



Virg Bernero, Mayor




Basement Backup Protection Program

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City of Lansing

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DC Engineering

Collection Systems 2015





The City of Lansing is located on the banks of the Grand and Red Cedar Rivers in the heart of Michigan

- Capital City of Michigan
- 37 square miles
- Population 115,000

★ Lansing

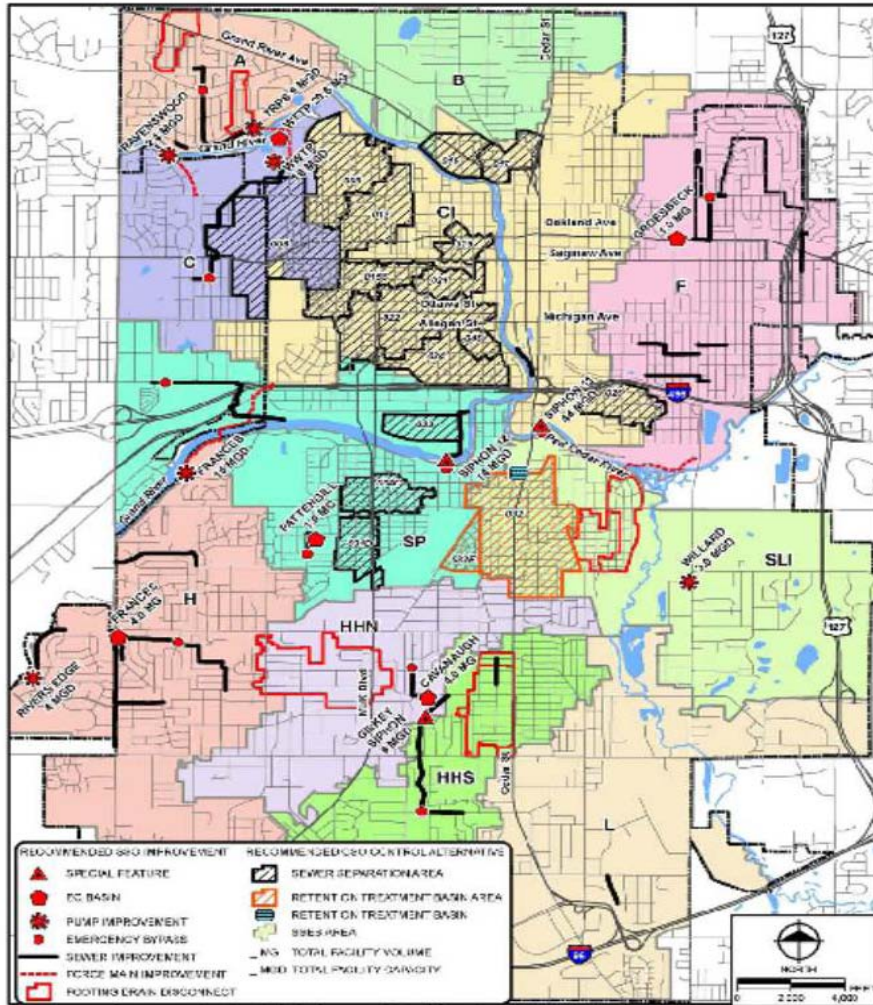
Historical Approach to CSO & SSO



Public Infrastructure Improvements

- Separate Combined Sewers
- Construct Equalization Basins
- Increase Conveyance Capacity
- Pump Station Improvements

Lansing's Comprehensive Wet Weather Control Program



- Future Cost \$450 Million
- 40-Year Schedule

Short-Term Goals

- Protect Public Health
- Fiscal Responsibility
- Cost of Business

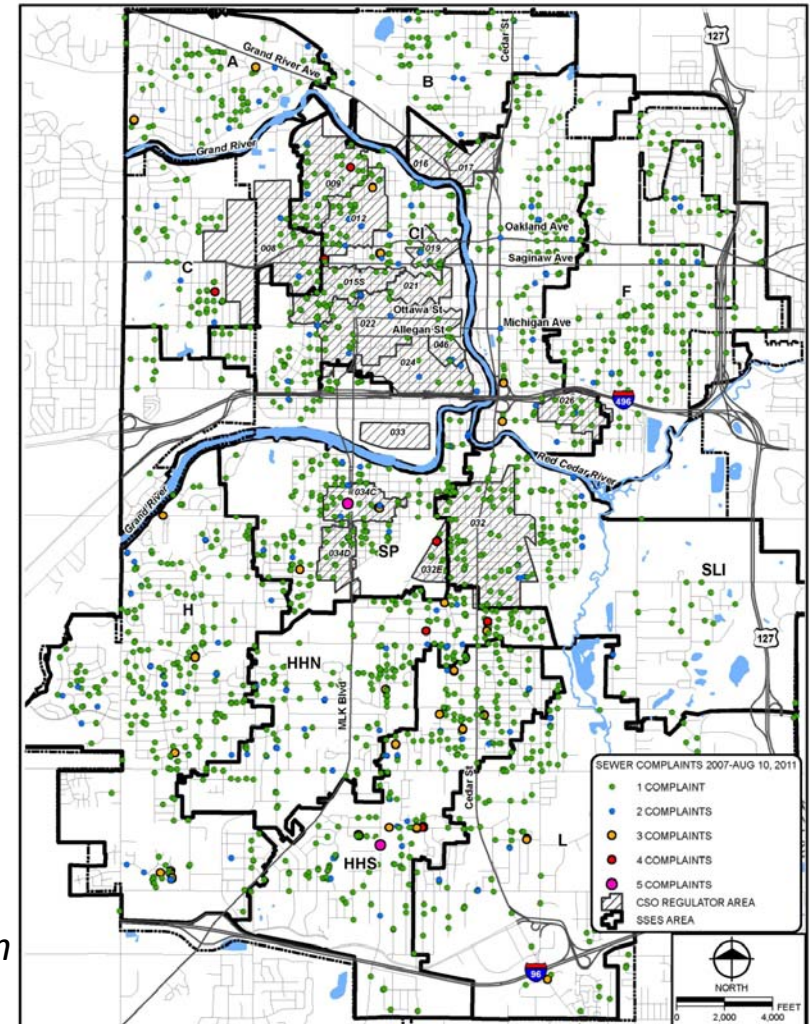
Solving our Public Health Problems?

