

PROJECT MEMORANDUM

OKLAHOMA COMPREHENSIVE WATER PLAN

Date: April 11, 2022

**Project
No.:** 12012A.00

Oklahoma Water Resources Board

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Subject: Programmatic Work Plan and Engagement Plan

Overview

The Oklahoma Water Resources Board (OWRB) is preparing the statutorily required update of the Oklahoma Comprehensive Water Plan (OCWP or 2025 OCWP). It will build upon the previous OCWP update (2012 OCWP) and will focus on the following key activities:

- Advance 2012 OCWP policy recommendations by identifying actions necessary to continue implementation of these.
- Model and assess water availability, water demand projections, and water quality trends, and identify basins with projected challenges or opportunities.
- Evaluate, develop, and recommend water management strategies for all water-use sectors, consider the cost of doing nothing, and develop innovative new funding mechanisms to support their implementation.
- Integrate the OCWP with Oklahoma’s first Statewide Flood Plan.
- Conduct focused engagement throughout the process to identify the most pressing current issues and develop best practicable solutions in collaboration with representatives from all water use sectors, Tribal Nations, interested water planning groups, state agencies and legislators, local entities, and federal organizations.

This Programmatic Work Plan and Engagement Plan (PWP/EP) provide a roadmap to complete the OCWP key activities by describing necessary tasks and work products. Figure 1 provides an overview of the major phases of work and tasks in the PWP. Phase 1 work was completed in 2021. Additional detail (subtasks, etc.) is provided in the PWP outline (Appendix A). Both Figure 1 and the PWP outline were refined to address and incorporate input from engagement group discussions held in Phase 1 of the OCWP development process.

// OCWP PWP and Engagement Framework

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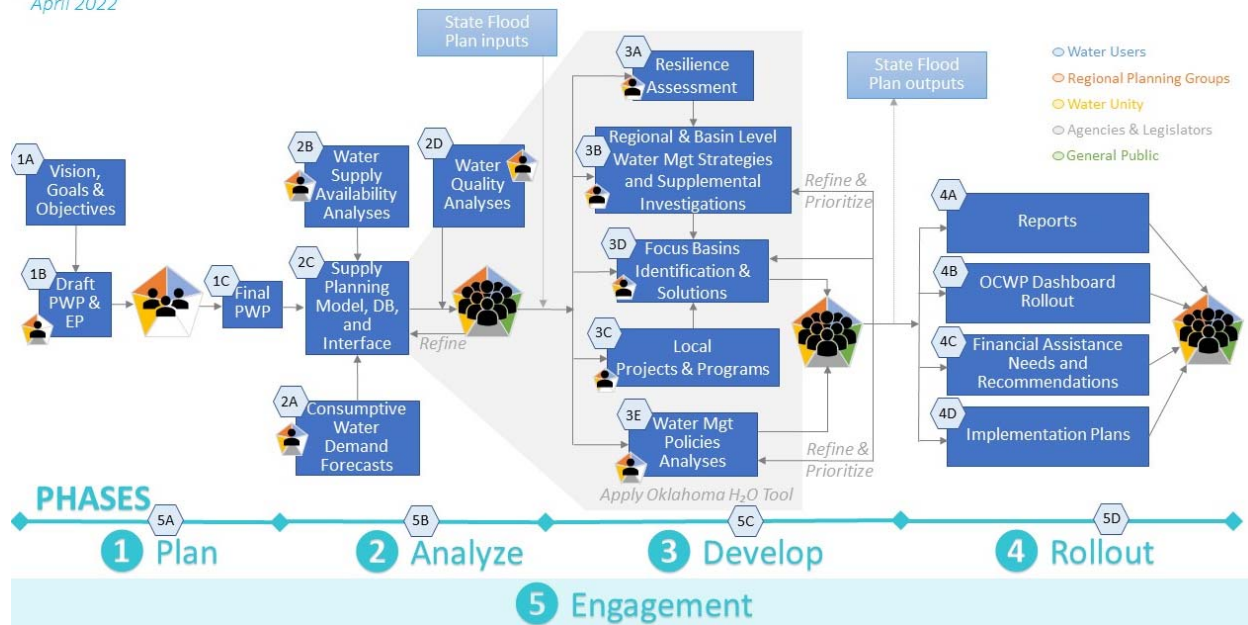


Figure 1 PWP and Engagement Framework

The OCWP will be developed in the five inter-related phases shown in Figure 1. While the work will primarily be completed in order from Phase 1 through Phase 4, tasks will be executed as needed and some Phase overlap will inevitably occur. Phase 5 represents engagement activities (forming the EP), which will support and integrate each of the other phases of the work. While not detailed here, each phase will have tasks for Project Coordination and Quality Management (e.g., Tasks 1P and 1Q for Phase 1).

It is anticipated that OWRB staff and consultants will complete PWP tasks based on availability of funding and OWRB prioritization over time, and as such, some tasks in this PWP may not be completed. Historically, USACE Planning Assurances to States (PAS) and OWRB matching funds have been the primary funding sources for OCWP work. Subsequent requests with scopes will be submitted to USACE as ensuing consequential project needs become evident.

Phase 1: Plan

Phase 1 activities establish the vision for the OCWP, its interim and end products, and the PWP "roadmap" of activities to achieve those goals. Top-level tasks in Phase 1 include:

- **1A: Vision, Goals, and Objectives.** Synthesize OCWP vision, goals, objectives, and ideas for potential end products.
- **1B: Draft Programmatic Work Plan and Engagement Plan.** Develop PWP/EP framework to facilitate participant input regarding OCWP vision, key issues, and end products. Develop draft PWP/EP to reflect OWRB vision and participants' needs and interests and assign preliminary priority to key tasks.
- **1C: Final Programmatic Work Plan.** Revise PWP to reflect participant input and finalize.

Phase 2: Analyze

Phase 2 activities assess the water supply and demand outlook through the planning period. This includes updating and modernizing the Oklahoma H₂O Tool to characterize the potential for future water shortages

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in each basin and implementing a database that facilitates OWRB analyses and feeds an interactive dashboard for users to explore selected public-facing modeled scenarios and predicted future outcomes.

Top-level tasks in Phase 2 include:

- **2A: Consumptive Water Demand Forecasts.** Confirm data sources and water use sectors. Develop consumptive demand forecasts to 2075, including existing levels of conservation and passive conservation (i.e., demand that will occur without actively implementing new conservation measures, which are considered in Task 3B).
- **2B: Water Supply Availability Analyses.** Assessment of physical water (wet water) availability and legal water (permits/water rights) availability for traditional sources (surface water, alluvial groundwater, bedrock groundwater) and nontraditional sources (examples include municipal reuse, produced water reuse, other industrial reuse, brackish groundwater, and stored flood water), considering Interstate Compact obligations and climate change scenarios.
- **2C: Supply Planning Model, Database, and Interface.** Modernize and update Oklahoma H₂O model, database, and interactive electronic user interface (for simplicity, the interactive electronic user interface is referred to as "OCWP Dashboard" in this memo). Assess potential supply shortages (surface water gaps and groundwater depletions) using physical supply availability and demand forecasts from Tasks 2A and 2B. Model additional scenarios as necessary to respond to participant feedback or project needs identified in later tasks.
- **2D: Water Quality Analyses.** Summarize groundwater quality and surface water quality in each Basin using OWRB BUMP/GMAP data. Assess trends in data and potential concerns with respect to meeting drinking water criteria and stream standards. This information will feed into the assessment of water supply concerns for each basin in Tasks 3B and 3D.

