of the future", grouped all traits raised by the group into three clusters: relationships (7), operations (10), management & ownership (7)

Revised definitions: Anything you can't live with? Why?
*Capture the key points of the discussion. Note any suggested revisions in **bold** text.*

- Affordability
    - Not sure if affordability definition is accurate/ or the term affordability is accurate here.
    - "Low-income" should it be there or not? Two sided opinion.
        - No- as this would seems to be emphasizing on the low-income population only, while we are targeting at the entire community;
        - Yes- as the low-income group is mostly affected.
    - Related to the above point- too specific.
        - **Recommendations:** Talking about customers as a whole, then proceed to affordability to low-income community; can create criteria to the definition;
        - If handled properly in the latter recommendation section then it should be fine (matches definition).

        - *Related to Erin's input on the second sentence in the Affordability term, the table liked the idea to have both affordability for the customers and sustainability for utilities.*
    - Discussion: we haven't talked about how to start with the conversation of affordability (prior investigation work); reexamine the infrastructure and particular community, as these information might redefine the discussion.
- Funding vs Financing
    - Needs more context in the funding and tax;
    - All languages speak to loans at this point, need to mention more other resources;
    - Financing piece is a little too specific, which might restrict people's thought;
    - **Recommendations:** leave it open; be concise; incorporate more innovative thoughts; funding as a separate item.

Addressing Trust: What is the number one thing that must happen now to rebuild/restore trust?
Capture the key points of the discussion at your table: [The second part of the question, if you think nothing can happen, why?] Trust between utility and community/ state and community.

- Utility that customers trust them directly, and utilities severely lack trust. On state level, lack of trust from the utility to the state and lack of trust from the customer to the state. *Define the scope this table want to tackle first.*
- From a resident perspective, when reporting a problem, get finger-pointing rather than fixing the issues;
    - Different mindsets, different concerns.
- More fundamental issue, across the state, people don't trust what comes out their tap (lead, PFAs?); genuinely fear beyond
- Grassroot perspective: you build the trust then you protect it. Have levels of protection, education and advocacy at community level;
    - Trust is based on transparency and communication, information sharing (poverty of information is everywhere);
    - Effective communication.
- Community engagement
    - We need to speak to people in the way they (not we) can understand;
- Have a "translator" at council level to ease the communication between groups;
    - Difficult, e.g., lead and copper as example;
        - Expertise in operating the system into the table, not really fixing the issue.
    - How to approach and bring out the conversation naturally a
        - Bring out the objective facts and let the expert explains the facts to the public.
        - When emotion is involved, facts are useless; tough.
- Hearing what other people are saying is also important (mediator).

During reporting out, note similarities and differences that other tables had with your table:
- Advisory and advising committees to facilitate communication;

- Embrace until truth;
- Our table: transparency of the data, building a community level liaison and deliver the information in the understanding of the audience
- Highlight systems who are doing well and not doing well (our table talked about this but didn't raise it as a necessity to spread out this information).
- Transparency in data, keep community engaged, <u>prioritize the need.</u>

[On working definition of affordability] one person from our table thinks that leaving "low-income" out we are marginalizing certain groups of people who are affected the most in the most urgent water issues (which is why we are here). The current definition does not preclude forming specific recommendations targeting at the low-income community, yet it doesn't require any.

Recommendation discussion, step 1: What questions and/or concerns do you have about making recommendations?
Capture key points of the discussion:
-

Screening recommendations
Help your table screen the recommendations. If the fellows are reluctant to move the post-it notes, you can get up and move the post-it notes through the filters for them. Record any key decisions (like if your table combines any recommendations) and areas of uncertainty:
-

Working Lunch: Screening recommendations, continued
We'll pull you out to eat your lunches before the Fellows get their lunches. When everyone gets back into the activity after eating, note any key discussion points or ideas:
- Enable of the future is an important one.
- # 14- what does 'structure' mean? Questions from 2+ participants.

At the end of the exercise, record the following:
- Number of recommendations your table completed screening= 17
    - Items #1 to #17 on the Recommendations from Fellows, item #18 in discussion yet not finished.
    - No new recommendation proposed, modifications to a few.
- Number of recommendations that made it through all the filters= 8
    - List of recommendations that made it through all the filters:
        - # 1
        - # 2 and 7 clustered together;
        - # 3 and 11 clustered together;
        - # 8, with modification, incentivize instead of provide to get through the state level;
        - # 9 and 16 clustered together, with modifications to 9 (see below)
            - wastewater, in addition to drinking water, needs to be addressed;
            - capitalize Certificate Of Need (CON)

- Number of recommendations failed the first filter (addresses our concerns) = 1
    - # 12
- Number of recommendations ONLY goes through the first filter (addresses our concerns) = 1
    - # 10
- Number of recommendations ONLY made it through the first two filters (stays at Enables Utilities of the Future) = 6
    - # 4, 5, 6, 17 clustered together;
    - # 13, with modification: wording as "Regionalize systems with oversight";
        - Addresses some concerns of some people (comment from some of the table)
    - # 15, with conditions (in the long future, not true for the immediate future)
- Number of recommendations ONLY made it through the first three filters (stays at Meets our definition of affordability) = 0
- Number of recommendations ONLY made it through the first four filters (stays at Actionable by the State) = 1
    - # 14

Mid-point check in 2: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes = 3
- Thumbs-down= No= 1
- Thumbs-middle= Maybe= 3

Table 2

Scribe: [migrated to Table 1]
Participants: [consolidated with Table 3]

Table 3

Mid-point check in 1: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes = 3
- Thumbs-down= No=
- Thumbs-middle= Maybe= 2

Update to Vision: feedback on clusters
You should listen for key points, areas of consensus, areas of divergence:

- First 2 meetings, things that struck the participants: Camden New Jersey, improved system, no rate increases for 15 years: innovative approaches, considering what we want to be and being realistic about where we are; fair access to money for improvements to water; eye opening to see how many organizations are involved in the water sector
- Vision clusters, works for all of table. "Ownership" term problematic, suggest responsibility as edit. "Structure" was also recommended

Revised definitions: Anything you can't live with? Why?
*Capture the key points of the discussion. Note any suggested revisions in **bold** text.*

- Financing: very detailed and specific, all other definitions are broader. Adds some clarity

- Affordability definition is clunky. Second sentence of affordability seem more like sustainability. Customer/system is combined, may not reflect how utility views affordability
    - While dealing with affordability you also need the funding to deliver the services. Dealing with that the utility needs funds to maintain service without shutting off service to customers
    - Suggest change from "low income customers" to "all customers
    - Don't want the utility to take the lead in affordability policy
    - Justified operational charges
    - Suggest "cost of service", possible to put bounds on that to distribute over time
- Equity - "process" some people have been systematically disadvantaged. May want to target these communities to relieve undue burden

Addressing Trust: What is the number one thing that must happen now to rebuild/restore trust?
Capture the key points of the discussion at your table:

- A problem in certain areas of the state, water contamination focus on Flint and Detroit
- Not a lot of focus on areas that are working well currently
- Being seen to be proactive in dealing with upcoming issues
- Good communication with the community
- Highlighting the success stories, expand focus to all of the state, not just certain regions
- Proactive customer service that is seen to handle complaints in good faith
- Review history of how the service systems developed and battles of control with Detroit system and resulting mismanagement that ran up debt to correct misperceptions
- Perception of unfair burden - action with engagement
- Potential change in leadership
- Sharing information with the public

During reporting out, note similarities and differences that other tables had with your table:

-

Recommendation discussion, step 1: What questions and/or concerns do you have about making recommendations?
Capture key points of the discussion:

-

Screening recommendations
Help your table screen the recommendations. If the fellows are reluctant to move the post-it notes, you can get up and move the post-it notes through the filters for them. Record any key decisions (like if your table combines any recommendations) and areas of uncertainty:

Working Lunch: Screening recommendations, continued
We'll pull you out to eat your lunches before the Fellows get their lunches. When everyone gets back into the activity after eating, note any key discussion points or ideas:

-

At the end of the exercise, record the following:

- Number of recommendations your table completed screening= 29
- Number of recommendations that made it through all the filters=14
    - List of recommendations that made it through all the filters:
        -

Mid-point check in 2: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes = 4
- Thumbs-down= No=
- Thumbs-middle= Maybe=1

Table 4

Mid-point check in 1: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes = 1
- Thumbs-down= No=
- Thumbs-middle= Maybe= 4

Reconnect and review:

- No matter how many good ideas there are, how do we fund them? How do we really get people to consider it a crisis?
    - Not on rate-payers, should have a culture shift to prioritize this as a state or federal issue
- Sense of individual and collective urgency is necessary

Update to Vision: feedback on clusters
You should listen for key points, areas of consensus, areas of divergence:

- Responsible governance

Revised definitions: Anything you can't live with? Why?
*Capture the key points of the discussion. Note any suggested revisions in **bold** text.*

- Restructure second sentence in the affordability definition, esp "also includes the ability of the utility": does not make sense because clean drinking water is a public issue and the problem is currently framed as a ratepayer vs utility issue when they should be working together
    - Problem is not the individual ratepayers
    - Comes back to trust
- Affordability = availability and consistent quality
- Equity and affordability → corporations should be held to the same payment/shutoff criteria as individuals
    - How does the cost of the bills relate to how far in arrears they are.
- Equity and affordability across community lines

Addressing Trust: What is the number one thing that must happen now to rebuild/restore trust?
Capture the key points of the discussion at your table:

- **Institute transparency: embrace the truth and actually listen (both sides)**
    - **Does everyone agree on what the truth is?**
- Acknowledge power differentials: fight for those with lower power/agency & give them a voice
    - Us vs them mentalities.
- Follow through with recommendations

During reporting out, note similarities and differences that other tables had with your table:

- One group recommended making committees
- Highlight what systems are doing well
- One group recommended transparency

Recommendation discussion, step 1: What questions and/or concerns do you have about making recommendations?
Capture key points of the discussion:

- Connection fees have too many variables to boil down to a one sentence recommendation

Screening recommendations
Help your table screen the recommendations. If the fellows are reluctant to move the post-it notes, you can get up and move the post-it notes through the filters for them. Record any key decisions (like if your table combines any recommendations) and areas of uncertainty:

- Put "actionable by the state" below feasiblity?
- An idea does not need to pass all of these criteria to be feasible at some level (some are best tackled locally, state level).
- Pull feasibility from the bottom and apply it to all levels

Working Lunch: Screening recommendations, continued
We'll pull you out to eat your lunches before the Fellows get their lunches. When everyone gets back into the activity after eating, note any key discussion points or ideas:

-

At the end of the exercise, record the following:

- Number of recommendations your table completed screening=30
- Number of recommendations that made it through all the filters=22
    - List of recommendations that made it through all the filters:
        -

Mid-point check in 2: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes = 4
- Thumbs-down= No = 0
- Thumbs-middle= Maybe= 1

Table 5

Mid-point check in 1: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes =4
- Thumbs-down= No=0
- Thumbs-middle= Maybe=0

Caught your attention so far: moving water, cleaning water, finding water, etc. these are all simple things. It's the other components that complicate the matter. Cultural shift to look at these problems.
Update to Vision: feedback on clusters
You should listen for key points, areas of consensus, areas of divergence:

-

Revised definitions: Anything you can't live with? Why?
*Capture the key points of the discussion. Note any suggested revisions in **bold** text.*

- Like that the definition includes both types of affordability: affordable for the customers and the utility
- Add the word "**safe**" to the affordability definition about the type of water being provided
- Are we only measuring equity in terms of health? We need to look at equity in terms of access. It isn't a user-friendly definition and a sentence should be added about access. The first sentence is good but the second sentence needs work. From the same paper: "Equity in health thus implies that resources are distributed and processes are designed in ways most likely to move toward equalising the health outcomes of disadvantaged social groups with the outcomes of their more advantaged counterparts."
- "Absence of systemic disparities" is awkwardly worded
- Was dismantling power structures included in the discussion of environmental justice?