Number of Basement
Backups Reported to City
Over 5 Year Period:

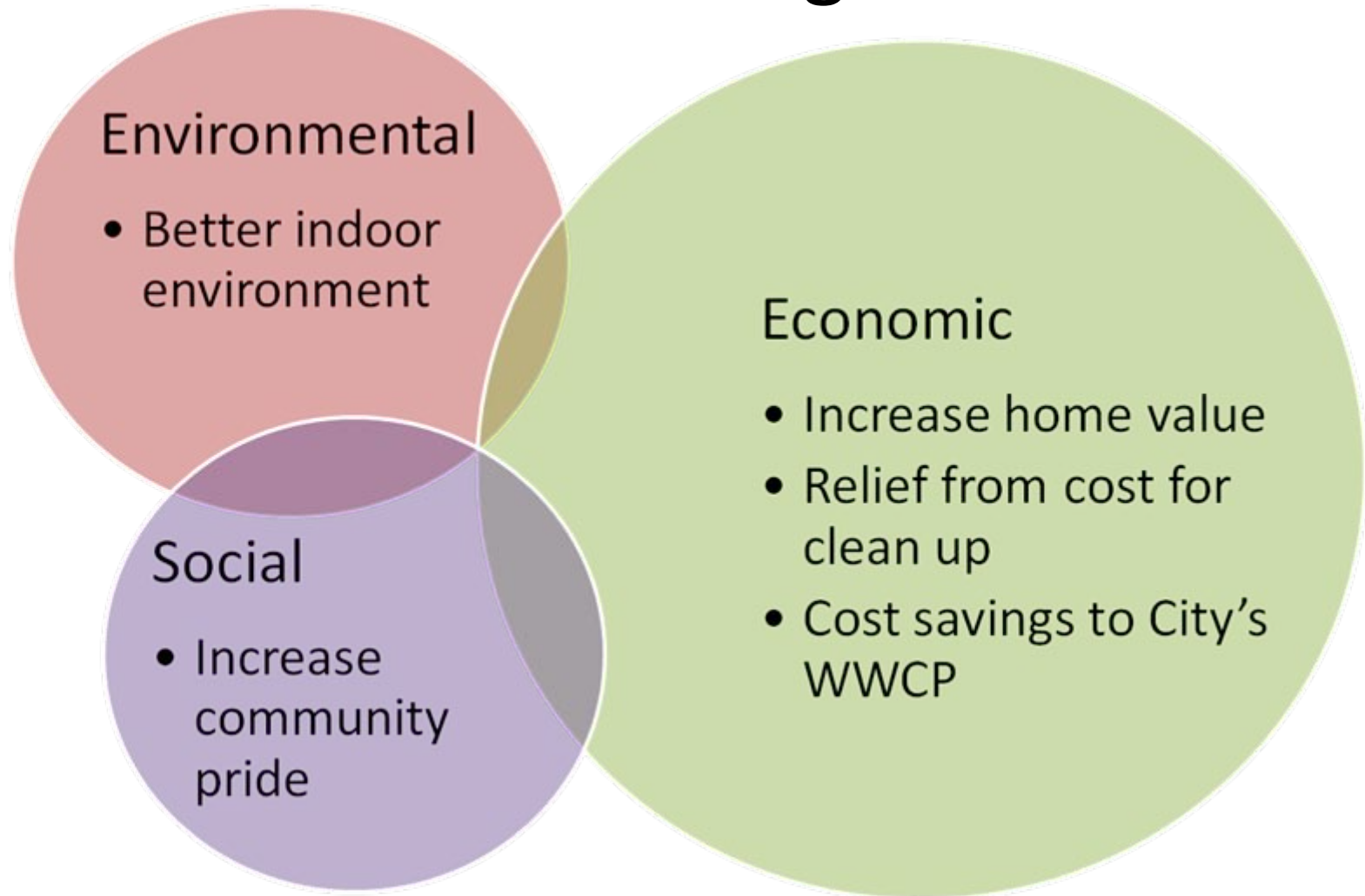
<u># of Backups</u>		<u># Reported</u>
2 or more	:	310
1	:	3,174

As few as 1 in 3 backups are
reported to the municipality *

* Sandink, D; (2007) *Sewer Backup: Homeowner Perception and Mitigative Behaviour in Edmonton and Toronto*



