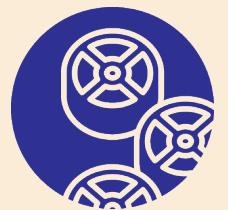


# Monthly Progress Report

October 2017





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## Program Overview

### Summary

The City of Enid, Oklahoma (City) has historically enjoyed an adequate supply of water resources to support consumers in Enid and its wholesale customers. However, the City's annual water demand has begun to exceed the annual yield of the existing groundwater supply, which has resulted in depletion of the aquifer system. To address this supply gap, the City initiated a Water Master Plan (by others) that recommended developing a new surface water supply from Kaw Lake to supplement the existing groundwater supply.

### Key Components

#### Intake and Intermediate Booster Pump Stations

The intake and intermediate booster pump station will provide the means to pump water from Kaw Lake to Enid. This will include an intake structure on Kaw Lake and an intake pumping station. An intermediate pump station will be located about two-thirds of the way to Enid along the pipeline and will provide additional pressure necessary to convey the design flow to the treatment plant site.

#### Pipeline

The pipeline will convey the raw water from the proposed Kaw Lake intake structure to the proposed water treatment plant along a 70-mile direct corridor.

#### Terminal Storage Reservoirs

Terminal storage is employed to provide a constant supply of raw water to the new water treatment plant, and it can also be utilized to minimize costs associated with conveyance of raw water. As such, the main components of the terminal storage assessed for the current project were emergency storage and equalization storage. For this program, the City desires to separate the volume dedicated for equalization storage from the volume for emergency storage. Therefore, the terminal storage is divided into two components:

- Equalization (TSR EQ) – storage used on a routine basis to meet peak demands
- Emergency (TSR EM) – storage used only when raw water conveyance is not in service

#### Water Treatment Plant

A new surface water treatment plant will be needed to meet the water quality objectives necessary to provide safe drinking water as well as to meet the aesthetic desires such as taste and odor. These objectives can be met by a combination of conventional treatment to produce safe drinking with the addition of polishing to reduce objectionable tastes and odors.

#### Distribution

Distribution system improvements are necessary to blend the existing groundwater with the treated surface water and to connect the blended water into the existing City of Enid water distribution network.



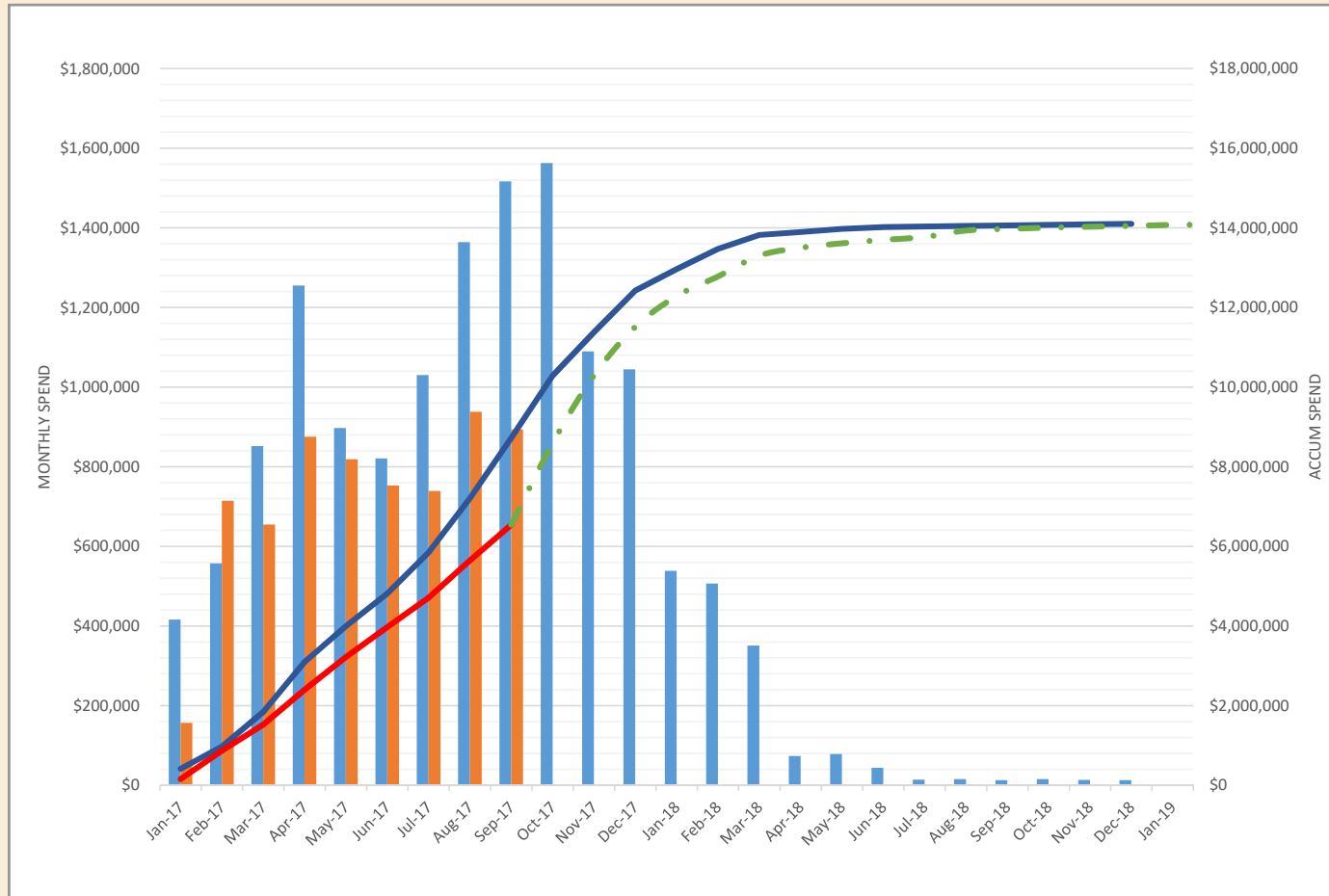




# Program Overview

## Program Finance - Phase 2

Kaw Lake Water Supply Program CashFlow

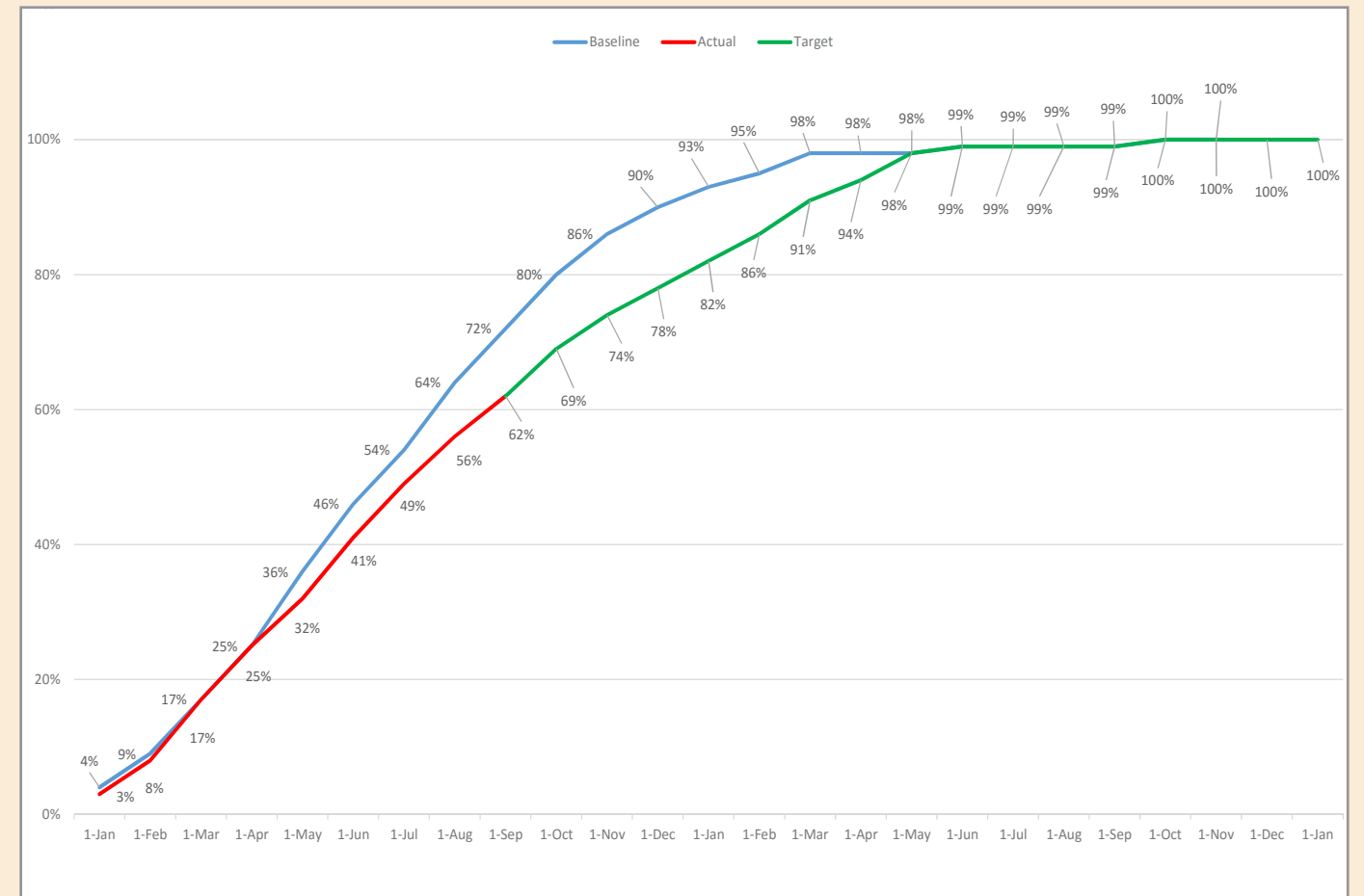


### Summary

As of September 30, the accumulate spent is 46 percent and the planned spend is 62 percent. A portion of the reduced spending is a result of higher than expected project execution efficiency. Additionally, tasks such as the Design Consultant Standards Manual and the Program Strategy Manual have been deferred to 2018, resulting in a shift of the projected cash flow. Also, large items such as the geotechnical investigations have shifted to later in 2017.

