

Public Information Meeting



Sump Pump Inspection Program

City of Boone, IA
August 11, 2026



Introductions



- **WHKS & Co. is a multidisciplinary Civil Engineering Firm headquartered in Mason City, Iowa, with offices in Ames, West Des Moines, Dubuque, Rochester, MN, Springfield, IL, & Fargo, ND.**
- **WHKS has assisted over 50 Iowa and Minnesota communities with sump pump I&I reduction projects.**



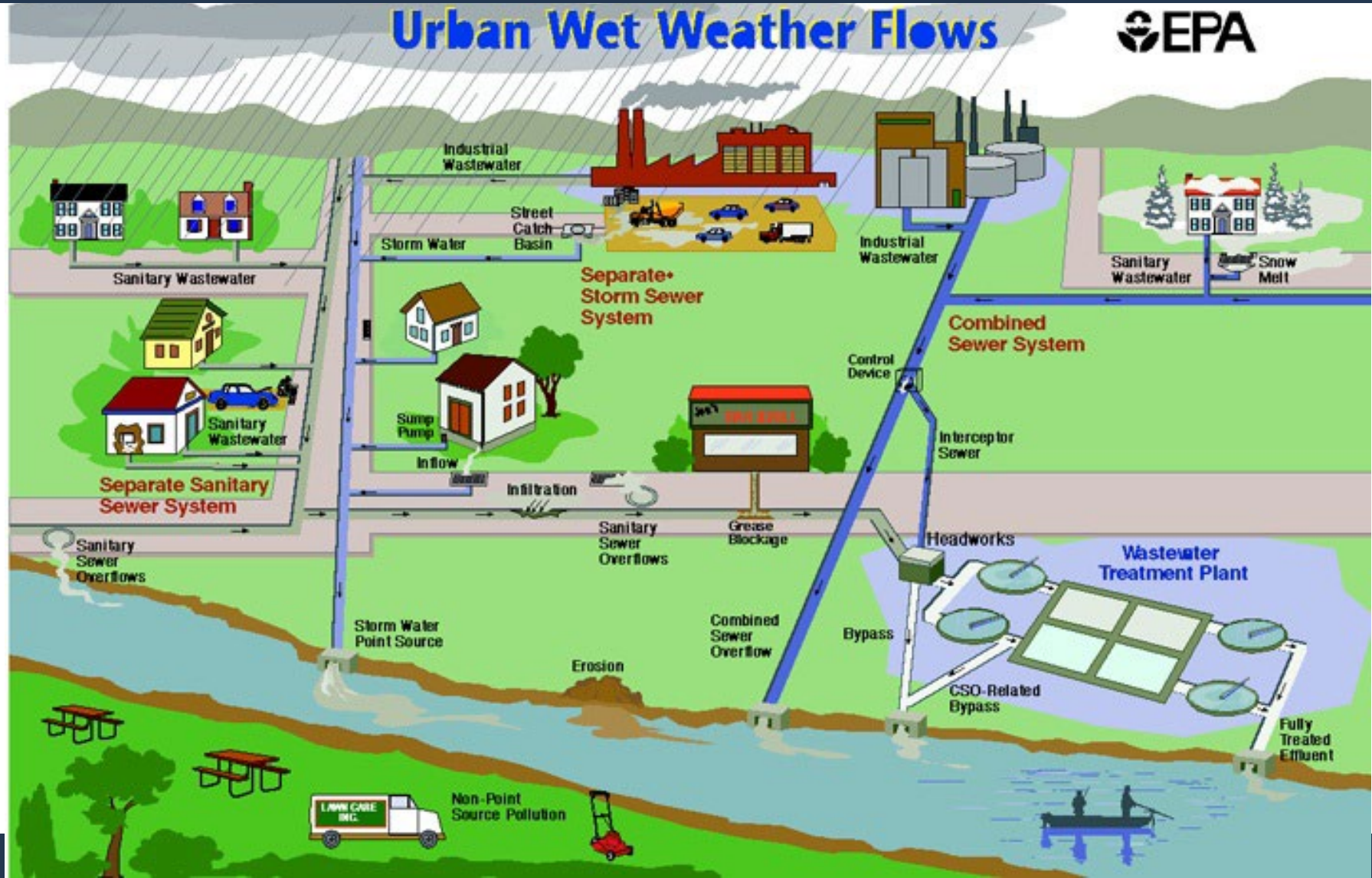
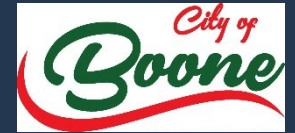
Presentation Objectives



- **Why is a sump pump program being recommended?**
- **Discuss program details**
- **Discuss next steps**

What is I/I?

