

City of Broken Arrow

Drainage Advisory Committee



PROJECT REPORT

DATE:	January 23, 2024
NAME	Patrick Wilson, City of Broken Arrow
ADDRESS / LOCATION	
WATERSHED	Adams Creek
ESTIMATE	\$50,000.00
CASE NO.	24-002

DESCRIPTION

Erosion is occurring along the north bank of Adams Creek adjacent to Preserve Park Regional Detention Pond.

The stream bank is eroding adjacent to the detention pond embankment.

Preserve Park Regional Detention Pond is located North of Albany St (61st St) and west of 37th St (209th St) immediately north of Adams Creek. The park and the pond are owned by the City of Broken Arrow. The regional detention pond was constructed in 2021. The area the regional detention pond serves is just under a square mile. The drainage area for Adams Creek at this point is approximately 7.5 square miles. The fully developed 1% (100-year) flow in Adams Creek is 10,582 cfs and the velocity is 9.7 ft/s. The fully developed 10% (10-year) flow in Adams Creek is 5,643 cfs and the velocity is 8.6 ft/s.

A 30-inch sanitary sewer runs parallel to the detention pond and along/through Adams Creek to the Adams Creek Northwest lift station. A portion of the steel casing over the line is exposed on the creek.

If the erosion continues and the pond embankment is breached, the water in the pond has the potential to damage the sanitary sewer and 37th St drainage structure approximately 550 ft downstream.

Highwater/flood events in 2019 and 2021 caused considerable erosion to the bank.

BENEFIT

Mitigate the erosion to protect the regional detention pond, sanitary sewer, and 37th St culverts.

