



CITY OF
FOLSOM
DISTINCTIVE BY NATURE

CONSULTING SERVICES FOR THE 2025 URBAN WATER MANAGEMENT PLAN





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A. Transmittal Letter



April 29, 2024

Marcus Yasutake

City of Folsom -
Environmental and Water
Resources

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Dear Marcus,

The City of Folsom (City) is seeking a consultant to prepare its 2025 Urban Water Management Plan (UWMP) as required by the California Department of Water Resources (DWR). Water Systems Consulting, Inc. (WSC) prepared the City's 2020 UWMP (in addition to several other planning projects) and is well suited to efficiently deliver a high-quality and compliant 2025 UWMP.

By partnering with WSC, your organization will receive:

Expert guidance. WSC's proposed key staff developed 46 UWMPs during the 2020 cycle. WSC has also completed more than 80 UWMPs as a firm. Members of our team have participated in the UWMP Guidebook Committee since 2015.

Local Context and Knowledge. WSC prepared the City's 2020 UWMP and is a partner to the City and other agencies in the region on recent water supply plans and projects. We will draw upon this deep local and regional knowledge to efficiently deliver the 2025 UWMP.

Added Value. WSC developed the baseline datasets for the 2020 UWMP that can be updated with data from the Water Conservation Needs Assessment (WCNA) and Folsom Water Vision (FWV). This, combined with our knowledge of your water supplies, will streamline the data collection and review process, saving the City's staff time.

Our team is committed to the success of this project and supporting the City. We hope this proposal demonstrates our qualifications, interest, and commitment to this initiative. If you have questions about our proposal, please contact Project Manager Stephanie Ard or Principal in Charge Rob Natoli.

Thank you for your consideration. We look forward to your response.

Sincerely,

Water Systems Consulting

A handwritten signature in black ink that reads 'Stephanie Ard'.

Stephanie Ard ^{PE}

Project Manager

A handwritten signature in black ink that reads 'Rob Natoli'.

Rob Natoli ^{PE}

Principal in Charge | Vice President

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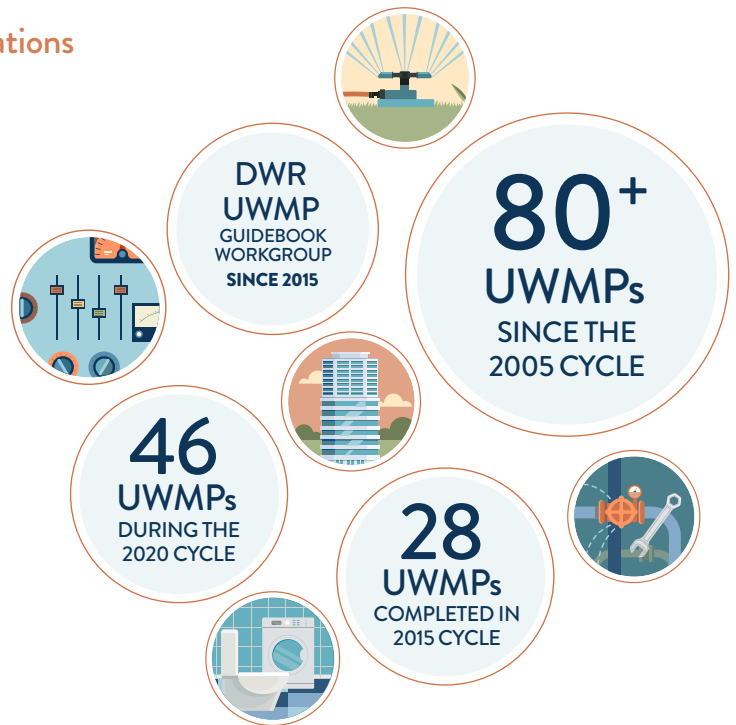
B. Introduction

WSC Firm Background

Demonstrated Expertise, Proven UWMP Qualifications

WSC is an industry leader at preparing UWMPs and related regulatory reporting for agencies like the City. Our team of UWMP experts continues to support several of these agencies in updating their analytical toolsets as new information becomes available about changes in State regulations and supply and demand assumptions. The tools and lessons learned during previous UWMP cycles allow WSC to prepare an efficient, cost-effective, and useful UWMP that integrates with, and builds off, existing and future water resources planning documents.

WSC has contributed to the State's UWMP guidebooks and reporting templates and has participated in development of the Making Conservation a California Way of Life Regulation (Conservation Regulation) and reporting templates. WSC's participation in these initiatives gives us the insight to make sure the UWMP and other related efforts are consistent with requirements and positioned for future compliance.



WSC's UWMP experience includes:

- ✓ Developing data gathering, data management, and data analysis tools to standardize and streamline UWMP development in alignment with State reporting templates.
- ✓ Developing standard calculations and language proven to comply with State requirements that is adaptable for unique supplier situations and contributes to efficient production of a compliant final UWMP.
- ✓ Integrating UWMPs with other related planning efforts. WSC has developed UWMPs alongside integrated regional water management plans, master plans, drought contingency plans, long-term water supply plans, conservation plans, and groundwater management tools to take advantage of the efficiencies created by shared data, analysis, and policies.

WSC's involvement in development of the State's regulations, guidance, and reporting templates for the UWMP and the Conservation Regulation framework gives us the ability to develop a UWMP that aligns with current regulations and is positioned for future compliance.



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C. Scope of Work

Overview and Summary

Project Purpose

Every five years, California's urban water suppliers are required to update their UWMPs. The 2020 UWMP introduced new and expanded requirements from DWR, including planning for prolonged droughts, groundwater sustainability, regulatory changes, and climate variability. The 2025 UWMP is expected to follow a similar framework, making the update process more streamlined than in previous cycles.

The City is well-positioned for this update thanks to recent efforts such as FWV and the WCNA. These projects provide valuable insights, data, inputs, and tools to build on in the UWMP process to assess and describe the City's water supply and demand conditions, projections, planning, implementation, and management, especially considering new land use and State regulations information.

The City's 2035 General and Folsom Plan Area Specific plans amendments introduce new land uses, densities, and development areas, fundamentally altering water demand patterns from previous UWMP projections. Furthermore, compliance with the State's Conservation Regulation encourages more detailed assessment of indoor and outdoor demands by customer category (aligned with land use) to plan for more efficient water use in the future. Therefore, this UWMP will assess the combined impacts of these new water demand drivers and demand factors to adaptively plan for long-term water resources planning.

Our approach will integrate and build upon these recent efforts and new information to produce a 2025 UWMP that not only meets all DWR requirements, but also presents a clear, forward-looking strategy for managing Folsom's water resources in alignment with the General Plan over the next 25 years.

City Objectives

Based on our understanding of the City's needs for this project, we have identified the following key objectives:

- ✓ Meet all DWR's requirements for the 2025 UWMP.
- ✓ Meet internal schedule milestones and deliver a complete and high-quality plan to DWR by July 1, 2026.
- ✓ Provide an effective outreach and communication process that both meets DWR's requirements and enhances customer relations.
- ✓ Incorporate the most recent supply and demand data from FWV and the WCNA projects.
- ✓ Incorporate the most recent land-use data from the 2035 General and Folsom Plan Area Specific plans amendments and new development data since 2020.
- ✓ Develop a tool that allows for easy adjustments to key assumptions on land use and growth, population, land and water-use type unit demand factors, and conservation regulations.



Project Challenges

WSC's experience gives us a unique understanding of the City's challenges and opportunities related to this UWMP Update. The following table summarizes our understanding of the key challenges and our strategies to address them:

Key Challenges	WSC Solutions
Tracking and projecting water demand in a rapidly changing development landscape.	Develop a demand tool with an interactive dashboard that enables the City to update demand forecasts as land use and development patterns evolve. This approach aligns with the Urban Water Use Objective (UWUO) methodology and provides long-term utility for annual reporting and adaptive planning.
Demonstrating the need for long-term supply investments while facing regulatory constraints and reduced per capita use.	Build a demand forecasting framework that balances compliance with state efficiency standards (e.g., SB 606/AB 1668, AB 1572) and justifies future supply investments. Our approach includes scenario modeling to show how much of the City's water-use target may be achieved through passive savings from efficient development vs. what will require active conservation measures.
Integrating new regulatory requirements and data into an already complex planning framework.	Our team has completed over 80 UWMPs across the state and is up to date on the latest DWR guidance. We incorporate current and anticipated regulations into every element of the plan to ensure a fully compliant, forward-looking UWMP.
Responding to climate variability and uncertainty in water supply reliability.	Leverage FWV tools that integrate American River Basin Study data to model the impacts of climate variability on reservoir reliability. We'll use this work to inform supply reliability assessments, demand projections, and water shortage planning in the 2025 UWMP.
Maximizing effectiveness of conservation programs under limited budgets.	Build on findings from the WCNA to recommend demand management measures that provide the greatest return on investment. This means that the City's conservation efforts are targeted, cost-effective, and aligned with regulatory requirements.

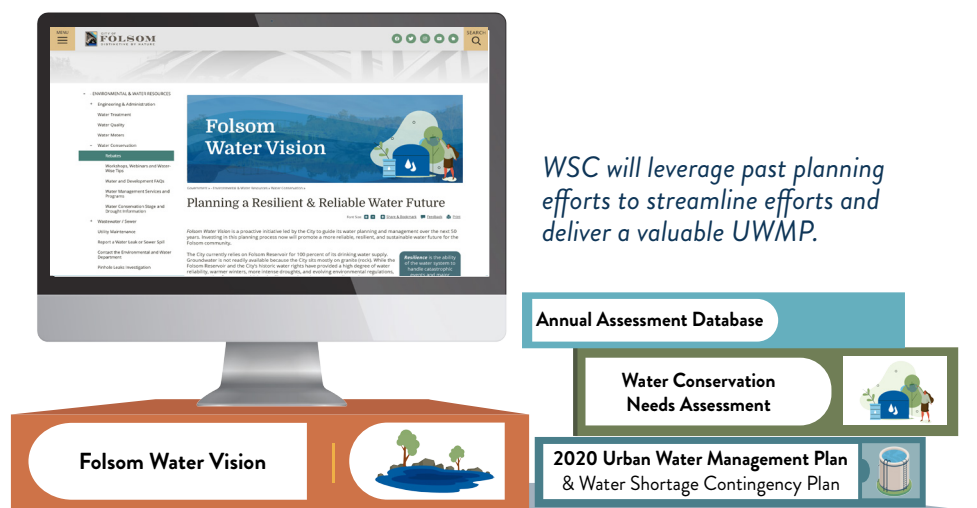


Project Approach

The following section provides a description of the project's work elements and WSC's proposed methodology. A summary of assumptions and deliverables is included in the cost section of the proposal. A detailed project scope was developed in the process of developing the cost proposal and can be provided upon request. If the City is interested in any of the optional tasks we propose, we can provide costs for consideration.

Task 1 Data Collection & Review

Our team is ready to begin work on the City's 2025 UWMP and Water Shortage Contingency Plan (WSCP) with minimal ramp-up time due to our extensive experience with the City's water planning efforts. Having prepared the City's 2020 UWMP and WSCP, and currently leading both the FWV and WCNA projects, we have a strong understanding of the City's water supply and demand, water-use efficiency programs, infrastructure, and future planning priorities. We have also closely reviewed other City planning documents such as the 2016 Water System Master Plan and 2023 Non-Potable Water Master Plan, further reinforcing our knowledge of the City's water system and goals. This background allows us to efficiently collect and organize the data necessary for the 2025 UWMP. We will leverage data already compiled from previous projects so that we can provide targeted and prioritized data requests to reduce the burden on staff time and we will coordinate with City staff to fill any remaining data gaps.



