

Independent Verification and Validation of DC Water's Lead Free DC Lead Service Line Removal Plan

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Presentation outline



- ▶ Recommendations
- ▶ Process of developing a LSLR program
- ▶ How many service lines need to be identified and removed in Washington, DC?
- ▶ Where and how should work be prioritized?
- ▶ How and when should work be completed?
- ▶ How much could it cost?
- ▶ Conclusions

DC Council's Charge:

Is the Lead Free DC Plan reasonably structured to facilitate DC Water's successful removal and replacement of all remaining full and partial lead water service lines in the District by 2030?

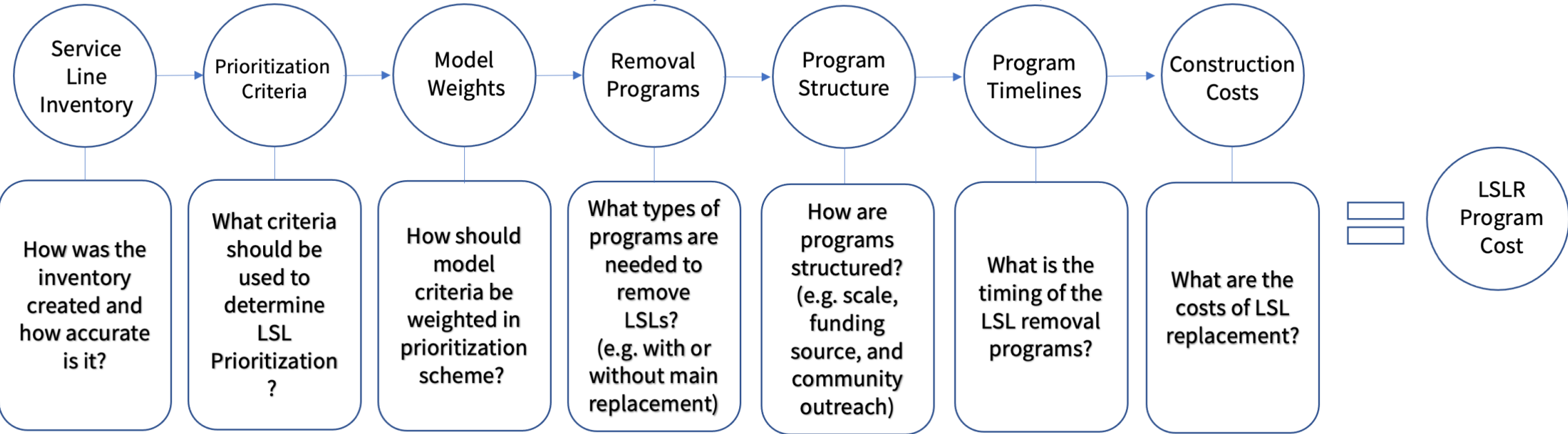
Identify	Identify the elements of the plan that are insufficient to meet that goal and elements absent from the plan but necessary for the timely completion of this work.
Review	Review the planning-level cost estimate. Are costs accurate and necessary to the successful removal and replacement of all LSLs by 2030?
Compare	Compare to lead water service line replacement programs in other comparable jurisdictions.
Assess	Assess the LSLR planning and prioritization model, and whether the model is reasonably structured to meet the 2030 goal in an efficient and equitable manner

Key Recommendations

- ▶ Pass an LSLR mandate and provide funding for all LSLRs;
- ▶ Account for identification and removal of all potential lead, brass and galvanized service lines;
- ▶ DC Water should initiate the majority of LSLRs, consolidate programs and timelines to generate cost efficiencies;
- ▶ Provide certified lead reducing filters to all potential LSL locations to provide an immediate source of safe drinking water for all residents;
- ▶ Clarify contract scope, requirements, and roles;
- ▶ Explore options to reduce paving costs; and
- ▶ Encourage and increase public participation through lower costs, fewer participation barriers, and increased public engagement.

