LOCAL GOVERNMENT WATER-CLIMATE PLANNING



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Model

Enabling Legislation

and

Supporting

Arguments



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Cover Photo: Dylan DesRosier, Glacier Park, View toward Cathedral Peak and Stoney Lake

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**Table of Contents**

[Part I: Model Enabling Legislation for Local Water-Climate Planning 1](#_Toc405804311)

[Preamble 1](#_Toc405804314)

[Water-Climate Element 1](#_Toc405804315)

[Definitions 4](#_Toc405804316)

[Part II: [Supporting Arguments for Water-Climate Planning 5](#_Toc405804318)](#_Toc405804317)

[General Arguments 5](#_Toc405804320)

[Comprehensive Inventory of Water Resources 6](#_Toc405804321)

[Capacity-Vulnerability Analysis 7](#_Toc405804322)

[Community Water Goals 8](#_Toc405804323)

[Implementation Strategies 8](#_Toc405804324)

[Intergovernmental Coordination 10](#_Toc405804325)

[Periodic Update and Continuous Assessment 11](#_Toc405804326)

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# Part I:

# Model Enabling Legislation

# for Local Water-Climate Planning

(with annotations)

## Preamble

Mindful of the West’s rapid land use growth and development, of the competing demands for limited water resources, and of the uncertainty in future climatic conditions, the Legislature concludes that local governments should have both the responsibility and power to manage their land use planning and water resource planning in wise, resilient, and integrated ways. Historically, local government land use planning has not fully considered the connection to water supply or the impact climate may have on that supply.

This legislation envisions that local governments will include within their comprehensive land use plans a Water-Climate Element that jointly analyzes projected land use development and goals alongside community water supply capacity and vulnerability. Joint land use and water supply planning will enable communities to play a direct role in the health of their water supply systems and increase awareness of their local hydrology and climate. To this end, the Legislature intends local governments to use this planning element to identify areas where the community’s anticipated or desired pattern of growth may place unrealistic demands on existing water supply. From this, local governments can develop informed responses to water shortages, collaborate in areas of shared water resources, and responsibly plan their water futures.

## Water-Climate Element[[1]](#footnote-1)

**[§ A]** **Water-Climate Element.** A local government comprehensive plan shall[[2]](#footnote-2) include a Water-Climate Element that contains the following:

1. A comprehensive inventory of the local government’s water resources that:
2. describes all of the water resources of the jurisdiction, including all surface and ground water in all watersheds[[3]](#footnote-3) contributing to, and affecting availability of, water supply within the jurisdiction;
3. summarizes scientific data on the quantity, quality, and hydrologic function of all water resources described in (1)(a);
4. identifies the water resources legally available to meet the water supply needs within the jurisdiction;[[4]](#footnote-4)
5. projects how future climate variability may affect the quantity, quality, hydrologic function, and legal availability of all water resources described in (1)(a).

1. An analysis of the local government’s water resources capacity that:
2. compares the jurisdiction’s water supply availability under (1) with the jurisdiction’s water supply needs to support its current and projected population and land uses;[[5]](#footnote-5)
3. in light of the comparison in (2)(a), identifies existing or future water supply issues, concerns, and vulnerabilities.
4. Community water-climate goals that:
5. identify the water supply conditions necessary and desirable for the local government to meet its current and projected land use needs;
6. address the water supply issues, concerns, and vulnerabilities identified in (2)(b), including the potential impacts of climate variability; and
7. indicate priorities to ensure that the most pressing water supply needs are adequately met.
8. Implementation strategies to achieve community water-climate goals that include:
9. identifiable actions to be taken toward each goal;
10. types of approaches to be used for each action, such as regulations, educational programs, incentive-based initiatives, fundraising, agreements, or water marketing or acquisition;[[6]](#footnote-6)
11. clear roles and responsibilities for each implementation action;
12. time frames for taking identifiable actions toward each goal;
13. specific plans for coordinating with other jurisdictions that share the same water resources;[[7]](#footnote-7) and
14. performance benchmarks and targets for measuring the progress and success of implementation strategies.[[8]](#footnote-8)

