



City of Broken Arrow
Meeting Minutes
Drainage Advisory Committee

Chair Lori Hendricks
Vice Chair Denise Mason
Member Amber Hamilton
Member Johnnie Parks
Member Donna Wallace
Member Donna Wiedower
Member Christi Gillespie

Monday, August 28, 2023

6:00 PM

Council Chambers
220 South 1st Street
Broken Arrow, OK

1. Call to Order

Chairperson Lori Hendricks called the meeting to order at approximately 6:00 p.m.

2. Roll Call

Present: 7 - Christi Gillespie, Amber Hamilton, Johnnie Parks, Donna Wallace, Donna Wiedower, Denise Mason, Lori Hendricks

3. Consideration of Consent Agenda

A. 23-881 Approval of Drainage Advisory Committee meeting minutes of March 27, 2023

B. 23-966 Approval of Drainage Advisory Committee meeting minutes of June 26, 2023

There were no Items on the Consent Agenda.

MOTION: A motion was made by Christi Gillespie, seconded by Denise Mason.

Move to approve the Drainage Advisory Committee meeting minutes of March 27, 2023

The motion carried by the following vote:

Aye: 7 - Christi Gillespie, Amber Hamilton, Johnnie Parks, Donna Wallace, Donna Wiedower, Denise Mason, Lori Hendricks

4. Consideration of Items removed from the Consent Agenda

There were no Items removed from the Consent Agenda; no action was taken or required.

5. Presentations

There were no presentations.

6. General Committee Business

A. 23-1122 Consideration, discussion, and possible action to recommend to City Council to expend funds to mitigate a ground water issue in the Woodcreek II subdivision (Case No. 23-004)

Stormwater Division Manager Patrick Wilson reported the proposed project was located in the Woodcreek II subdivision south of W. Houston and east of S. Garnett Rd, south of Anderson Elementary School. He said from 1311 S. Aster Pl. W. to 4409 W. Memphis St S., there appeared to be groundwater seeping through driveways and sidewalks. He explained

the groundwater caused algae to form in certain areas, causing a potential slipping hazard. He stated Staff investigated the site and found groundwater caused staining and algae to form along the gutter, sidewalks, and on some driveways. He displayed and discussed photos of the area noting there was standing water in the area. He stated Staff went and visited the site today, and there was still seeping and standing water. He stated Broken Arrow did not have any storm sewer, sanitary sewer, or waterline in the area. He reported Staff recommended installation of approximately 730 feet of a French drain system under the sidewalk to act as a collector system, and connections to the French drain systems of the residents. He noted sidewalk replacement would need to be done after installation. He reported the concepts were in place and design and construction could be completed within a year. He indicated Staff was requesting \$60,000 dollars of the 2018 GO Bond, Proposition 6, for installation of a drainage system to transport the groundwater to the storm sewer system. He reported there were no flood plains in the area, and no Army Corps jurisdiction streams. He noted this was a City street and sidewalk with a groundwater issue.

Committee Member Johnnie Parks asked if there were any complaints from the citizens about house settlement, or mold or mildew inside homes.

Mr. Wilson responded there was one resident with a complaint about settling.

Committee Member Parks said the City could make the drainage system deep enough and large enough, to pull the water away from the houses, before there was any house settling.

Mr. Wilson noted the City could see how deep it could go; the limiting factor would be the storm sewer, how to tie into it, and how deep the French drains could go. He said Staff could look into this moving forward.

Vice Chair Denise Mason asked if there was a way to identify where the water originated.

Mr. Wilson responded the water seemed to be coming from everywhere in the area. He said he believed there was water in the tract behind Anderson Elementary. He explained there was a large area from which the groundwater was percolating up to the surface. He noted he was unable to pinpoint a specific location.

Vice Chair Mason asked if this was the only area in the Woodcreek development showing groundwater issues.

Mr. Wilson responded there were some other areas with groundwater issues, but these appeared to be very minor. He noted he was unsure if the issues were connected.

Committee Member Christi Gillespie asked if there were groundwater seepage issues on school property.

Mr. Wilson responded he had not gone onto school property to investigate; he had not obtained permission from the school to do so yet.

Committee Member Gillespie asked if there was something which could have been done during the development process which could have prevented this.