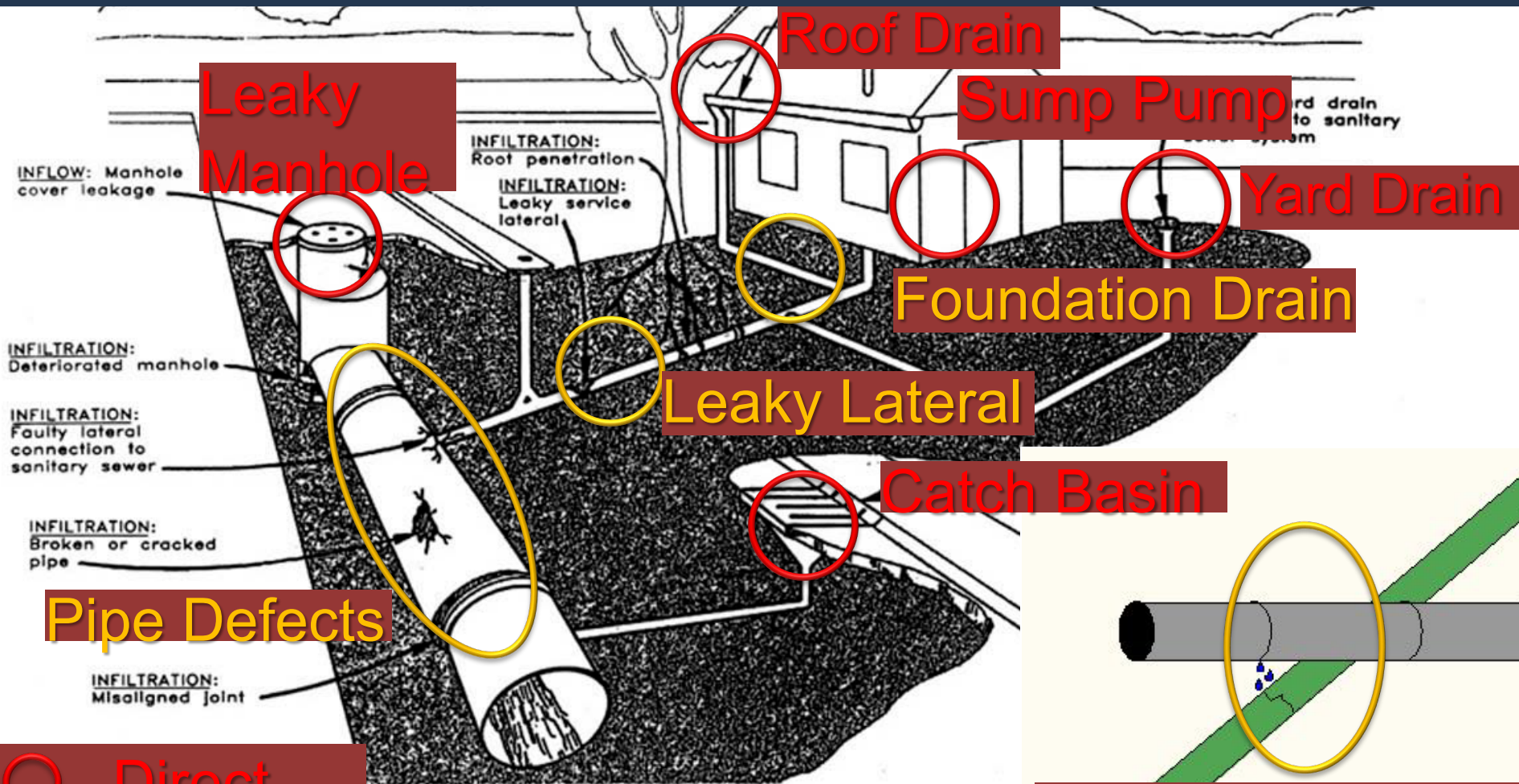
Inflow and Infiltration



Consequences of I/I



Some Sources of I/I



Indirect
Connection

SANITARY SEWER PROBLEMS

www.ci.berkeley.ca.us

○ Direct
○ Indirect

Inflow and Infiltration

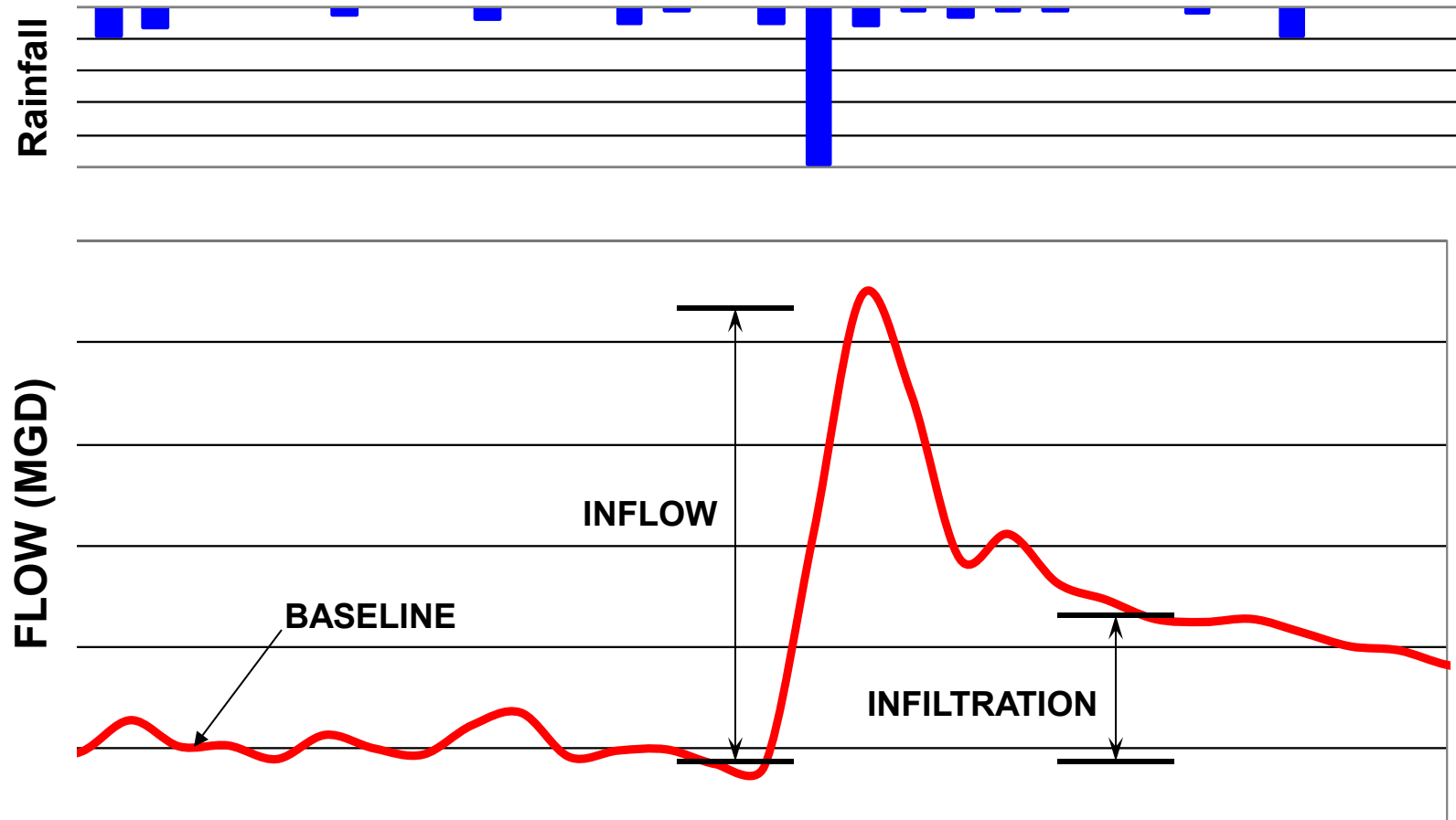


Boone System Description:

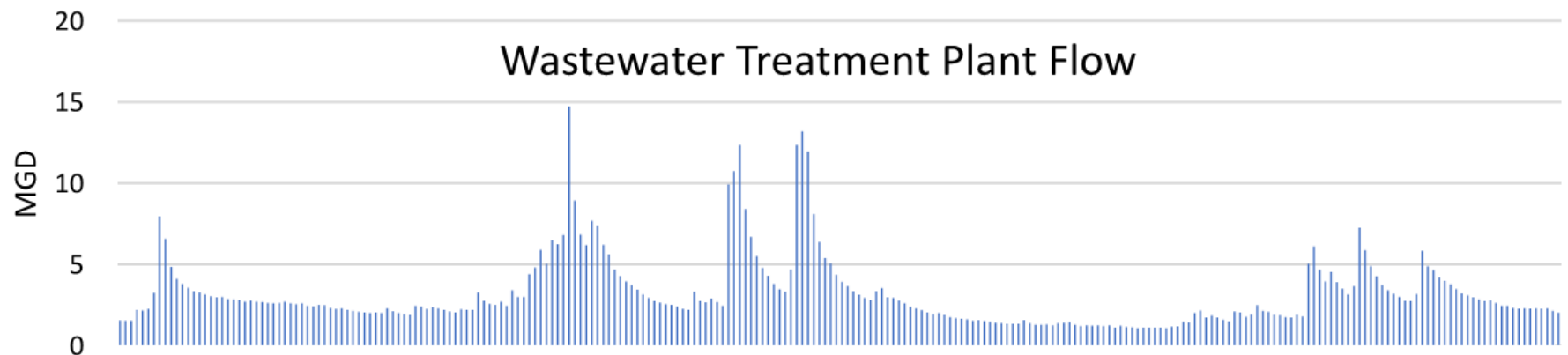
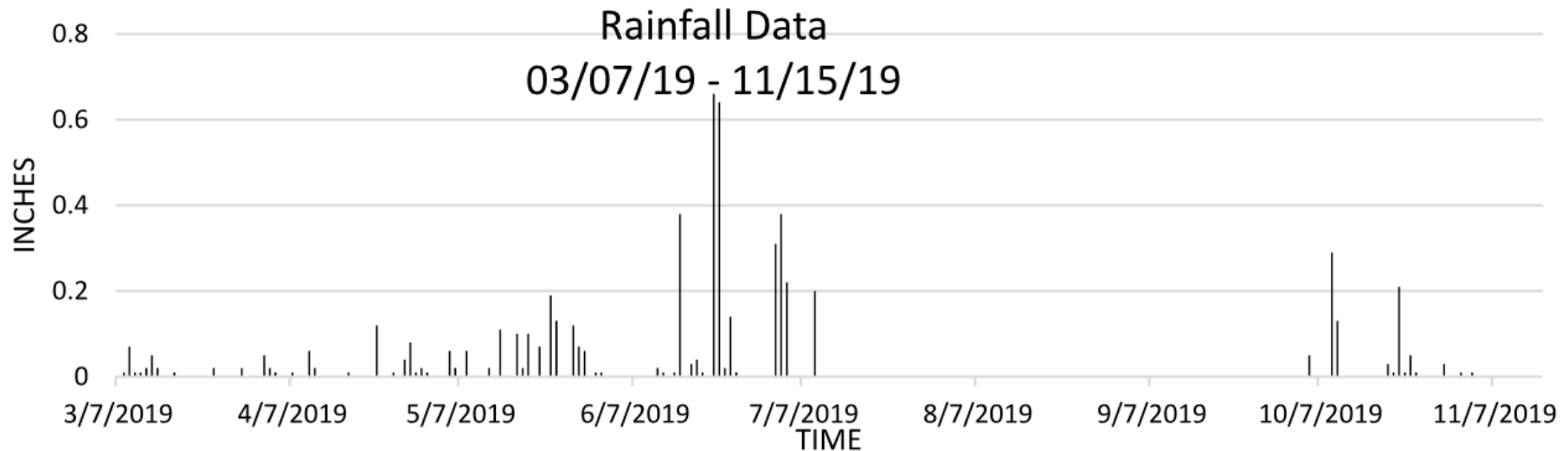
Average Dry Weather (ADW) flow (MGD): 2.1

