

AGENDA  
SHAWNEE MUNICIPAL AUTHORITY  
October 6, 2014 AT 6:30 P.M.  
COMMISSION CHAMBERS AT CITY HALL  
SHAWNEE, OKLAHOMA

CALL TO ORDER

DECLARATION OF A QUORUM

1. Consider approval of Consent Agenda:
  - a. Minutes from the September 15, 2014 meeting
2. Consider acceptance of final Shawnee Municipal Authority Comprehensive Utility System Master Plan as prepared by Smith Roberts Baldischwiler, LLC.
3. Consider an Executive Session for discussion of potential claims, litigation or other options regarding encroachment into the City's utility service area by other entities as authorized by 25 O.S. §307(B)(4).
4. Consider matters discussed in Executive Session regarding potential claims, litigation or other options regarding encroachment into the City's utility service area by other entities as authorized by 25 O.S. §307(B)(4).
5. Discussion, consideration and possible action to terminate agreement for legal services with Modrall Sperling.
6. New Business

(Any matter not known about or which could not have been reasonably foreseen prior to the posting of the agenda)
7. Adjournment

Respectfully submitted

Phyllis Loftis, CMC, City Clerk

**Shawnee Municipal Authority**

**1. a.**

**Meeting Date:** 10/06/2014

SMA 9-15-14 Minutes

Submitted By: Lisa Lasyone, City Clerk

Department: City Clerk

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Information

Title of Item for Agenda

Minutes from the September 15, 2014 meeting

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Attachments

MINUTES SMA 9-15-14

THE TRUSTEES OF THE SHAWNEE MUNICIPAL AUTHORITY OF THE CITY OF SHAWNEE, COUNTY OF POTTAWATOMIE, STATE OF OKLAHOMA, MET IN REGULAR SCHEDULED SESSION IN THE COMMISSION CHAMBERS AT CITY HALL, 9TH AND BROADWAY, SHAWNEE, OKLAHOMA, MONDAY, SEPTEMBER 15, 2014, DURING THE BOARD OF CITY COMMISSIONERS MEETING AT 6:30 P.M., PURSUANT TO NOTICE DULY POSTED AS PRESCRIBED BY LAW. UPON ROLL CALL, A QUORUM WAS DECLARED WITH THE FOLLOWING MEMBERS IN ATTENDANCE:

PRESENT: Vogel, Agee, Harrod, Mainord, Hall, Shaw, Dykstra

ABSENT: None

Call to Order

Declaration of a Quorum

AGENDA ITEM NO. 1: Consider approval of Consent Agenda

a. Minutes from the September 2, 2014 meeting

A motion was made by Trustee Harrod, seconded by Trustee Dykstra, to approve the Consent Agenda item No. 1(a). Motion carried 7-0.

AYE: Harrod, Dykstra, Vogel, Agee, Mainord, Hall, Shaw

NAY: None

AGENDA ITEM NO. 2: Consider Bids:

a. Sanitary Sewer Rehab Project (Various Locations) Contract No. SMA-15-01 (Award)

Public Works Director Steve Nelms announced that five bids were received and after review and consideration it was staff's recommendation to increase the quantities in the contract and to award the bid to Jordan Construction of Tecumseh, Oklahoma in the total amount of \$908,790.00.

A motion was made by Trustee Harrod, seconded by Trustee Dykstra, to accept staff's recommendation and award the bid to Jordan Construction in the total amount of \$908,790.00. Motion carried 6-0-1.

AYE: Harrod, Dykstra, Vogel, Agee, Mainord, Hall

NAY: None

ABSTAIN: Shaw

AGENDA ITEM NO. 3:

New Business (Any matter not known about or which could not have been reasonably foreseen prior to the posting of the agenda)

There was no New Business.

AGENDA ITEM NO. 4:

Adjournment

There being no further business to be considered, the meeting was adjourned by power of the Chair. (7:44 p.m.)

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WES MAINORD  
CHAIRMAN

ATTEST:

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PHYLLIS LOFTIS, CMC, CITY CLERK  
SECRETARY

**Shawnee Municipal Authority**

**2.**

**Meeting Date:** 10/06/2014

Comp Utility Sys MP

Submitted By: Lisa Lasyone, City Clerk

Department: City Clerk

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Information

Title of Item for Agenda

Consider acceptance of final Shawnee Municipal Authority Comprehensive Utility System Master Plan as prepared by Smith Roberts Baldischwiler, LLC.

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Attachments

SMA CUSMP

SMA Master Plan Scope

Steve Nelms  
Utility Director  
405-273-1960

Lyndsay Pickens  
Administrative Assistant  
Phone: 405-273-1960  
Fax: 405-878-1550

**Mayor**  
WES MAINORD



111 S. Kickapoo, Shawnee, OK 74801

Brad Schmidt  
Maintenance Manager  
405-878-1513

Mark Flores  
Special Projects Manager  
405-878-4253

**Commissioners**  
Gary Vogel  
Linda Agee  
James Harrod  
Keith Hall  
Lesa Shaw  
Micheal Dykstra

## MEMORANDUM

To: Brian McDougal, City Manager.  
From: Steve Nelms, Utility Director  
CC: Mayor and City Commission. Cindy Sementelli, Finance Director  
Date: 10/02/2014

Re: Adopt Comprehensive Multi-Phase Utility Master Plan provided by Engineering Consultants Smith, Roberts, Baldischwiler. (Oct 6<sup>th</sup>, 2014)

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Nature of the Request: Staff is respectfully requesting that the City Commission adopt the Utility Departments Multi-Phase Comprehensive Utility Master Plan with the understanding that this Master Plan will be used as a guide for future capital improvement projects.

Staff Analysis, Considerations: Staff has worked closely with Smith, Roberts, Baldischwiler over the past two years while developing the Multi-Phase Utility Master Plan. Staff is pleased with the final document and recommendations made within the master plan. The Multi-Phase Utility Master Plan will be used only as a guide when budgeting for CIP projects in the future.

Recommendation: Staff respectfully requests that the City Commission adopt the Multi-Phase Utility Master Plan that has been developed by Smith, Roberts, Baldischwiler. Please note that under the "attached" scope of services on PDF page 18. **(5) Develop Collection System Baseline** CIP 5.4 Develop Calibrate Hydraulic Model, staff is still working with SRB collecting data in the field that will help in creating a better sewer hydraulic model. To date \$523,128 has been invoiced leaving a balance of \$26,332 Contract amount was \$549,460.

