December 18, 2013

Eric Oppenheimer
State Water Resources Control Board
1001 I Street
Sacramento, CA 95812-0100
Sent via email: eric.oppenheimer@waterboards.ca.gov

RE: DRAFT GROUNDWATER WORKPLAN CONCEPT PAPER

Dear Mr. Oppenheimer:

California Coastkeeper Alliance (CCKA) represents 12 California Waterkeeper groups spanning the coast from the Oregon border to San Diego, and work to protect and enhance clean, abundant water flows throughout the state, for the benefit of Californians and California ecosystems. Environment Now (ENOW) partners with dozens of membership organizations aimed at protecting the environment. ENOW functions to support these organizations in creating measurably effective environmental programs that are aimed at the sustainability, protection, and restoration of California's water. On behalf of CCKA and ENOW, we appreciate the opportunity to provide comments on the State Water Resources Control Board (State Board) Draft Groundwater Workplan Concept Paper (Workplan), and urge the State Board to consider our proposed groundwater actions below, including the comments[1] submitted by the Klamath Riverkeeper, which we incorporate by reference.

We applaud the State Board for its objective to create a Workplan to ensure Water Boards address California's groundwater challenges. California is in desperate need of a strategic plan to manage its groundwater efficiently– particularly for regions where local governance is unwilling to protect aquifers from water pollution or groundwater overdraft. More than half of Californians rely on groundwater as a source of drinking water – in certain areas it is the only source of water. Water stored in California's aquifers is vulnerable, and is physically linked to the quantity and quality of surface waters. Groundwater is threatened by the same sources of pollution that threaten our surface waters, sources such as agricultural operations, landfills, septic systems, industrial operations, and over-pumping. Contamination, when present, will persist and often worsen, sometimes exposing Californians to dangerous levels of toxic contaminants like nitrates and arsenic. As climate change and population growth continue to put pressure on surface waters, Californians will become even more reliant on groundwater. The time is now for statewide leadership on California's critical groundwater issues.

While we appreciate the State Board identifying potential actions it and other entities can pursue to address groundwater challenges, the actions identified are inadequate to properly reduce groundwater pollution and overdraft in California. Regrettably, State Board's own Workplan identifies 21 various actions other entities may take, while only identifying 18 State Board actions. If the State Board is unwilling to take leadership on its own Workplan, then other government entities will lack the conviction

[1] Klamath Riverkeeper's Groundwater Workplan Comments, submitted to the State Water Board on December 12, 2013.

to do the same. Below we highlight numerous actions the State Board must to take to protect groundwater, but at a minimum, the Workplan must:

- Reflect the severity of contaminated drinking water and associated impacts to environmental justice communities by enshrining key principles such as the Human Right to Water and the "Polluter Pays" Principle;
- Provide clear guidance to Regional Boards calling for improved enforcement of existing regulatory tools available to improve groundwater quality;
- Recognize that groundwater and surface waters are physically interconnected, and that laws must be updated to accurately reflect the physical interconnection to protect instream flows from excessive groundwater withdrawals.
- Emphasize stormwater capture as a water quality control for stormwater runoff and encourage stormwater capture at the local level.

I. THE WORKPLAN SHOULD BE ORGANIZED AROUND CRITICAL GROUNDWATER CHALLENGES AND INCORPORATE ACTIONS FROM THE CALIFORNIA WATER ACTION PLAN.

a. The State Board should organize its Workplan around precise actions needed to address critical groundwater challenges.

The Workplan attempts to create a framework under which the Water Boards' groundwater activities can be organized, but the organization fails to identify the true challenges the State Board is attempting to address. In 2011, the State Board released a Draft Concept Paper: Development of Strategic Work Plan for Groundwater (Concept Paper).[2] The Concept Paper was well organized around three critical groundwater challenges: (i) degraded water quality; (ii) inadequate management of groundwater pumping; and (iii) increased impervious surfaces and channelization. The State Board still considers these three issues as critical for sustainable groundwater management. Page one of the current Workplan states, "Successful groundwater management requires prevention and cleanup of groundwater contamination, maximizing opportunities to recharge high-use basins, and ensuring that pumping occurs at sustainable levels over the long-term." We agree, and believe *the Workplan should be re-organized around i) groundwater pollution, ii) groundwater overdraft, and iii) groundwater recharge*.