Average Wet Weather (AWW) flow (MGD): 7.0

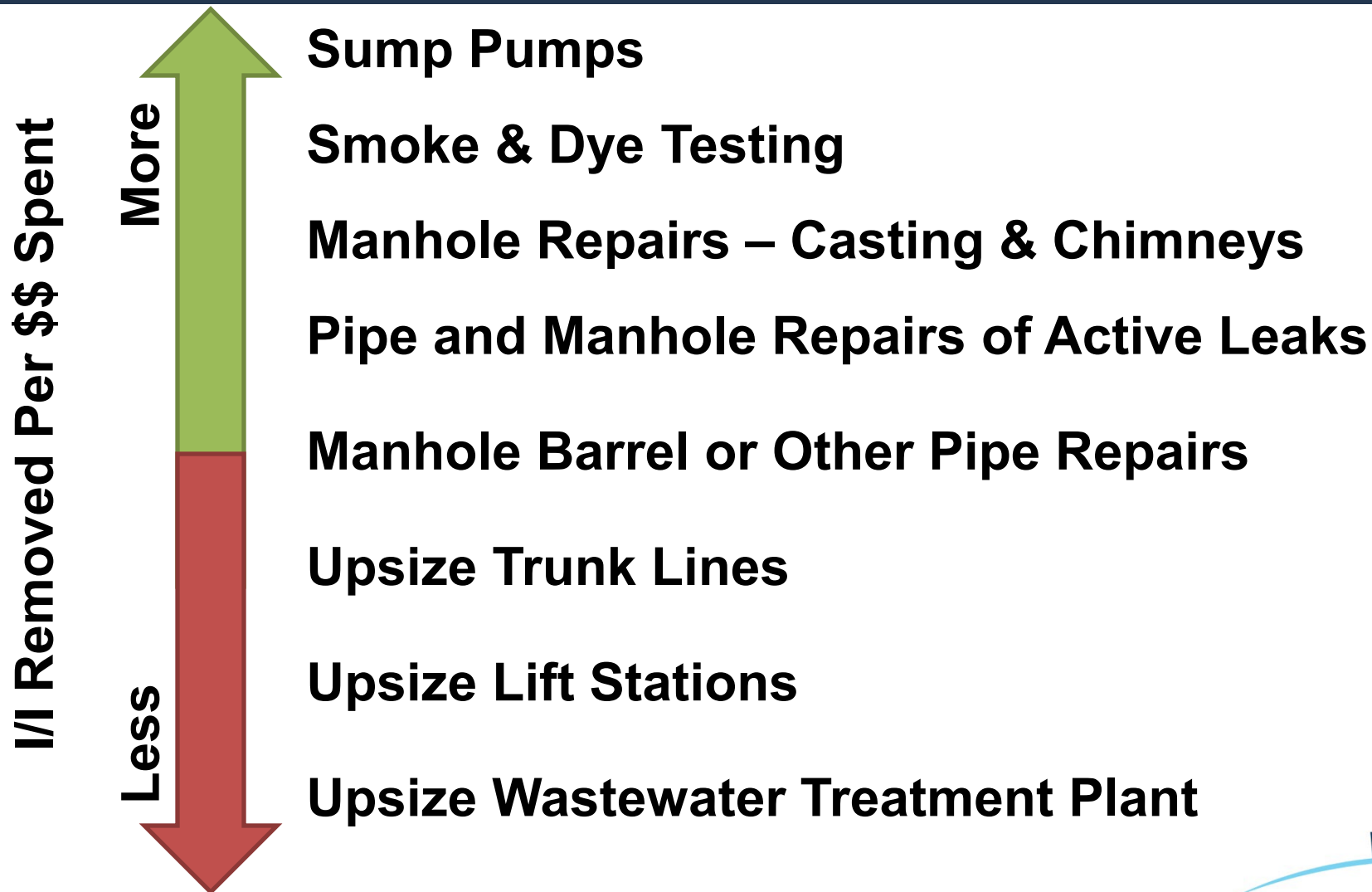
Peak Instantaneous Wet Weather (PIWW) flow (MGD): 24.6 **1170%**



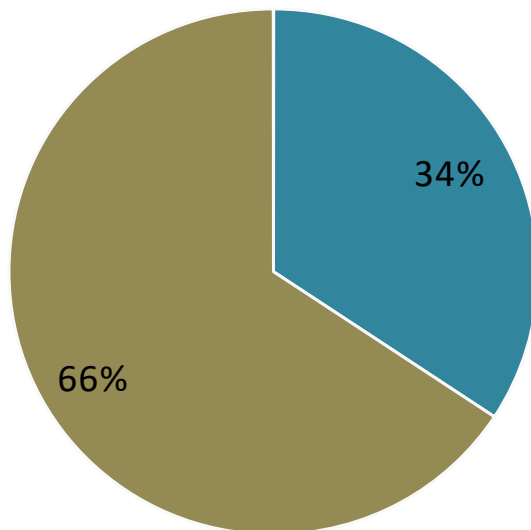
Inflow and Infiltration



Bang for your Buck

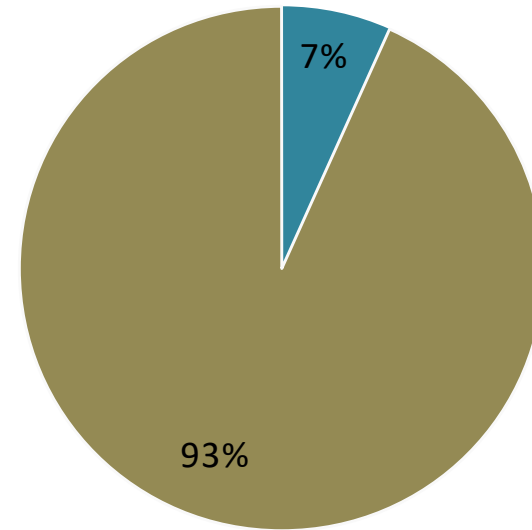


Example Flow Removal & Cost Public Sector vs. Private Sector



■ Private ■ Public

Sources of I/I



■ Private ■ Public

vs. Cost to Remove I/I

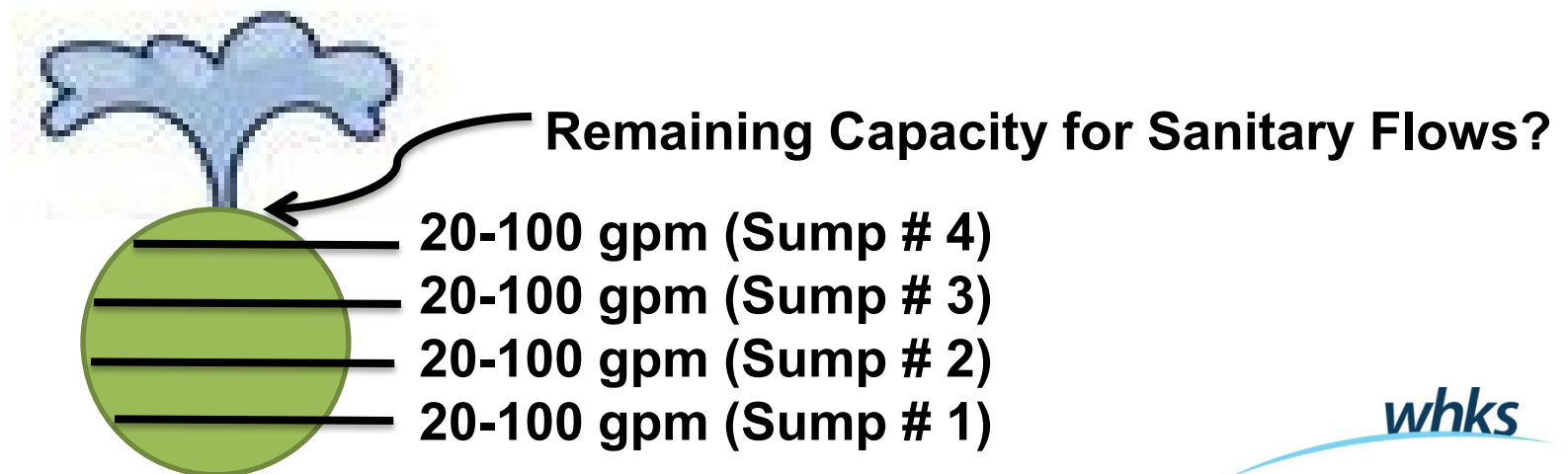
Example from Kutzky/Slatterly Pilot I/I Study, Rochester MN 2008
National averages range from 50/50 - 75/25



Why a Sump Pump Program?



- **A few sump pumps can make a big difference**
 - **Typical sump pump 20-100 gpm apiece**
 - **Typical 8" sewer capacity 350 gpm.**
 - **As few as FOUR pumps can take up the pipe capacity and cause a backup in the neighborhood.**



Why a Sump Pump Program?