Integration of State Flood Plan Information

State Flood Planning work will be conducted in parallel with development of the OCWP. State Flood Plan outputs are expected to support the development of potential solutions to water supply issues (e.g., storage of excess flood flows for subsequent beneficial use). As such, State Flood Plan inputs are shown as feeding into the OCWP development process between Phases 2 and 3 with OCWP outputs feeding into the Flood Plan between Phases 3 and 4. Opportunities to integrate flood plan information with the OCWP Dashboard will be explored where appropriate.

Phase 3: Develop

In Phase 3, technical and policy solutions are explored to address the water supply issues identified in Phase 2. Most OCWP analyses will be conducted at the "Basin" level for each of the state's 82 planning Basins. Additional solutions will be explored via more detailed analyses at the sub-basin level for those Basins identified as water supply "Focus Basins" (FBs, those basins with the most significant projected water challenges in need of investment due to physical availability, legal availability, and/or water quality considerations). Top-level tasks in Phase 3 include:

- **3A: Resilience Assessment.** Inventory potential threats to reliable water supply, assess the likelihood of each threat occurring and the relative severity of consequences in each OCWP Region, and identify best practices and opportunities to create reliable water supplies and investment needs to mitigate each type of threat. Coordinate activities with federally mandated America's Water Infrastructure Act (AWIA) analyses and provide AWIA compliance information and/or support to water providers.
- **3B: Regional and Basin-Level Water Management Strategies and Supplemental Investigations.** Define Water Management Strategies (WMS) and assess their effectiveness at the Basin level.

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Conduct supplemental investigations (e.g., source water protection, regionalization, drought response plan, nonconsumptive use considerations where appropriate, etc.).

- **3C: Local Projects and Programs (LPPs).** Compile LPPs in each Basin using input from Water Supply and Infrastructure Needs Survey (WSINS), Wastewater Collection and Treatment Infrastructure Needs (CWNS), and information received from other state agencies or through other OCWP engagement activities. Consider which LPPs to incorporate into the Oklahoma H₂O Tool and update Oklahoma H₂O accordingly.
- **3D: Focus Basins Identification and Solutions.** Define criteria (e.g., physical availability, legal availability, and/or water quality considerations) and identify FBs. Develop user-level demand projections for selected water use sectors and assess the effectiveness of FB mitigation measures, including the use of WMSs from Task 3B and LPPs identified in Task 3C. Populate Oklahoma H₂O model and OCWP Interface/ Dashboard (from Task 2C) with FB information. Feed results from Tasks 3B (WMSs) and Task 3C (FBs) to Engagement process for review and consideration in Task 5C; refine and prioritize as appropriate after receiving participant input.
- **3E: Water Management Policies Analyses.** Assess progress made on the 2012 OCWP policy recommendations and identify what is necessary to continue implementation of these. Close coordination with participants and possible workgroups (see Task 5C) and socio-economic analyses will support refinement and prioritization of these water management policies if appropriate.

Phase 4: Rollout

In Phase 4, work products developed in previous tasks are summarized and deployed for users of the OCWP. This includes finalizing and distributing reports and interactive tools, assessing financial needs and proposing solutions, and developing implementation plans for OCWP recommendations. Top-level tasks in Phase 4 include:

- **4A: Reports.** Compile reports from subtasks in Phases 1, 2, and 3 and post them to the external OCWP Dashboard. Develop Executive Report.
- **4B: OCWP Dashboard Rollout.** Identify, refine, and add functionality to interactive OCWP Dashboard initially developed under Task 2C. Develop online user guides. Increase user awareness through external communications and orientation workshops.
- **4C: Financial Assistance Needs and Recommendations.** Assess fiscal needs by category and compare with the cost of doing nothing. Categories will be defined based on observed needs and participant input. Inventory and characterize existing funding/financing mechanisms. Propose potential new funding/financing mechanisms, documenting the need and basis for the programs, leveraging the database of LPPs from Task 3C and policies from Task 3E.
- **4D: Implementation Plans.** Identify what is necessary to implement Policy Recommendations (drawing on findings from Task 3E) and Financial Assistance Programs (from those developed in Task 4C).

Phase 5: Engagement Plan

Engagement activities will support all aspects of OCWP development, starting with input to support PWP development in Phase 1 and continuing through the characterization of potential issues in Phase 2, the development of water supply and policy solutions in Phase 3, and the rollout of OCWP products in Phase 4. Top-level tasks in Phase 5 form the basis for the EP, which include:

- **5A: Engagement Phase 1.** Develop EP for all phases of OCWP development, including representative viewpoints, strategies and methods, and goals for each component of the plan. Gather feedback from Regional Planning Groups, Water Unity nations, Agencies, and subset of

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the water user groups in support of developing the vision for OCWP work products that will help shape the development of the PWP and the priorities for the OCWP.

- The Draft PWP and EP was issued June 9, 2021 and reviewed with various engagement groups representing water users and water interests across the state. Feedback collected based on their review of the Draft PWP and EP is included in Appendix B.
- The following meetings were conducted as part of the Task 5A effort.
 - State Agency Directors Meeting, 2/24/2021
 - Water Users Meeting 1, 6/21/2021
 - Chickasaw Nation and Choctaw Nation, 6/28/2021
 - Water Users Meeting 2, 6/29/2021
 - Northwest Action Regional Planning Group, 7/14/2021
 - Oklahoma Rural Water Association, 8/19/2021
 - Tulsa Regional Planning Group, 10/14/2021
- **5B: Engagement Phase 2.** Collaborate with specific state agencies, water users, Regional Planning Groups, and Water Unity nations to gather historical water demand and supply information, review basin level demand and supply forecasts, validate projected basin level shortages, review water quality findings. Refine supply planning model based on feedback from engagement groups. Begin identifying possible water management strategies, LPPs, and policy needs from engagement groups (for later use in Phase 3 work).
 - The following meetings were conducted as part of the Task 5B effort.
 - Tribal Nations of Oklahoma, 4/27/22 and 5/5/2022
- **5C: Engagement Phase 3.** Collaborate with specific state agencies, water users, Regional Planning Groups, and Water Unity nations to identify water management strategies, assess resilience of water supplies, compile list of local infrastructure projects and programs, and develop water management policies. Refine Focus Basin solutions, water management policies, and regional and basin level water management strategies based on feedback from engagement groups. Referencing input obtained in Phase 1, identify Topics of Interest that can be addressed immediately and begin design and coordination of appropriate work groups or meeting series to seek solutions. Work group topics could include Regional Planning, an Oklahoma Water Reuse Action Plan, a Brackish Resources Aquifer Characterization System, and/or infrastructure financing options. Begin getting feedback on mockups of potential Phase 4 Rollout items (for later use in Phase 4 work).
- **5D: Engagement Phase 4.** Collaborate with specific state agencies, legislators, water users, Regional Planning Groups, and Water Unity nations to identify financial assistance needs/programs and implementation plans. Refine and finalize OCWP Executive Summary, policy recommendations, funding programs, and Dashboard based on feedback from engagement groups. Develop and participate in a variety of activities to publicize available resources, new programs and policies.

