

COUNCIL OF INFRASTRUCTURE FINANCING AUTHORITIES SRF WORKSHOP

PWSA'S LEAD SERVICE LINE REPLACEMENT PROGRAM

Presenter: Edward Barca, Deputy Director
of Finance/Treasurer

November 18, 2019





CONTENTS

- Lead Service Line Replacement ("LSLR") Program
- Pennsylvania Infrastructure Investment Authority ("PENNVEST") Funding Award
- Take Away / Lessons Learned

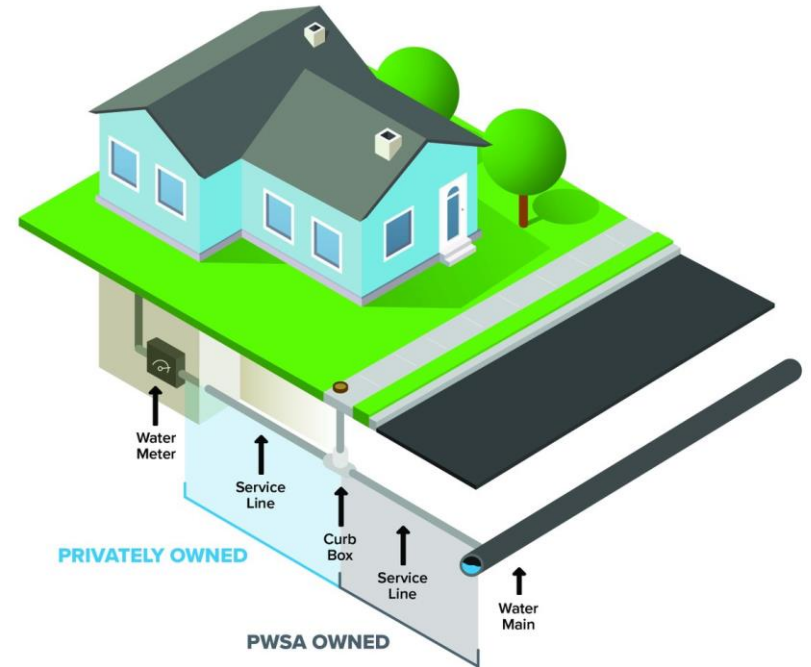


LEAD SERVICE LINE REPLACEMENT PROGRAM

- Started in 2016
- Initial program just replaced the public side
- Post-construction sampling indicated temporary lead increase since the private side lead pipes remained
- Pennsylvania law changed in late 2017 to allow The Pittsburgh Water and Sewer Authority (“PWSA”) to replace the private side
- Starting in 2018, the PWSA has been doing full service line replacements where homeowners give permission

LEAD SERVICE LINE REPLACEMENT PROGRAM

- Shows water main in the street
- Service line has joint ownership, both the PWSA and the customer
- PWSA's program will replace private lead service line's when we replace the public side





LEAD SERVICE LINE REPLACEMENT PROGRAM

LEAD AND COPPER RULE

- After exceeding the lead action level in 2016, the Lead and Copper Rule required the PWSA to take several actions:
 - Revise corrosion control treatment to reduce lead leaching into the water as the water passes through lead service lines
 - Prepare an inventory of service line materials to understand how many lead service lines are in the system
 - Replace at least 7% of those lines (roughly 860 lines) on an annual basis until the lead sampling results are below regulatory limits for 2 consecutive sampling rounds



PENNVEST FUNDING – 2019 LSLR PROGRAM

Program Goals:

- Prioritize lead service line replacement areas based on the highest concentration:
 - Of children and women of childbearing age, high lead blood levels, highest concentration of lead lines, and income level
- Affordability
- Best solution for the system and customer base



Program Objectives:

- Replace at least 7% of the lead service lines on an annual basis
 - 2,800 public lead service lines
- Replace private side lead service lines
 - 2,400 private lead service lines
- Replace aged infrastructure



PENNVEST FUNDING – 2019 LSLR PROGRAM

- In October 2018, PENNVEST awarded **\$49,128,404** to the PWSA for the purpose of funding the 2019 LSLR program:
 - \$35,441,231 – Approximately 25 year loan with an interest rate of 1%
 - \$13,687,173 – Grant
- 2019 LSLR Program:
 - 2,800 Public lead service lines
 - 2,400 Private lead service lines
 - Two agreements:
 - Agreement to replace the private line
 - O&M agreement for 30 years
 - If property is sold, the new owner needs to enter into an O&M agreement for the remaining term of the original agreement.