Addressing Trust: What is the number one thing that must happen now to rebuild/restore trust?
Capture the key points of the discussion at your table:

- Larger societal issue that we are getting at. The new administration has to make huge efforts at every point of contact with the communities, they have to go over the top with transparency because they are so far behind.
- Trust is all about relationships and once you've got a problem you can't build a trusting relationship. The solution needs to be something that builds trusting relationships before a crisis occurs. Continue to expand these leadership trainings and academies so people from different backgrounds could be brought together and build relationships while gaining skills (Great Lakes Leadership Academy)
- A state government saying affirmatively that this is the goal, and then following through with actions that are then monitored. This is our priority.

During reporting out, note similarities and differences that other tables had with your table:

- Communication, transparency, communicating on an understandable level

Recommendation discussion, step 1: What questions and/or concerns do you have about making recommendations?

Capture key points of the discussion:

-

Screening recommendations

Help your table screen the recommendations. If the fellows are reluctant to move the post-it notes, you can get up and move the post-it notes through the filters for them. Record any key decisions (like if your table combines any recommendations) and areas of uncertainty:

- Combine 4, 5, 6, 9, and 21
- Combine 23, 26, 27, and a written note "Prohibit Shut-offs" and an additional note about requiring coordinated asset management
- Combine 11, 12, 29 but change "create to utilize an existing" specifically DHHS
- Combine 2 and 7
- Combine 10, 18 and 19
- Combine 17 with a handwritten note about more research into private well users
- Add a note about having emergency response plans for crises when water isn't potable
- Wastewater needs to be tied into the idea of affordability.

Working Lunch: Screening recommendations, continued

We'll pull you out to eat your lunches before the Fellows get their lunches. When everyone gets back into the activity after eating, note any key discussion points or ideas:

-

At the end of the exercise, record the following:

- Number of recommendations your table completed screening= 29
- Number of recommendations that made it through all the filters=14
    - List of recommendations that made it through all the filters:
        - 3 (change state law to facilitate use of fund for affordability programs)
        - 24 (Adopt state-wide sanitary code)

        - 8 (provide diversity, equity & inclusion training to utilities)
        - 11, 12, and 29 (offer affordability programs, eliminate connection fees, ***utilize*** a non-profit entity to be a one-stop shop for utility related assistance program (DHHS))
        - 10, 18, 19 (engage local communities, increase accessibility to water testing for residents/homeowners)
        - 4, 5, 6, 9, and 21 (identify best practices and share information among utilities, promote inter-utility collaboration, enable utilities to share data, increase efficiency and maximize use of existing capacity, host quarterly funding forums to share information and discuss opportunities for collaboration)
        - 23, 26, 27, prohibit water shut-offs and required coordinated asset management (incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle, expand stormwater, asset management and wastewater (SAW) grants, support water bills already introduced in Michigan Senate…)
- Added: Prohibit water shut-offs which made it through all of the filters
    - Added: Emergency response plan designed by the state to follow when crises occur that doesn't include the distribution of bottle water

Mid-point check in 2: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes =4
- Thumbs-down= No=
- Thumbs-middle= Maybe=1 (Sylvia came after the first vote, the original 4 remain)

Table 6

Mid-point check in 1: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:

- Thumbs-up= Yes = 3
- Thumbs-down= No= 0
- Thumbs-middle= Maybe= 3

What has stuck with you from first two sessions?

- Focus on diversity
- Focus on project management
- Organizations' ability/willingness to "work around" rules

Update to Vision: feedback on clusters
You should listen for key points, areas of consensus, areas of divergence:

-

Revised definitions: Anything you can't live with? Why?
*Capture the key points of the discussion. Note any suggested revisions in **bold** text.*

- Second sentence on affordability doesn't quite capture the concept from the utility's perspective. This may be better captured with concepts about efficiency or optimization.
- "Low-income" terminology might not capture middle-income people who still struggle with water affordability. **Perhaps use "the ability of all to afford..."**?
- No substantial disagreements (other than potential wordsmithing).

Addressing Trust: What is the number one thing that must happen now to rebuild/restore trust?
Capture the key points of the discussion at your table:

- Transparency and community engagement
    - Utility can be a good community partner
    - Transparency: One example utility reported out the number of shut-offs and reconnections
    - Create some sort of community advisory board
    - Just like in a personal argument, a utility would do well to admit fault (where appropriate) before trying to start new negotiations
    - If rates need to be raised, have discussions with the public *before* the increase and give them an opportunity to understand why rates are increasing and to provide feedback
    - Somehow get utility and public to understand that we're all in the same boat
    - Maybe provide water quality reports to the public
- How do you discern people who cannot afford water from people whose choices prevent them from affording water? (or, how do you build trust that this isn't actually happening?)
    - Why are there assistance programs for electricity and heat but *not* for water

During reporting out, note similarities and differences that other tables had with your table:

- Honesty and transparency
    - "Embrace and tell truth"
    - Some mechanism to build community engagement

Recommendation discussion, step 1: What questions and/or concerns do you have about making recommendations?
Capture key points of the discussion:

-

Screening recommendations
Help your table screen the recommendations. If the fellows are reluctant to move the post-it notes, you can get up and move the post-it notes through the filters for them. Record any key decisions (like if your table combines any recommendations) and areas of uncertainty:

- Engage local communities
    - Somewhat hung up at "actionable by state", but group felt that the state could enable, encourage, or incentivize this by requiring utilities to engage w/ communities in some way

    - Group had some discussion about whether it's fair to force consumers to pay for redundancies in systems, or for affordability programs. It seems there are some strong precedents here.
- Adopt statewide septic code
    - Need more detail here - What would the code include? Who would pay for inspections? It's difficult to balance specificity that still applies generally.
- Change how the state uses its SRF…
    - This seems *feasible*, but does not seem *likely*
- Enable utilities to share data
    - Need more detail - With who, the public? What data? Are there anti-trust issues here? Do they not *already* share data?
    - Skipped this…
- Consolidate systems
    - Modified to "Incentivize consolidation of systems and services"
    - Placed between "actionable by state" and "actually feasible"

Working Lunch: Screening recommendations, continued
We'll pull you out to eat your lunches before the Fellows get their lunches. When everyone gets back into the activity after eating, note any key discussion points or ideas:
-

At the end of the exercise, record the following:
- Number of recommendations your table completed screening=24
- Number of recommendations that made it between "actionable by state" and "actually feasible"=3
    - List of recommendations that made it through all the filters:
        - Engage local communities
        - Adopt statewide sanitary code
        - Consolidate systems
- Number of recommendations that made it through all the filters=4
    - List of recommendations that made it through all the filters:
        - Offer affordability programs
        - Eliminate connection fees
            - Our group partially understood this as eliminating **re**connection fees after a shutoff
        - Incentivize funding/financing mechanisms that facilitate…
        - Change how the state uses its SRF...

Mid-point check in 2: Do you think that we can reach a shared set of recommendations?
Note the number of votes at your table:
- Thumbs-up= Yes =2
- Thumbs-down= No=0

- Thumbs-middle= Maybe=3

###

Water Fellows Workshop
24 May 2019
Meeting Notes

Table 1

Scribe: [Took notes for report out from all groups]
Fellows: [Split up and moved to other tables]

Table 2

Discussion 1: Divergent Results
*Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

Would these recommendations enable creation/operation of utilities of the future? Yes/No? Why?

- Facilitate collaboration via information sharing
    - yes , state can help with mapping and tying in active communities
    - One Fellow thought these were interconnected to other recommendations, so odd that these were divergent. Engagement with communities crucial to transparency. Possibly more specificity needed in what information would be shared. Difference between data being public and being useful to planners. Based on what is asked for and who is asking, there may be different levels of access allowed. Lack of access to data can harm by allowing cover up of health issues
    - Possibility of "water omsbudsman" who has some investigation powers, but wouldn't overreach or create more bureaucracy to help communities deal with complaints. Avoid being community specific, avoid the racial /socioeconomic divide
    - There would need to be a standard to help communities trust the data, with a collaborative shared responsibility. Community advocates need a voice;
    - Aspect of utilites sharing amongst themselves as well as communities communicating with each other
    - Equitable outcomes are needed
    - Operations staff are trained to run plants, not communicate with diversity of customers. Training needed
    - Collaboration between utility types to maximize efficiency in infrastructure, don't dig up the street 3 times
    - HUD section 3 training/development guidelines would help build capacity
    - Start with smaller cities, easier to move issues, show proof of concept, prevent rural communities from feeling consistently left out

- Engage local communities

    - Community ombudsman focused on water
    - Lack of rapport between utility and the community, even when conflict occurs if both sides have communication and dialog work can move forward

- Eliminate connection fees
    - No, utilities wouldn't be interested. Hardest to get the state to take a role in
    - Incorporate it into an affordability plan, tie it to a bottled water royalty fee
    - Part of revenue stream, but difference in new connection fee versus turning back on the water due to shutoff
    - Tax abatement process may work better than elimination of the fee

- Encourage more research on public health risks
    - Yes, state has interest in maintaining public health
    - Academic and citizen based science both important

Discussion 2: Reflection on ideas from top performers
*This section will start off with a vote. You don't need to capture voting results. Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

What do you like/not like?
-

What would it take at the state level to implement these in Michigan?
-

Discussion 3: Getting specific
We'll pull you out to eat your boxed lunches before the Fellows get their lunches. When everyone gets back into the activity after grabbing lunch, note any key discussion points or ideas. Help the fellows complete the table on the flip chart.

Record any key points of discussion not captured on the flip chart here:
-

Once your group is finished, record how they completed the table on the flip chart. Don't worry about taking notes for the rest of the meeting, just focus on recording the results on your table's flip chart:

Recommendation	Who at the state takes action?	Specific actions	Low hanging fruit?	High priority?
1: Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize	EGLE Treasury	Review SRF, Review tax credits, ability to use low interest loans, examine barriers to sending out	X	X

applications from water systems		grants and loans to communities in a timely & efficient manner		
23: Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle	-Government cabinet -MDOT, EGLE, Treasury -staff of cabinet members -collaborations of academic institutions	-Executive orders, task force to examine possibilities -Arrange meetings between utilities for work planning -Investigate programs used in other states -Research in public health tradeoff/outcomes		
26: Expand Stormwater, Asset Management, and Wastewater (SAW) grants-additional funds, more communities, follow up grants to implement	Administrator of FED (sp?) Fund at state level, apropriatial (sp?) & EGLE	-Designating certain academic institutions as leads in particular regions of the state -Technical assistance in grand applications & project management -Run informational meetings about SAVU grant requirements, legibility (establish a contact person/hotline by region. Integrate regional land use planning)		
28: Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination	Generalizing to state: prop DW specific from topic EGLE	Definitions of environmental justice		
3: Change state law to facilitate use of funds for affordability programs				
11: Offer affordability programs				
2: Create a state-level regulatory commission or governing body to oversee utilities		Champion at all levels, state level omubudsman	X	
7: Pass state legislation requiring annual reporting on water utility rate setting and costs				
9: Increase efficiency and maximize use of existing capacity				

8: Provide diversity, equity & inclusion training to utilities				

Table 3

Discussion 1: Divergent Results

*Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

- **The reason these are divergent seems to be that the ideas are less-rigidly defined or that the State has less-clear influence over.**
- Engaging local community is not really the role of the State. Utility should engage local community instead.
- Connection fee is different for some communities. It may be a source of revenue for communities. No connection fee for urban areas make sense, but new connections (especially in more rural areas) may need to charge for this service. **This is a different scenario for reconnections after shutoffs**.
    - Perhaps this should be tackled at a more local level instead of State level
    - This seems like the Camden, NJ issue from a previous session (2nd?) - not all connection fees should necessarily be waived.
- Encourage more research - The State *is* encouraging research (e.g. PFAS) by putting focus on it, even without supporting this type of research by providing funding.
- Some of these items come about from personal relationships, but *mandating* these relationships isn't often effective
    - Someone mentioned a group that used to meet for breakfast quarterly, but hasn't met now if 4 years and has less internal trust.
- Hiring a PR or marketing firm can be be helpful in bringing in new business or resolve some of these issues.
    - Shedding light on these problems honestly may be helpful.
    - Example - laying out *why* connection fees are so high may explain to residents what services they get for that. The fees may not seem so outrageous then.