Construct of a Basement Backup Protection Program



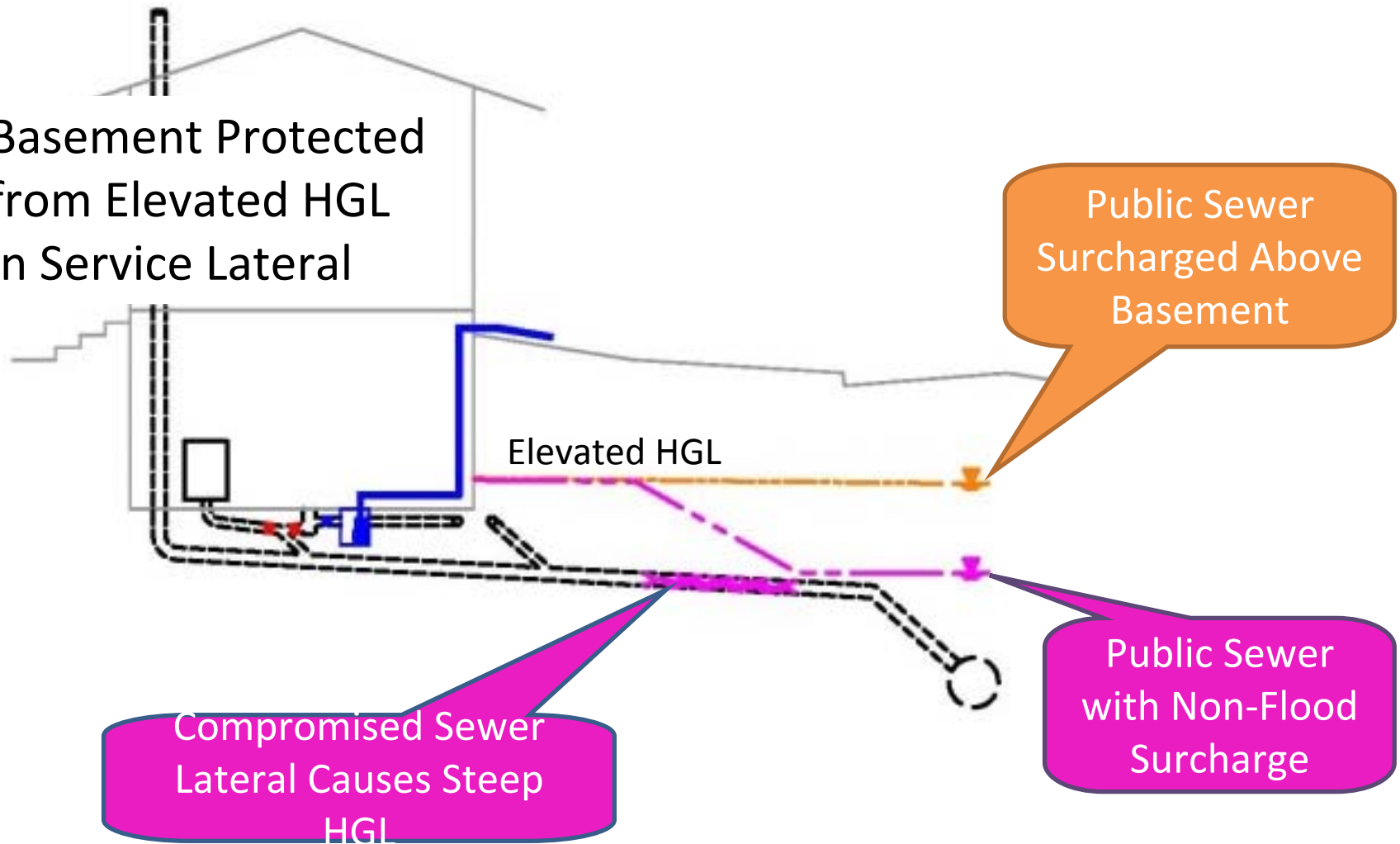
Program Objectives



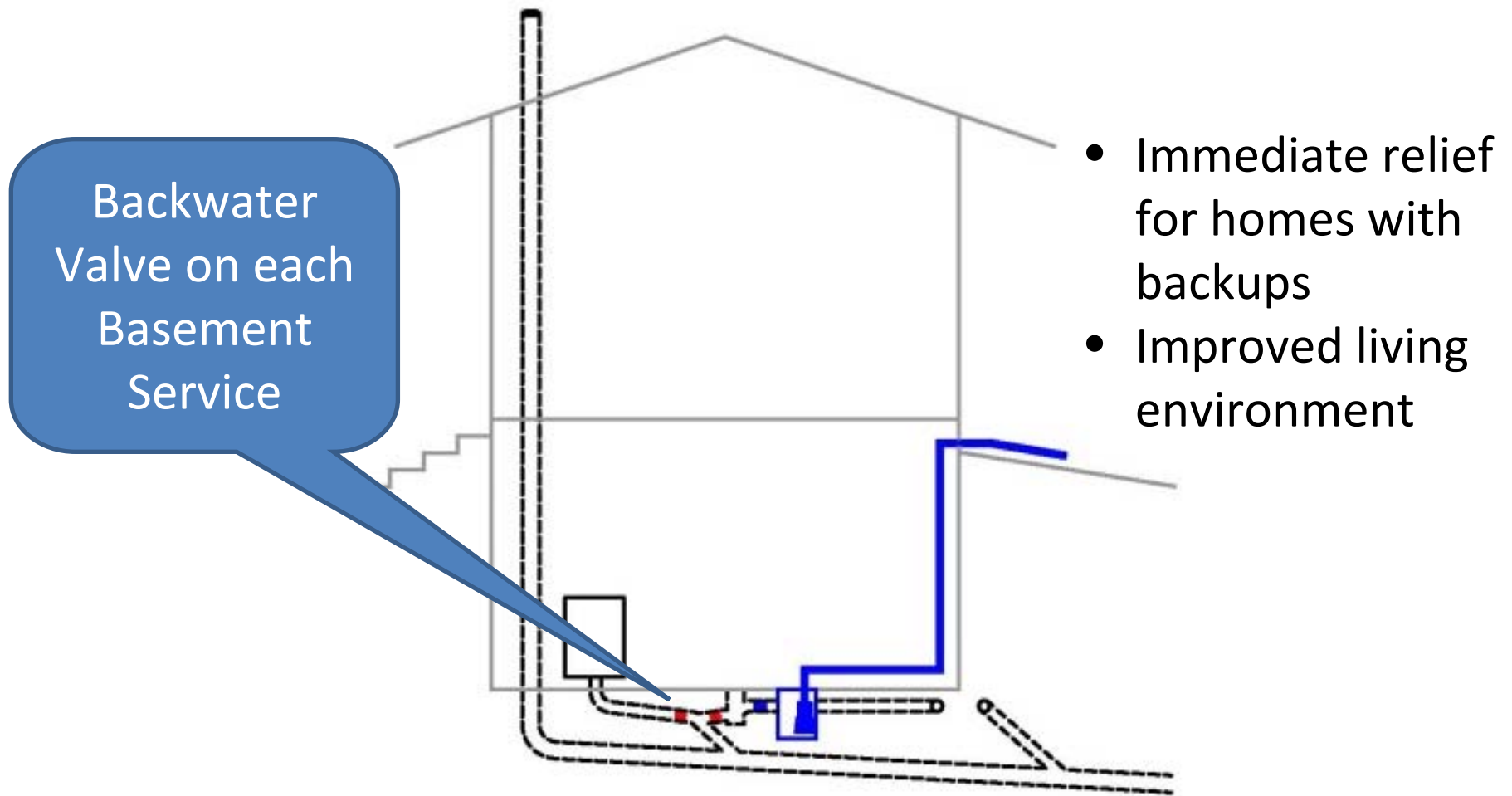
- Easy
- Affordable
- Ensure results
- Utilize local work force

Why Did the Basement Flood?

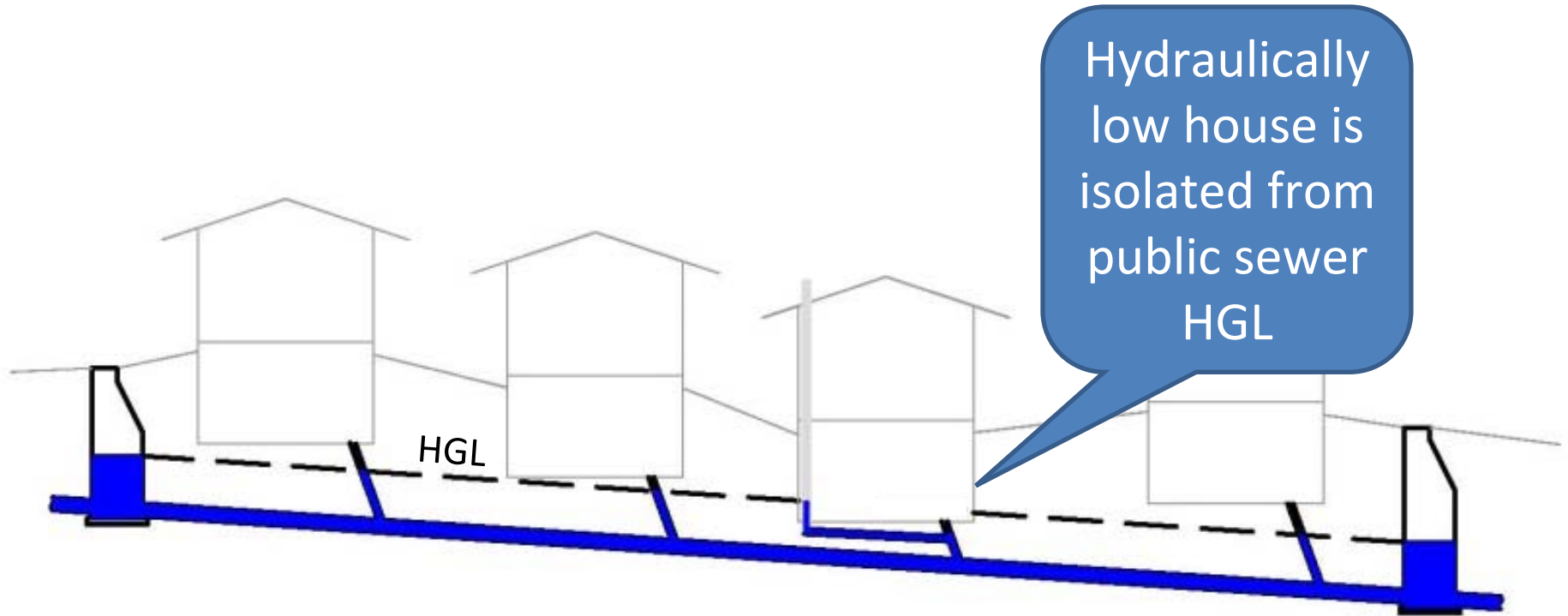
- Basement Protected from Elevated HGL in Service Lateral