PENNVEST FUNDING – 2019 LSLR PROGRAM

PWSA CUSTOMER SAVINGS

Annual Debt Service Savings: **~\$1,705,192**

Total Debt Service Savings: **~\$42,496,645**

Bond Funded

Principal Amount: \$50,602,256 (3% COI)

Coupon: 4%

Term: 25 years

Debt Structure: Level Debt Service

Annual Debt Service: ~\$3,303,324

Total Debt Service: ~\$82,583,112

PENNVEST Funded

Principal Amount: \$35,441,231

– *Grant: \$13,687,173*

Interest Rate: 1%

Term: ~25 years

Debt Structure: Level Debt Service

Annual Debt Service: ~\$1,598,132

Total Debt Service: \$40,086,467



PENNVEST FUNDING – 2019 LSLR PROGRAM

2019 LSLR PROGRAM SUCCESS

- As of September 2019, the PWSA met the regulatory lead line replacement requirement nearly 10 months early by replacing 855 public lead service lines. The regulatory year started on July 1, 2019 and ends on June 30, 2020.
- As of November 2019, 2,308 public lead lines and 1,740 private lead lines have been replaced using PENNVEST funds.



TAKE AWAY / LESSONS LEARNED

- If possible, perform full lead service line replacements rather than partial replacements.
- Do not be afraid to work with your state on funding “untraditional” projects.
 - Private side lead service line replacements



THANK YOU

Doing Great Things:

Innovative Uses of the SRF



Avon Lake
Regional Water

Serving the region,
protecting our resource.