Mr. Wilson responded potentially, but sometimes springs would develop over time, sometimes the weight of a house would cause a spring to develop. He noted a Geotechnical Report could have been done to see if there was something there, but this was not always required for a residential subdivision development.

Chairperson Hendricks asked about the public benefits of this project. She said it appeared this was an issue which only affected private homeowners.

Mr. Wilson explained the groundwater seepage could potentially cause a slip and fall hazard for pedestrians walking through the area.

Committee Member Parks noted mitigating the groundwater seepage would also improve the longevity of the sidewalks.

Committee Member Donna Wiedower asked if the water was tested to rule out City water as the cause.

Mr. Wilson responded the Utilities Department did test the water.

Committee Member Wiedower said she understood there was some benefit to the residents of Woodcreek, and that the groundwater seepage was problematic. She asked if the funds should be spent on stormwater flooding problems as opposed to groundwater seepage difficulties as per the Proposition.

Assistant City Manager of Operations, Kenny Schwab, stated Proposition 6 indicated “drainage” and groundwater seepage which was not properly draining met the “drainage” criteria. He said this was the fourth time the City had dealt with groundwater such as this. He noted the benefit to the public was the sidewalk; when water flowed over the sidewalk it caused algae growth, or the water froze in winter, and it was a problem. He stated, as such, the public benefit was there.

Committee Member Wiedower noted in her neighborhood, her neighbor had repeated problems with a main breaking and the same types of problems would be caused: water in the gutter, soggy lawn, etc. She asked if it was possible something was failing in the Broken Arrow water system which was causing this problem. She stated if this was a groundwater issue, perhaps the area affected would not be an “L” shape.

Mr. Schwab stated the photo which showed the water seepage up close to a home’s garage through the driveway indicated to him that this was groundwater seepage as opposed to a break in a water line. He noted the water seepage area was most likely not “L” shaped, it was most likely throughout the whole area, but the application for assistance was an “L” shaped area. He stated in the past, before Proposition 6, the City installed a pipe under the sidewalk in Highland Park Subdivision to direct groundwater into a storm inlet, and the homes affected were required to tie into the pipe with French drains. He noted this was done over a decade ago and it seemed to have addressed the problem.

Committee Member Wiedower asked if the homes in the problem area already had French drains.

Mr. Wilson responded in the affirmative; several of the homes had French drain systems.

Committee Member Hamilton asked if the proposed solution would actually fix the problem or would the problem simply move down the street to other homes.

Mr. Wilson responded it was possible other homes could suffer from groundwater seepage. He said if there was a small 4 inch system, the system could be overwhelmed and there would still be a problem. He noted a 6 inch drain system, as opposed to the typical 4 inch drain system was being considered to help mitigate the return of groundwater seepage. He indicated there was always the potential with groundwater and storm water that the City

mitigated to a certain level and there could still be problems.

Committee Member Hamilton asked if there was something residents could do to mitigate problems with algae on sidewalks.

Mr. Schwab responded household bleach killed algae on sidewalks.

Committee Member Wiedower asked if the pictures were taken after a rain event.

Mr. Wilson responded the photos were taken about two weeks after rainfall.

Discussion ensued regarding the groundwater seepage in the area and the potential to lower the water table in the area.

Committee Member Parks stated the City should consider how this could be prevented in the future.

Mr. Schwab asked where the surface water from the school was going.

Mr. Wilson responded from what he could tell it was all sheet flow into the neighbor's yards to the north and the west, which was into the problem area.

Mr. Schwab indicated the school was built before the subdivision. He noted these were two different things though, groundwater and surface water.

Vice Chair Mason asked if the school had any obligation to assist.

Mr. Schwab responded in the negative.

Vice Chair Mason asked if the groundwater was impacting the streets in Woodcreek. She noted there were cracks in the streets.

Mr. Wilson said there was potential for groundwater to be contributing to the cracks in the streets.

Chairperson Hendricks noted this ask did not include installation of French drains by the homeowners.

Mr. Wilson concurred noting the City would install a drainage pipe, connect the pipe to the existing French drains, and then construct a yard inlet to collect the surface runoff from Anderson Elementary; this was included in the \$60,000 dollars.

Mr. Schwab stated the surface water could not drain into the groundwater piping because with French drains there were holes, and the water could drain back out of the French drains.