Work Flow

Lead Service Line Removal Program Cost Decision Points



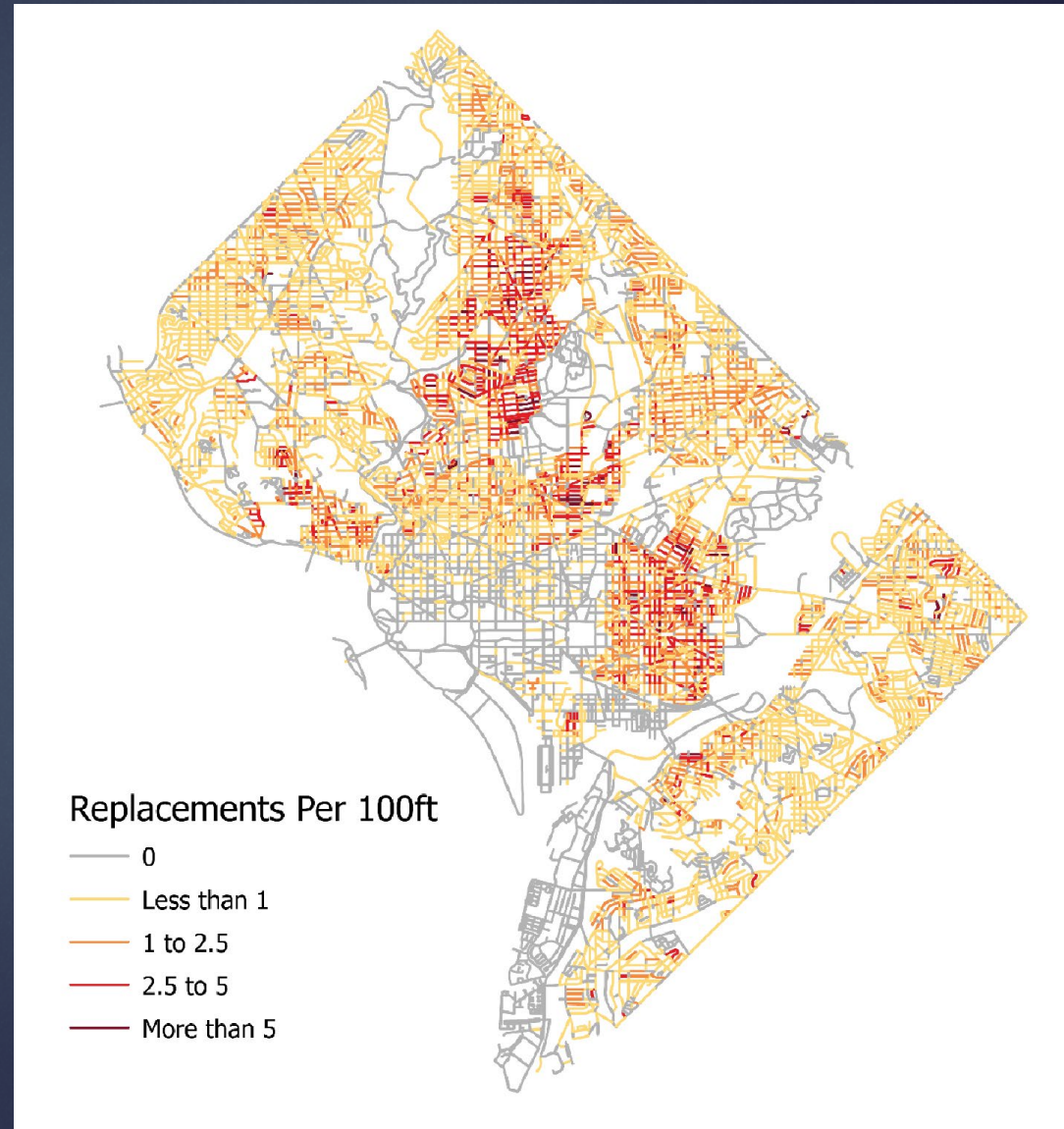
How many service lines need to be identified and replaced in Washington, DC?

TABLE 2: Service Lines in Washington, DC That Must Be Accounted for and the Anticipated Number Requiring Replacement

Material	Number of public and/or private services accounted for	Estimated Replacements Required (Lead, brass, and galvanized)