Budget Consideration: As stated above there is still \$26,332 that has not been invoiced out of the original contract amount of \$549,460 that will be invoiced after the Sewer Hydraulic Model has been completed to Staffs standards of operation.

Staff will return to the City Commission at a later date with several project recommendations and a financial plan for funding the projects.

# SCHEDULE OF PAYMENTS

**SMITH ROBERTS BALDISCHWILER, LLC**  
**100 NE 5TH ST**  
**OKLAHOMA CITY, OK 73104**  
**VENDOR # 1073**  
**NON-PO**

| DATE     | ACCOUNT #       | PAY REQUEST                       | AMOUNT        | BALANCE       |
|----------|-----------------|-----------------------------------|---------------|---------------|
|          | 501-5-1010-5339 | encumbered                        | \$ 549,460.00 | \$ 549,460.00 |
| 09/07/12 | 501-5-1010-5339 | PAY REQUEST #1<br>INVOICE# 31893  | \$ 22,920.00  | \$ 526,540.00 |
| 10/08/12 | 501-5-1010-5339 | PAY REQUEST #2<br>INVOICE# 31966  | \$ 14,736.00  | \$ 511,804.00 |
| 10/31/12 | 501-5-1010-5339 | PAY REQUEST #3<br>INVOICE# 32035  | \$ 54,894.00  | \$ 456,910.00 |
| 12/20/12 | 501-5-1010-5339 | PAY REQUEST #4<br>INVOICE# 32177  | \$ 27,045.00  | \$ 429,865.00 |
| 12/31/12 | 501-5-1010-5339 | PAY REQUEST #5<br>INVOICE# 32236  | \$ 21,079.00  | \$ 408,786.00 |
| 01/31/13 | 501-5-1010-5339 | PAY REQUEST #6<br>INVOICE# 32316  | \$ 28,544.00  | \$ 380,242.00 |
| 02/28/13 | 501-5-1010-5339 | PAY REQUEST #7<br>INVOICE# 32392  | \$ 33,761.00  | \$ 346,481.00 |
| 03/31/13 | 501-5-1010-5339 | PAY REQUEST #8<br>INVOICE# 32550  | \$ 19,485.00  | \$ 326,996.00 |
| 06/18/13 | 501-5-1010-5339 | PAY REQUEST #9<br>INVOICE# 32636  | \$ 33,930.00  | \$ 293,066.00 |
| 08/06/13 | 501-5-1010-5339 | PAY REQUEST #10<br>INVOICE# 32871 | \$ 70,034.00  | \$ 223,032.00 |
| 09/05/13 | 501-5-1010-5339 | PAY REQUEST #11<br>INVOICE# 32969 | \$ 36,667.00  | \$ 186,365.00 |
| 10/15/13 | 501-5-1010-5339 | PAY REQUEST #12<br>INVOICE#       | \$ 31,770.00  | \$ 154,595.00 |
| 12/05/13 | 501-5-1010-5339 | PAY REQUEST #13<br>INVOICE# 33250 | \$ 30,460.00  | \$ 124,135.00 |
| 01/07/14 | 501-5-1010-5339 | PAY REQUEST #14<br>INVOICE# 33355 | \$ 62,333.00  | \$ 61,802.00  |
| 04/07/14 | 501-5-1010-5339 | PAY REQUEST #15<br>INVOICE# 33427 | \$ 13,450.00  | \$ 48,352.00  |
| 06/16/14 | 501-5-1010-5339 | PAY REQUEST #16<br>INVOICE# 33677 | \$ 22,020.00  | \$ 26,332.00  |

**TOTAL PAID**

**TO DATE: \$ 523,128.00**

**Exhibit A**  
**Scope of Work**  
**Shawnee Municipal Authority Project Number \_\_\_\_\_**  
**Comprehensive Master Plan**

**GENERAL**

The following Scope of Work describes the CONSULTANT's scope of work associated with the Shawnee Municipal Authority (SMA) Comprehensive Master Plan. The scope of work for this project will consist of developing a Capital Improvements Plan(CIP) for the water supply, water treatment, collections systems, and wastewater treatment facilities. The master plan will include recommendations for prioritization and phasing of the recommended short term (0- 5 years, and 5-10 years) and long term (10-20 years) CIP projects..

Included in the master plan will be maps of the existing and proposed 0-5 years and 5-10 year recommended infrastructure improvements to the water and sewer systems, indicating line sizes, facilities (pumping, storage treatment, etc), and recommended phasing with associated triggers listed in accompanying legend. In addition to inclusion with the report, the FINAL recommended maps will be provided in a larger wall size, or on foam board and laminated for preservation.

The scope of work includes the following major tasks:

- Task 1 – Project Management
- Task 2 – Project Initiation and Data Collection
- Task 3 – GIS System Conversion (OPTIONAL)
- Task 4 – Develop Water Supply and Treatment CIP
- Task 5 – Develop Water Distribution System CIP
- Task 6 – Develop Collections Systems CIP
- Task 7 – Develop Wastewater Treatment CIP
- Task 8 – Prepare Comprehensive Master Plan Report

**TASK 1.0 - PROJECT MANAGEMENT**

**Purpose:** The purpose of task is to address the project management responsibilities associated with proper scheduling review, budget control, invoice preparation and coordination with the SMA and the CONSULTANT.

**Deliverables:**  
Monthly Project Updates

**Tasks:**

**1.1 Project Control and Reporting**



Prepare and submit a monthly invoice. Prepare monthly invoice based on the project progress. This report will contain the following elements:

- 1.1.1 Work Completed to Date
- 1.1.2 Scope elements added/deleted
- 1.1.3 Updated Action/Decision Logs
- 1.1.4 Budget and Schedule S-Curves

## **1.2 Quality Management**

CONSULTANT will manage the quality of the project deliverables throughout the development of the project. Specific activities that the CONSULTANT may employ to ensure the quality of the project include:

- 1.2.1 Peer Review Design Concepts by members of the CONSULTANT senior staff.
- 1.2.2 Quality Review prior to submitting deliverables.
- 1.2.3 Constructability Review.

## **1.3 Public Relations**

- 1.3.1 City Council Work Session Update
- 1.3.2 City Council Meeting and Final Approval

## **1.4 Agency Coordination:**

CONSULTANT will meet with ODEQ staff to discuss the findings of the evaluation of the wastewater treatment alternatives and evaluate the permitability of the recommended alternative. In addition, CONSULTANT will meet with ODEQ staff to discuss possible future wastewater discharge and water treatment permit limits.

