

1. GENERAL AGENDA

Acting President of the Board Brian Whitley opened the work session at 6:03 p.m. on February 21, 2023, at City Hall, 8880 Clark Avenue, Parkville, Missouri. In attendance were aldermen Greg Plumb, Douglas Wylie, Philip Wassmer, Tina Welch and Stephen Melton.

The following staff was also present:

Alexa Barton, City Administrator

Jeffery Rhodes, Assistant City Administrator

Kevin Chrisman, Police Chief

Alysen Abel, Public Works Director

Stephen Lachky, Community Development Director

Bryan Kidney, Interim Finance Director

Rich Wood, City Attorney

A. Riss Lake Low Pressure Sewer System Evaluation Report

City Engineer Jay Norco, North Hills Engineering, provided a report on the evaluation of the low pressure sewer system in the Riss Lake subdivision; presentation attached as Exhibit A. He stated that an evaluation of the system was never completed and some of the areas were more than 35 years old. Norco added that it was imperative to keep all the branches open and to have the needed valves when damage occurred.

Discussion focused on funding for the annual capital improvement programs would affect the entire system and not just Riss Lake and looking at options to charge residents within the improvements to pay for the repairs. City Administrator Alexa Barton said the presentation was to make the Board aware of the need and funding opportunities would be reviewed by staff and presented at a future meeting.

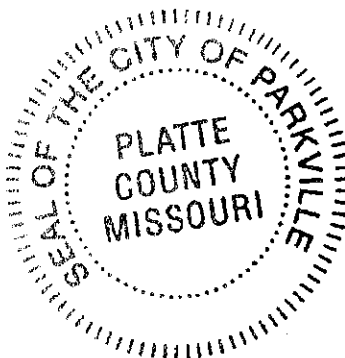
2. ADJOURN

The work session ended at 6:57 p.m.

The work session minutes for February 21, 2023, having been read and considered by the Board of Aldermen, and having been found to be correct as written, were approved on this the seventh day of March 2023.

Submitted by:

Melissa McChesney
City Clerk Melissa McChesney

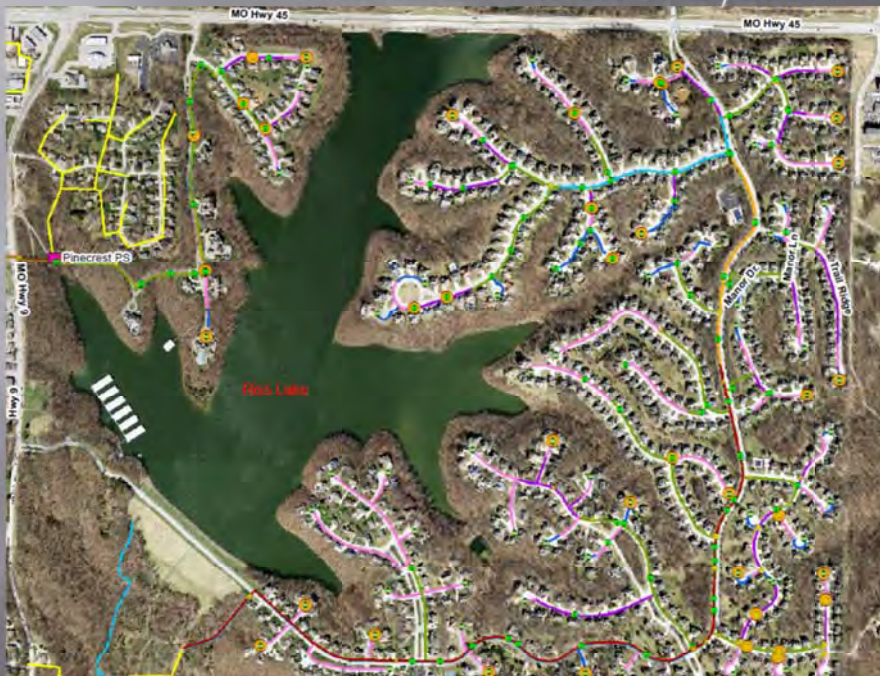




Update: Parkville Sewer CIP, 2022 Riss Lake LPS Inspections

February 21st, 2023
BY: JAY NORCO, P.E.
CONTRACT CITY ENGINEER

Riss Lake LPS Sewer System:



PIPES

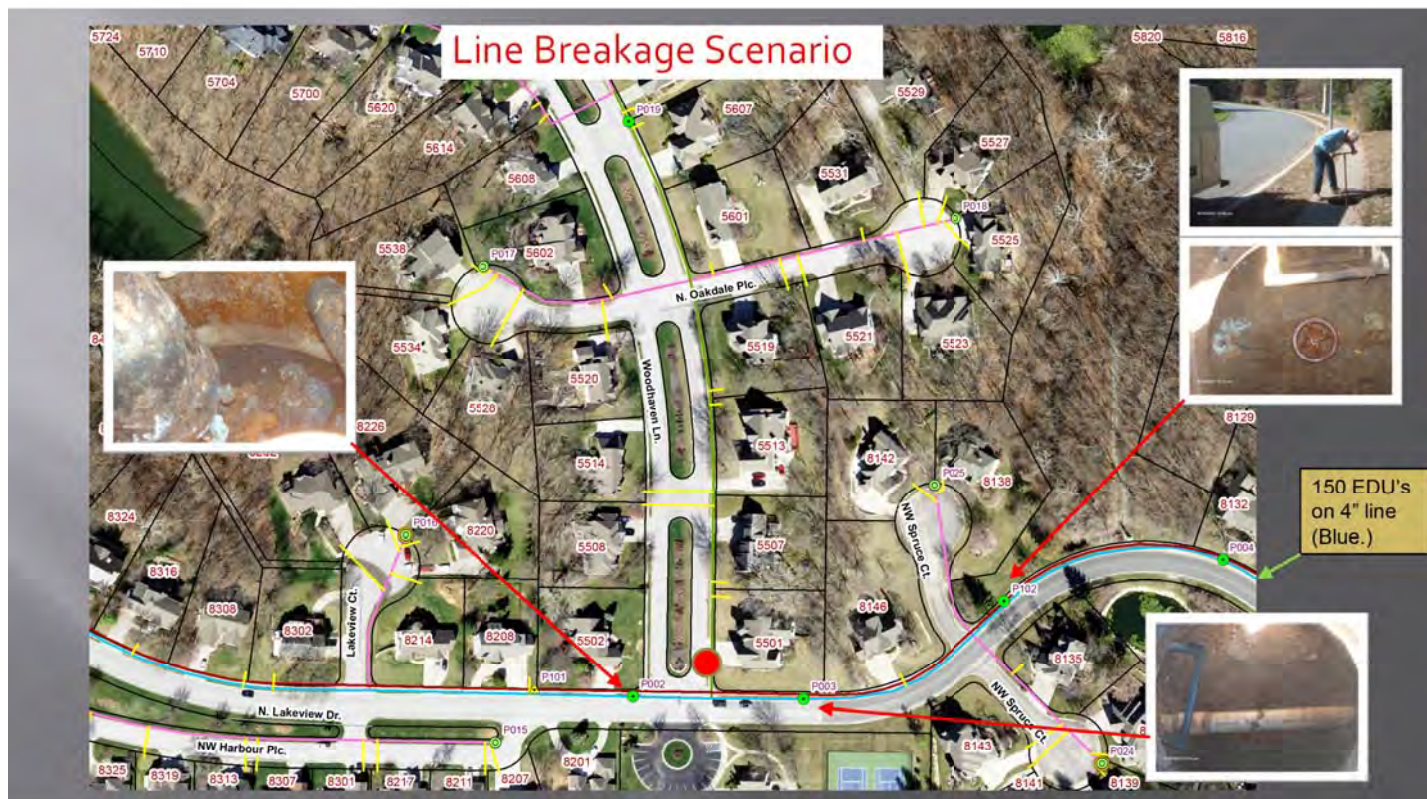
- 66,000 feet of PVC
- 2 Main Lines: 4-inch, 6-inch
- Compare to 108,000 feet of gravity sewers city-wide.
- Size: 1.5-inch to 6-inch
- Serves 850 residences.

VALVE PITS

- 204 total
- 4 Main Types:
 - Air valve pits.
 - In-Line clean-out pits.
 - End clean-out pits
 - Buried valves.

Open & Inspect LPS Valve Pits....Why?

- Important system assets.
- *Function: Need to quickly find, open, operate valves in every pit.*
- Never inspected, some 35+ years old.
- Pits become lost, age & deterioration continue...
- Emergency repairs & valve replacements cost 2x-3x more than planned repairs.



Valve Pit Inspection Program Objectives

- × Locate and open all structures.
- × Find missing & buried structures.
- × Evaluate structural condition, also condition of valves.
- × Identify repairs needed.
- × Catalog conditions and repairs in valve pit database.
- × Revise GIS mapping to increase accuracy.
- × Establish system repair priorities.
- × Plan for future repair projects.



Status of Valve Structures:

- 204 total pits in Riss LPS system. Of this number, 123 (60%) need repair of some type.
- 49 pits (24%) not accessible: buried, missing...
- Of the 49 missing, 33 are found, need raising. Other 16 are buried deep, covered with landscaping.
- Four main types of pits:



Concern #1: Buried & Lost Pits...