Perspective:

- **5%-10% violation rate typical out of 40,000 inspections completed in fifty communities**
- **Hypothetically, if 5% rate applied to Boone's proposed 2026 inspection area:**
 - **Approx. 600 buildings x 5% = 30 violations**
 - **If each violation contributed 50 gpm, 8 hours/day = 720,000 gpd**
 - **2026 area = 10% of Average Wet Weather at WWTP (0.7 MGD / 7 MGD AWW = 10%)**

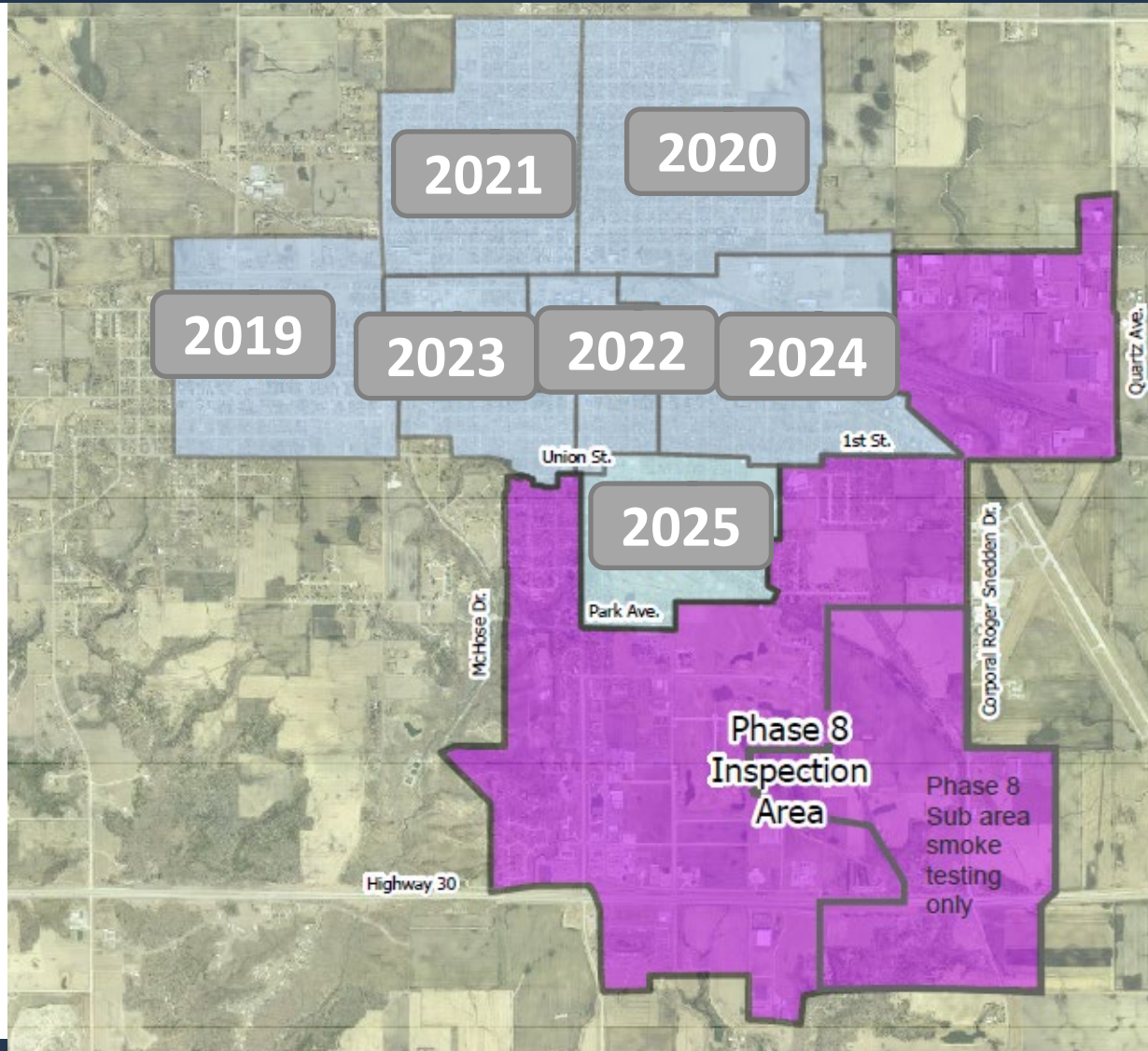
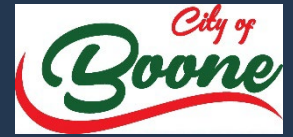
Why a Sump Pump Program?

Talking Points



- **The jump in flows during wet weather is evidence that clear water is entering the system.**
- **I/I sources are typically 50/50 Public vs Private, recent studies as high as 25/75 Public vs Private**
- **Removing Inflow/Infiltration (I/I):**
 - **Reduces Backups**
 - **Protects Health**
 - **Controls Costs**

2019-2026 Areas





Waylon Andrews
Public Works Director
And Project Manager

July 28, 2026

Property Owner: «Owner_Name_1»
Property Address: «Building_Street_1»

Re: 2026 Sump Inspection Program – Public Information Meeting

Due to high wastewater flows in the sanitary sewer system during wet weather, the City of Boone has adopted an Ordinance prohibiting the discharge of clear water into the sanitary sewer system. Clear water from any roof, surface, ground, sump pump, footing tile, swimming pool, seepage collection system (“beaver system”) or other natural precipitation is prohibited from discharging into the sanitary sewer.

The City will be conducting mandatory sump pump inspections to verify that sump pumps, roof drains, and other clear water sources are not connected to the sanitary sewer system. This year (2026) is the seventh year of the program, and it includes the southeast portion of the City. Over 3,750 homes have been inspected in other areas of the City since the program began in 2019. Other areas of the City will be inspected over the next couple years. The engineering firm, WHKS & Co., is coordinating this program and will serve as Project consultant.

Public Informational Meeting: The City will host a public informational meeting on Tuesday, August 11, 2026, at 5:00 pm at Boone City Hall 2nd floor Auditorium to discuss the scheduling of inspections, length of inspection, proper sump pump connection and other miscellaneous items. The meeting will be broadcast. Please access the broadcast via www.zoom.us, Meeting ID: XXXX and Passcode: XXXXXX.

Thank you for your attention to this matter. If you have any questions, or require any additional information, please do not hesitate to contact Angie Kolz, WHKS & Co., toll-free 866-880-8004.

Sincerely,

Waylon Andrews
Public Works Director

Letter

Scheduling



- **All inspections are scheduled, no door-to-door inspections.**
- **Scheduling is fast and easy**
- **Schedule through website or telephone**
 - BooneSump.com or toll free 1-866-880-8004
- **Residents will receive a letter when it is time for their sector to schedule inspections.**

Scheduling and Info Website

BooneSump.com



Find Appointment Availability

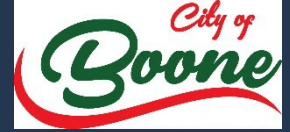


	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Available times for 06/03/2009:

- ☐ 12:00 PM - 12:15 PM
- ☐ 12:15 PM - 12:30 PM
- ☐ 12:30 PM - 12:45 PM
- ☐ 12:45 PM - 01:00 PM
- ☐ 01:00 PM - 01:15 PM
- ☐ 01:15 PM - 01:30 PM
- ☐ 01:30 PM - 01:45 PM
- ☐ 01:45 PM - 02:00 PM
- ☐ 02:00 PM - 02:15 PM
- ☐ 02:15 PM - 02:30 PM
- ☐ 02:30 PM - 02:45 PM
- ☐ 02:45 PM - 03:00 PM
- ☐ 03:00 PM - 03:15 PM
- ☐ 03:15 PM - 03:30 PM

The Inspection



- **Completed in under 15 minutes, many under 5 minutes**
- **Adult must be present**
- **Inspector looks at:**
 - **Sump pumps**
 - **Beaver drains**
 - **Roof drains**
 - **Site grading**
- **Occupant and inspector signs**
- **Notice of Violation and instructional diagrams given if needed**

Inspection Form



Inspector _____
Plumbing License # _____

City of Boone Sump Pump Inspection Report

A. Initial Inspection

1. Owner and Address:
 - a. Owner Name(s): _____
 - b. Address: _____
 - c. Occupants Name (If different): _____
 - d. Owner Address (s): (If different) _____
2. Date of Initial Inspection: _____
3. Date of construction and Building Type? Building built in year _____ (ex. 1959)
Note residential, apt., commercial, industrial: _____
4. History of backups or flooding? Note date, source, and actions taken: _____

5. Does building have:
 - a. ☐ Yes ☐ No Exterior grading sloping towards the building?
 - b. ☐ Yes ☐ No Roof drains that go into the ground?
 - c. ☐ Yes ☐ No Basement?
 - d. ☐ Yes ☐ No Seepage collection (beaver) system?
 - e. ☐ Yes ☐ No Sump pit?
6. If building has a **roof drain** that goes into the ground, which of the following apply?
 - a. ☐ It is properly constructed to discharge to open air or storm system.
 - b. ☐ It is improperly constructed to discharge into the sanitary sewer system.
 - c. ☐ Discharge location not determined.
7. If there is a **seepage collection (beaver) system**, which of the following apply?
 - a. ☐ It is properly constructed to discharge into a sump pit
 - b. ☐ It is improperly constructed to discharge into the sanitary sewer system.
 - c. ☐ Discharge location not determined.
8. If there is a **sump pit**, which of the following apply?
 - a. ☐ Pump is properly plumbed to discharge outside the basement through rigid piping.
 - b. ☐ Pump is improperly plumbed to discharge into the sanitary sewer system.
 - c. ☐ Pump has the capability of discharging into the sanitary sewer system (ex. flex hose).
 - d. ☐ There is a pit with no pump. Plumbing is checked as (a) (b) or (c) if present.
 - e. ☐ Discharge location not determined.
9. Other comments (exterior drains, uncapped cleanouts, inactive sump pit, etc): _____

10. Photos taken of Interior Sumps and Collection System, and Building Exterior? ☐ Yes ☐ No
11. If 6b, 7b, 8b or 8c was checked, a Violation Notice was given to the Occupant or Owner directing them to correct the violation by (date): _____

PASS _____

FAIL _____

City Follow-Up _____

Property Address _____ Page 2 of 2



DIAGRAM: roof drains into ground, exterior drains, improper grading, sump pits and pumps, sump pump discharges, beaver systems, sanitary grinder pumps, etc

B. Subsequent Inspection

1. Date of subsequent inspection: _____
2. Inspection conducted by _____
3. Does the building now comply with the applicable Ordinance for the City of Boone?
☐ Yes ☐ No

I hereby verify that the City Representative has inspected the above-described sump pump and the information set forth above is true and correct to the best of my knowledge.