**[§ B] Inter-Governmental Coordination**[[9]](#footnote-9) **and Joint Planning.**

**(1)** In carrying out its responsibilities under the Water-Climate Element, a local government is authorized to:

1. enter into inter-governmental partnerships, collaborations, or agreements,[[10]](#footnote-10) with local jurisdictions, special districts, federal and state agencies, or Indian Tribes that share a common interest in the water resources;
2. collaborate with citizen interest groups, nonprofit organizations, companies, and individuals;[[11]](#footnote-11)
3. undertake joint water-climate studies and share water-climate data;[[12]](#footnote-12)
4. form inter-governmental advisory commissions and bodies;[[13]](#footnote-13)
5. coordinate across local departments; and
6. exercise any other local government powers recognized by law.

**(2)** When a local government action under the Water-Climate Element has the potential to implicate the interests of an Indian Tribe, a local government shall:[[14]](#footnote-14)

1. consult with the Indian Tribe in advance of taking the action;[[15]](#footnote-15) and
2. coordinate water-climate planning efforts with the Indian Tribe.[[16]](#footnote-16)

**[§ C] Updates and Regular Assessment**.[[17]](#footnote-17)

**(1)** A local government shall update its entire Water-Climate Element at least once every five years.

**(2)** Local governments shall also regularly assess whether new or changed information related to its Water-Climate Element warrants a more immediate updating or modification of the element.[[18]](#footnote-18) This assessment shall occur at least once a year.

## Definitions[[19]](#footnote-19)

1. **“assessment”** means an ongoing, iterative process that examines (1) whether underlying data, information, or assumptions have changed and (2) whether goals, implementation strategies, coordination efforts, or other features of a plan element should be modified accordingly.
2. **“hydrologic function”** means the ways in which a watershed affects the human and natural environment, including: collecting water from rainfall and snowmelt; storing water in various amounts and durations; discharging water as runoff; responding during flood events; providing habitat for plants and animals; and creating conditions that affect water quality.
3. **“Indian Tribe”** means an Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges to exist as an Indian tribe pursuant to the Federally Recognized Indian Tribe List Act, 25 U.S.C. 479a.
4. **“interests of an Indian Tribe”** mean interests related to a Tribe’s water supply, water resources, water rights, land use planning or governance, or other related issues that may affect a Tribe’s political integrity, economic security, health or welfare.[[20]](#footnote-20)
5. **“performance benchmarks”** mean monitoring measures or standards, based on pre-determined time frames, by which a local government can measure whether goals and implementation strategies are being achieved over time.
6. **“water marketing”** means the buying, selling, exchanging, changing, or transporting of water supply under the laws governing water rights.

# Part II:

# Supporting Arguments for

# Water-Climate Planning

## General Arguments[[21]](#footnote-21)

* Local governments have a significant role to play in planning how land use and water resources will function together in their community, particularly in the face of climate variability. Protecting healthy watersheds, restoring degraded hydrologic systems, and preparing for anticipated future water needs, are a few of the nation’s most significant unmet environmental challenges. And unlike other natural resources, which exist in more static natural boundaries, watersheds do not respect political borders and require a highly collaborative approach among all users of shared water resources.
* The urgency of population growth, over-tapped water supplies, and dramatic climate change impacts in the West underscore the need for a mandatory water-climate element in local comprehensive plans. Making water-climate planning a universal and compulsory part of existing comprehensive plans provides the benefit of uniformity, predictability, cost savings and ease of integration with state, federal and Tribal water plans. Water-climate planning increases certainty about water supply availability, promotes sustainable and functioning water systems, and provides local governments with the flexibility to adapt to future climatic variations. Further, mandatory water-climate planning provides a mechanism to integrate state policies, where they exist, with local planning and provides means by which plans of adjoining local governments are taken into account, minimizing the risk of incongruities.
* Because water law is predominantly a matter of state and federal law, local governments have historically experienced disproportionate, if not little, control over water use.[[22]](#footnote-22) Yet local governments are at the front lines of environmental regulation through their regulation of private land use activities that directly connect to water supply. Thus, this adoption of a Water-Climate Element is a critical step toward local communities playing a more active role in the outcome of their water future.
* While the issue of funding will likely pose challenges to the development and administration of water-climate planning, a variety of creative funding options exist in the form of levies, state- and federal-funded hydrologic studies, taxes, fees and assessments, grants, university-funded research, awards and private donations.