Vice Chair Mason asked about the yard inlet.

Mr. Wilson explained a yard inlet was an open grate for water to drain into the collection system; it would be safe for children and pets.

Vice Chair Mason asked if the homes without French drains were required to install a French drain to connect to the system.

Mr. Wilson responded this could be required if the DAC felt it was appropriate.

Committee Member Parks said he questioned mandating residents to install a French drain system without additional information. He noted if he lived there, he would wish to install a French drain system, but he did not wish to make residents install the system if they did not wish to or could not afford it.

Committee Member Wiedower stated she feared if the City were to spend this money and the residents did not tie into the system it might not fix the problem.

Mr. Schwab asked how many homes had French drains.

Mr. Wilson responded approximately 50 percent of the homes had French drains.

Mr. Schwab indicated he hoped the homes with the biggest problems already had the French drains.

Mr. Wilson indicated the DAC could direct Staff to go back and do further investigation to determine which homes had French drains.

Committee Member Parks stated he would like to know. He said he would also like to know more about the waterflow off Anderson Elementary. He stated it was important to have all the facts before approving \$60,000 dollars. He indicated he could see how this would be a benefit to the public, but he wanted to make sure the best result was achieved. He suggested approaching those who did not have French drains to see if they would be willing to install French drains.

Committee Member Gillespie agreed.

Mr. Wilson said this could be done if this was the direction from the Drainage Advisory Committee.

Committee Member Hamilton asked if all the residents installed French drains, would it solve the problem.

Mr. Wilson said if every resident installed French drain systems, with outlet into the gutter, this would relieve the sidewalk issue some, but he did not know if it would eliminate the problem.

Committee Member Wiedower asked if the runoff from the school alone was addressed, how much would it alleviate the problem.

Mr. Wilson responded he was unsure, but this could be further researched.

Committee Member Parks said if every resident installed a French drain and it was not tied into a waterline, it would only push the problem out further and would hurt the streets.

Mr. Schwab showed the picture of the water flowing through the gutter. He stated if 50 percent of the homes were tied into the gutter, tying the remaining homes to the gutter with French drains would only increase this water flowing through the gutter. He agreed it would be best to tie the French drains to a waterline. He agreed research into the waterflow from Anderson Elementary should also be done. He noted the groundwater seepage could definitely cause damage to the street.

MOTION: A motion was made by Johnnie Parks, seconded by Christi Gillespie.

Move to direct Staff to conduct further research regarding the residents' French drain systems and the waterflow off Anderson Elementary

The motion carried by the following vote:

Aye: 7 - Christi Gillespie, Amber Hamilton, Johnnie Parks, Donna Wallace, Donna Wiedower, Denise Mason, Lori Hendricks

B. 23-1121 Consideration, discussion, and possible action to recommend to City Council to expend funds for grading a swale to mitigate water drainage damaging neighborhood property (Case No. 23-005)

Mr. Wilson reported on October 24, 2022 the Drainage Advisory Committee recommended to City Council the acquisition of a survey to assist Staff in the development of mitigation efforts. He stated on 14 November 2022, City Council (Agenda Item No. 22-1585) approved the Drainage Advisory Committee's recommendation. He indicated this property was south of E. Washington St and west of S. 177th East St, in between Knights of Columbus and the residential area to the west. He stated the Knights of Columbus building was platted in 1993 and the Branch Creek subdivision was platted in 2005. He indicated this property was not on a flood plain. He stated this was surface water draining onto the neighbors. He noted Staff investigated the site and found the grade of the property funneled water into the properties to the west. He displayed and discussed photos of the problem area, noting one homeowner installed sandbags along the fence line to prevent waterflow onto her property. He explained when Branch Creek was developed it should have been graded in a way to drain the water between the houses, to 7th Street, to an inlet. He stated when the builders came in, the original grading plan was not followed, and a fence was installed which acted to block waterflow. He stated according to plans, there was approximately 16.5 cubic feet per second flowing to the property. He noted he calculated the number was roughly 11 cubic feet per second, so it was different depending on which method was used to calculate. He explained Ordinance required no more than four lots to drain to a single point before it had to be collected. He noted the development met the letter of the Ordinance, but as large as the development was, it did not meet the intent of the Ordinance. He stated the mitigation effort being considered was adding a swale on the Knights of Columbus property, roughly 10 feet wide, funneling the water to the drainage ditch along E Washington St. He noted Knights of Columbus was willing to work with the City in this regard, and negotiations were underway. He stated the Washington improvement project was coming up in 2025. He stated collecting the private property stormwater in accordance with the intent of the Ordinance would provide public benefit as it would assist the future drainage design of Washington Street.

