

CITY COUNCIL STUDY SESSION MINUTES

September 29, 2015

The City Council of the City of Norman, Cleveland County, State of Oklahoma, met in a Study Session at 5:30 p.m. in the Municipal Building Conference Room on the 29th day of September, 2015, and notice and agenda of the meeting were posted at the Municipal Building at 201 West Gray, and the Norman Public Library at 225 North Webster 24 hours prior to the beginning of the meeting.

PRESENT: Councilmembers Allison, Castleberry, Heiple, Holman, Jungman, Lang, Miller, Williams, Mayor Rosenthal

ABSENT: None

Item 1, being:

DISCUSSION REGARDING THE MONITORING AND COMPLIANCE PLAN FOR THE LAKE THUNDERBIRD TOTAL MAXIMUM DAILY LOAD STUDY.

Mr. Shawn O'Leary, Director of Public Works, said the Department of Environmental Quality (DEQ) mandated a requirement for cities to create a Total Maximum Daily Load (TMDL) Compliance and Monitoring Plan for Lake Thunderbird, which is due in November, 2015. He said TMDL is a calculation of the maximum amount of a pollutant that a waterbody can receive and still meet water quality standards and an allocation of that load among the various sources of the pollutant. He said it is very difficult to pinpoint sources of storm water and flow. Olsson and Associates were hired in September 2014, to develop a 20 year TMDL Plan that is currently 95% complete and is the only TMDL Plan of its kind in Oklahoma so Norman is forging new ground.

Mr. O'Leary said Lake Thunderbird was built in 1965 and has 256 square miles of drainage area that includes portions of Norman, Moore, Noble, and Oklahoma City as well as portions of other cities in Oklahoma and unincorporated portions of Cleveland County. Lake Thunderbird is a water supply for Norman, Midwest City, and Del City; however, Norman is the only jurisdiction that discharges storm water into Lake Thunderbird and uses that storm water as its main source of drinking water. He said Lake Thunderbird's drainage area is one of the smallest drainage areas for a man-made lake in the State of Oklahoma, which makes it difficult to control water quality.

Mr. O'Leary highlighted previous TMDL steps as follows:

- In 2010, the Environmental Protection Agency placed Lake Thunderbird on their 303(d) list (a list of bodies of water with poor water quality) as a Sensitive Water Supply (SWS)
- In November 2013, the Department of Environmental Quality published the TMDL
- In September 2014, Norman acquired Olsson and Associates' services
- From October 2014, through June 2015, the Plan was developed
- On May 12, 2015, a City Council Study Session was held
- On June 29, 2015, the first public meeting was held
- On September 16, 2015, the second public meeting was held
- On September 29, 2015, a City Council Study Session was held
- On October 27, 2015, the TMDL Plan is scheduled to be adopted by City Council
- In November 2015, the TMDL Plan will be submitted to ODEQ

In 2011, the Oklahoma Water Resources Board reported that excess nitrogen and phosphorous leads to significant water quality problems including reduced spawning grounds and nursery habitats, fish kills, hypoxic/anoxic conditions, harmful algal blooms, and public health concerns related to impaired drinking water sources. Mr. O'Leary said Lake Thunderbird is a phosphorous limited system and soil is one of the greatest pollutants because phosphorous clings to soil particles.

In 2007, Dr. Baxter Vieux, Vieux and Associates, assisted in preparing information for the Oklahoma Water Conservation Commission (OCC) regarding the amount of phosphorous going into the lake and the impact of water quality under current base line conditions as well as build out scenarios of urban development. The standard threshold of Chlorophyll A (CHL-A) is 10 milligrams per liter (mgl) and in 2007, Lake Thunderbird was over 30.8 mgl. Dr. Vieux suggested the total phosphorous load would double at the total buildout scenario.

Mr. O'Leary said Best Management Practices (BMPs) potentially reduce loadings by 74% (baseline) and 84% (build-out). He said obtaining 10 mgl will require baseline requirements of wetlands and structural control while build-out will require wetlands, structural control, and more than voluntary fertilizer reduction.

