



City of Broken Arrow

City of Broken Arrow
220 S 1st Street
Broken Arrow OK
74012

Minutes Drainage Advisory Committee

Chairperson Mary Ann Colston
Vice Chairperson Lori Hendricks
Member Craig Thurmond
Member Johnnie Parks
Member Donna Wallace
Member Jason Featherngill
Member Denise Mason

Monday, September 28, 2020

6:00 PM

**Council Chambers
220 S. 1st St.
Broken Arrow, OK 74012**

1. Call to Order

Chairperson Mary Ann Colston called the meeting to order at approximately 6:00 p.m.

2. Roll Call

Present: 7 - Mary Ann Colston, Lori Hendricks, Jason Featherngill, Donna Wallace, Johnnie Parks, Denise Mason, Craig Thurmond

Jason Featherngill and Denise Mason were present via videoconference.

3. General Committee Business

A. 20-1127 Approval of the Drainage Advisory Committee meeting minutes of August 31, 2020

There were no corrections or deletions to the August 31, 2020 Drainage Advisory Committee Meeting Minutes.

MOTION: A motion was made by Johnnie Parks, seconded by Craig Thurmond.

Move to approve the August 31, 2020 Drainage Advisory Committee Meeting Minutes

The motion carried by the following vote:

Aye: 5 - Jason Featherngill, Donna Wallace, Johnnie Parks, Denise Mason, Craig Thurmond

Abstain: 2 - Lori Hendricks, Mary Ann Colston

B. 20-1191 Approval of the Drainage Advisory Committee meeting minutes of July 27, 2020

There were no corrections or deletions to the July 27, 2020 Drainage Advisory Committee Meeting Minutes.

MOTION: A motion was made by Lori Hendrix, seconded by Johnnie Parks.

Move to approve the July 27, 2020 Drainage Advisory Committee Meeting Minutes

The motion carried by the following vote:

Aye: 5 - Lori Hendricks, Jason Featherngill, Donna Wallace, Johnnie Parks, Denise Mason

Abstain: 2 - Mary Ann Colston, Craig Thurmond

C. 20-1192 Consideration, discussion and possible action regarding the design and construction of drainage and erosion control improvements in Waterford Park II subdivision and direction of staff to obtain necessary easements for such drainage improvements and authorization of the expenditure of 2018 General Obligation Bond, Proposition 6 funds for the improvements

Committee Member Donna Wallace recused herself for this Item. She left the Chamber prior to discussion and returned following the vote

Stormwater Division Manager Patrick Wilson displayed and discussed a slide which illustrated Waterford Park II subdivision and where the project would be located. He noted the stormwater runoff from Waterford Park II subdivision was collected in a public storm sewer system and was conveyed through a drainage way running through a reserve on the northeast corner of the subdivision. He displayed and discussed a photo which illustrated the outfall line and undercutting by stormwater which was undermining the public sewer system. He explained the outlet velocity of the 36-inch pipe was 9.2 feet per second which was causing eddies to form in the channel and was increasing erosions. He noted the City wished to armor protect this location to better protect the public utility while reducing erosion to private property. He displayed and discussed a photo of a tree which fell and was causing damage.

Vice Chair Hendricks asked if this stormwater drainage was causing erosion to any private property. Mr. Wilson responded in the affirmative.

Committee Member Johnnie Parks asked what type of easements the City would need to acquire. Mr. Wilson responded an easement with the HOA and the reserve would be required; the erosion was adjacent to the private property owner. He noted if a private property easement were required it would only be needed from one, maybe two, property owners. He explained 9.2 feet per second of drainage was a higher velocity than the natural grass could withstand and the energy dissipator in place was substandard in design for the area.

Vice Chair Hendricks asked if a larger capacity energy dissipator would be needed in this location. Mr. Wilson responded in the affirmative. He stated the design would be done in-house to determine the best course of action such as riprap placement, armor protection, or replacing the energy dissipator.