Lead	21,792	21,792
Unknown	11,399	5,700
Copper (Historic)	41,675	8,335
Galvanized	660	660
Brass	2,021	2,021
Brass (Historic)	8,118	3,815
Totals:	85,665	42,323

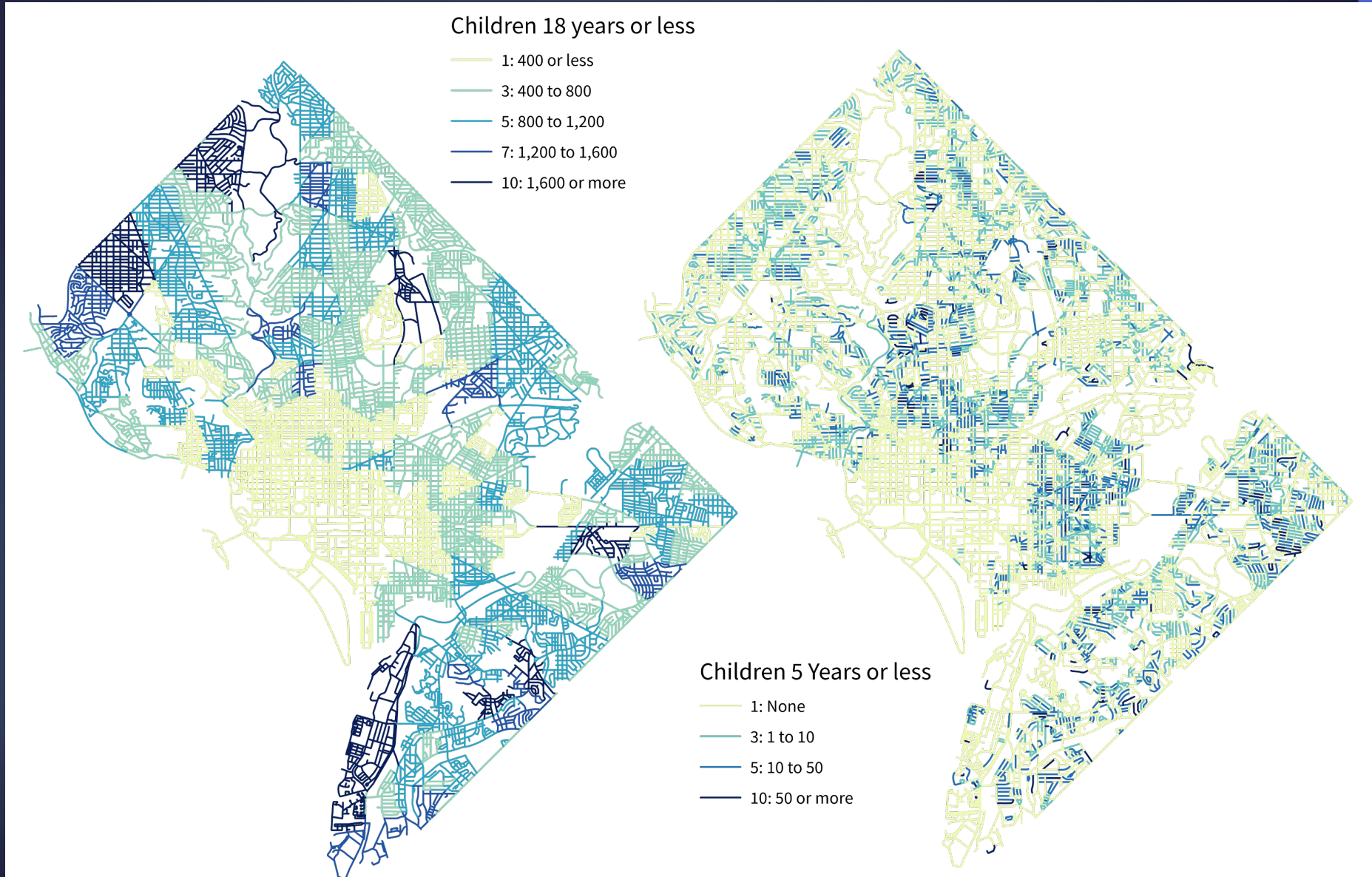
These recommendations account for identifying/confirming and replacing all Lead, Unknown, Copper (Historic), Galvanized, and Brass service lines per DC Council requirements.

