



DEPARTMENT OF PUBLIC WORKS



**HEALTH, ENVIRONMENT AND TECHNOLOGY
COMMITTEE COUNCIL HEARING**

ON

**FEASIBILITY STUDY REPORT FOR BUILDING BACKUP EXPEDITED
REIMBURSEMENT PROGRAM AND SOS PROGRAM**

OCTOBER 12, 2022 10:00AM



AGENDA

- Building backups Introduction
- BBERP Introduction
- SOS Program Introduction
- Feasibility studies
- Long term Building Backup plan
- Challenges and policy considerations
- Questions



BUILDING BACKUPS - GENERAL

- A sewage building backup occurs when water is pushed up into a dwelling through the pipes from a sanitary sewer or drainage system.
- Sewage building backups have two primary causes:
 - **Pipe blockages or failures**
 - **Stormwater and groundwater entering the sewer system during wet weather and causing capacity related issues**



BUILDING BACKUPS - CAUSES

Pipe blockage



Roots



Debris, Rags,
diapers,
disposable wipes,
etc



Fats, Oils and
Grease (FOG)



BUILDING BACKUPS - CAUSES

Pipe failures



Crack



Pipe Offset



Crushed



Collapse



BUILDING BACKUPS - CAUSES

Inflow and Infiltration



BUILDING BACKUPS - TYPES

Dry Weather Building backup

- A dry weather basement backup event occurs when there is a pipe blockage or a pipe failure in the City's sewer system or a private sewer lateral that causes a sewer backup.
- This type of backup occurs in the absence of a rain event or during sporadic rain with less than $\frac{1}{4}$ inch of precipitation recorded within a 24 hours period.



BUILDING BACKUPS - TYPES

Wet Weather Building backup

- A wet weather basement backup event occurs when there is a pipe blockage, pipe failure or inflow and infiltration in the sewer system thereby creating a sewer backup.
- This type of backup happens to occur when there is at least $\frac{1}{4}$ inch of precipitation recorded within a 24-hour period.
- However, the wet-weather basement backup may be primarily caused by factors other than wet weather.



BUILDING BACKUPS - TYPES

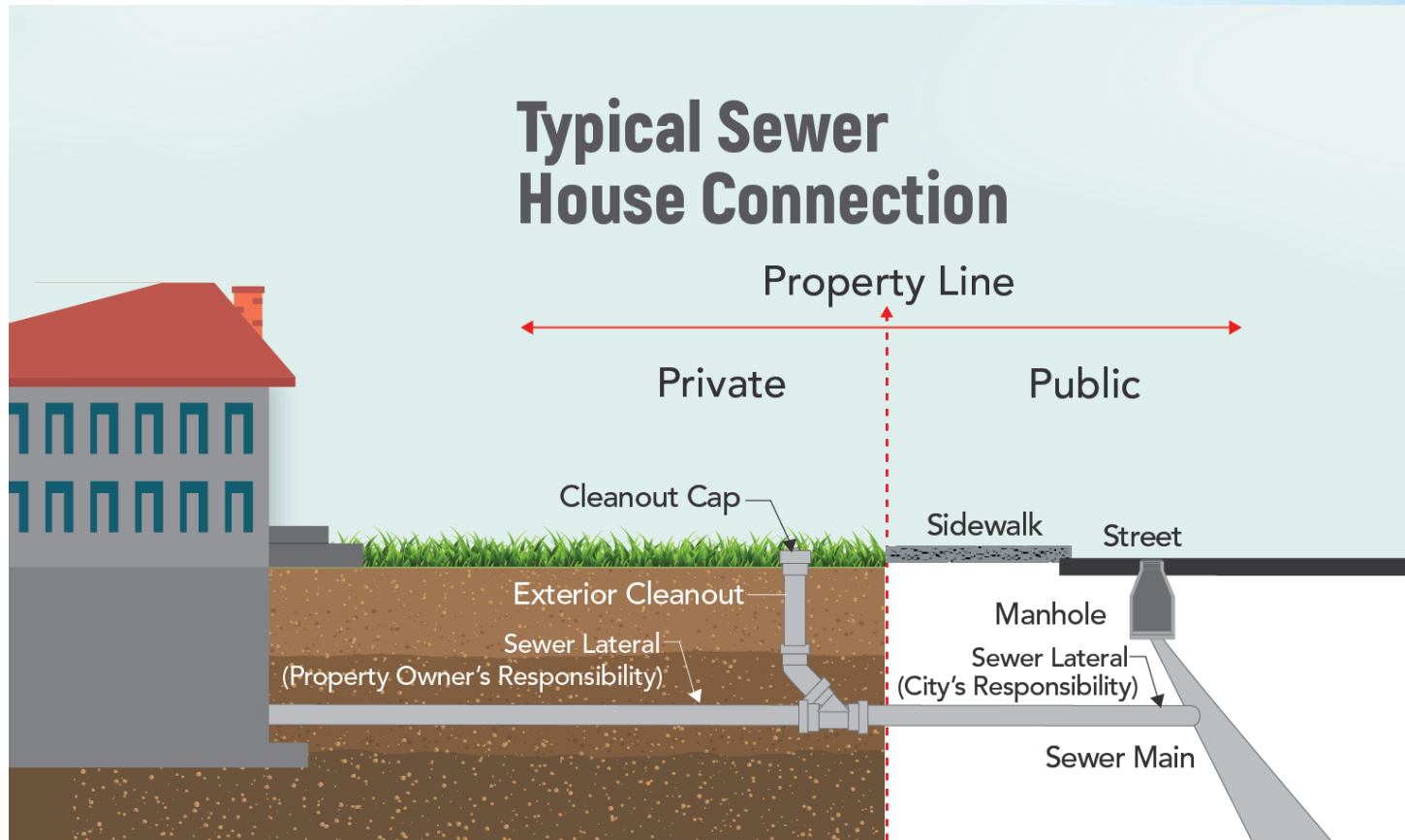
Wet Weather- Capacity related Building backup