## Program Schedule - Phase 2

Kaw Lake Water Supply Program - September 2017



### Summary

As of September 30, the schedule has an overall progress of 62 percent with a planned progress of 72 percent. The current issues causing delay in the schedule are access to private property for the geotechnical investigations. The shift in the target progress shown above is a product of the implemented recovery plan. The recovery plan allows for additional resources to be utilized for the completion of the 30 percent design and updated cost estimate to maintain the original submittal date while deferring less critical activities, such as the Design Consultant Standards Manual and Program Strategy Manual, to 2018.



## Program Administration

### Scope of Services

Garver is providing project administration and controls initiation through Phase 2, including reporting on the various aspects of the program management, scheduling and budget status updates, coordination of regulatory and funding agencies, as well as stakeholders and public meetings. Primary deliverables include a Design Consultants Standards Manual and updating the Program Strategy Manual. In addition, the Garver Technical Review Committee is providing review and oversight of the deliverables produced by the Infrastructure Teams.

### Project Update

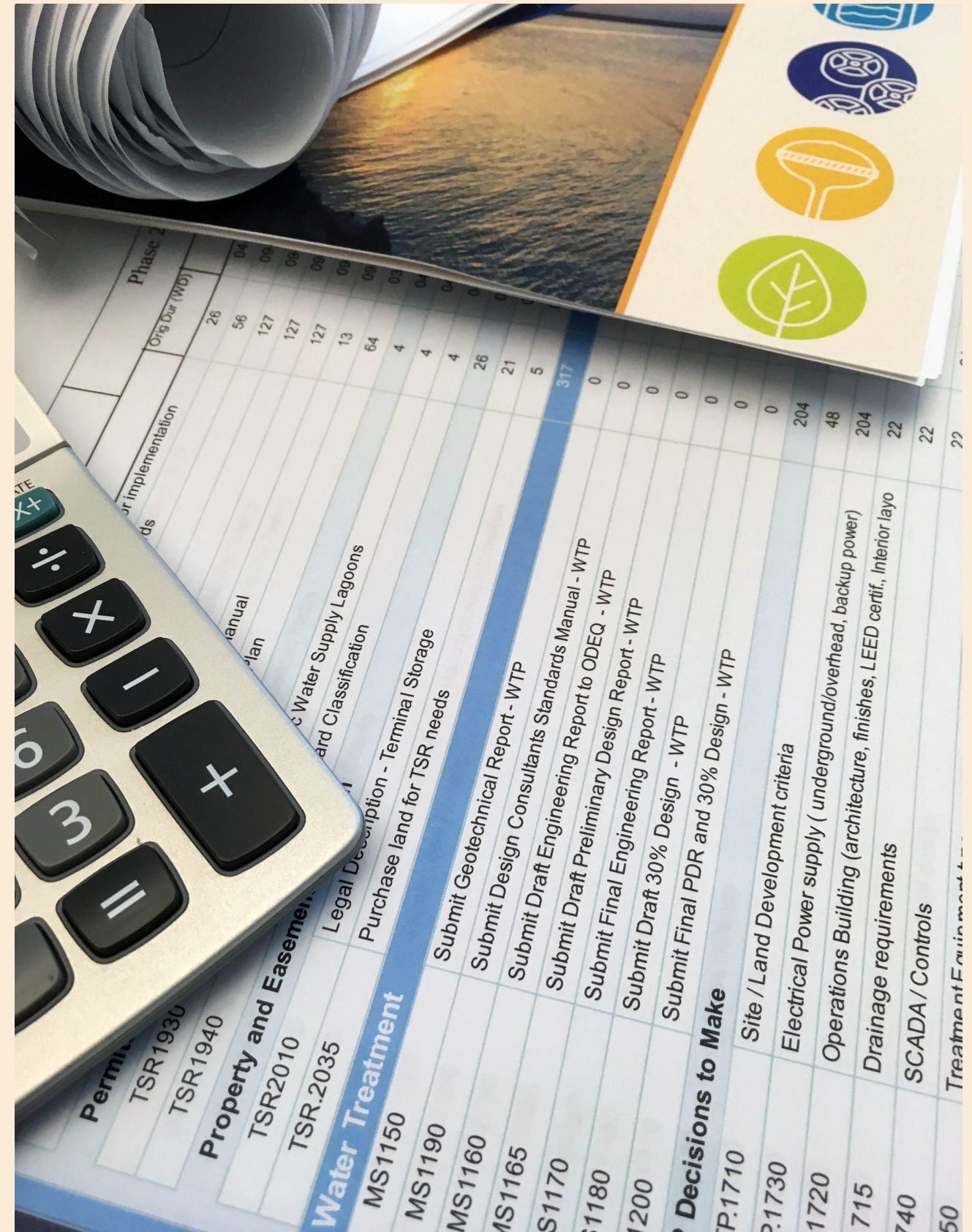
The Program Management Team continues to work on developing most of the items in the scope of services. Program strategy development continues with evaluation of Program Management Information Systems. A range of Program Management Information Systems were evaluated on how well each met the needs of the Kaw Lake Water Supply Program. Three systems were selected for detailed evaluation and demonstrations began. Project risk management activities are underway per the risk management process. Delays in access to private property, for geotechnical investigations, were impacting the pipeline preliminary design. A recovery schedule was developed to continue progress where possible. Part of the recovery plan included developing the Design Consultant Standards Manual after the draft thirty percent design was complete. The later development of the Design Consultant Standards Manual also delivers a more mature product to guide continued Program development.

### Completed

- Organization and planning activity on the Program Strategy Manual
- Evaluated Program Management Information Systems for compliance against requirements and identified three for detailed assessment
- Revised schedule and cost updating of the Master Project Schedule
- Seven cross discipline and four technical reviews of Technical Memos in support of Draft Preliminary Design Reviews for intake, terminal storage reservoir, and the water treatment plant
- Refined Design Consultants Standards Manual framework preparing for Phase 3 contracting and management
- Ongoing risk management
- City procurement of Engineers Joint Contract Documents Committee rights for contracting baseline documents

### Future Activities

- Update Program Strategy Manual
- Hold Program Management Information System demonstrations for the City staff
- Continue technical reviews of Draft Preliminary Design Reports for individual project disciplines
- Develop Program-specific contracting documents based on Engineers Joint Contract Documents Committee
- Develop program-specific contracting documents based on City current Professional Services Contract







## Intake and Pump Stations

### Scope of Services

The scope of services includes surveying, geotechnical investigations, preliminary (30 percent complete) design, investigation of property acquisition and development of design consultant standards for a new raw water intake and pumping station located on Kaw Lake at Intake Site No. 2 and an intermediate booster pump station as identified in Phase 1 of the project.

The intake is expected to include a shaft and micro tunnel with vertical turbine pumps in a parallel configuration with a design capacity to meet the targets identified during Phase 1 of the Program. The intermediate booster pump station is expected to consist of parallel horizontal split case pumps housed in an at-grade structure. The intermediate booster pump station is also expected to include approximately 5 million gallons of stored raw water within two ground storage tanks.