**Examples:**

* Examples of mechanisms commonly used to generate revenue for environmental programs include general property tax, sales and use tax, utility fees, per parcel assessments, real estate excise tax and pollution discharge tax. Non-regulatory options such as mini-grants can also be effective in involving schools, volunteer organizations and community groups in local environmental initiatives. The State of Washington is in the process of designing Watershed Investment Districts which are organized on watershed boundaries and authorize local governments to raise and disburse funds to conserve and restore lands and waters.[[23]](#footnote-23)

## Comprehensive Inventory of Water Resources

* A community’s first step toward water-climate planning is to take account of local water resources as they exist, both physically and legally. Only by understanding the legal and scientific connections between water supply (both surface and ground),[[24]](#footnote-24) hydrologic functions of watersheds, and regional climate impacts, can a community effectively evaluate and plan for its future.
* Local governments’ greatest opportunity to achieve healthy watersheds is through intimate familiarity with their own water resources. In many cases data gathering and modeling have already been done by state or federal agencies, local water districts, or water rights users. In these instances, local governments can build on existing information. When such information does not exist, states should provide funding to fulfill the mandates contained in the Water-Climate Element.[[25]](#footnote-25)

**Examples:**

* California provides a worthy illustration of attempted local governance. On a state level, California has chosen to bypass statewide groundwater management in favor of management by local water districts. As explained by Stanford Professor, Barton H. Thompson Jr., “a number of these districts have set a goal of minimizing surface-water impacts, studied interactions between groundwater and surface water, and even encouraged groundwater users in areas with a high probability of impacts to switch to surface supplies. However, no local district has fully integrated the two systems.”[[26]](#footnote-26)

## Capacity-Vulnerability Analysis

* After collecting valuable scientific data regarding the community’s water resources, local governments are then in a unique and advantageous position to overlay that information against land use projections. By comparing supply and demand through a “water budget” approach, a community is able to clearly identify where, how, when, why and to what degree its available water supply and hydrologic system capacity are not harmony with its current land use models, or growth projections, particularly in light of future climatic shifts.
* Ultimately, by highlighting these areas of vulnerability, local governments can identify, plan for, and adapt to the limits of their watersheds. Some scholars have argued that “[a]s our concerns over the consequences of climate change heighten, the legal system must continue to adapt and lead the way to create climate friendly settlement patterns.”[[27]](#footnote-27)

**Examples:**

* On the national level, the federal Environmental Protection Agency (EPA) has recognized the importance of identifying and acknowledging areas of community vulnerability. In the EPA’s Climate Change Adaptation Plan, the agency highlights an extensive list of negative impacts that can and may affect natural hydrologic systems, as a result of a warmer drier climate in the future.[[28]](#footnote-28) These problems can be exacerbated by in situations where aquatic systems are currently experiencing a degraded or stressed state. Thus, for a local government to reap the greatest benefits from its comparative vulnerability analysis, it is critical that it do so with realistic expectations in light of the current reality of the health of its watersheds.[[29]](#footnote-29)

## Community Water Goals

* Communities have long set land use planning goals within their comprehensive plans. Setting goals that address vulnerability in water supply helps a local government make connections between its traditional land use planning goals and the realities of water supply and climate, better integrating those important issues in the future.

**Examples:**

* The Department of Land Conservation in Oregon provides a notable example. This single agency is responsible for the creation, adoption, and implementation of Oregon’s statewide planning goals. Most important, since state planning goals are often evolving, designing goals specifically related to an individual community’s needs, provides local governments with the ability to easily adapt and/or amend the goals to changing circumstances.