Todd Danielson
Chief Utilities
Executive



Avon Lake
Regional Water

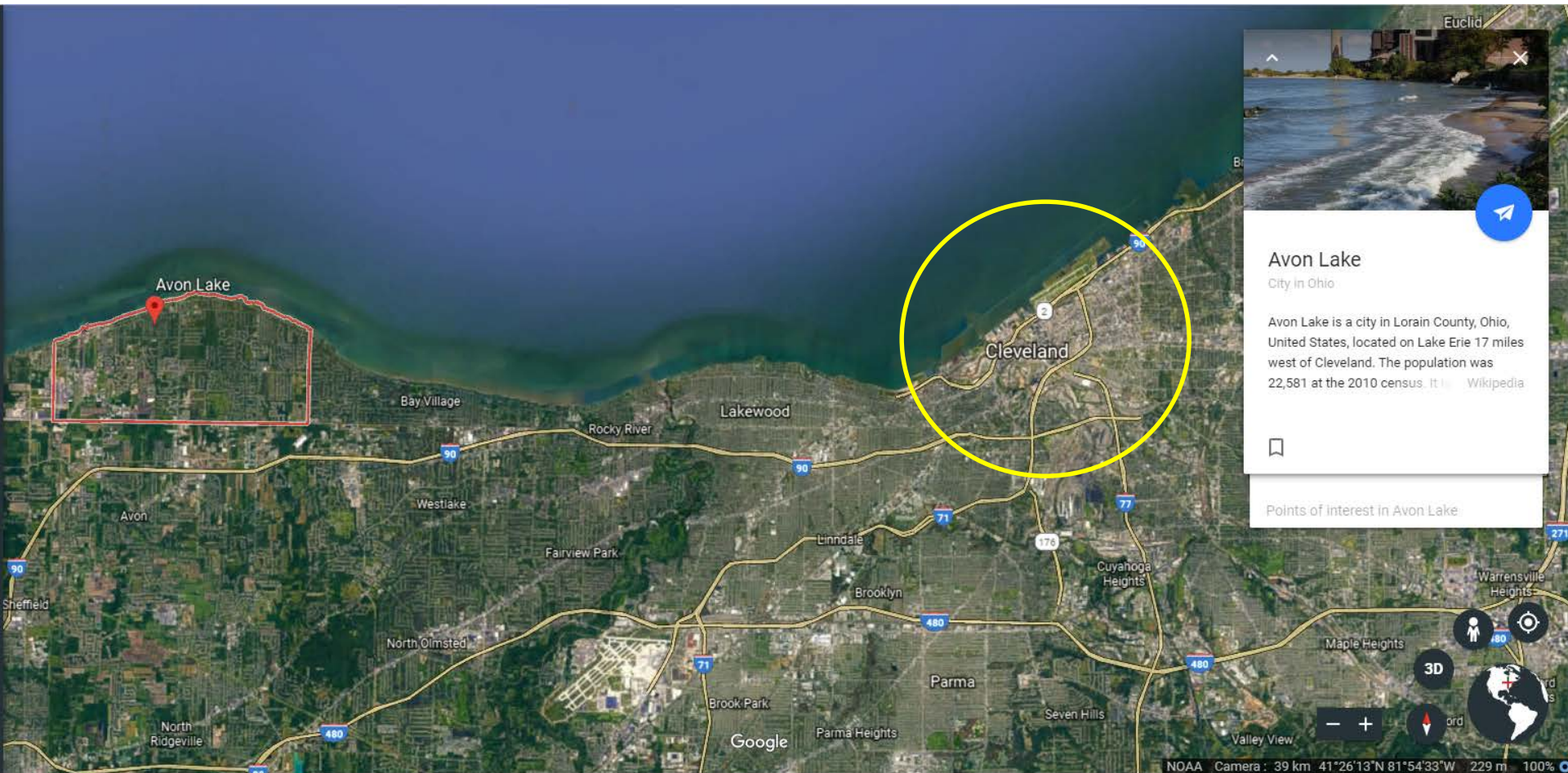




Combined Sewer Overflow, Photo credit: EPA



So, here's Avon Lake's story...



<https://earth.google.com/web/@41.4878209,-81.79676023,212.37059798a,38821.22548304d,35y,0h,0t,0r/data=ChIaEAoIL20vMHI6d2wYAiABKAI>

So, here's Avon Lake's story (cont'd)...



<https://clevelandhistorical.org/items/show/458#&gid=1&pid=7>



1964

- Bedroom community of Cleveland
- Industry: Ford, PolyOne, Lubrizol, GenOn Energy
- Combined sewer community
- Agreed with Ohio EPA in 2004 that it would completely separate its sewers (LTCP)
- Governed by Board

Well-laid plans don't always work...

Avon Lake to host sewer flooding meeting

Published: Thursday, March 24, 2011

ALMU removing storm water sources into sanitary sewers to prevent flooding

Filed by [bwroten](#) May 8th, 2011 in [News](#).

Pilot program offered in Avon Lake to disconnect foundation drains

Published: Thursday, September 15, 2011, 12:08 PM Updated: Thursday, September 15, 2011, 3:47 PM

Officials: Sewers worked properly

Filed by [bwroten](#) September 22nd, 2011 in [News](#).

Meetings on flooding set in Avon Lake

Published: Friday, November 11, 2011, 12:25 PM

ALMU asking for homeowners' help get storm water out of sanitary sewers

Filed by [bwroten](#) December 8th, 2011 in [News](#).

Quality of life
+ likelihood of success

f(types of Qs, ∠∠∠)