### Project Update

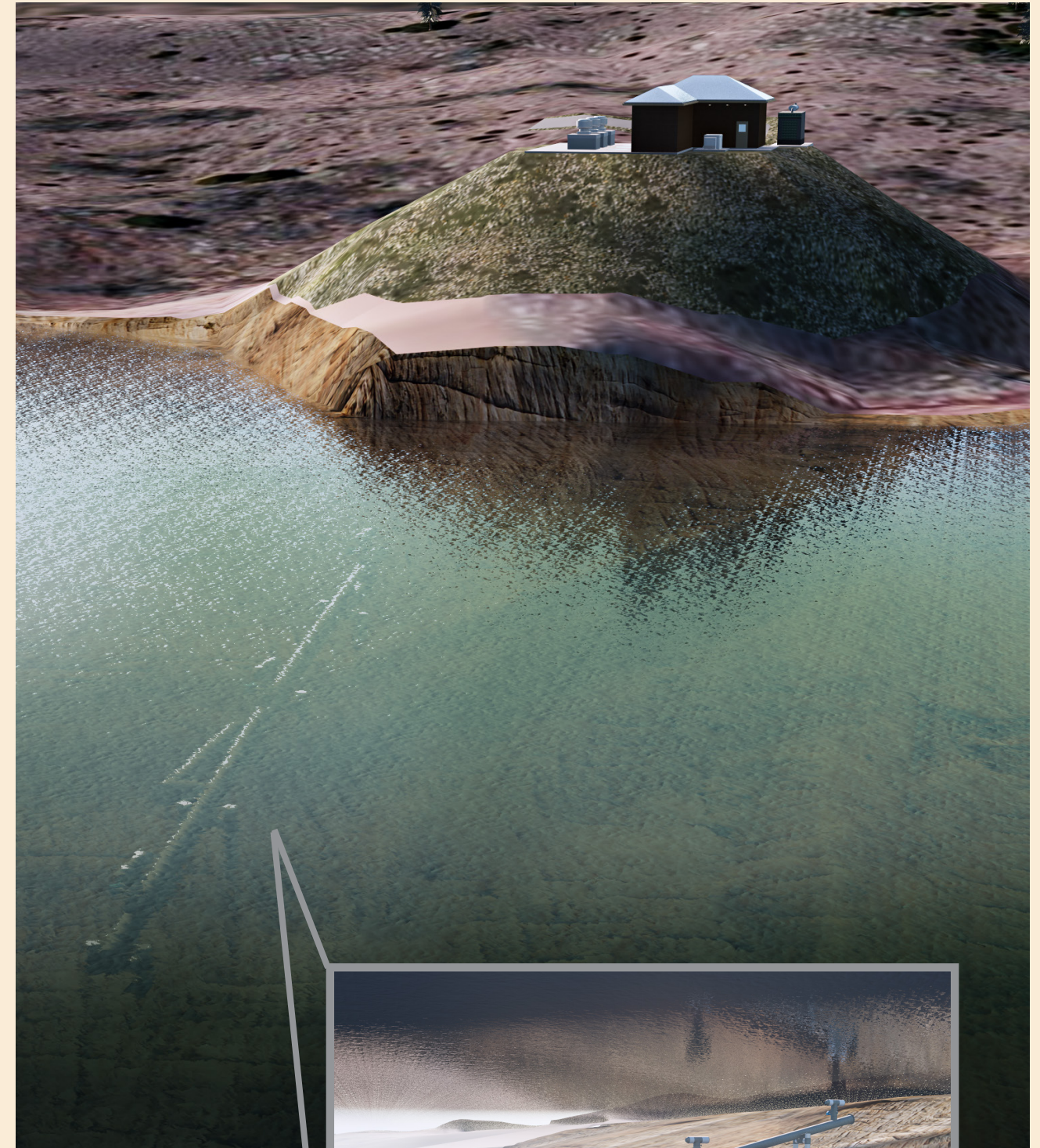
The team continues to focus on developing the preliminary design for the intake pump station, and has now begun preliminary design of the intermediate booster pump station. The preliminary design phase submittal will include design drawings and represent approximately 30 percent of final design documents.

### Completed

- Performed marine borings at intake site
- Received City comments regarding Draft Transient Analysis Technical Memo
- Continued design development of intake pump station access roads and model layout
- Created conceptual geotechnical boring plan for possible intermediate booster pump station site
- Completed field work for intermediate booster pump station site survey
- Completed borings at intermediate booster pump station site

### Future Activities

- Continue coordination with U.S. Army Corps of Engineers and boring subconsultant during on-land geotechnical borings
- Continue to develop preliminary (30 percent) design drawings
- Complete and receive lab results from geotechnical borings at intermediate booster pump station
- Develop an updated 30 percent opinion of probable construction cost

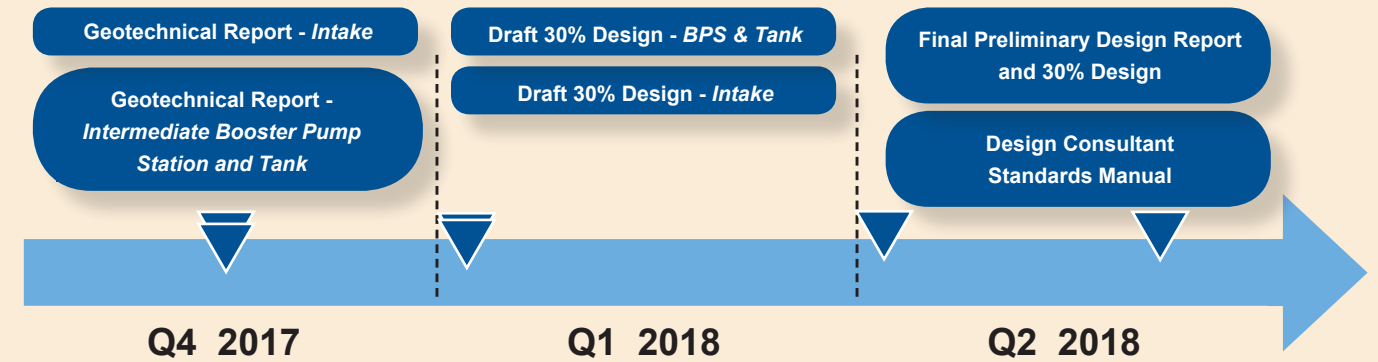


**Above and Right:** 3D rendering of intake pump station and underwater piping at Kaw Lake



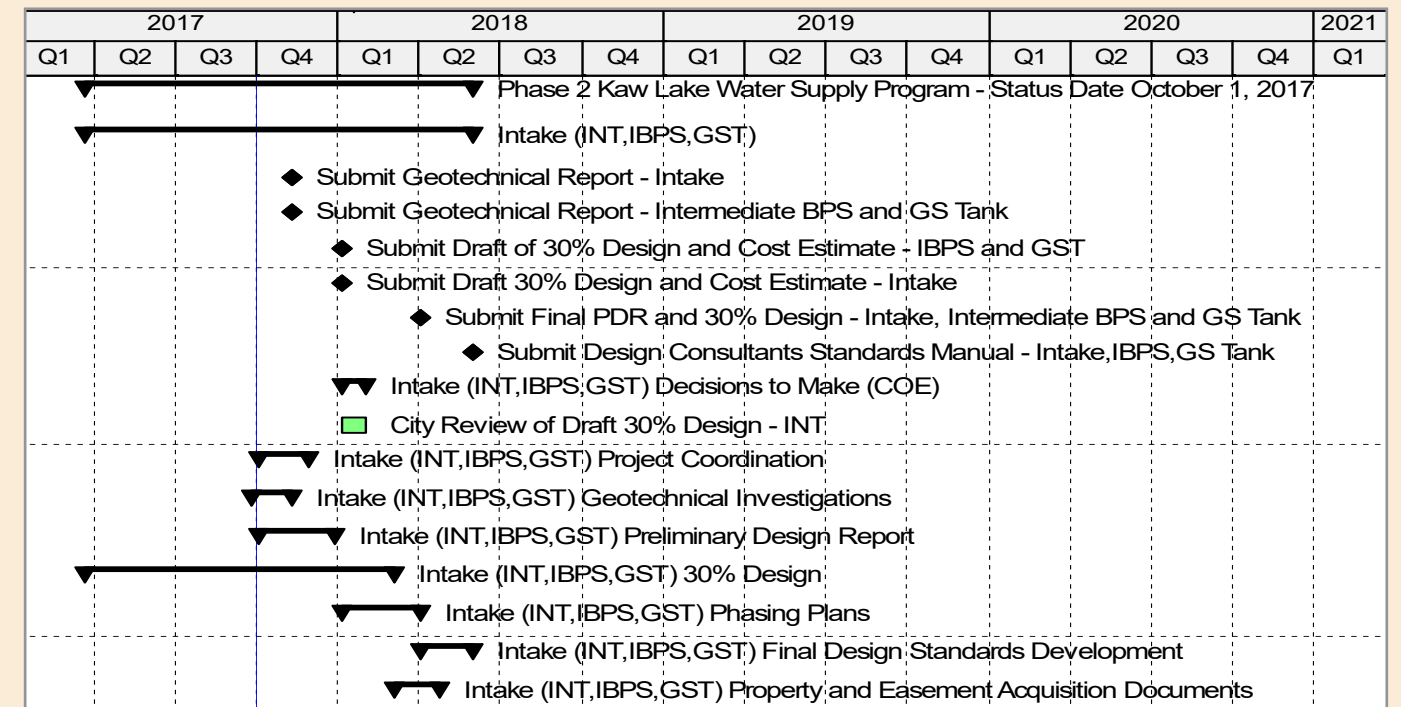


## Project Milestones



## Project Schedule

Activity ID	Activity Name	Orig Dur (WD)	Finish
<b>Phase 2 Kaw Lake Water Supply Program - Status Date October 1, 2017</b>		305	01-Jun-18
<b>Intake (INT,IBPS,GST)</b>		305	01-Jun-18
MS1010	Submit Geotechnical Report - Intake	0	10-Nov-17
MS1020	Submit Geotechnical Report - Intermediate BPS and GS Tank	0	10-Nov-17
MS1045	Submit Draft of 30% Design and Cost Estimate - IBPS and GST	0	04-Jan-18*
MS1035	Submit Draft 30% Design and Cost Estimate - Intake	0	04-Jan-18*
MS1050	Submit Final PDR and 30% Design - Intake, Intermediate BPS and GS Tank	0	02-Apr-18*
MS1040	Submit Design Consultants Standards Manual - Intake,IBPS,GS Tank	0	01-Jun-18*
<b>Intake (INT,IBPS,GST) Decisions to Make (COE)</b>		20	01-Feb-18
INT.1266	City Review of Draft 30% Design - INT	20	01-Feb-18
<b>Intake (INT,IBPS,GST) Project Coordination</b>		40	28-Nov-17
<b>Intake (INT,IBPS,GST) Geotechnical Investigations</b>		40	10-Nov-17
<b>Intake (INT,IBPS,GST) Preliminary Design Report</b>		60	27-Dec-17
<b>Intake (INT,IBPS,GST) 30% Design</b>		242	05-Mar-18
<b>Intake (INT,IBPS,GST) Phasing Plans</b>		62	02-Apr-18
<b>Intake (INT,IBPS,GST) Final Design Standards Development</b>		43	01-Jun-18
<b>Intake (INT,IBPS,GST) Property and Easement Acquisition Documents</b>		35	23-Apr-18







## Pipeline

### Scope of Services

The scope of services includes surveying, geotechnical, alignment analysis, preliminary (30 percent complete) design, investigation of future property acquisition and development of design consultant standards for a new raw water pipeline from Kaw Lake at Intake Site No. 2 to a new water treatment plant as identified in Phase 1 of the project. The pipeline will consist of approximately 70 miles of pipe along the direct corridor with a design capacity to meet the targets identified during Phase 1 of the Program. This task generally consists of providing final pipeline alignment selection within the Direct Corridor and preparation of aerial background plans.

