NORTHEAST AREA SANITARY SEWER ALTERNATIVES ANALYSIS

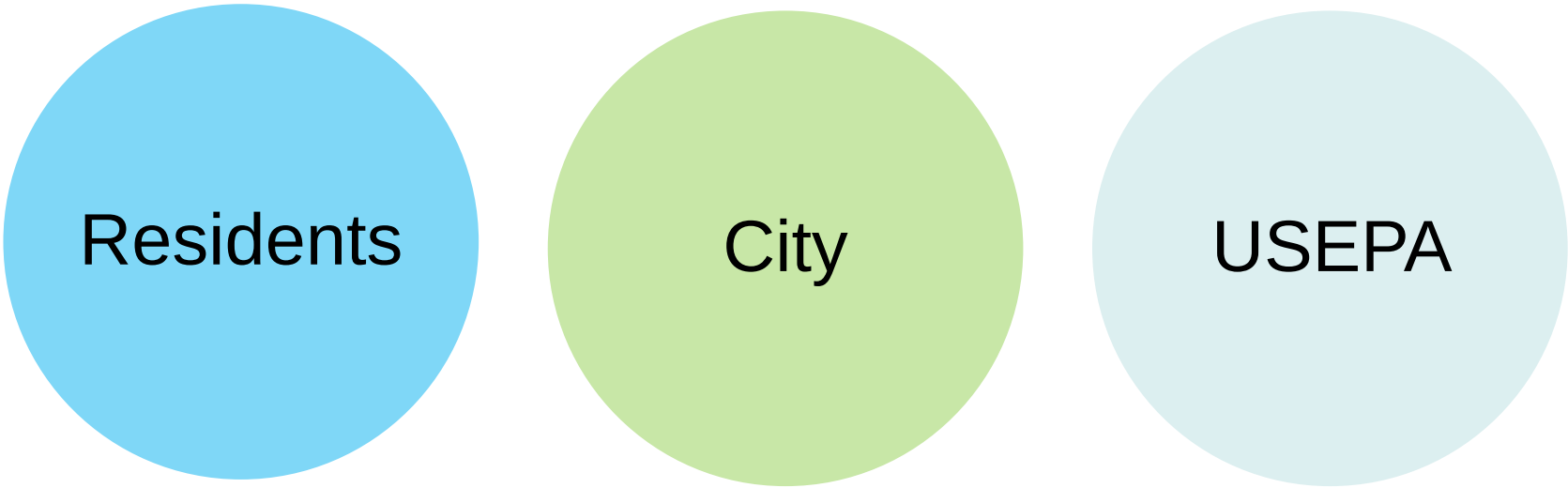
Public Meeting #1

INTRODUCTION

October 15, 2014

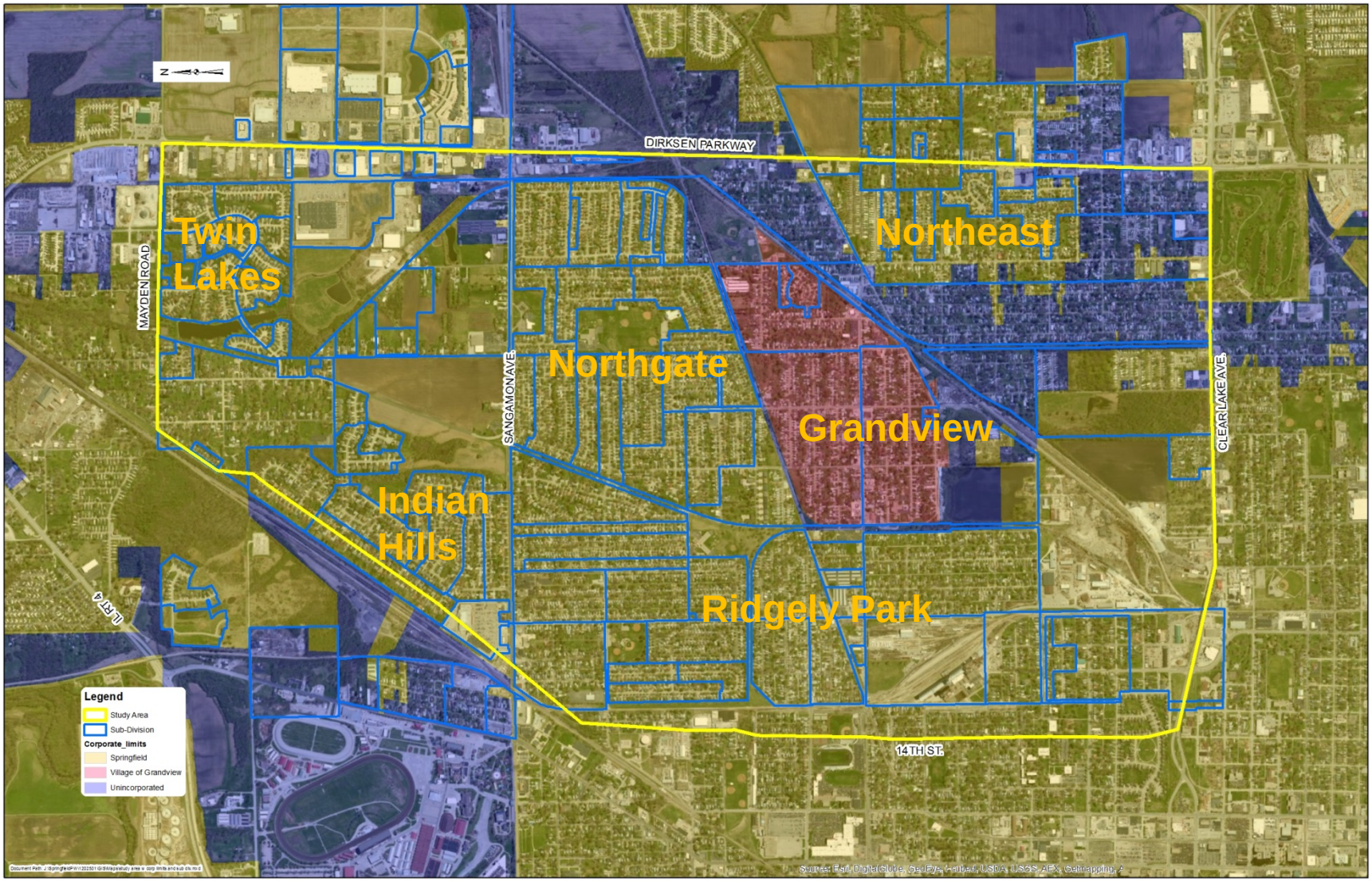
CMT
Crawford, Murphy & Tilly

Addressing City Sewers in Northeast Springfield…



…A coordinated process

The Northeast Area



MEETING OUTLINE

- Why we are doing this study
- What we need to understand about sewers
- What the study will involve
- How the community has addressed sewer improvements
- Reducing Public and Private I&I
- What other communities are doing
- Private property I&I removal program
- What role you can play

Purpose of the Study

WHY WE ARE DOING THIS STUDY

U.S. communities are prioritizing investments to address aging sewer systems

Regulatory compliance is a primary driver in the investments

Aging sewers contribute to overflows, a public health hazard

Sanitary Sewer Overflow (SSO): sewage leaves the system through manhole lids or other openings….