## **TASK 2.0 PROJECT INITIATION AND DATA COLLECTION**

**Purpose:** The purpose of this task is to develop the foundation for the evaluation of the water and wastewater system components to develop and prioritize associated capital improvements. This task includes the selection of a wastewater and water model, data collection and data gap analysis, determination of key assumptions, assessment of projected water demand and wastewater loads, and criteria to be used in screening and evaluation of potential capital project alternatives.

As an optional task, the CONSULTANT will work with SMA staff to convert the water distribution and wastewater collection system network from their native files into an arc GIS database to be utilized as a foundation

### **Deliverables:**

TM-01 Data Needs Memorandum (DRAFT)  
TM-02 Basis of Planning (DRAFT Chapter 2)  
Meeting Minutes with updated Decision/Action Logs

### **Key Project Meetings:**

Kickoff/Water and Wastewater Model Selection  
GIS Conversion Workshops No. 1 and No. 2 (OPTIONAL)  
Basis of Planning

### **Tasks:**

#### **2.1 Kickoff/Water Model Selection Workshop**

Shawnee currently has an outdated H2ONet (4,000 pipe) water model and no wastewater collection system model. CONSULTANT will conduct a kickoff/model selection workshop to discuss the costs, functionality, and applicability of several different water and wastewater model. The advantages and disadvantages will be discussed and Water and Wastewater Models will be selected for use by CONSULTANT during the preparation of the master plan..

#### **2.2 Generate Data Needs Memorandum (TM-01)**

CONSULTANT will generate a data needs memorandum indicating the existing data required for the completion of the master plan including, but not limiting to the following:

1. Most recent water and wastewater system master plans
2. Historical total and service area population estimates
3. Historical wastewater flows to treatment facilities (past 10 years)
4. Key Planning and zoning information (i.e. 2003 Shawnee Comprehensive Plan)
5. In-house population projections from planning department
6. Building/Starts permit records

7. Wastewater and Water system maps deemed pertinent to this project
8. Water Yield Study

Other data sources that will be explored include US Census Bureau, State Water Plan, ESRI Data Center, and GeoStore.

## **2.3 Review Data and Analyze Data Gaps**

CONSULTANT will organize an internal document review workshop to review the documents with City Staff and develop a data collection plan for capture of additional data needs.

## **2.4 Preparation of Basis of Planning TM (TM-02)**

### **2.4.1 Confirm Baseline Water Demands**

CONSULTANT will review the recorded historical population, land use factors, and average and peak day water demands. Based upon the population projections for Shawnee, OK developed as part of the Central Oklahoma 2050 Strategic Water Supply Plan (2009), CONSULTANT will establish the baseline water demands (i.e. without conservation program) for the anticipated 20 year planning period for the purposes of development of a short term < 10 years and long term 10-20 years CIP with appropriate demand based triggers.

### **2.4.2 Project Dry Wastewater Flows and Loadings**

CONSULTANT will review the historical wastewater flow and characteristics to determine the historical dry weather wastewater flows and loading allocation within the existing collection system drainage basins. Dry weather flow coefficients (gallons/area/day) and diurnal patterns will be established for each land use and population density type. Utilizing the population densities and land use allocations established by the 2003 Comprehensive plan, the wastewater dry weather flows in each drainage basin will be projected at 5 year intervals to 2050.

### **2.4.3 Develop Conservation Program and Project Impacts on Water Demands**

CONSULTANT will examine the existing conservation program and prepare estimates of the baseline water demand reductions (annual and peak) associated with each major conservation measure or program. Each measure will be coupled with an assumed "saturation" factor (e.g., the number or percent of SMA's customers adopting each measure) for each planning decade, to establish overall conservation saving estimates for each planning decade. Projections of conservation savings will be made with the intent of providing adequate time for implementation.

### **2.4.4 Conduct Basis of Planning Workshop**

CONSULTANT will conduct a "Basis of Planning" workshop with SMA Staff to define all key planning assumptions that will be used throughout the project.

During this workshop, we intend to reach consensus on the demand projections used in the plan, the planning horizon, the overall goals and objectives, and develop screening and evaluation criteria that will be used in the evaluation of water supply integration alternatives.

**2.4.5 Prepare Draft and Final Basis of Planning TM (TM-02)**

CONSULTANT will prepare five (5) draft copies of the Basis of Planning Technical Memorandum to establish the baseline water demands, and dry weather flows and loadings in decade increments to city build out conditions.

**TASK 3.0 DEVELOP WATER SUPPLY AND TREATMENT CIP**

**Purpose:** The purpose of this task is to identify the condition and capacity limitations of the existing source water supply transmission, treatment, and residuals handling/disposal systems, determine the capital improvement projects necessary to relieve these limitations, and define the demand based triggers for initiation of associated capital improvements.

**Deliverables:**

Water Supply Transmission and Treatment CIP (DRAFT Chapter 3 of Master Plan)  
Meeting Minutes with updated Decision/Action Logs

**Key Project Meetings:**

Water Systems Condition Assessment/Operator Questionnaire  
Treatment and Residuals Alternatives Evaluation Workshop  
Review of Water Supply and Treatment CIP (Draft Master Plan Chapter 3)

**Tasks:**

**3.1 Develop Operator/Maintenance Questionnaire**

**3.2 Hydraulic Evaluation of Water Treatment Plant**

**3.2.1 Develop Treatment Process Hydraulic Profile**

This task involves performing a hydraulic evaluation and preparation of a plant hydraulic profile for the existing plant to determine the location of the hydraulic bottlenecks.

The hydraulic profile of the facilities will depict current average and peak flows. From this work, ENGINEER will identify hydraulic bottlenecks that need to be eliminated to achieve expansion goals and provide improvements complimentary to ultimate build-out of the plant facilities.

**3.2.2 Field Investigations and WTP Hydraulic Model Calibration**

CONSULTANT will review existing survey data and geotechnical reports.

Utilizing the existing site benchmarks, a survey of the WTP hydraulic features will be conducted to determine the elevations of these features with respect to the plant water surface elevations for the purposes of conducting the hydraulic evaluation. In addition, a subsequent site survey trip will be conducted to measure the water surface elevations at the treatment plant under a different flow rate(s) for the purposes of hydraulic model calibration.