### Project Update

The team continued developing a preferred alignment utilizing the previously approved evaluation methodology. A workshop is scheduled for October 12 with City staff to review the preferred alignment in more detail. The team is continuously updating the web mapping site to allow the City and team members to see alternatives being considered, as well as adding the ability to track parcel access. The Pipeline Team is heavily involved in coordinating with other project teams on proposed layouts, connections, and various other design criteria, as well as coordinating and reviewing geotechnical field investigations. The team continued developing pipeline design criteria for the Preliminary Design Report. A cross discipline review of the pipeline Preliminary Design Report is scheduled for early November. Most of the geotechnical borings in public right-of-way have been completed. The remaining geotechnical investigations are at risk of falling behind schedule due to difficulties in gaining access to private properties; however, additional resources will be enlisted for this effort to maintain target completion dates associated with the pipeline. The team is preparing alternate boring locations to aid in gaining access to the remaining bore locations. Additionally, some geotechnical bores have been eliminated due to inaccessibility, while others have been delayed due to harvesting schedules. The analysis will continue to move forward with the information obtained to date, filling in the gaps with some assumptions, and then confirming the assumptions made once final soil analysis is complete.

### Completed

- Coordinated geotechnical investigation needs along the alignment
- Updated the web mapping tool for the entire pipeline alignment
- Continued performing alignment alternative analysis
- Completed the draft process and instrumentation diagrams for the pipeline
- Continued Preliminary Design Report development
- Updated hydraulic grade line based upon August progress meeting feedback
- Began preparation for preferred alignment review workshop

### Future Activities

- Finalize alignment alternative analysis
- Host preferred alignment review workshop
- Continue Preliminary Design Report development
- Develop preliminary 30 percent design drawings
- Continue coordination of geotechnical investigation needs along alignment
- Continue evaluation of equipment and material types
- Further coordination of crossings with utility companies, city, county, and state agencies
- Continue field reviews along proposed alignment (as necessary)
- Develop an updated 30 percent opinion of probable construction cost
- Develop a sequencing plan



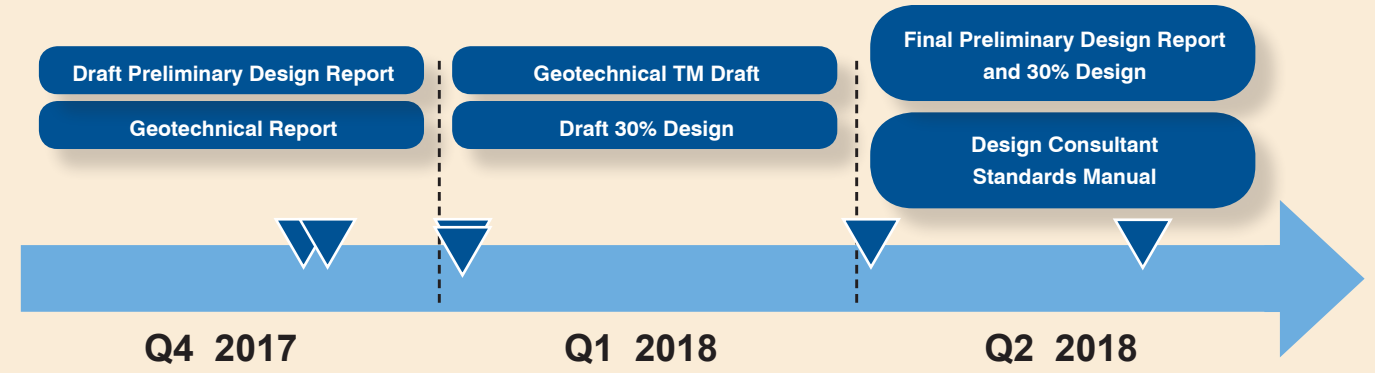
**Above:** Installing 60-inch casing



**Right:** Installing 48-inch pipe by bore and jack

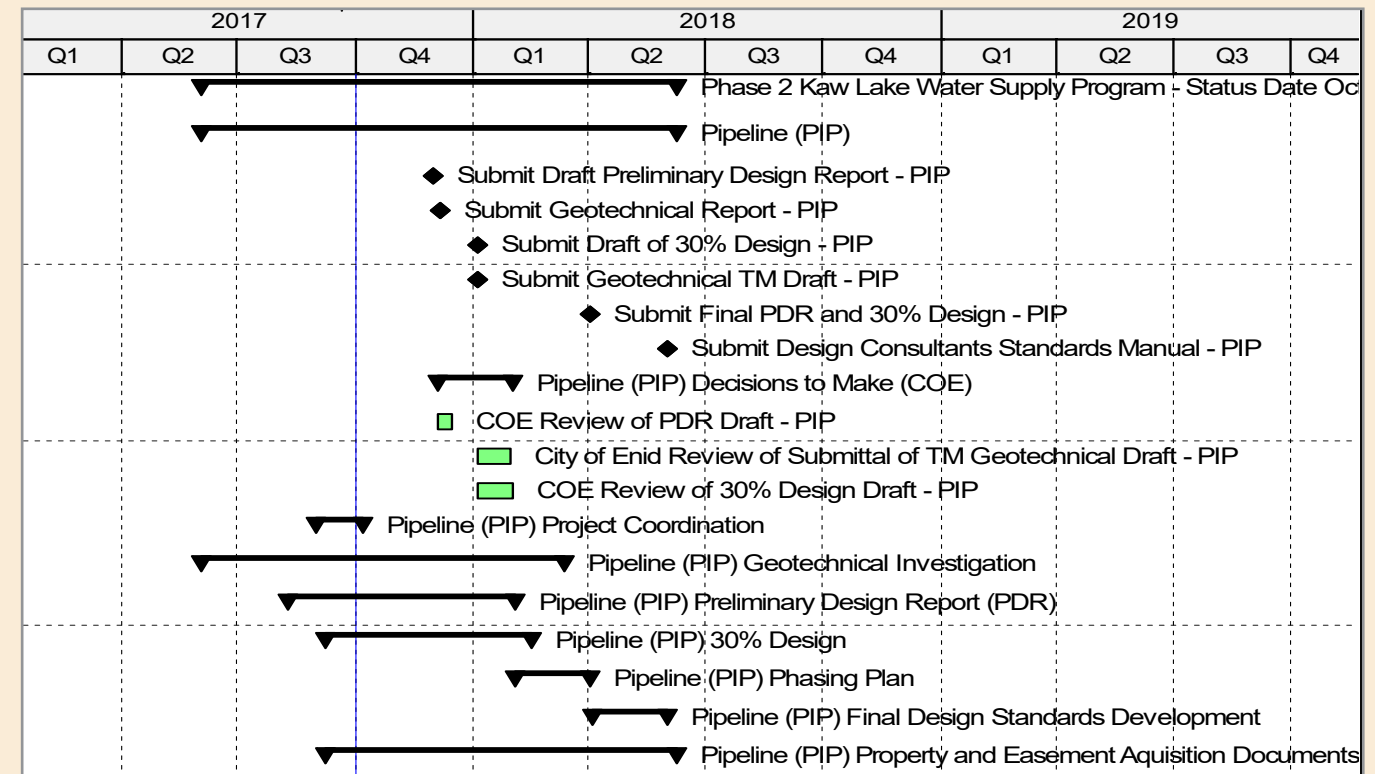


# Project Milestones



# Project Schedule

Activity ID	Activity Name	Orig Dur (WD)	Finish
<b>Phase 2 Kaw Lake Water Supply Program - Status Date October 1, 2017</b>		238	08-Jun-18
<b>Pipeline (PIP)</b>		238	08-Jun-18
MS1070	Submit Draft Preliminary Design Report - PIP	0	01-Dec-17
MS1060	Submit Geotechnical Report - PIP	0	05-Dec-17
MS1080	Submit Draft of 30% Design - PIP	0	04-Jan-18*
MS1075	Submit Geotechnical TM Draft - PIP	0	04-Jan-18*
MS1090	Submit Final PDR and 30% Design - PIP	0	02-Apr-18*
MS1085	Submit Design Consultants Standards Manual - PIP	0	01-Jun-18*
<b>Pipeline (PIP) Decisions to Make (COE)</b>		42	01-Feb-18
PIP.COED.PDRF.PP.S1	COE Review of PDR Draft - PIP	10	15-Dec-17
PMx.COED.TRCD.GT.00	City of Enid Review of Submittal of TM Geotechnical Draft - PIP	10	30-Jan-18
PIP.COED.30DF.PP.S1	COE Review of 30% Design Draft - PIP	20	01-Feb-18
<b>Pipeline (PIP) Project Coordination</b>		38	06-Oct-17
<b>Pipeline (PIP) Geotechnical Investigation</b>		176	13-Mar-18
<b>Pipeline (PIP) Preliminary Design Report (PDR)</b>		86	02-Feb-18
<b>Pipeline (PIP) 30% Design</b>		91	15-Feb-18
<b>Pipeline (PIP) Phasing Plan</b>		42	02-Apr-18
<b>Pipeline (PIP) Final Design Standards Development</b>		43	01-Jun-18
<b>Pipeline (PIP) Property and Easement Aquisition Documents</b>		171	08-Jun-18







## Terminal Storage

### Scope of Services

The scope of services includes surveying, geotechnical, preliminary (30 percent complete) design, investigation of property acquisition and development of design consultant standards for a new raw water terminal storage in two separate locations: one for emergency storage and one for equalization storage as identified in Phase 1 of the project.

