



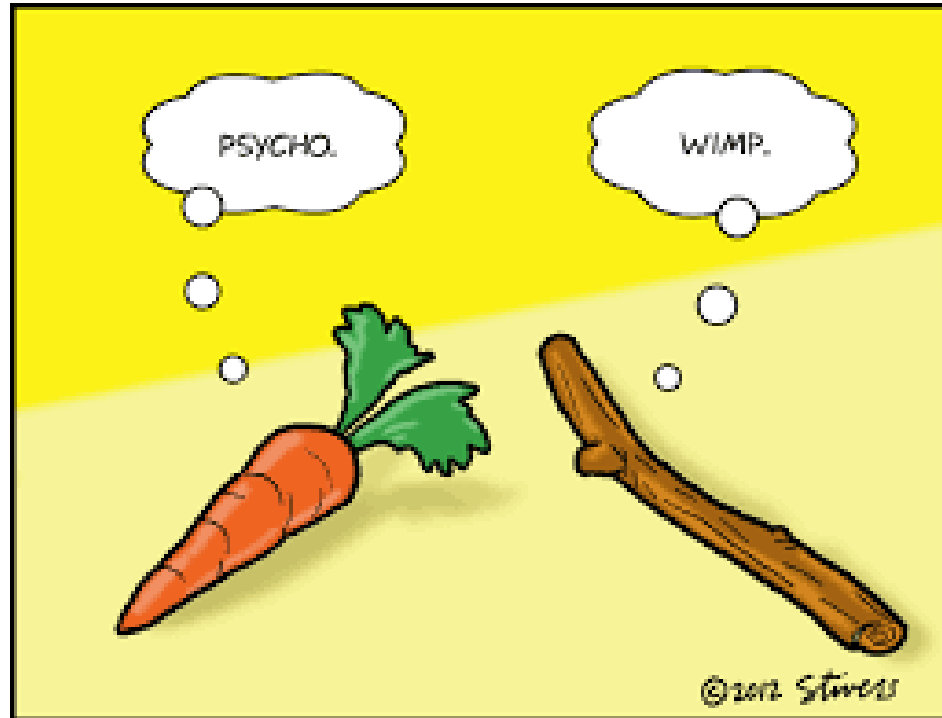
Department of
**Environment &
Conservation**

Pilot Projects: SRF Strategic Initiatives for Small and Disadvantaged Communities

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TDEC DWR State Revolving Fund Loan Program

Carrots vs Sticks



Drinking Water and Clean Water SRF

What is SRF:

- TDEC Division of Water Resources SRF
- The SRF Program receives Federal capitalization grants from the EPA for **Drinking Water** and **Clean Water**
- Federal funding (83.33%)
- State Match (16.67%)
- Loans to eligible entities
- Repayments and interest create the "Revolving Fund"
- Self-sustaining resources for future projects

Bloomington Utility District's
Waterline Replacement \$2.5M

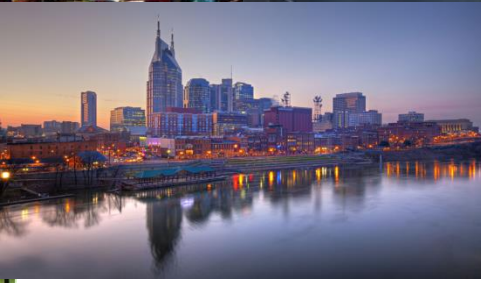


Elizabethton Waterline
Replacement \$650K



Eligibility

- Counties
- Cities
- Municipalities
- Water Authorities
- Utility Districts



Loan Activity

On an Annual Basis SRF Does:

- Between 20-30+ loans
- On Average \$100 Million in obligated loans
- Roughly \$23 Million (Cap Grant CW)
- Roughly \$19 Million (Cap Grant DW)



SRF Loans	FY 2018	FY 2019	FY 2020 (to date)
Total Amount Awarded	\$ 193,587,681	\$ 96,669,800	\$ 113,342,200
Amount Awarded to Small & Disadvantaged	\$ 7,082,481	\$ 17,695,000	\$ 1,386,000
Principal Forgiveness Awarded to Small & Disadvantaged	\$ 634,077	\$ 1,025,000	\$ 1,386,000

BILLIONS!!!