 Implementation Strategies

* The Water-Climate Element should include detailed strategies for implementation that

integrate performance benchmarks. These strategies explain how the local government’s long and short term goals, targets, and priorities will be met. For performance benchmarks to be effective in monitoring the achievement of Community Water Goals, they should compare the previously identified growth and development assumptions, targets, and objectives with verifiable changes in water use and climate. Overall, implementation strategies should look broadly across public and private spheres to share the responsibility for water-climate plan realization.

* To ensure accountability, all strategies must include the following: a timeframe that identifies a specific schedule for action; an assessment of how coordination between various groups of stakeholders can best be utilized; a detailed allocation of specific roles and responsibilities; and standards by which the effectiveness of the particular strategy can be measured. Within this framework, the decision as to which strategies will be utilized and how, should be left to the designated agency’s discretion.[[30]](#footnote-30)
* Local governments should be enabled to utilize both micro and macro-level strategies for implementation.[[31]](#footnote-31) Micro-level strategies are generally focused on small-scale project site design, whereas macro-level strategies for water climate planning focus on coordinating programs and actions on a larger watershed or regional scale. Such strategies may take either a voluntary or mandatory form. Voluntary strategies could consist of working with public and private organizations and landowners to encourage instream flow leasing, whereas mandatory strategies could include the use of city and county ordinances or zoning and subdivision regulations.
* Water markets have been identified as one of the best vehicles for communities to manage water systems in light of unpredictable future climatic conditions. The use of this type of free-market system has been shown to promote flexibility in water allocation, allowing the successful balancing of human and environmental needs.[[32]](#footnote-32) The reality of shared water supply necessitates creative planning solutions, both for communities that have identified surpluses, and those that have found they are operating in deficit.[[33]](#footnote-33) Water marketing is one such creative mechanism, providing communities with a “flexible water ‘product’ that can be used, bought, or sold, depending on short and long-term goals.”[[34]](#footnote-34)
* Water markets exist and are operating throughout much of the western United States.[[35]](#footnote-35) However, the diversity of physical landscapes and water-related legal schemes found between the individual states suggests that water markets will be most effective when developed in light of “location-specific conditions and needs.”[[36]](#footnote-36) As a result, it is suggested, both on the state and local level, that in planning for the future, communities will benefit from analyzing restrictive barriers to the free trade of water resources that exist in their jurisdiction, and subsequently designing new policies that encourage development in market-based systems. If properly devised, these markets stand to contribute to sustainable development in addition to protecting identified community values.[[37]](#footnote-37)

**Examples:**

* King County in Washington State serves as a strong example of the important role of performance benchmarks in effective planning. There, 35 cities in the Seattle metropolitan area established and adopted a benchmarking system to monitor the effectiveness of countywide planning policies. The participating communities prepared a report tracking the outcomes described in the benchmarks.[[38]](#footnote-38) This system has proved effective in enabling King County to meet goals regarding surface and groundwater quality data, Chinook salmon returns, amount of forest land, decreases in domestic water consumption, and aquatic habitat continuity.[[39]](#footnote-39) Another example of how local governments may set water conservation targets is California’s target for twenty percent per capita reduction in urban water use by 2020 in the Bay-Delta area.
* There are a variety of options for micro-level implementation strategies including: green building requirements, xeriscaping requirements, and other small-scale efficiency focused requirements. California’s 1:1 offset requirement highlights the role micro-level strategies can play in successful implementation.[[40]](#footnote-40) In this program, local governments in the San Francisco Bay area require all new developments to offset its required water use with off-site water savings of equal amounts. Macro level strategies might take the form of Integrated Regional Water Management Planning, regional drought planning, or synthesizing multiple implementation tools together to form a comprehensive plan of attack.[[41]](#footnote-41) For example, in a study done by the Rocky Mountain Land Use Institute, “the vast majority of communities with water conservation ordinances in place couple those regulatory tools with a variety of educational materials and financial incentives to promote additional efficiency.”[[42]](#footnote-42)

## Intergovernmental Coordination

* Meaningful climate and water planning requires that local governments engage in horizontal and vertical coordination with other governmental entities and legislative bodies. As water and climate issues are inherently transboundary in nature, coordinating across governing jurisdictions within watersheds is critical. Additionally, holistic water climate planning necessitates integrating planning efforts within and amongst different levels of government that share a common water source.
* A primary mechanism to carryout intergovernmental coordination and joint planning could be through implementation agreements. Implementation agreements should give local governments enough flexibility and discretion to work with other entities in a variety of ways, while also maintaining legal durability and accountability.