Locations of Service Lines to Be Verified and/or Replaced



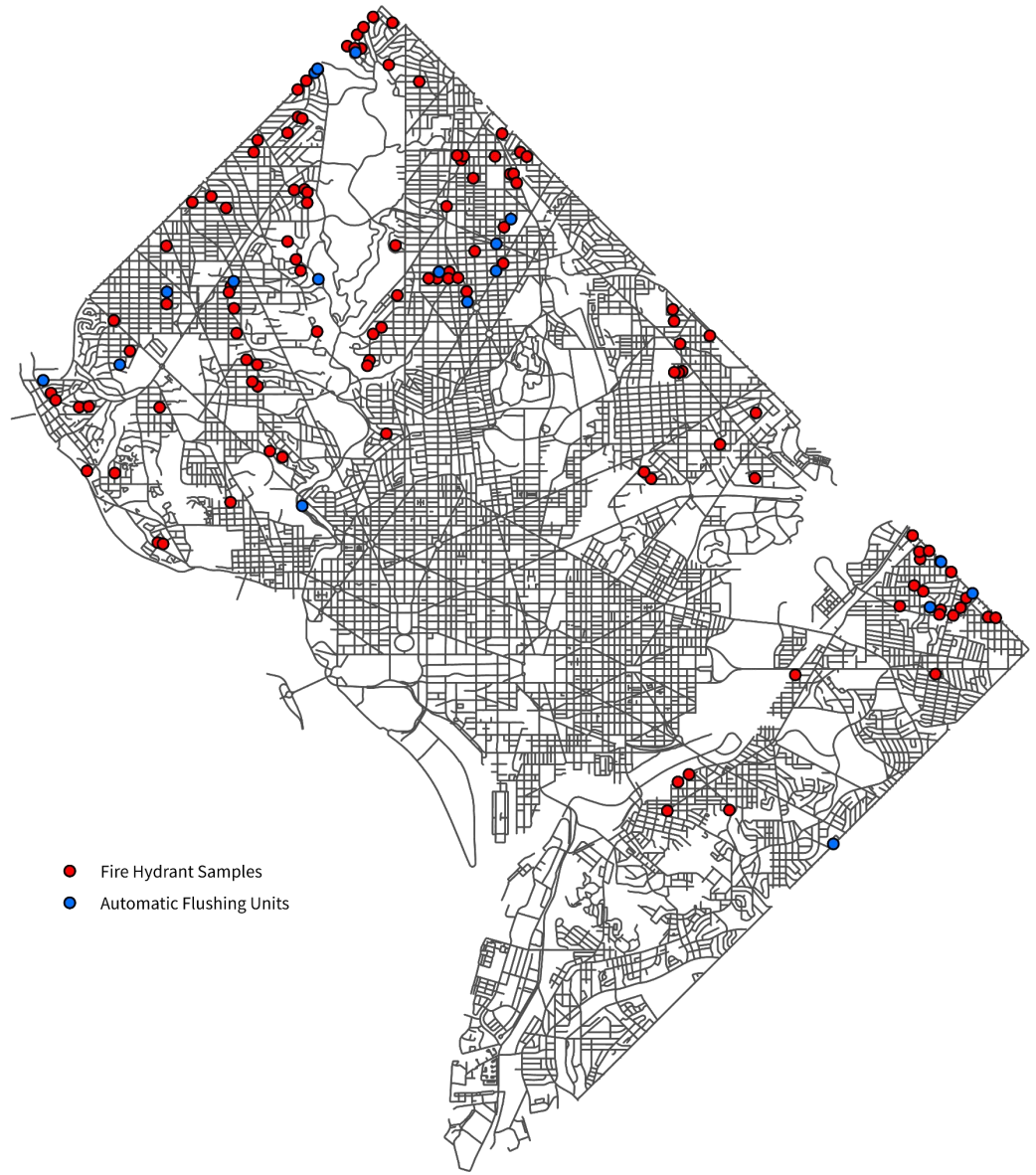
Where and how should work be prioritized?