Protection of Public Health

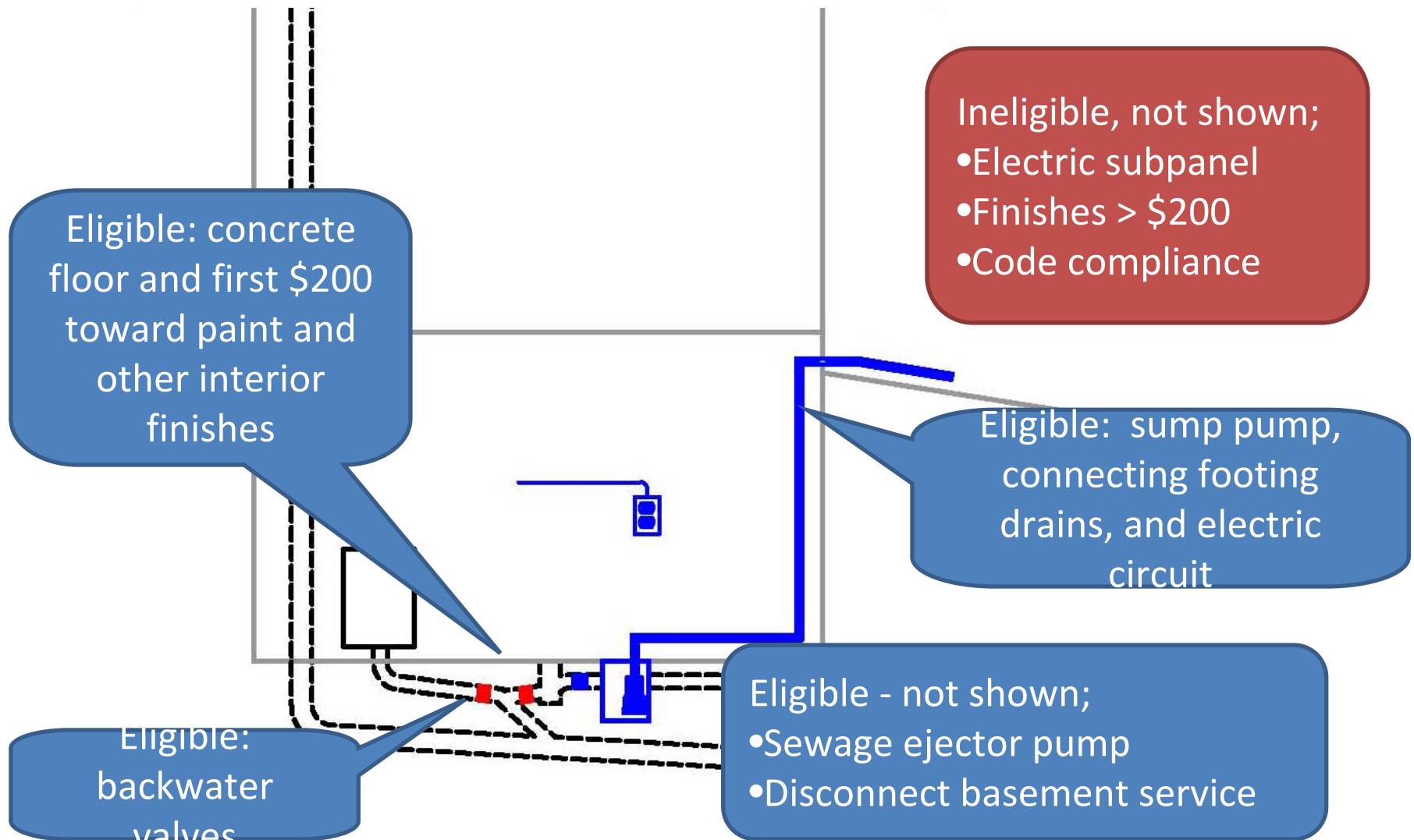


Optimize System Performance

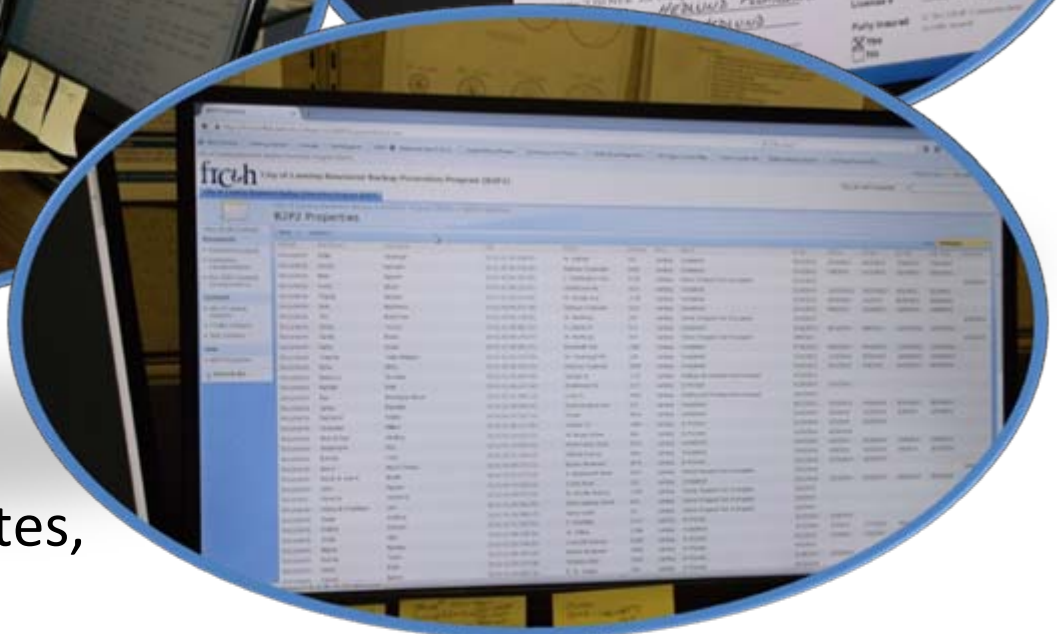
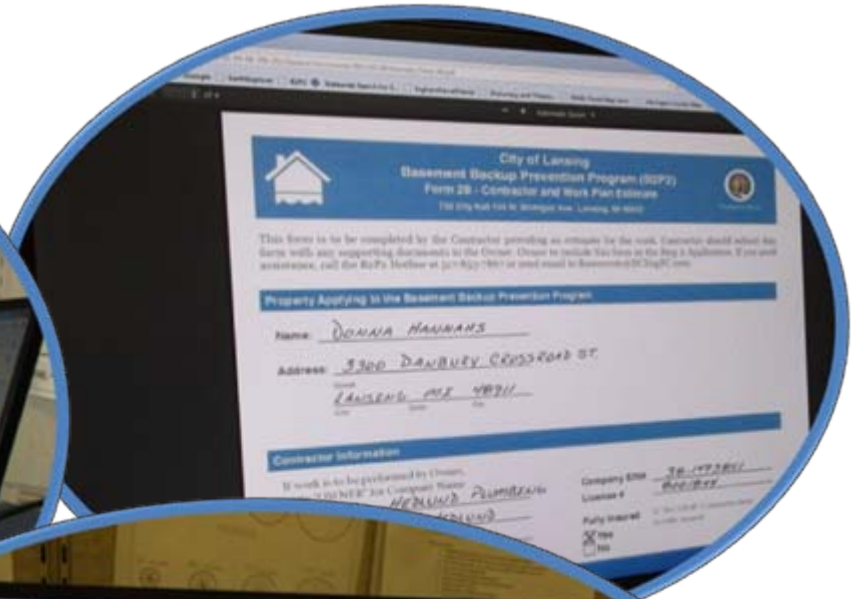


