

# City of Deer Lodge Infiltration & Inflow Investigation

March 2, 2019

City of Deer Lodge

Stahly Engineering & Associates



An Employee-Owned Company

# Infiltration & Inflow

- ▶ The Infiltration & Inflow (I&I) investigation and study is used to locate possible deficiencies in the City's wastewater collection system that may allow storm or ground water to enter the system. The results will help prioritize and plan wastewater maintenance and rehabilitation projects and is being done as part of a preventative maintenance program so that any issues can be proactively addressed.
- ▶ The negative impacts of I&I are additional flows and dilution of sewer at the treatment plant. I&I takes up capacity in the collection system and capacity at the treatment plant. Treating clean water costs the City just as much as treating sewer.



An Employee-Owned Company

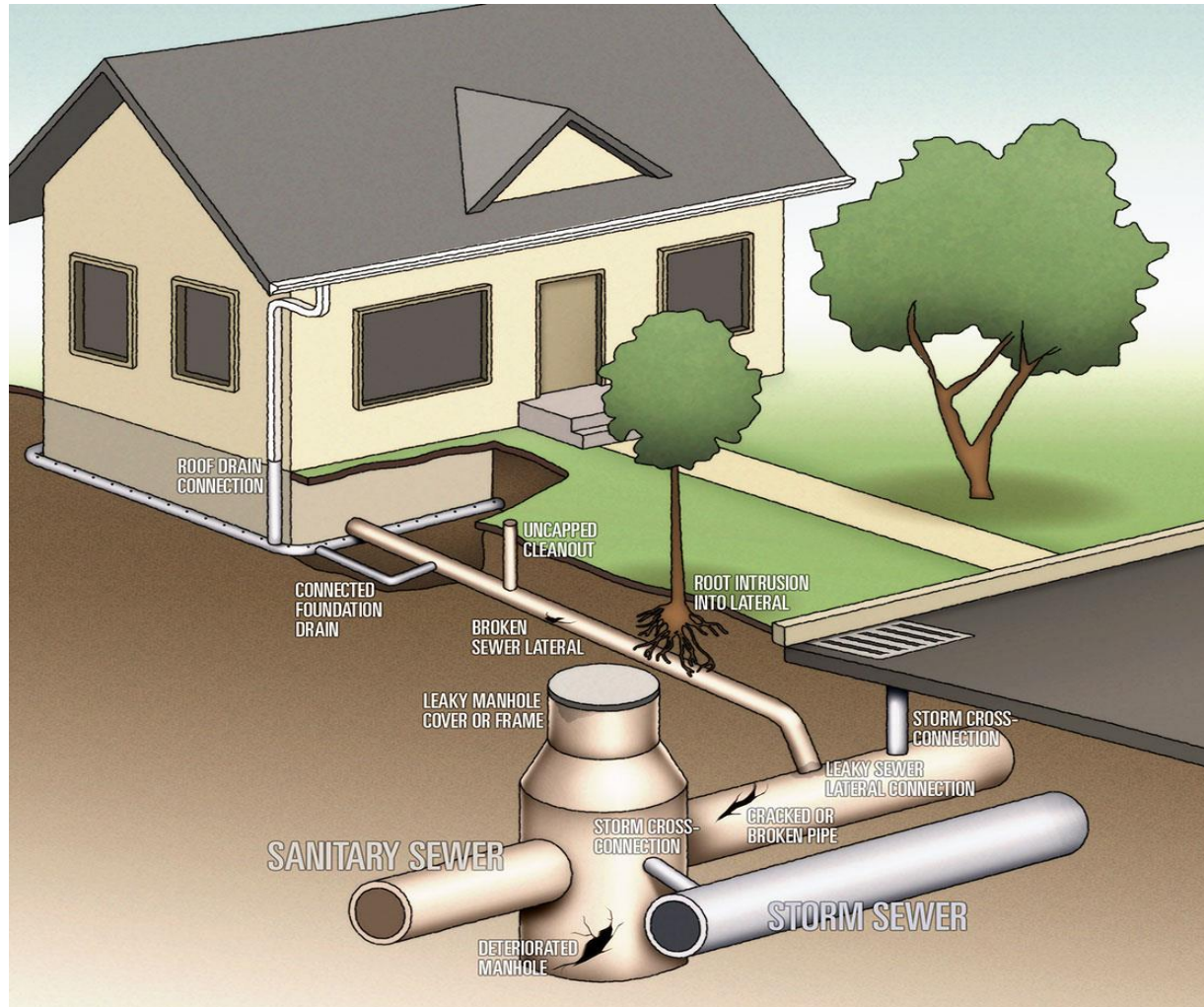
# Infiltration & Inflow

- ▶ What is infiltration & inflow? And what are the causes?
  - ▶ Infiltration is when groundwater enters the sanitary sewer system through faulty pipe or manholes. These pipes and manholes might have cracks or leaks that let water in. This can happen because of age, design, installation or maintenance issues or even tree root intrusion
  - ▶ Inflow happens when groundwater or stormwater seep into the sanitary sewer system private or public defects in the collection system. Leaky or vented manhole covers can contribute to inflow. Residential homes or businesses can contribute to the issue in a few ways:
    - ▶ Downspouts/Roof Drains
    - ▶ Sump Pumps
    - ▶ Stairwells