The Board must also identify robust and specific actions to address the challenges of groundwater pollution, groundwater overdraft, and groundwater recharge. As previously mentioned, the Workplan only identifies 18 potential State Board actions to address the three critical challenges. Moreover, the Workplan's organization conceals the fact that actions for groundwater overdraft and recharge are negligible. For example, the entire Workplan only identifies one action the State Board can take to address overdraft: "Establish an interagency task force to improve the integration of agency authorities that could be used to address groundwater overdraft." Groundwater overdraft is an overwhelming issue in California, and is in desperate need of statewide guidance. As we discuss below, only establishing an interagency task force falls far short of the State Board's authority, and the necessary action needed to address groundwater overdraft. Our suggested organization allows the reader to understand the challenge being addressed by each action proposed, and will provide clarity regarding the need for more robust actions to address groundwater overdraft and recharge. The State Board's Workplan should *provide an equitable, more robust and specific set of actions to address ALL three critical groundwater challenges*.

The Workplan needs to make citable findings as a basis for other entities to act upon – including in legislation and legislative hearings. As currently written, the Workplan is passive, does not provide the true severity of California's groundwater problems, and only suggests "potential actions." We understand

[2] State Water Resources Control Board, Draft Concept Paper: Development of Strategic Work Plan for Groundwater (September 2011), available at http://www.swrcb.ca.gov/board_reference/2011fall/draft_staff_gw_concept_paper.pdf.

that groundwater can be a challenging and politically-divisive issue, but the Board needs to speak with authority throughout the Workplan. We appreciate the political sensitivities regarding groundwater, but it is these sensitivities that have led to our current state of polluted aquifers and overdraft. The State Board should *speak with authority throughout the Workplan, and provide citable findings for other entities to use as a credible rationale for their actions*.

b. The Workplan should serve as a compliment to the California Water Action Plan, and include all items identified in the Action Plan incorporated into the Workplan.

The Workplan omits several key groundwater actions identified in the California Water Action Plan. Considering the State Board's extensive authorship of the Action Plan, the Workplan should be revised to include all activities identified, including: the Right to Clean Water, the Polluter Pays Principle, and the needed commitment to protect wetland and riparian areas as key treatment systems for groundwater basins.

The Human Right to Clean Water, nor the associated impacts of groundwater contamination to the environmental justice communities, is mentioned once in the Workplan. Only a year ago the basic human right to safe, clean, affordable and accessible water became part of state policy when Governor Brown signed AB 685. AB 685 directs relevant state agencies – including the State Board – to advance the implementation of the right to clean water when those agencies make administrative decisions pertinent to the use of water for human consumption, cooking, and sanitary purposes. Clearly, the management of groundwater resources is pertinent to the use of water for human consumption, cooking, and sanitary purposes. If the audience of the Workplan is State and Regional Boards, the Governor's Office and other state entities, then the Workplan must *clearly recognize and enshrine the key principle of the Human Right to Clean Water*.

Beyond enshrining the Right to Clean Water, the Workplan does not reflect the severity of contaminated drinking water and associated impacts to environmental justice communities; and the urgency of taking action to address the problem. The following *actions within the California Water Action Plan to address contaminated drinking water should be incorporated in the State Board's Workplan*:

> **California Water Action Plan, Pg. 6 -** The administration will provide technical assistance, tools, and allocate dedicated funds for grant administration, project development and stakeholder collaboration to under-represented and economically disadvantaged communities to promote greater participation and success in regional grant programs.
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> **California Water Action Plan, Pg. 12 –** Throughout the state, groundwater basins are contaminated by historic manufacturing and farming practices. This water is an important resource in itself for the future, and these basins will be critical storage repositories in the future. The Department of Toxic Substances Control and the State Water Board will develop recommendations to prevent the spread of contamination, accelerate cleanups and protect drinking water.
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> **California Water Action Plan, Pg. 13 –** The administration will work with the Legislature to establish a stable, long-term funding source for provision of safe drinking water and secure wastewater systems for disadvantaged communities. The funding will be made available through a framework of statutory authorities for the state, regional organizations, and county agencies that will assess alternatives for providing safe drinking water and wastewater, including regional consolidation, and to develop, design,

implement, operate, and manage these systems for small disadvantaged communities impacted by contaminated drinking water and lack of sanitary wastewater infrastructure.