### **3.3 Establish Finished Water Quality Goals**

The CONSULTANT will develop with SMA Staff input, a set of finished water quality objectives. These objectives will be used as the basis for determining current plant capabilities as well as developing future treatment alternatives to meet these performance objectives, while meeting the requirements of anticipated future State and Federal regulations.

The CONSULTANT will present Finished Water Quality Objectives in tabular format, indicating raw and finished water quality in comparison with State and Federal criteria.

### **3.4 Unit Process Evaluation**

The CONSULTANT will perform an evaluation of the unit operations of the existing Plant. This work will be performed to determine the necessary improvements for expansion of the plant, while recognizing the ultimate build-out capacity of the Existing WTP. In addition, the Engineer will assess the ability of each unit operation, as part of the overall treatment process, to produce water that is in compliance with current and anticipated future water quality goals. Specific treatment objectives and/or water quality parameters to be assessed include 1) disinfection, 2) TOC reduction, 3) removal of disinfection by product formation potential, 4) product water stability, 5) Settled and Filtered water turbidity, 5) Hardness reduction, 7) UV Transmittance, and 8) residuals handling.

The evaluation will include an investigation of necessary modifications to existing treatment processes and the addition of new basins and/or unit operations to achieve the increase in plant capacity. Consideration will be given such that the treatment process selected for the existing WTP Expansion will be compatible with future expansion and modifications to the existing facilities as well as the anticipated water quality of future water sources of raw water.

The following list of unit operations will be evaluated:

- Raw Water Metering & Splitting
- Flocculation/Sedimentation Basins
- Backwash Supply Storage and Piping System (including an evaluation of existing backwash storage tank)
- Finished Water Pumping
- Finished Water Storage
- Wash Water Recovery

- Sludge Lagoons
- Chemical Systems (type and adequacy)

### **3.5 Treatment Alternatives Evaluation**

CONSULTANT will develop a series of process alternatives that relieve hydraulic bottlenecks, generate finished water quality that meets or exceeds goals, and provide for an logically staged increase in firm treatment capacity to the firm yield of Twin Lakes and Wes Watkins Reservoir. Areas or components of the Plant whose condition could adversely impact treatment process performance and expansion capacity will be included in the CIP projects.

### **3.6 Raw Water Supply Transmission Evaluation:**

CONSULTANT will 1) determine the hydraulic capacity of the existing raw water transmission system 2) determine the improvements to the raw water transmission system to relieve hydraulic bottlenecks, and provide for a logically staged increase in firm water transmission capacity up to the projected peak day raw water supply demands within the timeframe of the master planning process.

### **3.7 Residuals Handling and Disposal Alternatives Evaluation:**

For the selected process alternative, the CONSULTANT will determine the estimated quantity and composition of residuals generated based upon annual average day flows up to the firm yield of Wes Watkins and Twin Lakes Reservoirs and current residuals composition.

CONSULTANT will examine the following alternatives for residuals handling:

- Expansion of existing lagoons.
- Engineered lagoons for enhanced dewatering
- Thickening and Mechanical Dewatering (centrifuges) with dewatered sludge storage.

CONSULTANT will examine the following alternatives for residuals disposal:

- Continued land application of dewatered solids.
- Land reclamation of state lands under ODEQ program.
- Permitted monofil
- Municipal Landfill
- Beneficial Use

In a workshop setting, CONSULTANT will screen and select the most viable alternative with the SMA Staff. Following the screening workshop, CONSULTANT will develop the selected alternatives, provide estimated capital and life cycle costs, and provide a phased implementation plan based upon average day and peak day demand flow triggers.

### **3.8 Prepare Short Term and Long Term Water Treatment CIP**

Utilizing the results of the analysis of the water treatment system, CONSULTANT will develop a prioritized list of recommended Capital Improvements Projects (CIP) for the water treatment process for the next 5 and 10 years, respectively. Included in the recommendations will be the estimates of conservation plan implementation costs, recommended conservation levels, and estimated range of reduction in peak day demands anticipated with the associated conservation level.

CONSULTANT will develop a prioritized list of longer term (> 10years) CIP projects for the water treatment system with appropriate demand triggers and recommended reserve capacity factors for each treatment project to satisfy demand triggers. A review meeting will be held to review the draft chapter and finalize the baseline water supply and treatment CIP strategy.

### **TASK 4.0 DEVELOP WATER DISTRIBUTION SYSTEM CIP**

**Purpose:** The purpose of this task is to develop, calibrate, and validate a robust CADD or GIS based hydraulic model to determine the hydraulic, condition, and water quality limitations of the existing distribution system in satisfying current and future projected demands. Then a CIP will be developed to address any deficiencies.

**Deliverables:**

Water Distribution System CIP (DRAFT Chapter 4 of Master Plan Report)  
Meeting Minutes with updated Decision/Action Logs  
Water Model License (OPTIONAL)

**Key Project Meetings:**

Water Model Development  
Water Model Validation  
Review of Water Distribution System CIP (Draft Chapter 4 of Master Plan)

**Tasks:**

#### **4.1 Develop Water System Hydraulic Model**

##### **4.1.1 Condition Assessment of Key Distribution System Components**

CONSULTANT will conduct condition assessment of key above ground and accessible below ground assets associated with the water distribution system. The condition assessment team will evaluate condition and assess remaining useful service life, criticality, vulnerability, risk, and other parameters for each asset. This investigation will be conducted at the same time as the condition assessment for the water supply and treatment systems.

##### **4.1.2 Establish Distribution System Hydraulic Criteria**

As part of the modeling effort, the CONSULTANT will establish the performance criteria that will be used to develop the CIP. The performance criteria will define the level of service that the SMA wants to receive and is willing to pay for.

#### **4.1.3 Develop Hydraulic Model**

4.1.3.1 Construct Representative Hydraulic Model: Using the hydraulic modeling software selected in Task 1, the CONSULTANT will develop hydraulic model representative of the distribution system using information provided by SMA staff. At a minimum the following attributes will be incorporated into the water model:

1. Line Lengths longer than 10 feet
2. Line diameters larger than or equal to 6-inches
3. Pipe Friction factors estimated from material, field observations from City Staff, and length of service.
4. Node elevations extracted from existing LIDAR data
5. Water storage elevations
6. Control valve and pressure regulating valve settings.
7. All current supply and booster pump data and operational curves
8. Water demands for current and future conditions.

4.1.3.2 Allocate Demands: Utilizing existing land use and population planning documents from the Shawnee Transportation Plan and other historical data, CONSULTANT will develop residential and commercial/industrial water demand distribution patterns and allocate demands at each node using the area method. If the City's water consumption data can be linked to the GIS database, the actual water use values from historical billing records will be utilized in the water model to develop point based allocation for each node.