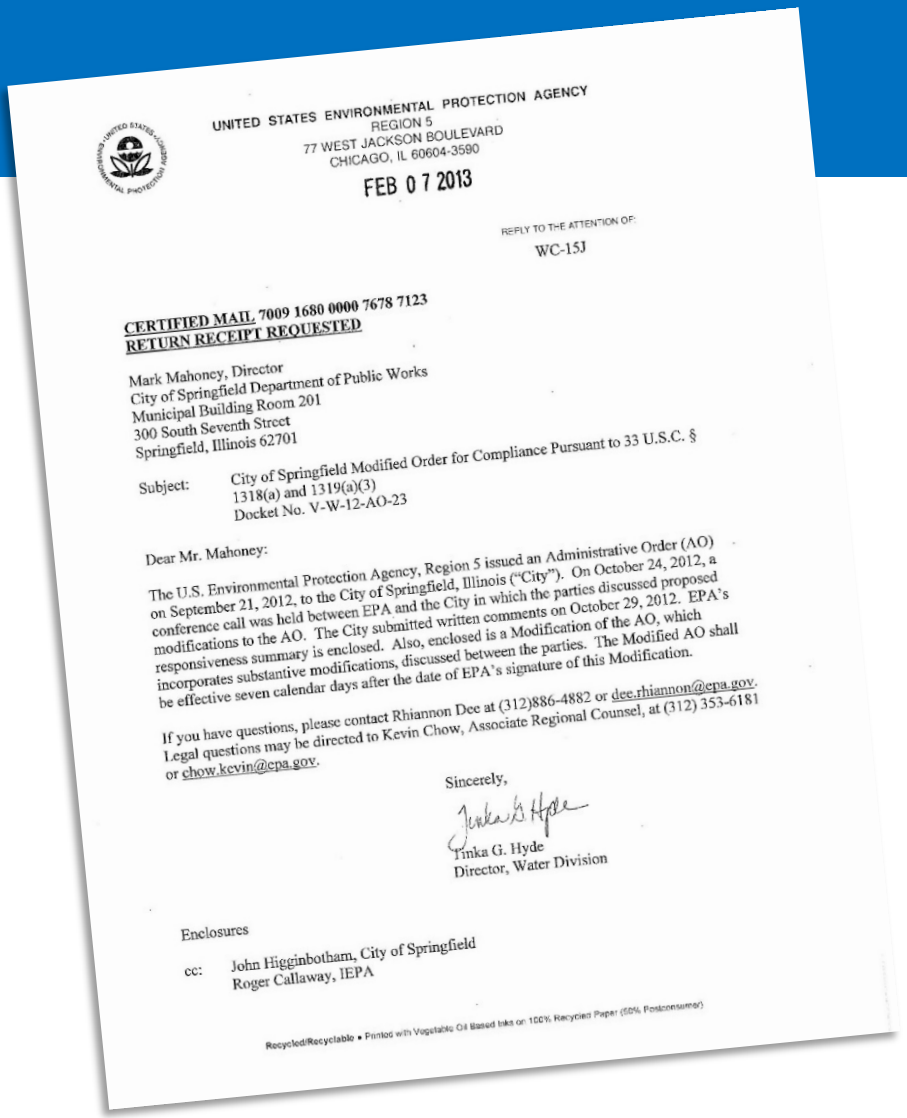
….including basement plumbing

By-pass pumping during major storm events has helped to reduce basement flooding

However…

USEPA says this violates the Clean Water Act!

Specifically for Springfield….



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

FEB 07 2013

REPLY TO THE ATTENTION OF:
WC-15J

CERTIFIED MAIL 7009 1680 0000 7678 7123
RETURN RECEIPT REQUESTED

Mark Mahoney, Director
City of Springfield Department of Public Works
Municipal Building Room 201
300 South Seventh Street
Springfield, Illinois 62701

Subject: City of Springfield Modified Order for Compliance Pursuant to 33 U.S.C. § 1318(a) and 1319(a)(3)
Docket No. V-W-12-AO-23

Dear Mr. Mahoney:

The U.S. Environmental Protection Agency, Region 5 issued an Administrative Order (AO) on September 21, 2012, to the City of Springfield, Illinois ("City"). On October 24, 2012, a conference call was held between EPA and the City in which the parties discussed proposed modifications to the AO. The City submitted written comments on October 29, 2012. EPA's responsiveness summary is enclosed. Also, enclosed is a Modification of the AO, which incorporates substantive modifications, discussed between the parties. The Modified AO shall be effective seven calendar days after the date of EPA's signature of this Modification.

If you have questions, please contact Rhiannon Dee at (312)886-4882 or dee.rhiannon@epa.gov. Legal questions may be directed to Kevin Chow, Associate Regional Counsel, at (312) 353-6181 or chow.kevin@epa.gov.

Sincerely,

Tinka G. Hyde
Director, Water Division

Enclosures

cc: John Higginbotham, City of Springfield
Roger Callaway, IEPA

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USEPA Administrative Order requires Springfield to:

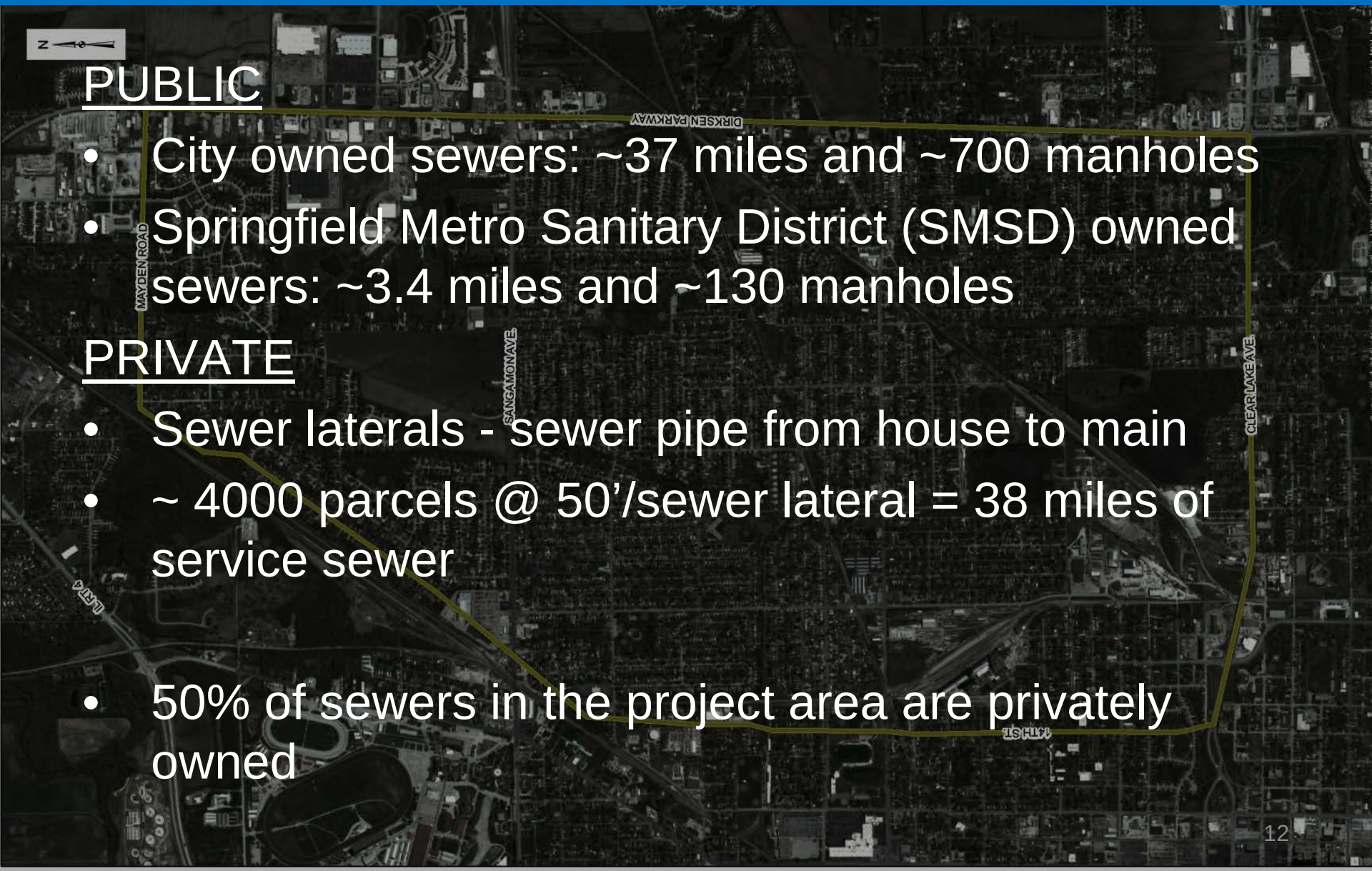
1. **Develop a plan to eliminate sanitary sewer overflows (SSO) from the northeast area.**
2. **Submit a plan to USEPA approximately nine months from now.**
3. **City attempting to comply with AO to avoid further regulatory action.**

CMT hired to assist the City with preparing the plan.