Locations of Children



Where and how should work be prioritized?

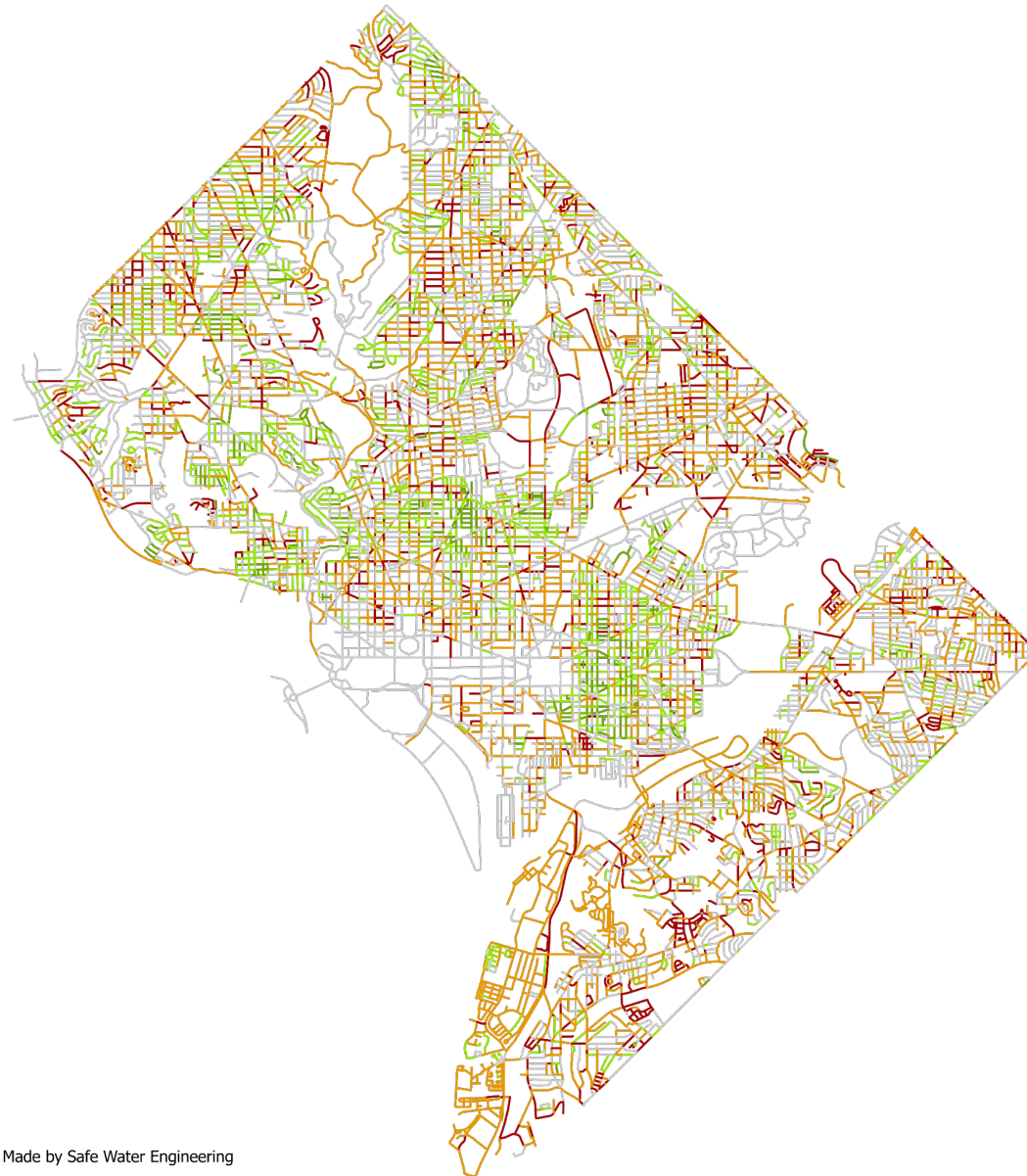
Water Quality Sampling Points bias priorities



Where and how should work be prioritized?

Comparison of LFDC and Recommended Prioritization

- Priority increased from LFDC to Recommended by more than 30%
- Priority increased from LFDC to Recommended between 10% and 30%
- No substantial change between prioritization models (-10% to 10% change)
- Priority decreased from LFDC to Recommended between 10% and 30%
- Priority decreased from LFDC to Recommended by more than 30%



How Should Work Be Completed?

Recommended Programs

Enact Policy to Enable the Program

- Pass an LSLR mandate
- Provide funding for all LSLRs (Public and Private).