Would these recommendations enable creation/operation of utilities of the future? Yes/No? Why?

-

Discussion 2: Reflection on ideas from top performers

*This section will start off with a vote. You don't need to capture voting results. Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

What do you like/not like?

-

What would it take at the state level to implement these in Michigan?

-

Discussion 3: Getting specific

We'll pull you out to eat your boxed lunches before the Fellows get their lunches. When everyone gets back into the activity after grabbing lunch, note any key discussion points or ideas. Help the fellows complete the table on the flip chart.

Record any key points of discussion not captured on the flip chart here:

-

Once your group is finished, record how they completed the table on the flip chart. Don't worry about taking notes for the rest of the meeting, just focus on recording the results on your table's flip chart:

Recommendation	Who at the state takes action?	Specific actions	Low hanging fruit?	High priority?
1: Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems	Executive Branch - EGLE Director	Create lower, and multiple, interest rates	Y	Y
23: Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle				
26: Expand Stormwater, Asset Management, and Wastewater (SAW) grants-additional funds, more communities, follow up grants to implement				
28: Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination	No one at the State *can* do this			
3: Change state law to facilitate use of funds for affordability programs	Legislature	Authorize state low-income programs to address Bolt decision		

11: Offer affordability programs	Legislature	Create affordability programs		
2: Create a state-level regulatory commission or governing body to oversee utilities	Legislature	Create legislation, though unlikely to go anywhere		
7: Pass state legislation requiring annual reporting on water utility rate setting and costs	Legislative	Legislation is currently in progress		
9: Increase efficiency and maximize use of existing capacity	Executive branch	Identify excess capacity to help locate (or relocate) business		
8: Provide diversity, equity & inclusion training to utilities				

Table 4

Discussion 1: Divergent Results

*Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

Would these recommendations enable creation/operation of utilities of the future? Yes/No? Why?

- No
    - ***ADDRESS POWER DIFFERENTIALS***
    - The recommendations *NEED* to address **financing** and **justice**
    - These specific 4 recs seem more like values than policy recs.
    - The list seems incomplete and unspecific
    - Stop fighting safe drinking water
- Eliminate REconnection fees, not connection
    - Exception for low income, rural areas that can't afford connection
        - State maybe can look at this via an income lens
        - Sewage and drinking water possibly can be separated
- Engaging local communities & encouraging collaboration
    - Table **thought that there is a power differential here,** and the fact that there is divergence shows that people don't want to give up power
    - Try to make the interaction meaningful, not something to check off a list
    - Put people who are affected by the policy in charge of it
- Role of the state:
    - Shift towards a tax base -- maybe a bottle water tax, say $0.05/bottle, go directly to water utilities

- Stop using shutoffs to punish people, they are a means for maintaining funding, not displacing people
    - One Fellow says he knows of 5 families in his town headed by African American women who got their water shut off for debts of $0.35 or less -- all comes back to power
- The role of the state should be to facilitate a just process
- This discussion really ties in well with other discussions on race, poverty etc
    - Many can leave an area when problems arrive; those who cannot are most affected
- Water rate transparency
    - Full detail on the whole process of determining rates
    - How were shutoffs decided
    - Entire line item budget needs to be available in an easily accessible location eg their websites
-

Discussion 2: Reflection on ideas from top performers
*This section will start off with a vote. You don't need to capture voting results. Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

What do you like/not like?

-

What would it take at the state level to implement these in Michigan?

-

Discussion 3: Getting specific
We'll pull you out to eat your boxed lunches before the Fellows get their lunches. When everyone gets back into the activity after grabbing lunch, note any key discussion points or ideas. Help the fellows complete the table on the flip chart.

Record any key points of discussion not captured on the flip chart here:

-

Once your group is finished, record how they completed the table on the flip chart. Don't worry about taking notes for the rest of the meeting, just focus on recording the results on your table's flip chart:

Recommendation	Who at the state takes action?	Specific actions	Low hanging fruit?	High priority?
1: Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems	Administrative	-lower interest rate -max. principle forgiveness/raise the EAP -eliminate interference of federal cap on grants	X	x

23: Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle	Legislative EGLE, MDOT? Infrastructure council DHHS			
26: Expand Stormwater, Asset Management, and Wastewater (SAW) grants-additional funds, more communities, follow up grants to implement	Legislation and/or go to ballot			
28: Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination	EGLE Agency	-maximize what can be claimed from federal government in annual contingency plan -max principal forgiveness to disadvantaged community	x	
3: Change state law to facilitate use of funds for affordability programs	Legislature (poss. To refer it to ballot)	-constitutional amendments? -declare H20 utility property as "Renaissance Zone" for state property reimbursement. -all regional H20 utilities need Hisr-roman (sp?) agreement		
11: Offer affordability programs	-Health & Human Services -Legislature	-push a bill through via a coalition and lobbying to establish a statewide program -income based rate structure		
2: Create a state-level regulatory commission or governing body to oversee utilities	Legislature	-find Republican to co-sponsor bills on this – lobbying		
7: Pass state legislation requiring annual reporting on water utility rate setting and costs	Legislation	-find bipartisan support & not by watering down the bills	x	
9: Increase efficiency and maximize use of existing capacity	Should be locally handled? EGLE oversight	-Make a state level timeline for asset management plans (budget issue?) - state can convene in two budget issues		
8: Provide diversity, equity & inclusion training to utilities	Civil rights commission	-develop curriculum -You can't work till you finish equity training? Redo training on a schedule	x	

Additional Note Written by a Fellow:
"We can't agree on the definition of affordability" -- those who don't have any experience with struggling with affordability should not have any say in defining it. Affordability = nexus of power differentials. This is why we can't "agree" on it. There isn't "agreement" to be reached between people who are being exploited by those with power *unless those doing the exploiting willingly give up their power.*

Table 5

Discussion 1: Divergent Results

*Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

- All suffered connection fees of the utilities of the future because this is how you finance your utility, can't eliminate connection fees.
- Eliminate reconnection fees, incentive someone to get people to hook up. Best practices, the state should create a best practice model, pick and choose what works for them. Interested thru eagle, dhhs, and other organizations and work on develop on a set for best practices, globally or what have u. If you have array of options to choose from, could be the best way to go. There is not a consistent set, so certenalize to a degree it would be most beneficial because some people may not know about AWWA. Engage local communities. Have it possible to come back and update it every two years. Consolidation and collaboration.
- 2 ways: one is shouldn't be charged to reconnect and people in rural areas to connect. Get research going so you can have some consistency. How do you balance research with response. Assessing the risk, high, low and immediate.
- The mission should be to supply water. How do you know how to manage the programs are there. Need to be more centralized.

Would these recommendations enable creation/operation of utilities of the future? Yes/No? Why?

1. **Best practices**, acts and operates like a manual. Having utilities to get together and talk about this. Got to have a variety of stakeholders, can't create a manual without the stakeholders. Have to have that component. Eagle would be the main component to work with state department. And outside stakeholders. Engaging local communities. Ways in which people can engage local communities. Build diversity and inclusion into the best practice model. Try and institute the state. Have categories of practices. Give them guidance on how to do that and have the state to centralize that.
2. **Connection fees**, should be change to affordable and providing incentives for people to connect, eliminate reconnection fees. Is there a program out there out to help with wells. Do you incentive for existing utility or building a new utility.

Discussion 2: Reflection on ideas from top performers

This section will start off with a vote. You don't need to capture voting results. Capture the key points of the discussion. Note any points that keep coming up at your table in ***bold*** *text.*

What do you like/not like?

-

What would it take at the state level to implement these in Michigan?

-

Discussion 3: Getting specific

We'll pull you out to eat your boxed lunches before the Fellows get their lunches. When everyone gets back into the activity after grabbing lunch, note any key discussion points or ideas. Help the fellows complete the table on the flip chart.

Record any key points of discussion not captured on the flip chart here:

-

Once your group is finished, record how they completed the table on the flip chart. Don't worry about taking notes for the rest of the meeting, just focus on recording the results on your table's flip chart:

Recommendation	Who at the state takes action?	Specific actions	Low hanging fruit?	High priority?
1: Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems	EGLE Legislature	Have to develop prioritization process Gather data about other SRF programs Revise the SRF criteria	X	½ gold star
23: Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle	Legislature Internal departments	Go through review to determine legalization Review existing grant programs Coordinate asset management	x	
26: Expand Stormwater, Asset Management, and Wastewater (SAW) grants-additional funds, more communities, follow up grants to implement	Legislature	Get another bond; Redo budget prioritize budget	X	
28: Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and ~~PFAS contamination~~ (any	EGLE Legislature	Expand forgiveness Increase funding for SRF	X	

contamination)				
3: Change state law to facilitate use of ~~funds~~ (rates) for affordability programs	Legislature	Develop state-wide program through legislation funded by ongoing stream of revenue, from rate payers, GF	X	
11: Offer affordability programs		Combined with #3		
2: Create a state-level regulatory commission or governing body to oversee utilities				
7: Pass state legislation requiring annual reporting on water utility rate setting and costs	Legislature & EGLE	Draft & pass legislation, make the reports available to the public, what information is needed to be in the annual report	X	X
9: Increase efficiency and maximize use of existing capacity	Legislature, permitting process through EGLE. Identify existing capacity	Identify the permits, administrative rules, have the executive branch issue. Build legislative support. Identify opportunities with grants	X	½ gold star
8: Provide diversity, equity & inclusion training to utilities	Labor Dept EGLE	Build this into best practices manual. Outreach. Institutional training	X	

Table 6

Discussion 1: Divergent Results

*Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

- Would these recommendations enable creation/operation of utilities of the future? Yes/No? Why?

(1) Facilitate collaboration via information sharing (Yes: 6/6)

Ideas about the role of the State:

- Role of the state was not well defined / Define the role of the state
- **Define incentives program to support best practices collaboration & information sharing modules** / - e.g. Tax sharing revenue approach between the city & neighborhood (e.g. if a business was built, the city & neighborhood agreed on how to share the incentives)
- What legislative support was available
- State regulation - Creation of State commission to handle all communication

(2) Engage local communities (No: 6/6)

- **Not specific enough to help understand how the recommendation will be interpreted beyond water fellows meetings**

Role of the State:

What good community engagement practices:

- **Proactive communication / best management practices for community engagement in the State should be selected and then formalize how these practices could be shared & applied to help the community**
- Identify and incentives best practices for community engagement
- Need more specific details on how this would be implemented
- What are the mechanism of local community engagement
- What is the role of the state e.g. best practices identification & support
- State level regulatory commission and evaluate more of best practice management
- Engage community with structure and use all

(3) Eliminate connection / reconnection fee (No: 6/6)

Why:

- **Reconnection: Seen as an issue to be addressed by creating an affordability program**
- **Connection - expanding the system to other communities: This could reduce the expansion of a utility program**
- **Connection (rural community/ underserved areas be covered using a grant & funding from the State**

State role:

- Targeted approach to identify where fees could be eliminated due problems like pollution /
- Safety issue (water contamination issue fees should be eliminated/ fees should be eliminated)
- If these are new installations of water utilities this approach would not work
- Affordability program has been recommended to replace this recommendation and allow coverage of affected communities

(4) Encourage more research on public health risks (No: 6/6)

- **Why: There are research material available on this topic & lack of strategy on how to communicate the research**

State role:

- Establish a program focusing on communicating research related to risk
- Fund & support Identification of emerging / new water contaminants

Discussion 2: Reflection on ideas from top performers

*This section will start off with a vote. You don't need to capture voting results. Capture the key points of the discussion. Note any points that keep coming up at your table in **bold** text.*

What do you like/not like?

