



CITY OF NORMAN, OK STAFF REPORT

MEETING DATE: 06/11/2024

REQUESTER: Jason Murphy, Stormwater Program Manager

PRESENTER: Scott Sturtz, Interim Public Works Director

ITEM TITLE: CONSIDERATION OF ACCEPTANCE, APPROVAL, REJECTION, AMENDMENT, AND/OR POSTPONEMENT OF AMENDMENT TWO TO CONTRACT K-2021-39 BY AND BETWEEN THE CITY OF NORMAN AND FREESE AND NICHOLS, INC., IN THE AMOUNT OF \$34,175, TO CONDUCT FEASIBILITY STUDIES FOR BEST MANAGEMENT PRACTICE INSTALLATION IN WOODCREST CREEK WATERSHED AS OUTLINED IN THE STAFF REPORT.

BACKGROUND:

Lake Thunderbird was constructed by the U.S. Bureau of Reclamation (BOR) in 1965 to impound the upper reaches of Little River and several tributaries east of Norman, Oklahoma, and north of the current alignment of State Highway 9. The watershed drains 256 square miles in Oklahoma and Cleveland Counties, including Norman, Oklahoma City and Moore, as well as small parts of unincorporated Oklahoma and Cleveland Counties. The Lake is operated by the Central Oklahoma Master Conservancy District on behalf of the U.S. BOR. In addition, the U.S. Army Corps of Engineers manages the flood control elements of Lake Thunderbird. Finally, the Oklahoma Department of Tourism and Recreation manages parks and recreation services at the Lake.

The Lake provides drinking water for the cities of Norman, Midwest City, and Del City. It also provides a myriad of recreational opportunities for citizens of Norman and of the State of Oklahoma as a warm water aquatic community affording quality fishing for a variety of species and as a primary body contact water body providing recreational boating and water sports activities. In order to continue to provide these recreational opportunities and continue to provide quality drinking water, the Lake must meet certain water quality standards. These standards are set by the Oklahoma Water Resources Board for the purpose of maintaining the beneficial uses of water bodies in the state, including lakes and streams.

Stormwater runoff to Lake Thunderbird has increased in both quantity and velocity as the populations of the nearby cities that deliver the vast majority of the stormwater runoff to the Lake have grown. Unintended consequences of strong growth include pollution in the water that runs off of the streets, buildings and lawns of the growing cities. This water flow carries sediment which clouds the water in the Lake and reduces its capacity and depth, while also carrying other

pollutants such as nutrients like nitrogen and phosphorus. All three of these pollutants are causing degradation to the water quality in the streams in the watershed as well as the lake itself.

In August 2010, the U.S. Environmental Protection Agency placed Lake Thunderbird on its 303(d) List of “Impaired Waterbodies”. This led to the establishment of a Total Maximum Daily Load (TMDL) by Oklahoma Department of Environmental Quality (ODEQ) in November of 2013.

The TMDL established waste load allocations (WLAs) for each of the cities. These WLAs established the maximum amount of each of the key pollutants of concern, total suspended solids, total nitrogen and total phosphorus, which each city can discharge to the Lake Thunderbird watershed. The TMDL also requires the cities of Norman, Oklahoma City, and Moore to develop and implement Compliance and Monitoring Plans describing how each city will comply with the TMDL requirements. The Compliance Plan defines the steps to be taken by the City of Norman (City) in order to reduce stormwater pollution in the watershed and meet the load reduction requirements set out in the TMDL. The Monitoring Plan defines steps the City will take to establish a baseline quantifying the amounts of pollutants in the runoff, and it also establishes a mechanism to monitor the effectiveness of Best Management Practices (BMPs) put into effect by the City as a result of its compliance efforts. ODEQ approved the City’s TMDL Compliance and Monitoring Plans on September 21, 2016, and required that the Monitoring Plan be fully implemented by November 12, 2016.

Implementation of the Plans is based on a 5 year permit cycle. The City began the first 5-year cycle by implementing a Monitoring Plan to establish a baseline for flow and pollutant loading of streams flowing from or through the City to Lake Thunderbird. BMPs were also implemented as part of the City’s Compliance Plan beginning with education campaigns and enhancing programs already in place, progressing to increasing cleaning efforts. The efforts during the first 5 years were aimed at reducing pollutants in stormwater runoff at the source. The Plans and the results of the first 5 years of monitoring must be reviewed at the end of this initial 5 year cycle to determine where best to establish structural BMPs during the next 5 year cycle.

When the Municipal Separate Storm Sewer Systems (MS4) permit is renewed or every 5 years, whichever comes first, the City must submit a compliance evaluation report for ODEQ review and approval. If this report does not show “significant progress” towards meeting the load reduction goals, the City will need to submit an updated compliance plan and implementation plan within 6 months of that report.