Overflow Storage



Lateral Separation



Temporary Overflow



Removing Clean Water



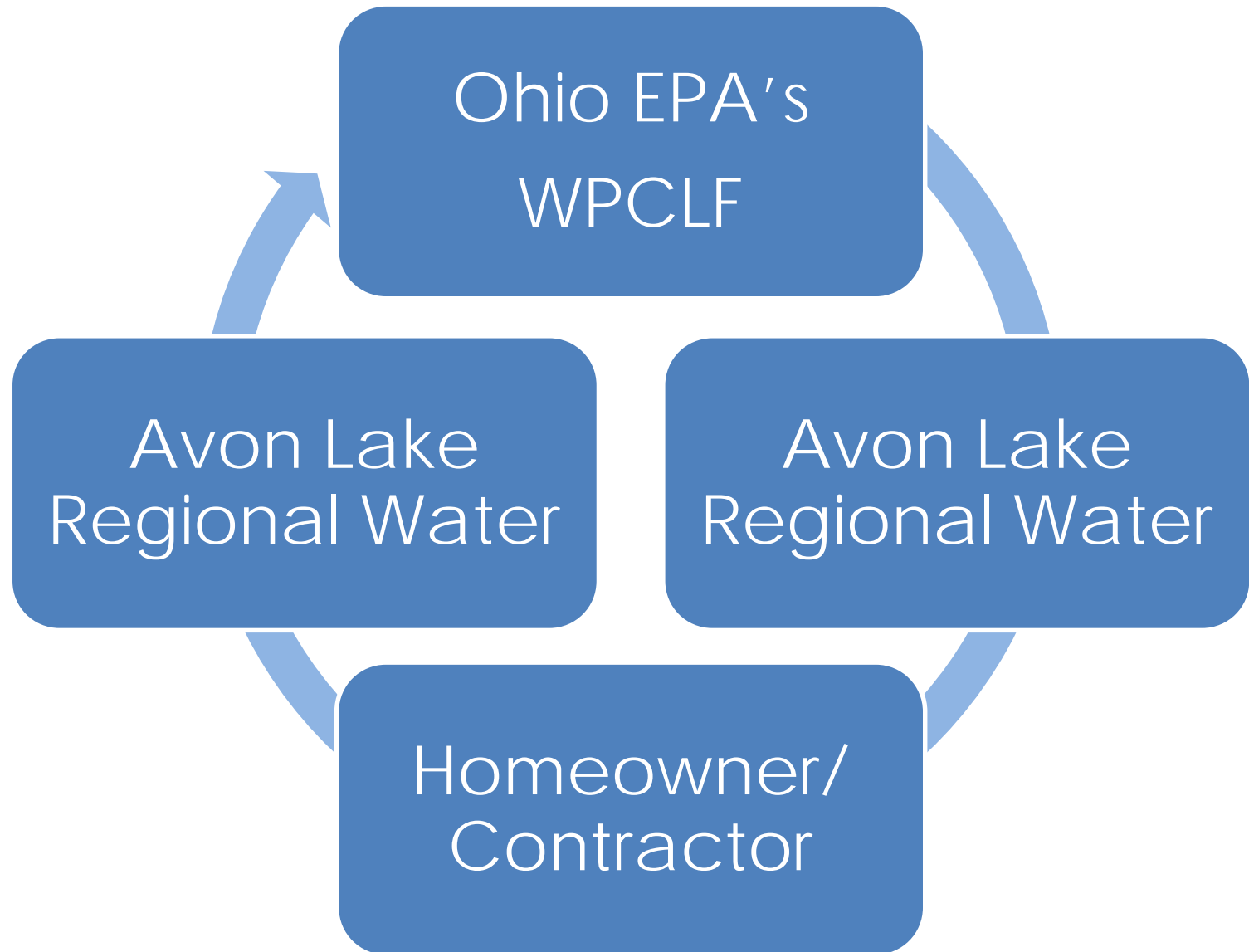
Avon Lake
Regional Water



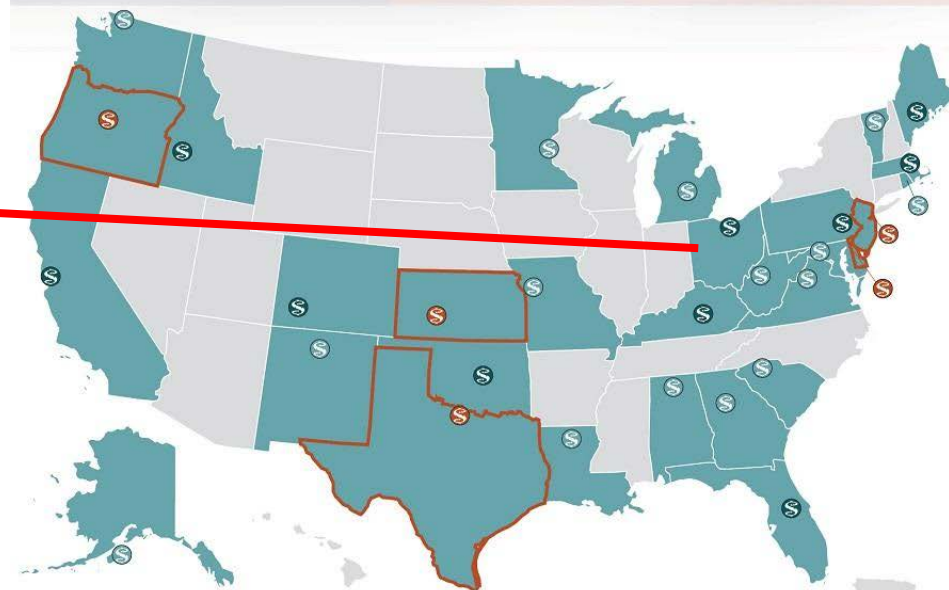








2018 PISCES Recognitions



Honorable Mentions

| | |
|-----------------------|--|
| <u>CALIFORNIA:</u> | Lake Merced Green Infrastructure |
| <u>COLORADO:</u> | Santa Rita Water Reclamation Facility |
| <u>FLORIDA:</u> | Minuteman Causeway Stormwater/ Streetscape Improvements |
| <u>IDAHO:</u> | Nampa Wastewater Treatment Plant Upgrade |
| <u>KENTUCKY:</u> | Lincoln County Sanitation District Junction City to Hustonville Sewer Project |
| <u>MAINE:</u> | Lewiston-Auburn Water Pollution Control Authority Anaerobic Digestion and Cogeneration Units |