Funding and Schedule

Figure 2 below indicates the estimated OCWP costs and timeline by Phase. The work conducted under the PWP, including engagement activities, will be prioritized based on funding availability. Costs for each task may be increased or decreased to reflect funding availability, OWRB priorities, and final work plans for the tasks. Foundational elements critical to subsequent tasks will be prioritized in terms of both schedule and funding. The PWP may be updated periodically through the course of developing the OCWP to reflect actual funding, feedback from engagement groups, and implementation priorities.

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	Estimated Cost in \$1,000s	Status as of April 2022	SFY 21		SFY 22				SFY 23				SFY 24				SFY 25				SFY 26	
			Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2		
Phase 1: Plan	\$ 335																					
1.A. Vision, Goals, and Objectives		complete																				
1.B. Draft Programmatic Work Plan and Engagement Plan		complete																				
1.C. Final Programmatic Work Plan		complete																				
Phase 2: Analyze	\$ 1,760																					
2.A. Consumptive Water Demand Forecasts		in progress																				
2.B. Water Supply Availability Analyses		in progress																				
2.C. Supply Planning Model, Database, and Interface		in progress																				
2.D. Water Quality Analyses		in progress																				
Phase 3: Develop	\$ 2,430																					
3.A. Resilience Assessment		not started																				
3.B. Regional and Basin-Level Water Management Strategies (WMS) and Supplemental Investigations		not started																				
3.C. Local Projects and Programs (LPPs)		not started																				
3.D. Focus Basin Identification and Solutions		not started																				
3.E. Water Management Policies Analyses		not started																				
Phase 4: Rollout	\$ 1,090																					
4.A. Reports		not started																				
4.B. OCWP Dashboard Rollout		not started																				
4.C. Financial Assistance Needs and Recommendations		not started																				
4.D. Implementation Plans		not started																				
Phase 5: Engagement	\$ 1,085																					
5.A. Engagement - Phase 1 Plan		complete																				
5.B. Engagement - Phase 2 Analyze		in progress																				
5.C. Engagement - Phase 3 Develop		not started																				
5.D. Engagement - Phase 4 Rollout		not started																				
Total	\$ 6,700																					

Figure 2 OCWP Schedule and Estimated Cost

APPENDIX A

PWP OUTLINE

Programmatic Work Plan (April 2022)		Brief description
1	Phase 1: Plan	
1.A.	Vision, Goals, and Objectives	Define OCWP initial goals, objectives, and vision.
1.B.	Draft Programmatic Work Plan and Engagement Plan	Develop initial framework for the Programmatic Work Plan (PWP) and Engagement Plan (EP).
1.C.	Final Programmatic Work Plan	Refine PWP workflow and planned OCWP products based on feedback from 5A engagement meetings.
1.D.	Project Coordination and Collaboration	Project coordination and collaboration for Phase 1 work.
1.E.	Quality Management	QA/QC for Phase 1 work.
2	Phase 2: Analyze	
2.A.	Consumptive Water Demand Forecasts	
2A 100	Data Collection and Analysis	Aggregate and compile the available demographic information base of population (census), categorical service areas, categorical growth and use characteristics, connections, per capita use, water efficiency, reported or estimated historical water use for municipal and non-municipal uses and geographic region, along with analyses to determine historical trends.
110	Water Demand - Data Collection and Analysis	Aggregate and compile the available demographic information base of population (census), categorical service areas, categorical growth and use characteristics, connections, per capita use, water efficiency, reported or estimated historical water use for municipal and non-municipal uses and geographic region, along with analyses to determine historical trends.
120	Water Demand - incorporate 2020 census and/or 2020 USGS	Gather and review data
2A 200	Develop Demand Forecasts by Decade to 2075 (Including Existing, Planned, and Passive Conservation)	Establish assumptions and performance of quantitative analyses towards development of decadal demand projections by use category at the basin level. Existing conservation, goals, and estimates of anticipated water efficiency will be developed and incorporated.
210	Develop Demand Model and Forecast for All Water Use Sectors	Statistically analyze each water use category based on categorical characteristics of historic patterns of growth and past water use.

Programmatic Work Plan (April 2022)		Brief description
220	Cross-Reference or Integrate Regional/Local-Developed Forecasts	Compile selected local forecasts and studies of forecasted population growth, water demand, and/or water supply gathered via local engagement, and evaluate materials for potential reference or incorporation as appropriate.
230	Water Demand - revise projections using 2020 census and/or 2020 USGS	Update water demand forecast using 2020 Census and/or 2020 USGS report
2A 300	Other demand growth scenarios	Develop alternative demand growth scenarios reflecting variation in native flow and interbasin transfers.
2A 400	Climate Change Demand Scenarios	Develop and apply of assumed impacts of climate variability to projections of water use by category, focusing upon the conservative estimation of drought effects on water demand.
2A 500	Allocate Demands to Basins by Scenarios	Disaggregate projected water demands by decade and water use category to geographical basin.
510	Allocate Demands to Basins by Scenarios	Disaggregate projected water demands by decade and water use category to geographical basin.
520	Allocate Demands - revise allocations using 2020 census and/or 2020 USGS reports	Update water demand allocations using 2020 Census and/or 2020 USGS report
2A 600	Demand Trend Analysis	Quantitative evaluation of characteristics and trends by water use category and basin to determine broader statewide traits in municipal and non-municipal uses.
2A 700	... Reserved	
2A 900	Demand Forecast Report	Develop Technical Report documenting data and analyses performed under Task 2A. Content of this report will inform later development of final OCWP reporting.
2.B.	Water Supply Availability Analyses	
2B 100	Data Collection and Analysis	Aggregate and compile the available information base on streamflow, watershed characteristics, storage, legal and physical availability of water supply by geographic region. Analysis of available data will be utilized to identify knowledge gaps and for the establishment of assumptions for OCWP.

Programmatic Work Plan (April 2022)		Brief description
2B 200	Characterize Interstate Compact Requirements	Review and summarize quantitative interstate compact obligations, including inflow from upstream Compact states and required outflow to downstream Compact states. Data will be used as part of the permit supply availability analyses (2B 600).
2B 300	Physical Supply Availability Analysis – Traditional Sources	Analyze water supply availability from surface and groundwater sources. Evaluation will include use of existing basin studies, hydrologic data, and surface water models with sufficient period of record to include drought effects.
2B 400	Physical Supply Availability Analysis and Water Quality Characterization – Nontraditional Sources	Analyze and quantify water supply availability from sources other than surface and groundwater supplies.
410	Municipal Water Reuse	Analyze and evaluate existing and potentially feasible direct and indirect reuse of municipal supply. Develop assumptions and quantitative estimates of available reuse supply and geographic basin.
420	Produced Water Management and Reuse	Analyze and estimate potential water supply from produced water sources. Evaluation will include assessment of existing information base. This will include targeted engagement with OWRB staff.
430	Industrial Reuse (non-O&G)	Analyze and estimate existing and potentially available supply from reuse of industrial water supplies. Development of assumptions and quantitative estimates of available reuse supply and geographic basin.
440	Brackish Groundwater	Compile and analyze existing knowledge base and data on existing and potentially feasible brackish groundwater supply. This will include targeted engagement with ongoing working group and OWRB staff.
450	Regional Stormwater / Stored Flood Flows	Compile and analyze available stormwater and storage data for potential water supply. Identification at basin level of surplus (flood scalping) potential with storage (surface, ASR, MAR).
451	Regional Stormwater / Stored Flood Flows (part 1)	Compile and evaluate stormwater data for basins with potential surplus that could be stored, and identification of high level storage opportunities (surface, ASR, MAR).