-

What would it take at the state level to implement these in Michigan?

-

Discussion 3: Getting specific

We'll pull you out to eat your boxed lunches before the Fellows get their lunches. When everyone gets back into the activity after grabbing lunch, note any key discussion points or ideas. Help the fellows complete the table on the flip chart.

Record any key points of discussion not captured on the flip chart here:

-

Once your group is finished, record how they completed the table on the flip chart. Don't worry about taking notes for the rest of the meeting, just focus on recording the results on your table's flip chart:

Recommendation	Who at the state takes action?	Specific actions	Low hanging fruit?	High priority?
1: Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems	EGLE	- Change is possible since the funding is supported by the federal government and user guidelines could be updated by the state		Star
23: Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle				
26: Expand Stormwater, Asset Management, and Wastewater (SAW) grants-additional funds, more communities, follow up grants to implement				
28: Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination				
3: Change state law to facilitate use of funds for affordability programs				
11: Offer affordability programs				

2: Create a state-level regulatory commission or governing body to oversee utilities	Legislative	- Identify a group to champion the initiative and present it to the legislative branch - Identify a coalition (if one exists) - Create a coalition to support the idea and present it to state representatives - Create a council to identify priorities and move the ideas forward. - The council should design an approach of rates evaluation and report on the process - Determine the type of the regulatory body needed / identify the support systems	Low hanging fruit	
7: Pass state legislation requiring annual reporting on water utility rate setting and costs	Legislative	- see above - Created will propose a narrative about required details of the reports the reports - Create a council that evaluates rates increase and generate the report on the process applied	Low hanging fruit	
9: Increase efficiency and maximize use of existing capacity	EGLE	- Create incentives for achieving efficiency e.g. financial support, low rates on loan - Support initiatives for installing new meters / provide incentives or replacing water main to reduce non-revenue water - SRF could include incentives to support programs described above	Low hanging fruit	
8: Provide diversity, equity & inclusion training to utilities	- EGLE	- Provide a continuing education for all operators and associate this training with a mandatory certification - Incentivize the process and include the training statistics in requirements before providing funding - Develop a program associated with the office of inclusion and diversity in EGLE to promote this issues across all water utilities in the State	Low hanging fruit	

Report out Capture:

Discussion 1:

Facilitate collaboration via information sharing

- Yes, enables vision= 12(ish)people, 3 of 5 tables
- State's role for yeses:
    - Standard of collaboration (Research based
    - Best practices
    - Beneficial without harm
    - The list is too short for all of the recommendations
    - Lack of specificity
        - What does this look like or mean?
    - Requiring of annual report
    - Develop best practices model instead of requiring to share data
    - State is already doing this (conferences and councils already happening)
    - Creating a forum to bring people to the table
    -
- No, it doesn't enable vision:
    -

Engage local communities

- Yes, enables vision= 4 out of 5 tables (some unclear)
- State's role for yeses:
    - Transparency through public meeting
    - Let people understand problems are not only in their communities
    - Systemic dynamic
    - What that engagement looks like
        - Most engagement superficial
        - Engagement where? And Who?
        - Placation vs actual engagement
        - Acknowledgement of power differentials
    - Not enough specificity for what this means to the state
    - Need more specific recommendations for this
    - The community being cut out of governing itself is how we got Flint
    - When determining the best management practices communities need to have a seat(s)
    - Community advocate and rebuilding trust
    - If this is done wrong it impacts trust far more
    - Separate from economic commissions
    - What is the ultimate outcome from the engagement? How do you translate good process into solutions
    - If utilities not doing this then it is a lack of leadership from the utilities
        - Not something you can actually regulate?
    - Utilities need to be part of the discussion
- No, it doesn't enable vision:
    -

Eliminate connection and/or reconnection fees

- Yes, enables vision= 1 out of 5 tables
- State's role for yeses:
    - Rolled into the water affordability plan
    - Part of creating a fund for infrastructure
    - Shift for common tax for improving water and health across the state
    - Racialized
        - Not afraid to have the conversations around common ground
    - Rural communities need to know that we are equally advocating for them as well
    - When expanding the system out money is need to pay for that connection
        - Money needs to come from the state/somewhere to pay for this
    - Connecting the underserved not normal expansion
    - Normal expansion is require grow to fund growth
    -
- No, it doesn't enable vision:
    -

Encourage more research on public health risks

- Yes, enables vision= 1 out of 5
- State's role for yeses:
    - Making sure the research is communicated back in a safe practical way.
    - Not wait until everyone else figures out contaminate is a threat (PFAS)
    - Be proactive on potential new threats vs waiting until they are already figured out
    - Citizen based science added to academics
- No, it doesn't enable vision:
    - List needed clarity on water justice (affordability and equal distribution)
    - These are what lead to equity, diversity etc.
    - We can't agree on affordability due to the nexus of power differential.

Recommendation	Who at the state takes action?	Specific actions	Low hanging fruit?	High priority?
1: Change how the state uses its SRF funds to maximize the benefits from the SRF, and properly incentivize applications from water systems	Administrative capacity	Raising the cap on principal forgiveness	5	4 tables
23: Incentivize funding/financing mechanisms that facilitate cross-asset coordination throughout the infrastructure installation, maintenance, and replacement lifecycle		Taskforce and create forum	0 groups	0 Tables

26: Expand Stormwater, Asset Management, and Wastewater (SAW) grants-additional funds, more communities, follow up grants to implement		Get another bond / redo repriotize budget	1 Group	0 Tables
28: Seek and apply for principal forgiveness on DWSRF loans to water systems, especially in cases of environmental injustice and PFAS contamination	EGLE and legislature	Expand forgiveness and increase SRF funding Expand statewide	2 groups	0 Groups
3: Change state law to facilitate use of funds for affordability programs	legislature	Develop statewide program from legislature	1 group	0 Groups
11: Offer affordability programs		Combined with 3	0 groups	0 Groups
2: Create a state-level regulatory commission or governing body to oversee utilities		There are pending bills waiting for bipartisan support	1 groups	0 Groups
7: Pass state legislation requiring annual reporting on water utility rate setting and costs		There are pending bills waiting for bipartisan support In process	2 groups	
9: Increase efficiency and maximize use of existing capacity		Through permitting and legislature shouldn't be making new if there is already capacity Maximization of current systems		1 group
8: Provide diversity, equity & inclusion training to utilities		Civil rights commission to develop curriculum Add to grants and loans programs as criteria	1 group	

###

Water Fellows Workshop
9 September 2019
Meeting Notes

Table 1

Key Points from Q&A with Paul and Andy:

Answered Questions from Paul McDonald (speaker)

- Disadvantage communities are based on the poverty level. Principal forgiveness based on the Cap Grant. Principal forgiveness 8.3% goes to disadvantaged communities and 1.3% lead service line replacement for advantage communities to address the public health aspect.

Answered Questions from Andy Kricun (speaker)

- Regular communities is 50% Market rate and 50% @ 2% interest rates. Disadvantages communities is 75% @ 1% and 25% market rate. 1million per project for principal forgiveness. Have environmental programs.
-

Finalizing the SRF Recommendation

- ***Changes:***
    - Water affordability. How to cost share. Local City council takes action.
    - An agreement in accepting the SRF funds.
    - Drainage fees = taxes.
    - Prioritize problem
    - How can we come up with a household determinant and eagle could come up with the exact calculation.
        - There was a consensus on the recommendation.

    Additions:
    - Community engagement
    - Trust building
    - Have a community based advisory process
    - Have serious engagement, scrutiny and examination of the house and senate bills. Mostly the house bills.

Other notes:

- Remarks from Fellow: Water justice.
- Raising class analysis (poverty).
    - Paul: 100% federal funds, 1 Billion in funds and 300 million is used for drinking water.
    - Replacing the entire system at the expense of raised rates.
    - Need more funds but they need to be forgivable. But no trust.
    -
- What can we do quickly to change the process.
- Looking at a grant application and how can we lessen that burden and get to that more equitable.
- Look at best practices in other states.
- Putting forth the environmental assessment.

- Is there a way to stress the finances out longer.
-

Table 2

Key Points from Q&A with Paul and Andy:

- Structuring of loan forgiveness
    - Public open meeting
    - Need to have better, more scheduled communication of loan forgiveness

Finalizing the SRF Recommendation

- ***Changes:***
    - Maximize the benefit - what does this mean and to whom is SRA document being addressed
    - Prioritize use of subsidy to DISADVANTAGED areas
    - Hard for areas that need the subsidy to even apply to the program
    - ENSURING SRA IS FUNDED
    - Implementing of SRF to make it more affordable
    - Intended use plan, make the interest rate flat
    - Definition of disadvantaged community. No definition in federal law
    - Reduction of subsidy to financially well off communities
    -
- ***Additions:***
    - Getting too specific in recommendations can get policy trapped so that it won't move forward
    - All communities have some percentage of residents that don't have affordable water, while some entire communities are labelled as disadvantaged.
    - Triple bottom line - adding idea of community and affordability to goals of SRA applications

Other notes:

- Primary additional recommendations:
    - Add section on rural areas to make sure rural residents have affordable water as well, SRA doesn't really apply to their situations
    - Need political will to assess the required fees to manage and improve water problems and not rely entirely on Federal programs
    - How do you spread the word among all of the different utilities of the availability of SRA funds

    - Review of SRA needed to identify where the constraints of SRA come from: state, federal, or policy choices

Audience: EGLE

Table 3

Key Points from Q&A with Paul and Andy:

-

Finalizing the SRF Recommendation

- ***Changes:***
    - "Change how the State uses its SRF funds to ensure that all people have access to safe, clean, affordable water."
        - The group agreed with the above statement, but had less consensus in continuing: "by principle loan forgiveness and providing below market interest rates to distressed communities (and other mechanisms)"
    - We've started focusing so much on utilities and policy, we need to remember to contextualize recommendations to fit the human components.
    - Current goal from recommendation doesn't include a strong focus on people. May want to refocus. Right now, it is a forgone conclusion for many that it's best to shut water off for delinquent accounts, rather than doing the cost-benefit analysis to measure impacts of shutoffs (including breaking up homes/families, etc.).
- ***Additions:***
    - Better consider resilience in the face of climate change.

Other notes:

- Recommendations were primarily for utilities, so we may have lost focus on other groups. Perhaps it would be important to deal with the groups more holistically.
- Context speaks toward "doing good" (i.e. "maximize benefits of SRF"), but doesn't necessarily offer prescriptive approaches to do so.
- How do you account for intergenerational costs/benefits, and get utilities/policymakers to better understand privilege?
- We need to start viewing Michigan as a whole rather than individual communities; Each community affects each other community and we would do well to behave that way.

Table 4

[Lunch discussion brief]

- Words to the graduate assistants. On the last meeting, concerns about the younger graduates on how they might view the professionals (how the professional career would look like).
- What is missing, community engagement, social justice, why not make it an overarching recommendation?
- Political feasibility is not a fixed thing, it is our job to change it.

[Fellow leads into discussion] On water justice. Subject right, objective right.