WSC will leverage past planning efforts to streamline efforts and deliver a valuable UWMP.

Task 2 Unit Demand Analysis

We recognize that the data, analysis, and tools prepared for the 2025 UWMP will serve purposes well beyond the plan itself. Our team will develop updated unit demand factors that not only support the 2025 UWMP but also provide a valuable foundation for future planning efforts.

As the team currently leading the City's WCNA, we bring a strong understanding of local water use patterns by water use category, including indoor vs. outdoor consumption trends, water use in new developments, and potential "process water" users. This existing knowledge allows us to hit the ground running.

Based on data received for the 2020 UWMP and the RFP's indication that the City will provide water use by customer class rather than for each customer account and their geographic location (APN or address), WSC proposes to use data from the City for water use by category and acreage and dwelling units or other available development growth factor information to update the land-use based demand factors from the 2020 UWMP. To refine the demand factors, WSC proposes leveraging indoor and outdoor analysis



WSC proposes using Eagle Aerial WaterView software and underlying data to refine demand factors by analyzing geographic subareas and land-use densities. This data will inform tailored unit demand factors, accounting for indoor vs. outdoor use and new vs. existing development.

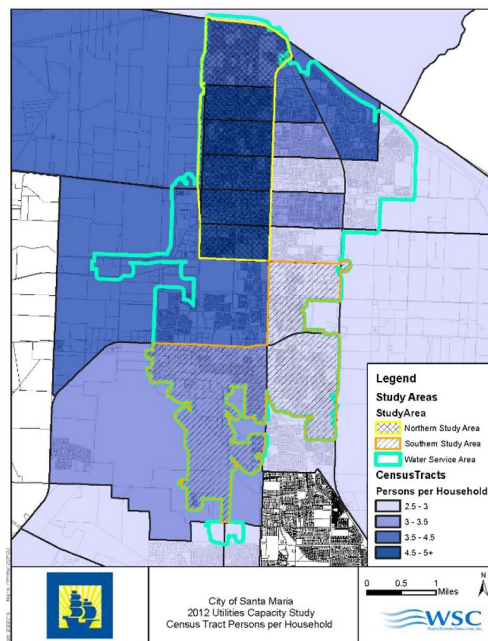
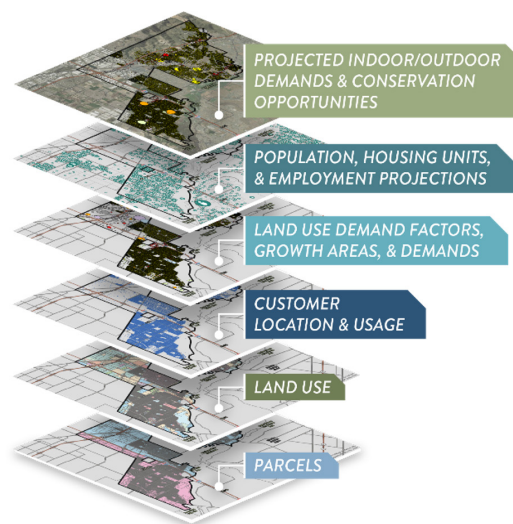
from the WCNA and the City's Eagle Aerial WaterView software and associated data to gain insights into demand factors for particular geographic subareas and specific land-use densities to inform distinct land- and water-use patterns for existing and future customers. Using this insight, we will develop tailored unit demand factors for each land-use type in particular subareas (e.g., Ashland vs Folsom Specific Plan Area vs Folsom West, etc. or for land-use overlay areas with increased densities), accounting for differences between indoor and outdoor use and between new and existing development. If a demand factor for a given expected water use category and pattern is not readily calculated based on available data, WSC can work with the City to identify sample customers or unique areas to calculate representative demand factors. WSC will compare demand factors to other water suppliers' demand factors to ultimately recommend appropriate factors. We will also review and recommend refinements to the City's current land use categories — such as breaking down residential uses into low-, medium-, and high-density — to improve forecasting accuracy.

Optional Task: Parcel-Based Unit Demand Analysis

WSC proposes an optional, more granular approach to demand analysis based on parcel-level data. This method would support alignment with UWUO standards and State and City initiatives. The methodology includes:

1. Spatially allocate customer use by account in GIS.
2. Associate the usage with parcels and underlying land use, dwellings units, acreage, and other geographic and sociodemographic information.
3. Analyze combined water use, geographic, and sociodemographic data to derive insights about geographic water use type patterns as well as differences between newer and older development.
4. Recommend “baseline” demand factors for existing and new customers in specific areas that ramp down over time in alignment with UWUO standards.

WSC recommends aligning with the UWUO methodology to project demand using parcel- and land-use based factors. We will leverage data from the U.S. Census Bureau, California Department of Finance, SACOG, and the City to define population, employment, dwelling unit types, land use categories, and commercial activity types. This approach promotes consistency across City and State data systems and supports integrated planning efforts. Using UWUO indoor/outdoor parcel-level data and development tracking datasets, including Model Water Efficient Landscape Ordinance (MWELo) annual reports, WSC can link water use and land use through GIS. This supports coordination between land and water planning entities and facilitates compliance with UWUO and CII Performance Measures. This approach also supports broader planning and regulatory goals, including consistency with the General Plan, Regional Housing Needs Assessment targets, MWELo amendments, and updates to landscape standards and customer classification. Incorporating Advanced Metering Infrastructure (AMI) data further refines demand factors and supports compliance with CWOL large landscape metering and implementation of conservation programs.

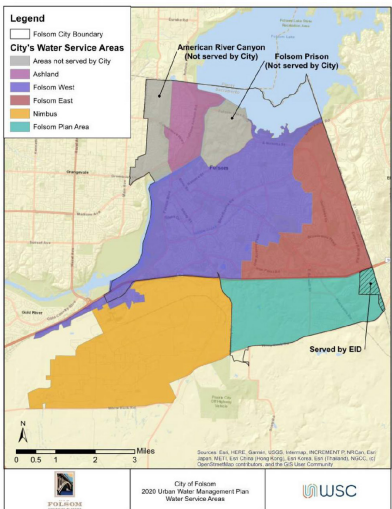


WSC worked with the City of Santa Maria's Community Development and Public Works departments to assess demand patterns, especially for different subareas of the City with distinct differences in housing density. WSC assessed U.S. Census data and water use data to determine different demand factors for various parts of the City based on persons per household among other sociodemographic criteria.

Task 3 System Description and Population Projections

Our team will develop an updated system description and population projections that provide a foundation for the 2025 UWMP. Our familiarity with Folsom’s water service area and population calculation methods performed for the 2020 UWMP and WCNA will allow us to streamline the update process and efficiently integrate the best and latest information. We will also update socio-economic data to reflect current conditions, planning assumptions, and the climate data with the Final American River Basin Study, published in 2022, for consistency with regional climate planning efforts.

WSC understands that a key goal of the population projection is to establish a consistent, defensible methodology for estimating the City’s water service area population for Annual Reports as well as for the 2025 UWMP. Our team has already completed preliminary work through the 2020 UWMP and WCNA to evaluate differences between data sources and methods such as Census tracts, the DWR Population Tool, and other state agency forecasts. This early analysis gives us a head start in developing a detailed comparison and recommending the most appropriate source and method for the City to use in this plan and in future water service population accounting. Once the preferred methodology is selected, we’ll calculate service area population estimates by zone and land use category in five-year increments through 2050. We’ll also determine the City’s build-out population using the updated 2035 General Plan.



Other Population Estimate Explanations	
CY 2023 Population Estimates: EAR = 79,266.	3.3 X connections from unknown source
US Census Data = 84,782.	City boundary is different from water service area
Dept of Finance = 85,698.	City boundary is different from water service area
UWMP = 87,602	Used DWR Population Tool, which used 2010 Census population/connection of 3.21 applied to 2020 connections. Then, a 2020 population per dwelling unit factor was developed and applied to future dwelling unit projections resulting in the UWMP's 2024 population

WSC conducted a preliminary review of population estimation methods for the WCNA. The 2020 Census-based approach produced a lower population estimate than the City’s current method, which uses the State’s persons-per-connection factor. While the State method results in a higher residential indoor GPCD target under the UWUO – potentially easing compliance – it may not reflect trends in household size and density. The UWMP should consider how persons-per-connection values are likely to shift over time. An increase in higher-density development may increase dwelling units while also decreasing the residents per unit. A lower population factor may better represent future conditions and support more accurate UWUO projections.

Task 4 Water Use Characterization

Building on Task 2, our team will leverage insights from the FWV and WCNA projects, to efficiently quantify historical, and projected potable and non-potable water demands by land-use category and service zone. WSC will coordinate with San Juan Water District (SJWD) for Ashland demands. Non-potable demands will be based on the 2023 Non-Potable Water Master Plan.

Distribution system losses will be evaluated using real and apparent loss data already analyzed as part of the WCNA. We will also estimate current and future demands for low-income households and provide water demand projections by service zone.

To support ongoing planning, we will develop a user-friendly Excel-based tool that allows the City to update demand projections annually based on changes to inputs for growth and unit demand factors – similar to the demand tool we are developing for the Upper Santa Ana River Watershed (reference figure on the next page).

Climate change will be addressed in the demand projections using the Final American River Basin Study (2022) so that the UWMP reflects long-term climate resilience.

Recommended Scope Adjustment:

The RFP suggests using demand projections from the SJWD 2020 or 2025 UWMP for the Ashland service area. While SJWD’s UWMP may serve as a useful reference, using demand projections developed by the City may be more appropriate, as Folsom is the retail service provider for this area. This alternative approach means that projections for the Ashland area are better aligned with Folsom’s service responsibilities and ongoing planning efforts. This approach is also consistent with the methodology used in the City’s 2020 UWMP.

WSC developed the Annual Assessment Database for the 2020 UWMP and the UWUO Projection Tool for the WCNA, shown on the left in the figure below. We will work with the City to understand pros and cons of the existing tools so we can improve upon them when developing a more user-friendly excel-based demand dashboard, such as the one shown on the right of the figure below.



Optional Task: PowerBI Unit Demand Tool

As an alternative to the Excel-based demand projection tool described in Task 4, our team can develop an interactive PowerBI dashboard that integrates GIS shapefiles (e.g., land use, service zones, and parcel boundaries) with Excel-based datasets (e.g., historical water use, population, and housing data). This platform would provide the City with a more dynamic and user-friendly tool for analyzing and updating unit demand factors.

The Power BI tool would allow users to explore water-use patterns spatially, assess how changes in land use or development influence water demand, and generate custom reports or visualizations. Filters and drill-down features would enable City staff to view demand projections by zone, land use type, or time period. The tool would be built to align with UWUO methods and offer flexibility for annual updates or scenario planning.