- Protected house does not dictate maximum HGL
- Protection exceeds design storm

Eligible and Ineligible Costs

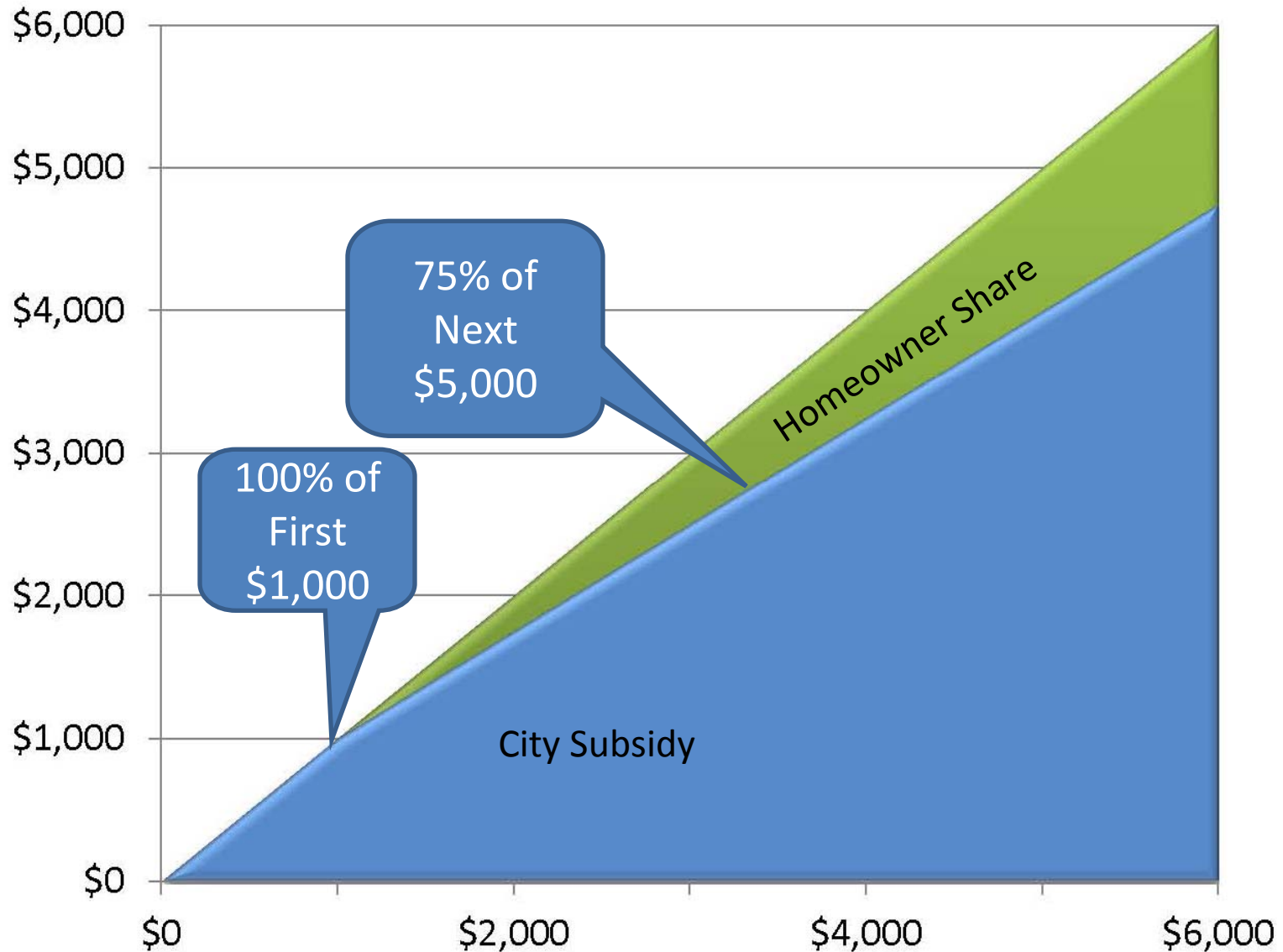


Program Administration

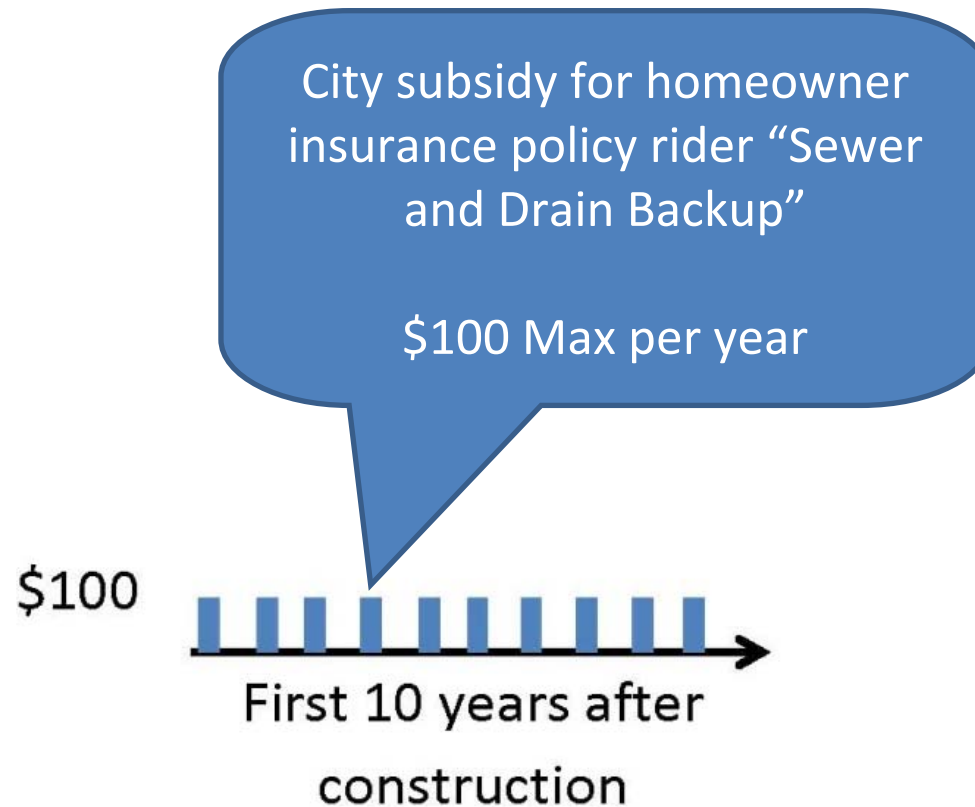