Key Points from Q&A with Paul and Andy:

- [Paul] State revolving funds overview. Clean water SRF (CWSRF), Drinking water SRF (DWSRF).
    - Criteria to disadvantaged community? Answer: Based on # of people below poverty level; will need to look at the calculations in the future (e.g., East Lansing, students all fall into the low income community).
    - Further reduce the interest rates if certain criteria are met? Answer: possible. E.g., low to zero interest or even negative interest (Wisconsin or Minnesota).
- [Andy]

Finalizing the SRF Recommendation

Clarification- how this would communicate to the people who are going to read it? As a piece for the government on our top recommendation for what to do, maybe fine. Not sure if this piece is sufficient for water equitability. Originally we were thinking utilities in the future, where we think utilities will be. We have listed a few task forces to pass along to the state, and the community is important so we could add in.

The table didn't agree to report out and mainly discussed/ expressed concerns (see "Other notes" for details).

- Concerned to have names signed on or affiliated with the report (some expressed that they wanted to review it and agree before 'submission').
- Not feeling comfortable/ confident to provide "recommendation", would rather use the term "observation", especially without the cultural diversity.

- ***Changes:***
    - Change 'recommendation' to 'observation';
    - 'Who at the state takes action?', critique for distribution of funds from an equitable lense; task force HUD section 3.

    - Maximizing the state's usage on SRF, under the lenses of water equitability, paying special attention to historical harms.
- ***Additions:***
    - Affordability has been strongly recommended.

Other notes:

- Discussion on the intended audience
    - The table expressed confusion about the audience of the final report, which is deemed important at the start of conversation to formulate better recommendations.
    - The table agreed that the intended audience includes policy makers and utilities; several attendees at the table commented that the actual audience feels more like the moderators.
    - The table felt there is "a poverty of information", and raised concerns about the composition of attendees (e.g., heavily academic, representatives from communities are not enough), questions about the goal for the report and logistics of the project.
- On Water Equity
    - Missing the failure and duty part (especially the duty). Maximizing, incentivizing, these words/ languages need to be in the equity discussion but is not in the current version.
    - Community benefit agreement, which is a grant not a loan, has been proposed as an alternative. The belief was to benefit those less fortunate, as one cannot ask the disadvantaged ones to investigate.
    - Water equity needs conversation across the state, so that (1) agreements could be made and (2) the ones with power to adopt/ implement the changes could be brought to the table as part of the conversation.
    - One proposed to frame as human right to water rather than water equity, which was inspired by [another Fellow thoughts]
    - Focusing on the real true community needs.
- On political feasibility
    - The topic of political feasibility was questioned by a few table members on whether it will have meaningful outcome.
    - The prior discussion (in prior sessions) on political feasibility might have aroused uneasy emotional feelings for some.
    - The table in general agreed that a higher level of work is needed to better solve the political feasibility issue, which requires further funding (that might be initiated from the current project).

- On SRF
    - Some agreed that an office of SRF would benefit (groups/ people of interest, added by the scribe). One table member suggest to make sure someone understanding SRF is in the group to facilitate the utilization of SRF.
    - Several table members strongly suggest to press for specific actions on SRFs (e.g., review more proposals), given that Michigan hasn't maximized its SRF potential.
    - The table in general agreed that more detailed recommendations are needed for the SRF part.
    - Several table members raised questions about SRF criteria, and mentioned income indexed (based) water affordability plan, which is in the list but not the specific actions. A related topic was the revenue generation fund applying to the plant. One question raised at the table was who actually pays for it?

###

Appendix 6. Materials from Workshop 5

You Tube video: "Race: the Power of an Illusion"
https://www.youtube.com/watch?v=Y8MS6zubIaQ&list=PL1rEBv3RSc4FM8Y5Y6M90sH92_1xO0TsE

You Tube video: "Understanding My Privilege" by Sue Borrego
https://www.youtube.com/watch?v=XlRxqC0Sze4

Power Point Presentation by Dr. Imani Michelle Scott:

Goals:

- To support peacebuilding, healing and a meaningful path forward where everyone feels listened to, valued, respected, empowered and influential.
- To heighten awareness of the basis for our own bias: identity, ethnocentricism and prejudice.
- To heighten understanding of the roots of conflict based on our racialized society.
- To involve everyone in identifying ways we might reduce the propensity for bias in our Water Fellows relationships and recommendations.

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"I have been gravely disappointed with [those] who prefer a negative peace, which is the absence of tension ..."

– Dr. Martin Luther King, Jr.

10/3/2019 4

We are all the same.
Different, but the same.

The Complexity of Identity

The Neuroscience of Prejudice

Truths about Ethnocentrism, Race, Racism, and Privilege

Strategies for Reducing Bias

10/3/2019 5

About Communication

"Somethings can't be communicated,
they can only be experienced."
– Stephen Levine

10/3/2019 6

Identity Matters
Social Constructionism

George Herbert Mead
- *Symbolic Interactionism*

Erving Goffman
- *Private Self*
- *Public Self*
- *Identity Management*

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Identity Matters
Self & Other

-- Who we believe we are
-- How we feel about ourselves
-- Our sense of self impacts:
- *-- Esteem for self*
- *-- Esteem for others*
- *-- Relationships with others*
- *-- Interactions with others*

"Wherever you go,
you will always be there"

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Identity Development

Age	Stages
18-22	A continuation of early identity stage
23-28	Getting established stage
28-32	The wavering and doubt stage
32-40	The getting settled stage
40-45	Mid-life transitional/crisis stage
45-50	The Commitment to tasks stage
50-60	Questioning and modification stage
60 +	Fulfillment stage

*Daniel Levinson

Core Identities are Socially Constructed by Culture

Culture:

- Shared language, beliefs, customs, values, and patterns of perception & encourages perceptual constancy
- Historically transmitted patterns of meaning that privilege some interests, values and worldviews over others

Mental Deposits Identities, Roles, Values and Worldviews

Gender, Race, Ethnicity, Age Group
Religious Beliefs, Political Affiliations, Occupation
Marital Status (wife, husband, single)
Regional Affiliation, Names, Economic class
Nationality, Educational status, Family history
Mental, Physical and Social Abilities
Sexual Orientation, Parental Status

Jake:
We are unable to perceive reality

"There is ultimately no way that people can totally step outside of their humanness to see and understand the world as it really is."
(Sociologist: Babbie)

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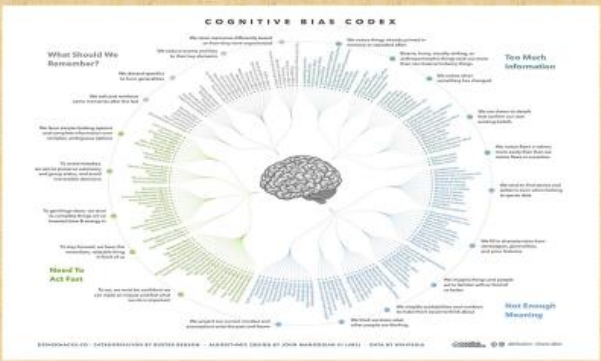
From Perception to Prejudice
The Persistency of Bias



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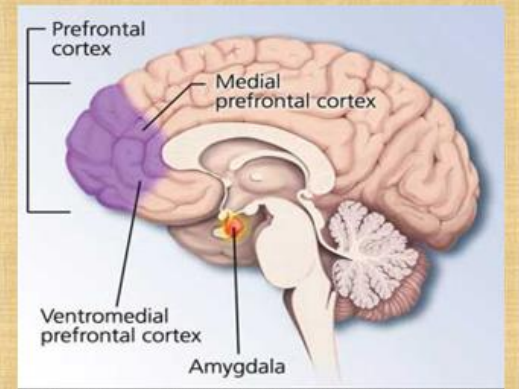
Neuro-science of Prejudice



Brain Structures Involved in Dealing with Fear and Stress

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The Truth about Ethnocentrism

Ethnocentrism –
The tendency to view our ethnic perspectives, values, behaviors, attitudes and beliefs as better than those of others.

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The Truth about the Fallacy of Race

Race: A ***social*** construct devised to separate and distinguish persons based on observed physical characteristics (i.e., skin color, hair texture, bone structure) and ***perceived*** differences (i.e., character and behavioral).

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The powerful fallacy of "race"
Impacting perceptions of self, other and difference

- A sociological construct
- Human sub-species do not exist
- Skin color is only skin deep
- Humans are 99.9 percent genetically identical
- 85 percent of gene **variations** occurs "within" populations
- Race is ***not*** biological
- Racism is real

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The Truth about Racism

Racism: A system which supports the disenfranchisement, marginalization, subjugation, persecution and/or discrimination of individuals and groups of persons based on the belief that those persons are a sub-human species, and thus inferior members of the human race.

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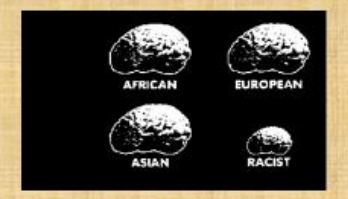
Truths about Racial Prejudice



Racists are Real: Those who believe in the fallacy of race and racial superiority and endorse the disenfranchisement, marginalization, subjugation, persecution and/or discrimination of others based on that fallacy.

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Truths about Privilege

Privilege: a systemic right, advantage, or immunity granted or available only to members of particular groups.

<u>Privileged Identities</u>

"Race" * Skin Color * Hair Texture * Body Type

Gender * Sexual Orientation * Socio-Economic Status * Occupation * Language * Ability * Age

Nationality * Religion * Educational Level

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Identity, Needs, Bias and Privilege
A complex confluence

-- Abraham Maslow

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Strategies for Reducing Bias, Prejudice & Ethnocentrism

Sui Generis

Humans: the only creatures who can consciously create and recreate themselves -- *On Being a Real Person:* Fosdick (1943)

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Strategies for Reducing Bias, Prejudice, Ethnocentrism and Impacts of Privileged Perspectives in Water Fellows Work

Challenge the Pitfalls of Perceptual Constancy

Question and evaluate the acuity of your discernment of self, others and the systems within which we all live.

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Strategies for Reducing Bias, Prejudice, Ethnocentrism and Impacts of Privileged Perspectives in Water Fellows Work

Confront and work to dismantle the social, political and economic systems which privilege some while oppressing and marginalizing others.

We are stronger as a *human* race when we are *collectively* privileged and empowered.

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Strategies for Reducing Bias, Prejudice, Ethnocentrism and Impacts of Privileged Perspectives in Water Fellows Work

Revisit the *Recommendations* to identify specific opportunities for communities to become empowered in their own pursuit of water justice.

Focus on their Locus of Control.

10/3/2019 25

Strategies for Reducing Bias, Prejudice, Ethnocentrism and Impacts of Privileged Perspectives in Water Fellows Work

Revise the *Recommendations* to prioritize "diversity, equity and inclusion" training for all policy maker and funding stakeholders.

Watch "What Lies Upstream (2018)

Encourage Empathy.

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Strategies for Reducing Bias, Prejudice, Ethnocentrism and Impacts of Privileged Perspectives in Water Fellows Work

Reconsider *Recommendations* to remove any implicit biases and prejudices, and incorporate the language of environmental justice

Involve those with varied "lenses" to review and update the Recommendations to support implementation success

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Your Hopes for Moving Forward

- Participate in honest conversations about race, access, affordability, and poverty with regard to water justice.
- Identify tangible steps for participants to support moving forward.
- Address the impacts of racial and social inequity in our work.

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Your Hopes for Moving Forward

- Make affordable, clean water happen for all households.
- Understand why many community-based participants need political support from well-funded partners.
- Develop ideas into action.

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Your Hopes for Moving Forward

- Acknowledge that utilities are not necessarily "good actors"; they will require oversight.
- Recognize the role of systemic racism in perpetuating climates of distrust in some communities.
- Produce a unified document with actionable policies.

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3 Steps

Awareness

Acceptance

Action

☺

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Strategies for Moving Forward

To involve everyone in identifying ways we might reduce the propensity for bias in our Water Fellows relationships and recommendations.