Optional Task – Esri StoryMap Visualization Tool

Another optional extension is to develop an Esri StoryMap to visualize the relationship between projected and actual development, land use, and associated water demands. This interactive tool will:

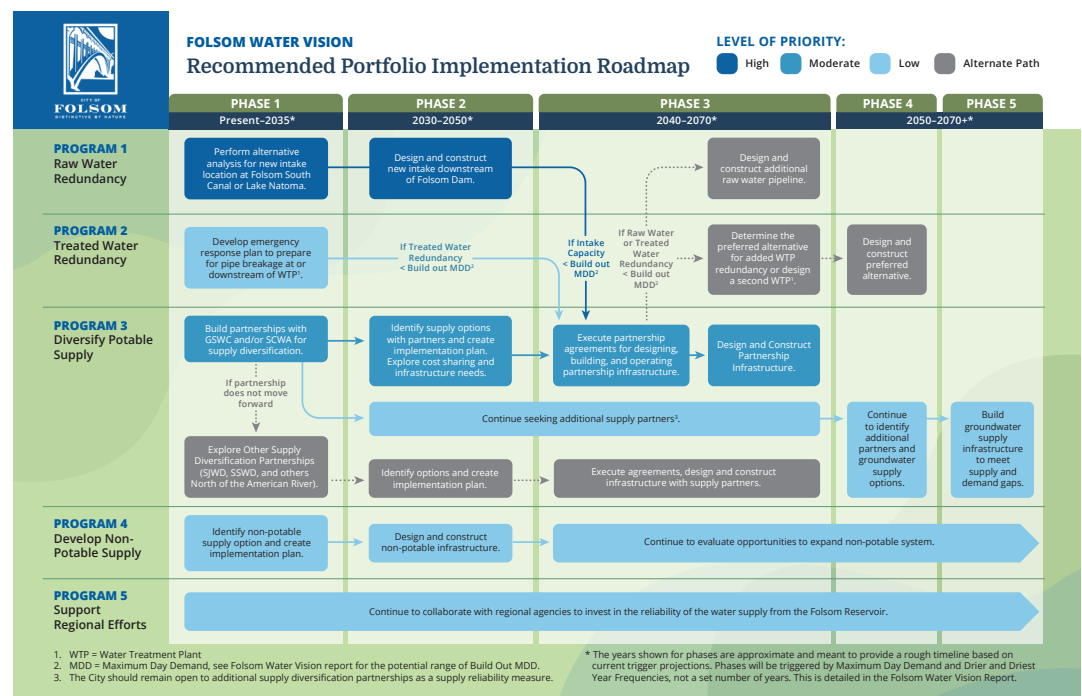
- Compare UWMP build out projections to actual development trends using current parcel and land-use data.
- Integrate demand factor assumptions and usage to illustrate deviations or alignment with projections.
- Visualize annual supply and demand conditions by planning area.
- Support cross-agency coordination by identifying parcels with remaining development potential.

This would link demand projections to build out acreage and units, providing a clearer, spatially-enabled view of demand dynamics over time. It would also support City staff in tracking development trends, refining demand forecasts, and communicating growth and water use patterns to stakeholders and the public.

Task 5 Water Supply Characterization

Our team will build on the analysis from the 2020 UWMP and the FWV project to characterize the City's current and future water supplies. During that project, we conducted an in-depth assessment of the City's supply sources and infrastructure, creating a tool that used the American River Basin Study data to evaluate the reliability of Folsom Reservoir under various climate scenarios. We also developed a future supply portfolio and implementation plan to guide the City in enhancing supply reliability.

Using this foundation, we will summarize the City's surface water sources, water rights, and management practices, along with an overview of the groundwater basins and opportunities for recycled water, desalination, wastewater treatment, and water transfer or exchange per Water Code Section 10633. Finally, we will provide an energy use overview related to the City's water supply, based on recent planning efforts and operational data, as required by Water Code Section 10631.



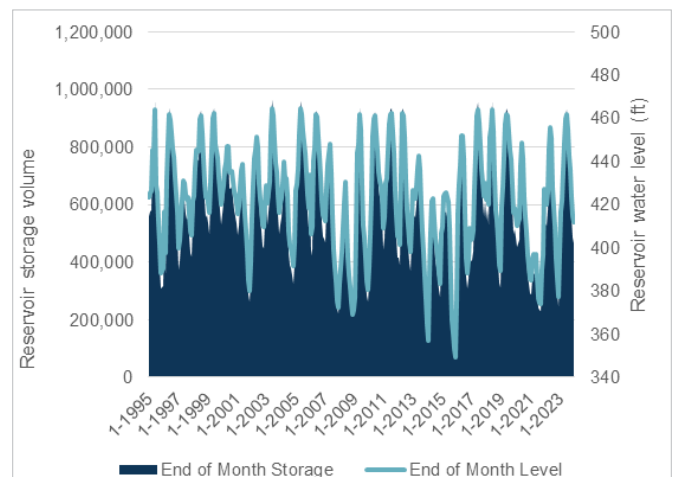
Task 6 Water Service Reliability and Drought Risk Assessment

Building on our detailed supply analysis in the 2020 UWMP and the FWV project, our team will assess the reliability of the City's potable and non-potable supplies through 2050 under normal, single dry-year, and multiple dry-year scenarios.

We have already compiled historical Folsom Reservoir inflow and storage data, giving us a strong head start in identifying representative dry-year conditions. Using this data, we will recommend appropriate single and multiple dry-year scenarios and assess how each scenario affects the City's ability to meet projected demands.

Our analysis will include a comparison of projected demands against available supplies under each hydrologic scenario. For the drought risk assessment required by Water Code Section 10635, we will provide a clear, narrative summary of supply vulnerabilities and identify constraints or limitations that may impact the City's water supply. We will also describe existing and planned management strategies to mitigate drought-related risks and improve long-term supply resilience.

This task will build directly on tools and insights developed during FWV, including the climate-informed supply reliability tool based on the American River Basin Study.



As part of the FWV project, we analyzed historical Folsom Reservoir storage and water level data to understand trends and variability. For this UWMP, we will incorporate the most recent data and work with the City to identify a five-year baseline period that reflects recent hydrologic conditions and captures the impacts of climate variability on local supply reliability.

Task 7 Water Shortage Contingency Plan

As the authors of the City's current WSCP and through Water Conservation Ordinance development support, we can efficiently update both documents to meet current regulatory requirements.

We will review and revise the WSCP to align with Water Code Section 10632, incorporating lessons learned from recent droughts and ensuring consistency with the City's broader planning efforts. We will provide reference to the required seismic risk assessment and mitigation plan per Water Code Section 10632.5. Finally, we will update the City's Water Conservation Ordinance (FMC Section 13.26) to reflect changes to the WSCP and provide both redline and clean versions for City review.

Task 8 Demand Management Measures (DMMs)

This task will build directly on the ongoing WCNA, which is currently evaluating the City's existing Demand Management Measures (DMMs) and recommending future ones. Much of the analysis and content for this section of the 2025 UWMP will be summarized from that project.

We will provide a concise summary of the City's DMMs implemented over the past five years — such as metering, conservation pricing, public outreach, real loss management, and staffing support — to demonstrate compliance with Water Code Section 10608.20.

We will also describe the City's planned DMMs for achieving its long-term water use targets. These future measures will be aligned with and supported by the detailed recommendations developed through the WCNA, ensuring consistency across the City's planning efforts and a clear path forward for ongoing water conservation.

Task 9 UWMP Report and Supporting Documentation

Our team will prepare the draft and final 2025 UWMP, synthesizing the results of prior technical tasks into a complete, DWR-compliant report. Our team will also complete and submit all required DWR tables, forms, and the final checklist. Supporting materials, including all GIS, Word, and Excel files, as well as documentation of assumptions and methods, will be compiled and delivered in an organized format for City records and future updates.

Task 10 Project Management and Meetings

WSC's approach to effective project delivery begins with a clear understanding of your objectives, a comprehensive project management plan, and a dedicated team focused on delivering quality work.

Project Administration

We use an integrated project management and accounting system that tracks progress and budget in real time. This gives our project manager and principal-in-charge immediate access to key performance metrics, helping us stay on schedule and within budget.

Quality Assurance and Quality Control

Our internal QC committee has developed detailed checklists for planning deliverables, ensuring our teams provide the right information to reviewers at the right time. These tools help our senior technical staff thoroughly review calculations, models, and reports before submittal.

City Meetings

We will start the project with a meeting to align expectations, clarify roles, and set the tone for a successful partnership. Throughout the project, we will hold monthly progress meetings with City staff to provide updates, track milestones, and support consistent coordination.



Public Meetings

These meetings will inform the public, Utility Commissioners, and City Council about the UWMP. They offer an opportunity to build trust by educating the community on the City's water system: its strengths, challenges, and future plans.

Recommended Scope Adjustments:

The RFP proposes two public workshops, two Utility Commission presentations, and support for two City Council presentations and a public hearing. Since these meetings are focused on informing rather than gathering input, we recommend the following approach to simplify efforts:

- **Public Meetings:** After publishing the Public Draft, host two public meetings at separate locations in the City to broaden outreach. Both will present the same content to maximize awareness and participation.
- **Utility Commission Presentations:** Hold the first meeting after the Public Draft is released and before the public meetings to gather Commissioner feedback early. Then hold the second meeting after public meetings to summarize public input and proposed revisions.
- **City Council Presentations and Public Hearing:** **Combine these meetings to reduce redundant efforts.** The first meeting will present the Public Draft, summarize public input, and gather Council feedback. The second will present the revised plan for adoption consideration. Note that the public hearing and adoption can occur in the same meeting, if desired.

Agency Coordination support

We will support the City with communication efforts with DWR and other interested parties. We can take lead on the communication or provide technical support, as desired by the City. Our team can coordinate with overlying counties, nearby cities, and other interested parties as required by the Urban Water Management Planning Act, leading to compliance and alignment with regional planning efforts.

Optional Task: Enhanced Executive Summary

Effective documents include graphics, tables, photographs, and text such as headings, captions, sidebars, and pull-quotes to inform and engage the reader. We have included optional tasks to enhance the scoped UWMP to support engagement with the City's customers and decision makers.

Take this opportunity to tell your story. Water resources plans are more than a planning document; they are a powerful community tool, a reflection of your commitment to providing reliable services. Our team of technical and creative professionals can design and develop a custom report that reflects your brand, aligns with your vision, and tells your unique story. Rich with graphics and imagery, your plan will inspire forward-looking solutions and build confidence among those you serve. Through clear messaging and thoughtful design, your UWMP will serve both technical and non-technical audiences.

Task 1 Data Collection & Review

This task involves collecting, reviewing, and organizing relevant data and background documents to support the preparation of the City of Folsom (City) 2025 Urban Water Management Plan (UWMP).

1.1 Information and Data Collection

- Collect and review data necessary for the 2025 UWMP, including but not limited to water supply and consumption, demand management measures activity, as well as land use from the latest General Plan Update, population, housing, dwelling units, acreages, or employee projections (as available).
- Coordinate with City staff to identify and obtain additional data sources as needed.

1.2 Background Documents Review

- Review the City's 2020 UWMP, Water Shortage Contingency Plan (WSCP), various required annual reports to the State, Folsom Water Vision, Water Conservation Needs Assessment, and other resources recommended by the City to identify and incorporate key content, data sources, and assumptions.

Assumptions:

- (1) The City will provide available data in a timely manner and in accessible formats (e.g., Excel, GIS, PDF).
- (2) Data provided by the City is assumed to be accurate and complete to the best of their knowledge.

Task 1 Deliverables:

- (1) Data request list and tracking log

Task 2 Unit Demand Analysis

This task involves updating the City's unit demand factors based on historical and future estimated trends for each customer class with additional analysis on indoor versus outdoor use and new build consumption trends. These updated unit demand factors will assist the City in developing more accurate demand projections.

2.1 Review Existing Unit Demand Factors

- Compile and evaluate existing unit demand factors and supporting data currently used by the City. Coordinate with the City to understand and obtain available data for updated demand factors.

2.2 Update Unit Demand Factors Based on Historical Trends

- Analyze ten years of water use data by customer account to identify trends in water use.
- Analyze consumption by customer class to identify trends in water use.

Assumptions:

- (1) Analysis includes determining a range of “normal” usage to inform further comparison of usage with results of the Water Conservation Needs Assessment (WCNA), typical usage estimates based on Conservation Way of Life (CWOL) Regulation efficiency standards, WaterView budgets, and/or Waterfluence budgets.
- (2) Climatic conditions and impacts to water usage will also be considered.