- Web-based project management
- Applications, photos, notes, and more available

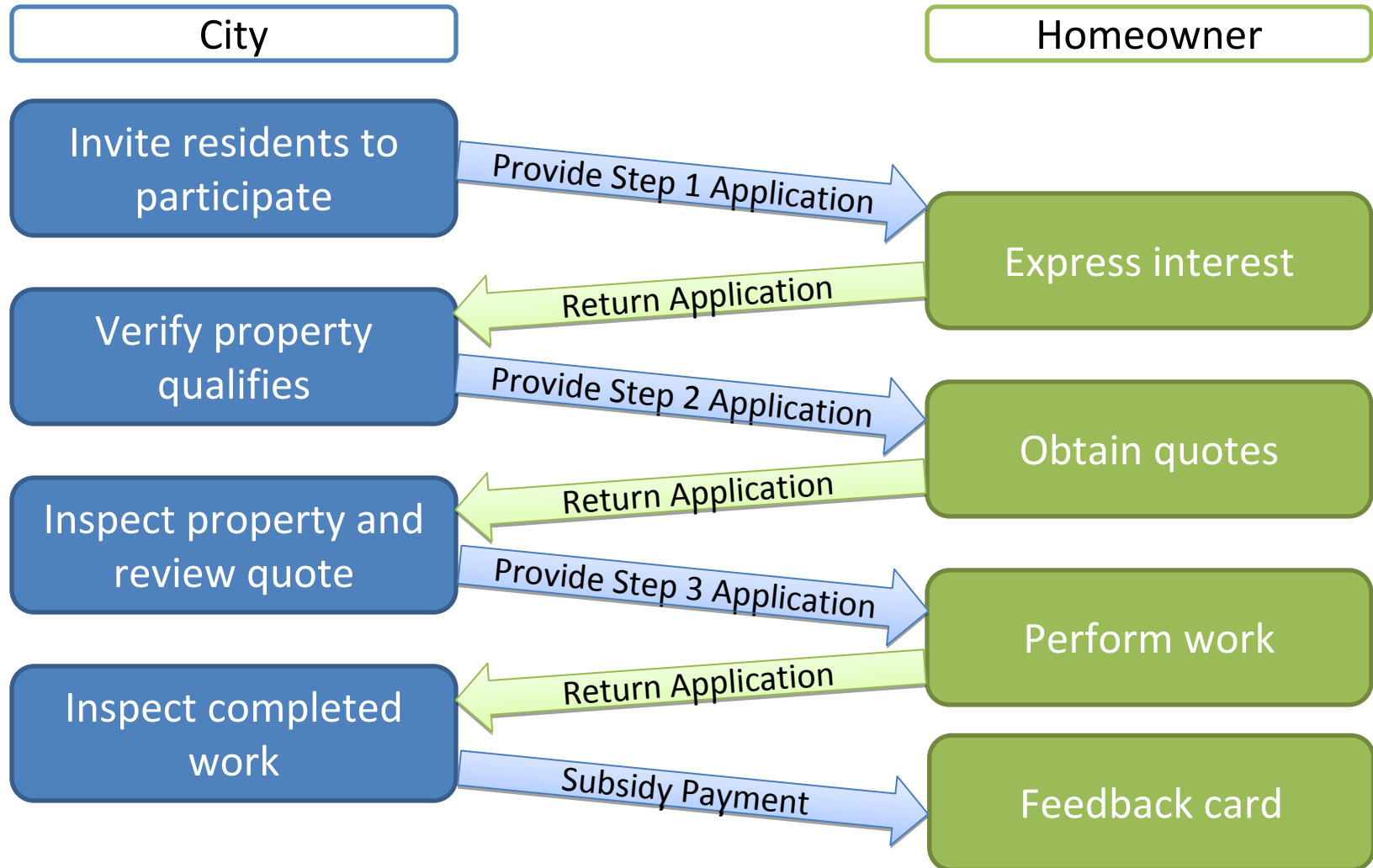
Construction Subsidy



Insurance Subsidy