**Examples:**

* The importance of Tribal consultation can be seen through numerous examples provided in federal law, including: statutory provisions within the National Historic Preservation Act, executive orders like E.O. 13175, and inter-departmental policies and principles like the USDA Tribal Consultation Regulations.[[43]](#footnote-43) Consultation should lead to reciprocal sharing of information that facilitates coordinated planning through mutual understanding, and more informed decision making. Noteworthy examples of mandated Tribal consultation requirements are exemplified in the Yakima County Plan.[[44]](#footnote-44)

## Periodic Update and Continuous Assessment

* Climatic uncertainty and increasing changes in western water systems require that the Water-Climate Element and its implementation be able to evolve and adapt to new data and changes in the hydrological system.[[45]](#footnote-45) Central to an adaptive watershed management approach is the flexibility of local planning to continually tailor implementation strategies to changing uses and conditions of water, while monitoring their effectiveness. Local government should not be constrained to follow specific implementation strategies without the ability to adjust and adapt to changing circumstances. Additionally, there should remain some discretion as local governments are situated in different ecological, economic, and societal contexts. Nonetheless, local governments must clearly define how water-climate goals and benchmarks will be implemented and acted on.
* Monitoring through performance benchmarks is crucial to meaningful climate water planning. Careful monitoring of predictions and management outcomes both advances scientific understanding and helps adjust policies and implementation strategies as part of an iterative learning process.[[46]](#footnote-46)