2.3 Analyze Indoor and Outdoor Water Use

- Analyze indoor and outdoor water use to support unit demand factors.

Assumptions:

- (1) Incorporate results of the WCNA, typical usage estimates based on CWOL Regulation efficiency standards, WaterView budgets, and/or Waterfluence budgets.
- (2) Climatic conditions and impacts to water usage will also be considered.

2.4 Evaluate Folsom Plan Area (FPA) Water Use

- Review and analyze historical water use data for the FPA.
- Develop unit demand factors for future unit demand calculation in the FPA.

Assumptions: See Task 2.5 assumptions.

2.5 Unit Demand Factors and Land Use Categories

- Compare the future FPA unit demand factors to unit demand factors that incorporate urban water use efficiency standards from the CWOL Regulation.
- Recommend the appropriate unit demand factors to use for all land-use categories.
- Review existing land-use categories used for unit demand calculations.
- Assess the need to expand or refine categories (e.g., differentiate single- and multi-family residential into low, medium, and high density).
- Provide recommendations for any changes to land-use categories.
- Document analysis, findings, and recommendations in a technical memorandum.

Assumptions:

- (1) Per the 2020 UWMP methodology and available data, the City will provide historic and projected water use, acreage, and dwelling units by customer class for each desired service area.

- (2) Analysis will incorporate results of the WCNA, typical usage estimates based on CWOL Regulation efficiency standards, WaterView budgets, Waterfluence budgets, and/or other relevant data.
- (3) Climatic conditions and impacts to water usage will also be considered.
- (4) If a demand factor for a desired water/land use category is not readily calculated based on available data, WSC will work with the City to identify sample customers or unique areas to calculate representative demand factors, or WSC will consider demand factors from other water suppliers or reference resources to ultimately recommend appropriate factors.
- (5) If water customer account usage and their geographic location (APN or address) and related parcel-specific development data (dwelling units, acreage, building square footage, etc.) are available, WSC can propose an optional task to develop a parcel and land use-based demand projection methodology similar to a master planning method.

2.6 Identify Industrial “Process Water” Users

- Identify industrial customers that may qualify as using “process water” as defined in Water Code Section 10608.12.
- Use water meter data to estimate the volume of water that may be categorized as process water for each identified user.

Assumptions:

- (1) Incorporate results of the WCNA. The City will work with “process water” customers to estimate the volume of water that may be categorized as process water for each identified user.

Task 2 Deliverables:

- (1) Technical memorandum summarizing updated unit demand factors by customer class and land-use category. Memo will include:
 - Comparison table of current, updated, and efficiency-standard-based unit demand factors
 - Summary table of indoor and outdoor water use estimates by customer class
 - Recommendations for refined land-use categories and subcategories (e.g., SFR low/medium/high density)
 - Identification of process water user and estimated process water use summary

Task 3 System Description & Population Projections

This task involves preparing a comprehensive description of the City’s water service area, including geographic, demographic, and land use characteristics. It also includes development of population estimates.

3.1 Plan Preparation and System Description

- Describe the purpose and background of the UWMP; coordination with other agencies and public outreach efforts; and plan adoption and submittal required by the UWMP Act.
- Describe the following:
 - General description of the water service area
 - Service area boundary and water service zones
 - Service area climate
 - Service area population, demographics, and socioeconomics
 - Land uses within the service area

3.2 Population Projections

- Provide population estimates based on the following:
 - Census data
 - Department of Water Resources (DWR) Population tool
 - Other state agency population projections
 - Some combination of above
- Recommend which population source the City should use in this plan and in annual water service area population accounting.
- Provide the service area population by City water service zones based on the population source recommended above for 2025 and in 5-year increments to 2050 with the breakdown by land-use category.
- Estimate population per Single Family Residential (SFR) and Multi Family Residential (MFR) connection and/or dwelling unit.
- Calculate the City's build-out population by City water service zone based on the current 2035 General Plan (amended August 27, 2024) with the breakdown by land-use category.
- Document population projection methodology as a narrative in the Demand technical memorandum described in Task 2.

Deliverables:

- (1) Narrative of Plan Preparation and System Description for inclusion in the UWMP.
- (2) GIS figures showing service area boundaries, water zones, and land uses (PDF format).

Assumptions:

- (1) The City will provide GIS shapefiles of water service boundaries, zones, and land use designations.
- (2) WSC will create up to two figures showing the boundaries and land use areas.

- (3) A breakdown of SFR and MFR connections and/or dwelling units per water service zone will be provided.
- (4) Buildout assumptions will align with current General Plan policies and maps unless otherwise directed by City staff.

Task 4 Water Use Characterization

This task involves quantifying historical, current, and projected potable and non-potable water demands across the City's water service area by land-use category and service zone. It includes characterizing water loss, identifying low-income household demands, and incorporating climate change considerations into long-range demand forecasts.

4.1 Per Capita Demand

- Calculate per capita water use within the City water service area and within the retail area of San Juan Water District (American River Canyon north and south) for the purposes of documenting compliance with SBx7-7.
- Draft narrative of analysis for inclusion in the UWMP.

4.2 Existing Potable and Non-Potable Demands

- Past (five years), current (2025), and future potable and non-potable demands to 2050 by land-use category.
- Calculate potable and non-potable build-out demands based on the updated 2035 General Plan by land-use category.
- Draft narrative of demand projections for inclusion in the UWMP.

4.3 Distribution System Losses

- Analyze distribution system water losses using available data in accordance with Water Code Section 10608.34.
- Include real and apparent losses and summarize performance relative to water loss targets or goals.
- Draft narrative of distribution system water losses analysis for inclusion in the UWMP.

4.4 Low-Income Household Water Demands

- Estimate current and projected (to 2050) water demands associated with low-income households, as defined in Health and Safety Code Section 50079.5.
- Draft narrative of analysis of low-income household demand for inclusion in the UWMP.

4.5 Water Demands by Water Service Zone

- Provide water demand projections by service zone.
- Coordinate with and incorporate data from San Juan Water District for their 2025 UWMP and if this data is not available, use existing data from their 2020 UWMP.

- Draft narrative of demand projection by service zone for inclusion in the UWMP.

4.6 Climate Change Considerations

- Develop and provide a description of how the City is incorporating climate change into the water use projections.
- Draft narrative of climate change considerations for inclusion in the UWMP.

4.7 Develop Excel-based Demand Forecasting Tool

- Develop a user-friendly Excel-based tool that allows the City to update demand and population projections annually based on changes to inputs for growth, unit demand factors, and related items.

Deliverables:

- (1) Narrative of system demands for inclusion in the UWMP.
- (2) Excel-Based Demand Forecasting Tool.

Assumptions:

- (1) Land use and population projections from earlier tasks will be used as the foundation for demand forecasting.

Task 5 Water Supply Characterization

This task includes documenting and evaluating the City's current and potential future water supply sources.

5.1 Existing Water Supply Sources and Management

- Summarize the City's water sources.
- Describe how these supplies are managed in relation to each other.
- Describe the City's water rights and contracts including the total volume of water.
- Describe the groundwater basins within the City
 - Note that the City is a member of the Sacramento Groundwater Authority and the Sacramento Central Groundwater Authority but has not pumped any groundwater in the last 20 years.
- Describe the City's recycled water and desalinated water opportunities in accordance with Water Code Section 10633.
- Describe the wastewater collection and treatment for the City pursuant to Water Code Section 10633
- Describe any existing, planned, or potential future water exchange or transfer opportunities pursuant to Water Code Section 10631.

5.2 Future Water Supply Projects

- Review the City's Water Vision project to learn more about potential water supply portfolios discussed with the public and Stakeholder group.
- Include these projects in the 2025 UWMP.

5.3 Energy Use Related to Water Supply

- Provide an overview of energy use associated with the City's water supply in accordance with Water Code Section 10631.

Deliverables:

- (1) Narrative of system supplies for inclusion in the UWMP.

Assumptions:

- (1) The City will provide relevant water rights documentation, supply contracts, and operational information.
- (2) Groundwater information will be based on publicly available SGMA data and City input—no groundwater modeling or new basin studies will be conducted.
- (3) This work will leverage work completed for the City as part of the 2020 UWMP and the FWV projects.

Task 6 Water Service Reliability and Drought Risk Assessment

This task evaluates the reliability of the City's potable and non-potable water supplies through 2050 under normal, single dry-year, and multiple dry-year drought scenarios.

6.1 Supply Reliability Assessment

- Assess the reliability of potable and non-potable water supplies compared to demands for normal, single dry-year, and multiple dry-year scenarios (drought lasting at least 5 consecutive years) to 2050.
- Review historical inflow data into Folsom Reservoir to determine and recommend the appropriate dry-year scenarios (single and multiple).

6.2 Drought Risk Assessment

- Develop a drought risk assessment pursuant to Water Code Section 10635, including all narrative descriptions required for the assessment.
- Describe any constraints on the City's water supplies and include a description of the management strategies that have been, or will be, employed to address these constraints.

Deliverables:

- (1) Narrative of Supply Reliability and Drought Risk Assessment for inclusion in the UWMP.

Assumptions:

- (1) Supply and demand projections developed in earlier tasks will serve as the foundation for this analysis.

Task 7 Water Shortage Contingency Plan

This task involves developing and updating the City's Water Shortage Contingency Plan (WSCP) as required by Water Code Section 10632.

7.1 Water Shortage Contingency Plan

- Review the City's existing WSCP and identify any areas requiring updates or improvements to align with Water Code Section 10632.
- Implement necessary changes to the WSCP.

7.2 Seismic Risk Assessment

- Describe seismic risk assessment and mitigation plan compliance pursuant to Water Code Section 10632.5

7.3 Water Conservation Ordinance

- Update the City's Water Conservation Ordinance (Folsom Municipal Code Section 13.26) to align with the updated Water Shortage Contingency Plan.

Deliverables:

- (1) Email summarizing changes and improvements made to the WSCP, including any regulatory compliance updates.
- (2) Draft and final versions of the updated Water Shortage Contingency Plan.
- (3) Draft and final versions of the updated Water Conservation Ordinance (Folsom Municipal Code Section 13.26), with track changes and clean versions

Assumptions:

- (1) The 2020 WSCP and the existing Water Conservation Ordinance are generally up to date and will require only minor revisions.
- (2) Seismic risk assessment compliance will be met by referencing an existing local hazard mitigation plan and/or America's Water Infrastructure Act (AWIA) documents for risk and resilience assessments (RRAs) and emergency response plans (ERPs).

Task 8 Demand Management Measures

This task involves providing a review and description of the Demand Management Measures (DMMs) implemented by the City over the past five years and outlining new measures the City will implement to meet its water use target, in accordance with Water Code Section 10608.20.

8.1 Review Past Demand Management Measures

- Provide a narrative description of the DMMs implemented over the last five (5) years to include at a minimum:
 - Water waste prevention ordinance
 - Metering
 - Conservation pricing
 - Public education and outreach
 - Programs to assess and manage distribution system real loss
 - Water conservation program coordination and staffing support
 - Other DMMs

8.2 Future Demand Management Measures

- Describe the DMMs the City will implement to achieve its water use target pursuant to Water Code Section 10608.20

Deliverables:

- (1) Narrative of Demand Management Measures for inclusion in the UWMP.

Deliverables:

- (1) Review and description of DMMs will be limited to summarizing DMM activity data, informational updates provided by the City, and the analysis completed as part of the WCNA. No new analysis will be performed under this scope.