| <u>MASSACHUSETTS:</u> | Grafton Wastewater Treatment Plant Improvements |
| <u>OHIO:</u> | Avon Lake Lateral Loan Program |
| <u>OKLAHOMA:</u> | Atoka Reservoir Dam Rehabilitation |
| <u>PENNSYLVANIA:</u> | Fritz Island Solids and Liquids Treatment Plant Upgrade |

Exceptional Projects

| | |
|--------------------|---|
| <u>DELAWARE:</u> | Wilmington Renewable Energy and Biosolids Facility |
| <u>KANSAS:</u> | Dodge City Biogas Reuse to Motor Fuel Project |
| <u>NEW JERSEY:</u> | South Monmouth Regional Sewerage Authority Pump Station Resiliency Initiative |
| <u>OREGON:</u> | Prineville Crooked River Wetlands Complex |
| <u>TEXAS:</u> | Wichita Falls Permanent Reuse Project |

Honorable Mentions

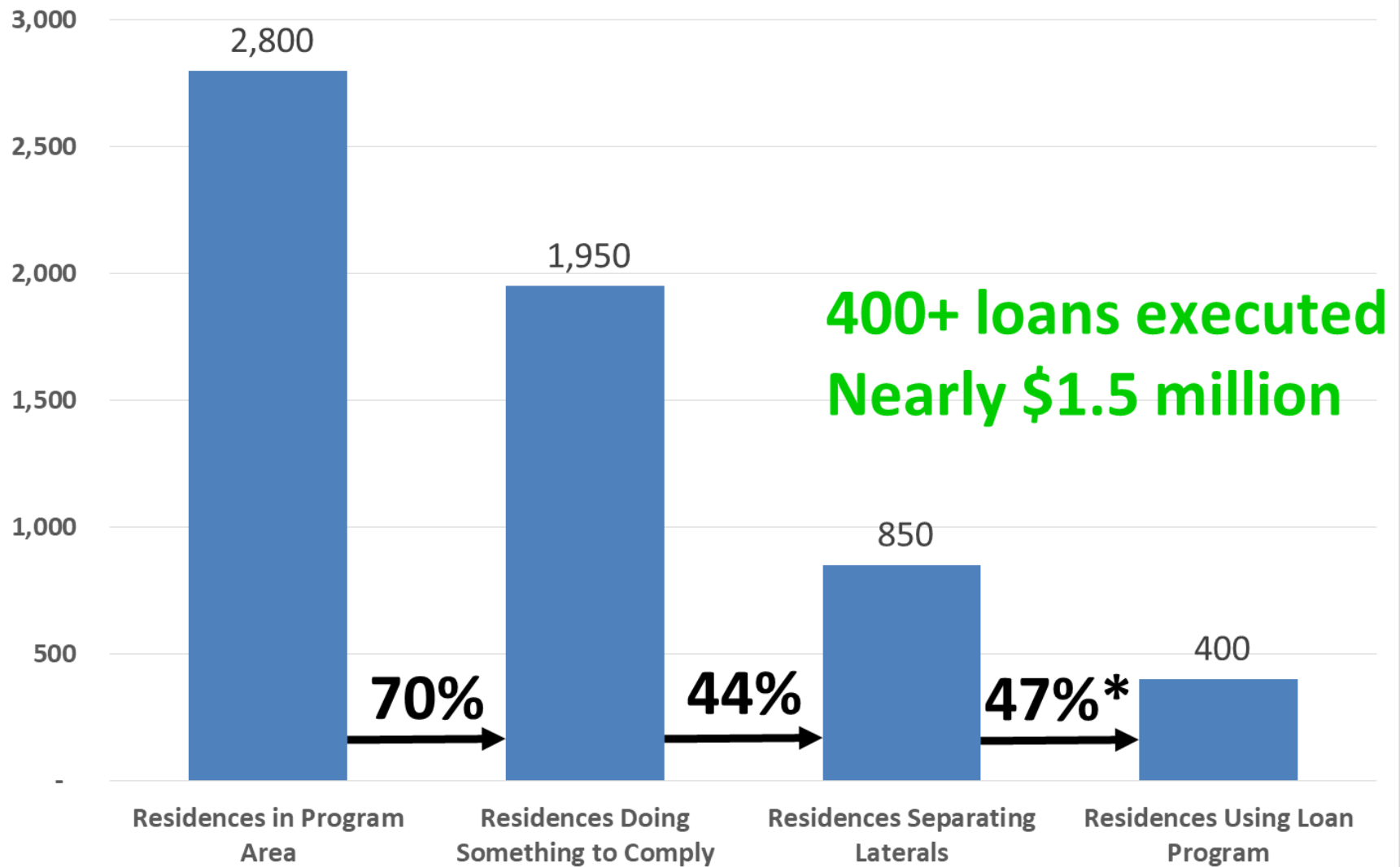
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Recognized Projects