### Project Update

Conceptual layouts of the equalization storage basin continues to evolve as new concepts are explored. The most recent configuration utilizes three equally sized basins to allow for flexibility and phasing. The Terminal Storage Team continues to coordinate with the water treatment plant and Distribution Team on the conceptual site design, storm water drainage, process flow, and drying beds.

Civil site design has commenced, including preliminary grading, road locations, and stormwater design. The drainage swale west of the terminal storage flowing north to south will be relocated, moving the swale discharge point approximately 500 feet to the west.

The location of the emergency storage basin has been established, and site survey, environmental, and geotechnical activities have been completed with final reports pending. Geotechnical investigation and soil testing on the equalization site have been completed.

### Completed

- Determined design flows
- Provided assistance in determining the preferred final location of emergency terminal storage
- Determined Oklahoma Department of Environmental Quality permit requirements for the terminal storage reservoirs
- Completed preliminary site layouts with grading and site access for the equalization basin
- Received City comments on the Draft Preliminary Design Report
- Completed geotechnical report for the terminal storage reservoir equalization basins
- Performed field survey and geotechnical investigations of the emergency terminal storage reservoir
- Completed multiple technical memoranda pertaining to the design criteria associated with the following:
  - Reservoir liners
  - Erosion control

### Future Activities

- Develop potential configurations for the emergency terminal storage reservoir
- Develop site layout for the emergency terminal storage reservoir
- Process and pipeline layout for equalization and emergency terminal storage reservoirs
- Complete multiple technical memoranda pertaining to the design criteria associated with the following:
  - Algae management
  - Stormwater handling
- Develop an updated 30 percent opinion of probable construction cost



**Above:** Rendering of equalization terminal storage reservoir at water treatment plant

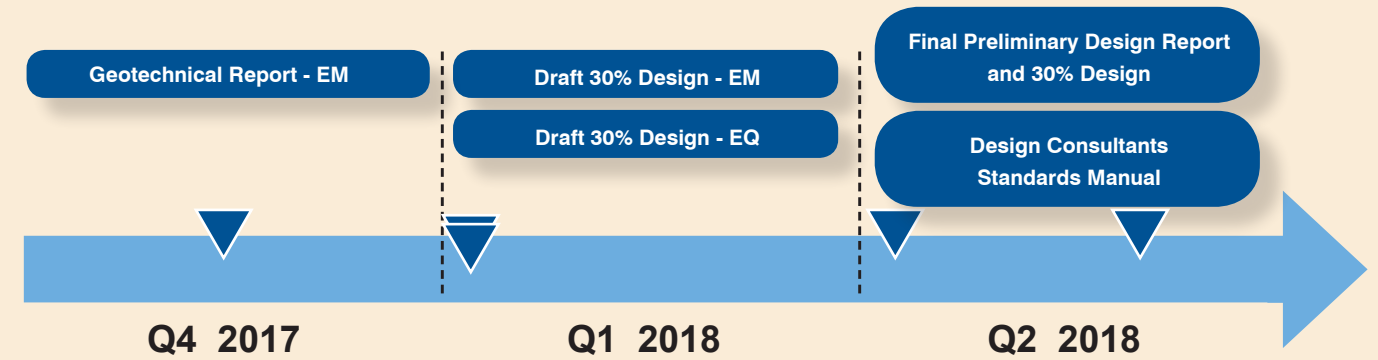


**Right:** Example terminal storage reservoir under construction



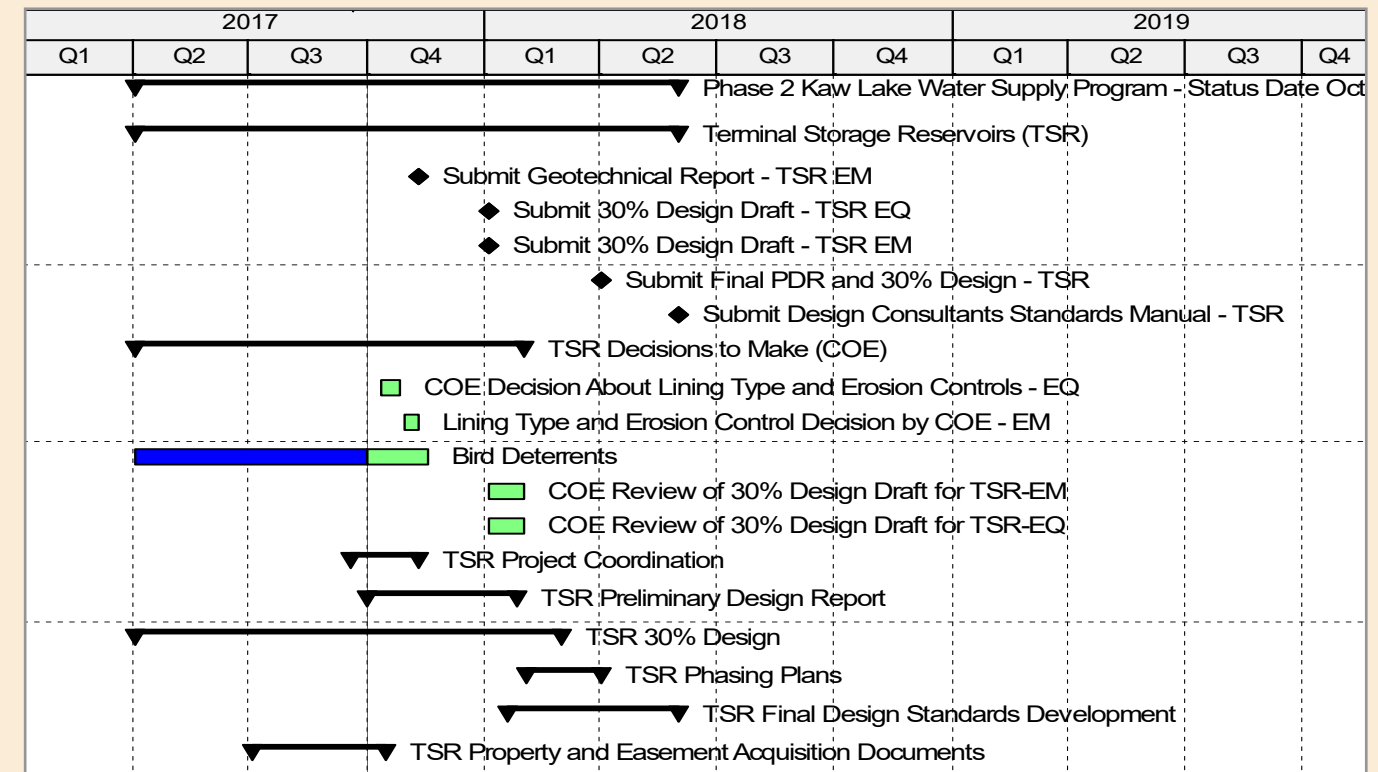


## Project Milestones



## Project Schedule

Activity ID	Activity Name	Orig Dur (WD)	Finish
<b>Phase 2 Kaw Lake Water Supply Program - Status Date October 1, 2017</b>		297	01-Jun-18
<b>Terminal Storage Reservoirs (TSR)</b>		297	01-Jun-18
MS1110	Submit Geotechnical Report - TSR EM	0	10-Nov-17
MS1132	Submit 30% Design Draft - TSR EQ	0	04-Jan-18*
MS1130	Submit 30% Design Draft - TSR EM	0	04-Jan-18*
MS1140	Submit Final PDR and 30% Design - TSR	0	02-Apr-18*
MS1120	Submit Design Consultants Standards Manual - TSR	0	01-Jun-18*
<b>TSR Decisions to Make (COE)</b>		212	01-Feb-18
TSR.2030	COE Decision About Lining Type and Erosion Controls - EQ	10	26-Oct-17
TSR.2032	Lining Type and Erosion Control Decision by COE - EM	10	10-Nov-17
TSR.2046	Bird Deterrents	142	17-Nov-17
TSR.COED.30DF.EM.00	COE Review of 30% Design Draft for TSR-EM	20	01-Feb-18
TSR.COED.30DF.EQ.00	COE Review of 30% Design Draft for TSR-EQ	20	01-Feb-18
<b>TSR Project Coordination</b>		35	10-Nov-17
<b>TSR Preliminary Design Report</b>		80	25-Jan-18
<b>TSR 30% Design</b>		168	01-Mar-18
<b>TSR Phasing Plans</b>		42	02-Apr-18
<b>TSR Final Design Standards Development</b>		96	01-Jun-18
<b>TSR Property and Easement Acquisition Documents</b>		21	16-Oct-17







## Water Treatment Plant

### Scope of Services

The scope of services includes surveying, geotechnical, preliminary (30 percent complete) design, investigation of property acquisition, and development of design consultant standards for a new Enid water treatment plant located adjacent to the City's current water treatment plant No. 2.