Task 9 UWMP Report and Supporting Documentation

This task involves the preparation and submission of the draft and final 2025 UWMP report, including all required documentation, tables, and forms. The task also includes preparing supporting materials such as GIS files, methodology documentation, and a completed UWMP checklist to ensure compliance with the DWR requirements.

9.1 Draft Report

- Prepare the draft UWMP report, including the 10 chapters as outlined in the UWMP Guidebook.
- Submit draft report to City and regional agencies for review and comments.
 - Send 1 hard copies to up to 5 regional agencies.

- Send 5 hard copies to the City.
- Provide an electronic PDF copy.
- Incorporate feedback from the regional agencies and City into the final version of the report.

9.2 Final Report

- Prepare the final UWMP report, including the 10 chapters as required by the UWMP Guidebook.
- Submit final report to City, including 2 hard copies, an electronic Word version, and an electronic PDF version.
- Submit the final report to DWR and fill out all required DWR tables to be submitted.
- Complete and submit the UWMP checklist, as outlined in the UWMP Guidebook.
- Send a notice of adoption and link to an electronic copy of the Final UWMP to the State Library, Sacramento County, and other regional agencies as directed by the City.

9.3 Supporting Documentation

- Compile all deliverables, data, calculations, reporting forms, and outside references in an electronic folder and electronically submit to the City.
- Supporting data shall include all GIS, Word, and Excel files used, documentation detailing assumptions, and methodology for unit demand analysis, service area population, and residential and non-residential growth.

Deliverables:

- (1) Draft UWMP Report
 - 5 hard copies for Regional Agencies
 - 5 hard copies for the City
 - Electronic PDF copy for internal review and Regional Agencies.
- (2) Final UWMP Report
 - 2 hard copies for the City
 - Electronic Word version
 - Electronic PDF version
- (3) Completed UWMP checklist
- (4) Supporting Documentation
 - Organized electronic folder containing all relevant files (GIS, Word, Excel)
 - Methodology documentation for unit demand analysis, service area population, and growth calculations
 - Assumptions and calculation derivations

Assumptions:

- (1) The City and regional agencies will provide feedback and comments on the draft report in a timely manner.
- (2) The City will provide WSC guidance on how comments the public, City Council, and other reviewing agencies should be addressed.
- (3) Revisions to the Draft and Final UWMP will not require major changes to the document format or calculations.

Task 10 Project Management and Meetings

10.1 Project Administration

- Provide project administration, coordination, and perform quality control reviews of all deliverables. Prepare project schedule and update as required based upon actual progress and the City's direction. Prepare monthly progress reports to be submitted with each monthly invoice.

Deliverables:

- (1) Monthly progress reports including summaries of work completed.
- (2) Monthly invoices.

Assumptions:

- (1) Project duration is 12 months.

10.2 City Meetings

- **Project Kickoff Meeting**
 - WSC will plan, organize and conduct one kickoff meeting.
 - The purpose of the Kickoff Meeting will be to: (1) establish roles and responsibilities; (2) review scope, schedule and deliverables; (3) review available data and establish data needs; (4) review UWMP requirements and methodology; (5) discuss agency coordination; and (6) review public outreach strategy.
- **Monthly Review Meetings**
 - WSC will plan, organize, and conduct virtual monthly one-hour progress meetings with the City to inform City of project progress, discuss data, and review UWMP content.
 - Conduct internal coordination meetings.

Deliverables:

- (1) Meeting agendas will be provided ahead of the Kickoff Meeting and monthly progress meeting.
- (2) A summary of action items will be provided following the meeting.

Assumptions:

- (1) Meetings will be virtual unless otherwise specified.
- (2) Up to 11 monthly review meetings are assumed.

10.3 Public Meetings

- Public Workshops: WSC will host two public meetings at separate locations in the City to broaden outreach. Both will present the same content.
- Utility Commission Presentations: WSC will prepare two presentations for the Utility Commission.
 - The 1st meeting will be held after the Public Draft is released and before the public meetings to gather Commissioner feedback early.
 - The 2nd meeting will follow the public meetings and will summarize public input and proposed revisions.
- City Council Presentation and Public Hearing for Adoption of the 2025 UWMP and WSCP.
 - WSC will support City Staff for up to two City Council meetings. The second meeting is assumed to be for the UWMP Public Hearing and Adoption. (Note that the public hearing and adoption could occur during the same meeting). The purpose of the meetings (to be presented by City staff) will be to: (1) present and discuss the Public Draft; (2) receive City Council comments; (3) and receive public comments. WSC will prepare and provide electronic copies of handouts / PowerPoint prior to the City Council meeting and will support the City in preparation of the meeting agenda.

10.4 Agency Coordination Support

- Coordinate communication with the City and DWR including telephone calls, emails, letters, and other correspondence.
- Contact and coordinate communication with adjacent water agencies and other interested parties as required by the Urban Water Management Planning Act.

Deliverables:

- (1) Electronic copies of handouts and/or a PowerPoint presentation will be provided to the City at least two days before the meeting if necessary.

Assumptions:

- All public meetings will be in person and are assumed to be 2 hours unless otherwise stated.

Other Tasks: Parcel-Based Unit Demand Analysis

O1.1 Water Use Spatial Allocation

- Using Excel and GIS, spatially allocate customer water use data based on billing information using available meter coordinates, other available coordinates, APN, or address.
- Cross-reference and verify appropriate meter and account locations and water use information using the City's WaterView and Waterfluence platform subscriptions.
- Adjust customer and location data as necessary and provide recommended information updates for WaterView and Waterfluence accounts alignment.
- Associate water use data with the appropriate overlying or nearby served parcel(s).
- Spatially join usage and parcel data with underlying land use, dwellings units, acreage, and other relevant geographic (service and study areas from updated General Plan) and sociodemographic information (household density).

Deliverables: GIS geodatabase and/or shapefile with unique identifiers to associate with an Excel tool used for analyzing demand factors and projections.

Assumptions:

- (1) The City will provide water use and location data for each meter and account for 2025, and other historical years if readily available, with formatting and quality sufficient for association with parcels.
- (2) Approximately 24,500 connections will be allocated and up to 1% (245 connections) will need to be further analyzed, reviewed with City staff, and adjusted based on poor matches to parcels and verified address points.
- (3) The City will provide parcel, land use, dwelling unit, and service area data. WSC will work with City staff to understand how total dwelling units and acreages were derived by the City for the 2020 UWMP and how to update those values based on their underlying data.

O1.2 Demand Drivers, Factors, and Projections

- Analyze combined water use, geographic, and sociodemographic data to derive insights about geographic water use type patterns as well as differences between subcategories of land uses and newer and older development in various areas of the City.
- Recommend "baseline" demand factors for existing and new customers in specific areas that ramp down over time in alignment with UWUO standards.
- Spatially allocate projected demands with underlying demand factors assumptions for existing and future customers.

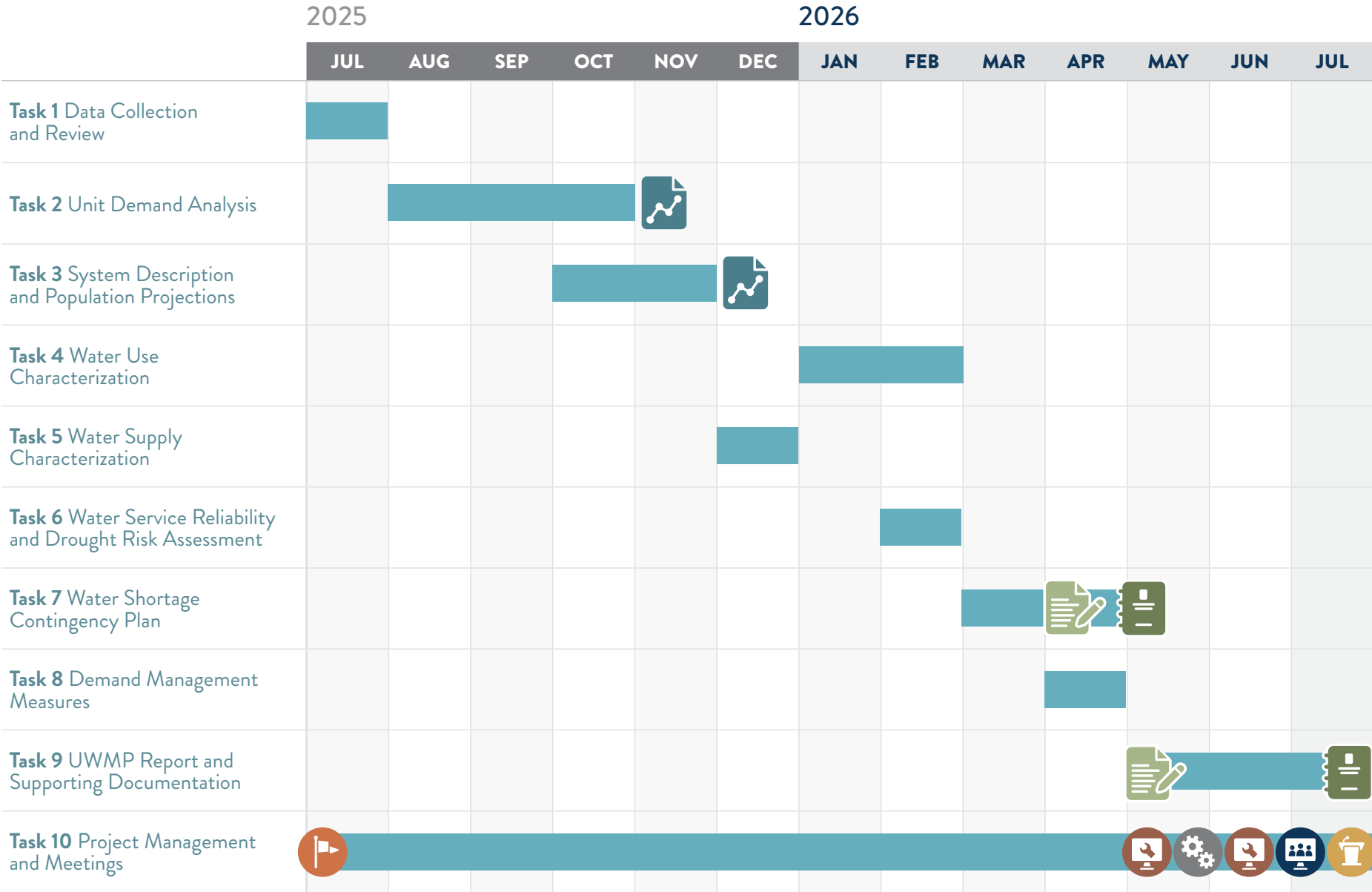
Deliverables:

- (1) GIS geodatabase and/or shapefile with demand projections for existing and future customers.
- (2) GIS data will be exported and linked to the Task 4 Excel-Based Demand Forecasting Tool.
- (3) Analysis, outcomes, and recommended steps to maintain the methodology used will be provided in the Task 2 technical memorandum summarizing updated unit demand factors by customer class and land-use category.

Assumptions:

- (1) The City will provide water use and location data for each meter and account for 2025, and other historical years if readily available, with formatting and quality sufficient for association with parcels.

Project Schedule



Project Team

WSC's approach to effective project delivery begins with an experienced project manager, a clear understanding of the City's objectives, a comprehensive project management plan, and a team of professionals with the collective goal of delivering a quality project. While we tailor our approach based on the specific needs of the client, the foundation of our project management approach remains consistent regardless of project size. This consistency enables us to deliver the same high level of service to the City that has distinguished WSC as an engineering provider. Some highlights of WSC's proven approach to project delivery and how our team will work collaboratively with the City are summarized below.