- A wet weather capacity-related basement backup event occurs when inflow and infiltration enters the sewer system and causes it to surcharge, or overflow. In this type of event, all laterals and sewer mains, both upstream and downstream, are surcharged.
Click to add text
- This type of event causes the sewer system to lose available pipe capacity to accommodate and contain the sewage.



BUILDING BACKUPS - NATURE

Private Vs Public Side



BUILDING BACKUPS - HISTORY

| | Count of Cause of basement backups, if identified | | | |
|-----------------------------|---|-------------|----------------------|--------------|
| Row Labels | Lateral | Mainline | Mainline and Lateral | Grand Total |
| 2016 | 1038 | 718 | 394 | 2150 |
| Dry weather basement backup | 907 | 608 | 341 | 1856 |
| Wet weather basement backup | 131 | 110 | 53 | 294 |
| 2017 | 2247 | 1620 | 855 | 4722 |
| Dry weather basement backup | 1903 | 1388 | 746 | 4037 |
| Wet weather basement backup | 344 | 232 | 109 | 685 |
| 2018 | 2396 | 1708 | 747 | 4851 |
| Dry weather basement backup | 1770 | 1182 | 558 | 3510 |
| Wet weather basement backup | 626 | 526 | 189 | 1341 |
| 2019 | 1852 | 1348 | 727 | 3927 |
| Dry weather basement backup | 1483 | 1091 | 583 | 3157 |
| Wet weather basement backup | 369 | 257 | 144 | 770 |
| 2020 | 2837 | 1934 | 974 | 5745 |
| Dry weather basement backup | 2366 | 1563 | 787 | 4716 |
| Wet weather basement backup | 471 | 371 | 187 | 1029 |
| 2021 | 1493 | 1001 | 421 | 2915 |
| Dry weather basement backup | 1220 | 829 | 340 | 2389 |
| Wet weather basement backup | 273 | 172 | 81 | 526 |
| Grand Total | 11863 | 8329 | 4118 | 24310 |



Expedited Reimbursement Program

Scope:

- 3-year pilot program established under the Modified Consent Decree in 2018
- Provides expedited reimbursement for cleaning and sanitizing costs for a sewer building backup for costs up to \$5,000
- The eligibility is limited to Wet-weather capacity related events
- Customer needs to submit the application within 90 days
- Eligible for residential customers only
- Applications processed within 60 days

Current Status:

- The Pilot period has now ended, but DPW is continuing to implement the program
- DPW has submitted a long-term plan to MDE which is currently under review by MDE.



