



City of Broken Arrow
Minutes
Drainage Advisory Committee

City Hall
220 S 1st Street
Broken Arrow OK
74012

Chairperson Lori Hendricks
Vice Chairperson Denise Mason
Member Amber Hamilton
Member Johnnie Parks
Member Donna Wallace
Member Donna Wiedower
Member David Pickel

Monday, January 27, 2025

Time 6:00 p.m.

Council Chambers

1. Call to Order

The meeting was called to order by Chair Lori Hendricks.

2. Roll Call

Present: 5 - David Pickel, Donna Wiedower, Donna Wallace, Denise Mason, Lori Hendricks

Absent: 2 - Amber Hamilton, Johnnie Parks

3. Consideration of Consent Agenda

A. 25-144 Approval of Drainage Advisory Committee meeting minutes of October 28, 2024

MOTION: A motion was made by Donna Wallace, seconded by Denise Mason.

Move to approve Meeting Minutes of October 28, 2024

The motion carried by the following vote:

Aye: 5 - David Pickel, Donna Wiedower, Donna Wallace, Denise Mason, Lori Hendricks

4. Consideration of Items Removed from Consent Agenda - NONE

5. Presentations - NONE

6. General Committee Business

A. 25-148 Consideration, discussion, and possible action to recommend to City Council to expend funds for retaining an engineering consultant to design a set of construction plans to mitigate erosion along Adams Creek adjacent to the Preserve Park Regional Detention Pond (Case No. 25-002)

Patrick Wilson, Stormwater Division Manager of the Engineering and Construction department, presented Item 25-148. The case initially presented on January 9, 2024, requested \$50,000 for design funds, but further consultation with engineering firms revealed that this amount was insufficient. The project, which involves mitigating erosion at Preserve Park Pond in Broken Arrow, is more complex than anticipated. Various solutions, such as sheet piling and riprap, were considered, and after scoping with a consultant, the revised estimated cost is \$165,000, requiring an additional \$115,000.

Preserve Park Pond is a city-owned regional detention pond within a FEMA floodplain and

floodway, receiving water from multiple areas. The affected erosion zone extends approximately five hundred feet along the channel, near a walking trail, splash pad, and a city-owned sanitary sewer lift station with a 30-inch steel-encased sewer line. The area experiences a high-water velocity of 9.7 feet per second, significantly above the erosive threshold of 6 feet per second.

The proposed solution involves stream training, successfully implemented in Arlington, Texas. This approach reshapes and stabilizes the bank, anchors the soil, and promotes grass growth for erosion control. Additionally, strategically placed stones will redirect water flow to reduce velocity and prevent further erosion. The U.S. Army Corps of Engineers has endorsed this method.

The project's public benefits include protecting the regional detention pond, securing the sanitary sewer system, and preventing damage to culverts under 37th Street. Staff recommends that the committee approve the additional \$115,000 for the design of erosion mitigation along Adams Creek at Preserve Park Detention Pond.

Further discussion covered key concerns and clarifications regarding the erosion mitigation project at Preserve Park Pond. Hamilton inquired about the velocity at the Arlington, Texas project for comparison, but Patrick Wilson did not have those details. Hamilton also asked whether the additional \$115,000 included permitting costs, which Wilson confirmed. Miss Walters questioned whether discussions with the U.S. Army Corps of Engineers had occurred. Wilson explained that while no direct talks had occurred, similar projects had received Corps approval in other states.

The timeline was discussed, and Mr. Wilson estimated an 18-month design phase, including Corps approval, followed by construction, pending funding decisions. Concern was expressed over worsening erosion before the project began, asking if any interim measures could be taken. Mr. Wilson noted that the eroded area is about 10 feet from the trail currently fenced off and monitored. It was suggested that some temporary riprap could be placed in critical areas, though erosion would continue elsewhere without full-scale mitigation.