Mr. O'Leary said Norman, Moore, and Oklahoma City are known as Municipal Separate Storm Sewer Systems (MS4) communities and are all regulated by Oklahoma Department of Environmental Quality (ODEQ) and EPA. ODEQ is requiring each community to develop compliance and monitoring plans for storm water. The City of Norman has been coordinating with members of each community and working together as much as possible, but each community is preparing their own TMDL Plan and DEQ will have to figure out how these plans will work together to accomplish the goal of improving water quality in Lake Thunderbird. He said the City of Moore hired a consultant in April and are concentrating on the southern portion of their watershed where more of the development is located, but the entire City is in the watershed. The City of Oklahoma City is preparing their TMDL Plan in-house because they have highly qualified Staff to do that and they have been monitoring their TMDL for years. He said Norman has been working very closely with ODEQ throughout this entire process and ODEQ has been reviewing Norman's TMDL Plan to ensure Norman is meeting all of the principles and goals of the program in effect to ensure the plan will not be rejected in November.

Mayor Rosenthal asked if the entire City of Moore is located in the Lake Thunderbird watershed why are they are concentrating on the southern portion of the watershed only and Mr. Reza Khakpour, Olsson and Associates, said he has a very limited understanding of Moore's TMDL Plan and does not want to assume anything. He said each City has to submit their TMDL Plan to ODEQ and ODEQ will decide whether or not cities are meeting their TMDL requirements. Councilmember Allison asked if Norman could submit an objection to ODEQ regarding Moore's plan. Mr. O'Leary said it is a delicate situation and Moore is keeping their plan close to the vest and are not holding any public meetings; however, in November all the plans will become public documents once they are submitted to ODEQ.

Councilmember Miller said the smart thing to do is be transparent and if ODEQ has been reviewing Norman's plan since July, have they given any feedback to staff and Mr. O'Leary said yes, the feedback has been positive so far. Councilmember Castleberry asked if ODEQ could reject Norman's plan and ask them to revise it and then use Oklahoma City's or Moore's plan instead and Mr. O'Leary said yes they could reject Norman's plan. Councilmember Castleberry asked if there is an appeal process and Mr. Khakpour said no, if ODEQ does not like something in the plan then the City would have to change it.

Mr. O'Leary said development is one of the biggest challenges in terms of runoff. Councilmember Miller asked if agriculture, i.e., livestock, was also an issue and Mr. O'Leary said yes. Mr. O'Leary said the City does not have solid data and the monitoring plan is so important because cities do not know the sources of the pollution. Staff is focusing on gathering data in order to have solid data driven practices.

Councilmember Castleberry said phosphorous seems to be the biggest issue and asked why development creates more phosphorous than non-development and Mr. Sturtz said over fertilization and grass clippings from urbanized areas help increase the phosphorous. He said phosphorous is also naturally occurring through soil washed into the streambanks. Councilmember Castleberry asked if there is a way to counteract phosphorous and Mr. Sturtz said that is not a simple thing to do.

Mr. O'Leary said phosphorous is generally not needed to fertilize grass in most yards, but phosphorous is in most fertilizer products used so Norman adopted a no phosphorous rule for fertilizer products. Councilmember Castleberry asked if there has been a reduction in phosphorous since the ordinance went into effect and Mr. Sturtz said there have been a slight reduction in the loadings going into Lake Thunderbird, but Staff does not know if that is due to the ordinance, drought, or other factors.

Mr. Sturtz said the data the City is using was collected between 2005 and 2009, so Staff is dealing with very dated information. The most current data on TMDL's is from 2009, and consists of data from five sampling locations and only two of those locations are in Norman. Staff is trying to determine how accurate the data is and if this is really what the City needs to use because since that time, the City has adopted a Water Quality Protection Zone (WQPZ) ordinance as well as a non-phosphorous fertilizer ordinance. He said the City has taken some very proactive steps that will benefit the watershed.

With the data available, Staff has developed a Strategic Plan for effective watershed monitoring. The strategic plan is comprehensive and will provide a good view of Norman's contributing areas and what is coming from upstream. The monitoring plan will be flexible to enable the City to adjust data as BMPs improve water quality. The City will also have a Quality Assurance Project Plan which will ensure the data collected is accurate, correct, and usable. He is hoping ODEQ will coordinate with Oklahoma City, Moore, and Norman so they all have similar programs for better comparisons.