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Recommended Resources

Articles and books (see References list for this presentation)

Videos

Children and Youth in Peacebuilding: Evidence based approach to breaking cycles of violence. Available online at: https://www.youtube.com/watch?v=z0jhClxpJp0

Race: The Power of an Illusion. Available online at: https://www.youtube.com/watch?v=OXEV0tqax9k

Activities

Internal Peacebuilding: Yoga (Centering Essence. www.centeringessence.com)
Interpersonal and Small Group Peacebuilding
Teambuilding

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Policy Recommendations

A Roadmap for the State of Michigan to Support Its Water Utilities and Residents in Building Safe, Efficient, and Affordable Drinking and Wastewater Systems

January 23, 2020

The Nature Conservancy

The Nature Conservancy is responsible for the contents of this report.

Any questions should be directed to:

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Table of Contents

Background

In 2018, a team from The Nature Conservancy (TNC), Michigan State University (MSU), and Public Sector Consultants (PSC) identified drinking and wastewater utilities providing exceptional and affordable customer service and analyzed their business models to find ways to address the growing problem of aging water infrastructure, deferred maintenance backlogs, and increased costs to customers. PSC then examined the current condition of Michigan's water infrastructure and analyzed best-practice regions around the country for drinking water, wastewater, and stormwater management, while also providing technical support throughout the project. The team then recruited and convened a group of diverse stakeholders, dubbed "Water Fellows," who were tasked with analyzing the research, interacting with and learning from the leaders of the identified water utilities, and developing implementable recommendations that would begin to address Michigan's critical water infrastructure needs.

With the information gathered during the research phase, MSU and TNC hosted five facilitated meetings for the Water Fellows to generate recommendations to the State of Michigan that would address at least some of Michigan's most pressing water infrastructure needs (see the "Water Fellows Proceedings" section of this report for process details and the fellows' recommendations). While the bulk of the project has been completed through water utility research and the work of the Water Fellows, a research component remained to identify implementation barriers for a subset of the policy recommendations identified by the fellows. TNC worked with PSC to identify a subset of the recommendations focused on actions the State of Michigan could take to increase the likelihood that all Michigan residents have access to safe and affordable drinking water and wastewater treatment.

This report is organized into three pillars of action:

1. Supporting Sustainable, Resilient Water Utilities
2. Supporting Low-income Water Utility Customers
3. Supporting Low-income Self-supplied Customers

This report summarizes PSC's research of the barriers to implementing these recommendations, as well as examples of similar policies already implemented across the United States. As discussed in greater detail within the report, barriers include, but are not limited to, the political, technical, legal, and financial obstacles that communities and individuals face in accessing safe and affordable water services.

An Ethic of Assistance

One theme running through this report is that of an "ethic of assistance"—the idea that at any point in time anyone may at any time need assistance in meeting basic human needs, including Michigan residents. In the case of accessing safe and affordable water services, that assistance can come from many different sources, including state and local governments, utilities, nonprofits, and more. Many of the ideas found in this report highlight additional or different capacity for state government that would support Michigan residents and communities, aligning with this ethic of assistance.

Supporting Sustainable, Resilient Water Utilities

Michigan's infrastructure is in dire need of additional investment due to deferred maintenance and aging facilities across the state, receiving a D+ overall from the American Society of Civil Engineers (ASCE) for the condition of its infrastructure. The state's water utility infrastructure is no exception, receiving a C in wastewater, a D in drinking water, and a D- in stormwater (ASCE 2019). Furthermore, the *21st Century Infrastructure Commission Report* prepared for the State of Michigan highlights multiple figures regarding the state's water infrastructure, including the fact that approximately 5.7 billion gallons of raw sewage entered Michigan waters between 2013 and 2014. In addition, a majority of the state's drinking water systems are over 50 years old and lose 10 to 50 percent of their water due to leakage during conveyance. With 1,080 community municipal wastewater treatment systems serving 70 percent of Michigan residents and 1,390 drinking water systems supplying 75 percent of residents and businesses, sustainable water utilities are an important contributing factor to Michigan's growth as a state and quality of life for Michigan residents (21st Century Infrastructure Commission 2016). To that end, the following four recommendations would help ensure resilient water systems that provide safe and affordable water to Michigan residents:

- Promote utility effectiveness and viability: Sustainable, resilient water utilities operate effectively and maintain financial viability for future operations. Many of Michigan's water utilities may need assistance to continue to effectively and safely provide water in the future.
- Financial support for sustainable operations: Sustainable utility operation is a necessity for continuing utility operation, including increased environmentally sustainable practices and financial solvency. Research, evaluation, and capital improvements to meet this goal will likely require external financial support, particularly if not included in the utilities' budgets.
- Financial incentives for efficiency and innovation: Efficiency and innovation are crucial components to sustainable utility operations and continued utility growth. Providing financial incentives will encourage Michigan utilities to implement efficient operations and innovative practices.
- Financing performance subsidies: Performance-based ratemaking allows incentives for other behaviors outside of traditional utility operations and is currently under consideration in Michigan and other midwestern states as an addition to traditional ratemaking.

Promote Utility Effectiveness and Viability

Increasing utility operational effectiveness and viability is a broad goal to better Michigan's water utility infrastructure and operations. There are a host of action items that could fall under this category, all of which require additional capacity and technical assistance to implement. This section focuses on the idea of creating an oversight or assistance body, using the Wisconsin Public Service Commission (WPSC) as a model. The WPSC ensures utility effectiveness and viability through rate oversight and focuses on the action items noted in their Division of Water Utility Regulation and Analysis core functions map, outlined below:

- Identify financial concerns
- Promote compliance through annual report reviews and "audits"
- Assist utilities with planning
- Promote conservation and efficiency
- Approve rebate and incentive programs

- Provide support to "troubled" utilities
- Provide training and outreach
- Monitor nonrevenue water (WPSC n.d.a)

Having a state regulatory body assist with the responsibilities listed above could improve water utility operations and viability. By increasing capacity in a state agency, such as the Michigan Public Service Commission (MPSC), the State could be proactive in increasing the operations of Michigan's water utilities and creating a culture of sustainable water infrastructure and service. Robust sustained support for Michigan's water utilities is important to ensure that Michigan residents have access to clean, potable water now and for future generations. Instituting these responsibilities would mean additional work for the State of Michigan and potentially additional regulatory oversight for the utilities. The conventional relationship between municipal water utilities and the State would also need to be broadened.

Potential Barriers

A state division, board, or other similar entity would need to be created or expanded to complete this work. Furthermore, Michigan law does not authorize the State to provide for the type of oversight needed to manage the functions currently performed by the WPSC. For example, to identify financial concerns, the State would need to be able to review utility finances, make recommendations, and then promote compliance for set recommendations through annual report reviews and audits. The State does not currently review the finances of publicly operated water utilities.

Given the scale of the undertaking (over 2,000 water utilities and a cumulative $800 million annual investment gap) the State would also need to consider how to implement the regulatory changes, including which utilities would be subject to oversight and when. While the process would be financially and labor intensive, the argument could be made that because municipal water utilities currently lack any state-level regulatory oversight, a deficiency in investment and upkeep to the water systems is more pervasive than in states like Wisconsin.

Financial Support for Sustainable Operations

Due to the aging infrastructure, a declining population and tax base, and the historic underinvestment noted above, many of Michigan's water utilities will need financial and technical support to sustain financial and environmental operations. Promoting utility effectiveness and viability is a broad goal, and this section focuses on financial solvency and environmentally sustainable practices. Without changes to federal and state financial support, utilities that do not, or cannot, budget for the true costs of infrastructure investment will likely face future challenges. This includes a lack of financial means and the technical expertise to make the necessary investments to maintain a safe and sustainable water system.

One possible solution is for the State to provide utilities with financial and technical assistance to restructure operations to enhance sustainability. Sustainability refers broadly to increased financial solvency and environmentally sustainable operations. This may take the form of a plan outlining the current operating procedures and financial position of a utility, with any necessary changes needed to become sustainable in the future—in other words, a sustainability plan. A state agency would provide technical expertise to a utility when drafting the plan, and the additional costs of the planning process and necessary capital improvement could be

supported through multiple financial means, including a state revolving loan fund, such as the Drinking Water State Revolving Fund (DWSRF), a federally funded loan program that supports the upgrade and repair of drinking water systems.

A plan could include the following steps:

1. Goal setting: Establish sustainability goals, whether financial, environmental, or otherwise, that reflect the priorities of both the utility and the community.
2. Objectives and strategies: Establish measurable objectives associated with the goals in step one, as well as strategies for meeting those goals.
3. Alternative analysis: Evaluate a range of infrastructure alternatives to achieve steps one and two.
4. Financial strategy: Implement a financial strategy that estimates accurate and necessary revenues to sufficiently operate, maintain, and upgrade the utility (EPA 2012).

In Michigan, the DWSRF fund is currently used to provide low-interest loans to water suppliers for construction of public water systems. While a large portion of the money is allocated for the engineering and construction of drinking water systems, a portion of the money is allocated for nonconstruction tasks. The fiscal year (FY) 2020 Drinking Water State Revolving Fund Intended Use Plan the State submitted to the U.S. Environmental Protection Agency (EPA) allocates funds for nonconstruction tasks as follows:

- Up to four percent for administering the DWSRF
- Two percent for Michigan Department of Environment, Great Lakes, and Energy (EGLE) staff to provide small-system technical assistance
- Ten percent for EGLE staff to administer the existing scope of the Community Water Supply Section Public Water System Supervision Program
- Five percent for wellhead protection support staff
- Ten percent for EGLE staff to provide direct technical assistance to public water supplies (EGLE 2019)

While additional capacity and funding will still be needed for utility restructuring, there is a subset of items in the DWSRF that are not strictly construction based. In the future, this could be used to develop utility sustainability plans by providing necessary additional financial and technical assistance.

Potential Barriers

The primary barrier to creating a sustainability plan is the State's financial and staff capacity to provide assistance in drafting, reviewing, submitting, and implementing a plan. Additional capacity would be needed for the State to review such plans, especially given the number of water utilities in Michigan. One incremental approach to implementing sustainable practices in Michigan's water utilities is to implement a model similar to the WPSC, which oversees all municipal and investor-owned drinking water utilities operating in Wisconsin. The WPSC ensures that utilities charge rates that will support operation, maintenance, and future capital costs in an efficient manner. While total regulatory oversight may not be feasible in Michigan, a state agency or body could still provide rate and financial review at the request of the utility. It should be noted that the WPSC does not oversee all the wastewater and stormwater utilities, instead reserving the right to become involved through customer complaints or disputes regarding rates or practices (WPSC n.d.b).

Financial Incentives for Efficiency and Innovation

Technology that increase efficiency can decrease operating costs, decrease rates, and build resiliency into water systems. It is important to highlight innovation for future utility growth but also to implement current efficiency technologies. This section studies a series of capital improvements for multiple utilities in Massachusetts that primarily focused on energy efficiency.

The Commonwealth of Massachusetts's gap funding grant program provides an example for how Michigan could financially incentivize water utility innovation. The grant program is used to promote clean and efficient energy use to reduce operating costs at public water utilities. Dubbed the Clean Energy Results Program (CERP), the program is a partnership between the Massachusetts Department of Environmental Protection (MassDEP), the Massachusetts Department of Energy Resources (DOER), and the Massachusetts Clean Energy Center (MassCEC). The project began as an initiative in 2007 with a series of voluntary energy use and greenhouse gas emission audits performed by a partnership that included the EPA, several commonwealth departments, educational institutions, and private partners. Initially, 14 municipal drinking water and wastewater utilities received audits; this number grew to over a third of the commonwealth's 370 water utilities.[1] The audits provided efficiency recommendations for each utility; however, not all the audited utilities implemented the efficiency recommendations due to a lack of financial capacity.