Expedited Reimbursement Program

Program Summary:

| Fiscal Year | Amount paid to date | Number of applications received | Number of applications approved |
|--------------|---------------------|---------------------------------|---------------------------------|
| FY 2018 | \$4,500.00 | 14 | 2 |
| FY 2019 | \$10,275.00 | 61 | 9 |
| FY 2020 | \$1108.43 | 22 | 2 |
| FY 2021 | \$5244.41 | 43 | 5 |
| FY 2022 | \$0 | 54 | 0 |
| FY2023 | \$0 | 8 (2 application pending) | 0 |
| Total | \$21,127.84 | Average reimbursement | \$1,173.77 |





Scope:

- 1-year pilot program established in March 2021
- Provides proactive cleaning and sanitizing services for a sewer building backup event
- The eligibility is limited to Wet-weather capacity related events
- Residents need to call 311 to report a building backup for qualification
- Eligible for residential customers only
- On-call contractors dispatched within 24 hours for addressing qualified events

Current Status:

- The Pilot period has now ended, but DPW is continuing to implement the program
- DPW has submitted a long-term plan to MDE which is currently under review by MDE.

The image shows two overlapping documents. The top document is a 'Frequently Asked Questions (FAQs)' page for the 'SOS SEWAGE ONSITE SUPPORT CLEANUP PROGRAM'. It includes the program logo and the City of Baltimore DPW logo. The bottom document is a promotional flyer for the same program, featuring the logo and the text: 'Professional sewage backup cleaning... at no cost to you.' and 'To report a sewage backup, call 311 or go to 311.baltimorecity.gov'.

SOS SEWAGE ONSITE SUPPORT CLEANUP PROGRAM

Frequently Asked Questions (FAQs)

- 1. What does this program cover?**
As part of the new Sewage Onsite Support (SOS) Program, DPW will clean the affected area of a residential property impacted by a wet weather event that led to sewage backup inside reported properties. DPW provides cleaning and disinfection services at no additional cost to the homeowner. DPW on-call cleaning contractors will be responsible for:
 1. Drying out the affected room(s)
 2. Disinfecting and sanitizing the affected area
 3. Disposing of and removing soiled carpet, flooring, furniture, and other items.
- 2. Who is eligible for this program?**
The SOS Cleanup Program is available to owners, residents and tenants of properties in Baltimore City impacted by a sewage backup caused by a wet weather event.
- 3. Does this include multi-family residential properties as well as single family residential properties?**
Yes, DPW's SOS Cleanup Program is available to both multi-family residential and single-family residential properties owners and tenants in Baltimore City.
- 4. Can this program be used for a flooded basement due to a water main break?**
No, this program is designed to support sewer water flooding impacts, not a water main break.
- 5. How quickly will the cleanup be scheduled and completed after reporting?**
Once the cause has been determined, the inspector will provide information on the program and what it includes. The on-call cleaning contractor will contact the customer within one hour of notification about the affected address. Cleaning schedules are dependent on availability for service as contractors offer cleanup appointments from 8 a.m. to 5 p.m. Monday through Friday, 9 a.m. to 4 p.m. Saturday and 10 a.m. to 4 p.m. Sunday, 7 days a week.
- 6. Is there a statute of limitations for reporting an issue and getting cleanup services?**
Customers are encouraged to contact 311 as soon as the sewage water damage is discovered. In the event of an extended period between the backup and its discovery, customers should contact DPW's Expedited Reimbursement Program to seek funds to assist with disinfection and cleanup costs.
- 7. If my insurance company handles cleanup at my property due to a sewage backup event, can my deductible be reimbursed by DPW?**
Yes, if the damage is due to a wet weather event. The customer can apply for the Expedited Reimbursement Program for reimbursement of the insurance deductible.

SOS SEWAGE ONSITE SUPPORT CLEANUP PROGRAM

**Professional sewage backup cleaning...
at no cost to you.**

**To report a sewage backup,
call 311 or go to
311.baltimorecity.gov**



SOS Program

Program Summary:

| Fiscal Year | Timeline | Number of Cleanups offered | Number of Cleanups completed |
|-------------|-----------------------|----------------------------|------------------------------|
| FY- 21 | Mar 2021 – June 2021 | 17 | 11 |
| FY-22 | July 2021 – June 2022 | 12 | 3 |
| FY-23 | July 2022 – June 2023 | 16 | 0 |