Committee Member Gillespie asked if a swale was a ditch.

Mr. Wilson responded essentially yes, but a ditch was deeper than a swale.

Committee Member Gillespie asked if this was the same developer which developed Woodcreek, as both subdivisions were developed in 2005.

Mr. Schwab indicated he was unsure.

Committee Member Wiedower noted many of these problems have arisen due to poor planning and development. She asked whether the City should be more stringent with developers, whether the City should be more aggressive with inspections during the building process to ensure builders stuck to the plans submitted. She indicated the City should not have to come back and pay for something which should have been done by the developer.

Mr. Schwab stated he did not disagree; however, at the time Branch Creek was developed, the City only had one individual reviewing plans. He stated in 2005 the Engineering Department had 6 people; today the Engineering Department had 30 Staff members; in 2005

Broken Arrow only had 4 people in Community Development Services; now Community Development Services had 62 people. He discussed the 2002 Ordinance regarding drainage and how its intent was not followed by the developer; today, with more Staff and more eyes on the projects, these things were typically caught and rectified before development.

Vice Chair Mason noted while the plans were developed properly for Branch Creek, the builder did not grade the property properly and created this issue. She asked if anything could be done about this problem.

Mr. Schwab explained property owners purchased property to develop, hired engineers and planners to begin the process, and typically then sold the lots to builders who then took over the process and occasionally the builder would change the grading of the site at the lot level. He stated Broken Arrow did not have a grading requirement down to the lot level. He stated he believed the City of Tulsa required builders to meet certain criteria for grading at the lot level and got a lot of push back from the builders. He said he did not know of any other community which made grading requirements at the lot level. He indicated Broken Arrow's Building Inspectors would look at the foundation, plumbing, electrical, framing, mechanical, roofing, everything, but did not look at the grading, and it has created problems.

Vice Chair Mason asked how this could be changed.

Mr. Schwab stated there would have to be a desire at the Administrative and City Council level to make the change.

Committee Member Wiedower stated if the only way to control it was to have someone responsible for ensuring the lots and lay of the land mitigated flooding, this might be necessary.

Mr. Schwab explained the City did approximately 850 building permits a year, and the inspector would not be able to "eyeball" how a lot was graded, the property would have to be surveyed.

Committee Member Gillespie asked if there was a way to possibly spot check a couple of the lots as opposed to inspecting every lot. She asked what would happen if the lot did not pass the inspection.

Mr. Schwab stated the property would have to be surveyed before the builder put down the foundation. He noted this subject has been discussed by Staff. He indicated it became a difficult process to do this, because the property owner would be required to pay for a survey, have it conducted, submit it to the City for review, and would have to wait for this whole process to be completed before being able to move forward with construction. He noted also, this cost would be passed on to the home buyer.

Committee Member Wiedower asked who did the grading.

Mr. Schwab responded typically the developer, when cutting in the street, would roughly grade the lots. He stated from the plat there was a finished floor elevation, and the builder would then perhaps have to tweak the grading.

Committee Member Parks discussed the grading of properties and how the grading could affect drainage.

Committee Member Wiedower suggested possibly having the developer inspect the grading of the lots before transferring to the builder and requiring builders to leave the grading alone.

Mr. Schwab stated this would put more cost on the developer and the City would be required to inspect the lots before transference. He noted Staff would continue to discuss this problem to hopefully find a solution which would be good fit for all.

Chairperson Hendricks asked how frequently this was a problem.

Mr. Schwab responded problems with faulty lot grading were less frequent today because a finished grade was required on the plat. He noted he could not say it did not happen, but it was a lot less frequent.

Vice Chair Mason asked when the finished grade requirement was instituted.

Mr. Schwab stated he was unsure; perhaps 20 years or so. He stated he agreed this was a subject which needed continued discussion.

Committee Member Parks asked if the Knights of Columbus would donate the right-of-way to construct the swale.