Programmatic Work Plan (April 2022)		Brief description
452	Regional Stormwater / Stored Flood Flows (part 2)	Based on FB and other strategies, evaluate the infrastructure needed to collect and store flows, and the withdrawal and transmission infrastructure to transport to identified areas of water need.
460	Decentralized Treatment and Reuse	Basin-scale assessment for potential of small-scale supply infrastructure (raw water treatment or reuse) for positioning of plants near identified water needs. Development of assumptions and high-level estimates of potentially feasible supply for both municipal and non-municipal needs.
470	Onsite (Rooftop Capture, Greywater, Onsite treatment and reuse	Review and assess available information base on estimation of existing and potentially feasible supply from rainwater/stormwater harvesting, onsite treatment, and reuse at the basin level.
480	... Reserved	
2B 500	Climate Change Supply Scenarios	High-level analysis of potential change to existing supply when accounting for effects of climate variation to precipitation and evaporation to streamflow and storage, with a focus upon characterizing potential drought effects.
2B 600	Permit Supply Availability Analysis	Compile legal and infrastructure information and data for the assessment of basin-level accessibility to water supply. Analysis to include Excess and Surplus characterization in coordination with OWRB, and development of basin-specific runoff modeling.
2B 700	... Reserved	
2B 900	Water Supply Availability Report	Develop Technical Report documenting data and analyses performed under Task 2B. Content of this report will inform later development of final OCWP reporting.
2.C.	Supply Planning Model, Database, and Interface	
2C 100	Confirm Functionality and Planning Scenarios	Determine desired capabilities and planned interaction of functional elements for the H2O Tool, database, and portals.
2C 200	Update and Modernize Oklahoma H ₂ O Model	

Programmatic Work Plan (April 2022)		Brief description
210	Update and Modernize Oklahoma H ₂ O Model (part 1)	Model vetting, assessment, and selection of best appropriate methodology, development and coding as necessary for incorporation of model inputs, preliminary application of analytic approaches for planning scenarios, representations of basin demand and supply, and review of model results.
220	Update and Modernize Oklahoma H ₂ O Model (part 2)	Continued model development, refinement of analyses for FB evaluations and necessary model outputs for database and portal uses.
2C 300	Database Structure Development	Evaluate and develop structural database to process data and H ₂ O Model outputs. Queries to be developed based on necessary functionality for both in-house State uses as well as public-facing portal.
2C 400	Interactive User Interface / OCWP Web Portal	Evaluate, select, design, and implement software for internal and external portals, utilizing database queries and outputs. Portal development will include presentation of key information as identified by OWRB for representation of the OCWP.
2C 500	Model Functionality for Nonconsumptive Demand	Evaluate and implement H ₂ O Model functions to represent existing and potential future flow frequencies at the basin-level for potential impacts to available nonconsumptive uses.
2C 600	Run Model Supply/Demand Scenarios to Forecast Shortages in Each Basin	Apply the fundamental water equation of supply and demand at the basin level to determine surpluses and shortages for various water use categories over the planning period. The extent, magnitude, and duration of such shortages will heavily inform upon the identification of FBs.
2C 700	... Reserved	
2C 800	Supplemental Model Development and Runs to Address Stakeholder Feedback	Based on feedback from engagement, adjustments to the H ₂ O Model, database, and/or portal functionalities will be performed at the appropriate level.

Programmatic Work Plan (April 2022)		Brief description
2C 900	Model and Interface Report	Development of Technical Report documenting modernization of the H2O Model, and development of the database and portals as performed under Task 2C. Content of this report will inform later development of final OCWP reporting.
2.D.	Water Quality Analyses	
2D 100	WQ Parameter Selection and Data Collection	Plan WQ work (what parameters are we going to use, what are outputs, etc.) Aggregate available pertinent water quality data and information base. Data will be provided at the basin level.
2D 200	WQ Trending Analysis by Region	Analyze data to determine trends in selected water quality parameters, with a potential focus on variation in water temperatures at the basin level.
2D 300	WQ Regulatory Considerations	Develop an inventory of present water quality regulations, rationale, and key influences affecting economy, recreation, and water supply permitting and planning.
2D 400	... Reserved	
2D 900	Water Quality Summary Documentation	Develop Technical Report documenting data, analyses, and evaluations performed under Task 2D. Content of this report will inform later development of final OCWP reporting.
2.P.	Project Coordination and Collaboration	
2P200	Task Order 2	Project coordination and collaboration for Task Order 2.
2P300	Task Order 3	Project coordination and collaboration for Task Order 3.
2P400	Task Order 4	Project coordination and collaboration for Task Order 4.
2P500	Task Order future	Project coordination and collaboration for future task orders.
2.Q.	Quality Management	
2Q2100	Task Order 2	Internal quality management for assurance and control functions. Applicable for technical analyses, tool/model development and functionality, and reporting. QA/QC for Task Order 2.

Programmatic Work Plan (April 2022)		Brief description
2Q300	Task Order 3	QA/QC for Task Order 3.
2Q400	Task Order 4	QA/QC for Task Order 4.
2Q500	Task Order future	QA/QC for future task orders.
3	PHASE 3: DEVELOP	
3.A.	Resilience Assessment	
3A 100	Inventory and Characterize Potential Threats to Water Supply Reliability	Identify types/categories of threats to water supply reliability and characterize the potential types of implications for water supply reliability and/or water quality.
3A 200	Regional Assessment (for the 13 Watershed Planning Regions)	Develop a matrix indicating the likelihood/applicability of each threat category to each planning region, considering conditions specific to each region.
3A 300	Mitigation Strategies for Each Threat Type	Identify and characterize best practices that can be used to mitigate each category of water supply vulnerability.
3A 400	AWIA Coordination / AWIA Utility Support	Coordinate vulnerability assessments with AWIA requirements to provide supplemental guidance for communities to use in AWIA compliance documents.
3A 500	Populate Interactive Portal from 2C with Resilience Content	Populate the relative applicability/risk of each threat category for each region/basin into geospatial coverages in the interactive OCWP Portal.
3A 600	... Reserved	
3A 900	Oklahoma Water Resilience Report	Develop Technical Report documenting Task 3A methods and findings.
3.B.	Regional and Basin-Level Water Management Strategies (WMS) and Su	
3B 100	Establish Categories of WMS	Identify categories of potential WMS, including supply, treatment, demand management and other aspects.
3B 200	Develop Effectiveness Rating Scale and Approach for Each Category	Develop a means to evaluate and characterize the effectiveness of individual WMS categories in addressing a range of water supply / water quality challenges.
3B 300	Assess Effectiveness for Applicable WMS Categories from 3.B.1 in Each Basin/Category	Evaluate potential effectiveness of each WMS Category in addressing water supply / WQ challenges in individual Basins.