The gap funding model was created to encourage those utilities that had not implemented the audit recommendations to do so. In 2011, MassDEP launched the CERP program to provide financial incentive funding throughout Massachusetts in combination with energy utility incentives so that water utilities could implement energy-efficiency projects and reduce operating costs. Grants totaling $1.7 million were dispersed in 2014 with funding provided by the Regional Greenhouse Gas Initiative, MassCEC, and DOER. The CERP program had four overarching goals when providing grant funding:

- Expedite the installation of clean energy projects that would produce significant cost savings that can be reinvested into facilities' assets
- Promote a model of collaboration between many partners to leverage all available funding sources for clean energy development
- Address the challenge of funding smaller clean energy projects that have a cost too large to cover with an operating budget but are too small to warrant financing
- Provide additional financial incentives for larger clean energy projects requiring financing through a competitive award process (DiBara et al. 2016)

Michigan could implement a similar program focused on incentives for energy efficiency. The program could also provide incentives for other efficiency or innovative measures, such as reducing the amount of water lost from a drinking water facility to the end use.

[1]This number includes both drinking and wastewater utilities.

Potential Barriers

There are at least two potential barriers to implementing such a program in Michigan. The first is the need for efficiency audits. The CERP program was created to implement already-identified energy-efficiency measures. To effectively implement an incentive-based grant program in Michigan, efficiency projects will first need to be identified, either wholesale or at the facility level. For example, Michigan's CERP program could provide incentives for a set list of projects, such as solar panels. Conversely, the program could require an analysis of each water facility to identify efficiency needs at a granular level, and then funding would be made available based on audit findings.

The second concern revolves around the sheer number of water utilities in Michigan. In 2014, Massachusetts had 250 drinking water and 120 wastewater utilities, compared to Michigan's 1,390 drinking water utilities and 1,080 community municipal wastewater systems. While the number of water utilities in Michigan will always be a challenge, this could be addressed by focusing solely on municipal or water utilities of a certain size or setting other criteria for program involvement.

Financing Performance Subsidies

Traditionally, a majority of utilities, including water, electric, and gas, operate using a cost-of-service model, where utilities request approval from state regulators to recoup the costs of providing service, which in the case of privately owned utilities also includes profit. However, the cost-of-service model does not provide opportunities to incentivize other behaviors, such as increasing renewable energy generation. One way to address that is using performance-based regulation (PBR) that still primarily focuses on recouping the cost of service but determines utility revenue based on specific, predetermined performance metrics. Performance outcomes can fall into multiple categories depending on the needs of the utility and goals of the regulator. Generally, the outcomes can focus on customer satisfaction, safety, reliability, environmental impact, and social obligations (MPSC 2018).[2] Michigan and other states, including Minnesota and Pennsylvania are exploring the idea of implementing PBR with electric utilities.

In 2018, the MPSC published a report on PBR and its potential applicability in Michigan, primarily for the investor-owned electric and natural gas utilities currently regulated under a cost-of-service model. The commission found that, after looking at multiple PBR systems implemented across the U.S. and in other countries, the traditional cost-of-service model is still the basis for the ratemaking structure and PBR is used to supplement the traditional approach, rather than replace it. This is primarily because a utility must at least recoup the cost of service to continue to operate. The commission noted that PBR could help both the utilities and the regulators adapt to changes in the industry, the energy industry in this example. If implemented correctly, PBR could enhance utility performance and customer satisfaction through optimized shared-saving approaches (MPSC 2018).

[2] In this instance, "social obligations" primarily refers to assessing the quality of the utilities' response to low-income and vulnerable customers.

Minnesota is also exploring PBR for its electric utilities that traditionally operate under cost-of-service regulation. Still in the early stages of PBR legislation, state law allows the Minnesota Public Utilities Commission (PUC) to "initiate a proceeding to determine a set of performance measures that can be used to assess a utility" (NARUC 2019). The PUC identified the following process in response to the order: articulate goals, identify desired outcomes, and specify performance metrics (NARUC 2019). A logical transition can be made to water utilities in Michigan, with the state's utilities adopting the process noted above and revising as necessary. The State could incentivize water utilities in Michigan using a similar system to PBR, and financial incentives would be provided to utilities that operate in a sustainable manner and meet specific goals, such as reduced water loss in conveyance or decreased energy usage.

Potential Barriers

PBR is a supplement to traditional cost-of-service regulation, which presents a problem for implementation in Michigan. Currently, Michigan's water utilities are largely unregulated at the state level. There is no state entity that could implement PBR without developing some sort of regulatory oversight for ratemaking, though a combined implementation of both strategies is possible. Given that PBR itself cannot be implemented without some form of cost-of-service regulation, a program could be implemented with the same goals: providing financial incentives for utilities meeting additional performance metrics. A state entity would still need to go through the process of articulating the goals of the performance metrics, identifying the desired outcomes, and specifying the performance metrics for the program to be successful. Furthermore, additional capacity would be needed in state government to continue to track utility progress for performance metrics. A funding source would also need to be determined for the financial incentives.

Supporting Low-income Water Utility Customers

Michigan has found itself in the national spotlight recently with several high-profile cases of drinking water quality and affordability concerns, particularly the Flint water crisis of 2015, widespread water shut-offs in Detroit, and concerns with affordability in other cities in Michigan, such as Benton Harbor (Bridge Magazine 2019; Graham Sustainability Institute 2017). Additionally, water is becoming an increasingly large part of the average household's bills. Water rates increased by 106 percent over the last 30 years, while median household income has failed to keep up, with just a 61 percent increase over the same time period (National Consumer Law Center 2014).

In 2015, the typical annual Michigan household water and wastewater expenditure was $911 (UNC Environmental Finance Center 2017). This was especially pronounced in Detroit, where University of Michigan researcher found that the average annual expenditure was $1,183, with low-income residents paying 10 percent of their monthly household income for water services on average (Rockowitz et al. 2018). For context, the EPA defines affordable combined drinking water and wastewater bills as those at or under 4.5 percent of median household income (AWWA 2019). A multiprong approach to solving this problem must address both the rising costs of water delivery for utilities and implementation of financial assistance mechanisms to assist customers who cannot afford their utility bills. Potential supports for water affordability in Michigan could include:

- Water shut-off prevention assistance: Clean, potable water is a necessity for all people, and Michigan can help ensure that its residents have access to this necessity by providing assistance to prevent water shut-offs.

- Property tax lien for delinquent bills: Property tax liens for delinquent water bills combined with property or income tax forgiveness are potentially viable solutions for providing such alternative measures. Programs that allow for this type of forgiveness do exist in Michigan, but they are not widespread or explicitly laid out as assistance for water affordability.
- Water bill income tax credit: Another alternative to water shut-offs is to provide an income tax credit to those residents whose water bills are an exceedingly high percentage of household income.
- Statewide franchise fee: A statewide franchise fee could be used to help utilities afford needed capital improvements and efficiency measures, lowering the cost of service to residents in the long run.

Water Shut-off Prevention Assistance

Access to clean, potable water is a necessity of life. In Michigan, residents in some of the state's most notable cities struggle to access this critical resource. No one should be denied access to water for cleaning, bathing, drinking, and sanitation. When this situation arises, water shut-off prevention assistance is necessary to ensure that all Michigan residents have access to water. Exacerbating the issue is the reality that water is currently the only utility without a state- or federally funded safety net for low-income utility customers. Examples of how states and other utilities are providing customer assistance programs are provided below.

The Northeast Ohio Regional Sewer District (NEORSD), a public utility district serving portions of Cuyahoga and Summit Counties, provides a series of customer assistance programs for individuals in different situations. The homestead program is available to both customers aged 65 or older and those with a disability. Customers with total household income under $33,500 are eligible for a 40 percent rate reduction. The affordability program also provides a rate reduction of 40 percent for eligible customers. To qualify, a customer's annual income must be at or below 200 percent of the federal poverty level. A customer cannot be enrolled in both programs. The NEORSD also provides a crisis assistance program to eligible customers who have had a major life event, such as the loss of a job, medical expenses, or a divorce. The program provides a 50 percent discount on a customer's bill of up to $300 (NEORSD n.d.). Funding for these assistance programs is built into the rate structure of the NEORSD (NEORSD pers. comm.).

Bill assistance could also come from the state and federal government, as is the case with the Low Income Home Energy Assistance Program (LIHEAP). The program provides grant funding to assist low-income households in paying for a portion of their home energy bill. Funding is provided through federal grants and the program is administered by the Michigan Department of Health and Human Services (MDHHS) in cooperation with other state agencies. The LIHEAP allows for a multipronged approach in assisting low-income customers, which includes a home heating credit, crisis intervention (e.g., a ruptured pipe in the home), and weatherization (MDHHS n.d.). Furthermore, customers who already qualify for the Temporary Assistance for Needy Families or Supplemental Nutrition Assistance Program (SNAP) have the option to automatically qualify for the LIHEAP (U.S. DHS, OCS 2016). A similar program could be implemented through MDHHS that would allow for a home water credit, crisis intervention, and water efficiency measures. In this model, bill assistance would be supplied by state government, as there is currently no federal grant program for water utilities that mirrors the LIHEAP.

As a supplement to the LIHEAP, the Michigan Legislature also established the Low Income Energy Assistance Fund (LIEAF) in 2013. The MPSC approves a low-income energy assistance funding program on an annual basis, not to exceed $50 million. The LIEAF, like the LIHEAP, provides financial support for low-income residents,

including direct assistance and self-sufficiency services (MPSC n.d.). The program is funded by a monthly surcharge assessed on retail electric billing meters, not to exceed $1. The funding is distributed by MDHHS through the Michigan Energy Assistance Program (MEAP), which provided assistance to 61,322 households in fiscal year 2019, with an average utility payment of $534 (MPSC 2019). A similar program could be implemented for water utilities either on a state or local level. Water utility customers could pay a small surcharge on their water bills to fund an assistance program for residents who may need assistance.

Potential Barriers

A primary barrier to a utility-based customer assistance programs is the 1998 Michigan Supreme Court case of *Bolt v. City of Lansing*. The court ruled that the stormwater service fee imposed by the City of Lansing was unconstitutional and void on the basis that it was a tax for which voter approval was required and not a valid use fee. The court established three criteria for distinguishing between a fee and a tax: 1) a user fee must serve a regulatory purpose rather than a revenue-raising purpose, 2) a user fee must be proportionate to the necessary costs of the service, and 3) a user fee must be voluntary—property owners must be able to refuse or limit their use of the commodity or service. The court found that the charge failed to satisfy the first and second criteria (Michigan Supreme Court 1998). The three criteria established by the *Bolt* case could apply to customer assistance funding raised through rates or a surcharge for an assistance program. This is only a barrier for rate-based funding sources and does not affect funding sources such as state or federal block grants. For a state-administered program, the primary barrier is the source of funding. The LIHEAP program referenced above is funded through a federal grant.

Property Tax Lien for Delinquent Bills

To prevent water shut-offs and also ensure that community-owned water utilities are still able to collect unpaid water bills, delinquent water utility bills could be placed as a lien on a customer's property and paid through property taxes. Michigan law already allows for this in the Municipal Water Liens Act 178 of 1939. Overdue municipal water or sewage utility rates, assessments, charges, or rentals may be collected through a lien on a house, building, or parcel of land that is supplied by a water or sewage system (State of Michigan 1939). While this may not seem like a way to help low-income residents afford their bill, it opens up additional avenues for forgiveness of a water bill. In Michigan, a resident who participates in relief programs, such as the SNAP, can potentially receive help with their property taxes, either in the form of financial assistance or forgiveness. For example, the City of Detroit currently administers the Homeowner's Property Tax Assistance Program (HPTAP) to help Detroit residents pay all or a portion of their property taxes based on household income levels or circumstances. For example, a four-person household with a household income equal to or below $26,104 would be fully exempt from property taxes (City of Detroit n.d.). For the program proposed here, tax forgiveness or issuance of a tax refund would be administered by the State of Michigan with state funds.