Effective Communication

From the very beginning, Stephanie will establish an open and continuous line of communication with the City. A well established line of communication, and relationship based on trust, facilitate effective exchanges of information outside of regularly scheduled progress meetings, enabling quick resolution of questions and issues so the project can continue to progress smoothly. We know the importance of responding rapidly when you need us and are committed to being responsive, including being available for phone calls, in person meetings, and site visits. Stephanie will provide regular updates with appropriate detail for City staff to be kept informed of project progress.

Maximized Opportunities

We will follow your lead with your desired level of engagement from your staff. We suggest that closer engagement can beneficially lead to learning opportunities for younger staff. Our experience can be leveraged to help your staff gain additional project management experience in a safe, controlled environment. We are Folsom customers and project partners, invested in mutual project success. We aim to continue our partnership with the City to develop long-lasting value that is enhanced through collaboration and delivering exactly what the City needs. We have local staff ready to collaborate in-person when necessary.

Schedule and Budget

WSC uses an integrated project management and accounting system, Ajera, to manage project progress and budget in real time so our project managers have immediate access to key project performance metrics. We use earned value management to identify discrepancies between planned and actual progress, allowing corrective measures to be implemented early to prevent cost overruns and schedule delays. WSC holds internal kickoff meetings with our project teams to assure that each team member understands and shares the commitment to managing the scope, schedule, and budget.

Resource Management

Stephanie will proactively manage the teams' workload to avoid competing priorities. We hold weekly workload planning meetings with our local and company-wide team to assess workload and make adjustments as needed to assure we can meet our commitments to the City and other clients. The hours table on the following page shows how work will be allocated among team members. Our detailed proposal cost is included in a separate sealed envelope.



D. Consultant and Subconsultant Staff



A Team You can Trust to Deliver

WSC's team includes UWMP experts, experienced demand projection modelers, and water use efficiency professionals who have experience working with the City. Our streamlined and experienced team has the capacity and commitment to meet the project's schedule.

WSC brings a unique team that has experience working with the City on other relevant planning projects including your 2020 UWMP, WSCP, FWV, and WCNA. Stephanie Ard, Rob Natoli, and Spencer Waterman bring a strong knowledge of the City's systems and models. Stephanie will serve as Project Manager and will be supported by our Technical Lead and QA/QC Spencer Waterman, a similar role he held on the City's 2020 UWMP. WSC's Principal in Charge Rob Natoli has led several relevant projects throughout Northern California, including serving as the project manager for the City's 2020 UWMP and FWV. WSC has additional subject matter experts, planners, engineers, and hydrogeologists who have relevant knowledge and experience working in the region and can support the development of an efficient, defensible, and compliant UWMP.



CITY OF FOLSOM
DISTINCTIVE BY NATURE

Principal in Charge

Rob Natoli ^{PE}

Project Manager

Stephanie Ard ^{PE}

Technical Lead & QA/QC

Spencer Waterman

Supporting Author

David Williams ^{EIT}

Stephanie Ard ^{PE}

PROJECT MANAGER

WSC's proposed Project Manager is Stephanie Ard.

Stephanie has more than 13 years of experience in hydraulic modeling, master planning, project management, technical writing, and communication.

She has worked with over a dozen clients to develop comprehensive planning documents that include preparing growth scenarios, identifying current and future water system needs, and meeting state reporting requirements. Over her career, she has also led and provided key technical analysis on over 30 water master plans and planning projects, including several supply studies. Stephanie has collaborated with all members of the technical team, as well as City staff. Stephanie is currently working on the City's FWV Project and WCNA and brings a unique understanding of your water systems. Her experience will provide planning leadership, team collaboration, and a local presence to the team.



Relevant Experience

- FWV, City of Folsom, CA. Project Engineer.
- WCNA, City of Folsom, CA. Project Manager.
- 2020 UWMP and Related Conservation and Reporting Services, City of Folsom, CA. QA/QC for Technical Memo.
- Wholesale Master Plan, San Juan Water District, CA. Project Engineer.
- Wholesale Meter Hydraulic Analysis, San Juan Water District, CA. Project Manager.
- Hydraulic Model Update, Citrus Heights Water District, CA. Project Manager.



Rob Natoli ^{PE}
PRINCIPAL IN CHARGE

Rob Natoli brings 17 years of engineering experience in the water and wastewater industry. He has managed both large and small projects across California, including projects for the City. He is skilled at directing and managing multidisciplinary teams to exceed client expectations. Having served as project manager for the City's 2020 UWMP, Rob understands the City's water system, existing supplies, and expected demands.

Relevant Experience

- 2020 UWMP and Related Conservation and Reporting Services, City of Folsom, CA. Project Manager.
- Folsom Water Vision, City of Folsom, CA. Project Manager.
- 2020 UWMP, Placer County Water Agency, CA. Project Manager.
- 2021 Drought Operations Planning Project, San Juan Water District, Granite Bay, CA. Project Manager.
- Wholesale Master Plan, San Juan Water District, Granite Bay, CA. Principal in Charge.
- Sunnyvale Master Plan, City of Sunnyvale, CA. Project Engineer.



Spencer Waterman
TECHNICAL LEAD & QA/QC

Spencer has 15 years of water planning and water-use efficiency experience. Spencer has led 24 UWMPs, 20 Annual Water Supply and Demands Assessments, and 10 2024 Annual Water Use Reports. He has also served as a member of DWR's UWMP Guidebook Workgroup for three UWMP cycles. He led the demand efforts for the City's 2020 UWMP and will do so again for this cycle's UWMP.

Relevant Experience

- 2020 UWMP, City of Folsom, Folsom, CA. Lead Author.
- WCNA, City of Folsom, CA. QA/QC and Technical Lead.
- 2020 and 2015 UWMP, Soquel Creek Water District, Soquel, CA. Project Manager.
- 2020 UWMP, Placer County Water Agency, Auburn, CA. Technical Advisor.
- 2025 & 2020 UWMPs, Water Conservation, Regulatory & Technical Assistance Services, City of Oxnard, Oxnard, CA.
- 2020 UWMP, City of Fresno, CA. Demand Projections Lead.



David Williams ^{EIT}
SUPPORTING AUTHOR

David is a staff engineer with experience supporting water, wastewater, and reuse projects throughout California. David brings experience analyzing data in Excel and ArcGIS. He has experience working with the proposed team for clients such as Citrus Heights Water District and South Tahoe Public Utility District. David will help author the UWMP and WSCP.

Relevant Experience

- Hydraulic Model Update, Citrus Heights Water District, CA. Engineering Support.
- Annual Water Supply and Demand Assessment, West Basin Municipal Water District, CA. Engineering Support.
- County Operations Center Water Shortage Contingency Plan, County of San Luis Obispo, CA. Engineering Support.
- Water Resources Implementation Strategy, Calleguas Municipal Water District, CA. Engineering Support.

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E. Consultant Qualifications and References

WSC's Team's UWMP Qualifications

The table below summarizes some of WSC's most relevant experience providing clients with UWMP and water planning services in recent years.

CLIENT	Population	2020 UWMP	2015 UWMP	Surface Water	Recycled Water	Groundwater	Climate Change	Customized Demand Model	Customized Supply Model	Enhanced Executive Summary	Stakeholder Communication	Integrated with other Planning Efforts
City of Folsom	69,500	✓		✓		✓	✓	✓				✓
Placer County Water Agency	150,000	✓		✓		✓	✓			✓		
City of Fresno	575,034	✓		✓	✓	✓		✓	✓	✓		✓
City of Santa Barbara	95,279	✓		✓	✓	✓		✓	✓	✓	✓	✓
Eastern Municipal Water District	856,500	✓			✓	✓						
Elsinore Valley Water District	163,984	✓		✓	✓	✓						
Western Municipal Water District	1,118,839	✓			✓	✓	✓			✓		✓
Antelope Valley-East Kern Water Agency	320,571	✓				✓			✓	✓		
Soquel Creek Water District	40,234	✓	✓		✓	✓	✓	✓	✓			✓
West Basin Municipal Water District	841,550	✓		✓	✓	✓		✓	✓	✓		
City of Oxnard	209,877	✓			✓	✓		✓				✓
Coachella Water Authority	55,783	✓				✓					✓	
Desert Water Agency	55,700	✓		✓	✓	✓					✓	
Indio Water Authority	91,240	✓			✓	✓					✓	
Coachella Valley Water District	282,900	✓			✓	✓					✓	
City of Colton	49,973	✓	✓			✓						✓
City of Redlands	79,090	✓	✓	✓	✓	✓						✓
City of Rialto	65,125	✓	✓	✓	✓	✓						✓
East Valley Water District	104,693	✓	✓	✓	✓	✓						✓
San Bernardino Municipal Water Department	203,151	✓	✓			✓						✓
San Bernardino Valley Municipal Water District	715,859	✓	✓		✓	✓		✓	✓			✓
West Valley Water District	81,356	✓	✓	✓		✓						✓
Yucaipa Valley Water District	65,191		✓	✓	✓	✓						✓
City of Riverside Public Utilities District	94,500	✓	✓		✓	✓						
California American Water, Los Angeles District	101,777	✓	✓	✓		✓	✓					
California American Water, Sacramento District	203,851		✓	✓	✓	✓	✓					
California American Water, Monterey District	95,191	✓	✓	✓		✓	✓					
California American Water, Ventura District	63,423	✓	✓				✓					
California American Water, San Diego District	94,043		✓	✓			✓				✓	
City of Victorville	128,005	✓	✓		✓	✓						
County of San Luis Obispo Zone 3	47,081	✓	✓	✓								
San Lorenzo Valley Water District	21,924	✓	✓	✓	✓	✓			✓			
City of Arroyo Grande	17,636	✓	✓	✓		✓		✓	✓			✓
City of Camarillo	42,869	✓	✓		✓	✓						
City of Escondido	142,183	✓		✓								

Demonstrated Expertise and Proven UWMP Qualifications

Within the past five years, WSC completed 46 UWMPs. WSC's collaboration with the City on recent water management projects, coupled with our team's statewide UWMP experience, positions us to deliver significant advantages to the City.

2020 UWMP and Related Conservation and Reporting Services

City of Folsom, CA

WSC worked collaboratively with the City to prepare and submit the City's 2020 UWMP and WSCP. The 2020 UWMP and WSCP address new requirements and position the City for future required reporting with additional deliverables including a Water Use Efficiency (WUE) Technical Memo (TM), updated Water Conservation Ordinance, and a database for annual updates. Project development included data review and analysis; population and demographic analysis; demand projection development; system supply analysis; water supply reliability assessment; water shortage contingency planning updates; demand management measure analysis; and climate change impact analysis. The UWMP was prepared per the DWR 2020 UWMP Guidebook, met the July 1, 2021 submittal deadline, and was approved by DWR.

WSC's team gained considerable insight into the City's current water demands, infrastructure, systems, and policies through our work on the UWMP and WSCP.

The WUE TM evaluated future water use standards and strategies the City can implement to meet required demand reductions. This included:

- Evaluating indoor, outdoor, and water loss regulations and providing recommendations to the City as to how to meet these standards.
- Discussing alternatives for tracking and monitoring indoor, outdoor, water loss, and CII water use targets.
- Identifying software / tools to help the City track, monitor, and evaluate its water use targets.
- Quantifying the savings for each of the DMMs.