Questions concerning how the creek's volume was initially calculated and whether the potential for erosion was considered during the pond's design, Mr. Wilson explained that flow calculations were based on empirical data from the U.S. Geological Survey. While erosion risks were factored into the design, environmental changes and tree loss could accelerate the process. Regarding potential risks to the sanitary sewer line, he stated that, at present, there was no imminent danger unless the pond itself was breached.

It was pointed out that the affected area sits on a horseshoe bend, making it naturally prone to erosion. Potential water flow redirection was discussed, but property ownership constraints limit options. The need to explore alternative solutions was acknowledged within city-owned land. The consulting firm Freese and Nichols is under contract to design the project, but adjustments to the scope are still possible before finalization. Mr. Hamilton concluded by noting the firm's national expertise.

MOTION: A motion was made by Denise Mason, seconded by Donna Wallace.

Move to approve Item 25-148 recommend to City Council to expend funds for retaining an engineering consultant to design a set of construction plans to mitigate erosion along Adams Creek adjacent to the Preserve Park Regional Detention Pond (Case No. 25-002)

The motion carried by the following vote:

Aye: 5 -

David Pickel, Donna Wiedower, Donna Wallace, Denise Mason, Lori Hendricks

B. 25-149 Consideration, discussion, and possible action to recommend to City Council to expend funds to construct erosion control measures and channel cleaning along the bank of Haikey Creek at the Diocese of South Tulsa (Case No. 25-003)

Patrick Wilson, Stormwater Division Manager of the Engineering and Construction department, presented Item 25-149. The case was initially presented to the Drainage Advisory Committee on April 29, 2024, requesting \$50,000 in design funds. The design is now 98% complete, with ongoing coordination with the U.S. Army Corps of Engineers, which is expected to grant a nationwide permit. The city is now requesting \$430,000 for construction.

The site is on Washington Street (91st Street) between Garnett and Olive, near the Diocese of Tulsa. Erosion occurs when water exits a culvert beneath Washington Street and directly impacts the bank. Upstream, sediment has accumulated, restricting flow, and downstream, erosion threatens stability. The construction budget includes removing sediment, stabilizing the bank, and mitigating further erosion.

The proposed solution involves reconstructing the bank and installing Flexamat, a concrete-filled plastic grid that anchors to the soil, providing a stable, erosion-resistant surface while allowing vegetation growth. This method has been successfully used in South Carolina.

The project's benefits include reducing erosion downstream of the city's box culvert and improving water flow efficiency by clearing sediment. Staff recommends that the committee approve the project for city council consideration.

The discussion clarified key aspects of the erosion mitigation project and funding considerations. In inquiries about "armoring," Mr. Wilson explained that riprap armoring was initially planned when Washington Street was constructed, but no bids were received. A few years later, city management explored alternative solutions due to changing conditions. The chosen approach, Flexamat, functions as armoring by embedding concrete within a plastic grid, anchored to the slope, and covered with grass for additional stabilization.

When asked about the effectiveness of Flexamat, Mr. Wilson confirmed its long-standing use and noted that it is more cost-effective than the original riprap estimate. Questions regarding the aesthetic benefits of Flexamat and the funding source were asked; Mr. Wilson explained that the project would be funded through "unnamed funds" rather than the Haikey Creek basin, which lacks sufficient resources. Kenny Schwab, Assistant City Manager for Operations, added that while available funds are currently low, the city plans to sell \$2.5 million in bonds by October, ensuring financial feasibility.

Inquiries about upstream development that might impact the project's effectiveness were voiced; Mr. Schwab confirmed that no significant developments are planned, as most remaining land is in the floodplain. When asked whether the existing box culvert was sufficient to handle water flow, Mr. Schwab affirmed its adequacy, noting that when Washington Street was rebuilt during COVID, some improvements to the structure were deferred, but its capacity remains sufficient.

MOTION: A motion was made by Donna Wiedower, seconded by Denise Mason.