Potential Barriers

Since Michigan already has a law allowing for property tax liens for unpaid water bills, barriers to implementation lay with property tax forgiveness. The HPTAP notes that fees not covered by the program are still the responsibility of the property owner, so while an overdue water bill may be eligible for property tax forgiveness, any late fees are not. Property tax lien forgiveness eligibility for overdue water bills would likely depend on what is forgivable under each specific program. The Michigan Legislature could amend the 1939 law or use the law to

set up a state-funded and -administered program. Increased use of property tax liens must be accompanied by increased low-income assistance, or low-income individuals risk losing their homes. Using a property tax lien as a form of payment assistance for a customer's water bill assumes that a given household are able to pay their property taxes, which may not be the case for all Michigan residents.

Water Bill Income Tax Credit

In addition to property tax forgiveness, Michigan residents in need of financial assistance for their water bills could also receive tax relief via an income tax credit. Residents would receive an income tax credit if their drinking water, sewer, or combined water bill exceeds a set percentage of their total household income. The City of New York administers the Home Water Assistance Program (HWAP) to help low-income homeowners afford water and sewer bills. The initiative is a partnership between the New York City Departments of Environmental Protection and Finance, as well as the Human Resources Administration, to provide financial assistance to homeowners who already received energy assistance from a City of New York program similar to LIHEAP, as well as additional City of New York programs for senior citizens, homeowners with a disability, and customers who receive relief for their school taxes. Residents do not have to enroll in the HWAP; eligible customers automatically received a credit on their water and sewer account of $115.89 per month in 2017 (NYC DEP n.d.).

Michigan provides a home heating income tax credit for customers in need. The Home Heating Credit program is administered by the Michigan Department of Treasury and provides financial support for heating expenses to qualified homeowners or renters in Michigan. Financial support is based on a formula using income tax exemptions and resident income (Michigan Department of Treasury n.d.). A program for water could be set up in Michigan like the City of New York program or through the expansion of the home heating credit program. Michigan residents whose water bill is a certain percentage of their household income, who are already enrolled in other financial assistance programs, or who meet certain income thresholds would receive financial assistance with their water bill. This could be in the form of tax credits or other financial distribution methods.

Potential Barriers

If the program was set up as a tax deduction, any credits would mean less revenue for the State of Michigan. A program like this could potentially subsidize water utility rates across the state using the state income tax as a mechanism. This may cause customers to not realize the true cost of providing water or sewer service or cause utilities to raise rates knowing that they are subsidized for low-income customers. Capacity and program administration are also potential barriers. Since an income tax forgiveness program does not currently exist, the program would need to be developed and run by a state agency.

Statewide Franchise Fee

A franchise fee recoups the cost of a utility's use of publicly owned space, such as damage to roads for utility infrastructure maintenance. The fees are assessed on the utility and may be passed onto customers through their utility bills. Franchise fees are common in Michigan for the cable and telephone industries but less so for water utilities. Franchise fees are traditionally implemented by local governments and used to compensate for the added costs of a utility's use of local public spaces. Municipal water utilities could use the franchise fee to raise additional needed funding for operation. Furthermore, a statewide franchise fee on water utilities could be

implemented to support a revenue bond to help those utilities most in need. One major benefit of revenue bond backed by a franchise fee is that it will not have to go to a statewide vote because it is a fee charged on local utilities for municipal governments to recoup costs and not a tax on residents.

The following are two local examples of franchise fees for utilities that the State of Michigan or local governments could implement. In El Paso, Texas, a franchise fee was imposed on the primary water utility to compensate the City for capital damages done to city infrastructure due to utility vehicles and rights of way for utility pipelines. The franchise fee is assessed to residential, commercial, and standby fire protection accounts as a flat fee based on meter size (El Paso Water n.d.). In Minneapolis, Minnesota, the city collects a utility franchise fee from electric utilities operating within city limits. In this case, fees are a set percentage of a customer's total electric bill; the current residential rate is 4.5 percent. The goal of the program is to reduce overall energy use and increase the use of conservation programs to generate new savings that ultimately benefit residents and businesses in the city (City of Minneapolis 2017).

Potential Barriers

One potential barrier to implementation is the initial increase in costs of utility service for customers. Due to the time it takes to construct and install capital improvement projects, there will be a period where customers must face an increased rate without increased efficiency. While the goal of any efficiency program would be an overall net positive for the utility customer, the delayed benefits through future cost-savings may be difficult for customers to come to terms with or afford depending on the size of the increase. There may also be challenges to a franchise fee for capital improvements through *Bolt v. City of Lansing*, which is discussed in depth the "Water Shut-off Prevention Assistance" section on page 11 of this report.

Supporting Low-income Self-supplied Customers

Much of this report focuses on water utilities and their customers, but given that 25 percent of Michigan residents and businesses obtain their water from private wells and 30 percent of residents use a septic system, access to clean, potable water for low-income self-supplied customers is also a concern. Michigan has the highest number of wells in the country, at more than one million. Water quality and affordability is important for all Michigan residents, not just those served by a water utility, and the State has a compelling public and community health and environmental protection interest in assuring private systems are safe and functioning. There are measures the State can take to assist low-income residents with private drinking and wastewater infrastructure, such as a private well or septic system, to ensure the health and safety of all Michigan residents. The following incremental solutions can help ensure that Michigan's self-supplied residents are receiving clean, affordable water services:

- Property-assessed clean water financing: As with utility operations, self-supplied customers may require assistance to implement necessary capital improvements. A comparable energy program could allow property owners to finance eligible improvements through their local government.
- Low-income well and septic replacement: Well and septic maintenance and replacement are necessities of home ownership but can be expensive and unexpected costs. Michigan residents who may not be able to afford such projects will need financial support for access to clean, potable water.

- Septic inspection and well-testing incentives: Maintenance and replacement are not possible unless there is a known system issue. However, not all septic and well concerns present with above-ground symptoms, so inspection and testing are both necessary to ensure access to safe water.

Property-assessed Clean Water Financing

One potential solution to improve privately owned well and septic systems is to introduce a water infrastructure financing model like that of the property-assessed clean energy (PACE) model. Multiple states have implemented a PACE model, including Michigan. State law allows local governments to implement and finance PACE, but local governments must adopt a resolution allowing PACE and must comply with other legal standards outlined in the law (State of Michigan 2010). PACE allows property owners to finance energy-efficiency or other eligible improvements and then pay the loan back over time through a property tax assessment. Assessments are typically ten to 20 years, and the debt is tied to the property, though repayment obligation may be transferred as part of property sale negotiations. Local governments create PACE districts and finance the loan operations for projects, usually through bonds. Examples of water services that could be eligible under PACE include well or drain tile replacement (U.S. DOE n.d.).

Potential Barriers

Since local governments are the entities that finance initial loan operations, there must be funding readily available to complete projects. This is one area where the state government could step in and provide funding, potentially through increasing funding to the current water revolving loan funds or in the creation of a state water infrastructure bank (SIB). A SIB operates as a revolving loan fund, and funding would be used for initial loans either to municipal governments for further distribution or to customers directly. The SIB would need to be capitalized but, after capitalized, it could be a reoccurring and stable source of funding for property-assessed clean water financing. Another primary barrier to implementing a financing model tied to increased property taxes is that those in need of funding assistance may not be able to afford increased property taxes, particularly those on a fixed income.

Low-income Well and Septic Replacement

Another financing mechanism for well and septic replacement may be a state program based on the Federal 504 Loan Program specifically for well and septic improvements. The Section 504 Home Repair Program is administered by the U.S. Department of Agriculture through the state's Rural Development Office and provides loans to low-income homeowners to repair, improve, or modernize their homes. Eligibility is determined on a case-by-case basis and considers a multitude of factors. To qualify for the program, a loan applicant must be the homeowner and occupy the house, be unable to obtain affordable credit elsewhere, and have a family income below 50 percent of the area median income.

Grants are available for those age 62 and older who cannot afford to repay a loan. Well and septic improvements are eligible services through the program, which provides as much as $20,000 for a loan and $7,500 for a grant. The program provides a fixed interest rate at 1 percent and is administered through each state's local rural development office year-round (USDA n.d.). A similar program could be set up through the State of Michigan to local municipalities specifically for well and septic replacement. Municipalities could then provide funding to those in need for septic and well-related home repairs. There is a precedent for this type of program in Michigan.

In 1998, the State of Michigan borrowed $675 million for the Clean Michigan Initiative (CMI), an environmental bond program with a myriad of goals. A portion of the CMI loan funding set up the Clean Water Fund with $90 million, of which $35.1 million was appropriated for other water programs. This included $6.9 million in grants to 15 municipalities and nonprofit groups to identify and correct leaking septic systems (Center for Michigan 2002).

Potential Barriers

As with many of the other solutions in proposed in this paper, initial funding will need to be provided to fund a loan program. A state water infrastructure bank is another option for this, and project financing would be tied to a person rather than the property. As with the PACE program, low-income individuals may not be able to afford the loan payments necessary to implement the program.

Septic Inspection and Well-testing Incentives

One of the keys to ensuring that well and septic systems are properly functioning is inspection and testing. Without proper inspection and maintenance, home water systems can begin to function improperly, become less efficient, and potentially damage the environment. Mandatory inspections are often expensive for both the customer and the local municipal government that administers an inspection program. One possible solution to this is state incentives for both well testing and septic inspection. It is important to consider both septic and well systems because they can impact one another—for example, a malfunctioning septic system can contaminate a drinking water well.

As an example, the State of Minnesota currently requires septic inspections for all new construction or replacement of private systems. Furthermore, the law prohibits issuance of building permits or variances for the addition of a bedroom unless a septic inspection has been completed. Inspection certificates are valid for three years for existing systems and five years for new systems. State law requires all counties to adopt ordinances in compliance with the state sewage treatment system rules, meaning inspection and compliance are primarily managed at the local level (State of Minnesota 2007, Tip of the Mitt Watershed Council 2017).

During the 2018 legislative session, the Michigan Legislature considered a statewide septic inspection program and recognized that support would be needed for inspection and repair costs for those that cannot afford needed repairs (State of Michigan 2018). Additionally, in 2002, a part of the Great Lakes Water Quality Bond Authorization Act amended the Michigan Natural Resources and Environmental Protection Act to allow funding from a $1 billion bond to be used for "upgrades or replacements of failing on-site septic systems that are adversely affecting public health or the environment, or both" (State of Michigan 2002). From the $1 billion, $710 million was set aside for the Strategic Water Quality Initiatives Fund, which provided municipal governments funding to support a variety of issues, including onsite single-home septic systems (State of Michigan 2002). It is important for the state and local government to step in and regulate septic and well systems because the federal government does not (EPA n.d.a; EPA n.d.b).

Potential Barriers

Depending on the structure of the program, the State would need additional capacity to administer the program, either statewide or through local governments. For low-income customers, it would be important to have a financing or cost-saving mechanism to ensure that everyone can afford a septic inspection or well test. Additionally, the large number of private wells and septic systems in Michigan will be an unavoidable challenge.

Conclusion

Michigan is rich with natural resources that benefit its residents, including abundant fresh water. Michigan's water utilities and private household systems provide clean, potable water to Michigan's residents for both drinking water and sanitary purposes. These recommendations are informed by and build on the discussions of the Water Fellows and describe solutions and implementation mechanisms for creating sustainable, resilient water utilities; supporting low-income water utility customers; and supporting low-income self-supplied customers. They are not the only solutions that could ensure access to clean, affordable, potable water and water services; however, they function as viable incremental changes that can significantly advance Michigan toward this goal.

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