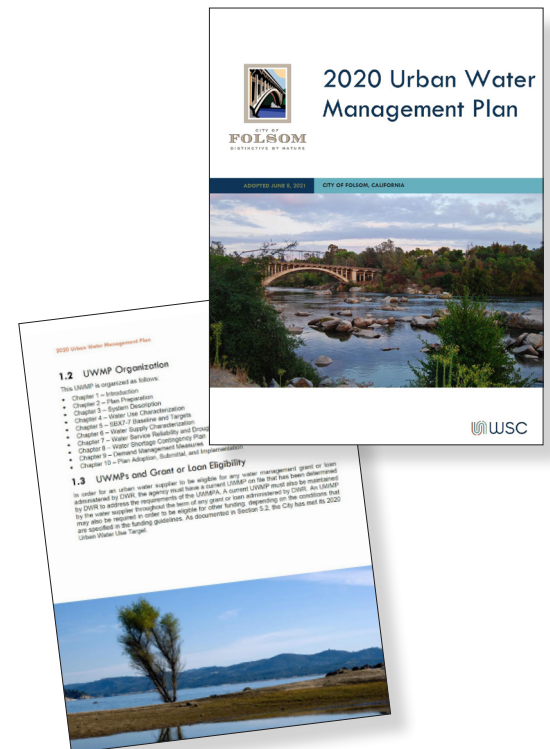
The Database for Annual Updates provides a tool for the City to efficiently update supply and demand data and assumptions for forthcoming AWSAs submitted to the State annually.

Client Reference: Marcus Yasutake | 50 Natoma Street Folsom, CA 95630 | myasutake@folsom.ca.us | (916) 461-6161

Completion Date: May 2023

Cost of Service: \$91,000

Key Staff: Rob Natoli (Project Manager), Stephanie Ard (QA/QC - TM), Spencer Waterman (Supply and Demand Lead)



The City's 2020 UWMP met the challenge of incorporating the new UWMP requirements while enhancing usability for planning purposes and provided a toolset and protocol that can be efficiently used for future reporting.

Folsom Water Vision

City of Folsom, CA

WSC is serving as the lead for the City's first long-range, 50-year plan that will serve as a guiding document for near- and long- term water decisions and management that will result in a more reliable, resilient, and sustainable water supply. WSC is using a portfolio-based approach and decision support framework that integrates stakeholder input to provide clear, defensible direction for effective long-term water resources management that upholds your community's values. The project includes a robust stakeholder engagement process centered around working with a citizens stakeholder group that includes 25 members representing an array of local interests and industries, and includes active engagement with City Council and the Utilities Commission.

Client Reference: Marcus Yasutake | 50 Natoma Street
Folsom, CA 95630 | myasutake@folsom.ca.us | 916.461.6161

Completion Date: Ongoing

Cost of Service: \$392,525

Key Staff: Rob Natoli (Project Manager), Stephanie Ard (Project Engineer), Spencer Waterman (Demand Lead)

Water Conservation Needs

Assessment

City of Folsom, CA

WSC is preparing a WCNA that will assess its UWUO and Commercial, Industrial, Institutional (CII) Performances Measures (PM) to inform development of locally appropriate programs to achieve WUE goals and provide an adaptive plan for implementation initiatives.

Client Reference: Marcus Yasutake | 50 Natoma Street
Folsom, CA 95630 | myasutake@folsom.ca.us | 916.461.6161

Completion Date: Ongoing

Cost of Service: \$127,786

Key Staff: Rob Natoli (Principal in Charge), Stephanie Ard (Project Manager), Spencer Waterman (QA/QC & Technical Lead)



Water Vision Santa Barbara and 2020 UWMP

City of Santa Barbara, CA

WSC developed a roadmap for the City's current and future supply portfolio to secure water supplies in the face of climate change. This includes the role of desalination and integrating groundwater storage programs to increase reliability. The City's current water supply portfolio is one of the most diverse in California. WSC conducted an integrated evaluation of optimized supply portfolios involving all the City's water. As part of the project, WSC completed the City's 2020 UWMP and seamlessly integrated it with the rest of the project and the City's Water Conservation Strategic Plan. WSC's expanded evaluation and alternative process incorporated risks and future uncertainties into the evaluation. Risks and uncertainties were used in multiple steps throughout the planning process, including the development of alternatives, developing risk scores for the alternatives, and developing resilience scenarios to test the top alternatives. The adaptive planning tool was designed to be updated by the City as uncertainties such as demand projections, SWP projections, and sustainable groundwater yield become better defined. The potential portfolios can be reevaluated with updated conditions and changing City priorities for reliability or resiliency. WSC worked closely with the City to facilitate a comprehensive stakeholder engagement process to support community aligned water planning decisions.

Client Reference: Joshua Haggmark | 735 Anacapa Street, Santa Barbara, CA 93101 | (805) 564-5393 | JHaggmark@SantaBarbaraCA.gov

Completion Date: June 2021

Cost of Service: \$432,000

Key Staff: Spencer Waterman (UWMP Lead)

2020 UWMP and Metro Plan City of Fresno, CA

WSC partnered with the City of Fresno to update their Metropolitan Water Resources Management Plan (Metro Plan), providing a road map for the City's water supplies, water infrastructure, and sustainable growth through 2070. The 2020 Metro Plan also included a 2020 UWMP. The City's investment in a surface water treatment plant combined with SGMA implementation allowed the City to reduce its reliance on groundwater supplies. The UWMP was also the first evaluation of long-term demand projections after implementation of water meters and AMI data collection. WSC developed a multi-scenario demand model based on population, employment, and land use projections and evaluated approaches to comply with proposed Conservation Regulations.

The Metro Plan documented the City's existing water assets – supplies, infrastructure, and rights – to evaluate multiple future supply and demand scenarios that considered a variety of assumptions about conservation, pace of growth, surface water availability, climate change impacts, and groundwater management actions. WSC provided the evaluation tools developed for the Metro Plan to the City for use in the future as conditions and assumptions change. The tools include a Groundwater Water Budget and Supply / Demand Scenario Tool. Existing supply optimization and new supplies required creative partnerships and identifying mutually beneficial projects.

Client Reference: Brock Buche | 2600 Fresno Street, Fresno, CA 93721 | (559) 621-8600 | brock.buche@fresno.gov

Completion Date: July 2021, Metro Plan 2022

Cost of Service: \$1,824,000

Key Staff: Spencer Waterman (Demand Projections Lead)



2020 & 2015 UWMP

Soquel Creek Water District, Soquel, CA

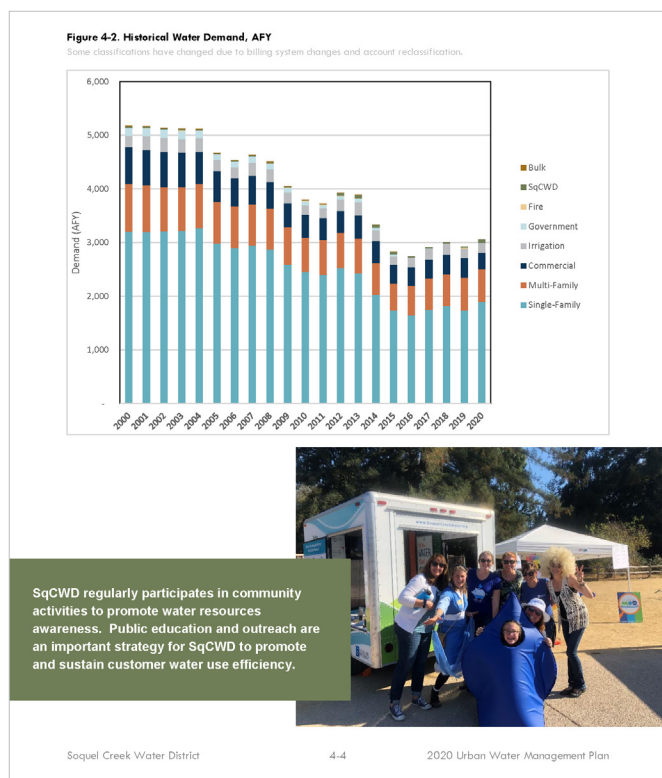
As part of the District's 2020 and 2015 UWMPs, WSC developed a quasi-econometric demand model incorporating elasticity response factors for climate, social, economic, political, and technical parameters. The demands informed the District's Community Water Plan, which is a roadmap to achieve water supply sustainability by 2040. The model results were compared with groundwater modeling results to determine the supply deficit to be met by supplemental supplies and water shortage contingency planning efforts during a recovery period to make up for groundwater overdraft. WSC provided demand model support services to the District through as needed updates and training to help ensure the District's supplemental supply targets are based on the most up-to-date information. The UWMPs also included the evaluation of population growth, supply reliability, drought risk, energy use, demand management measures, and water shortage contingency planning.

Client Reference: Shelley Flock | 5180 Soquel Dr, Soquel, CA 95073 | (837) 475-8501, ext. 156 | shelleyf@soquelcreekwater.org

Completion Dates: July 2016 and April 2022

Cost of Service: \$87,000 and \$125,000

Key Staff: Spencer Waterman (Project Manager)



WSC presented the results of a custom demand model in the District's 2020 and 2015 UWMPs, and provided as-needed model support after the UWMPs were submitted.

2020 UWMP

Placer County Water Agency, Auburn, CA

WSC developed Placer County Water Agency's 2020 UWMP based on new legislated requirements from SB 606 and AB 1668. The Agency provides untreated, treated, and irrigation water directly and indirectly to wholesale and retail customers throughout Placer County and north Sacramento County. The Agency's 2020 UWMP concisely evaluated how a complex network of supplies and demands for multiple customer agencies will be met. WSC reviewed, provided guidance, and leveraged the Agency's WSCP including the annual Water Supply and Demand Assessment to inform development of the 5-Year DRA. The UWMP was also integrated with Geographical Information Systems to convey key UWMP information.

Client Reference: Jeremy Shepard | 144 Ferguson Road, Auburn, CA 95603 | (530) 823-2066 | jshepard@pcwa.net

Completion Date: July 2021

Cost of Service: \$72,160

Key Staff: Spencer Waterman (Technical Advisor), Rob Natoli (Project Manager)



F. Team Resumes



Stephanie Ard

PROJECT MANAGER

Stephanie has more than 13 years of experience in hydraulic modeling, master planning, project management, technical writing, and communication. She has worked with over a dozen clients to develop comprehensive planning documents that include preparing growth scenarios, identifying current and future water system needs, and meeting state reporting requirements. Stephanie has collaborated with all members of the technical team, as well as City staff. Stephanie is currently working on the City's Folsom Water Vision Project and Water Conservation Needs assessment and brings a unique understanding of your water systems. Her experience will provide planning leadership, team collaboration, and a local presence to the team.

REPRESENTATIVE PROJECTS

2020 UWMP and Related Conservation and Reporting Services, City of Folsom, CA. QA/QC. WSC worked collaboratively with the City to prepare and submit the City's 2020 UWMP and Water Shortage Contingency Plan (WSCP). The 2020 UWMP and WSCP address new requirements and position the City for future required reporting with additional deliverables including a Water Use Efficiency Technical Memorandum (WUE TM), updated Water Conservation Ordinance, and a database for annual updates. Stephanie provided quality control and review support for the WUE TM.

Water Conservation Needs Assessment, City of Folsom, CA. Project Manager. Preparing a Water Conservation Needs Assessment that will assess its Urban Water Use Objective and Commercial, Industrial, Institutional Performances Measures to inform development of locally appropriate programs to achieve water use efficiency goals, and provide an adaptive plan for implementation initiatives.

Hydraulic Model Update, Citrus Heights Water District, Citrus Heights, CA. Project Manager. Provided management and technical oversight for hydraulic model update, constructed in Infowater. Project included updating the District's pipe network, matching model settings to the District's operating setpoints, updating steady state and extended period simulation demands, and validating steady state scenarios by comparing model output to pressure data provided by the District at the well pumps.
WATER SYSTEMS CONSULTING, INC.

Folsom Water Vision, City of Folsom, CA.