An Employee-Owned Company

# Infiltration & Inflow



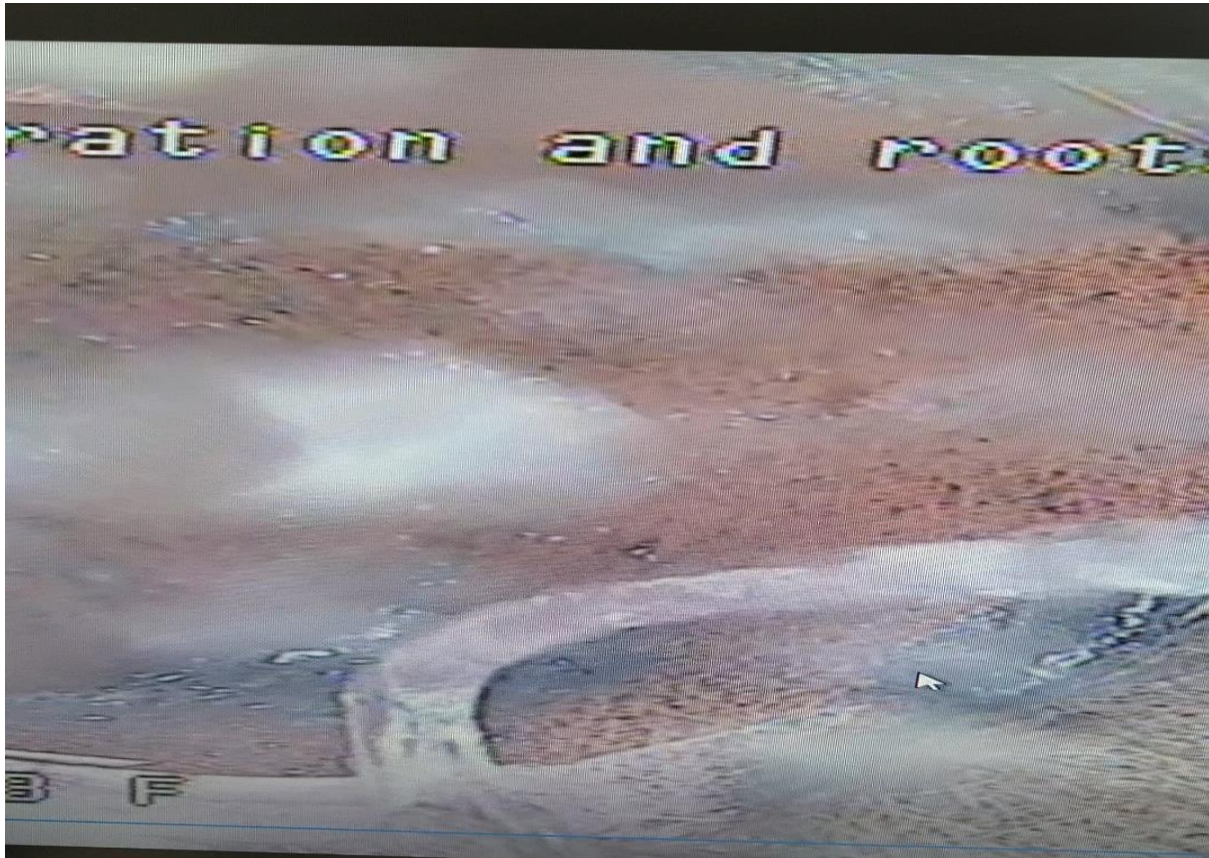
An Employee-Owned Company

# Infiltration & Inflow Service Connection in California Infiltration



An Employee-Owned Company

# Infiltration & Inflow Service Connection in California Infiltration



An Employee-Owned Company

# Infiltration & Inflow Manhole West of Clark Fork River



An Employee-Owned Company

# Infiltration & Inflow

- ▶ There are several ways to fix I&I depending on the source of water entering the City's collection system:
  - ▶ Manhole Repair/Replacement
  - ▶ Manhole Cover Replacement
  - ▶ Slip Line or Pipe Bursting
  - ▶ Sump Pump - Remove from System
  - ▶ Roof Drain/Downspout - Remove from System
  - ▶ Service Repair
    - ▶ Lining or Replacing Service Pipe
    - ▶ Repair of Service at Connection with Main