Study Area


Dirksen Parkway
Mayden Rd.
Clear Lake Ave.
14th Street
DIRKSEN PARKWAY
MAYDEN ROAD
SANGAMON AVE.
CLEAR LAKE AVE.
14TH ST
IL RT 4

Study Area Details



PUBLIC

- City owned sewers: ~37 miles and ~700 manholes
- Springfield Metro Sanitary District (SMSD) owned sewers: ~3.4 miles and ~130 manholes

PRIVATE

- Sewer laterals - sewer pipe from house to main
- ~ 4000 parcels @ 50'/sewer lateral = 38 miles of service sewer

- 50% of sewers in the project area are privately owned

CITY-WIDE CHALLENGES

- It is understood that there are residents outside the study area that experience similar challenges with the sewer system.

- However, we have to focus on the northeast area first because of the USEPA Administrative Order.

KEY TERMS AND CONCEPTS

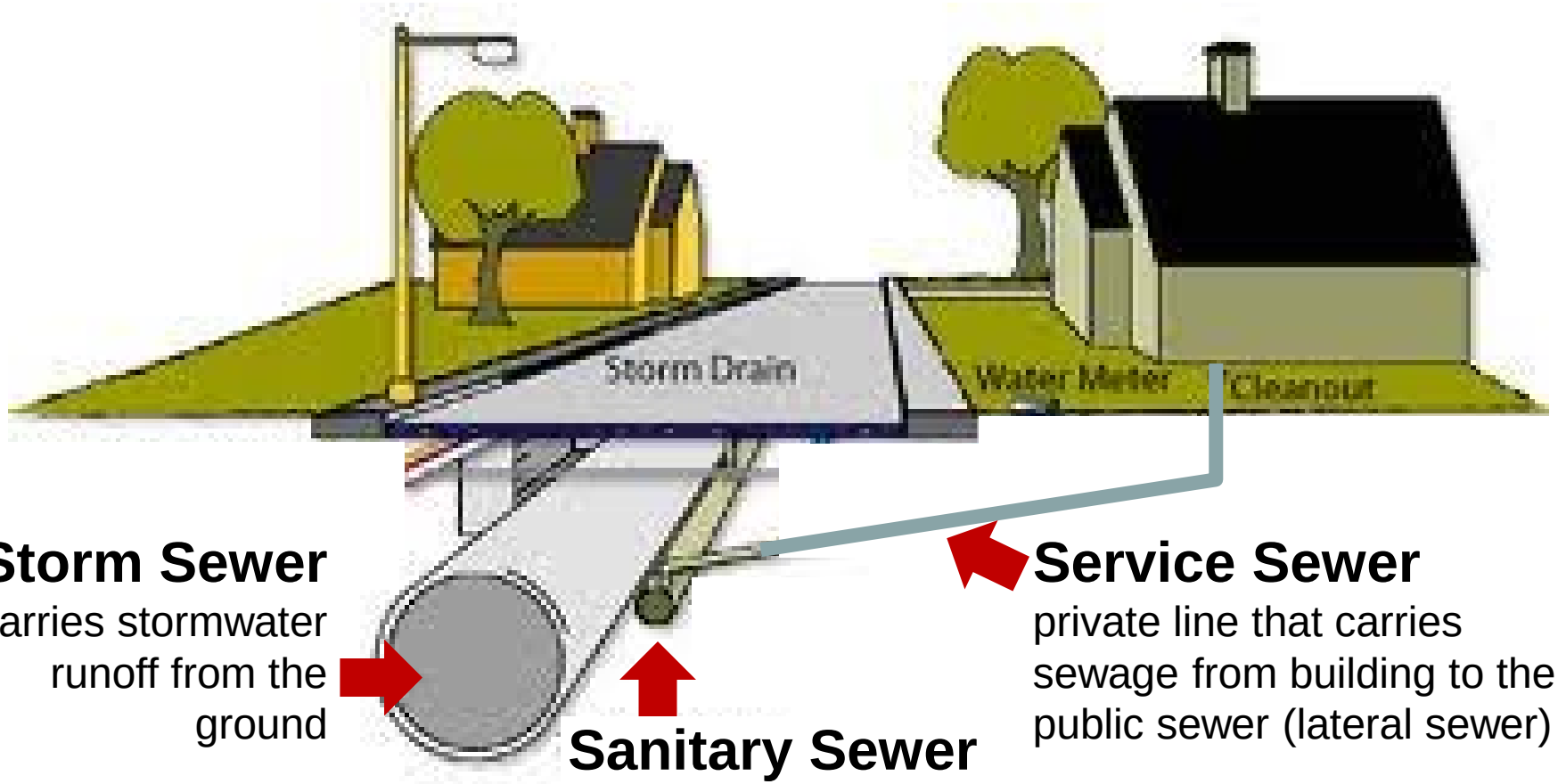
WHAT WE NEED TO UNDERSTAND ABOUT SEWERS

REGULATORY

- **Clean Water Act (CWA):** federal legislation governing discharge of pollutants to waters of the United States

- **National Pollutant Discharge Elimination System (NPDES):** a permit is required under this program to discharge

SEWER TYPES



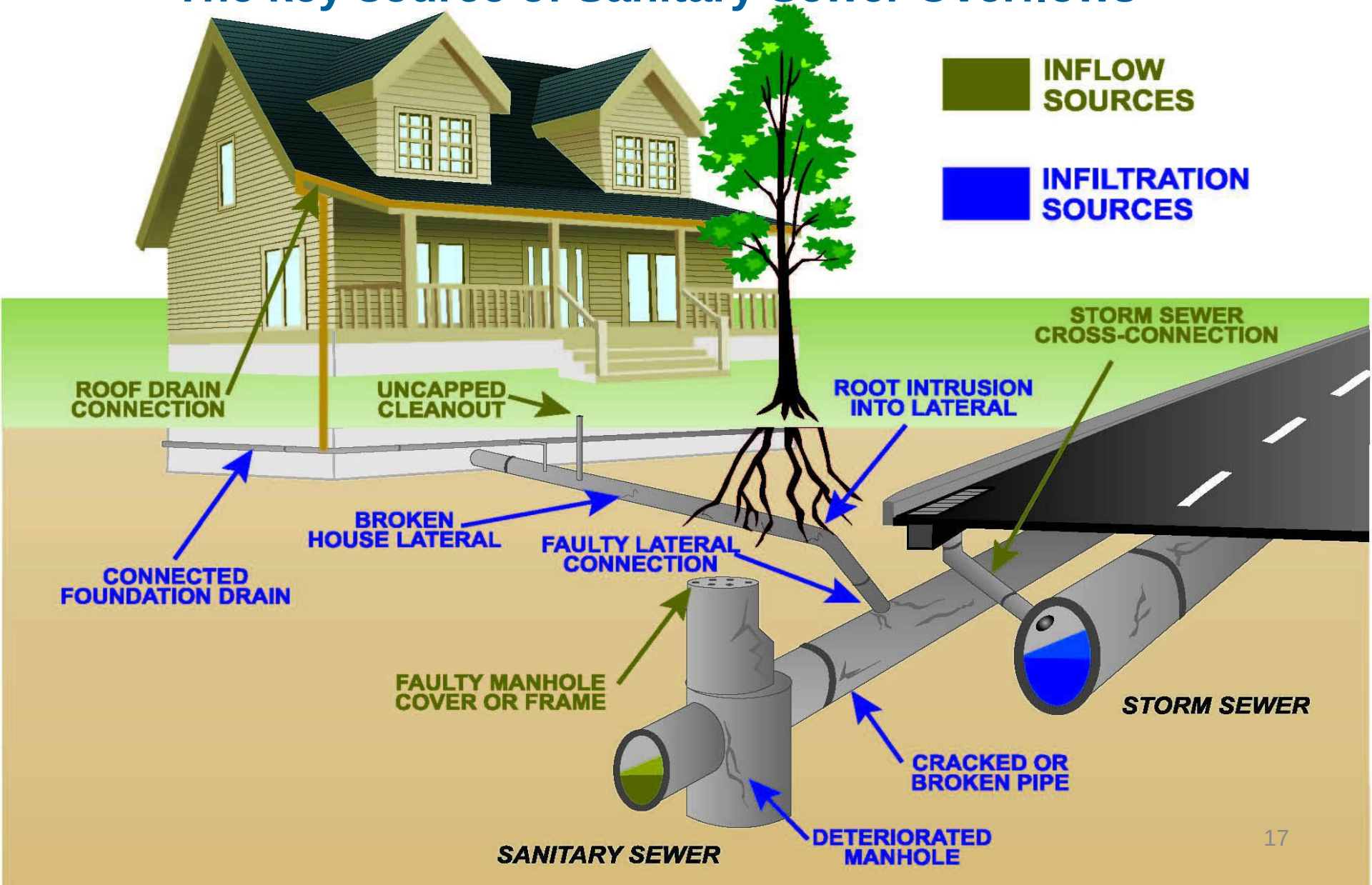
Storm Sewer
carries stormwater runoff from the ground