SRF has done so much! BUT.....

Clean Water:

- WWTP upgrades & improvements
- I&I correction / collection system rehab
- New collectors & interceptors
- Combined sewer overflow correction
- **Stormwater management**
- **Recycled water (gray water)**
- **Decentralized systems**
- **Water conservation, energy efficiency, nutrients**
- **Green infrastructure**
- **Land acquisition / brownfields**

Drinking Water:

- Compliance
- Treatment
- Storage
- Transmission & distribution
- Consolidation / regionalization
- Water loss / distribution system rehab
- Creation of new systems
- **Source water development**
- **Wellhead protection**
- **Green infrastructure**
- **Water conservation & energy efficiency / optimization**

Where is DWR SRF?

Historically reactive

Proactive future



Fulfilling DWR mission and
assisting communities in need

Strategic Use of SRF Funds

- Governor Bill Lee's Executive Order #1
- TDEC Priorities
- DWR-SRF Priorities



- **Refocus SRF on building opportunities for small and disadvantaged communities/systems**

SRF wanted to open doors



New leadership blew the doors OFF!!



Identify – Fund – Assist

- Needed an improved way of **identifying** small and disadvantaged communities (SDCs)
- Develop a **funding** strategy for SDCs
- **Assist** with specific project development
- Provide direct and indirect **technical assistance**
- Gather **data** on SDCs to better understand future needs
- Build on **lessons learned**



Identifying Small and Disadvantaged Communities

- Updates to existing processes were needed to refine how we define and identify SDCs
 - Populations less than 10,000
 - Dynamic information to capture economic status
- Developed a new Ability To Pay Index (ATPI)
 - Partnership with UTIA and ECD
- The new ATPI includes **multi-year trends** rather than a snapshot in time
 - ✓ **Census Data** - Population change, median household income, poverty rate, and food stamp dependence
 - ✓ **Economic Data** – Unemployment, property taxes, and land values
 - ✓ **Financial Data**- Bond rating and debt

ATPI Intended Use

- **Objective** - Aid in understanding affordability issues for TN communities, and how their needs can be addressed based on what they can afford, how they are changing, and what “We” can offer
- **Current uses (present and past)**
 - ✓ Calculation of SRF loan interest rates (Current market rate x ATPI)
 - ✓ Determination of matching requirements for grants (CDBG, etc.)
- **New uses per the 2020 SRF IUPs:**
 - ✓ Allocation of standard SRF subsidy (principal forgiveness)
 - ✓ Prioritization of 50% principal forgiveness loans
 - ✓ Prioritization of technical assistance

SRF Subsidy as an SDC Funding Strategy

Principal Forgiveness and Lower Interest Rates

Starting 2019, SRF subsidy is prioritized to small and disadvantaged communities:

- ✓ Small (population served < 10,000)
- ✓ Disadvantaged (ATPI ≤ 60%)
- ✓ Desire to develop better solutions for our most vulnerable communities
- ✓ Collaboration between consultants and DWR
- ✓ Community led opportunities and solutions

Innovative, Sustainable, Resilient, and Green
Projects

Thinking Outside the Box



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Pilot Projects and Strategic Coordination

- If SRF loans and grants \$100 million dollars annually to communities for improving water and wastewater- we should ask
- How can we **assist** and improve benefits to local communities and focus on the mission of TDEC DWR?
 - Developing relationships within local government
 - Water and wastewater facilities, planners, elected leaders
 - Understanding the interconnected water picture in your jurisdiction
 - Create a team that addresses short term needs along with sustainable and resilient decisions for a secure future
 - Regional/watershed based solutions
 - Make improvements to water quality part of the conversation on the front end
 - Consider the triple bottom line approach

Scalable, Placed Based Solutions

- Community led pilot projects
- Based on principal forgiveness
- Pilot projects
 - Dyersburg- Flood resiliency
 - Oliver Springs – Water loss
 - Bell Buckle-
Integrated Asset Management

What are Pilot Projects?