**Examples:**

* One legal mechanism to ensure accountability in an adaptive management approach that ensures monitoring feedback is pre-negotiated management commitments or “triggers.”[[47]](#footnote-47) Scholars Courtney Shultz and Martin Nie define the term trigger as “a type of pre-negotiated commitment made by an agency within an adaptive management or mitigation framework specifying what actions will be taken if monitoring information shows x or y.”
* The King County Comprehensive Plan Update aptly illustrates monitoring and adaptive management language to facilitate continuous planning and assessment. The need is summarized as, “King County policies, regulations, and actions to protect and restore the environment need to be assessed on an ongoing basis to ensure that they are having the intended effect, and that they are responding to changing conditions.”[[48]](#footnote-48)
1. *Drafter’s Note*: This model law is intended to be added as a subsection within a state’s existing enabling legislation authorizing or mandating the adoption of a local government comprehensive plan. Different states may use a term other than “comprehensive plan,” such as “land use plan” or “growth policy.” [↑](#footnote-ref-1)
2. *Drafter’s Note*: Because an adequate water supply is fundamental to supporting a community’s natural environment and human population, the word “shall” is recommended. A legislature could alternatively use “may,” which would empower local governments with the option of water-climate planning, but would not ensure that such planning occurs. [↑](#footnote-ref-2)
3. Watersheds rarely fall neatly within jurisdictional boundaries. Thus, it is important for local governments to think beyond their boundaries and take a watershed approach to water-climate planning. By necessity, this will also encourage a local community to collaborate with other jurisdictions that share the same watershed. [↑](#footnote-ref-3)
4. Under the West’s prior appropriation system, water may be legally transported outside of its watershed of origin. Thus, not all waters present within a local government’s jurisdiction are necessarily available for its use. [↑](#footnote-ref-4)
5. This comparison functions essentially like a “water budget” that should be in balance so that water supply needs do not exceed available water supply. [↑](#footnote-ref-5)
6. Because shared supply is a reality, both for communities with water surpluses and those with deficits, local governments should assess opportunities for water marketing or water acquisition. [↑](#footnote-ref-6)
7. Section B(1) authorizes various types of inter-governmental water planning. [↑](#footnote-ref-7)
8. A community’s progress towards achieving its water-climate goals should be measured against pre-determined targets which track progress and allow for reevaluation when targets are not met. These benchmarks should thus be integrated with the assessments and updates in § C. [↑](#footnote-ref-8)
9. Recognizing that different levels of government have authority over water (vertical authority), and that water resources span multiple jurisdictions (horizontal authority), this section enables both vertical and horizontal coordination. [↑](#footnote-ref-9)
10. To provide maximum flexibility in addressing unique water-climate issues, local governments should have discretion to enter into a broad range of agreements, without qualification, including but not limited to: interlocal agreements, implementation agreements, partnership agreements, and cooperative agreements. “Partnerships” and “collaborations” may be different than “agreements” because they can be more informal or more temporal in nature. [↑](#footnote-ref-10)
11. This power recognizes that non-governmental cooperation is crucial for local implementation of water-climate planning. [↑](#footnote-ref-11)
12. Coordinated research and data sharing not only enable local governments to form a more complete picture about water supply and climate, but enable them to share costs associated with creating and implementing a water-climate element. [↑](#footnote-ref-12)
13. *Drafter’s Note*: This power is limited to “advisory” bodies that lack regulatory authority, under the assumption that inter-governmental bodies exercising regulatory authority require specific, express state authorization. This section should be tailored to ensure consistency with a state’s specific laws regarding local government authority. [↑](#footnote-ref-13)
14. Because most Indian Tribes have extensive water rights holdings, local governments should engage in local-tribal coordination over shared water resources. Additionally, many Indian reservations contain non-Indian land holdings within reservation boundaries, which raises jurisdictional questions. To provide a uniform approach to land use planning on checkerboard land holdings such as these, a coordinated approach is recommended. [↑](#footnote-ref-14)