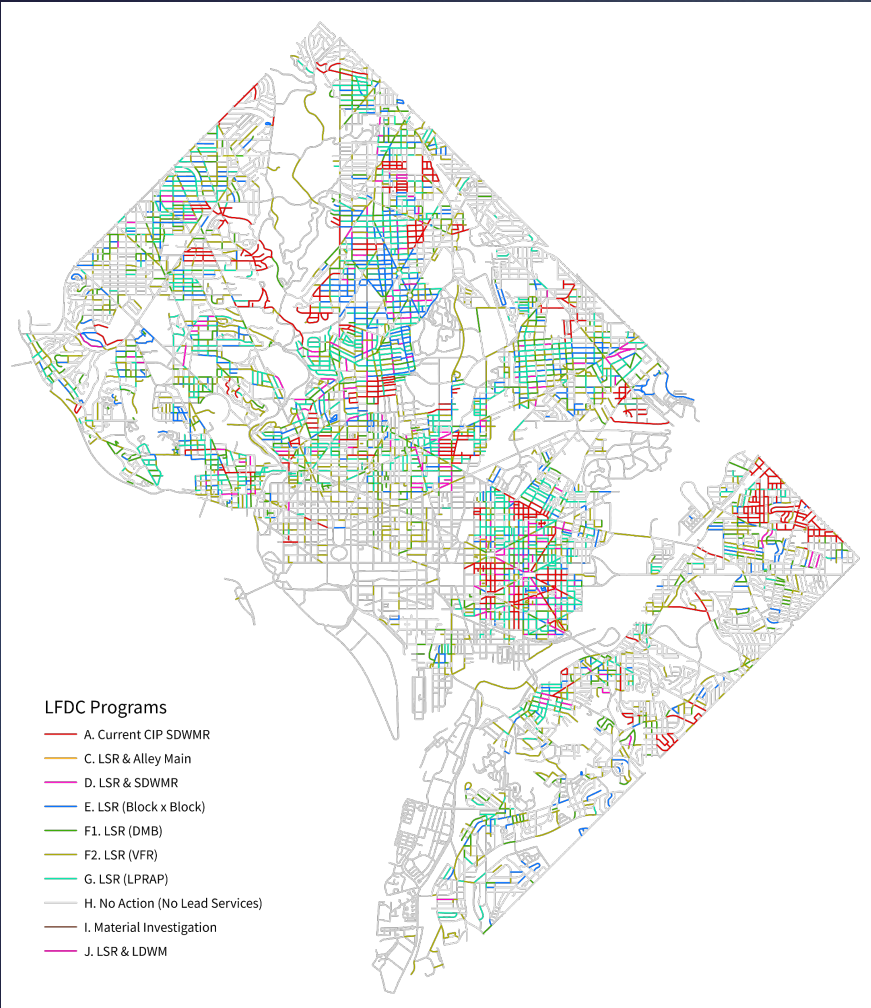
Consolidate LSLR Programs and Initiate Replacements at DC Water

1. Create a new DC Water-initiated Neighborhood Scale LSLR Program;
2. Create a new district-wide DC Water-Initiated Individual High-Priority LSLR Program
3. Group all LSLRs associated with water main replacements (WMR) together in the Capital Improvement Plan (CIP) to create the CIP Water Main Replacement LSLR Program.

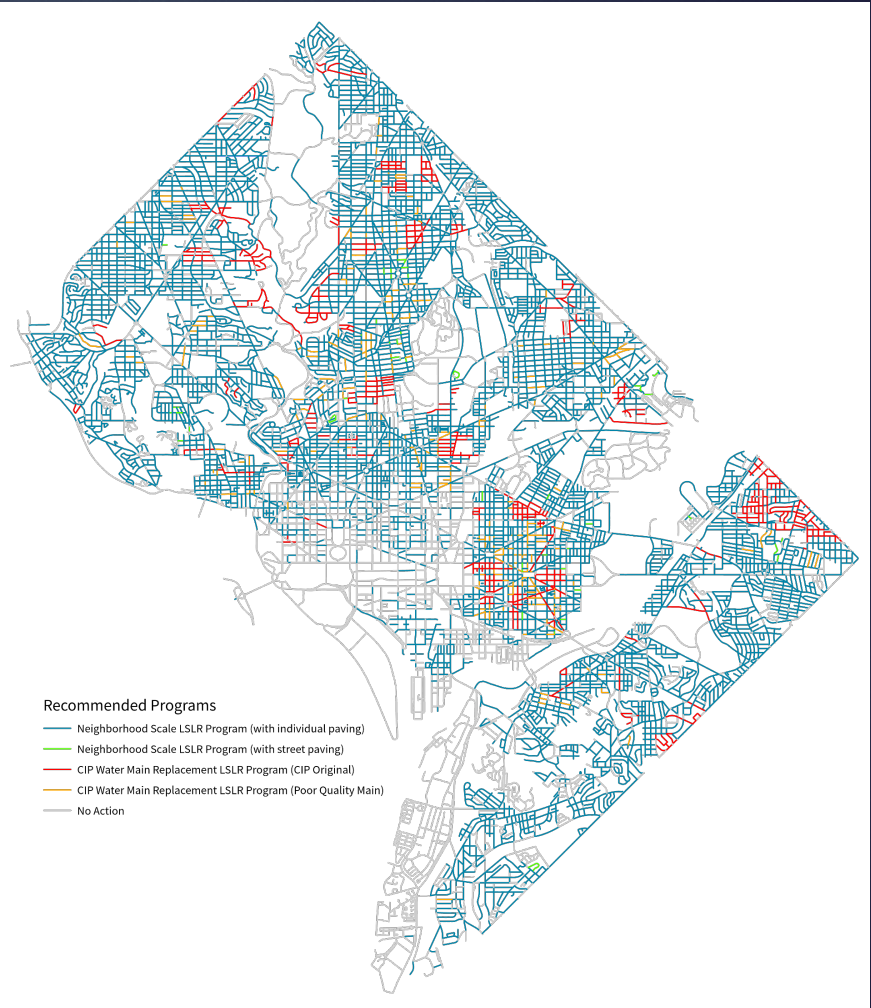
Continue to Provide a Voluntary Option

- Continue the Voluntary Full Replacement Program (VFRP) program from the LFDC plan.