Occupant/Owner _____

Date _____

I hereby verify that the City Representative has inspected the above-described sump pump and the information set forth above is true and correct to the best of my knowledge.

City Representative
Licensed Plumbers: sign with license #.

Date _____

Inspector Identification



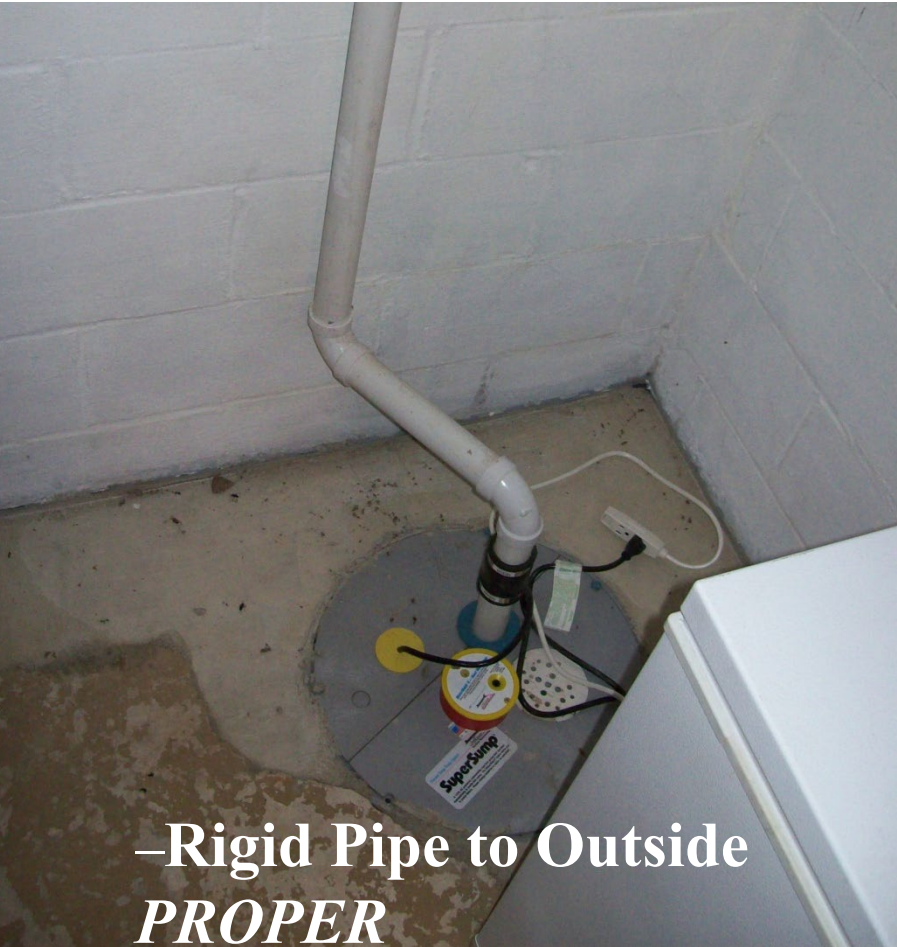
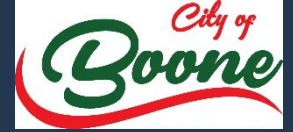
BOONE - I/I PROGRAM INSPECTOR



- All inspections are scheduled
- No door-to-door
- WHKS logos on
 - Badges
 - Clothing
 - Vehicles



Installation Examples: Sump Pumps

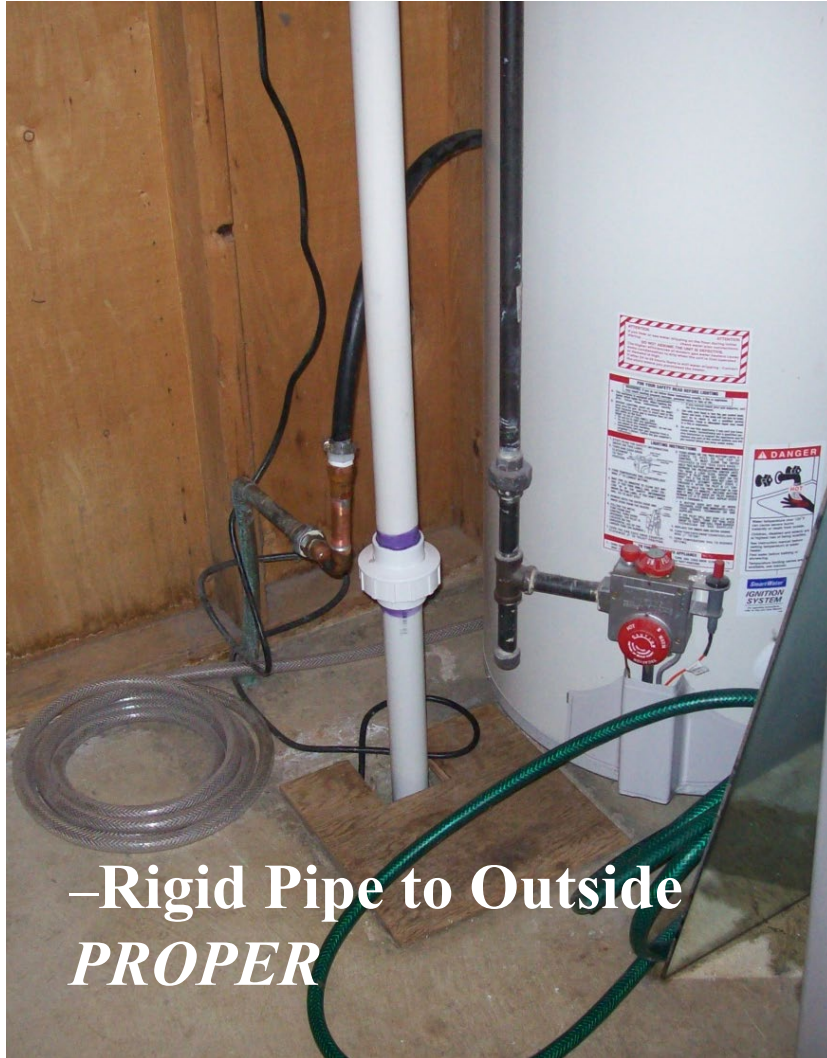
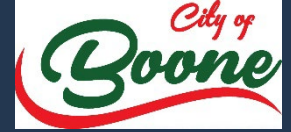