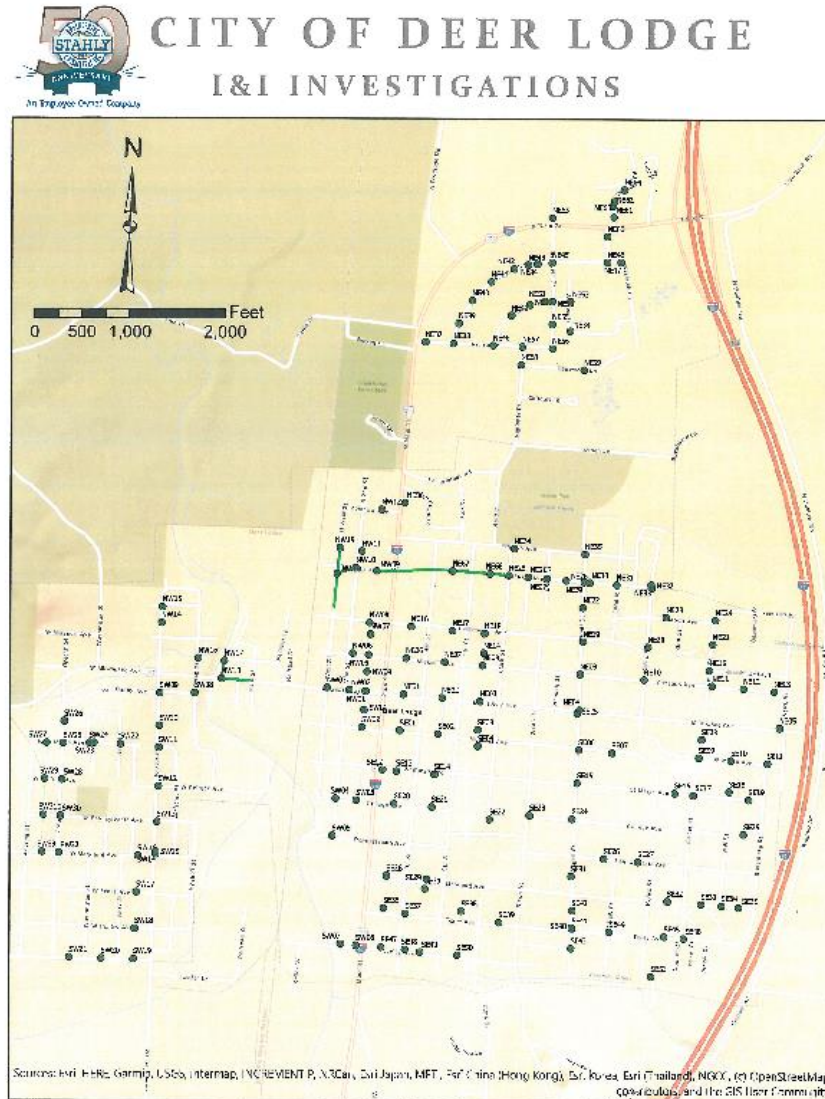
An Employee-Owned Company



# Infiltration & Inflow

## ▶ Study Areas

- ▶ California Avenue
- ▶ Cottonwood Avenue
- ▶ Clark Fork River Crossing
- ▶ Proximity of City Lift Station



An Employee-Owned Company

# Infiltration & Inflow

- ▶ What's next?
- ▶ Finalize I&I study and investigation. Provide the City of Deer Lodge with a Technical Memorandum with results and recommendations.
- ▶ Utilize findings from I&I study to prepare a Preliminary Engineering Report to support funding requests.



An Employee-Owned Company

# Preliminary Engineering Report (PER) and Potential Funding Options

- ▶ I&I Study and PER are being prepared with assistance from RRGL and TSEP
- ▶ Resulting documents are used to apply for construction funding
- ▶ PER requires:
  - ▶ Project Planning
  - ▶ Existing Facilities
  - ▶ Need for Project
  - ▶ Alternatives Considered
  - ▶ Selection of an Alternative
  - ▶ Proposed Project
  - ▶ Conclusions and Recommendations



An Employee-Owned Company

# Preliminary Engineering Report (PER) and Potential Funding Options

- ▶ Conclusions and Recommendations include:
  - ▶ Discussion of funding alternatives for the project
    - ▶ Loan funds that might require the assistance of bond counsel to help with a rate increase process
    - ▶ Grant opportunities: TSEP, RRGL, CDBG, USDA Rural Development, Others



An Employee-Owned Company

# Preliminary Engineering Report (PER) and Potential Funding Options

## ▶ Grant/loan funding limits:

- ▶ RRGL - \$125,000