The planned capital improvements include construction of a new conventional water treatment plant with ozone and granular activated carbon facilities to meet capacity and treatment goals identified during Phase 1 of the Program.

### Project Update

Presented design updates for the ozone system, filtration system, sedimentation basins, operations and maintenance building exterior design, building mechanical design concepts, and algae control strategies at the September project progress meeting and water treatment plant workshop. Developing draft design of information memoranda of building mechanical concepts, structural concepts, and site civil concepts for review. Developing process site layouts, pipeline and electrical distribution corridors, and site drainage/storm water retention concepts.

### Completed

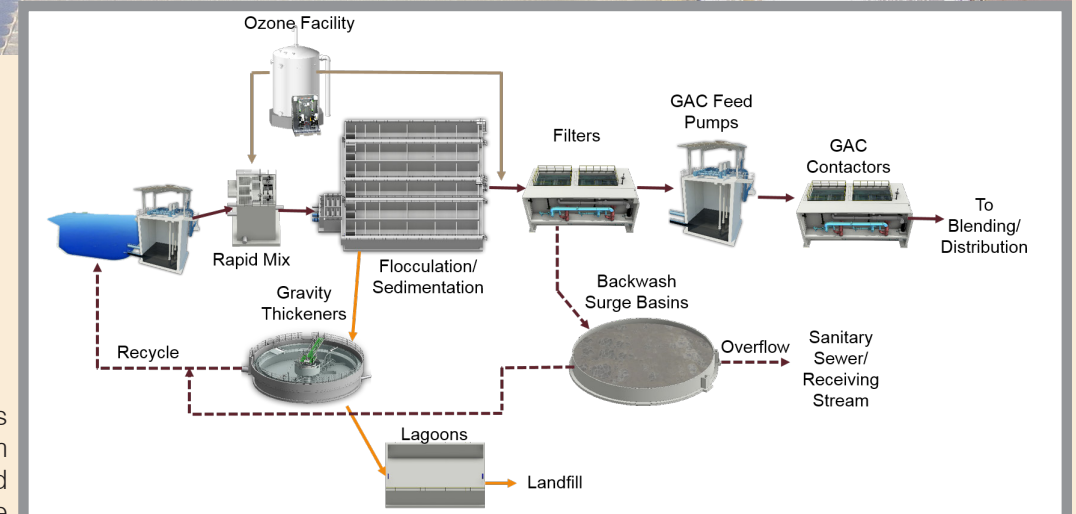
- Draft Design Information Memoranda:
  - Building mechanical design concepts
- Updated preliminary process layouts and draft site layout
- Updated preliminary operations and maintenance facility layouts
- Coordinating first round of granular activated carbon column testing
- Reviewed Draft Geotechnical Technical Report
- Submitted Draft Engineering Report to Cross Disciplinary Review
- Submitted Draft 30 percent drawings to Technical Review Committee

### Future Activities

- Draft Engineering Report for City Review and submission to the Department of Environmental Quality
- Develop Draft Pre-Design Report deliverables for site civil and structural concepts and operations and maintenance building system
- Continue development of site and facility layouts
- Develop outline of specifications and standard details for Design Consultant Standards Manual
- Develop an updated 30 percent opinion of probable construction cost



**Above:** Water treatment plant sedimentation basin

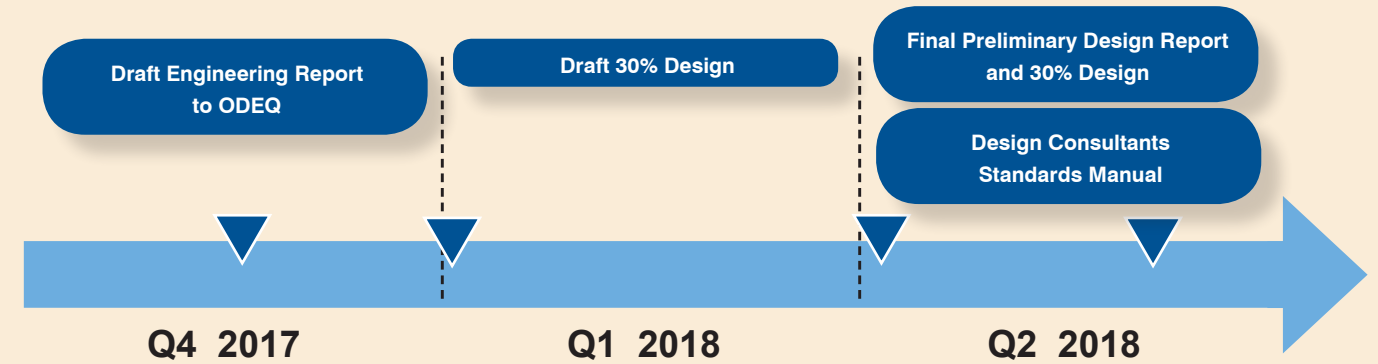


**Right:** Process flow diagram for selected alternative



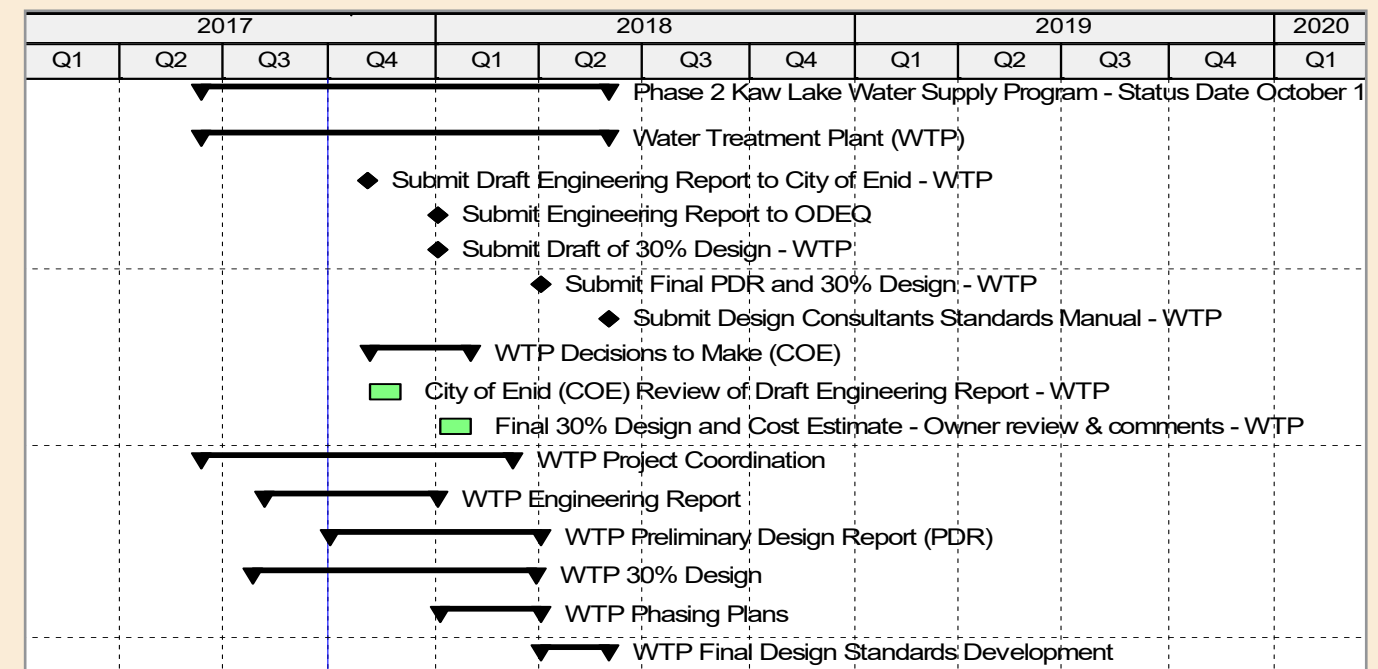


## Project Milestones



## Project Schedule

Activity ID	Activity Name	Orig Dur (WD)	Finish
<b>Phase 2 Kaw Lake Water Supply Program - Status Date October 1, 2017</b>		248	01-Jun-18
<b>Water Treatment Plant (WTP)</b>		248	01-Jun-18
MS1165	Submit Draft Engineering Report to City of Enid - WTP	0	03-Nov-17
MS1160	Submit Engineering Report to ODEQ	0	04-Jan-18
MS1180	Submit Draft of 30% Design - WTP	0	04-Jan-18*
MS1200	Submit Final PDR and 30% Design - WTP	0	02-Apr-18*
MS1190	Submit Design Consultants Standards Manual - WTP	0	01-Jun-18*
<b>WTP Decisions to Make (COE)</b>		60	01-Feb-18
WTP.COED.ENRP.RE.00	City of Enid (COE) Review of Draft Engineering Report - WTP	20	01-Dec-17
WTP.1904	Final 30% Design and Cost Estimate - Owner review & comments - WTP	20	01-Feb-18
<b>WTP Project Coordination</b>		189	09-Mar-18
<b>WTP Engineering Report</b>		85	04-Jan-18
<b>WTP Preliminary Design Report (PDR)</b>		131	02-Apr-18
<b>WTP 30% Design</b>		173	30-Mar-18
<b>WTP Phasing Plans</b>		62	02-Apr-18
<b>WTP Final Design Standards Development</b>		43	01-Jun-18







## Distribution

### Scope of Services

Generally, the scope of services includes surveying, geotechnical, preliminary (30 percent complete) design, investigation of property acquisition, and development of design consultant standards for new distribution infrastructure (pumping, storage, and piping) as identified in Phase 1 of the project.