Programmatic Work Plan (April 2022)		Brief description
3B 400	Water for 2060 Assessment/Tracking/Revisions	Develop method for tracking progress toward the Water for 2060 (WF2060) goal both through fresh water saved and use of alternative sources to meet demands. Consider adding fields to OWRB Water-Use database and promote new technologies and practices.
3B 500	Populate Interactive Portal from 2C with WMS Content	Populate the results of WMS analyses for each region/basin into geospatial coverages in the interactive OCWP Portal.
3B 600	Supplemental Investigations	Supplemental studies contingent on funding availability.
610	Potential Nonconsumptive Flow Strategies	Evaluate potential methods for implementing nonconsumptive use strategies from prior OWRB investigations; consider reservoir release management and other innovative approaches.
620	Source water protection	Evaluate existing state and local source water protection programs. Evaluate applicability of elements from successful programs elsewhere. Develop and analyze options to improve source water protection specifically with goal of improving or maintaining water quality for suitable uses, for possible inclusion in water management policy work (3E).
630	Regionalization	Evaluate potential regionalization projects (like developing shared infrastructure/treatment and supplies or developing system interconnections for greater resiliency/redundancy between nearby systems), determine if incentives are needed to promote regionalization and if so, develop incentive options for consideration. Develop guidelines/strategies of how regionalization can be implemented. Results from regionalization analysis may be incorporated into the water management policy work (3E) and/or used to develop solutions in Focus Basins (3D).

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Brief description

640	Drought management/contingency plan	Building on existing drought planning documents, evaluate drought management strategies that OWRB could exercise statewide or regionally and their potential impact on water use. Results from the drought management analysis may be incorporated into the water management policy work (3E) and/or used to develop solutions to Focus Basins (3D) and/or replace the existing Oklahoma Drought Tool.
650	Groundwater	
651	Aquifer Recharge (including storage and recovery)	<i>Evaluate the current aquifer recharge program (i.e., update the 2010 Aquifer Recharge Issues and Recommendations to reflect new technological and legal framework/opportunities). Develop and analyze opportunities to enhance programs and implement recharge projects for possible inclusion in water management policy work (3E) and/or specific systems that could be added to the Local Infrastructure Projects and Programs (LPPs) database and/or address issues in Focus Basins (Task 3D).</i>
652	Critical groundwater treatment needs (guide, best practices)	<i>Characterize regional or aquifer-specific groundwater quality challenges and develop best practices for addressing them. The deliverable for this task is likely to be a user guide and may assist in development of LPPs (3C) and/or resolution of issues in Focus Basins (3D).</i>
653	Complete remaining basin studies and set EPS	This task will be led by OWRB. Complete basin studies and set equal proportionate share (EPS) in unstudied basins.
660	Surface water	
661	Surface Storage Sites and Implementation of New Storage	This task is not intended to develop new reservoir sites but will use best available data to focus on implementation processes and actions for specific sites.
661A	Surface Storage Sites and Implementation of New Storage (pa	Update the 2012 Reservoir Viability Study to reflect latest data for proposed major reservoirs or changes to reservoir use for non-federal reservoirs. Screen the most likely/best locations and perform a more rigorous technical analysis, potentially informed by Task 2B450 and regional engagement.

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Brief description

661B	Surface Storage Sites and Implementation of New Storage (pa	Using findings from Task 3B661A, identifying next steps for permitting and identifying any hurdles to implementation for specific sites.
662	Reservoir Yield and Sedimentation Studies	This task will be led by OWRB. Complete additional yield studies and sedimentation studies.
663	Analyze Major Federal Reservoirs for Permit Allocation Usage	In conjunction with the State Flood Plan, evaluate reallocation of storage within federal reservoirs to enhance raw water supply reliability. Results from this task may be used as part of the development of LPPs, development of water management policy work, and/or to address solutions for Focus Basins.
664	Harmful Algal Blooms	Assess supply reliability implications of HABs; integrate analyses with Water Research Foundation HAB prediction research study on which OWRB is a partner.
665	Protecting Reservoir Yields	
669	... Reserved	
670	Agricultural	
671	Soil health	Evaluate soil health's impact on water use and quality and develop/document best practices. The deliverable of this task may be a user guide and may assist in development of LPPs. Consider developing soil health improvement program including funding criteria.
672	Compare cost of converting to high efficiency irrigation to cor	As a pilot study, evaluate various degrees of conversion to high efficiency irrigation measures vs. bringing in new water supplies (in lieu of allowing greater depletions of groundwater supplies) for a few basins. Determine if incentives are needed to promote conversion and if so, develop incentive options for consideration. Develop guidelines/strategies of how conversion can be implemented. Based on pilot work, determine factors that drive the viability of conversion to high efficiency irrigation as a water management strategy and could be used as a potential solution to address FBs.

673	Compare water quality/chemical cost impacts if fertilize using	Evaluate various chemical delivery methods to crops in terms of cost and impact on water quality and water quantity and develop chemical delivery best practices (to minimize impact on water quality while not increasing water use). Determine if incentives are needed to promote better chemical delivery methods and if so, develop incentive options for consideration. Develop guidelines/strategies of how conversion to better chemical delivery methods can be implemented. Determine factors that drive the viability of better chemical delivery method as a water management strategy and could be used as a potential solution to address FBs.
674	Compare cost/water savings of implementing reuse versus high	As a pilot study, determine where implementing reuse for agriculture purposes is feasible, then select a few sites (counties/basins) and evaluate the cost of implementing nonpotable reuse. Compare cost to implement reuse with cost to convert to high efficiency irrigation (using 3B672 data). Determine non-monetary factors that influence decision to implement reuse versus high efficiency irrigation. Determine if incentives are needed and develop options for later consideration if appropriate. Results from this analysis may be incorporated into water management strategy and/or used as a potential solution to address Focus Basins.
675	Irrigation Resource District Strategies	Evaluate existing state and national irrigation resource district programs and specifically the applicability of elements from successful programs. Develop and analyze options for possible inclusion in water management policy work (3E).
679	... Reserved	
680	Onsite (localized) Sources	Evaluate potential water supply benefits and best practices associated with onsite sources such as greywater, decentralized treatment, rainwater harvesting, green stormwater infrastructure.
690	Mapping (not publicly available)	Develop additional GIS databases and mapping of water infrastructure in municipal and/or rural water systems.