Vice Chair Hendricks asked if there was any anticipated cost increase related to easement acquisition should the City need to obtain additional easements from homeowners. Mr. Wilson responded in the negative.

Committee Member Parks asked if this was designed as a City of Broken Arrow subdivision. Mr. Wilson responded in the affirmative; this subdivision was designed in September of 1999 and the standards which governed this design was adopted in August of 1999. He explained this slight overlap was what caused the substandard design of the energy dissipator to slip through the system.

MOTION: A motion was made by Johnnie Parks, seconded by Lori Hendricks.

Move to recommend to City Council an expenditure up to a maximum of \$15,000 dollars to design and obtain necessary easements and construct the drainage and erosion control improvements to the water course in Waterford Park II subdivision

The motion carried by the following vote:

Aye: 6 - Mary Ann Colston, Lori Hendricks, Jason Featherngill, Denise Mason, Johnnie Parks, Craig Thurmond

Recused: 1 - Donna Wallace

- D. 20-1193 Consideration, discussion and possible action regarding the design and construction of drainage and erosion control improvements near the intersection of 9th Street and Natchez Avenue and direction of staff to obtain necessary easements for such drainage improvements and authorization of the expenditure of 2018 General Obligation Bond,**

Proposition 6 funds for the improvements

Mr. Wilson displayed and discussed a map of the potential project area. He reported the stormwater runoff from the Lakes at Indian Springs, Indian Springs Manor, the Oaks at Indian Springs subdivision and a portion of the Indian Springs Golf Course, drained into a private lined, manmade channel, and was conveyed southeast through Indian Springs Manor subdivision. He explained the stormwater discharged through a box culvert underneath 9th Street, immediately north of Natchez Avenue, into a private drainageway pond; an earthen dam and overflow spillway were located east of the pond. He identified this area on the map. He stated the private drainage way and pond were owned by Mr. Jerry Wilkins who recently constructed a water feature and had worked with the City to mitigate previous drainage concerns along his property. He stated Lynn Lane Trunk Sewer which collected wastewater flows from both County Line Trunk Sewer System and the Broken Arrow Trunk Sewer System ran immediately to the east of the pond. He explained the pond served as an energy dissipator and protected the Main Trunk Sewer System to the Lynn Lane Treatment Plant. He noted the Main Trunk Sewer System was immediately east of the earthen dam, next to the channel. He displayed and discussed a video which illustrated the water leaving the culvert, flowing into the pond, and causing erosion along the bank. He reported there was stormwater flowing across Indian Springs Manor and the Golf Course at a higher rate due to a couple of recent flash floods in the area. He explained the flash floods eroded the grass which stabilized the bank. He noted Broken Arrow Staff was looking upstream at possible methods of flow mitigation (this would be a future discussion).

Committee Member Parks asked if the video was taken following a flash flood. Mr. Wilson responded the video was taken following a storm event. He indicated Mr. Wilkins' property was located just on the east side of 9th Street and there was a right-of-way along 9th Street. He noted just south of Mr. Wilkins property was the Broken Arrow Sanitary Sewer Treatment Plant.

Committee Member Denise Mason asked if the creek associated with this area was a blue line creek. Mr. Wilson responded in the affirmative; the creek was located in a flood plain. He noted, however, the project was located outside of the flood plain and outside the channel itself; therefore, there would be no Army Corps of Engineers involvement.

Committee Member Parks asked Mr. Wilson to specify where the sanitary sewer was located on the map. Mr. Wilson obliged Committee Member Parks.

Mr. Kenneth Schwab noted historically, this used to be Mr. Gary Kills (ph) property. He indicated there were problems with the old sanitary sewer system before Mr. Wilkins built his pond. He reviewed a brief history of the drainage difficulties related to this property. He noted the pond acted as an energy dissipator.