–Rigid Pipe to Outside
PROPER

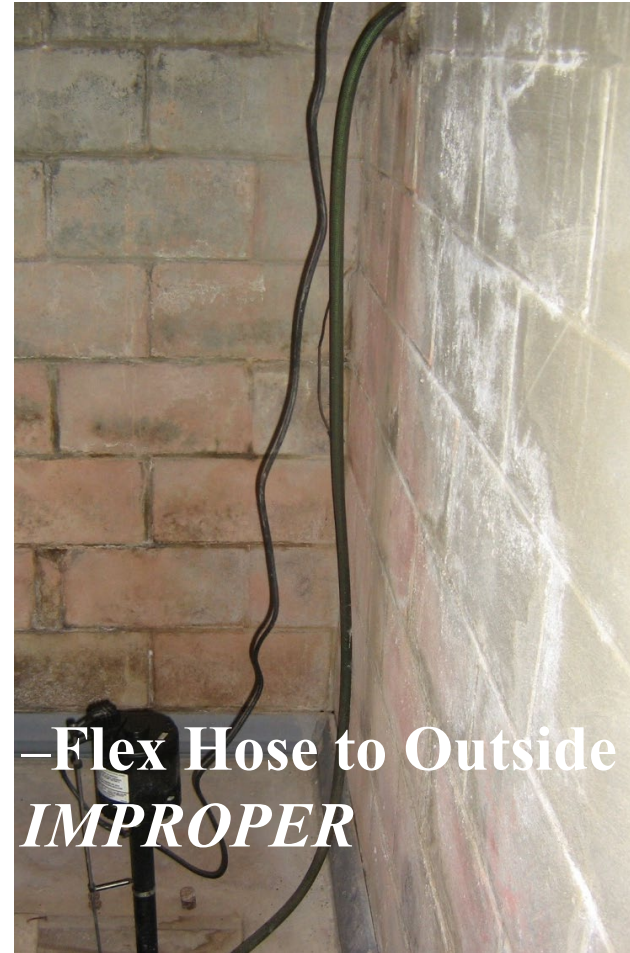


–Flex Hose to Drain
IMPROPER

Installation Examples: Sump Pumps



–Rigid Pipe to Outside
PROPER



–Flex Hose to Outside
IMPROPER

Installation Examples: Sump Pumps

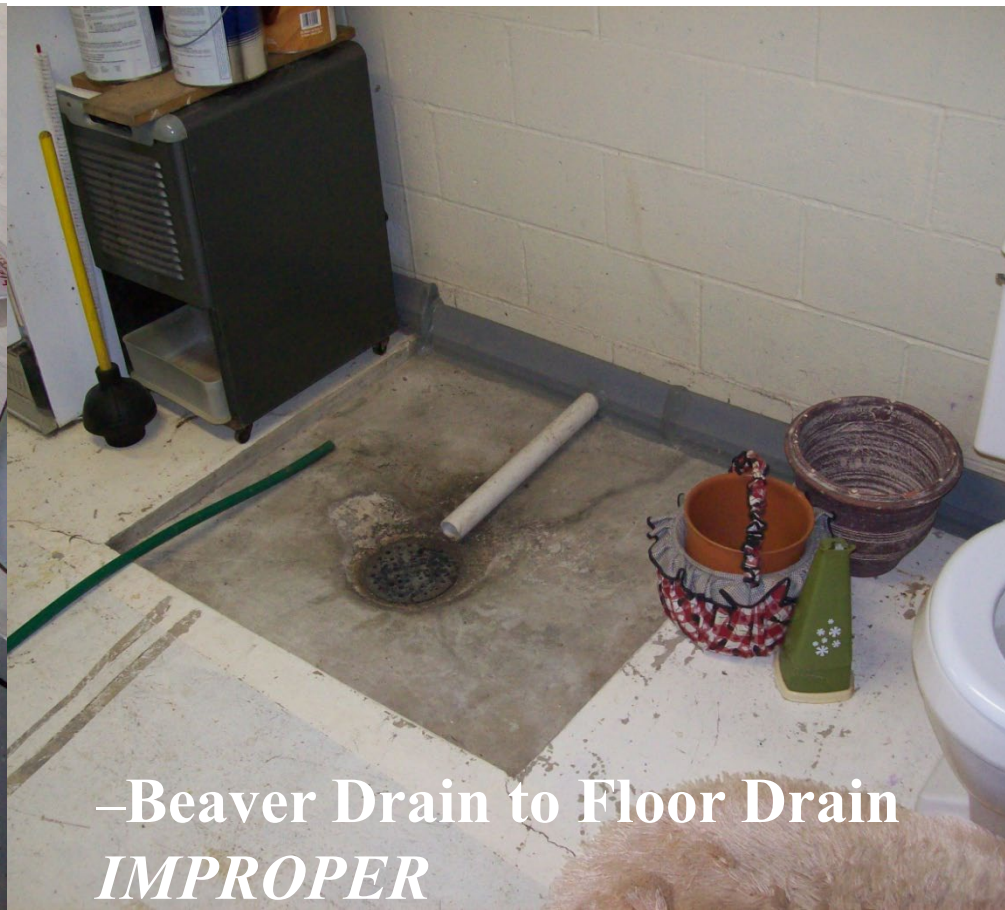


**Flex Hose to
Sanitary
via stool**

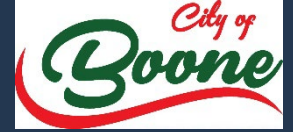
No.

whks

Installation Examples: Beaver Drains



Installation Examples: Beaver Drain / Tile



Installation Examples: Tile Pit

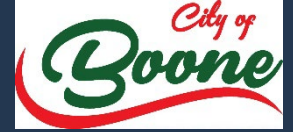


Photo courtesy of WCF Courier

Tile Pit into Floor Drain

“Running Trap”