Programmatic Work Plan (April 2022)		Brief description
6A0	Small system studies	Develop water supply planning guides and best practices unique to small systems across Oklahoma.
6B0	Regional Water Planning	Evaluate existing state and national regional water planning programs and specifically the applicability of elements from successful programs to Oklahoma. Work with various stakeholders to develop and analyze options for possible inclusion in water management policy work (3E).
6C0	Oklahoma Water Reuse Action Plan	Work with various stakeholders to develop and analyze water reuse options for possible inclusion in water management policy work (3E). If appropriate, develop an Oklahoma Water Reuse Action Plan.
6D0	Workforce Development	Work with various stakeholders to evaluate workforce challenges in Oklahoma, evaluate successful programs locally and elsewhere, and develop recommendations for possible inclusion in water management policy work (3E).
6E0	Other studies	Other studies as identified by OWRB or water users, subject to funding availability.
6Z0	... Reserved	
3B 700	... Reserved	
3B 900	Regional and Basin-Level Water Management Strategies Report	Document Task 3B methods and findings, excluding Supplemental Investigations that may have their own dedicated reports.
3.C.	Local Projects and Programs (LPPs)	
3C 100	Establish Eligibility Criteria for Inclusion in OCWP / Financial Assistance Eligibility	Develop criteria for projects to be included in OCWP LPP database. Compile eligibility criteria for existing or potential future financial programs and recommend changes to be considered. Results from this work may be incorporated into water management policies work (3E).
3C 200	Inventory Potential LPPs	
210	Water Supply and Infrastructure Needs Survey (WSINS)	Solicit LPP information from water providers, possibly through use of a survey or other outreach mechanisms.
220	Wastewater collection and treatment infrastructure needs (CWNS)	Solicit LPP information from wastewater providers, possibly through use of a survey or other outreach mechanisms.

Programmatic Work Plan (April 2022)		Brief description
230	Coordinate survey with other OCWP elements	Coordinate with WSINS and CWNS during survey development and data collection
3C 300	Screen LPPs Using Eligibility Criteria	Using criteria developed in 3C100, screen LPP list and identify which projects are eligible for existing or potential future financial programs.
3C 400	Populate Interactive Portal from 3C with LPP Content	Populate LPPs into geospatial coverages in the interactive OCWP Portal.
3C 500	... Reserved	
3C 900	LPPs Report	Summarize findings from analyses into report. Report will include documentation of LPP screening criteria and weighting criteria (if appropriate for funding).
3.D.	Focus Basin Identification and Solutions	
3D 100	Identify Focus Basins (FBs)	Develop criteria and scoring method to assess all 82 basins relative to physical water availability, legal water availability, and water quality. Identify FBs based on this process.
3D 200	Analyze FB Demand and Supply at User Level of Detail	For selected FBs, develop demand projections and supply analyses at a sub-Basin or local level of resolution.
3D 300	Assess FB Mitigation Measures	Building on WMSs identified in Task 3B, determine the effectiveness of applicable WMSs to mitigate or resolve projected FB supply challenges.
3D 400	Prioritize (at basin or project level – TBD)	Prioritize WMSs for local implementation to mitigate FB issues, in coordination with LPP database.
3D 500	Populate Interactive Portal from 2C with FB Content	Populate FB issues and solutions into geospatial coverages in the interactive OCWP Portal.
3D 600	... Reserved	
3D 900	Focus Basins Report	Develop Technical Report documenting Task 3D analyses.
3.E.	Water Management Policies Analyses	
3E 100	Assess Progress in Addressing 2012 OCWP Policy Needs	Assess status of implementation or resolution of policies identified in the 2012 OCWP, including the "Big 8" and full lists of policy recommendations. Consult OWRB, agencies, water users, Tribes, RPGs, and other interested parties to gauge progress.

Programmatic Work Plan (April 2022)		Brief description
3E 200	Synthesize Potential Policy Priorities	Drawing from input obtained as part of Engagement Plan meetings and actions, compile and organize a list of potential policies for action by OWRB, other agencies, or the Legislature.
3E 300	Establish and Deploy Prioritization System for Water Management Policies	Develop and apply criteria and method for evaluating and ranking the priority of identified policy measures.
3E 400	Socio-Economic Analysis	Assess the socio-economic aspects and cost/benefits of nonconsumptive water uses and the costs associated with inaction for consumptive use projects.
3E 500	Policy Refinement	Refine policies developed and prioritized in previous tasks based on further input and feedback from water users, agencies, organizations, Tribes, Legislators, and others.
3E 600	... Reserved	
3E 900	Water Management Policy Report and Interactive Story Map	Document Task 3E methods and findings, including development of an online Story Map that depicts locations and issues associated with priority policy recommendations.
3.P.	Project Coordination and Collaboration	Internal project management functions, including coordination and collaboration amongst project team, OWRB, and other project team members. This includes preparation and participation in conference/video calls, internal team meetings, and in-person meetings as necessary.
3P200	Task Order 2	Project coordination and collaboration for Task Order 2.
3P300	Task Order 3	Project coordination and collaboration for Task Order 3.
3P400	Task Order 4	Project coordination and collaboration for Task Order 4.
3P500	Task Order 5	Project coordination and collaboration for Task Order 5.
3P600	Task Order "future"	Project coordination and collaboration for future task orders.
3.Q.	Quality Management	Internal quality management for assurance and control functions. Applicable for technical analyses, tool/model development and functionality, and reporting.
3Q200	Task Order 2	QA/QC for Task Order 2.
3Q300	Task Order 3	QA/QC for Task Order 3.
3Q400	Task Order 4	QA/QC for Task Order 4.
3Q500	Task Order 5	QA/QC for Task Order 5.

Programmatic Work Plan (April 2022)		Brief description
3Q600	Task Order "future"	QA/QC for future task orders.
4	PHASE 4: ROLLOUT	
4.A.	Reports	
4A 100	Compile / Synthesize / Publish Phase 1, 2, and 3 Reports	Compile Phase 1, 2, and 3 reports and develop final OCWP documentation. Publish report(s).
4A 200	Executive Report	Develop and publish OCWP Executive Report (ER). Initial table of contents of ER includes: Executive Summary, Policy Recommendations and Implementation, Statewide Overview and Water Assessments, Regional/Statewide Water Management Options and Solutions, and Funding Assessment.
4A 300	Provider planning guides (development and rollout)	Develop and publish identified user guides. Update and move the Public Water Supply Planning Guide and Public Wastewater Planning Guide online.
4.B.	OCWP Dashboard Rollout	
4B 100	Identify, Refine, and Add Functionality (building on 2C products)	Determine what information and tools will be part of the (public facing) portal and how visitors will interact with it and, when feasible, real-time databases to be utilized. Develop content, add functionality, and publish portal.
4B 200	Develop Online User Guide	Develop OCWP portal user guide. Develop user guides for other tools developed as part of OCWP (example may be the Harmful Algal Bloom Predictive model).
4B 300	User Awareness and Orientation Workshops and Web Content	Develop materials for promoting and describing how to use the OCWP portal for use in engagement meetings and other workshops as identified.
4B 400	... Reserved	
4.C.	Financial Assistance Needs and Recommendations	
4C 100	Fiscal Need Analysis by Water Use Sector / LPP Prioritization	Using the results from Task 3C, assess each water use sector's ability to fund identified LPPs. Complete analysis at the Basin level with more detailed assessment possible for the FBs. Develop method of prioritizing LPPs for financial support.
4C 200	Inventory and Characterize Existing Federal Programs	Identify and compile requirements of existing federal programs that are available to financially support LPPs.