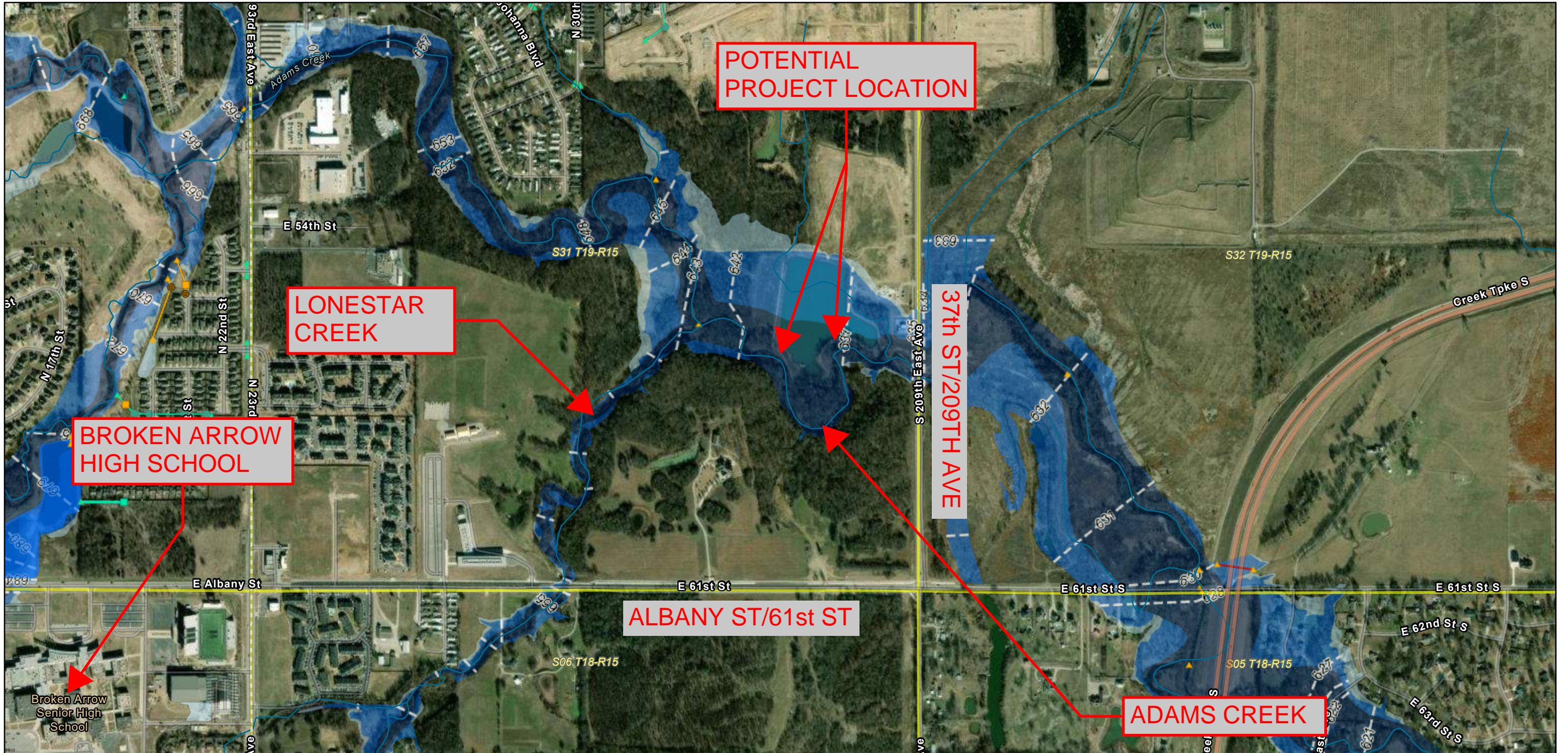
RECOMMENDATION

Hire a consulting engineer to design erosion mitigation measures along the Adams Creek along the Preserve Park Regional Detention Pond.

COMPLETED BY: Patrick P. Wilson

DATE: 1/24/24

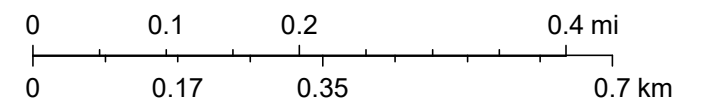
Preserve Park Pond



1/24/2024, 8:48:03 AM

- | | | | | | |
|--------------------------|------------------|---------------------------------|-----------------------|---------|-------------------------------|
| Sections (PLSS) | Stormwater Lines | Stormwater Structures (Private) | Other | Manhole | 0.2% Annual Chance Floodplain |
| Blue Line Streams (ODOT) | Broken Arrow | Inlet | Other | Other | 0.2% Annual Chance |
| Address Points | State-Federal | Manhole | Other | Other | 1% Annual Chance Floodplain |
| Detention Ponds | State-Federal | Manhole | Stormwater Structures | Other | Floodway |
| NO | Private | Other | Inlet | Other | 1% Detailed |
| YES | | Other | Manhole | Other | Base Flood Elevations |

1:11,285



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City of Broken Arrow

POTENTIAL MITIGATION LOCATIONS



1/19/2024, 8:59:40 AM

- | | | | |
|--------------------------|--------------------|---------------|--------------|
| Parcels | PressurizedMain | Manhole | Contours_2ft |
| Sections (PLSS) | GravityMain | No Inspection | 2ft |
| Blue Line Streams (ODOT) | Polyvinyl Chloride | Mains | 10ft |
| Address Points | NetworkStructure | Unknown | |
| Lift Station | Hydrants | | |

1:2,257
 0 0.01 0.03 0.06 mi
 0 0.03 0.05 0.1 km
 Copyright nearmap 2015, Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, City of Tulsa, US Census Bureau, INCOG, & unknown, City of Broken Arrow Geospatial Services Division