FEASIBILITY STUDY

Current Cost of BBERP

| Cost type | Cost per backup |
|--|-----------------|
| 311 support | \$2 |
| Cost of investigation | \$100 |
| Cost of relief for a basement backup | \$2,267.74 |
| Cost of reviewing the BBERP application | \$320 |
| Average cost of BBERP reimbursement | \$1,733.37 |
| Total costs for addressing each wet weather capacity related basement backup through BBERP | \$4,423.11 |



FEASIBILITY STUDY

Cost of Expansion for the BBERP

| Cost type | Average number of events | Total cost (Annually) |
|---|--------------------------|-----------------------|
| Expanding the BBERP to all wet weather basement backups | 774* | \$1,589,308.38 |
| Expanding the BBERP to all dry weather basement backups | 3277* | \$4,216,328.36 |
| Expanding the BBERP to all basement backups | 4051* | \$8,318,201.87 |

*Average number of events per year based on events that occurred in the last 6 years



FEASIBILITY STUDY

Cost of Cost Analysis of Dry and Wet Weather events in the Public and Private System for the BBERP

| | Dry Weather | Wet Weather |
|--------------------|--|---|
| Public Side | Number of average events annually = 1110 | Number of average events annually = 278 |
| | \$2,279,240.70 | \$570,836.86 |
| Private Side | Number of average events annually = 1608 | Number of average events annually = 369 |
| | \$3,301,818.96 | \$757,693.53 |
| Public and Private | Number of average events annually = 559 | Number of average events annually = 127 |
| | \$1,147,833.83 | \$260,777.99 |

*Average number of events per year based on events that occurred in the last 6 years



FEASIBILITY STUDY

Current Cost of SOS

| Cost type | Cost per backup |
|---|-------------------|
| 311 support | \$2 |
| Cost of investigation | \$100 |
| Cost of relief for a basement backup | \$2,267.74 |
| Cost of processing SOS request | \$320 |
| Cost of average SOS cleanup through a SOS contractor | \$3,316.11 |
| Total costs for addressing each wet weather capacity related basement backup through a SOS program | \$6,005.85 |



FEASIBILITY STUDY

Cost of Expansion for the SOS Program

| Cost type | Average number of events (Annually) | Total cost (Annually) |
|---|-------------------------------------|-----------------------|
| Expanding the SOS program to all wet weather basement backups | 774* | \$2,814,349.14 |
| Expanding the SOS program to all dry weather basement backups | 3277* | \$11,915,532.47 |
| Expanding the SOS program to all basement backups | 4051* | \$14,729,881.61 |

*Average number of events per year based on events that occurred in the last 6 years



FEASIBILITY STUDY

Cost of Cost Analysis of Dry and Wet Weather events in the Public and Private System for the SOS Program