Programmatic Work Plan (April 2022)		Brief description
4C 300	Inventory and Characterize Existing State of Oklahoma Programs	Identify and compile requirements of existing state programs that are available to help financially support LPPs.
4C 400	User Awareness and Orientation Workshops and Web Content	Develop and host workshops that provide information on federal and state programs that are available for financial assistance for LPPs. Solicit feedback from attendees (or users) about potential new state programs. Provide information on available programs that can be incorporated into the OCWP web portal (4B).
4C 500	Develop new State of Oklahoma Programs	Based on 4C300 findings, 4C400 discussions, and discussions with OWRB staff, develop concept, eligibility, and financial needs (how much money is needed and how it will be acquired in addition to how it will be distributed). If other programs have been identified of benefit, (reuse, efficiency, regionalization) how funding programs could be designed to incentivize these efforts. Examples of programs that may be considered are distribution system hydraulic analysis for small communities and infrastructure mapping.
4C 600	... Reserved	
4.D.	Implementation Plans	Develop actionable plans, assign priorities, responsibilities, and timelines for plan components. Develop implementation plan for water management strategies and special studies developed under Task 3B.
4D 100	Develop policy language for priority policies from 3E	Develop implementation plan for priority policy recommendations developed under Task 3E.
4D 200	Develop financial assistant programs from 4C	Develop implementation plan for financial assistance program recommendations developed under Task 4C.
4D 300	... Reserved	
4.E.	... Reserved	
4.P.	Project Coordination and Collaboration	Internal project management functions, including coordination and collaboration amongst project team, OWRB, and other project team members. This includes preparation and participation in conference/video calls, internal team meetings, and in-person meetings as necessary.

Programmatic Work Plan (April 2022)		Brief description
4P400	Task Order 4	Project coordination and collaboration for Task Order 4.
4P500	Task Order 5	Project coordination and collaboration for Task Order 5.
4P600	Task Order future	Project coordination and collaboration for future task orders.
4.Q.	Quality Management	Quality management for assurance and control functions. Applicable for technical analyses, tool/model development and functionality, and reporting.
4Q400	Task Order 4	QA/QC for Task Order 4.
4Q500	Task Order 5	QA/QC for Task Order 5.
4Q600	Task Order future	QA/QC for future task orders.
5	PHASE 5: ENGAGEMENT	
5.A.	Engagement - Phase 1 Plan	
5A 100	Engagement 1B (Draft PWP & EP)	Present preliminary draft OCWP vision, goals, objectives, and PWP framework; Solicit input on collaboration, end products, key challenges
110	Develop Engagement Plan	Develop draft and final OCWP Engagement Plan
120	Tribal engagement (2 months)	Prepare and lead meetings with Tribal representatives (recurring meeting format for duration of OCWP).
130	Regional Planning Group engagement (2 months)	Prepare and lead meetings with existing Regional Planning Groups (recurring meeting format for duration of OCWP).
140	Agency engagement (1 meeting)	Develop, distribute, and analyze survey to various state agencies to gather feedback on possible OCWP end products, water challenges, opportunities for collaboration. Prepare materials for and lead meeting with state agency directors.
5A 200	Engagement 5A (end Phase 1 Plan beginning Phase 2 Analyze)	Present information on OCWP vision, goals, and objectives; Present PWP and EP; Solicit input on collaboration (Tribes and RPGs), end products (all), status of local/regional water planning efforts (Tribes and RPGs)
210	Tribal engagement	Prepare and lead meetings with Tribal representatives (recurring meeting format for duration of OCWP).
220	Regional Planning Group engagement	Prepare and lead meetings with existing Regional Planning Groups (recurring meeting format for duration of OCWP).
230	Water Users engagement	Prepare and lead meetings with Water Users (two virtual meetings with small group of water users).

Programmatic Work Plan (April 2022)		Brief description
5.B.	Engagement - Phase 2 Analyze	
	Tribal engagement Phase 2	Present preliminary demand, supply, gaps/depletions, and water quality information as available, ask for feedback on water management strategies that are applicable to their challenges
5B 100		
	Regional Planning Groups engagement Phase 2	Present preliminary demand, supply, gaps/depletions, and water quality information as available, ask for feedback on water management strategies that are applicable to their challenges
5B 200		
5B 300	Water User engagement Phase 2 (up to 20 meetings)	Prepare and lead meetings with Water Users (up to 20 virtual meetings with small water user groups or individual water users).
310	2B - Water User engagement demands	Obtain information needed from water users necessary to develop/validate basin level water demand projections
320	2C - Water User engagement supplies	Obtain information needed from water users necessary to develop/validate basin level water supply gaps/depletions
330	2D - Water User engagement water quality	Obtain information needed from water users necessary to develop/validate basin level water quality concerns
340		
5B 400	Agency engagement Phase 2 (up to 2 meetings)	Prepare and lead meetings with agencies (up to 2 virtual meetings).
410	ODEQ	Obtain information needed from ODEQ to aid in development of water demand projections, water supply analysis, and/or water quality concerns
420	ODOC	Obtain information needed from ODOC to aid in development of water demand projections (county level population projections)
430	Others	
5B 500	Engagement 5B (end Phase 2 Analyze beginning Phase 3 Develop)	Present draft basin level demand, supply, gaps/depletions, and water quality information as available, ask for feedback on water management strategies that are applicable to their challenges
510	Review (draft) Phase 2 outputs (up to 6 meetings)	Prepare and lead meetings with water users (public notification provided)
5.C.	Engagement - Phase 3 Develop	
5C 100	Tribal engagement Phase 3	Prepare and lead meetings with Tribal representatives.

Programmatic Work Plan (April 2022)		Brief description
5C 200	Regional Planning Groups engagement Phase 3	Prepare and lead meetings with existing Regional Planning Groups.
5C 300	Water User engagement Phase 3	Prepare and lead or facilitate meetings with Water Users
310	3A - resilience	Obtain information needed from water users necessary to develop/validate basin level resilience challenges/solutions
320	3B - regional/basin WMS	Obtain information needed from water users necessary to develop/validate basin level water management strategies
330	3C - Request input LPPs	Coordinate with key water user groups, regional planning groups, and tribes to review projected demands, supplies, and shortages from Task 2C. Gather stakeholder input for regional and basin-level water management strategies (3B), the LPPs database (3C), and water management policies (3E).
340	3D - FBs	Obtain information needed from water users necessary to develop/validate more specific solutions in the Focus Basins. Discussions may cover resilience, water management strategies, LPPs, funding, and policies.
350	3E - Request input Policy Needs (anticipate Phase 3 works)	Obtain information needed from water users necessary to develop/validate state level water management policies (new and existing)
5C 400	Agency engagement Phase 3	Coordinate with agencies as appropriate to discuss water management strategies and policies
5C 500	Engagement 5C (end Phase 3 Develop beginning Phase 4 Rollout)	
510	Review (draft) Phase 3 outputs - regional/basin level	Present draft basin level water management strategies, resilience assessments, and water management policies. Ask for feedback on funding challenges/needs, priorities for implementation, and mockups of Phase 4 deliverables.

