

Appendix C12

Plausible Range of Parameters

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Table C12-1 describes the parameters range for each parameter of the Current Projected scenario. The storyline for the Current Projected scenario is that growth, development patterns, and institutions will continue along recent trends.

TABLE C12-1
Plausible Range of Parameters for Each Critical Uncertainty Associated with Water Demand

General Driving Force Categories	Critical Uncertainties ¹	Description of Parameters if Current Projected Continues	Plausible Low End of Range	Plausible High End of Range
Demographic and land use	Changes in population and distribution [4]	Best estimate of population growth	Slow growth: <ul style="list-style-type: none"> Increases principally in existing urban areas 	Rapid, expansive growth: <ul style="list-style-type: none"> Focused in urban centers and “sprawl” to traditionally non-urban areas (likely driven by economic growth)
	Changes in agricultural land use (e.g., irrigated agricultural areas, crop mixes, etc.) [5]	Nominal increase in irrigated agricultural lands due to the build-out of currently planned agricultural supply projects: <ul style="list-style-type: none"> Varies from state to state with some natural decreases also occurring 	Significant decrease in agricultural lands in many basin states <ul style="list-style-type: none"> Due to permanent agricultural retirement 	Slightly faster increase in irrigated agricultural lands (varies from state to state) due to the build-out of currently planned agricultural supply projects
Technology and economics	Changes in agricultural water use efficiency [8]	Continued Current Projected in agricultural water use efficiency: <ul style="list-style-type: none"> Salinity control projects continue to be pursued 	Decreased agricultural efficiency resulting from aging infrastructure and minimal capital investment in repair/replacement	Externally driven increases in water saving technology Rapid adoption of new water saving technologies
	Changes in municipal and industrial water use efficiency [9]	Water use efficiency is increasing according to current policy and technology: <ul style="list-style-type: none"> External factors limiting water use of appliances/fixtures (e.g., federal statutes dictating water use efficiency of fixtures) Policies in place affecting future—vary by municipality and state 	M&I consumer efficiency continues according to Current Projected: <ul style="list-style-type: none"> Aging infrastructure could have effects on water efficiency 	Diversification of supply portfolios and increased costs, leading to increased water use efficiency: <ul style="list-style-type: none"> Increased implementation of WaterSense, EnergyStar, efficient landscaping technology, etc.

General Driving Force Categories	Critical Uncertainties ¹	Description of Parameters if Current Projected Continues	Plausible Low End of Range	Plausible High End of Range
Technology and economics (cont.)	Changes in water needs for energy generation (e.g., solar, oil shale, thermal, nuclear, etc.) [12]	Water needs for energy expand: <ul style="list-style-type: none"> • Some expansion of oil shale/fossil fuel development • Some expansion of thermal solar development • Existing requirements for renewable energy are applied 	Decreases in water for energy based on reduced freshwater for cooling (e.g., dry cooling) or technology improvements: <ul style="list-style-type: none"> • High technology adaptation • Increased requirements for renewable as a percentage of energy portfolio, with emphasis on dry technologies 	Increased water use for energy, including solar, oil shale, and nuclear: <ul style="list-style-type: none"> • Low technology adaptation • Economic drivers encouraging growth in energy production
Social and governance	Changes in institutional and regulatory conditions (e.g. laws, regulations, etc.) [10]	No anticipated changes in institutional and regulatory conditions	Same as Current Projected	Increased institutional and regulatory conditions National climate change regulations implemented (related to greenhouse gas management)
	Changes in flow-dependent ecosystem needs for Endangered Species Act (ESA)-listed species [13]	No change in currently realized ESA-listed species needs	Same as Current Projected	ESA flow targets for existing listed species are met and recovery is maintained
	Changes in other flow-dependent ecosystem needs [14]	No change in current planning and/or projections associated with ecosystem needs or practices	Same as Current Projected	Institutional agreements for ecological flows sufficient to ensure a resilient ecosystem (in timing, amount and location)
	Changes in social values affecting water use [15]	Social values affecting water use are similar to recent past: <ul style="list-style-type: none"> • Continue along current trend of increased conservation, increased support in parts of the Basin for meeting environmental flows 	Societal focus on economic efficiency	Societal values result in greater flexibility of water use for multiple purposes: <ul style="list-style-type: none"> • Acceptance of water recycling • Social values affecting water use accelerate current trend of increased conservation
	Changes in water availability due to tribal water use and settlement of tribal water rights claims [17]	Tribal water use continues as projected in settlements	Slower implementation of development within the settlements	Faster implementation of development within the settlements <ul style="list-style-type: none"> • Additional tribal claims and settlements realized

¹ Bracketed number reflects the number assigned to the 18 driving forces listed in *Technical Report A – Scenario Development*.