| | |
|------------------------|---|
| <u>ALABAMA:</u> | Gullman Wastewater Treatment Plant Improvements |
| <u>ALASKA:</u> | Kodiak Compost Facility |
| <u>GEORGIA:</u> | Lake Peachtree Dam Spillway |
| <u>LOUISIANA:</u> | West Monroe Solar Panel Farm |
| <u>MARYLAND:</u> | Cumberland Combined Sewer Overflow Storage Facility |
| <u>MICHIGAN:</u> | East Lansing Headworks Upgrades and Outfall Retrofit Into a Relief Interceptor |
| <u>MINNESOTA:</u> | Afton Stormwater Green Infrastructure and Advanced Wastewater Treatment |
| <u>MISSOURI:</u> | Liberty Design-Build Wastewater Treatment Facility |
| <u>NEW MEXICO:</u> | Cuba Solids Handling and Effluent Reuse |
| <u>RHODE ISLAND:</u> | Wellington Avenue CSO Treatment Facility Upgrade |
| <u>SOUTH CAROLINA:</u> | Reedy River Basin Sewer Tunnel |
| <u>VERMONT:</u> | Waterbury Wastewater Treatment Facility Upgrade |
| <u>VIRGINIA:</u> | Harrisonburg-Rockingham Regional Sewer Authority Biogas Recovery and Reuse Project |
| <u>WASHINGTON:</u> | Squalicum Creek Water Quality and Biotic Integrity Improvements |
| <u>WEST VIRGINIA:</u> | Pennsboro Wastewater System Improvement Project |

Clean Water Removal / Lateral Separations (10/23/19)

(Requirement began 2/13, Loan program began 6/16)



Program Highlights:

- Board of Municipal Utilities wanted to help make lateral separations affordable for customers
- OEPA DEFA wanted to help, using SRF in unique way
- Staff went/goes the extra distance to inspect properties, interact with customers & contractors, and administer loans/repayments
- Customers now have a way to make a significant reinvestment in their property and protect Lake Erie
- Loan program could be used for other applications