Service Sewer
private line that carries sewage from building to the public sewer (lateral sewer)

Sanitary Sewer
carries sewage produced by residential and commercial sources

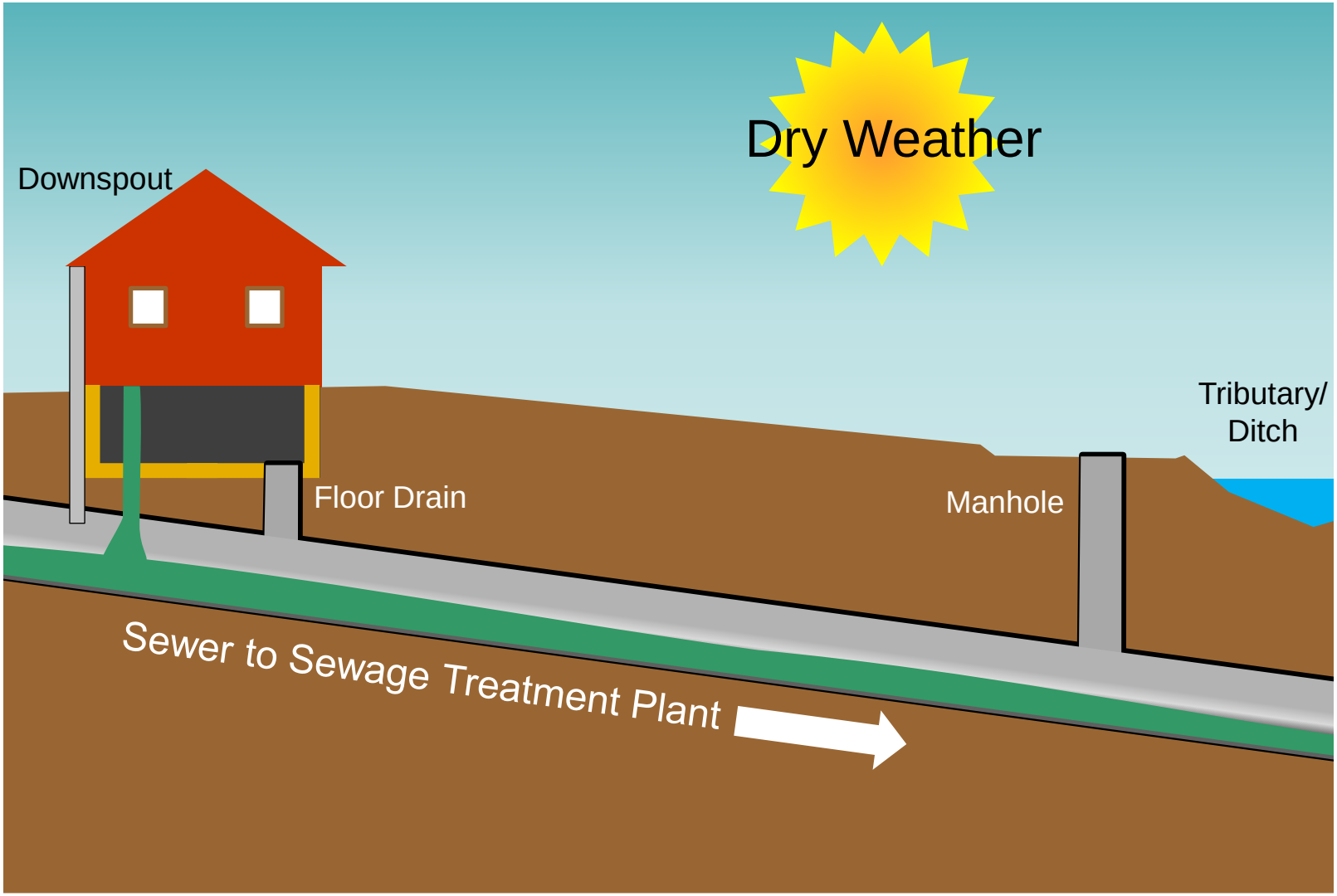
Inflow & Infiltration:

The key source of Sanitary Sewer Overflows



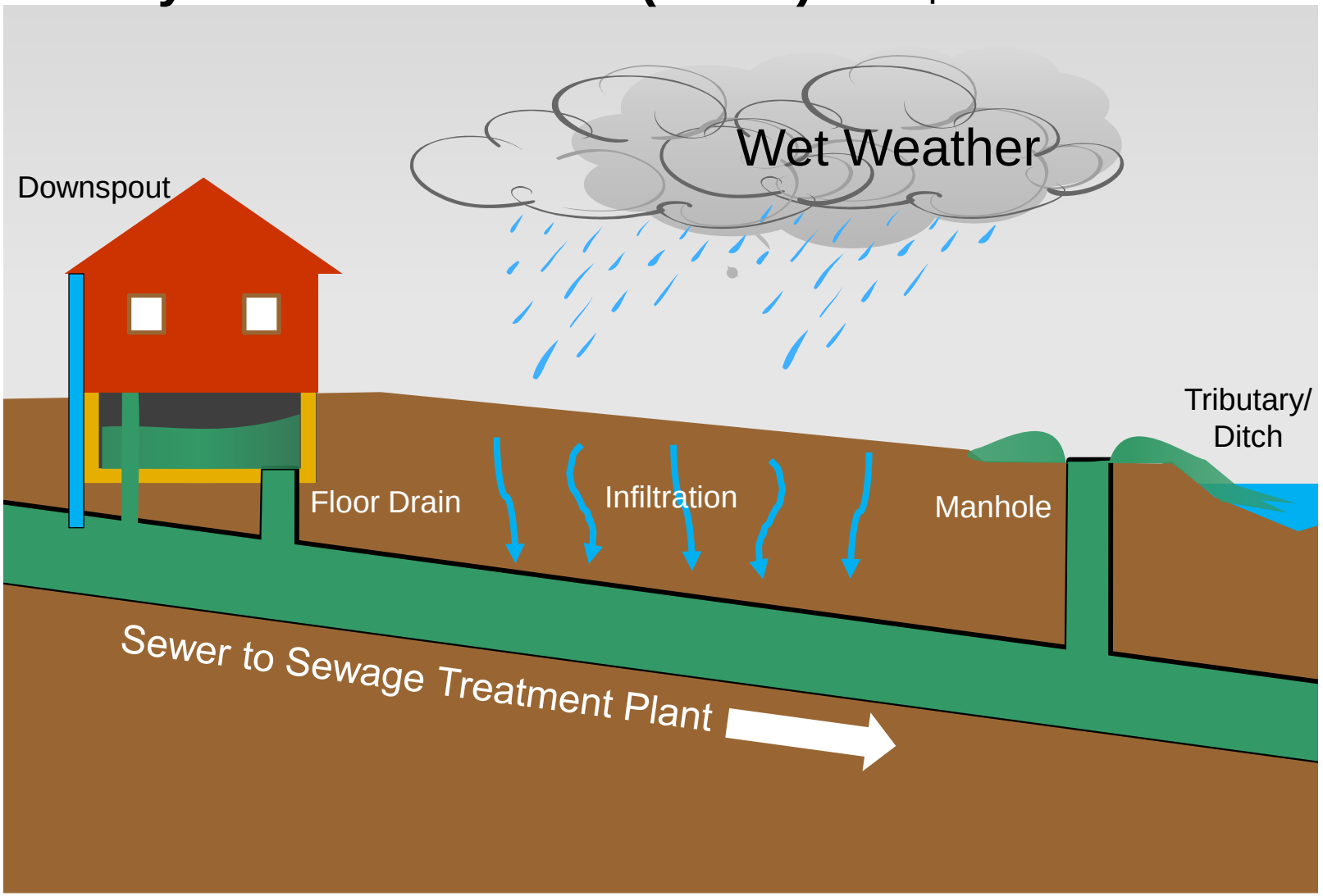
Overflows

Sanitary Sewer Overflows (SSOs)