4.1.3.3 Develop Seasonal diurnal patterns for residential and commercial/industrial users.

4.1.3.4 Conduct Model Development Meeting:

CONSULTANT will meet with City's distribution personnel to review model structure and confirm arrangement of model, location of valves, and other key components.

#### **4.2 Calibrate Hydraulic Model**

CONSULTANT will identify locations for use of pressure telelogger data recorders (or similar equipment) to obtain pressure data to be used in calibration of the hydraulic model. The SMA will be responsible for the purchase, installation, and data collection during the calibration process.



The CONSULTANT will identify new locations for hydrant flow testing to obtain flow data to be used in calibration of the hydraulic models. The City will perform all hydrant tests under the direction of the CONSULTANT.

#### **4.3 Determine Existing System Deficiencies:**

CONSULTANT will analyze the distribution system using the calibrated and verified water model under the following conditions:

- Average day demand
- Maximum day demand plus fire flows
- Peak hour demand
- Pumping Station capacity analysis by pressure zone
- Storage capacity analysis by pressure zone
- Water system interruptions.

CONSULTANT will evaluate the reliability of the water system and identify potential deficiencies under the following scenarios:

- Outage of Key Water Transmission mains
- Outage/restriction of groundwater wells
- Ability to meet fire flow demands system wide

Under these conditions, CONSULTANT will evaluate the hydraulic capacity of the system with respect to the system parameters and storage capacity with respect to determine equalization, fire, and emergency storage requirements. A sensitivity analysis will be performed on the recommended solutions to verify the viability of the recommendations.

#### **4.4 Allocate Future Water System Demands**

Utilizing projected land use data from the Shawnee Comprehensive Plan, historical population densities for land use factors in Shawnee and other surrounding communities, and growth trends for the area based upon the 2050 Water Supply plan projections CONSULTANT will allocate projected water system demands for each decade to projected system buildout.

#### **4.5 Identify Potential Water Distribution System CIP Projects**

##### **4.5.1 Identify Short Term CIP Projects:**

CONSULTANT will utilize the hydraulic model to prioritize near term (0-5 years and 5-10 years) CIP projects based upon the following:

1. Completing system loops to provide proper system backbone, residual disinfection, and elimination of maintenance problems caused by dead ends.
2. Adding/replacing water lines where flow and pressure deficiencies, known areas of chronic water quality complaints, and main breaks are identified.
3. Correcting inadequate system pressures and flow to meet the City's

performance criteria.

4. Providing fire flow protection
5. Analyzing existing storage and booster station capacity and making recommendations for additional or improvements.
6. Based upon the results of the EPS model, identify locations of higher water age that can be used to identify higher DBP levels (OPTIONAL).

#### 4.5.2 Identify Long Term CIP Projects

CONSULTANT will utilize the model to generate preferred solutions and identify long term (>10 years) distribution system CIP projects that minimize impacts to water quality while satisfying the agreed upon performance criteria. Included in each project will be a measurable demand trigger with appropriate reserve capacity to aid in future assessments and determination of when scheduled improvement should be implemented.

**Water Model Training** CONSULTANT will provide up to 16 hours of training in the structure and use of the water model to OWNER's staff. The training will be conducted over a series of two-days and sessions of 4 hours each. The training will consist of the following:

- Model Construction – How to add/change/edit information within the model.
- Model Calibration – How to calibrate the model from existing monitoring data.
- Model Hydraulic Criteria – Criteria upon which model will be based.
- Model demand allocation – How to change or otherwise allocate demands.
- Model Analysis: How to run and analyze the model for hydraulic, storage, and fire flow deficiencies. Training will include a step by step instruction in a sample problem (i.e. addition/modification of system to meet new demands).

## **TASK 5.0 DEVELOP COLLECTION SYSTEMS CIP**

### **Deliverables:**

Wastewater Collection System CIP (DRAFT Chapter 4)  
Meeting Minutes with updated Decision/Action Logs  
Wastewater Model License (OPTIONAL)

### **Key Project Meetings:**

Collections System Review Meeting  
Collections System CIP Review Meeting (Chapter 6 of Master Plan Report)

## **5.1 Review Maintenance and Inspection Records**

The CONSULTANT will review available maintenance and inspection records for the collection system and pump stations. This review will provide information on the status of the system and provide input on any existing problem areas. An important aspect of this subtask will be discussions with SMA's maintenance personnel regarding current sanitary collection system problem areas and wastewater pump station performance occurring over the last five years.

## **5.2 Conduct Flow Monitoring Program**

### **5.2.1 Conduct Flow Monitoring.**

The CONSULTANT will provide and install ten (10) flow monitors and portable flow recording units at sanitary sewer sites identified based upon discussions with SMA staff. The CONSULTANT will request assistance of one member of SMA staff maintenance during meter installation and removal. One local rain gauge will be installed for the duration of the monitoring period.

The CONSULTANT will collect all data from all flow metering sites and rain gauge site for a period of four weeks. Analyze data for quality assurance and control. Flow data will be used for calibration of the model and determination of the relative degree of rain dependent infiltration inflow (RDII) generated from each sewer basin.

## **5.3 Determine Flow Criteria**

### **5.3.1 Develop Existing/Future Dry Weather Sanitary Flows.**

The CONSULTANT will focus on estimation of existing and future dry weather (base) sanitary flow for each sewer basin based on land use and/or population information. Base wastewater unit flow criteria will be developed and reviewed with the City to ensure appropriateness.

### **5.3.2 Develop Existing/Future Wet Weather Flows.**

The CONSULTANT will evaluate wet weather flow monitoring data to determine existing wet weather flows and RDII components. Rainfall and statistical analyses will be utilized to project total future wet weather peak flows from each basin.

The CONSULTANT will summarize flow criteria, and methodology for development of existing/future sanitary and storm flow projections in technical memorandum to the SMA.

## **5.4 Development and Calibration of Hydraulic Model**

### **5.4.1 Develop Sanitary Model.**

The CONSULTANT will review SMA records of as-built plans and AutoCad files to determine physical information for sanitary and storm systems. Utilize City's existing database files as validation to the as-builts. A database will be constructed of pipeline, manhole and culvert data (size, length, slope, invert and ground elevations).