Project Engineer. Leading the City's first long-range, 50-year plan that will serve as a guiding document for near- and long-term water decisions and management that result in a more reliable, resilient, and sustainable water supply. Using a portfolio-based approach and decision support framework that integrates stakeholder input to provide clear, defensible direction for effective long-term water resources management that upholds your community's values. The project includes a robust stakeholder engagement process centered around working with a citizens stakeholder group that includes 25 members representing an array of local interests and industries and including active engagement with City Council and the Utilities Commission.

Wholesale Master Plan, San Juan Water District, Granite Bay, CA. Project Engineer.

The Plan addressed current and future water supply, demand, and capacity conditions for the District's Wholesale Division. A key emphasis of the plan was ensuring water supply reliability, given the District's heavy reliance on Folsom Lake. The plan assessed supply alternatives, including infrastructure enhancements and regional supply options. Additionally, it conducted an evaluation of the District's 100 MG surface water treatment plant and performed a planning-level condition assessment of the wholesale system infrastructure. A cost-effective Capital Improvement Plan was devised to allocate resources for infrastructure replacement, renewal, and planned improvement projects.



EDUCATION

BS, Civil Engineering, University of Portland, Oregon

PROFESSIONAL REGISTRATIONS

Professional Engineer, California License No. 95788

Professional Engineer, Washington State License No. 54859

“Working closely with clients, I am always striving to develop water solutions that will have long-term positive impacts on communities.”

Stephanie Ard

Rob Natoli PE

PRINCIPAL IN CHARGE

Rob Natoli brings 17 years of engineering experience in the water and wastewater industry. He has managed both large and small projects across California, including projects for the City. He is skilled at directing multidisciplinary teams to exceed client expectations. Having served as project manager for the City's 2020 UWMP, Rob understands the City's water system, existing supplies, and expected demands.

REPRESENTATIVE PROJECTS

Folsom Water Vision, City of Folsom, CA.

Project Manager. Leading the City's first long-range, 50-year plan that will serve as a guiding document for near- and long-term water decisions and management that result in a more reliable, resilient, and sustainable water supply. Using a portfolio-based approach and decision support framework that integrates stakeholder input to provide clear, defensible direction for effective long-term water resources management that upholds your community's values. The project includes a robust stakeholder engagement process centered around working with a citizens stakeholder group that includes 25 members representing an array of local interests and industries and including active engagement with City Council and the Utilities Commission.

2020 UWMP and Related Conservation and Reporting Services, City of Folsom, CA. Project Manager.

WSC worked collaboratively with the City to prepare and submit the City's 2020 UWMP and Water Shortage Contingency Plan (WSCP). The 2020 UWMP and WSCP address new requirements and position the City for future required reporting with additional deliverables including a Water Use Efficiency Technical Memorandum (WUE TM), updated Water Conservation Ordinance, and a database for annual updates. Project development included data review and analysis; population and demographic analysis; demand projection development; system supply analysis; water supply reliability assessment; water shortage contingency planning updates; demand management measure analysis; and climate change impact analysis. The UWMP was prepared per the DWR 2020 UWMP Guidebook, met the submittal deadline, and was approved by DWR.

2020 UWMP, Placer County Water Agency, Auburn, CA. Project Manager.

WSC developed Placer County Water Agency's 2020 UWMP based on new legislated requirements from SB 606 and AB 1668. The Agency provides untreated, treated, and irrigation water directly and indirectly to wholesale and retail customers throughout Placer County and north Sacramento County. The Agency's 2020 UWMP concisely evaluated how a complex network of supplies and demands for multiple customer agencies will be met. WSC reviewed, provided guidance, and leveraged the Agency's WSCP including the annual Water Supply and Demand Assessment (WSDA) to inform development of the 5-Year DRA. The UWMP was also integrated with Geographical Information Systems (GIS) to convey key UWMP information.

2021 Drought Operations Planning Project, San Juan Water District, Granite Bay, CA. Project manager.

Due to the extreme drought conditions that could be faced in dry years, SJWD requested an analysis of system supplies and demands to develop operational procedures in the event the lake level decreases below the point of the Main Pumping Plant operations. To develop the regional solutions, WSC coordinated with wholesale customer and local agency local agencies to understand, verify, and quantify potential supply sources, existing infrastructure (including Sacramento Suburban Water District pump back supply availability), and interties. WSC's team provided drought demand analysis and supply assessment and hydraulic modeling to provide recommended improvements and an operations summary. The operations summary, provides operation actions based on the Folsom Lake level.



EDUCATION

BS, Civil Engineering, California Polytechnic State University, San Luis Obispo, CA

REGISTRATIONS

Professional Engineer - Civil, California, No. C78271

Professional Engineer - Civil, Nevada, No. 23188

Professional Engineer - Civil, Oregon, No. 96253

“I enjoy the personal and technical aspects of being a water engineer and being a part of finding great solutions on projects. I strive to communicate well, take initiative and bring a high level of quality to everything I do.”

Rob Natoli

Spencer Waterman

TECHNICAL LEAD AND QA/QC

Spencer Waterman brings 15 years of planning experience with an emphasis on water resources planning and water use efficiency. His experience includes water, wastewater, and recycled water resources planning, grant funding applications, water use efficiency and conservation services, water law compliance reporting, and GIS services. Spencer has led 24 UWMPs, 20 Annual Water Supply and Demands Assessments, and 10 2024 Annual Water Use Reports. He has also served as a member of DWR's UWMP Guidebook Workgroup for three UWMP cycles.

REPRESENTATIVE PROJECTS

2020 Urban Water Management Plan, City of Folsom, Folsom, CA. Supply and Demand Lead. Led development of the City's 2020 UWMP which met DWR's requirements. The project addressed new requirements for the 2020 UWMP, including 5-year DRA, long-term forecast for each water supply source, and WSCP with prescriptive elements.

2020 Urban Water Management Plan, Placer County Water Agency, Auburn, CA. Technical Advisor. Supported development of the Agency's 2020 UWMP which met DWR's requirements. The project addressed new requirements for the 2020 UWMP, including 5-year DRA, long-term forecast for each water supply source, and WSCP with prescriptive elements.

Water Vision Santa Barbara, City of Santa Barbara, CA. Supply and Demand. Collaborated with the City and the City's Water Conservation Strategic Plan consultant to develop a demand envelope. Assessed multiple demand scenarios to account for uncertainty in demand projections factors, such as population and employment projections, demand rebound, conservation program response, climate change impacts, economic recession, and response to rate changes. The multiple demand scenarios were used to evaluate the adequacy and reliability of the City's water supply portfolio, incorporating future supply and demand risks, and under unprecedented drought conditions to provide a long-term view of how the City's water supplies will be managed in the future. The City's 2020 UWMP was completed as part of this project.

Water Conservation Needs Assessment, City of Folsom, CA. QA/QC and Technical Lead. Preparing a Water Conservation Needs Assessment that will assess its Urban Water Use Objective and Commercial, Industrial, Institutional Performances Measures to inform development of locally appropriate programs to achieve water use efficiency goals, and provide an adaptive plan for implementation initiatives.

Folsom Water Vision, City of Folsom, CA. Demand Lead. Leading the City's first long-range, 50-year plan that will serve as a guiding document for near- and long-term water decisions and management that result in a more reliable, resilient, and sustainable water supply. Using a portfolio-based approach and decision support framework that integrates stakeholder input to provide clear, defensible direction for effective long-term water resources management that upholds your community's values. The project includes a robust stakeholder engagement process centered around working with a citizens stakeholder group that includes 25 members representing an array of local interests and industries and including active engagement with City Council and the Utilities Commission.

2020 Urban Water Management Plan, Soquel Creek Water District, Soquel, CA. Project Manager. Prepared an Urban Water Management Plan that includes evaluation of population, demand projections, supply reliability, drought risk assessment, energy analysis, and technical writing. Demand projections were developed using a SEPT+ model, that uses statistics to evaluate changes in demand based on social, economic, political, and technological parameters.



EDUCATION

BS, City & Regional Planning,
California Polytechnic State
University, San Luis Obispo

CERTIFICATIONS

American Water Works Association,
California-Nevada Section, Water
Use Efficiency Practitioner Grade 1,
Certificate # 1714

PROFESSIONAL AFFILIATIONS

American Water Works
Association, Member

California Water Efficiency
Partnership, Member

“My life revolves around water—surfing, sailing, fishing, hiking and recreating around water drive my passion to foster a better water future through prudent water resources planning.”

Spencer Waterman

David Williams EIT, PACP

SUPPORTING AUTHOR

David is a staff engineer with experience supporting water, wastewater, and reuse projects throughout California. David brings experience analyzing data in Excel and ArcGIS. He has experience working with the proposed team for clients, such as Citrus Heights Water District and South Tahoe Public Utility District. David will help author the UWMP.

REPRESENTATIVE PROJECTS

Annual Water Supply and Demand Assessment, West Basin Municipal Water District, Carson, CA. Engineering Support. This project consisted of preparing the State-mandated Annual Water Supply and Demand Assessment for the West Basin Municipal Water District, which included communication with water purveyors which purchase water from West Basin. David provided data analysis assistance.

County Operations Center Water Shortage Contingency Plan, County of San Luis Obispo, San Luis Obispo, CA. Engineering Support. This project consisted of creating a water shortage contingency plan for the County Operations Center and analyzing opportunities for the Chorro Valley (in which the County Operations Center sits) to augment its water supply. David researched water transfers, exchanges, agreements, entitlements, and allocations in the vicinity of the County Operations Center from the previous 80 years.

Water Resources Implementation Strategy, Calleguas Municipal Water District, Calleguas, CA. Engineering Support. This extensive regional collaboration evaluates potential projects to address long-term water supply and reliability challenges, building on the Water Supply Alternatives Study, by establishing a preferred portfolio list considering project costs, reliability, yield, and adaptability. Through workshops, interviews, research, and analysis, collaborated with over a dozen stakeholders, including retail water providers, groundwater agencies, and regional partners, to establish water supply needs and priorities, define project evaluation criteria, and recommend feasible projects and a framework

for delivery. David researched infrastructure opportunities and constraints and groundwater users and issues to help development and analysis of potential water supply, intertie, and exchange projects within Calleguas's service area and with neighboring purveyors.

Drought Relief Project, Baron Canyon Mutual Water Company (BCMWC), San Luis Obispo, CA. Engineering Support. WSC supported efforts with BCMWC to identify and develop project elements to provide immediate drought relief infrastructure improvements for a small community with 30 residential connections. Supported the writing of the funding application for the Department of Water Resources Small Community Drought Relief Program which was successful in being awarded \$1,986,000 in grant funds. Subsequently, David provided engineering support on the design of a 2,600-foot water transmission main, a single 15-hp pump booster pump station, and the equipping of a production well.

Pure Water Soquel Injection Well Equipping Engineering Services During Construction, Soquel Creek Water District, Soquel, CA. Engineering Support. Pure Water Soquel is a groundwater replenishment and seawater intrusion prevention project. This portion of the project pertained to civil site improvements at three recycled water injection well sites including piping and valving, well backwash pumps, buried backwash water equalization tanks, electrical, telemetry, and site grading and finishing. David assisted with Engineering Services During Construction, including submittal and RFI review and field directive preparation. Attended weekly construction progress meetings and served as the interim primary point of contact with the client.



EDUCATION

BS, Civil Engineering, California Polytechnic State University

PROFESSIONAL REGISTRATIONS

Engineering In Training, California, No. 180296

PACP Certified No. P0041682-032023

"I take pride in supporting projects that provide optimal solutions for WSC's clients and partners."

David Williams

betterwaterfuture.com