15. This precautionary, consultation approach with Indian Tribes mirrors that used by the federal government. *See, e.g.,* U.S. Dept. of Agriculture’s Tribal Consultation Reg. #1350-002 (Jan. 18, 2013). [↑](#footnote-ref-15)
16. Many Indian Tribes lack the resources to develop planning departments, let alone integrated water-climate planning programs. Thus, when local governments should be encouraged to support Tribal efforts to achieve coordinated planning. [↑](#footnote-ref-16)
17. Because of the changing and dynamic nature of water supply and climate, and the critical need to adaptively and quickly respond to water realities, local governments should assess their Water-Climate Element on an ongoing basis. This differs from the standard approach in planning, where a plan is typically updated after several years have elapsed. [↑](#footnote-ref-17)
18. The use of benchmarks and targets under §A(4)(f), is one way in which local governments can ensure regular assessment. [↑](#footnote-ref-18)
19. *Drafter’s Note*: These definitions should be inserted into the broader set of definitions contained in a state’s land use planning enabling act. [↑](#footnote-ref-19)
20. This requirement incorporates principles of Tribal sovereignty recognized in *Montana v. United States*, 450 U.S. 544 (1981). [↑](#footnote-ref-20)
21. For a lengthier discussion of these arguments, see Michelle Bryan, *A Next, Big Step For the West: Using Model Legislation To Create a Water-Climate Element In Local Comprehensive Plans*, 32 Washington Journal of Environmental Law and Policy 1 (2013). [↑](#footnote-ref-21)
22. “Not only do local units of government lack direct control of waters within their borders, another legacy of the 19th and 20th century centralization of water is the assumption that state regulation preempts indirect as well as direct local control because it is a matter of statewide concern.” A. Dan Tarlock, *The Potential Role of Local Governments in Watershed Management*, 20 Pace Envtl. L. Rev. 149, 164 (2002). [↑](#footnote-ref-22)
23. *E.g.,* Watershed Investment District Proposal, *available at* http://www.govlink.org/watersheds/9/plan-implementation/FundingMechanisms.aspx. [↑](#footnote-ref-23)
24. While the importance of documenting surface water use and availability is widely acknowledged, a similar understanding of groundwater resources has lagged far behind. Ironically, groundwater resources directly provide up to 45% of water consumed by irrigation and domestic use. Gary Bryner & Elizabeth Purcell, *Groundwater Law Sourcebook of the Western United States*, 1 (2003). In certain parts of the country, ground water contributions account for as much as 80% of total water use. Cal. Dep't of Water Res., Bulletin 118, California's Ground Water 140 (2003) (groundwater furnishes over 80% of the water used by agricultural and urban users in the Central Coast of California). As a direct result, over-drafting of groundwater and its associated negative impacts, remain a serious problem in vast areas of the High Plains (including the Ogallala Aquifer), Pacific Northwest, and Southwest. U.S. Geological Survey, Fact Sheet 103-3, Ground-Water Depletion Across the Nation 3-4 (2003), *available at* http://pubs.usgs.gov/fs/fs-103-03/JBartolinoFS<282.13.04<29.pdf. [↑](#footnote-ref-24)
25. Minnesota stands as a leading example of a state that has embraced a watershed planning approach. The state’s One Watershed One Plan is a part of larger state statutory scheme. The Minnesota Board of Water and Soil Resources explains the mission of the plan as aligning “local water planning on major watershed boundaries with state strategies towards prioritized, targeted and measurable implementation plans.” One Watershed, One Plan, *available at* http://www.bwsr.state.mn.us/planning/1W1P/index.html. [↑](#footnote-ref-25)
26. Barton H. Thompson, Jr., *Beyond Connections: Pursuing Multidimensional Conjunctive Management*, 47 Idaho L. Rev. 273, 281 (2011). [↑](#footnote-ref-26)
27. John R. Nolon, *The Land Use Stabilization Wedge Strategy: Shifting Ground to Mitigate Climate Change*, 34 WM. & MARY ENVTL. L. & POL’Y REV. 1, 11 (2009). [↑](#footnote-ref-27)
28. The EPA’s list of negative impacts includes: decreases in water quality, aquatic habitat health, and water quantity. U.S. Envtl. Prot. Agency, Climate Change Adaptation Plan 18 (June 2014), *available at* http://epa.gov/climatechange/pdfs/EPA-climate-change-adaptation-plan-final- for-public-comment-2-7-13.pdf. [↑](#footnote-ref-28)
29. Robin Kundis Craig posits that “ecosystems . . . already coping with other problems, such as pollution, habitat destruction, and loss of biodiversity, are [also] more vulnerable to climate change impacts than systems not already suffering from such stresses.” Robin Kundis Craig, *Principles for Climate Change Adaptation Law*, 34 Harv. Envtl. L. Rev. 9, 20-21 (2010). [↑](#footnote-ref-29)
30. American Planning Association, Growing Smart Legislative Guidebook: Model Statutes for Planning and the Management of Change 7–151 (Stuart Meck ed., 2002), *available at* http://www.planning.org/growingsmart/guidebook/print/ American Planning Association Legislative Guidebook. [↑](#footnote-ref-30)