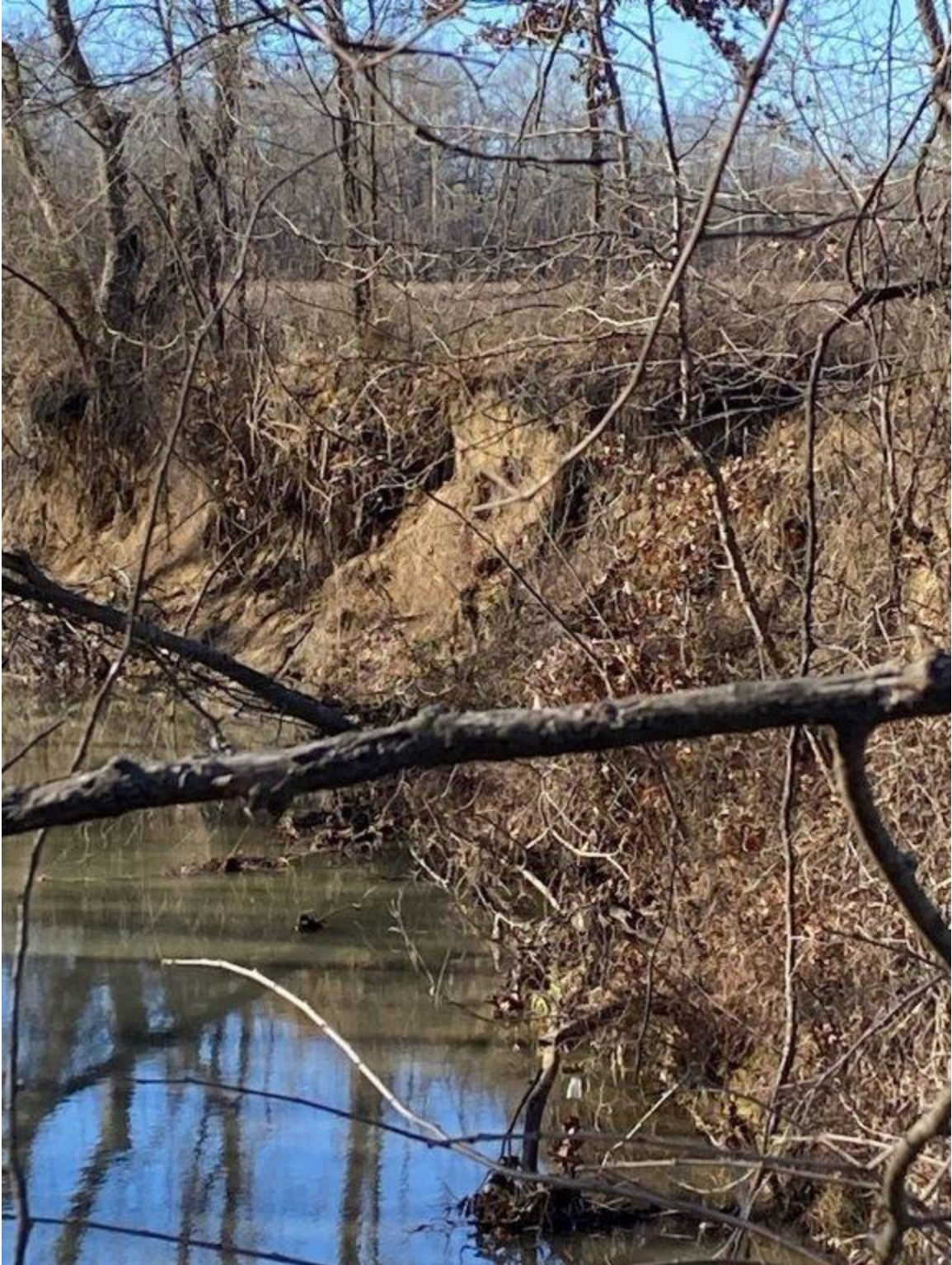
Photographs taken January 10, 2024