Move to approve Item 25-149 recommend to City Council to expend funds to construct erosion control measures and channel cleaning along the bank of Haikey Creek at the Diocese of South Tulsa (Case No. 25-003)

The motion carried by the following vote:

Aye: 5 - David Pickel, Donna Wiedower, Donna Wallace, Denise Mason, Lori Hendricks

C. 25-150 Consideration, discussion, and possible action to recommend denial to City Council the

expenditure of funds to construct improvements to a creek bank in the Estates of Birchwood subdivision (Case No. 25-001)

Patrick Wilson, Stormwater Division Manager of the Engineering and Construction department, presented Item 25-150. The Estates of Birchwood project, located south of New Orleans (101st), west of Olive, and east of the Creek Turnpike, involves erosion concerns along an unnamed tributary to Hakey Creek. The affected area includes a 12-inch sanitary sewer line, a floodplain with regulatory considerations, and an intermittent blue line.

The applicants have proactively obtained a nationwide permit from the U.S. Army Corps of Engineers for riprap placement. Photos of the site show significant erosion, including a 3.6-foot-deep cavity and a 15- to 20-foot-tall retaining wall extending across multiple properties. Homeowners have attempted temporary fixes using sandbags and have sought city assistance.

City staff, in coordination with the utilities department, inspected the sanitary sewer line and found it structurally intact with no immediate concerns. Given that no public benefit was identified in mitigating the erosion at this location, staff recommends that the committee deny the request for city funds to construct mitigation improvements.

Phil and Nicole Parrish, residents, expressed concerns about significant erosion along an unnamed tributary in the Estates of Birchwood, particularly its impact on a nearby 12-inch sanitary sewer line and retaining walls. They emphasized that while the exposed sewer line has not yet been deemed a critical issue by the city, water flow erodes the bank toward the retaining walls 12 to 15 feet high. Despite efforts to slow erosion with approximately 70 sandbags, the problem persists and has become more extensive than initially expected.

It was noted that because the area falls within a drainage and utility easement, homeowners cannot take action without ensuring compliance with city regulations. The erosion has created large undercuts on both sides of the creek, which residents could only observe after an arid period. They expressed concern that continued erosion could soon result in more significant widening and instability.

While they understand their responsibility for essential maintenance, such as mowing and keeping the area clear, they seek guidance on adequately addressing the erosion without creating liability for themselves or causing unintended damage to the sewer line. Additionally, they inquired about potential city assistance with costs, as the problem has become more prominent than they can manage alone.

It was described how, during heavy rain events, the neighborhood experiences significant runoff, with floodwaters rising high enough for residents to kayak through submerged areas. Their primary goal is to ensure that any mitigation efforts they undertake are practical compliant and will not later result in unforeseen consequences or financial burdens imposed by the city.

The discussion clarified property ownership, liability concerns, and the city's ability to assist residents in addressing erosion in the Estates of Birchwood. Miss Walters questioned land ownership, and it was determined that the affected area is private property, likely under the responsibility of homeowners or the HOA, despite being within a drainage and utility easement.

Regarding the location of city infrastructure concerning the erosion site, Mr. Wilson confirmed that the only city infrastructure at risk is the exposed sanitary sewer line, encased in steel and intentionally designed to withstand debris. Residents shared concerns about their lateral sewer lines, with one homeowner stating that their line was previously damaged by erosion, requiring costly repairs.

Key questions about homeowners' liability if their mitigation efforts inadvertently worsened the situation were raised. Mr. Wilson explained that any work in the floodplain would require a permit and approval from the city's stormwater engineering office. He assured the residents that he would work closely with them to ensure proper solutions while maintaining compliance.

The residents emphasized that their primary concern is preventing erosion from undermining their retaining walls, as insurance will not cover such damage. They are not seeking to alter or beautify the exposed sewer line but are requesting guidance and potential financial assistance to stabilize their property.

While acknowledging their concerns, it was reiterated that the committee is responsible for approving funding only if there is a clear public benefit. Since no immediate threat to city infrastructure was identified, the committee could not authorize financial assistance, aligning with the staff's recommendation to deny the request. Despite this, Mr. Wilson committed to providing technical guidance to help homeowners find an appropriate solution. The residents expressed gratitude for the city's willingness to assist in a non-financial capacity.