- Communities that agree (contractually) to in-kind efforts to address high priority issues and share results with public
- Eligible for larger amounts of principal forgiveness
- Only a few each fiscal year

Dyersburg, Collection Lines, and Critical Assets

- **Assets fail** - how you manage the consequences of failure is important.
- Not every asset presents the same failure risk, or is equally critical to your system.
- It is important to know which assets are required to sustain system performance.
- Critical assets are those with a **high risk of failing** (old, poor condition, etc.) and **major consequences** if they do fail (major expense, system failure, safety concerns, etc.).
- You can decide how critical each asset is and rank them accordingly.













Dyersburg Flood Resiliency Questions

- Where might collection line assets fail?
- What is the cause of the failure?
- What are the likelihoods (probabilities) and consequences of asset failure?
- What does it cost to repair the asset?
- What are the other costs (social, **environmental**, etc.) that are associated with asset failure?
- Best Practices
 - Listing assets according to how critical they are to system operations.
 - Layering in streambank stability and condition assessment
 - Establish a failure analysis (root cause analysis, failure mode analysis)
 - Determining the probability of stream bank failure AND collection line failure
 - **Analyzing combined failure risk and consequences**

Dyersburg Asset Management for Flood Resiliency- Focused on Bank Stability

- West TN utilities along stream banks
- Develop a streambank threat assessment protocol and preferred practices list for collection lines
- Use known streambank condition assessment techniques
 - Identify threats to critical infrastructure
 - Rank the risk of failure
 - Prioritize stabilization needs and select preferred practice based on
 - Asset location
 - Asset criticality
 - Streambank condition
 - Potential risk of failure

Risk and Reward: How to Choose the Right Approach



Dyersburg Asset Management and Flood Resiliency

- TAKING BUFFER ZONES SERIOUSLY
- Managing collection line easements with variable vegetation zones
- Work with local farmers to encourage better buffer zone protections
- Develop a social media campaign
- Promote benefits of buffer protection as part of ecotourism and hunting economy that supports Dyersburg community
- Tree planting

Dyersburg Asset Management and Flood Resiliency

- Planning, Design and Construction
 - Investigate UD issues
 - Develop an integrated plan implementable for the community
 - Adapt to specific conditions
 - Implement plan through demonstration/construction
- Partnerships- Dyersburg pilot and West TN River Basin Authority
- Leverage funding where we can
 - 319 Grants
 - CDBG
 - Others

Oliver Springs and Water Loss



- 70% chronic water loss issues
- Pilot to identify, isolate, and correct issues.
- Consultants, local officials, and TDEC developed an investigation plan together
- Leveraged partnerships CDBG funding for future construction phases

Implementation Plan

- Communication with TDEC on decision tree
- Use multiple methods for leak detection
 - Zoned meters and audio leak detection
- Address raw water losses and lost water revenue
- Develop a Water Loss Control Plan
- Training
- Workshops
- Social media
- Field work training for employees
- Asset management
- GIS

Bell Buckle – Integrated Asset Management

- Drinking Water
- Clean Water
- Stormwater
- Water Resources
- Understand reliance and connectivity of assets
- Build a plan using accessible tools
- GIS
- EPA Small Systems Asset Management Plans
- Facilitate workshops
- Social Media
- Water model for long term sustainability

WIIN Grant Awards

- TN is first state awarded the WIIN Grant: Assistance for Small & Disadvantaged Communities Drinking Water Grant
- \$1.3 M total award (45% State Match)
- City of Spencer, TN
 - Planning & Design
 - Disinfection byproducts
 - Source Water
 - Partnership with USDA-RD & University of Memphis
- City of Clifton, TN
 - Planning & Design
 - Turbidity
 - Partnership with TN DOC



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Partnering with Trusted Utility Leaders