Mr. Wilson responded in the affirmative; a temporary construction easement would be donated. He noted Knights of Columbus would still own the land and would maintain the swale after construction.

Committee Member Gillespie noted it was very nice of the Knights of Columbus to agree to this.

Mr. Schwab stated the applicant has had water flow into her yard and up to her house, visited City Council on several occasions about this, and was a big supporter of the 2018 Bond Package and Proposition 6. He stated he has visited the site several times, and without the Knights of Columbus being willing to work with the City, he could not see many solutions to the problem. He stated, with the Knights of Columbus being willing to work with the City, this was a relatively inexpensive fix. He noted the City would construct the swale so it would be easy to mow and maintain.

Vice Chair Mason noted there were some drainage swales near her home which were simply not well maintained.

Mr. Wilson stated historically the Knights of Columbus have maintained this property very well. He noted the Knights of Columbus hosted events on this land and the City wanted to make the swale as easy to maintain as possible.

Vice Chair Mason asked about construction materials for the swale.

Mr. Wilson explained a shallow ditch would be dug and sod would be placed.

Committee Member Hamilton asked how long it would take to complete the project.

Mr. Wilson responded the swale could be completed in less than a week. He noted some of the cost would be in sidewalk repair, the material for the sod, and labor.

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

Move to recommend to City Council to expend funds for grading a swale to mitigate water drainage damaging neighborhood property (Case No. 23-005)

The motion carried by the following vote:

Aye: 7 - Christi Gillespie, Amber Hamilton, Johnnie Parks, Donna Wallace, Donna Wiedower, Denise Mason, Lori Hendricks

C. 23-1123 Consideration, discussion, and possible action to recommend to City Council to expend funds for construction of drainage improvements in the Cedar Ridge Estates Subdivision (Case No. 23-006)

Mr. Wilson reported this was previously presented to the DAC. He reported on February 28, 2022, the Drainage Advisory Committee recommended to City Council, Case No. 22-002 (Agenda Item 22-255) to expend funds for obtaining a survey for an in-house drainage improvement design in the Cedar Ridge Estates Subdivision. He stated on March 21, 2022, City Council (Agenda Item 22-332) approved the Drainage Advisory Committee's recommendation. He stated the project was located in the Cedar Ridge Estates subdivision, west of Garnett Road and north of Florence Street and was platted in 1971. He noted the Reserve Area was platted as a drainage easement and was privately owned. He reviewed the location on a map. He explained it was originally supposed to be a reserve but was bundled with other land into one lot by the developer in 1984. He stated the gentleman to the south purchased the property in 2013. He stated the original design outlet of the culvert was under Cedar Ridge Road to an open ditch. He noted a junction box was added to the downstream culvert connecting the crossroad culvert and the driveway culverts on the west side of Cedar Ridge Road. He indicated the pipe outlet from the junction box was a private 30-inch corrugated metal pipe; the private pipe was failing and causing sink holes in the reserve area and the failing pipe could cause a blockage and back water up onto Cedar Ridge Road. He displayed and discussed photos of the area. He noted the flood plain boundary was right next to the pipe. He stated this was a private system connected to the City's system. He indicated the City proposed to install a manhole at the bend in the pipe, replace a bit of the pipe, and connect the pipe to another system to ensure it did not flow into the floodplain. He noted the City was working to save a large mature tree on the property which was why the drainage would be angled. He explained the benefit of repairing this drainage area was to prevent flooding of the City system and roadway. He stated the estimated cost of repair was \$80,000 dollars.

Discussion ensued regarding the proposed repair plan; where the pipe led; the corrugated pipe which was eroding and collapsing causing water flow backup; the proposed repair plan leaving the flood plain intact; the property owner being the applicant who was willing to allow the City to work on the property.

Mr. Wilson explained this project would protect the roadway from flooding.

Vice Chair Mason asked if the City could dig a ditch as opposed to burying a new pipe and directing the water into the floodplain.

Mr. Wilson indicated it was possible to dig a ditch or swale and redirect the waterflow; however, the property owner did not wish for that to be done.

Committee Member Hamilton asked how much a ditch or swale would cost.

Mr. Wilson responded it could cost around \$40,000 dollars or so, and the tree would have to be removed which would cost extra.