IMPROPER

Plugged + Pump Installed

PROPER



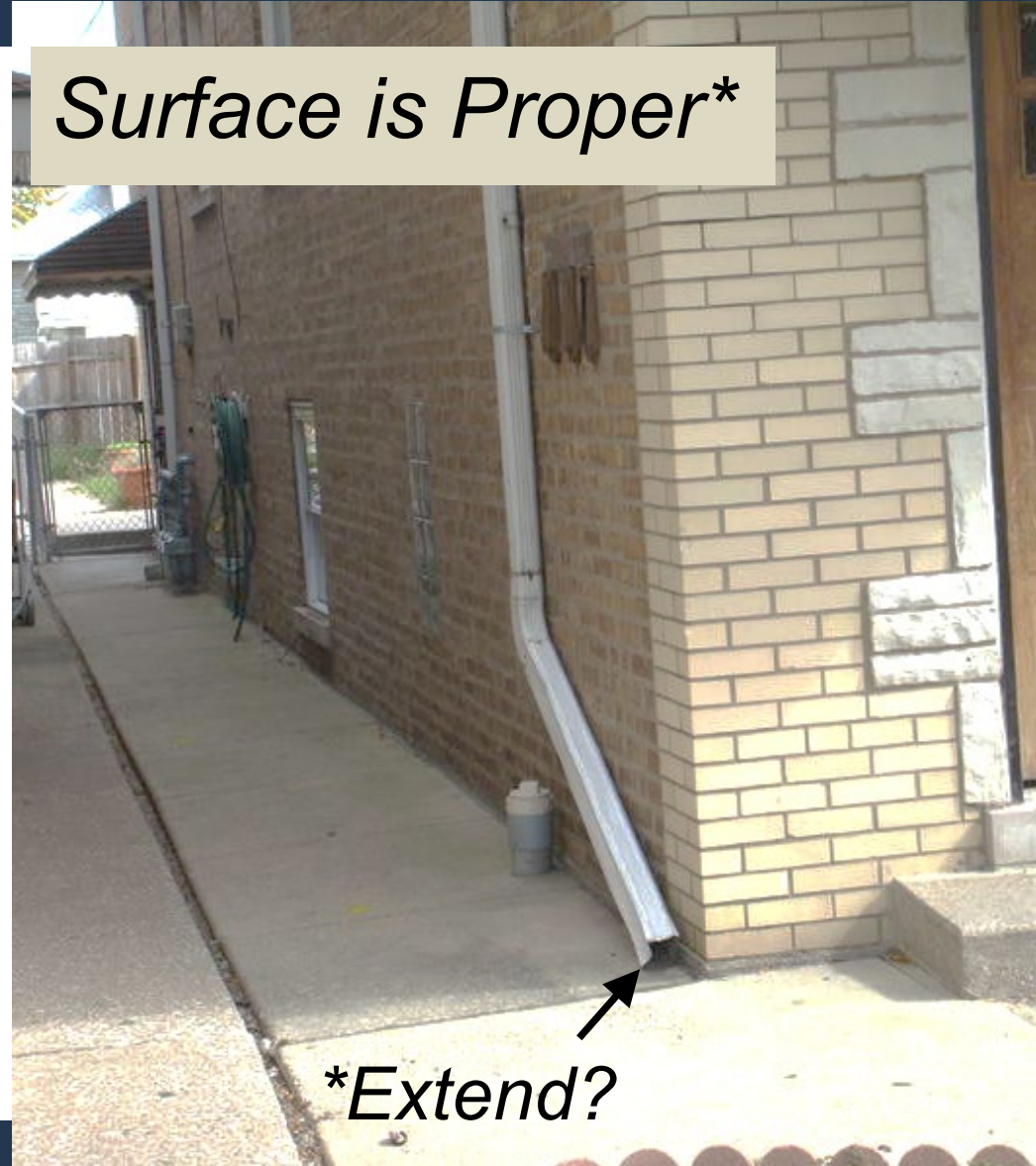
Roof Drains



*Underground and
ties into Sanitary,
Improper*

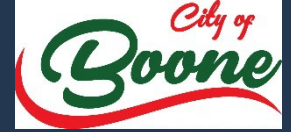


*Surface is Proper**



**Extend?*

Discharge Options



Flexible Pipe



Discharge Options



- **Curb outlet**

Discharge Options

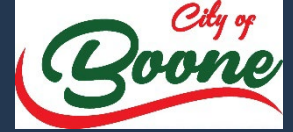


- **Air Gap & underground pipe**



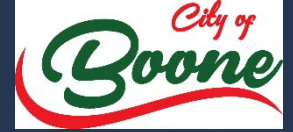
whks

Discharge Options



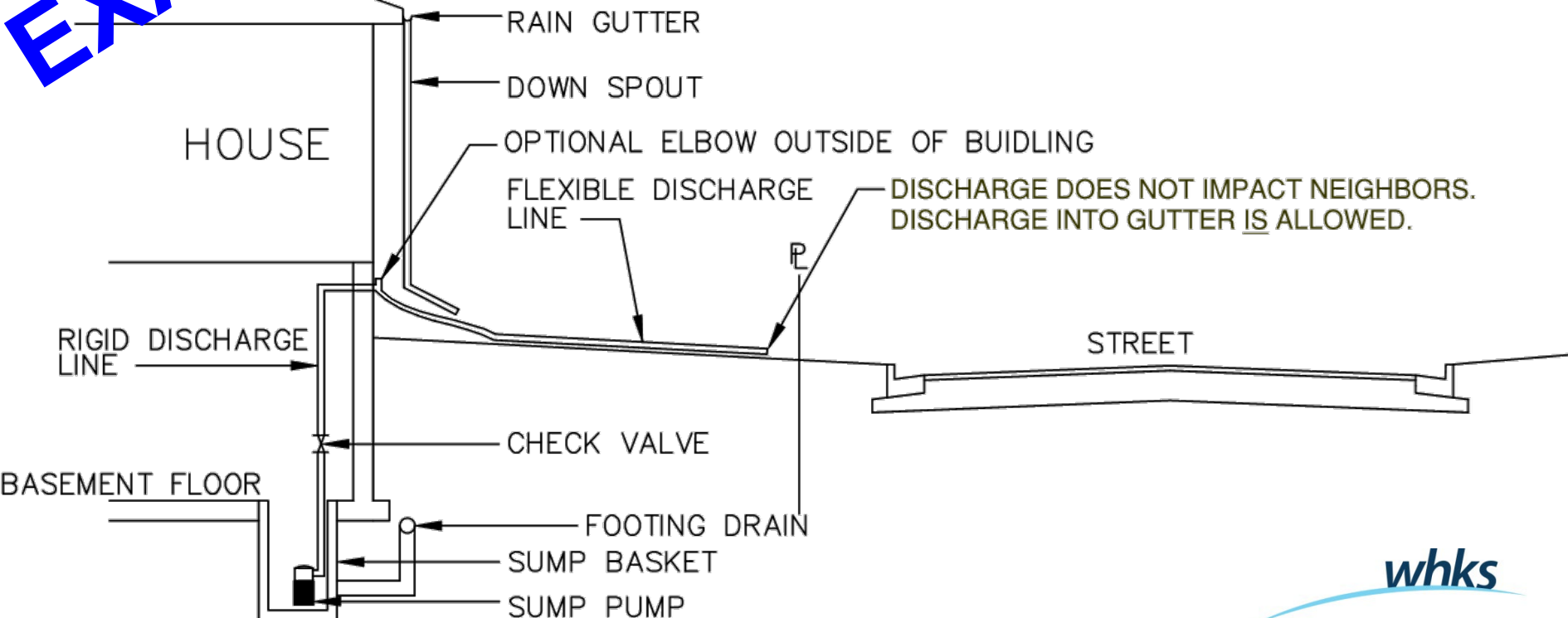
Legal, but not a good idea

Sump Pump Diagrams

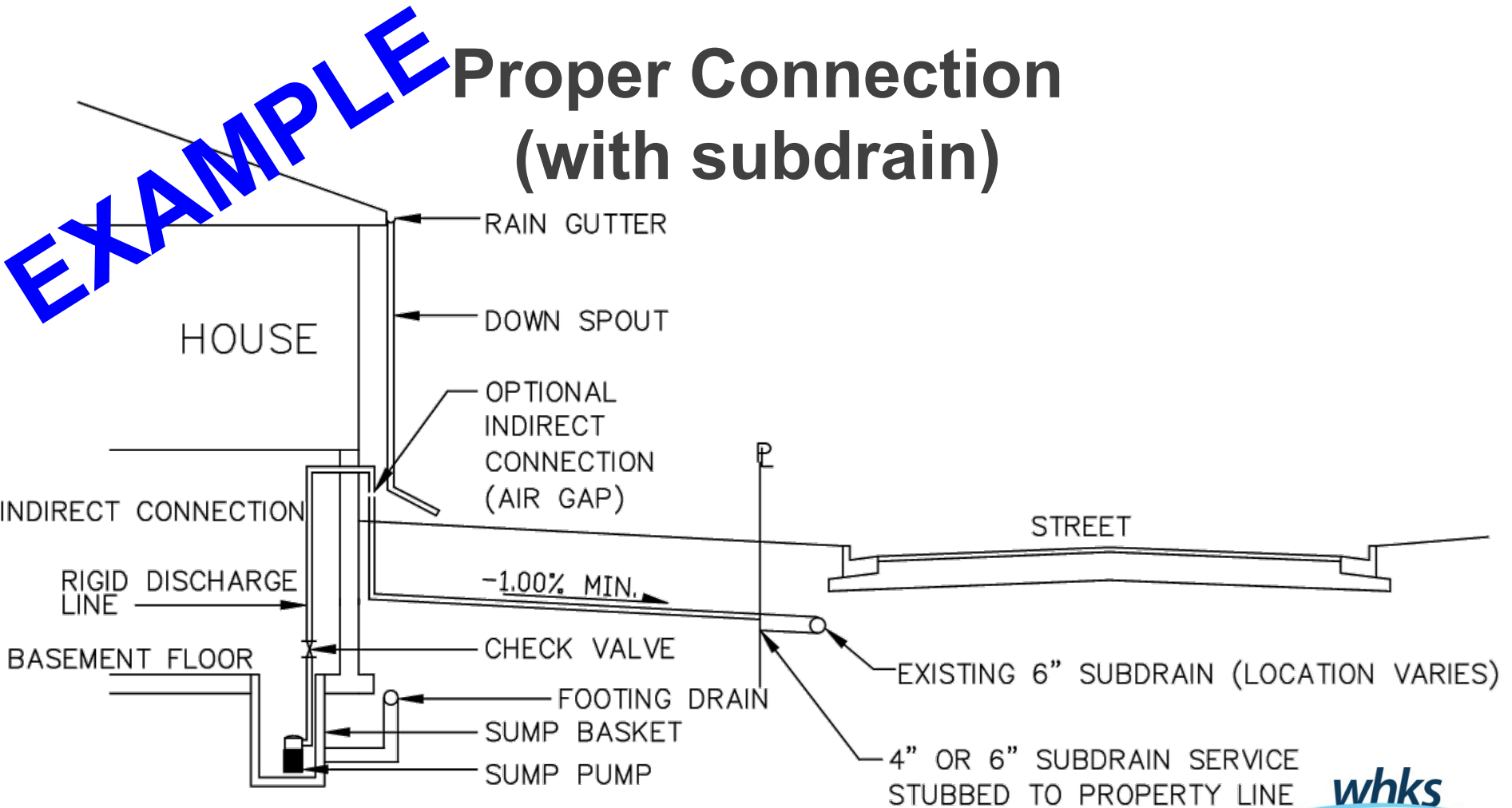
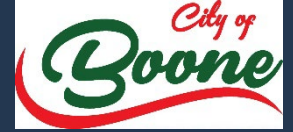


EXAMPLE

Proper Connection



Sump Pump Diagrams



whks

Inspection Timeline



Item	Date
2026 Public Meeting	August 11, 2026
Receive Letters and Start Inspection	July-October 2026