The pumping improvements will include the construction of a new high service pump station adjacent to the water treatment plant capable of conveying flow to both pressure planes and the decommissioning of the existing high service pump stations. The storage improvements will consist of adding a new 8 million gallon ground storage tank adjacent to the new high service pump station. The piping improvements will include the piping necessary to blend the groundwater supply with the treated surface water prior to the high service pump station, as well as the piping necessary to convey water to the east pressure plane.

### Project Update

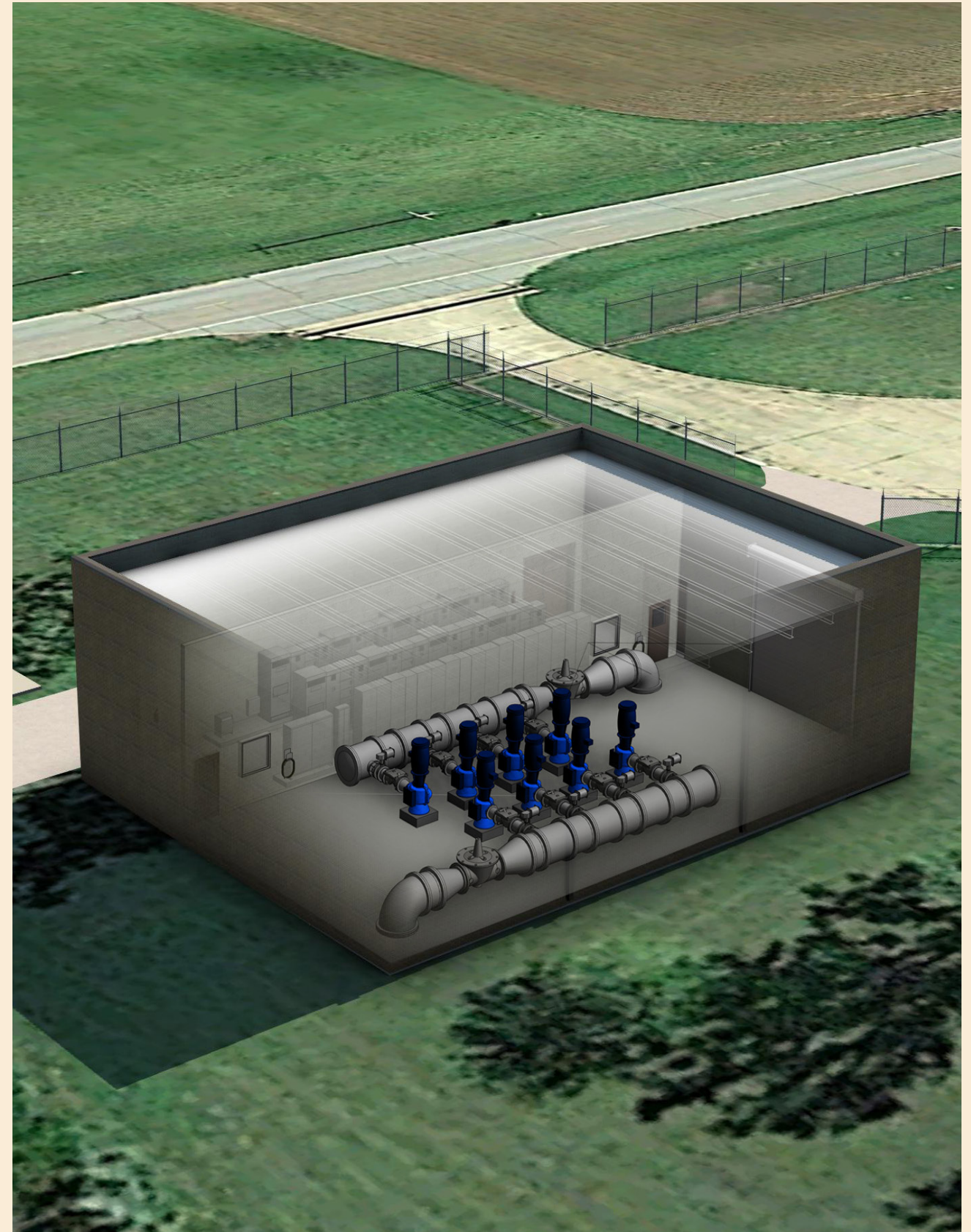
Completed transmission main alignment selection, transmission main material evaluation, and system optimization to determine sizing of infrastructure components for the Distribution Interface. Determination of infrastructure sizing and transmission main alignment allows design to proceed for all distribution interface items. Preliminary 30 percent design work continues on the preliminary design report, high-service pump station and storage site layout and design, operational controls and electrical, transmission main design, and geotechnical investigations along the transmission main.

### Completed

- Completed selection of transmission main for conceptual design
- Completed selection of infrastructure component sizes based on system optimization
- Confirmed geotechnical boring locations along transmission main alignment
- Completed transmission main pipe material evaluation
- Completed initial computational fluid dynamics modeling for blended water storage tank
- Completed distribution system hydraulic model calibration

### Future Activities

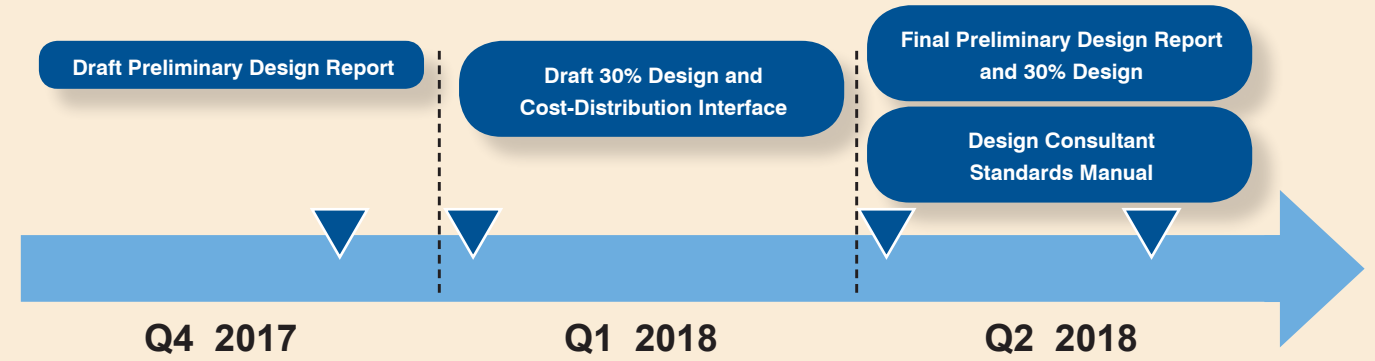
- Complete site layout in conjunction with Water Treatment Plant Team
- Complete electrical one-line diagram
- Continue Preliminary Design Report Draft
- Develop construction sequencing
- Complete hydraulic modeling
- Complete computational fluid dynamics modeling to evaluate chlorine contact basin design
- Complete computational fluid dynamics modeling to evaluate mixing in blended storage tank bypass lines
- Continue property surveys along transmission main corridor
- Conduct geotechnical investigations along transmission main alignment
- Develop plan and profile sheets for transmission main
- Develop an updated 30 percent opinion of probable construction cost