PROJECT MEMORANDUM

APPENDIX B
PHASE 5A ENGAGEMENT COMMENTS/RESPONSES

General theme	Paraphrased comment(s) received	Response
2012 OCWP	Request update on progress on implementing or addressing the 2012 OCWP policy recommendations	This analysis will be conducted in PWP Task 3E100. Analysis will include identifying activities that have been initiated or completed in support of each of the recommendations. For activities not started, the OCWP planning team will determine whether proposed activities are still valid and should be carried forward or modified to better reflect current (2025 OCWP) recommendations. Input regarding policy recommendations (considering the 2012 recommendations and newly-identified policy needs) will be solicited as part of the engagement process detailed in Phase 5 tasks.
Climate Change	Request analysis that looks at potential impacts on water supply and demand associated with various climate change scenarios	The potential impact of climate change on water demands and water supply availability will be evaluated in PWP Tasks 2A400 and 2B500, respectively.
Environmental/ Instream Flows	Request to incorporate environmental or instream flows more specifically into the OCWP were received. A few specific notes related to these requests include: - recognizing financial impacts of flow in streams has on tourism, property value, quality of life - quantify non-consumptive/recreational flows to support existing activities and wildlife - water quality associated with environmental / instream flows	PWP Task 3E (Develop OCWP Water Management Policies) is an opportunity to further examine the potential role, benefits, challenges, and implementation of instream flow management in Oklahoma. PWP Task 2C500 is intended to integrate the evaluation of nonconsumptive needs into the functionality of the updated Oklahoma H2O supply/demand model. In Task 3B610, potential instream flow strategies can be further considered.
Infrastructure Improvements & Funding / Financing	Expressed concerns about aging infrastructure and its replacement/upgrade costs as well as need for new infrastructure to access or treat new water supplies. Expressed interest in having more funding available for water projects through both existing and/or new programs.	PWP Task 3C will compile a list of local infrastructure projects and programs intended to meet future needs as well as look at possible funding mechanisms. PWP Task 4C will assess financial assistance needs and make recommendations regarding existing and/or new programs.
Other - working with established water planning groups	How will OWRB work with established water planning groups?	PWP Task 5 (Engagement) identifies a process whereby existing water planning groups along with water users, providers, experts, academia, and others will be sought for significant interaction, collaboration, and coordination.
Permitting / Regulations / Policy	Comments received requested establishing minimum streamflow legislation, provide data about remaining streamflow after demands are met, strengthening water quality regulations, and resolving ambiguities on delivering water to medical marijuana growers (ODEQ, ODAFF, OSDH, and OMMA).	PWP Task 3E (Develop OCWP Water Management Policies) will afford the opportunity to identify and provide administrative, regulatory, and/or policy recommendations relating to water management in Oklahoma. Policy recommendations will be influenced by analysis completed in PWP Task 2D Water Quality, PWP Task 3D Identification and Solutions for Hot Spot Basins, and others. Output from the supply/demand analyses using the updated Oklahoma H2O Tool could also provide insights into basin-level stream flows in decadal increments throughout the 50-year planning period.

General theme	Paraphrased comment(s) received	Response
Regionalization	Request to identify where system interconnectivity and regionalization makes sense	Regionalization will be one of the water management strategies explored in PWP Tasks 3B (Water Management Strategies) and Task 3E (Water Management Policies).
Staffing / Workforce Shortages	Expressed concerns about difficulty finding qualified staff for operations and maintenance work as well concern about loss of institutional knowledge with aging workforce.	PWP Task 3E (Develop OCWP Water Management Policies) will provide an opportunity to identify and provide administrative, regulatory, and/or policy recommendations relating to water management in Oklahoma. The potential implementation of water management policies as they relate to the workforce will be considered within the context of this task.
Stormwater / Flooding	Comments received noted flooding frequency and concerns about future regulations.	A separate Oklahoma State Flood Plan is in development and will address these comments.
Support from Agencies / Scientific Communities	Agencies and the scientific community should be included in the planning process for the OCWP.	PWP Task 5 (Engagement) identifies a process whereby water users, providers, experts, academia, and others will be sought for significant interaction, collaboration, and coordination. Further, the PWP identifies tasks whereby external consultants may be brought on to accomplish specific elements of the work, which will include subject matter experts from water consulting, engineering, and academia.
Support to Rural Communities / Public Education	It is important that the plan offer benefits for struggling rural water users and providers.	PWP Task 3B (Regional and Basin-Level Water Management Strategies (WMS)) identifies a series of basin-level analyses comparatively assessing existing water supplies to projected demands. This focus at the basin-level is intended to capture both urban and rural water needs. PWP Task 3D then more thoroughly evaluates Hot Spot Basins where needs are identified and more rigorously vetted, thus capturing needs and evaluating potentially feasible water management strategies at the user level. This exercise will provide the basis for the OCWP's capability to inform legislators on both urban and rural water issues; identify potential strategies, policy recommendations, and/or financial programs; and provide planning information that might not otherwise be available to smaller water providers.
Sustainability	The OCWP's primary goal should be to establish and implement a sustainable management methodology for Oklahoma's water resources.	A fundamental precept of the OCWP is assessing supply capabilities under present water policy. A key element of this work is identifying areas where future demands are projected to exceed sustainable supplies, which will be illustrated as surface water gaps and groundwater depletions (PWP Task 2). The OCWP will also evaluate potential water management strategies to address these gaps and depletions at the basin level, and in more detail in identified "hot spot" basins (PWP Task 3).

General theme	Paraphrased comment(s) received	Response
Water Conservation	Acknowledge on-going water conservation efforts and cover in OCWP	PWP Task 2A200 will include passive conservation in demand forecast development (this is conservation that will happen because of changes to plumbing codes and fixture efficiencies) and savings from existing conservation programs and measures. PWP Task 3B will include conservation as one of water management strategies that will be analyzed.
Water Quality Issues	Water quality comments ranged from concerns about specific constituents (example, nitrates in groundwater), assessing progress on water quality from past efforts (example, phosphorus in eastern Oklahoma), degrading water quality during droughts and/or resulting from specific activities	PWP Task 2D will compile and assess trends in water quality for both groundwater and surface water. Water quality will also be an element of determining whether a basin is identified as a "hot spot" basin. Once the potential water supply/water quality issues are characterized in Phase 2, solutions will be sought via water management strategies and policies in Phase 3.
Water Quantity Issues	Water quantity comments received requested identifying new supply sources, providing trend information on water quantity specifically in aquifers, addressing the hydrologic connection between surface and groundwater supplies, and enforcing senior water right access to water and protecting conservation pool storage in reservoirs.	PWP Task 2B will evaluate changes in supply availability since previous OCWP. PWP Task 2C (physical supply availability) incorporates the connection between surface water and alluvial groundwater. These tasks will be part of the information that is used in PWP Tasks 3B and 3E to identify effective water management strategies and policies.
Water Reuse	Modify regulations (or offer flexibility) to make reuse more feasible, remove barriers to implementation, so that reuse can be a viable water supply alternative. Comments were also received that requested OCWP look at better matching water quality available with water quality needed (e.g., are there some needs that can be met with nonpotable water instead)?	PWP Tasks 2B.410, 420, and 430 look at potential reuse from municipal, produced water, and industrial as water supply options. PWP Task 3E evaluates various water management policies which will include water recycling.