- ▶ TSEP - depends on amount rates are over target rate (Deer Lodge target rate = \$72.71) - 100%:\$500,000; 125%:\$625,000; 150%:\$750,000
- ▶ CDBG - \$450,000
- ▶ USDA RD Loan/Grant
- ▶ State Revolving Loan Fund (SRF)

## ▶ Match Required

- ▶ RRGL - no match
- ▶ TSEP - 50%
- ▶ CDBG - 25%



An Employee-Owned Company

# Preliminary Engineering Report (PER) and Potential Funding Options

- ▶ Grant considerations:
  - ▶ Environmental Review
  - ▶ Public Health and Safety
  - ▶ Renewable Resource Benefit
  - ▶ Financial Need
  - ▶ Technical Design and Long-term Solution
  - ▶ Long-term Planning and Management
  - ▶ Available Funding from Other Sources (match) and Financial Feasibility
  - ▶ Public Benefit including Business or Tax Base Expansion
  - ▶ Community Support



An Employee-Owned Company

# Preliminary Engineering Report (PER) and Potential Funding Options

- ▶ How the Public Can Help with the PER and Funding Process
  - ▶ Provide input on any issues they experience with the system
  - ▶ Identify how the project will benefit the public health and safety or economic well-being of local citizens
  - ▶ Attend Public Meetings and/or comment on surveys
  - ▶ Write letters of support



An Employee-Owned Company

# Thank you!

## Questions or Comments?

Kurt Thomson, P.E.  
Project Manager  
[kthomson@seaeng.com](mailto:kthomson@seaeng.com)  
406.522.8594

Robie Culver  
Grant Writer  
[rculver@seaeng.com](mailto:rculver@seaeng.com)  
406.442.8594



An Employee-Owned Company