How Should Work Be Completed?

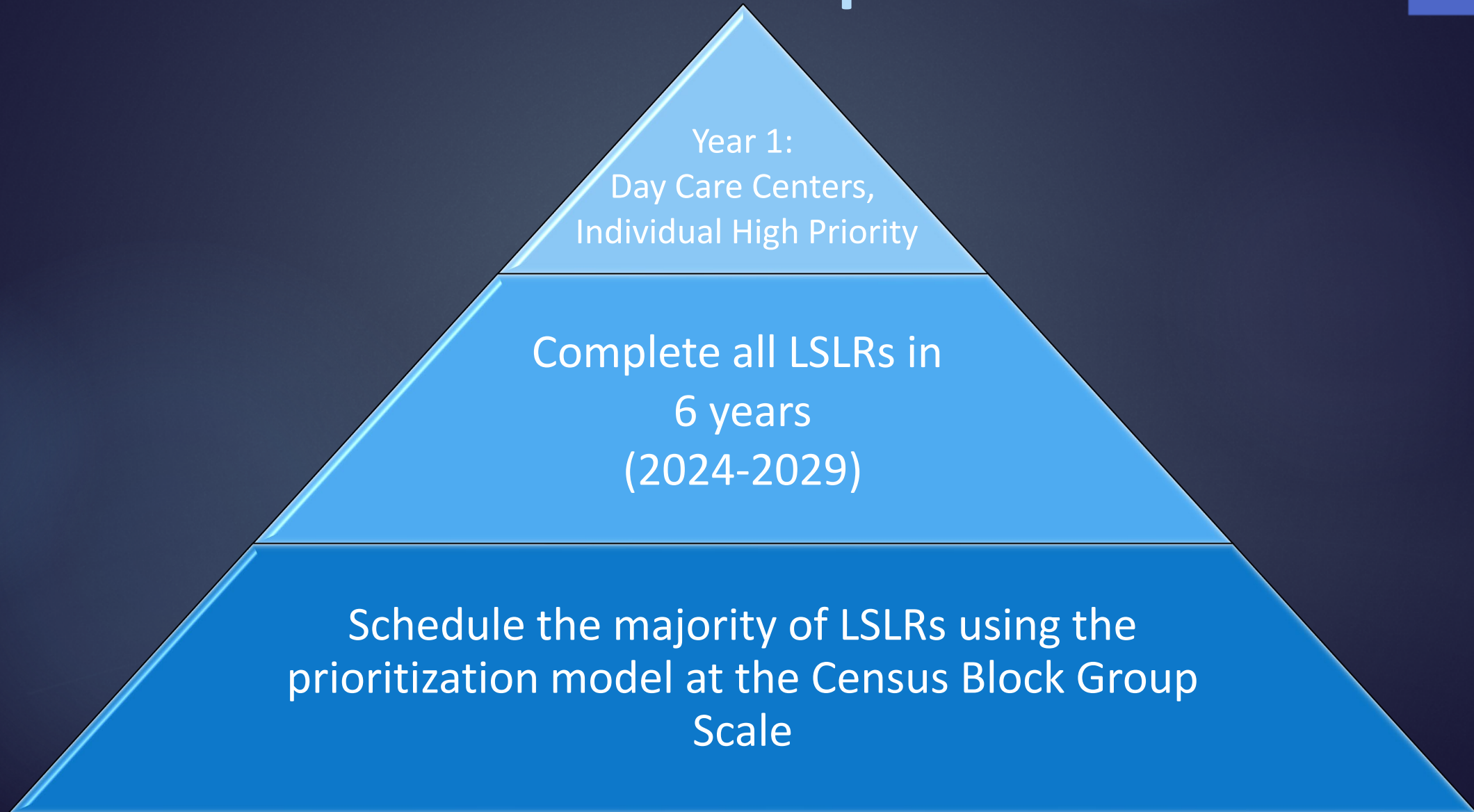


LFDC Programs

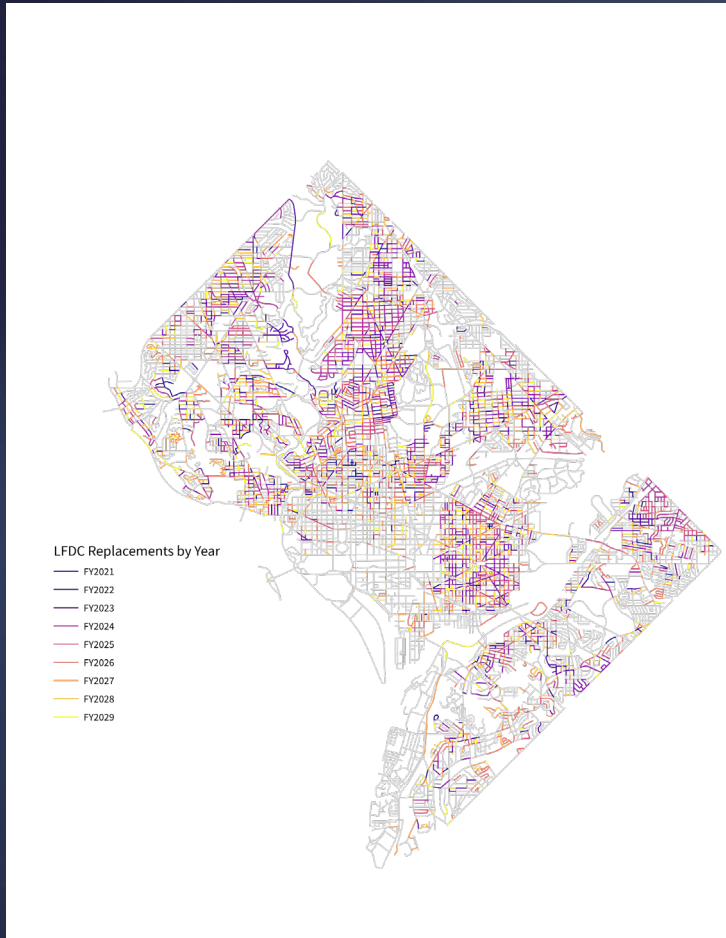


Recommended Programs

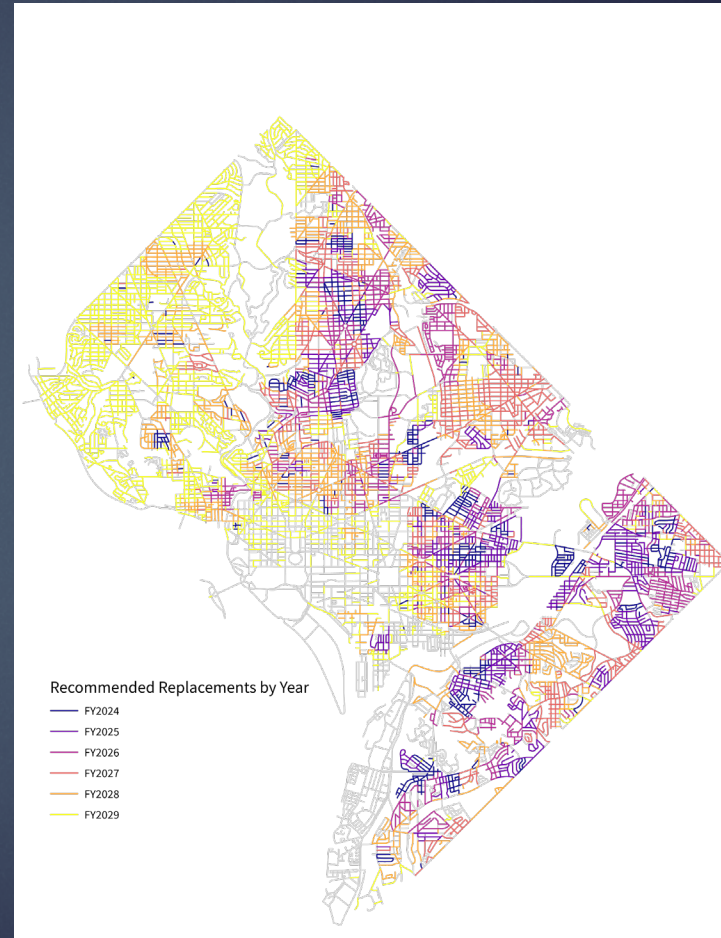
How Should Work Be Completed?



When Should Work Be Completed?