Basement Backup Protection Program Flow Chart

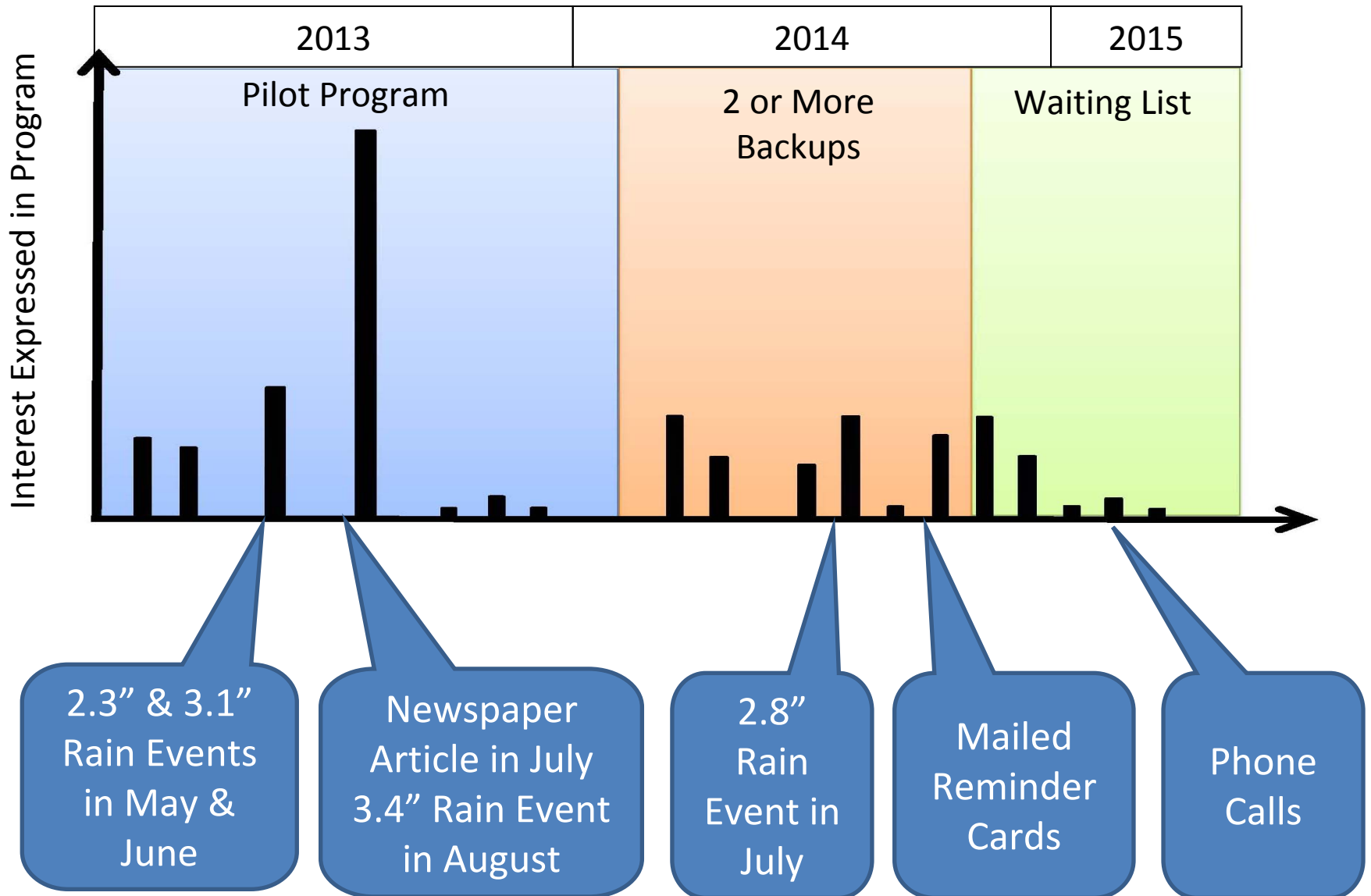


Public Outreach



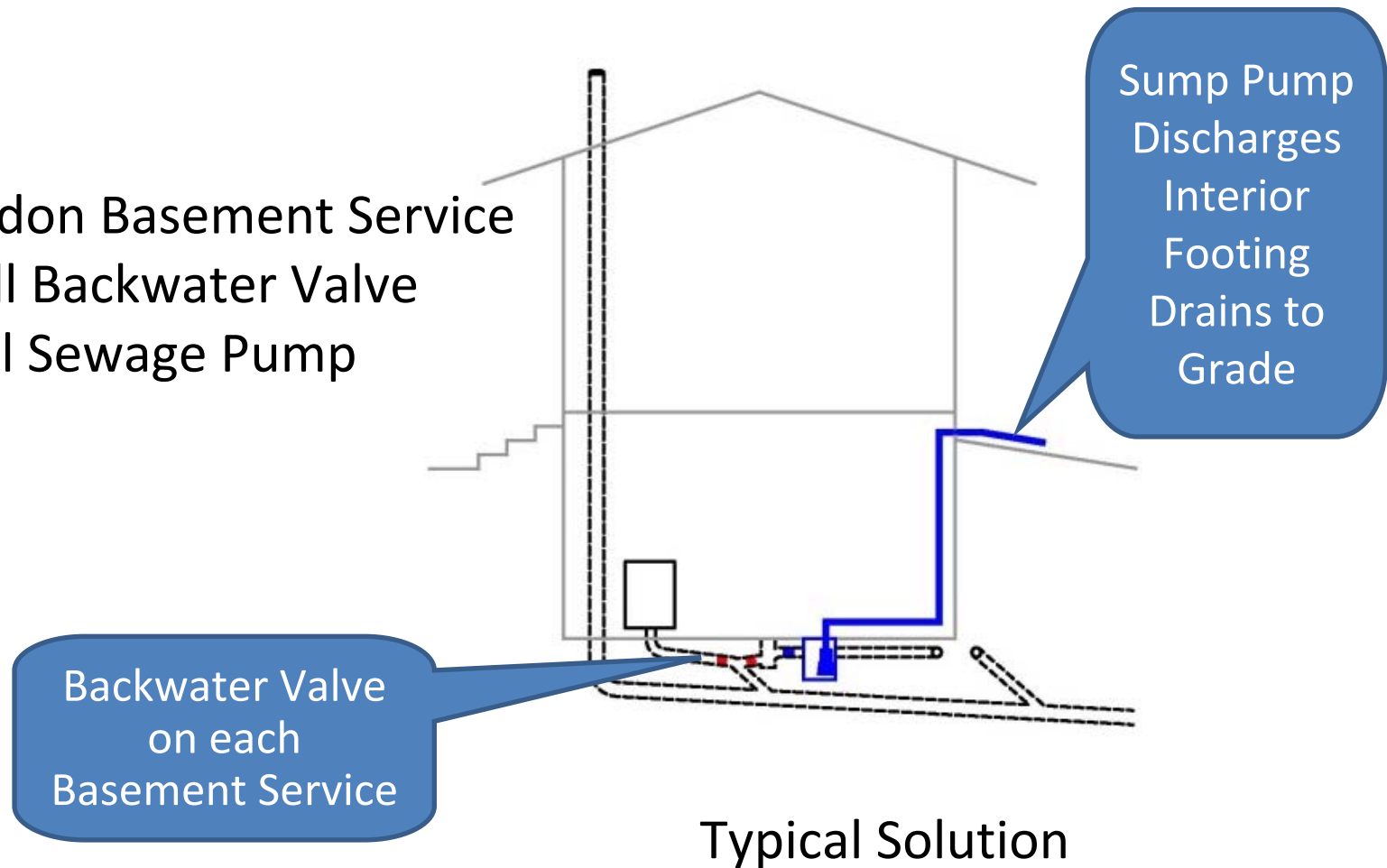
- Invitation
- Word of mouth
- Newspaper article
- Program literature