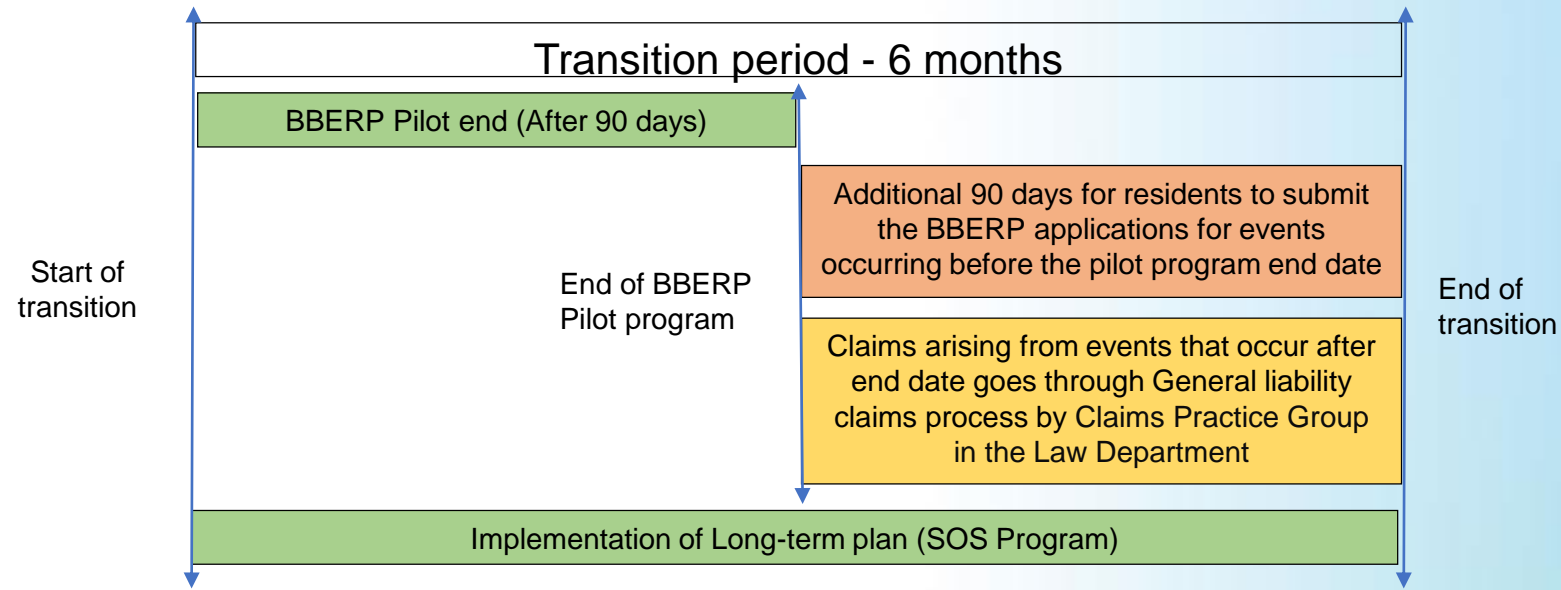
| | Dry Weather | Wet Weather |
|----------------------|--|---|
| Public Side | Number of average events annually = 1110 | Number of average events annually = 278 |
| | \$4,036,082.10 | \$1,010,838.58 |
| Private Side | Number of average events annually = 1608 | Number of average events annually = 369 |
| | \$5,846,864.88 | \$1,341,724.59 |
| Public and Private * | Number of average events annually = 559 | Number of average events annually = 127 |
| | \$2,032,585.49 | \$461,785.97 |

*Average number of events per year based on events that occurred in the last 6 years



FUTURE OF BUILDING BACKUP PROGRAM

City has proposed that this SOS program be included in the Modified Consent Decree as a long-term plan for replacement for the existing Building Backup program. The existing program is reimbursement model.



CAPITAL AND OPERATIONAL IMPROVEMENTS

- Multiple Conveyance upgrade projects and Inflow and infiltration reduction projects under Phase II of Modified Consent Decree starting January 1, 2023. The Phase II plan report is due to the regulators by December 31, 2022
- Cyclical cleaning program under the Modified Consent Decree that will improve operational efficiency.
- Periodic Sewer pipe inspection under Modified Consent Decree that will improve operational efficiency.
- Dedicated Root control program established under Modified Consent Decree.
- Dedicated Fats, Oils and grease cleaning program established under Modified Consent Decree



LITIGATION COSTS

In last 10 years

1012
Total Claims

847
No Payments

39
Currently Open

165
Payments

60
**Required
Litigation**

\$1,225,360
Total payments

\$7,426
Average amount



Challenges and Policy Considerations

- The sanitary sewer, storm sewer, and water utilities must operate as separate, financially self-sustaining enterprises at all times, without profit or loss to other City funds or programs.
- Diverting funds to other programs increases risk of insufficient revenue to properly operate and maintain the utilities.
 - May impact bond covenants of the wastewater enterprise funds
- Increased liability exposure to the City:
 - City obligation to perform cleanup services for basement backups is necessary and is created by a determination of liability
 - City may be obligated to pay for any sudden, unforeseeable, and catastrophic events such as a major failure in a pumping station or sinkhole collapse, major storms that leads to sewer backups that affect numerous homes
 - Property damage claims and insurance claims for alleged substandard work, allegations of patent and latent defects to property, must be investigated and resolved by settlement or litigation
 - Expansion invites advocacy for coverage for property and appliance damage costs
 - Unjustified improvements to private property



Challenges and Policy Considerations

Increased burden on Law Department:

- Currently analyzes general liability claims by deciding if the City was negligent, and if so, whether the City's negligence resulted in the alleged damages
- Lacks the resources and funding to investigate liability plus additional (construction, insurance, etc.) claims that will arise
- Extent of analysis and factual review necessary to investigate an increased number of backup claims goes against the goal of providing a rapid-response cleaning program, which is a key reason why the expedited reimbursement program was developed with a narrow scope



QUESTIONS