Committee Member Parks noted the City had to be willing to work with the property owner or it would not be able to access the property to fix the problem.

Committee Member Hamilton noted it would be expensive to fix damage caused by flooding to the street.

Chairperson Hendricks commended the City for wishing to preserve the mature tree.

Committee Member Gillespie noted the property might need a pipe as opposed to a ditch.

Mr. Schwab noted this property was built to Tulsa standards, not Broken Arrow standards and was part of a property swap done a long time ago between Tulsa and Broken Arrow. He noted he was confused by the layout of the stormwater system as it seemed to run from private to public to private property.

Mr. Wilson stated the only stormwater collecting system in this area which was truly public was the crossroad system, all the others were installed privately.

Discussion continued regarding the stormwater collecting system in this area.

Mr. Wilson noted part of this property was originally platted as a reserve but was eventually bundled with other land into one lot which now had one owner and therefore the drainage easement language was not clear.

Chairperson Hendricks asked if the property owner was maintaining this portion of the parcel.

Mr. Wilson responded in the affirmative.

Vice Chair Mason asked if there was any opportunity for the homeowner to partner with the City on this project, especially since the property owner did not want a ditch, the lower cost option.

Mr. Wilson responded he had not asked that question, but he could ask the property owner.

Committee Member Wiedower asked about the current best practice.

Mr. Schwab responded an open ditch might be the better option.

Committee Member Wiedower stated rather than putting in a pipe which would eventually fail, it might be better to dig the ditch.

Mr. Wilson noted the pipe which existed lasted almost 50 years, and the plastic pipe which would replace the existing pipe had a lifespan of 100 years.

Discussion ensued regarding the property owner having the right to refuse to allow the City on the property to dig a ditch; the road continuing to flood if the City did not fix the problem; the property owner possibly having liability if his private system was damaging the public system; and the City not having the ability to force the property owner to agree to the less expensive option.

The City Attorney explained if the private system was not repaired, and eventually it caused damage to the public system, it was possible to sue the homeowner for causing the damage, but it would be a big burden to the legal department and would require a lot of experts to prove liability.

Mr. Schwab agreed and stated it would cost the City more money to pursue the liability route than it would cost to simply repair the system in a manner approved by the homeowner. He said he would prefer to go meet the property owner with Mr. Wilson. He asked if the City

could simply cut off the private system's access to the public system.

Mr. Wilson responded this was an option.

The City Attorney indicated the property owner then might be able to claim the City's water was causing damage to his private property, so it would be important to make sure this could not happen before cutting off the access.

Mr. Schwab stated yes, a ditch would be the cheapest solution, and if the property owner was not willing to allow a ditch, the pipe was then the second cheapest solution. He indicated there was a liability issue, but it would cost more to pursue this avenue than to simply install a pipe.

Vice Chair Mason noted the property owner was willing to grant a temporary construction easement at no cost.

Mr. Wilson concurred noting the property owner would continue to maintain the property after construction.

Mr. Schwab stated he would prefer a permanent easement and the City taking ownership of the pipe.

Mr. Wilson stated this was also an option.

Discussion ensued regarding making a motion to approve the expenditure if the City took ownership of the pipeline and was granted a permanent storm sewer easement by the property owner; and the property owner needing to be in agreement before moving forward.

MOTION: A motion was made by Lori Hendricks, seconded by Amber Hamilton.

Move to recommend to City Council to expend funds for construction of drainage improvements in the Cedar Ridge Estates Subdivision (Case No. 23-006), contingent upon the homeowner agreeing to the City taking ownership of the pipe and granting the City a permanent storm sewer easement

The motion carried by the following vote:

Aye: 7 - Christi Gillespie, Amber Hamilton, Johnnie Parks, Donna Wallace, Donna Wiedower, Denise Mason, Lori Hendricks

7. Adjournment

The meeting was adjourned at approximately 7:20 p.m.

MOTION: A motion was made by Johnnie Parks, seconded by Christi Gillespie.

Move to adjourn

The motion carried by the following vote:

Aye: 7 - Christi Gillespie, Amber Hamilton, Johnnie Parks, Donna Wallace, Donna Wiedower, Denise Mason, Lori Hendricks

Lori Hendricks, Chairperson

Lisa Blackford, Deputy City Clerk