2019 CIFA SRF Workshop

San Francisco Public Utilities Commission SRF Experience

Richard Morales
Alexandra Gunnell
November 18, 2019



Services of the San Francisco Public Utilities Commission

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water



HETCH HETCHY RESERVOIR

Delivering high quality water
every day

Power



SOLAR PANELS AT SAN FRANCISCO AIRPORT

Generating clean energy for
vital City services

Sewer



OCEANSIDE TREATMENT PLANT

Protecting public health and the
environment

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water

Retail and Wholesale
Drinking Water

2.7M Customers

\$526M FY18 Revenues

\$2.4B Capital Program

AA- / Aa3 Bond Ratings

\$4.3B Outstanding Debt

Power



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Power

Hydroelectric Energy

City Municipal Customers

\$160M FY18 Revenues

\$102M Capital Program

AA- / AA Bond Ratings

\$48M Outstanding Debt

Sewer



**OCEANSIDE TREATMENT
PLANT**

Protecting public health and the
environment

SAN FRANCISCO PUBLIC UTILITIES COMMISSION

Water

**Retail and Wholesale
Drinking Water**

2.7M Customers

\$526M FY18 Revenues

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\$4.3B Outstanding Debt

Power

Hydroelectric Energy

City Municipal Customers

\$160M FY18 Revenues

\$102M Capital Program

AA- / AA Bond Ratings

\$48M Outstanding Debt

Sewer

**Combined Sewage /
Stormwater Collection &
Treatment**

865,000 Customers

\$315M FY18 Revenues

\$5.3B Capital Program

AA / Aa3 Bond Ratings

\$1.5B Outstanding Debt



Need for Low-Cost Financing

- SFPUC implementing comprehensive \$6.9B Sewer System Improvement Program (SSIP) for Wastewater Enterprise
 - SSIP to upgrade SF's aging sewer infrastructure to ensure reliable, sustainable, seismically safe sewer system
 - Three overlapping phases planned over 20 years – multiple projects
 - \$2.7B Phase 1 implementation authorized in 2012
 - Largest Phase 1 project is \$1.3B Biosolids Digester Facility Project
- SSIP projected to be funded primarily through debt
 - Revenue Bonds traditional long-term financing vehicle
 - Interim funding provided through Commercial Paper Program
- 100% Revenue Bond funding would result in large sewer rate increases
 - Combined water/sewer bill was \$113/month in FY 19
 - 2014 Rate Study projected combined bill of \$250/month by FY 30; \$300/month by FY 34
 - Double digit sewer rate increases
- Lower cost funding alternatives for SSIP needed to mitigate sewer rate increases



SFPUC's History with SRF

- SFPUC had been active SRF loan program participant, entering into 13 loans during 1991-2001 for total of \$280M
- SRF subsequently less attractive than revenue bonds;
 - 20-year terms and interest rates ranged from 2.8% -3.5%.
 - Some loans senior in lien to Wastewater Revenue Bonds
- CA CWSRF changes in 2013
 - Expanded eligibility for 30-year repayment option (Extended Term Financing)
 - Greater flexibility on lien priority



SFPUC's SRF Loans

- In 2016, \$7.4M SRF loan approved for Lake Merced Green Infrastructure Project (SSIP)
- In 2017, executed 4 loans totaling \$280M
- Estimated combined savings vs Revenue Bonds of \$168M
- Applications for 4 projects currently pending; forecasting execution two new SRF loans (\$186M total) by year-end



Enhancements to CA CWSRF

- Improved predictability
 - Annual application deadline
 - Scoring revision
- Faster application processing and agreement negotiation
- Eligibility of previously incurred costs
- Increased outreach and opportunities for stakeholder feedback