- × 49 pits (24%) not accessible:
buried, missing...
- × Most of the time we don't need
them, but...
- × How Lost?
 - Builders & lot grading.
 - Homeowners.
 - Landscapers.
 - Buried by other utilities.



Covered with earth and turf.....



Under Light Landscaping.....



Under Heavy Landscaping.....



Under Trees and Large Shrubs.....



Challenges in finding and raising buried pits...

- × Residents do not want to see manhole lids, generally resent these being exposed.
- × Residents usually unaware of utility easements, purpose of pits.
- × City cannot afford to replace costly landscaping in utility easements.
- × Disturbance from recent tele-com install projects has put many residents on the defensive.
- × Need support of the Riss Lake Board Members.



Concern #2: Corroded/inoperable valves ...

- × Most in older plats are not operable, or will close but not open again...
- × Metal parts corrode.



Oldest valves on large main lines...

- × 4" main carries 300+ residences.
- × 6" main line carries 550 residences.
- × Pits often too small to allow replacement within...



Some older valves can continue in service.....but which?

- × Need to be tested and exercised.
- × Some will fail when tested, need to be prepared.
 - Many parts can fail...
 - Seals, stem, packing, gate seizure....etc.
- × Will require time & material contract work.



More recent valves are PVC.

- × Easier and safer to exercise.
- × Less costly to replace (true union).
- × But many clean-out risers lack valves.



Air / Vacuum Relief Valves:

- × Old iron valves need to be replaced with newer PVC/nylon.
- × Need PVC isolation valve below ARV.
- × Even new valves clog & leak, need periodic inspection.



#3 - Other Concerns:



Gas corrosion of concrete.



Broken chimney rings.



Off set castings & rings.

More Concerns:



Mud and water wash into pit, accelerate corrosion.



Utility bore through pit.



Valves never installed....
Can't isolate sections.

Projected Repair Costs:

- ✗ The cost for remedial repairs: \$800k over next 7 years.
Impact: \$100-\$125k per year to CIP program.
- ✗ Some of this cost will displace prior planned repairs to gravity system.
- ✗ Repairs to Riss LPS system will become high priority.
- ✗ Suggested Repair Program:
 - Phase 1: Raise Buried Pits (2023)
 - Phase 2: Locate and Raise Lost Pits (2024-2025)
 - Phase 3: Repair and Test High Priority In-line Clean-Out Pits (2025-2027)
 - Phase 4: Repair and Test High Priority Air Valve Pits (2027-2028)
 - Phase 5: Repair and Test End-of-Line Clean-Out Pits (2029)



Why So Costly to Replace Valves & Pits?

- ✗ Can't shut down a pressure sewer, have to pump & haul from multiple branches at the same time.
- ✗ Area of LPS mains surrounded by other utilities.
- ✗ Existing piping was not provided with piping unions or couplings.
- ✗ Adjacent valves are not operable.
- ✗ Restoration in Riss Lake is costly.
- ✗ Lack of space for staging and storage: hauling of excavated spoils.
- ✗ Most residents do not understand the challenges of construction, demanding, makes repairs more difficult.



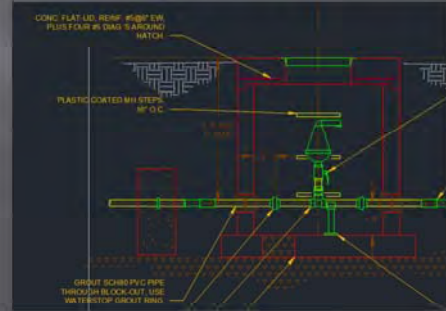
Operations: Lessons Learned

- Catalog & exercise valves regularly (annually).
- Building permits: Watch for pits being buried, lost, damaged.
- Have frequent inspections and damage checks during utility (e.g. boring) projects.
- Need for on-call utility repair contractors, multiple.



Design & Approval: Lessons Learned

- Avoid large LPS systems where possible. LPS cheaper to build, but costs City more than gravity over long term.
- Use modern materials: HDPE pipe, PVC line valves.
- Use only PVC/nylon air/vacuum valves.
- Require unions for easy valve replacement.
- Epoxy line air valve pits.
- Use pits and hatches large enough to allow repairs.
- Hatches and lids need to be aluminum or non-metallic.
- Avoid buried valves (not inside of a pit/vault).
- Use iron frames and lids for service line valves.
- Require tracer wire with multiple access stations.
- Better inspections on LPS systems.
- Require a hard survey for as-builts.



Questions?