Mr. Wilson reported 9th Street was the main access to the Treatment Plant. He noted the culvert was originally a 54-inch concrete pipe which proved to be inefficient and was upgraded to a double 5 x 5 round concrete box with a drop structure upstream and dissipated the velocity down to 6 feet per second exiting on the 100-year event.

Committee Member Parks asked how deep the sewer was in this location. He asked if the sewer was protected. Mr. Schwab responded he did not know the exact depth, but it was deep and protected. He stated the working relationship between Mr. Wilkins and the City of Broken Arrow was fantastic. He noted the culvert under 9th Street was increased to reduce the velocities; 6 feet per second was a good standard along normal grass, but with the fine sand it was a little too fast. He indicated a little more riprap along the south side would better dissipate the energy, slow down the water and help the Broken Arrow Sewer in the long run.

Committee Member Craig Thurmond asked about the flow rate. Mr. Schwab responded based upon the flow numbers the volume was approximately 400 cubic feet per second and the flow rate was approximately 6 cubic feet per second once it exited the culvert into the pond. He noted he believed the volume was higher than 400 cubic feet per second which was why the flow rate looked to be higher than 6 cubic feet per second in the video.

Mr. Wilson indicated many subdivisions in this area did not have a detention pond and were possibly contributing to the elevated volume. He noted this was one reason Staff was looking upstream to help alleviate the problems in this area.

Committee Member Thurmond noted these subdivisions were developed in the 1970s and 1980s when detention was not required. He asked if more energy dissipation was planned for this location, possibly with riprap. Mr. Wilson responded in the affirmative.

Vice Chair Hendricks asked if this project was just for prevention of erosion and dissipating the flow of the water. Mr. Wilson responded in the affirmative. She asked if improvements to the pond were planned. Mr. Wilson responded in the negative; any improvements to the pond would be performed by Mr. Wilkins.

Committee Member Parks stated it was important to do whatever was necessary to maintain the integrity of the Broken Arrow Sewer Line. He asked if this was part of the new sewer line. Mr. Schwab responded in the affirmative; this was the new 60-inch line and was the only line leading to the plant. He explained all the trunk sewer lines came together in this section. He noted if the line here was lost there was no way to pump around the breach; it would be necessary to do an emergency fix with 60-inch pipe. He noted the line was deep, but in the past erosion had continued until the top of the sewer line was exposed in certain locations. He stated it was important to make sure the energy in this location was dissipated to protect the sewer line. Committee Member Parks agreed.

Chairperson Colston asked if the stormwater had ever gone over the spillway. Mr. Wilson responded Mr. Wilkins had not indicated the water had run over the spillway. Chairperson Colston asked if this was a concern. Mr. Wilson responded in the affirmative; however, the last time he was on Mr. Wilkins' property the contractors were protecting and armoring the spillway with riprap. Mr. Schwab reported Mr. Wilkins indicated he concreted the spillway because there were problems with the spillway in the past.

Committee Member Thurmond asked if the spillway was concrete or riprap. Mr. Schwab stated he believed the spillway was concrete. Mr. Wilson stated he believed it was riprap; he would have to verify to be certain.

MOTION: A motion was made by Craig Thurmond, seconded by Lori Hendricks.

Move to approve Item D and fund near the intersection of 9th Street and Natchez Avenue and direct Staff to obtain necessary easements for such drainage improvements and authorize the expenditure of 2018 General Obligation Bond, Proposition 6 funds for the improvements

The motion carried by the following vote:

Aye: **7 -** Mary Ann Colston, Lori Hendricks, Jason Featherngill, Denise Mason, Johnnie Parks, Craig Thurmond, Donna Wallace

4. Adjournment

The meeting adjourned at approximately 6:28 p.m.

MOTION: A motion was made by Mary Ann Colston, seconded by Johnnie Parks.

Move to adjourn

The motion carried by the following vote:
Aye: 4 - Jason Featherngill, Donna Wallace, Johnnie Parks, Craig Thurmond

Mary Ann Colston, Chairperson

Lisa Blackford, Deputy City Clerk

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