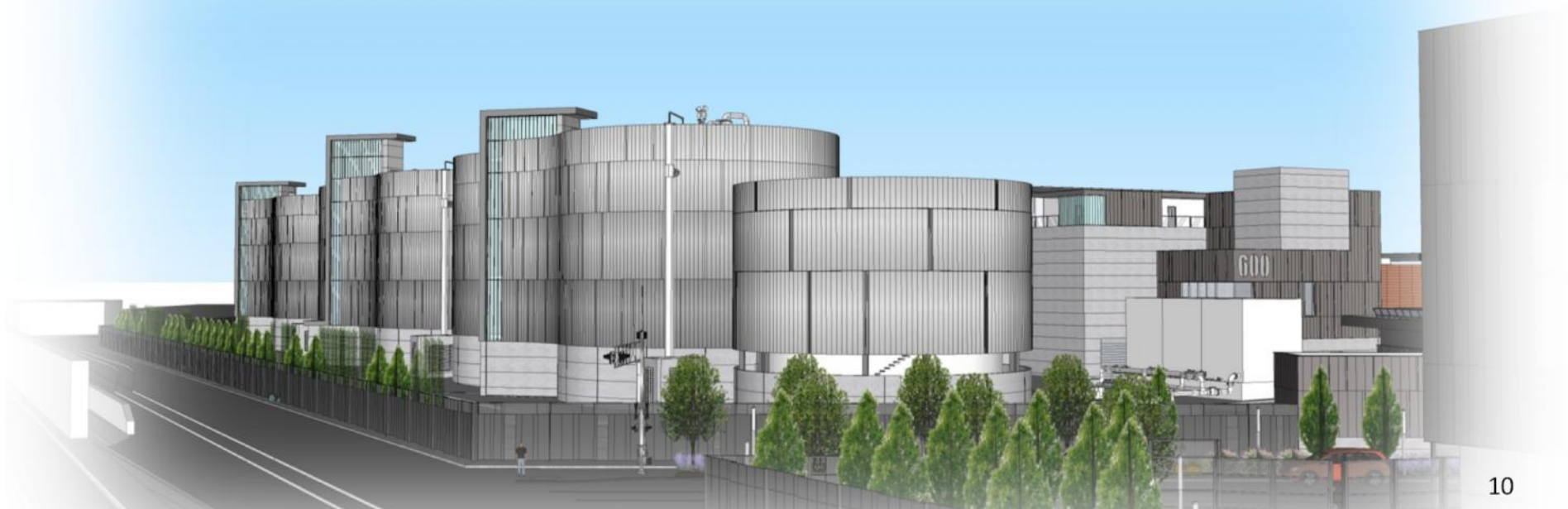
Pairing SRF with WIFIA

\$1.3B Biosolids Project = \$699M WIFIA + \$132M SRF + Revenue Bonds

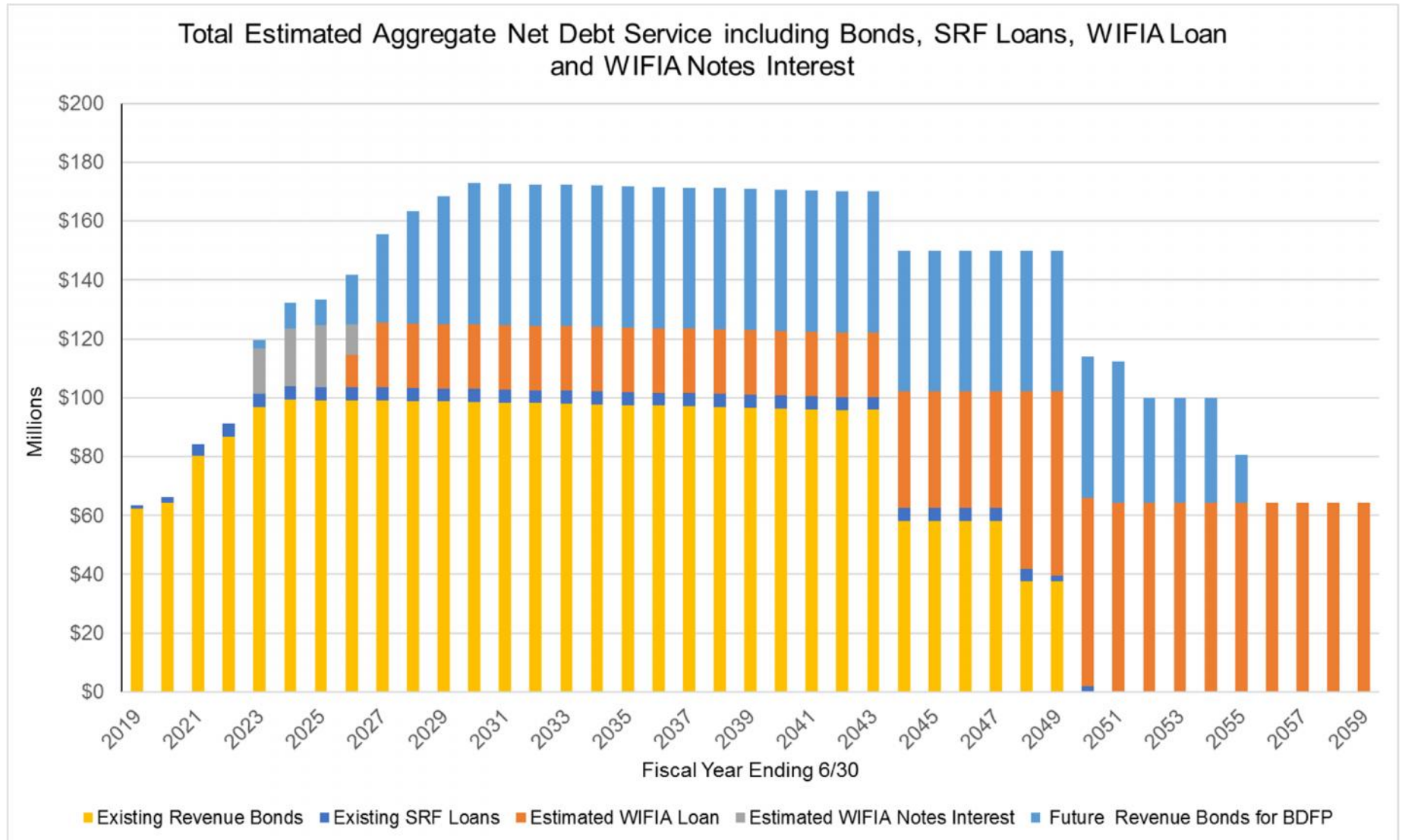
- Low-cost funding for 65% of largest SSIP project

Pairing WIFIA with SRF optimizes savings

- Expands project cost eligibility
- Federal requirements fulfilled for both programs
- Ability to draw on lowest interest rate first



Sculpted Repayment of WIFIA Loan





THANK YOU!