- TN Association of Utility Districts
- Identify small and disadvantaged communities
 - Chronic drinking water issues
 - Chronic wastewater issues
 - Need funding
 - Source water challenges
 - Water quality issues
 - Provide FREE assistance- technical, financial, and asset management
 - Conservation of community funds
 - Protect human health and safety
 - Workable solutions to improve or maintain water quality of the natural resources

Strategic Partnerships across agencies

- TDEC SRF / DWR (ESU, DW)
- TN USDA-Rural Development
- Department of Economic & Community Development (CDBG, etc.)
- Comptroller (Utilities)



TN Scorecard- Striving for System Sustainability

- In 2019 SRF observed a unifying theme among agencies and utility systems – the need for **asset management assistance**
- SRF is working to assist small communities develop resilient and sustainable solutions.
- We want to work on the foundation of a sustainable utility system = Asset Management
- Developed by EPA
- Modified for Tennessee in partnership with TAUD
- An effort to understand broadly where systems are at in planning efforts
- What do utility systems do well?
- Where can TAUD and TDEC SRF assist?
- Statewide **data-gathering** to determine future needs

Thinking Outside the Box- CS/SS/SW Grants and Pilot Projects



SRF Funds for Green Infrastructure and Conservation

- California has funded the purchase and preservation of over **40,000 acres of vernal pool wetlands**
- Ohio uses **wetlands as green infrastructure** components to wastewater facilities loans
- NY has used millions of SRF dollars to **protect thousands of acres** of watershed used for **source water**
- North Carolina subsidized a large scale **stream restoration** project to stabilize stream at a drinking water intake
- **TDEC SRF wants to implement these practices through the SRF program here in TN**

SRF Eligible Projects

- **Green Infrastructure**—practices to manage wet weather and maintain and restore natural hydrology by infiltrating, evapotranspiring, and harvesting and using stormwater. from the local scale to the regional scale- rain gardens to forest preservation
- **Water Efficiency**—technologies and practices focused on conservation and reuse efforts, as well as water loss reduction and prevention. Examples include recycling and reuse of stormwater and wastewater streams.
- **Energy Efficiency**—technologies and practices to reduce the energy consumption of wastewater and drinking water projects. Water efficiency saves water saves energy and also saves money
- **Environmentally/Green Innovative**—new or innovative approaches to managing water resources in an economically and environmentally sustainable way. Examples include water reuse projects that reduce energy consumption, recharge aquifers, or reduce water withdrawals and treatment costs.

Stormwater Projects in MS4s

- Phase I and Phase II NPDES permitted communities
- Publically owned treatment works
- Control measures identified in the permit



NPS Projects

- Higher points awarded for projects on or affecting WQ impaired stream
- Can include protection or improvement of GW, SW, or wetlands
- Consistent with TN NPS Management Program



How to get in on the ACTION.....

Each calendar year SRF has a process:

1. Solicitation for Clean Water and Drinking Water Projects (Sent: January, Deadline: February)
2. Project Scoring (March/April)
3. Develop/Finalize of Priority Ranking Lists (June)
4. Intended Use Plans (IUP) Meeting (July)
5. Second Drinking Water Project solicitation (**August**)
6. Apply for Federal capitalization grants (**September**)
7. Notify those on PRLs (August/September)
8. Notice of award (September/October)
9. Proceed to loan request process

Communities: How to Navigate SRF

- May benefit from applying for a planning and design loan (significantly lower cost, interest, and term of 5 years)
- Help identify issues and develop a plan for a construction loan at a later time

Clean Water:

- Interest rates below market (as low as 0%)
- Principal forgiveness
- 30-year term for all communities
- Planning and design loans up to 5 years to identify issues and develop a plan (prior to construction)

Drinking Water:

- Interest rates below market (as low as 0%)
- Principal forgiveness
- 30-year term for all communities
- Extends repayment initiation to 18 months (up from 12) after project completion
- Additional subsidy to economically disadvantaged communities (6-35%)
- Planning and design loans up to 5 years to identify issues and develop a plan (prior to construction)

New Adventure– where to start?



Start at the beginning of course!

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