Mr. Sturtz highlighted the Monitoring Plan as follows:

- 10 Continuous Monitoring Gauge Stations
 - Provide Telemetry Data Read Every 15 minutes
 - Water level and flow recorded every 15 minutes with real time data availability
 - Gauge data measurements used to calculate loading
 - Sampling Location
 - Each location sampled monthly
 - Four of the monthly samples must occur during a storm event
 - Field screened for potential hydrogen (pH), temperature, dissolved oxygen, nitrogen, Total Suspended Solids (TSS)
- 14 Major Discharge Locations
 - Sampling Location
 - 40% of the sites to be sampled during a storm event each year (each site will be sampled two times over five years)
 - Field screened for pH, temperature, dissolved oxygen, specific conductance and turbidity
 - Grab sample for lab analysis of phosphorous, nitrogen, TSS

Mr. Sturtz highlighted the Compliance Plan as follows:

- Passive/Non-Structural BMPs (lower cost)
 - Adjust ordinances (Low Impact Development Design already being encouraged by the City of Norman)
 - Public education
 - Enforce construction storm water permits, including Storm Water Permit and Prevention Plan
 - Water Quality Protection Zone (WQPZ) ordinance (already in place)
 - Fertilizer ordinance (already in place)
- Stream Stabilization BMPs
 - Fencing to protect streams from livestock
 - Riparian buffers
 - Stream Bank stabilization
- Structural BMPs (highest cost/most removal)
 - Wetland creation
 - Regional detention ponds, wet ponds, infiltration practices
 - Stream stabilization and stream bank stabilization (some work already in progress)

Mr. O'Leary highlighted the Norman Action Plan as follows:

2016 Action Plan

Monitoring Plan

- Install water level gauges at 10 creek stations (at least four with telemetry)
- Monthly sampling, in-stream monitoring, and flow monitoring
 - Storm-flow sampling (four year minimum)
 - Begin rotating sampling of 14 major discharge locations
- Maintain Quality Assurance Project Plan requirements
- Partner with OCC for cost-free biological monitoring (every other year)

Implementation Passive/Non-Structural BMPs

- Increase street sweeping and storm water maintenance
- Public Education Programs
 - Fertilizer Use
 - Soil testing before applying phosphorous
 - Applicator registration and education
 - Community outreach
 - Pet Waste Management
 - Pet waste receptacles in City parks (30 receptacles located in 25 of the 62 parks)
 - Community outreach through media
 - Septic System Maintenance
 - Identify properties with private sewage systems for educational outreach
 - Watershed Protection
 - Educate property owners on stream protection

Improve Construction Storm Water Practices

- Education and Training
 - Bi-annual training for builders and developers
 - Quarterly storm water newsletter
 - On-site individual technical assistance
- Review of Storm Water Pollution Control Plans prior to and during construction
- Inspection of sites during construction
- Enforcement of noted violations during construction

The estimated cost of the Monitoring Plan implementation will be \$105,000 and the estimated cost of Compliance Plan implementation will be \$145,000. Total estimated cost of implementation is \$250,000 and that money has been budgeted in FYE 2016.

Mr. O'Leary highlighted the City's Action Plan as follows:

2017-2020 Action Plan

- Implement Passive/Non-Structural BMPs
 - Street sweeping increases and inlet clean out increases
 - Street sweeping increases from annual/bi-annually (secondary roads/arterial roads to bi-annually/quarterly)
- Rededicate Enforcement of Construction Storm Water Requirements
- Review First Three Years of Monitoring Data
 - Set new loading baseline (using all available data)
 - Adapt Compliance Plan as necessary
- Implement Stream Stabilization BMPs
 - Partner with Oklahoma Conservation Commission (OCC) and local Agriculture Extension Agent to accomplish this task

2020 and 2021 Action Plan

- Implement Urban/Suburban Structural BMPs
 - Review ordinances for applicability (revise ordinances if needed)
 - Identify key areas
 - Begin with demonstration projects
- Begin Riparian Buffer Restoration
- Review First Five Years of Monitoring Data
 - Assess Compliance Plan with load requirements
 - Evaluate validity of TMDL

Mr. O'Leary said the strategies for success include monitoring and data analysis to determine compliance; annual data summaries; an interim report every five years; re-evaluation plan every five years; and conceptualizing and participating with ODEQ in creation of a Watershed Protection Group.