In the event all SMA provided database information is not available or valid, as an optional service to be authorized by the SMA, provide field survey to obtain accurate manhole rim and invert elevations for existing sanitary and storm drain

systems. Systems elevations would be correlated to a single elevation datum in the SMA.

Develop sanitary and storm hydraulic models using physical information and design flow data generated in Task 2. InfoSWMM or a similar software will be utilized for the modeling efforts. All pipes and pump stations will be built into the model.

#### **5.4.2 Calibrate Existing Dry Weather (Base) Flows.**

The CONSULTANT will calibrate the existing dry weather flows based upon the flow monitoring data, as well as any additional data available from SMA's records and monitoring system. Flow monitoring data will provide diurnal curves that establish the daily flow patterns in the sewer basins. Model results will be reviewed and adjusted, as needed, to best match the flow monitoring and any other known data.

#### **5.4.3 Calibrate Existing Wet Weather Flows.**

The CONSULTANT will calibrate the existing wet weather flows based upon flow monitoring and rainfall data. Rainfall information will aid in developing the required I/I estimations that enter the collection system during a storm event. Model results will be reviewed and adjusted to best match the flow monitoring and rainfall.

The CONSULTANT's general strategy for modeling I/I and the sewerage flows will be to calibrate the continuous hydrologic portion of the model to rainfall response in all the flow monitoring basins. Once good calibration is achieved, we will use a long-term (at least 30 years) rainfall data set to run each model long-term flows for each model basin in the service area. The modeled long-term flows will be analyzed statistically to determine the 5- and 10-year produced within each basin.

### **5.5 Evaluate Hydraulic Capacity**

#### **5.5.1 Establish System Performance Criteria.**

In collaboration with the SMA, the CONSULTANT will develop system performance criteria for use in determining acceptable sanitary sewer flow conditions under maximum design capacity. These criteria will include depth-to-diameter (d/D) ratio, minimum allowable flow velocities, pipe slopes, and amount of surcharging above crown of pipe, and pumping requirements.

Criteria recommendations will be made by the CONSULTANT based on experience with other municipalities.

#### **5.5.2 Perform Model Runs.**

The CONSULTANT will perform several hydraulic model runs of the sanitary and storm systems for both existing and future conditions to assess the capacity of the existing stormwater and sanitary sewer collection systems. The design storm and design criteria, established in Subtask 6.1, will provide the basis for the capacity analysis of both systems. Identify capacity deficiencies and problem areas. Pipes, channels, and pump stations will be upsized in the model as

necessary until the systems hydraulically

## **5.6 Develop Short Term and Long Term Collection Systems CIP)**

The Engineer will develop and prioritize CIP improvements as identified in previous tasks. This is a very important step, since this is where the SMA is delivered a phased “plan of attack,” or implementation schedule, for upgrading the collection system to reduce system capacity deficiencies, reduce potential I/I, and maximize improvements with the amount of expended dollars. Under this task, the Engineer will guide the SMA through the identification of the CIP process. The identified improvements will be incorporated into the master plan report.

## **5.7 Wastewater Collections System Model Training (OPTIONAL)**

CONSULTANT will provide up to 16 hours of training in the structure and use of the sewer collection system model to OWNER’s staff. The training will be conducted over a series of two-days and sessions of 4 hours each. The training will consist of the following:

- Model Construction – How to add/change/edit information within the model.
- Model Dry Weather Calibration – How to calibrate the model dry weather flows from existing monitoring data.
- Model Wet Weather Calibration – How to create and calibrate wet weather flows from Rainfall IDF curves, antecedent moisture coefficients, and historical wet weather flow monitoring data.
- Model Hydraulic Criteria – Criteria upon which model will be based.
- Model demand allocation – How to change or otherwise allocate demands.
- Model Analysis: How to run and analyze the model for wet weather flow deficiencies. Training will include a step by step instruction in a sample problem (i.e. measurement of potential impacts of I/I reduction projects)

## **TASK 6.0 DEVELOP WASTEWATER TREATMENT CIP**

**Purpose:** The Shawnee Municipal Authority (SMA) owns and operates two wastewater treatment facilities, the Northside WWTP and Southside WWTP Facilities. The existing Southside wastewater treatment facility is in extremely poor condition and the SMA would like to determine the potential capital projects required to either 1) retire the facility and direct all wastewater flow to the Northside treatment facility, 2) retire the facility and construct a new southside treatment facility designed with sufficient capacity for the future with incorporation of nutrient removal in the future or 3) rehabilitate, repair and improve the facility to permit incorporation of facilities for future nutrient removal.

**Deliverables:**

Wastewater Treatment System CIP (DRAFT Chapter 4 of Master Plan Report)  
Meeting Minutes with updated Decision/Action Logs

**Key Project Meetings:****6.1 Develop Operator/Maintenance Questionnaire****6.2 Evaluate Hydraulic and Equalization Capacity of Northside WWTP****6.2.1 Prepare Hydraulic Model of Northside WWTP Effluent Discharge**

This task involves performing a hydraulic evaluation and preparation of a hydraulic profile from the discharge weir of the final clarifier to the point of discharge at the Northside WWTP.

The hydraulic profile of the clarified effluent will depict current average day and peak day design flows with respect to 100 year flood conditions in the discharge stream. From this work, ENGINEER will determine capital projects necessary to relieve these hydraulic bottlenecks within the process.

**6.2.2 Calibrate Hydraulic Model:**CONSULTANT will review existing survey data and geotechnical reports. Utilizing the existing site benchmarks, a survey of the WTP hydraulic features will be conducted to determine the elevations of these features with respect to the plant water surface elevations for the purposes of conducting the hydraulic evaluation. In addition, a subsequent site survey trip will be conducted to measure the water surface elevations at the treatment plant under a different flow rate(s) for the purposes of hydraulic model calibration.

**6.2.3 Identify Equalization Needs:** Utilizing the sanitary sewer collection system model, CONSULTANT will identify the storage volumes necessary for equalization of current and anticipated 5-year projected wet weather flows to the Northside WWTP.

**6.3 Development of Wastewater Treatment Alternatives)**

Utilizing the projected dry and wet weather wastewater flows and loadings for the next 20 years, CONSULTANT will identify major capital improvements necessary to the Southside and Northside wastewater treatment facilities for the following treatment alternatives:

1. Abandon Southside WWTP, construct headworks/septage receiving station and transfer all screened flows to the Northside WWTP.
2. Rehabilitate/Repair Southside WWTP to handle all projected flows within the current basin served by the Southside WWTP.
3. Construct new Southside WWTP to handle all projected flows within the current basin served by the Southside WWTP.