Overflows

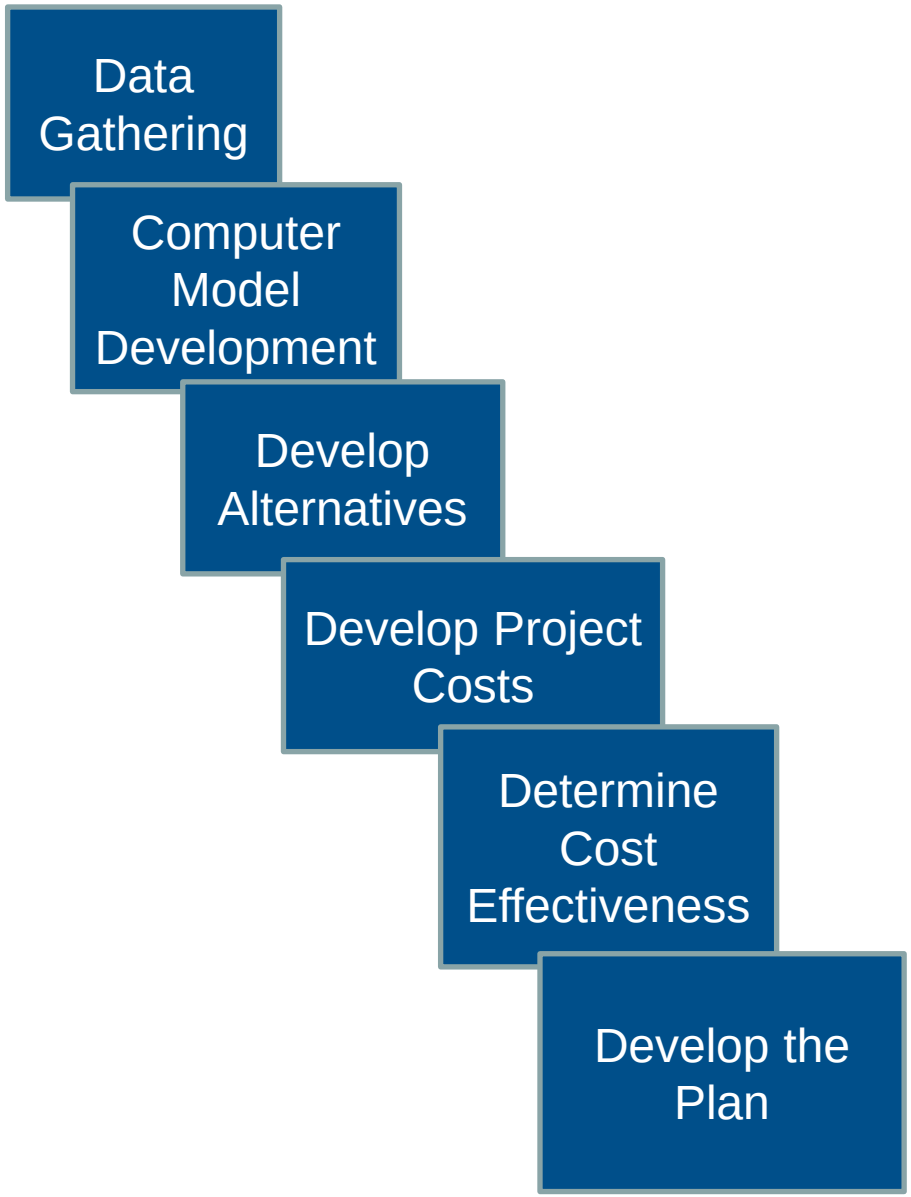
Sanitary Sewer Overflows (SSOs) - are prohibited