Council Comments/Questions

Councilmember Holman asked how the wetlands on Rock Creek Road are working out and Mr. O'Leary said Norman partnered with OCC on the manufactured wetlands and it is working very well. He said development is taking place next to the wetlands area so time will tell what effect that will have on the wetlands environment. Councilmember Lang said wetlands serve a huge benefit to wildlife.

Councilmember Heiple said Oklahoma City and Moore's runoff goes into Norman's lake so Norman is basically cleaning up their mess. Mr. O'Leary said ODEQ is charged with finding the source(s) of the pollution and ways to get it stopped or reduced. Councilmember Heiple asked if ODEQ has the authority to make those cities pay to clean up the lake and Mr. O'Leary said yes, but there first has to be a measured finding, which will not be seen for a while and that is why the Monitoring Plan is so critical. Mr. Sturtz said Oklahoma City and Moore will only be responsible for their own watershed cleanup and once storm water moves into Norman it is Norman's responsibility.

Councilmember Lang said Norman is the only city drinking its storm water and the only reason Oklahoma City and Moore would care about any of this is if ODEQ holds them accountable and fines them. Mr. O'Leary suggested Moore and Midwest City be a part of the Watershed Protection Group to help them understand how their runoff affects the lake and the importance of monitoring.

Councilmember Castleberry asked how storm water re-use factors into the TMDL Plan and Mr. O'Leary said it is argued that monitoring and compliance will improve storm water quality by decreasing the pollutant rate.

Mayor Rosenthal reminded everyone that \$250,000 in TMDL implementation costs have been factored into the FYE 2016 Budget. She asked what the City is currently spending on storm water activities. Mr. O'Leary said the City has a Storm Water Division within the Public Works Department that is spending approximately \$3 million a year in operating funds that includes mowing of rights-of-way.

Council Comments/Questions

Mayor Rosenthal hopes the City does not spend another five years monitoring a situation if there is a problem because the City will need to intervene and take action when a problem is identified and Mr. O'Leary agreed.

Councilmember Miller said citizens who attend the public meetings are typically citizens involved with the process in some way, i.e. they were on the Strategic Water Supply Committee, Storm Water Master Plan Committee, Environmental Control Advisory Board, etc. She said there is concern about when a Storm Water Utility will be put into place since these citizens understand how expensive monitoring and compliance will be. Mr. O'Leary said there is an overarching permit called the OKR04, which is the Storm Water Phase II Permit introduced in 2005. Staff has now learned that ODEQ is getting ready to issue the second Storm Water Permit in November at around the same time as the TMDL Plan. He said things are changing at the State and regulatory levels and Staff is just trying to keep up. Staff will update Council on what the second permit will add to the storm water program in terms of cost when the permit is issued.

Mayor Rosenthal said the TMDL Plan will be coming before Council for adoption in October so now is the time for Councilmembers to communicate with Staff if they have concerns with the proposed Plan.

Councilmember Castleberry said his only concern is what Staff has done since 2010 to coordinate with Oklahoma City and Moore and Mr. Sturtz said all communities meet during Central Oklahoma Storm Water Association meetings regarding any water quality concerns they may have. He said the communities try to look at ways, as a whole, to increase water quality in the Central Oklahoma area, but Staff has not met one-on-one with Oklahoma City or Moore. Mr. O'Leary said all communities are regulated by ODEQ and Oklahoma City is really good at storm water pollution control because they have been monitoring storm water for 25 years and have a great Storm Water Program.

Mayor Rosenthal said there have been previous efforts to engage other jurisdictions in discussions regarding the watershed, but they were not inclined to address the issue until ODEQ mandated them to do so. She said other jurisdictions do not have the same incentive as Norman to fix this.

Councilmember Castleberry asked if capital projects identified in the Storm Water Master Plan will take care of larger projects in this Compliance Plan and Mr. Sturtz said some of those projects would overlap, but a lot of the compliance standards will require new capital projects.

Mayor Rosenthal said she did not hear any issues with the proposed TMDL Plan and requested Staff put the finishing touches on the TMDL Plan and bring it back to Council in October for approval.

Items submitted for the record

1. PowerPoint presentation entitled, "Monitoring and Compliance Plan for the Lake Thunderbird total Maximum Daily Load (TMDL)," City Council Study Session, Tuesday, September 29, 2015

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The meeting adjourned at 6:47 p.m.

ATTEST:

City Clerk

Mayor