CONSULTANT will prepare process flow diagrams and projected layouts of

proposed facilities for purposes of preparing an opinion of probable construction costs. The development of the treatment alternative will be based upon the assumption that biological nutrient removal and enhanced disinfection will be required within the 20 year timeframe of the improvements.

#### **6.4 Evaluation of Wastewater Treatment Alternatives:**

In a workshop setting with SMA staff, each of the treatment alternatives will be ranked with respect to the following evaluation factors:

1. Capital costs
2. Operation and Maintenance Costs
3. Permitability
4. Constructability
5. Environmental
6. Complexity
7. Others deemed appropriate by SMA

**6.5 Develop Short Term and Long Term Treatment System CIP Based upon the results of the evaluation, CONSULTANT will develop a near term (0-5 and 5-10 years) Capital Improvement Program (CIP) for projects at the Northside and Southside wastewater treatment facilities to determine the phasing and scheduling of the recommended improvements.**

In addition, CONSULTANT will develop a long term CIP for projects > 10 years that satisfy the projected dry and wet weather flows. Included in the CIP will be measurable flow triggers to reexamine recommended timing of capital improvement projects.

### **TASK 7.0 PREPARE COMPREHENSIVE WATER AND WASTEWATER SYSTEM MASTER PLAN REPORT AND CIP**

#### **7.1 Prepare Draft Master Plan Report and CIP**

Using the recommended CIP's identified developed under previous tasks, a draft Master Plan Report will be compiled for the City's review and comment. The Master Plan Report will be structured as follows:

Executive Summary

Chapter 1 – Introduction and Basis of Planning

Chapter 2 – Water Supply and Treatment System CIP

Chapter 3 – Water Distribution System CIP

Chapter 4 – Wastewater Collection System CIP

Chapter 5 – Wastewater Treatment System CIP

Chapter 6 – Project Integration Recommendations

Attachment A – TM-01 Data Needs Memorandum

Attachment B – TM-02 Basis of Planning  
Attachment C – Source Water Reservoir Yield Study  
Attachment D - Water Treatment Plant Hydraulic Calculations  
Attachment E – Water Distribution System Model Calibration  
Attachment F – Sanitary Sewer System Model Calibration  
Attachment G – Northside Wastewater Treatment Plant Hydraulic Calculations

## **7.2 Water and Wastewater Tapping Fee Analysis:**

CONSULTANT will conduct a survey of communities with similar population size and demographics to determine current water and wastewater tapping fees. CONSULTANT will include this comparison in the final master plan report as an appendix.

## **7.3 Final Master Plan Report and CIP**

SMA review comments on the draft Master Plan Report will be addressed as part of revising the draft report into the Final Master Plan Report. CONSULTANT will provide an electronic (PDF) copy as well as up to 20 sets of hard copy deliverables. Included in the Final Master Plan Report will be detailed maps of the existing and proposed water, wastewater, and integrated water systems infrastructure for years 0-5 and 5-10 years, indicating line sizes, facilities (pumping, storage treatment, etc), and recommended phasing with associated water demand triggers listed in accompanying legend. In addition to inclusion with the report, the FINAL recommended maps will be provided in a larger wall size, or on foam board and laminated for preservation.

## **Time of Completion**

CONSULTANT agrees to complete the Draft Master Plan Report within sixteen (16) months from the notice-to-proceed date. CONSULTANT agrees to complete the Final Master Plan Report within forty-five (45) calendar days following receipt of comments from SMA on the draft report.

## **END OF SCOPE OF WORK**



**Exhibit B**  
**Estimated Fee Breakdown**  
**Shawnee Municipal Authority**  
**Water and Wastewater System Master Plan**