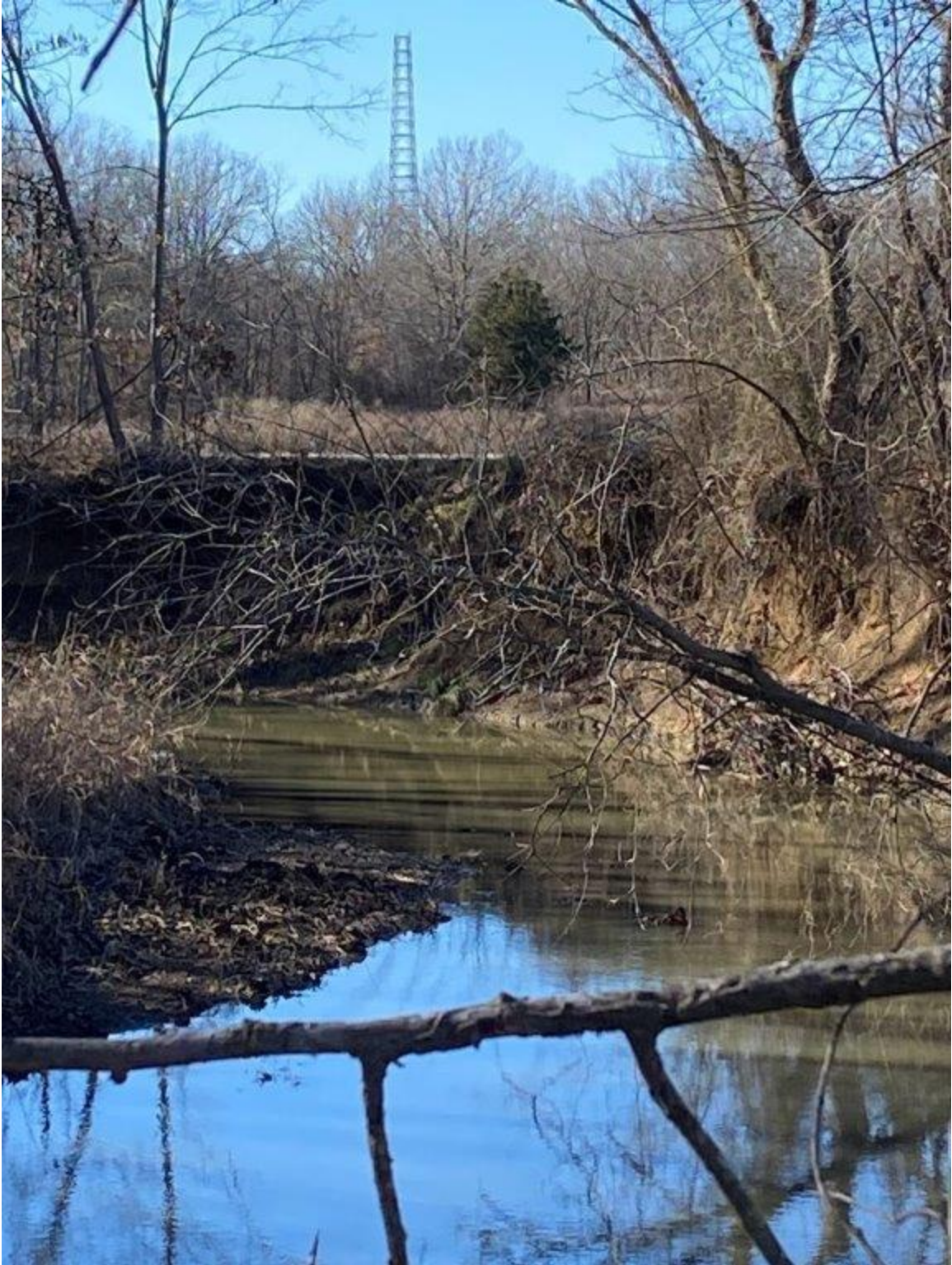
On walking trail, looking down to stream