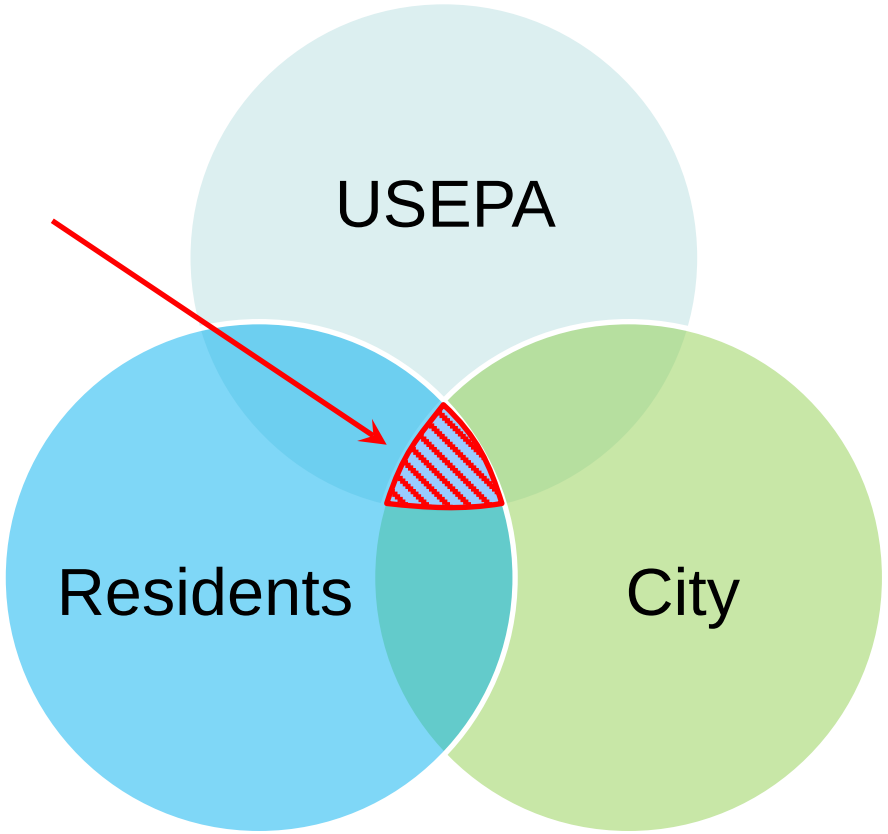
The Process

WHAT THE STUDY WILL INVOLVE

The Process: Key Steps



Finding the Right Mix that Meets Our Goals



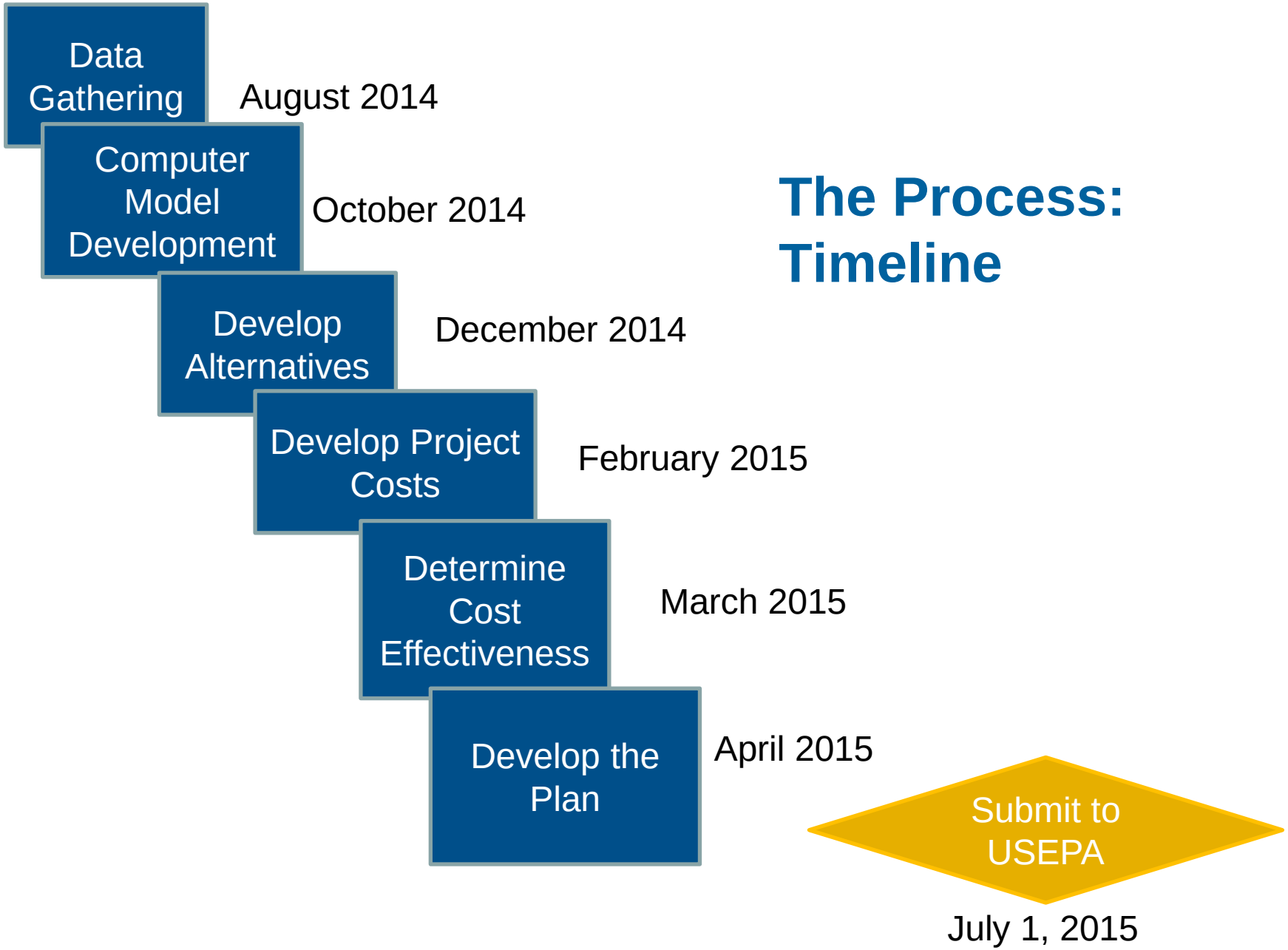
Historical Alternatives Include:

- Relief Sewers
- Sewer Repair / Rehabilitation
- Storage Facilities
- Additional Treatment Capacity

Modern Approach:

- Lateral Rehabilitation
- Private Property Modifications

The Process: Timeline



The Process

HOW THE COMMUNITY HAS ADDRESSED SEWER IMPROVEMENTS

Corrective work done to Springfield's NE sewer system over the last 20 years

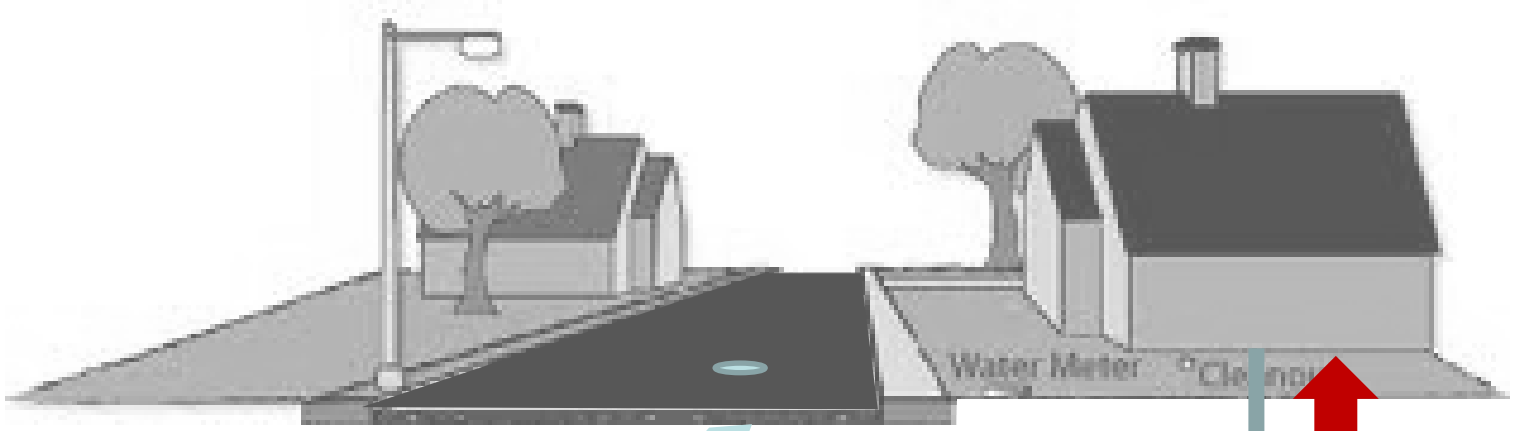
This work used available sewer funds.