Above: Conceptual layout of high-service (distribution) pump station

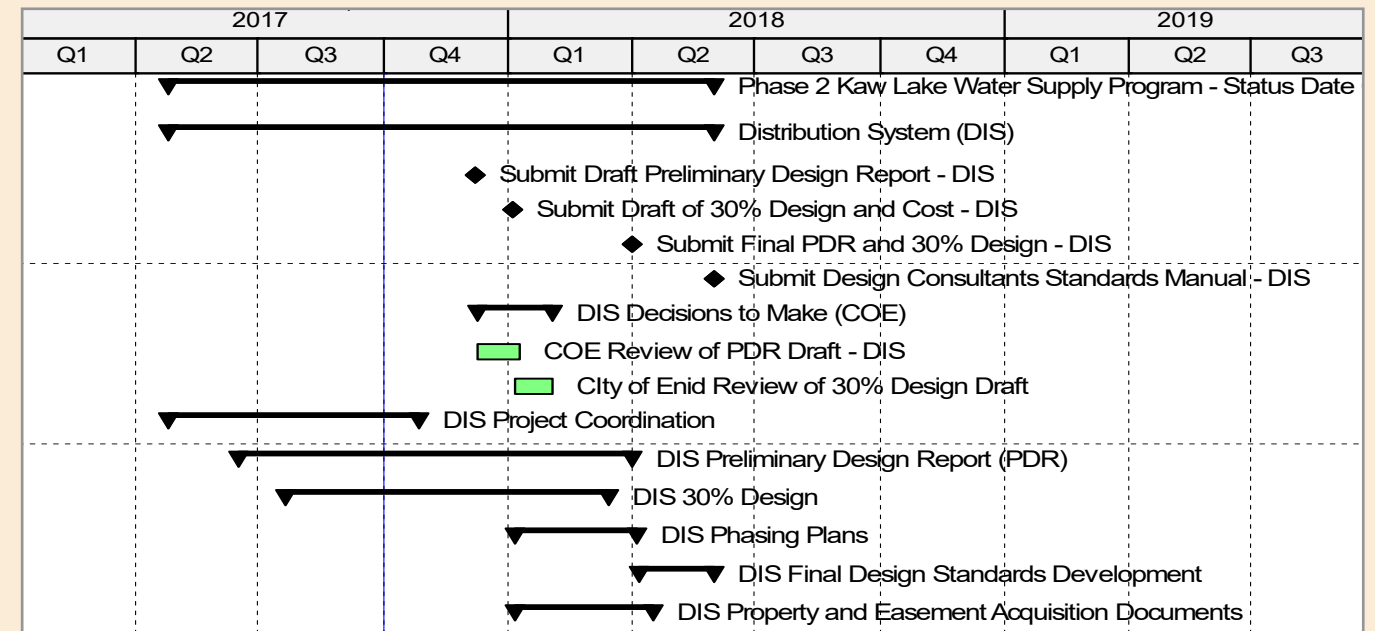


# Project Milestones



# Project Schedule

Activity ID	Activity Name	Orig Dur (WD)	Finish
<b>Phase 2 Kaw Lake Water Supply Program - Status Date October 1, 2017</b>		312	01-Jun-18
<b>Distribution System (DIS)</b>		312	01-Jun-18
MS1220	Submit Draft Preliminary Design Report - DIS	0	07-Dec-17
MS1230	Submit Draft of 30% Design and Cost - DIS	0	04-Jan-18*
MS1250	Submit Final PDR and 30% Design - DIS	0	02-Apr-18*
MS1240	Submit Design Consultants Standards Manual - DIS	0	01-Jun-18*
<b>DIS Decisions to Make (COE)</b>		38	01-Feb-18
DIS.COED.PDRF.xx.R1	COE Review of PDR Draft - DIS	20	08-Jan-18
DIS.COED.30DF.xx.R1	City of Enid Review of 30% Design Draft	20	01-Feb-18
<b>DIS Project Coordination</b>		162	27-Oct-17
<b>DIS Preliminary Design Report (PDR)</b>		190	02-Apr-18
<b>DIS 30% Design</b>		165	15-Mar-18
<b>DIS Phasing Plans</b>		65	05-Apr-18
<b>DIS Final Design Standards Development</b>		40	01-Jun-18
<b>DIS Property and Easement Acquisition Documents</b>		72	16-Apr-18







## Environmental

### Scope of Services

This scope of work includes activities to support document preparation as required of the National Environmental Policy Act (NEPA) (42 U.S.C. 4321 et seq.) in accordance with the procedures set forth in Council on Environmental Quality Regulations Implementing the Procedural Provision of NEPA (40 CFR 1500-1508) and in the U.S. Army Corps of Engineers (USACE) Procedures for Implementing NEPA (33 CFR 230). The U.S. Army Corps of Engineers, Tulsa District, will serve as the lead federal agency for the project.

It is anticipated that the NEPA Class of Action for this Program will be an Environmental Assessment and will analyze the impacts of a No Build and one Build Alternative (Proposed Action) for each of the project's infrastructure components [intake, pipeline, terminal storage reservoir (emergency and equalization), treatment plant, and distribution system].

### Project Update

Biological and cultural field studies are complete for the intake, water treatment plant, and distribution. Biological field studies for the pipeline are approximately 88 percent complete. Remaining properties to be surveyed are on hold pending tribal property access. Cultural resources survey is on hold pending approval of proposed methodology by the U.S. Army Corps of Engineers and State Archaeologist. The U.S. Army Corps of Engineers sent the methodology to the State Archaeologist and other consulting parties for review on July 21, 2017 with a request for a 15-day review. Comments from the State Archeologist were received on August 25, 2017. A response to these comments has been sent to the U.S. Army Corps of Engineers for approval.

Work on the biological reports is ongoing. Shape files of aquatic resources constraints are being prepared and will be completed in October. Coordination with the U.S. Army Corps of Engineers on cultural resources methodology is ongoing.

### Completed

- Intake, water treatment plant, and distribution biological and cultural resource studies
- Approximately 88 percent of the biological field work along the pipeline corridor
- Biological field work at terminal storage reservoir off-site emergency storage site complete – no findings
- Submittal of requested data to the team for areas of concern
- Approximately 50 percent complete with wetland and threatened and endangered species reports

### Future Activities

- Preparation of biological constraint information for pipeline workshop on October 12, 2017
- Complete biological studies for remainder of pipeline as alignments are refined and access to tribal property is obtained
- Begin cultural resources field work when methodology is resolved
- Additional community meeting with Ponca Tribe as requested
- Continue work on wetland and threatened and endangered species reports



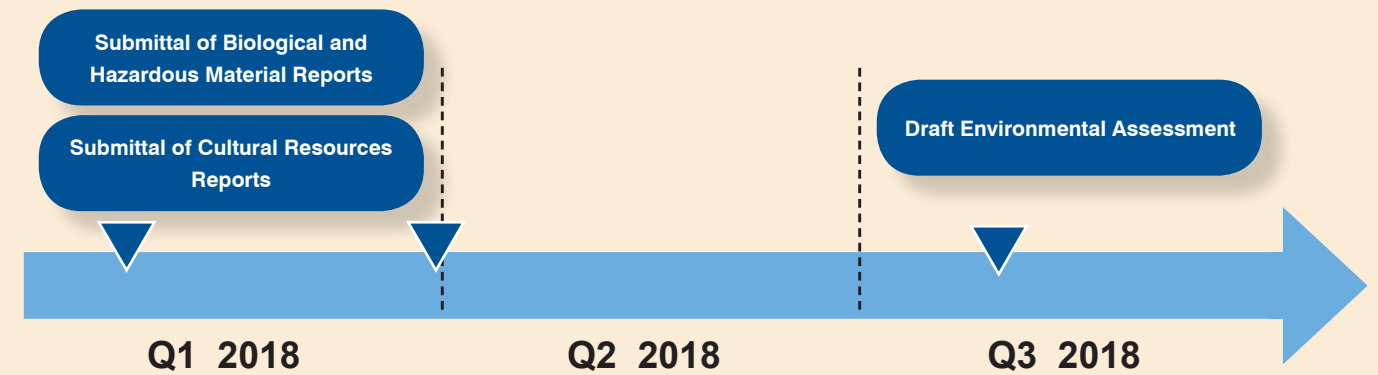
Above: Kaw Lake shoreline







# Project Milestones



# Project Schedule

Activity ID	Activity Name	Orig Dur (WD)	Finish
<b>Phase 2 Kaw Lake Water Supply Program - Status Date October 1, 2017</b>		480	21-Mar-19
<b>Environmental (ENV)</b>		480	21-Mar-19
<b>ENV Specialist Studies</b>		312	23-Jul-18
ENV.1950D	Hazardous Materials memo	47	28-Nov-17
ENV.1950D.1	City Review of Hazardous Materials Memo	10	12-Dec-17
ENV.1950A	Wetland and Stream Delineation Report	60	15-Dec-17
ENV.1950B	Threatened & Endangered Species Report	60	19-Dec-17
ENV.1950A.1	City Review of Wetland and Stream Delineation	10	02-Jan-18
ENV.1950B.1	City Review of T&E Report	10	04-Jan-18
ENV.1950A.2	Revisions of Wetland & Stream Delineation Report	5	09-Jan-18
ENV.1950B.2	Revisions of T&E Report	5	11-Jan-18
ENV.1100A	USACE Review of Wetland & Stream Delineation Report	42	08-Mar-18
ENV.1100B	USACE Review of T&E Report	42	12-Mar-18
ENV.1950C	Cultural Resources Report	60	30-Mar-18
ENV.1100B.1	USFWS Review of T&E Report	20	09-Apr-18
ENV.1950C.1	City Review of Cultural Resources Report	10	13-Apr-18
ENV.1950C.2	Revisions of Cultural Resources Report	5	20-Apr-18
ENV.1100C	USACE Review of Cultural Resources Report	44	22-Jun-18
ENV.1100C.1	SHPO Review of Cultural Resources Report	20	23-Jul-18
<b>ENV for PIP</b>		173	05-Jan-18
<b>ENV for TSREM</b>		15	19-Oct-17
<b>ENV Environmental Assessment</b>		187	26-Dec-18
ENV.1120	Prepare Draft EA - Introduction and Background	10	13-Apr-18
ENV.1123	Prepare Draft EA - Existing conditions	5	20-Apr-18
ENV.1121	Prepare Draft EA - Environmental Impacts	22	22-May-18
ENV.1122	Prepare Draft EA - Public Involvement summary	22	22-May-18
ENV.1124	Prepare Draft EA - Summary and Commitments	10	06-Jun-18
ENV.1125	Produce and Submit Draft EA	5	30-Jul-18
ENV.1110	USACE & Cooperating Agency review of EA	31	12-Sep-18
ENV.1080	Draft FONSI	10	26-Sep-18
ENV.1130	Public Comment Period - FONSI	21	25-Oct-18
ENV.1140	Review & incorporate Public Comments	21	27-Nov-18
ENV.1150	FINAL EA Approval	20	26-Dec-18
<b>ENV Section 408 Approval</b>		60	21-Mar-19
<b>ENV Section 404 Pre-Coordination</b>		42	08-Mar-18