MOTION: A motion was made by Donna Wiedower, seconded by Donna Wallace.

Move to recommend denial of Item 25-150 to City Council - the expenditure of funds to construct improvements to a creek bank in the Estates of Birchwood subdivision (Case No. 25-001)

The motion carried by the following vote:

Aye: 5 -

David Pickel, Donna Wiedower, Donna Wallace, Denise Mason, Lori Hendricks

D. 25-152 Consideration, discussion, and possible action to recommend to Council to expend funds to construct erosion control measures along the banks of a tributary to Covington Creek (Case No. 25-004)

Patrick Wilson, Stormwater Division Manager of the Engineering and Construction department, presented Item 25-152, providing an update on the Covington Creek erosion mitigation project. Originally brought forward on July 27, 2020, the project initially received \$30,000 for design, followed by an additional \$30,000 in February 2022 to apply for an individual Army Corps of Engineers 404 permit. The design is now 98% complete, with the remaining 2% pending final signatures on the license before the project can proceed to bidding.

The project site is located south of Kenosha (71st Street) and east of 241st (Anita Road), encompassing a floodplain where three tributaries converge. The affected area extends into Wagoner County to the north, outside Broken Arrow city limits, while the southern portion falls within Forest Ridge and city jurisdiction. Erosion has severely impacted the creek banks, with vertical drops ranging from six to 13 feet, exposing a city storm sewer headwall and placing a utility pole just seven feet from the creek bank at risk. This utility pole supports overhead power lines that serve the north and south areas before transitioning underground.

To mitigate erosion, the plan includes widening the creek channel to slow water velocity, using sod for stabilization in less critical areas, and installing riprap for bank protection where necessary. The Army Corps of Engineers permit is in its final approval stage and once signed, the project will be ready for bidding.

Kenny Schwab, Assistant City Manager for Operations, and Mr. Wilson further discussed the Covington Creek erosion and flooding mitigation project with the committee, its history, funding, and legal implications. They provided an update, explaining that the project has been under discussion since at least 2016, with formal committee involvement beginning in 2020. The goal is to reduce erosion and mitigate flooding, primarily impacting Forest Ridge and

surrounding areas while navigating jurisdictional challenges between Broken Arrow and Wagoner County.

Inquiries about public benefit were asked and Mr. Schwab clarified that the project aims to protect city infrastructure, particularly a storm sewer, while reducing flooding impacts. The issue is complicated by ongoing litigation between the Forest Ridge HOA and several Wagoner County property owners, with Wagoner County preparing a counter-lawsuit. Broken Arrow is not directly involved in the litigation but has sought to facilitate a solution.

The proposed project, which requires an individual permit from the Army Corps of Engineers, has finally received approval after a lengthy three-year process. Funding remains a key concern, as the city proposes to contribute roughly half of the costs, with the Forest Ridge HOA and affected property owners expected to cover the remainder. A public meeting is recommended to ensure all parties, including homeowners and attorneys, are aligned before moving forward.

Davis Robson, President of Development representing Forest Ridge HOA, emphasized the long history of the issue and the severe flooding risks, noting that the 100-year floodplain reaches into residents' living rooms. He supported Schwab's recommendation to hold a public meeting before formal funding approval. After further discussions with stakeholders, the committee tentatively planned to revisit the matter in April.

MOTION: A motion was made by Denise Mason, seconded by Donna Wiedower.
Move to table Item 25-152 and recommend to Council to expend funds to construct erosion control measures along the banks of a tributary to Covington Creek (Case No. 25-004) to the April meeting.

The motion carried by the following vote:

Aye: 5 - David Pickel, Donna Wiedower, Donna Wallace, Denise Mason, Lori Hendricks

7. Adjournment

The meeting adjourned at 7:22 p.m.

MOTION: A motion was made by Denise Mason, seconded by Donna Wiedower.
Move to adjourn.

The motion carried by the following vote:

Aye: 5 - David Pickel, Donna Wiedower, Donna Wallace, Denise Mason, Lori Hendricks

Chairperson

Deputy City Clerk