Public Funds not spent to correct private property defects

Preliminary Alternatives

REDUCING PUBLIC AND PRIVATE I&I

Public and Private

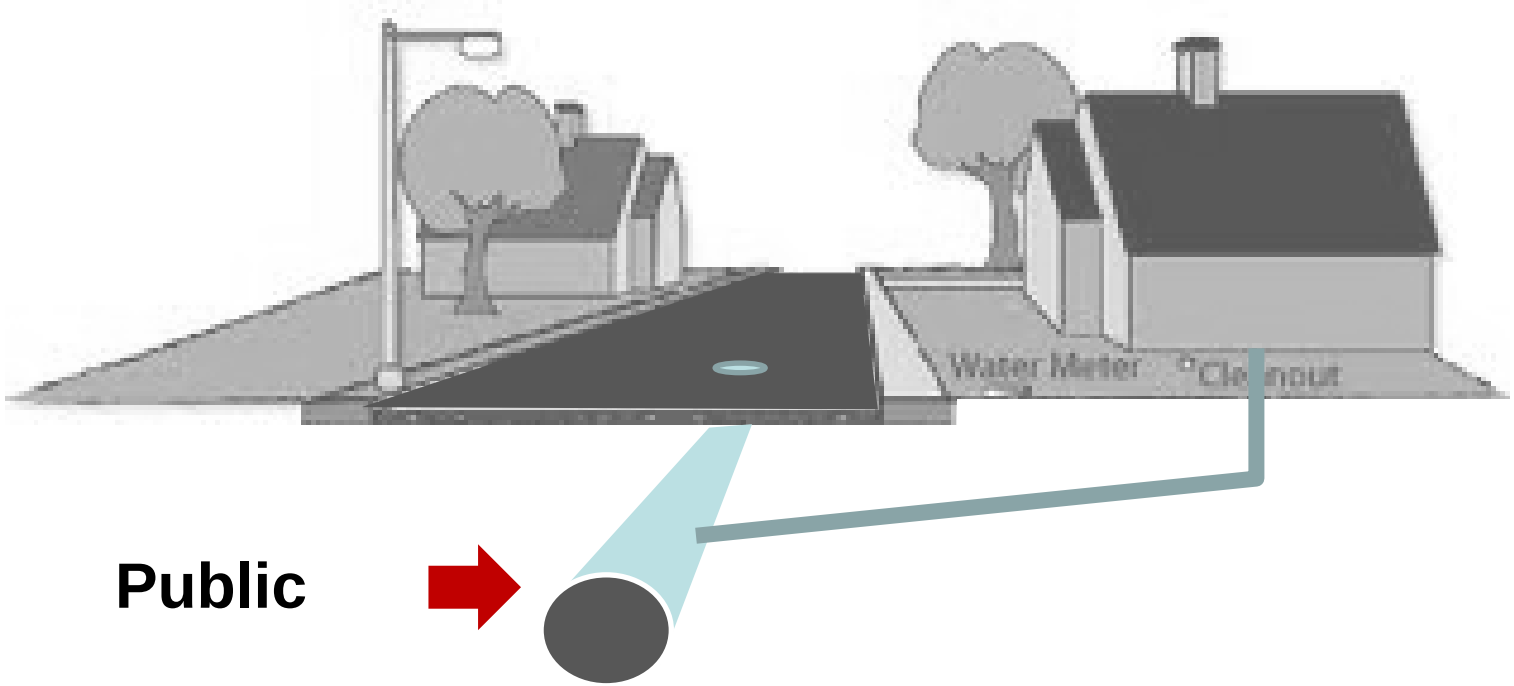


Public

Private Laterals

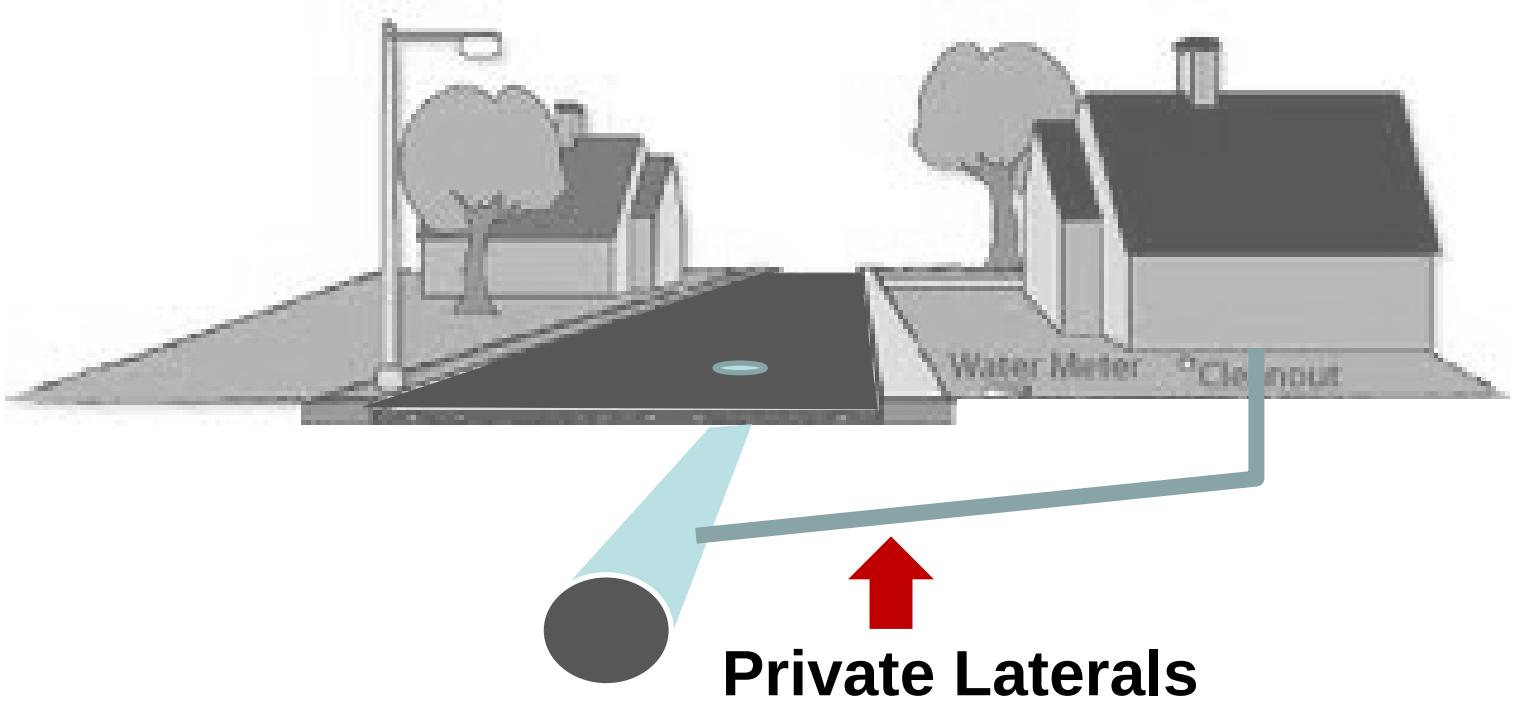
Private Connections (clear water)

Public Sewers



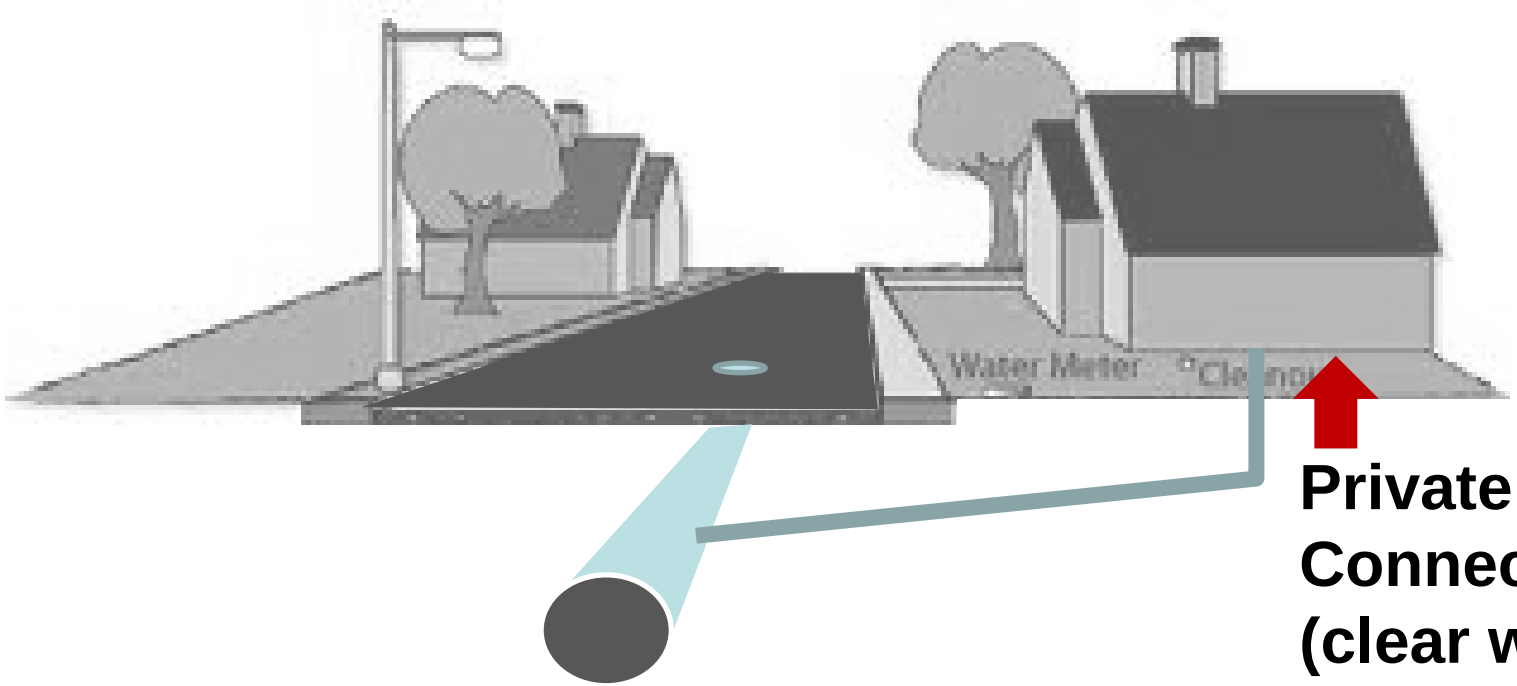
Rehabilitation of sewer mains and manholes cured-in-place-pipe (CIPP), chemical grouting and open cut construction. Eliminate any cross connections with storm sewers.