| <b>Task</b> | <b>Description</b>                             | <b>Subtask</b> | <b>Description</b>                                                | <b>NTE Fee</b>    |
|-------------|------------------------------------------------|----------------|-------------------------------------------------------------------|-------------------|
| <b>1</b>    | <b>Project Management</b>                      |                |                                                                   | <b>\$ 35,400</b>  |
|             |                                                | 1.1            | Project Control and Reporting                                     |                   |
|             |                                                | 1.2            | Quality Management                                                |                   |
|             |                                                | 1.3            | Public Relations (Council Presentations)                          |                   |
|             |                                                | 1.4            | Agency Coordination                                               |                   |
| <b>2</b>    | <b>Project Initiation</b>                      |                |                                                                   | <b>\$ 35,000</b>  |
|             |                                                | 2.1            | Kickoff Model Selections WS                                       |                   |
|             |                                                | 2.2            | Preparation of TM-01                                              |                   |
|             |                                                | 2.3            | Review and Analyze Data Gaps                                      |                   |
|             |                                                | 2.4            | Preparation of TM-02                                              |                   |
|             |                                                | 2.4.1          | Confirm Baseline Water Demands                                    |                   |
|             |                                                | 2.4.2          | Project Dry Wastewater Flows and Loading                          |                   |
|             |                                                | 2.4.3          | Examine Conservation Program and Project Impacts on Water Demands |                   |
|             |                                                | 2.4.4          | Basis of Planning Workshop                                        |                   |
|             |                                                | 2.4.5          | Basis of Planning TM-02 Draft                                     |                   |
|             |                                                | 2.4.6          | Basis of Planning TM-02 FINAL                                     |                   |
| <b>3</b>    | <b>Baseline Water Supply and Treatment</b>     |                |                                                                   | <b>\$ 71,830</b>  |
|             |                                                | 3.1            | Develop O&M Questionnaire                                         |                   |
|             |                                                | 3.2            | Hydraulic Evaluation of Water Treatment Plant                     |                   |
|             |                                                | 4.2.1          | Treatment Process Hydraulic Profile                               |                   |
|             |                                                | 4.2.2          | Field Investigations and WTP Hydraulic Model Calibration          |                   |
|             |                                                | 3.3            | Establish Finished Water Quality Goals                            |                   |
|             |                                                | 3.4            | Unit Process Evaluation                                           |                   |
|             |                                                | 3.5            | Filter Investigations (OPTIONAL)                                  |                   |
|             |                                                | 3.6            | Treatment Alternative Evaluation                                  |                   |
|             |                                                | 3.7            | Raw Water Supply Pumping and Transmission Evaluation              |                   |
|             |                                                | 3.8            | Residuals Handling Evaluation                                     |                   |
| <b>4</b>    | <b>Baseline Water Distribution CIP</b>         |                |                                                                   | <b>\$ 103,000</b> |
|             |                                                | 4.1            | Develop Water System Hydraulic Model                              |                   |
|             |                                                | 4.1.1          | Condition Assessment of Key Components                            |                   |
|             |                                                | 4.1.2          | Establish Dist. System Hydraulic and WQ Criteria                  |                   |
|             |                                                | 4.1.3          | Develop Hydraulic Model                                           |                   |
|             |                                                | 5.1.3.1        | Construct Hydraulic Model                                         |                   |
|             |                                                | 5.1.3.2        | Allocate Demands                                                  |                   |
|             |                                                | 5.1.3.3        | Seasonal Diurnal                                                  |                   |
|             |                                                | 5.1.3.4        | CONDUCT MODEL DEVELOPMENT WS                                      |                   |
|             |                                                | 4.2            | Calibration of Hydraulic Model                                    |                   |
|             |                                                | 4.3            | Determine Existing System Hydraulic Deficiencies                  |                   |
|             |                                                | 4.4            | Allocate Future Water System Demands                              |                   |
|             |                                                | 4.5            | Identify Potential CIP Projects                                   |                   |
|             |                                                | 4.6            | Draft Water Distribution System CIP                               |                   |
|             |                                                | 4.7            | Water Model Training                                              |                   |
| <b>5</b>    | <b>Develop Collection Systems Baseline CIP</b> |                |                                                                   | <b>\$ 148,000</b> |
|             |                                                | 5.1            | Review Maintenance and Inspection Records                         |                   |
|             |                                                | 5.2            | Conduct Flow Monitoring Program                                   |                   |
|             |                                                | 6.2.1          | Conduct Flow Monitoring                                           |                   |
|             |                                                | 6.2.2          | Rainfall Data Analysis                                            |                   |
|             |                                                | 5.3            | Determine Flow Criteria                                           |                   |
|             |                                                | 6.3.1          | Develop Current and Future Dry Weather Flows                      |                   |
|             |                                                | 6.3.2          | Develop Current and Future Wet Weather Flows                      |                   |
|             |                                                | 5.4            | Develop and Calibrate Hydraulic Model                             |                   |
|             |                                                | 6.4.1          | Develop Sanitary Model                                            |                   |
|             |                                                | 6.4.2          | Calibrate Dry Weather Base Flows                                  |                   |
|             |                                                | 6.4.3          | Calibrate Existing Wet Weather Flows                              |                   |
|             |                                                | 5.5            | Evaluate Hydraulic Capacity of Sewer System                       |                   |
|             |                                                | 6.5.1          | Establish Performance Criteria                                    |                   |
|             |                                                | 6.5.2          | Perform Model Runs                                                |                   |
|             |                                                | 5.6            | Develop Long Term and Short Term Collection System CIP            |                   |

5.7 Wastewater Model Training

|                                                                          |                                                                           |           |                |
|--------------------------------------------------------------------------|---------------------------------------------------------------------------|-----------|----------------|
| <b>6 Baseline Wastewater Treatment CIP</b>                               |                                                                           | <b>\$</b> | <b>74,030</b>  |
| 6.1                                                                      | Develop Operation and Maintenance Questionnaire (Northside and Southside) |           |                |
| 6.2                                                                      | Evaluate Hydraulic and Equalization Capacity of Northside WWTP            |           |                |
| 6.2.1                                                                    | Prepare Hydraulic Model of Effluent Discharge                             |           |                |
| 6.2.2                                                                    | Calibrate Hydraulic Model                                                 |           |                |
| 6.2.3                                                                    | Identify Equalization Needs                                               |           |                |
| 6.3                                                                      | Development of Wastewater Treatment Alternatives                          |           |                |
| 6.3.1                                                                    | Northside Only                                                            |           |                |
| 6.3.2                                                                    | New Southside WWTP                                                        |           |                |
| 6.4                                                                      | Evaluation of Wastewater Treatment Alternatives                           |           |                |
| 6.5                                                                      | Development of Short Term and Long Term Treatment CIP                     |           |                |
| <b>7 Prepare Draft and Final Water and Wastewater Master Plan Report</b> |                                                                           | <b>\$</b> | <b>82,200</b>  |
| 7.1                                                                      | Prepare Draft Master Plan Report                                          |           |                |
| 7.1.1                                                                    | Executive Summary                                                         |           |                |
| 7.1.2                                                                    | Chapter 1 - Introduction/Planning Basis                                   |           |                |
| 7.1.3                                                                    | Chapter 2 - Water Supply and Treatment System CIP                         |           |                |
| 7.1.4                                                                    | Chapter 3 - Water Distribution System CIP                                 |           |                |
| 7.1.5                                                                    | Chapter 4 - Wastewater Collection System CIP                              |           |                |
| 7.1.6                                                                    | Chapter 5 - Wastewater Treatment System CIP                               |           |                |
| 7.1.7                                                                    | Chapter 6 - CIP Integration (Project Phasing)                             |           |                |
| 7.2                                                                      | Development of Water and Wastewater Capacity Fee Model                    |           |                |
| 7.3                                                                      | Prepare Final Master Plan Report                                          |           |                |
| <b>TOTAL</b>                                                             |                                                                           | <b>\$</b> | <b>549,460</b> |

**Shawnee Municipal Authority**

**3.**

**Meeting Date:** 10/06/2014

Exec Session

Submitted By: Lisa Lasyone, City Clerk

Department: City Clerk

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Information

Title of Item for Agenda

Consider an Executive Session for discussion of potential claims, litigation or other options regarding encroachment into the City's utility service area by other entities as authorized by 25 O.S. §307(B)(4).

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**Shawnee Municipal Authority**

**4.**

**Meeting Date:** 10/06/2014

Consider Matters In Executive Session

Submitted By: Lisa Lasyone, City Clerk

Department: City Clerk

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Information

Title of Item for Agenda

Consider matters discussed in Executive Session regarding potential claims, litigation or other options regarding encroachment into the City's utility service area by other entities as authorized by 25 O.S. §307(B)(4).

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**Shawnee Municipal Authority**

**5.**

**Meeting Date:** 10/06/2014

Terminate Modrall Agg

Submitted By: Lisa Lasyone, City Clerk

Department: City Clerk

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Information

Title of Item for Agenda

Discussion, consideration and possible action to terminate agreement for legal services with Modrall Sperling.

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