Implementation

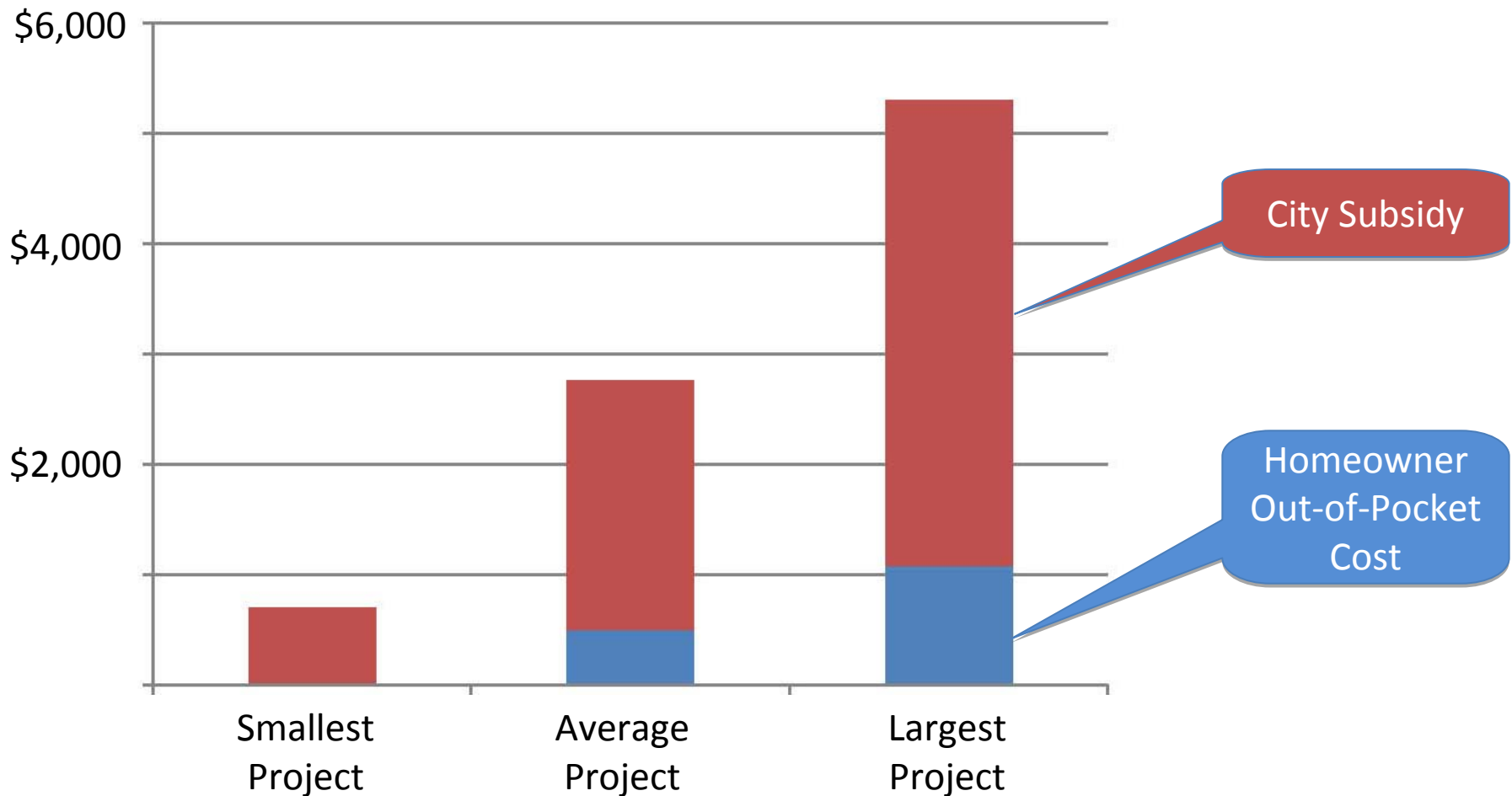


Solutions Selected by Homeowners

6% Abandon Basement Service
94% Install Backwater Valve
0% Install Sewage Pump



Homeowner Construction Subsidy Breakdown



Contractor Challenges

Challenges

- Extra effort to prepare quote
- Disclosure of company pricing



Solutions

- Insist on complete quotes
- Hold detailed pricing in confidence

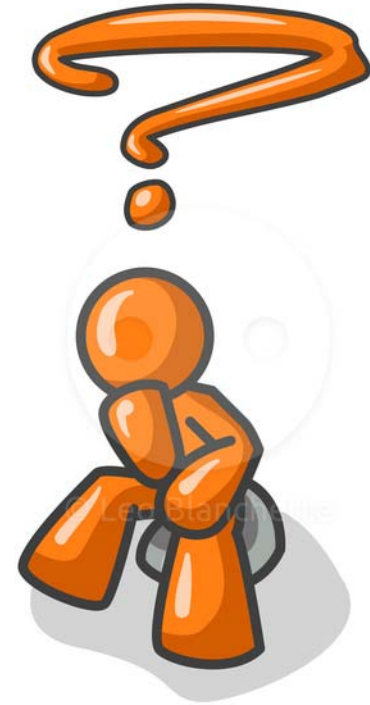
Homeowner Challenges

Challenges

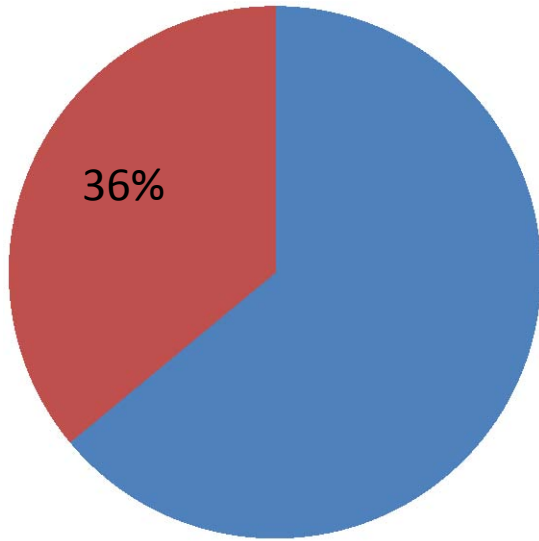
- Level of participation
- Incomplete applications

Solutions

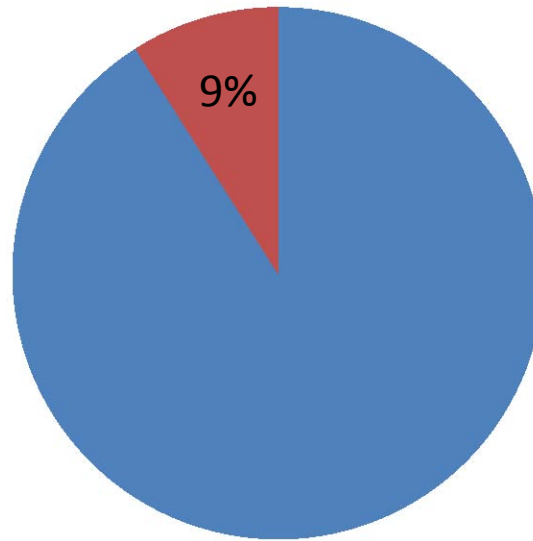
- Make personal contact
- Accept properties at time of problem
- Provide checklist



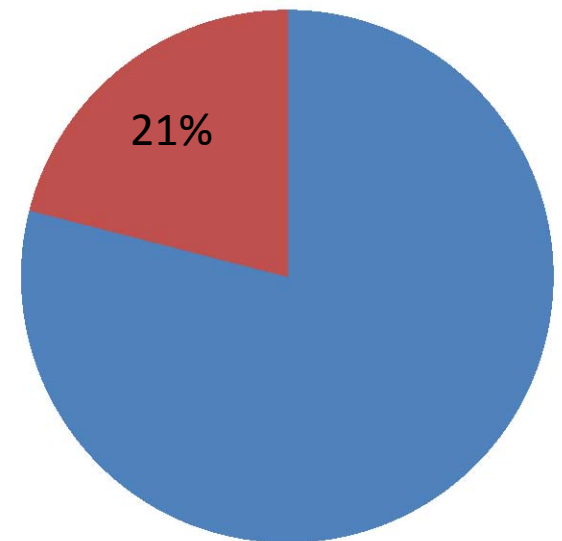
Participation Resulting from Invitations Mailed to Residents



Pilot Program



Second Rollout



Waiting List

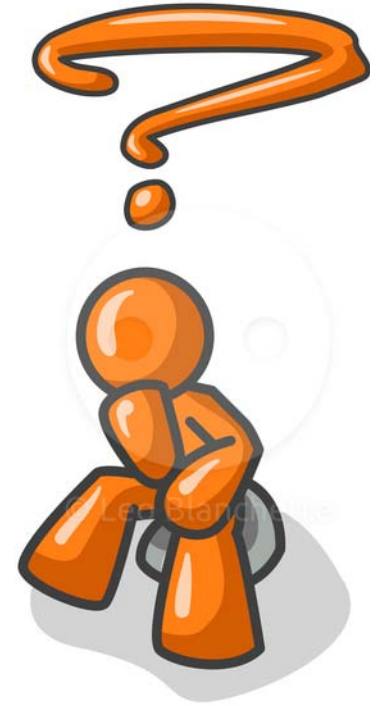
Homeowner Challenges

Challenges

- Level of participation
- Incomplete applications

Solutions

- Make personal contact
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Program's 1st Project



- 4 backups - 5 years
- 1" to 12" deep

Before Work

- Homeowner \$294
- City \$1,881
- Total \$2,175

- No backups

After Work

Thank You



Virg Bernero, Mayor



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www.lansingmi.gov/basements