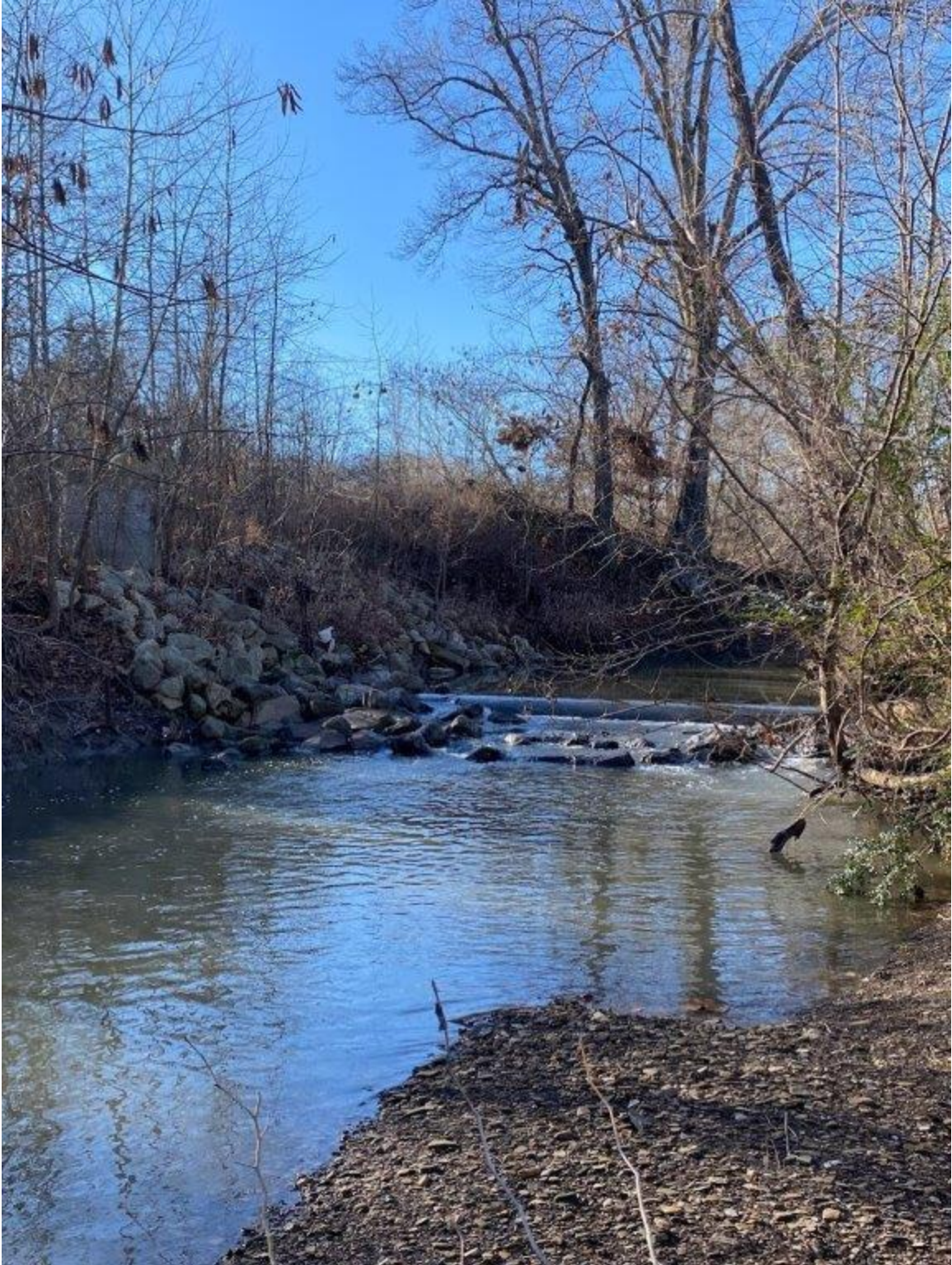
Looking along bank



Looking along bank



Looking along the bank



Looking upstream to sanitary sewer line.