Private Laterals



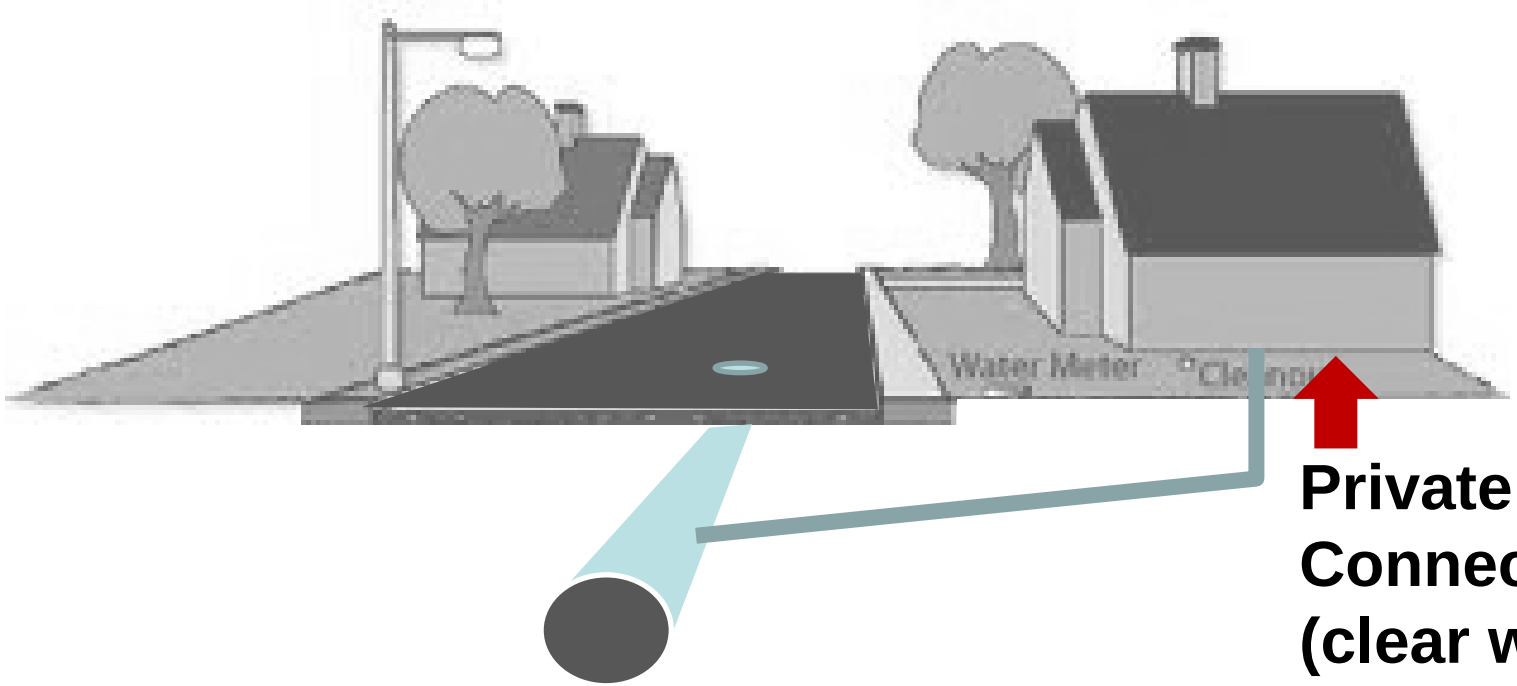
Rehabilitation of private line that carries sewage from building to the public sewer, using CIPP, pipe bursting and open cut construction.

Private Connections



1. Disconnect sump pumps connected to the sanitary sewer, construct dedicated sump pump collector lines.
2. Disconnect foundation drains and/or construct sewage ejector systems to reduce basement backups.

Private Connections



3. Disconnect downspouts & drains connected to the sanitary sewer, extend storm sewers where possible and construct residential rain gardens to reduce runoff.
4. Distribute rain barrels to each residence to capture downspouts & reduce stormwater runoff.

PRELIMINARY ALTERNATIVES

The preferred alternative will likely be a combination of the aforementioned alternatives, which will be refined & optimized based on the upfront field work, detailed collection system modeling and cooperation from the residents.

I&I Removal Experience

WHAT OTHER COMMUNITIES ARE DOING

WHAT OTHER COMMUNITIES ARE DOING

City / Sanitary District (1)	Lateral Rehabili-tation	Length of Lateral	Clear Water Removal	Backup Prevention /Sewer Ejector	Resident Participation
Downers Grove S.D., IL	Pay all eligible costs	Entire length	Pay all eligible costs (2)	Up to $3,000 or 50% of cost	Voluntary
Urbana, IL	Up to $5,000	In ROW only	No	Up to $3,750 or 75% of cost	Voluntary
St. Louis MSD	Only Low Income	Repair or replace pipe	Pays all costs for all residents (exterior only) (3)	N/A	Mandatory by Ordinance (still pursuing voluntary compliance)

(1) All entities addressing public sewer defects.

(2) Not eligible: sump pumps, downspouts & roof drains

(3) Not pursuing sump connections, but feel they have right to enter residences based on ordinance

WHAT OTHER COMMUNITIES ARE DOING

City / Sanitary District (1)	Lateral Rehabili-tation	Length of Lateral	Clear Water Removal	Backup Prevention/ Sewer Ejector	Resident Participation
Johnson County (KS) Wastewater	Yes, paid by County	Entire length	All sources paid for	All costs paid for	Voluntary
Milwaukee MSD	Yes, paid by MSD	Entire length	All sources paid for	No	Voluntary
Hampton Roads S.D., VA	Yes, paid by S.D.	Entire length	No	No	Voluntary
Naperville, IL	Yes, paid by City	Entire length	Yes, 50/50 split	75% of costs, 100% if LMI (4)	Voluntary

(1) All entities addressing public sewer defects.

(4) Must apply & be pre-approved by city.

Program Justification

PRIVATE PROPERTY I&I REMOVAL PROGRAM

PROGRAM JUSTIFICATION

Why do this?

- Being ordered by the USEPA to take action

- Without a long-term plan to address SSOs and existing infrastructure needs, additional work at higher costs will have to be undertaken in the future

PROGRAM JUSTIFICATION

Why just the NE side of town?

- This is the area USEPA is ordering the City to address.
- Bypass pumping most prevalent in this area.
- This is one of the most prevalent areas in Springfield for reoccurring basement backups caused by I&I.

PROGRAM JUSTIFICATION

Why involve private property?

- With an equal amount of public and private sewer, addressing private property I&I will provide **greater return on investment** by reducing flow and improving residents' standard of living.

- Removing I&I benefits all sewer customers and therefore **cost of removal should be borne by all users** as a system cost.

PROGRAM JUSTIFICATION

Why involve private property?

- **Residential property values will benefit** by complying with city code and improved sewage conveyance from the house.

- If the problem of SSOs is not corrected to the satisfaction of USEPA, **additional work** will have to be undertaken and/or endure **increased regulatory pressure**.

PRIVATE PROPERTY I&I REMOVAL PROGRAM

PROGRAM	LATERAL SEWER INSPECTION *	LATERAL SEWER REPLACEMENT*	CLEAR WATER REMOVAL	OVERHEAD SEWER PROGRAM*
Existing	Not currently performed	Pay all costs in ROW, resident responsible to building	N / A	Up to 15% or $600 maximum
Proposal for Northeast Area only	Perform @ Point of Sale & during program implementation	Pay costs from main to building	Pay initial costs to disconnect downspouts, sump pumps & area drains	Pay initial costs

**Lateral & overhead sewer maintenance is the responsibility of the resident.*

PROGRAM IMPLEMENTATION NEEDS

- Educational campaign on private property I&I for residents, city council, home inspectors, realtors, media ….
- Revise ordinances to enter private property.
- Provide training to city building & zoning inspection staff, possibly adding additional staff.
- Identifying a representative pilot/trial area in the study boundary to test implementation approach.
- Prepare administrative forms, processes & techniques to access and implement private property inspections.

Participation

WHAT ROLE YOU CAN PLAY

PARTICIPATION
Public Information Meetings

#1 Introduction (this meeting)

#2 Alternatives and cost effective analysis (~February 2015)

#3 Recommended alternative and compliance plan (~April 2015)

#4 Meeting with City Council (~May 2015)

PARTICIPATION
Alternatives Analysis

- Contribute to the alternatives analysis process.
- Residents participation will help identify problem areas.
- Residents participation will help better define the solution.
- Residents participation will help better refine project costs.

PARTICIPATION
Closing Points

- If you have information regarding your sewer lateral and other connections (sump pumps, downspouts or footing drains), we would appreciate having it.
- Please complete the questionnaire and return it to the City by November 1, 2014.
- The questionnaire and handout will be posted on the City's website.
- Please pass this information on to your friends and neighbors and encourage them to participate in this process.

PARTICIPATION
Closing Points

- Please call or send your information to:

  John Higginbotham –

  Sewer Engineer

  217-789-2244

  Public.Works@Springfield.il.us

THANK YOU

QUESTIONS?

CMT
Crawford, Murphy & Tilly