31. Bryan, s*upra* note 21, at 47. [↑](#footnote-ref-31)
32. *See generally* Bonnie Saliba & David B. Bush, *Water Markets in Theory and Practice: Market Transfers, Water Values, and Public Policy* (1987); T.L. Anderson, *Water Rights: Scarce Resource Allocation, Bureaucracy, and the Environmen*t (1983); Bay Area Economic Forum (hereinafter BAEF), *Using Water Better: A Market-Based Approach to California's Water Crisis* (1991); Richard W. Wahl, *Water Marketing in California: Past Experience, Future Prospects* (1993) (Reason Foundation, Policy Study No. 162, 1993); Charles H. Howe, Dennis R. Schurmeier, and W. Douglas Shaw Jr., *Innovative Approaches to Water Allocation: The Potential for Water Markets*, 22 Water Resources Res. 439 (1986); H.J. Vaux Jr. and Richard E. Howitt, *Managing Water Scarcity: An Evaluation of Interregional Transfers*, 20 Water Resources Res. 785 (1994). [↑](#footnote-ref-32)
33. In 2003, a majority of states anticipated water shortages over the subsequent decade, even in the absence of drought conditions. G. Tracy Mehan III, *Energy, Climate Change, and Sustainable Water Management*, DAILY ENVT. REP. 4 (Dec. 4, 2007). [↑](#footnote-ref-33)
34. Robert David Pilz, *Lessons in Water Policy Innovation from the World's Driest Inhabited Continent: Using Water Allocation Plans and Water Markets to Manage Water Scarcity*, 14 U. Denv. Water L. Rev. 97, 127 (2010). [↑](#footnote-ref-34)
35. *Id.* [↑](#footnote-ref-35)
36. Pilz, *supra* note 36, at 127. [↑](#footnote-ref-36)
37. Markets, of course, do not always function perfectly and require a fine balancing of economics and public interest. *See e.g.*, Richard W. Wahl, *Market Transfers of Water in California*, 1 West-Northwest 49 (1994); Santos Gomez, Penn Loh, *Communities and Water Markets: A Review of the Model Water Transfer Act*, 14 Hastings W.-N.W. J. Envtl. L. & Pol'y 689, 690-91 (2008) (noting failures of California’s model water transfer law “despite more than 15 years of policy discussions and initiatives aimed at creating a long-term, state-wide market for water transfers.”). [↑](#footnote-ref-37)
38. King County Office of Budget and Strategic Planning, *King County Benchmarking Report*, *1996* (Seattle: The Office, December 16, 1996); *see also* City of Seattle, Office of Management and Planning, *Seattle’s Comprehensive Plan: Monitoring Our Progress* (Seattle: The Office, 1996). [↑](#footnote-ref-38)
39. *See generall*y King County Office of Strategic Planning and Performance Management, King County Benchmarks: Environment (2009), *available at* http://your.kingcounty.gov/budget/benchmrk/bench09/environment/Environment\_09.pdf. [↑](#footnote-ref-39)
40. Randle Kanous & Douglas Wallace, Symposium, *Optimizing Land Use and Water Supply Planning: A Path to Sustainability*, 4 Golden Gate U. Envtl. L.J. 145, 157 (2010). [↑](#footnote-ref-40)
41. John T. Andrew *et al., California Water Management: Subject to Change,* 14 Hasting W. Nw.J. Envtl. L. & Policy, 1470 (2008). [↑](#footnote-ref-41)
42. Sustainable Community Development Code: A Code for the 21st Century (Version 1.2) at 20. [↑](#footnote-ref-42)
43. The USDA offers the following as a definition of Tribal consultation, “Tribal Consultation is the timely, meaningful, and substantive dialogue between USDA officials who have delegated authority to consult, and the official leadership of Federally recognized Indian Tribes, or their designated representatives, pertaining to USDA policies that may have tribal implications.” *Available at* http://www.usda.gov/wps/portal/usda/usdahome?contentid=otr-tribal.xml. [↑](#footnote-ref-43)
44. Some sample text includes, “Coordinate planning efforts with the Yakama Indian Nation for lands under County land use jurisdiction that lie within the exterior boundary of the Yakama Indian Reservation. Facilitate coordinated planning for lands within the exterior boundary of the Yakama Indian Nation through reciprocal sharing of plans, studies, policy documents, maps, databases, and other information needed.” Further the plan exhibits sample language in the form of policies and declarations, “Cooperation with the Yakama Indian Nation is mutually beneficial. As a basis for cooperation, it is important to recognize that the Nation is a sovereign nation, with a status unlike that of other jurisdictions”… “Recognize and respect the sovereign nation status of the Yakama Indian Nations.” *See* Yakima County Plan at 186. [↑](#footnote-ref-44)
45. Bryan, *supra* note 21, at 58. [↑](#footnote-ref-45)
46. *See* King County Comprehensive Plan Update at 4-85. [↑](#footnote-ref-46)
47. *See* Schultz and Nie, *Decision-making Triggers*, *Adaptive Management, and Natural Resources Law and Planning*, 52 Natural Resources Journal 443 (2012). [↑](#footnote-ref-47)
48. King County Plan Update, *supra* note 48, at 4–86. [↑](#footnote-ref-48)