The Public Works Department, Stormwater Division prepared a Request for Proposals (RFP) to solicit the services of a qualified firm to review and analyze monitoring data generated during Years 1-5 of the City of Norman’s Lake Thunderbird TMDL monitoring program, determine compliance with TMDL’s load reduction requirements, identify potential changes to the City of Norman’s TMDL Compliance and Monitoring Plans, and update both plans and the associated Quality Assurance Project Plan as necessary.

Five (5) proposals were received for this project. The Selection Committee included three (3) staff members consisting of Michele Loudonback, Stormwater Program Specialist, Public Works Department; Carrie Evenson, Stormwater Program Manager, Public Works Department; and Scott Sturtz, City Engineer, Public Works Department; and two (2) private citizens including

Amanda Nairn, Vice Chair of the Environmental Control Advisory Board; and Courtney Dekalb-Myers, Horticulture Educator, Cleveland County OSU Extension Services. The Selection Committee members independently scored each statement of qualifications on a point scale as defined in the RFP. Based on these scores, three (3) firms were selected to be interviewed by the Selection Committee. The three (3) firms were ranked based on their interviews, and Freese and Nichols, Inc., was selected for this project. Freese and Nichols, Inc., was selected based upon their experience working with other municipalities on similar projects and the proposed methods and procedures for completing the project.

Required services included the following:

1. Review and analyze all available water quality monitoring data;
2. Calculate waste load allocations using maximum daily load;
3. Determine compliance with TMDL's load reduction requirements;
4. Identify potential changes to the City of Norman's TMDL Compliance and Monitoring Plans, and update both plans and the associated quality assurance project plan (QAPP);
5. Recommend location and type of potential structural water quality control measures; and
6. Evaluate and draft report for ODEQ summarizing progress toward compliance with the TMDL and progress toward achieving the WLAs and load reduction goals.

On October 13, 2020, City Council approved Contract K-2021-39, between the City of Norman and Freese and Nichols, Inc., for completion of the Lake Thunderbird Watershed TMDL Monitoring, Years 6-10, project.

On April 27, 2021, City Council approved Amendment 1 to Contract K-2021-39, between the City of Norman and Freese and Nichols, Inc., for additional work related to ensuring that the City meets DEQ requirements through the completion of the following tasks:

- Review and update the Stormwater Management Plan (SMP);
- Incorporate Best Management Practices (BMPs) identified as part of the TMDL program review into the SMP;
- Recommend a path forward for indirect potable reuse project modeling based on the findings of the modeling completed for the TMDL Compliance and Monitoring Plan Update;
- Evaluate potential water quality modeling software; and
- Coordinate with other agencies, organizations, and entities, including DEQ, regarding modeling results and the potential need revise the Lake Thunderbird TMDL to allow indirect potable reuse.

DISCUSSION:

In 2023, Freese and Nichols completed an update of the TMDL model for Lake Thunderbird under Contract K-2021-039. Results from that update were provided to the City. Updated nutrient and sediment loading calculations were completed for the entire watershed and for individual sub-watersheds. These loadings provided data showing concentrations of nutrient and sediment

inputs from each of the sub-watersheds. Using this data to guide nutrient and sediment reduction efforts in the form of constructed BMPs, it has been determined that Woodcrest Creek (WC-1) is one of the highest sources of sediment and phosphorous in the City. In an effort to potentially reduce loadings for this watershed, a feasibility study is being proposed to determine if segments of Woodcrest Creek and its tributaries could undergo bank stabilization efforts. In addition, a feasibility study for converting an existing dry detention pond to a rain garden so that stormwater runoff could not only be contained but treated through natural processes to effect higher water quality effluent and reduce nutrient and sediment loads into Woodcrest Creek and the Little River. These studies and potential subsequent projects would also tie into the City's Blue Neighborhood program in this sub-watershed, providing tangible evidence for a public education program showing the efficacy of designed efforts to improve water quality in Lake Thunderbird. Efforts to reduce nutrient and sediment loading are also required by the City through the TMDL issued by ODEQ and the City's accepted TMDL Monitoring Plan. The City's existing water quality monitoring network would be utilized to determine if the efforts are successful by comparing historic data to future data after projects are completed.

The Lake Thunderbird TMDL Project, Design (Account 50599968-46201; Project DR0061) is used to account for these compliance-related activities. Budgeted capital funds in the amount of \$34,175 are available for the additional work related to performing a feasibility study for Best Management Practices.

RECOMMENDATION 1:

Staff recommends approval of Amendment 2 to Contract K-2021-39, between the City of Norman and Freese and Nichols, Inc., in an amount not to exceed \$34,175 for a Total Project Cost of \$304,706 for the Lake Thunderbird Total Maximum Daily Load (TMDL) Monitoring Data Analysis and Compliance and Monitoring Plan Update and subsequent Best Management Practices feasibility studies.