Long Range I/I Plan: Field Investigations

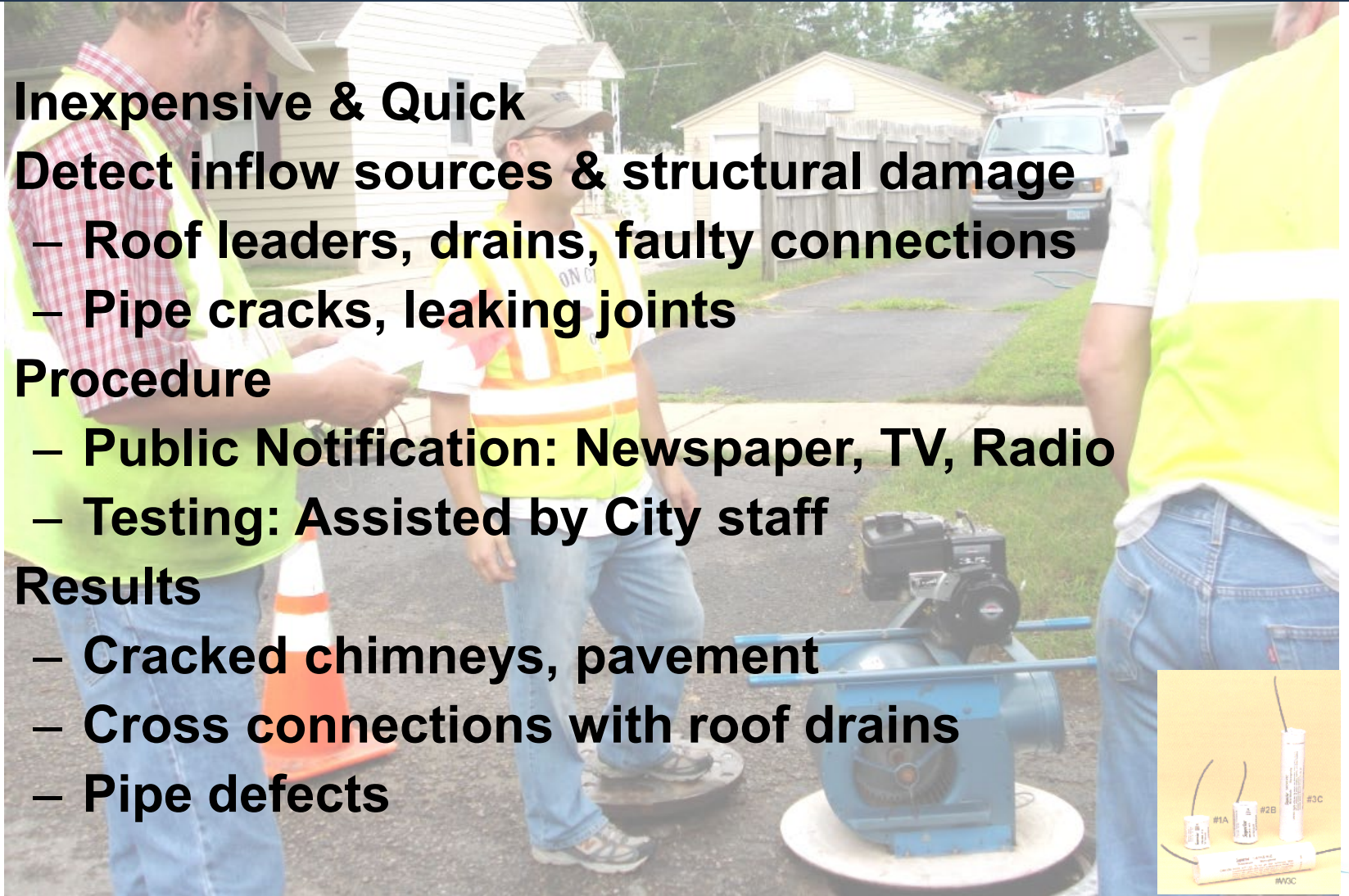


- **Private:**
 - **Building Inspections**
- **Public:**
 - **Smoke and Dye Testing**
 - **Manhole Inspections**

Smoke Testing



- **Inexpensive & Quick**
- **Detect inflow sources & structural damage**
 - Roof leaders, drains, faulty connections
 - Pipe cracks, leaking joints
- **Procedure**
 - Public Notification: Newspaper, TV, Radio
 - Testing: Assisted by City staff
- **Results**
 - Cracked chimneys, pavement
 - Cross connections with roof drains
 - Pipe defects



Manhole Inspection



- **I/I defects**
 - **Cover, frame seal, chimney, barrel**
- **Confirmed/updated system configuration**
 - **Location, depth, pipe size**



Public Info



Boone IA Sump Pump Inspection

BooneSump.com

Boone Sump Inspection

home program information FAQs notices inspection map contact

SUMP PUMP INSPECTION PROGRAM

Updated 4/09/2019

Received a Letter? [Click Here](#) to Schedule an Inspection

Have a Question? Please call toll free 844-630-0878.

Why is this important?

Like many cities in Iowa, Boone faces a challenge with its sanitary sewer system. During significant rain events, the sewer system can be overloaded. When it rains, flows can jump up to 20 times the normal amount. Overloaded sewers lead to basement backups and overflows of untreated sewage.

The City is being urged by the EPA and Iowa DNR to reduce overflows. The City has already invested millions of dollars in improving the public sewer. When it rains, flows can jump up to 20 times the normal amount. Overloaded sewers lead to basement backups and overflows of untreated sewage.

Boone News

Students continue to strive for Goepfinger...

Second week of May instated as Be Kind to Animals...

Ames Chamber Artists features Boone Area Singers

United Community Midwest Childrens Choir Selection

United Community Honor Choir selections

City Council Mandates Sump Pump Inspections

AT AMES FORD LINCOLN WE PROMISE YOU ...

You can't buy the wrong car with our 7-Day Like it or Return it Policy

By Logan Kahler Managing Editor | kahler@newsrepublican.com

Posted Feb 10, 2019 at 12:01 AM

After attempting to receive voluntary approval compliance from residents to remove sump pumps from sanitary sewer lines, the Boone City Council met Monday evening to begin taking steps to mandate a program that will involve inspections of sump pumps and the location in which about discharge sewage.

The Cedars Assisted Living in Madrid

Any family who is concerned about finding a place for their older parents, The Cedars is the place they should look at.

MADRID HOME COMMUNITIES

Addressing the Needs of Citizens Within the Corporate Limits of Boone

Your Government Boone

Sump Pump Inspection Program Coming Soon

The City of Boone has revised Ordinance 96.07 to prohibit all storm water including sump pumps from being connected to the sanitary sewer throughout the entire year. There will no longer be any seasonal sump pump connections allowed to the sanitary sewer. Any home or business that has a system that allows the switching of sump pump discharge to the sanitary sewer system will be required to remove it. The new ordinance will be implemented over several years throughout the City by specific targeted areas.

The City will be implementing a mandatory sump pump inspection program beginning in 2019.

Why is this important?

Like many cities in Iowa, Boone faces a challenge with its sanitary sewer system. During significant rain events, the sewer system can be overloaded. When it rains, flows can jump up to 20 times the normal amount. Overloaded sewers lead to basement backups and overflows of untreated sewage to Honey Creek and the Des Moines River.

The City is being urged by the EPA and Iowa DNR to reduce overflows. The City has already invested millions of dollars in improving the public sewer. When it rains, flows can jump up to 20 times the normal amount. Overloaded sewers lead to basement backups and overflows of untreated sewage.

Excess clear water enters the system from cracks in sewer mains and manholes along with private sources such as sump pumps, basement seepage collection system and roof drains. Removing private sources of clear water is essential to solving the problem.

A sump pump removes ground water from around a home's foundation or storm sewer street intake if available. The improper place for it to discharge is into the sanitary sewer system. A single sump pump discharges between 20-100 gallons per minute (gpm). A typical residential sewer main that has a typical capacity of 400 gpm.

Starting in 2019 to verify that clear water sump pump connections will need access to your property and basement to observe exterior grading. A typical inspection is completed in less than 15 minutes. There will be no charge for the inspection.

Area of approximately 600 homes south of the Union Pacific tracks from State Street to the upcoming work. Please visit the City website at www.boonegov.com

WWW.BOONEGOV.COM FOR MORE INFORMATION

Addressing the Needs of Citizens Within the Corporate Limits of Boone

Your Government Boone

Member Author Talk with Aaron Putze and special guest, Chuck Long

Friday, November 27 at 6:00 p.m.

in Public Library, Second floor Meeting Room

and Chuck will be sharing stories from Aaron's book, Chuck Long: Destined for Business, an autobiography of Chuck's life.

hardbound (\$30) and softbound (\$20) copies of the book will be available.

will join in photos and sign one additional item for each book purchased!

an Theater, 1944-1945

30 p.m.

second floor Meeting Room

er of The Houndsborth City Reenactment Company

and fight on the front lines in new authentic military items!

EPL is becoming a Scholastic Literacy Partner!

Starting in November, children who attend any storytime at Ericson Public Library will receive a punch card. After attending ten storytimes, each child will get to select a free book for their own home library!

This program is made possible through a generous donation from the Friends of Ericson Public Library.

Sump Pump Inspection Program Coming Soon

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The City is being urged by the EPA and Iowa DNR to reduce overflows. The City has already invested millions of dollars in improving the public sewer. When it rains, flows can jump up to 20 times the normal amount. Overloaded sewers lead to basement backups and overflows of untreated sewage.

However it isn't enough to solve the problem. It is possible that the DNR could require us to install an equalization basin at the wastewater treatment plant unless the excess clear water is removed from the system from cracks in sewer mains and manholes along with private sources such as sump pumps, basement seepage collection system and roof drains. Removing private sources of clear water is essential to solving the problem.

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WWW.BOONEGOV.COM FOR MORE INFORMATION

UPCOMING EVENTS

November 15th OPEN BURNING ENDS in the city of Boone

Santa Express November 23, 24, 25, 30 & December 1, 2, 7, 8, 9, 14, 15, 16, www.bvrrr.com

November 29th Downtown Holiday Lighted Parade

November 30th "Shop with a Cop" County Law Enforcement

December 13th "Shop with a Cop" County Law Enforcement



Questions?



Contact and Project Information



- Contact/ Project information
 - Angie Kolz, PE

akolz@whks.com

515-663-9997