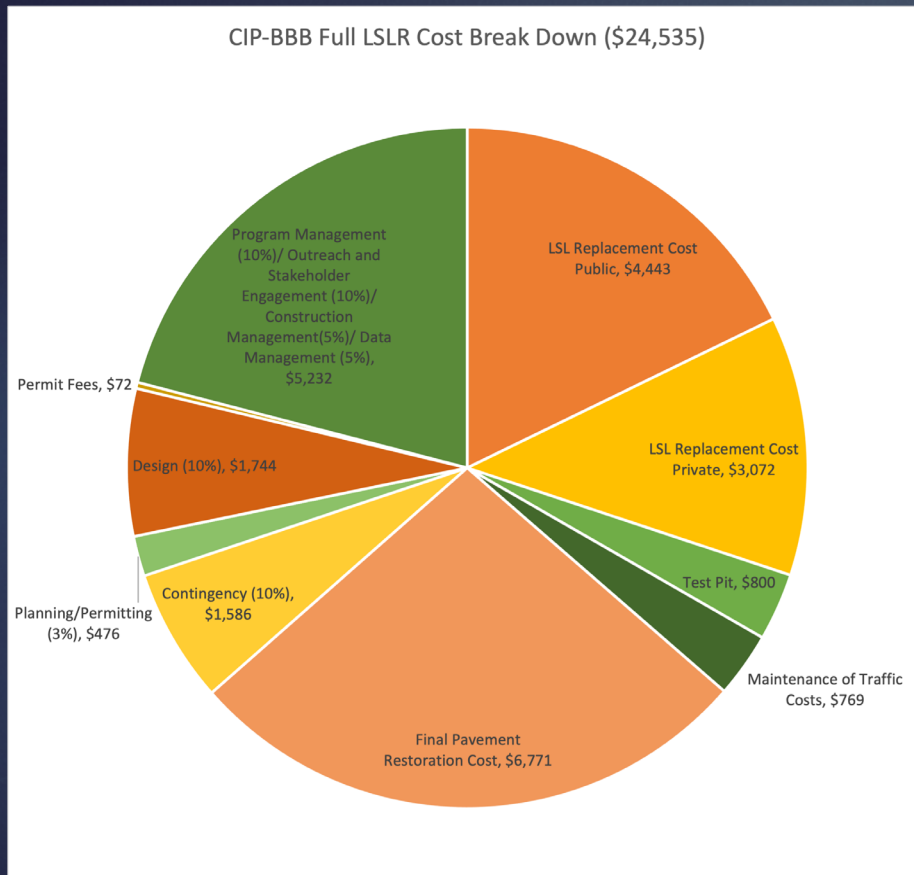


LFDC Programs

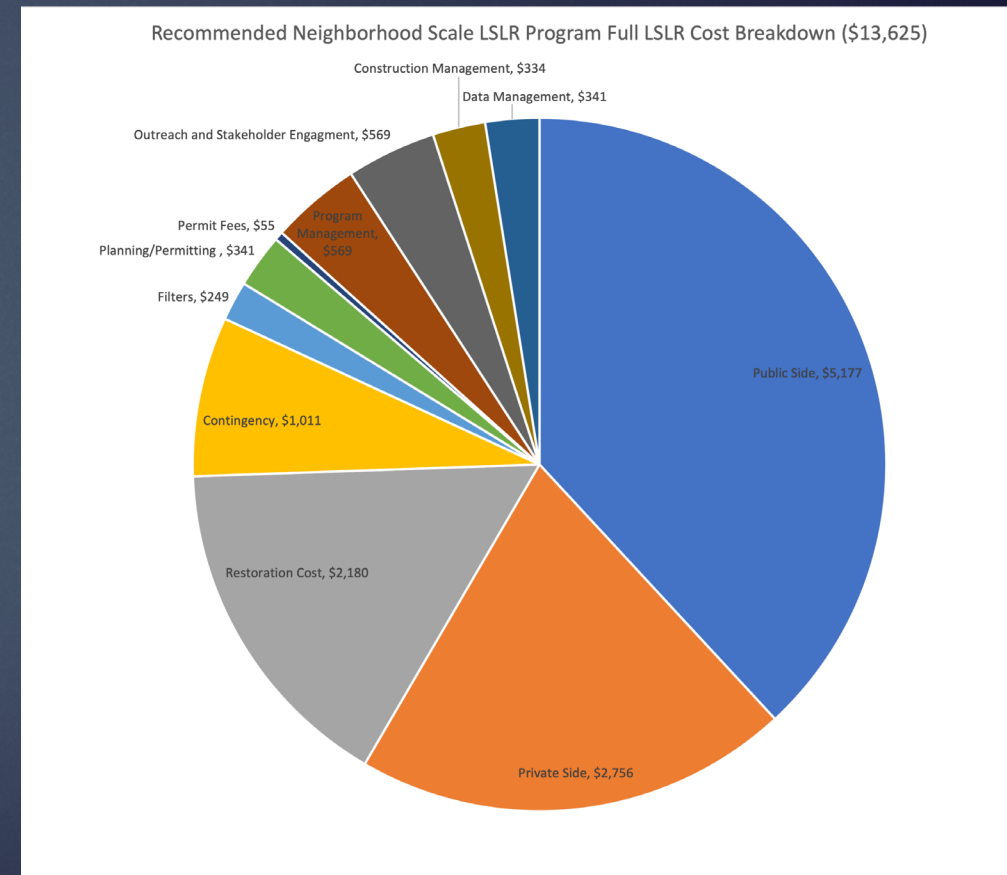


Recommended Programs

How Much Does it Cost to Replace a Service Line in Washington, DC?



LFDC LSLR Cost



Recommended LSLR Cost

What Can DC Do to Reduce Paving Costs?

Revise DDOT Paving Policy

- ▶ DDOT paving regulations suggest paving entire streets when replacing 4 or more utility services on that street, not accounting for the length of the block.
 - ▶ 4 replacements affect approx. 30 ft in length
- ▶ Using the Least Cost Paving Method could save \$148 Million.
- ▶ Consider evaluating number of LSLRs per 100 ft of road to identify an appropriate balance.



Photo: Elin Betanzo, Benton Harbor, MI

How Much Could it Cost to Replace All Lead, Galvanized, and Brass Service Lines in Washington, DC?

Program Costs	LFDC Plan	Recommended Plan
Lead Service Line Replacement Program		
CIP-Block-by-Block not including main replacement	\$222,000,000	
CIP-Emergency/Vulnerable Pop	\$70,000,000	
CIP-SDWM not including main replacement	\$109,000,000	
Voluntary Full Replacement Program	\$48,000,000	
Lead Pipe Replacement Assistance Program	\$91,000,000	
Lead Service Line Replacement Program Total- not including cost of main replacement	\$540,000,000	\$480,000,000
Recommended High Estimate w/ Paving per DDOT Regulations		\$628,000,000
Anticipated Results	27,975 LSLRs 76,138 services accounted for 0 water filters	42,323 LSLRs 85,665 services accounted for 5 years water filters

How Much Could it Cost to Replace All Lead, Galvanized, and Brass Service Lines in Washington, DC?

TABLE ES.2: Recommended LSLR Plan Cost

Program	Number of Test Pits	Number of LSLRs	Recommended Program Cost	Miles of WMR	WMR Cost
Neighborhood Scale LSLR program	77,809	31,319	\$386,000,000	-	\$0
CIP Water Main Replacement LSLR Program	8,875	6,771	\$45,000,000	97	\$338,000,000
Individual High-Priority LSLR Program	-	4,232	\$49,000,000	-	\$0
Total:	86,684	42,323	\$480,000,000		

Grand Total Low Estimate*		\$480,000,000
Grand Total High Estimate*		\$628,000,000

*The low and high estimates are calculated using optimized street paving versus street paving as suggested by District of Columbia Department of Transportation regulations.

Conclusions



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