WATER AND SEWER INFRASTRUCTURE:

CORRECTING UNDERINVESTMENT WITH SMART SPENDING

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Executive Summary: Municipalities are financing water and sewer infrastructure with ARPA funding to improve public service quality and accessibility. We analysed over 100 interim plans submitted to the Treasury. Four case studies are also profiled. The most successful plans focus on the long term, build inter-agency partnerships, engage the community and invest for multiple benefits.

Yeon Joo Kang, Lohita Turlapati, Jack Schwab, Junbo Huang, May 2022

LONG-TERM CHALLENGES

1. Decreased Investment

In the absence of federal funding, localities lack the ability to raise revenue for capital renewal and regular maintenance, resulting in expensive failing systems.

2. Disproportionate Impact

Poor and minority communities face the highest costs for the lowest quality of service, deepening existing inequalities within communities.

3. System Design

Short-sighted system design decisions can lead to higher long-term costs, damage public health, and limit economic development.

Access to safe, affordable water and sewer services, is critical for economic development, environmental sustainability and quality of life.

THE WATER PLAN-MAKING CYCLE

Build Ambitious Long-term Plans

Create spending and project roadmaps that allow for quick access to new funding sources.

Invest for Multiple Benefits

Identify necessary public health, social and environmental protection outcomes that can be achieved from a single investment.
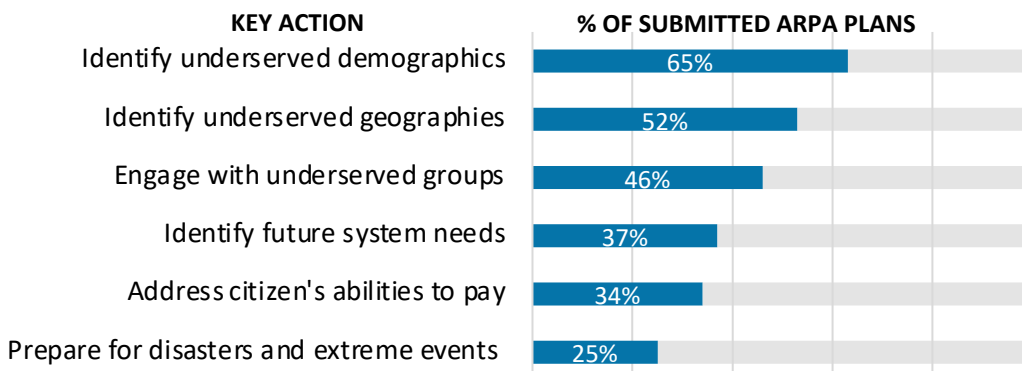
Form Inter-Agency Relationships

Build relationships across government agencies and with community organizations and external experts to create allies for the long-term vision.

Proactively Engage with Communities

Develop plans with constant community input, verified with expert analysis, to develop clear investment priorities.
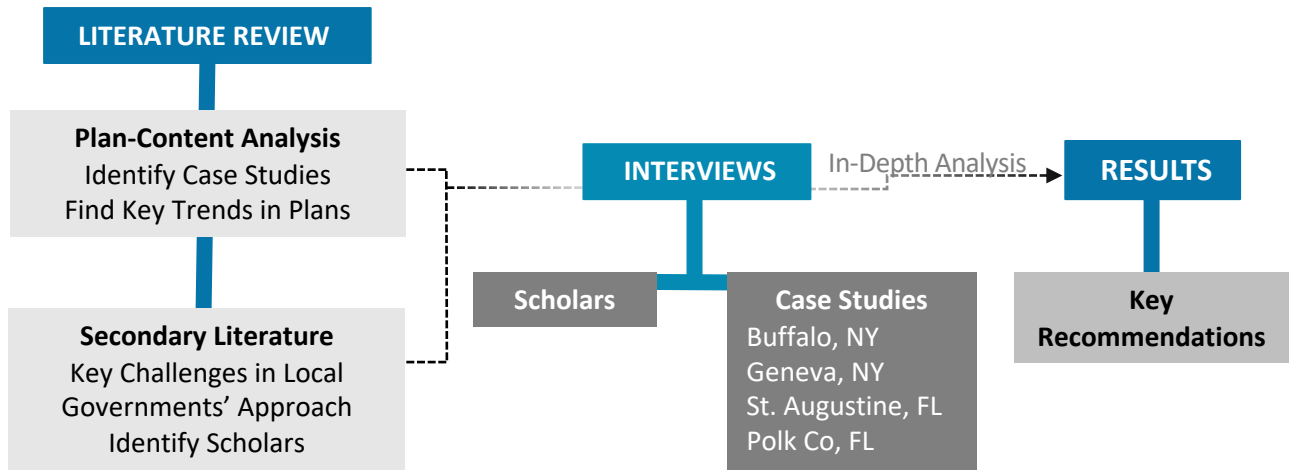
KEY ACTIONS IN CREATING AN EFFECTIVE WATER AND SEWER PLAN

KEY ACTION	% OF SUBMITTED ARPA PLANS
Identify underserved demographics	65%
Identify underserved geographies	52%
Engage with underserved groups	46%
Identify future system needs	37%
Address citizen's abilities to pay	34%
Prepare for disasters and extreme events	25%

For more details on ARPA Plan analysis: [Appendix A](#)

Sample Size: 93 local governments

STUDY METHODOLOGY

LITERATURE REVIEW

Plan-Content Analysis
Identify Case Studies
Find Key Trends in Plans

Secondary Literature
Key Challenges in Local
Governments' Approach
Identify Scholars

In-Depth Analysis

INTERVIEWS

Scholars

Case Studies
Buffalo, NY
Geneva, NY
St. Augustine, FL
Polk Co, FL

RESULTS

Key Recommendations

LEVERAGING ARPA TO MAKE A LASTING DIFFERENCE

Buffalo, NY	Polk Co, FL	Geneva, NY	St. Augustine, FL
Lead Pipe Replacement	Improved Stormwater Infrastructure	Plugging Revenue Shortfalls	Septic to Sewer Conversion
$63 Million	$ 80 Million	$0.92 Million	$52 Million
Design for public health outcomes	Reduce climate disaster vulnerability	Address service affordability	Expand service to all
Responding to elevated blood lead levels in their city's children, Buffalo engaged all its water agencies to develop comprehensive plans with expansive community input across a variety of water issues. ARPA enabled Buffalo to expand lead pipe replacement programs and stormwater management projects.	Polk County's Roads and Drainage Division maintains an unfunded list with decades worth of stormwater management projects. The county's budget limits its ability to fund these projects, and funding usually only comes after major storms. ARPA is enabling Polk County to make investments that will reduce future flood damage.	A decline in usage during the COVID-19 Pandemic created a shortfall in the City of Geneva's maintenance budget. ARPA allowed the City of Geneva to replace its lost revenue without passing higher costs onto citizens. The City was also able to plug gaps in capital projects to reduce the system's long-term expenses.	In West Augustine, homeowners couldn't connect to the sewer system built to service their area, because it was too expensive, leading to the system lying dormant. The city is using ARPA to expand its efforts to build connections directly to homes and parcels. This opens up opportunities for new commercial and multi-family development.

For more details on case studies: Appendix B