The Workplan does not adequately enshrine the Polluter Pays Principle. The Workplan only offers a recommendation to others to "[e]stablish a funding source that also addresses liability for cleanup of contaminated sites where responsible parties are unavailable, unable, or unwilling to pay for cleanup." This recommendation is vague and generic, and places the responsibility on other agencies to collect fees. As the agency responsible for California's water quality, it is the State Board's responsibility to assess polluter fees on those responsible for polluting groundwater. The Workplan should *include the Action Plan's action of the Polluter Pays Principle*:

> **California Water Action Plan, Pg. 13 –** The administration will direct agencies to identify areas where user and/or polluter fees may be appropriate. The agencies will assess the following: Areas where users may not be fully funding the costs or impacts associated with their use, instances where polluters are not able to diminish their pollution and have not adequately accounted for the impacts of that pollution, and opportunities to use fees to incentivize positive behavior. The agencies will provide recommendations on fees, who would pay them, how they would be collected, and how they would be used.

Finally, the State Board needs to commit to wetland and riparian protection as key treatment systems for groundwater basins. The Action Plan finds that "[t]he variability of natural water flows created vibrant and resilient habitat for many species and functioned to store water, recharge groundwater, naturally purify water, and moderate flooding." The State Board should *identify opportunities to coordinate with other state agencies that are working towards wetland and riparian protection*:

> **California Water Action Plan, Pg. 8 –** The Department of Fish and Wildlife in coordination with other state resource agencies will restore 10,000 acres of mountain meadow habitat in strategic locations in the Sierra Nevada and Cascade mountain ranges, which can increase groundwater storage and provide habitat for more than 100 native species, many of which are at risk as threatened or endangered.
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> **California Water Action Plan, Pg. 9 –** The Department of Fish and Wildlife in coordination with other state resource agencies will develop at least 10 off-channel storage projects, modernize at least 50 stream crossings, and implement at least 10 large scale habitat projects along the California coast in strategic coastal estuaries to restore ecological health and natural system connectivity, which will benefit local water systems and help defend against sea level rise.
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> **California Water Action Plan, Pg. 9 -** The Department of Fish and Wildlife in coordination with other state resource agencies will develop and implement a water acquisition, management, and water use efficiency strategy in coordination with the U.S. Fish and Wildlife Service, U.S. Bureau of Reclamation, Central Valley Project Improvement Act refuge water program, and Central Valley Joint Venture to secure reliable and affordable water for managed wetlands statewide. The administration will work with the Legislature, and others, to secure funding to acquire water and to replace or repair the most in need conveyances for delivering water for wetlands.

In order for the Workplan to be comprehensive and work as a compliment to the California Water Action Plan, several omitted issues should be incorporated, including the Human Right to Clean

Water, and associated actions to address drinking water contamination for environmental justice communities, the Polluter Pays Principle, and riparian protection of groundwater basins.

II. THE WORKPLAN SHOULD IDENTIFY PRECISE ACTIONS TO ADDRESS NITRATE AND INDUSTRIAL POLLUTION IMPACTS TO GROUNDWATER QUALITY.

a. Provide clear guidance to Regional Boards and call for improved enforcement of existing regulatory tools to improve groundwater quality.

The Water Boards have the necessary regulatory tools to improve groundwater quality – they only lack the will to enforce them. Rather than re-create new actions to address groundwater pollution, the State Board should reinforce its current regulatory system, and strive to provide better enforcement of groundwater pollution.

The State Board needs to provide Regional Board guidance on concentrated animal feeding operations (CAFOs). CAFOs are a serious source of pollution to California's groundwater. CAFOs generate manure, litter, process wastewater, and stormwater runoff, which contain high levels of ammonia, bacteria, biochemical oxygen demand, nitrate, phosphorus and other salt compounds. The Santa Ana Regional Water Board estimates 7.9 million gallons of wash water, which contains approximately 10 percent of the manure generated by milking cows, is discharged to the ground each day. This has resulted in groundwater impairment from nutrients, pathogens, salinity/Total Dissolved Solids (TDS)/chlorides, and suspended solids. Regional Boards are not properly enforcing existing regulations regarding CAFOs. The State Board should *provide Regional Board guidance on CAFOs*.

We applaud the State Board for identifying the need to "[c]larify how the State Water Board's Antidegredation Policy applies to groundwater." However, the State Board needs to go further and not only clarify that the Antidegredation Policy applies to groundwater, but declare that the Policy's analysis must be properly applied in all permits and policies. The Antidegredation Policy (Resolution No. 68-16) applies to all waters of the state. No clarification needs to be made that the Policy applies to surface waters, yet Water Boards consistently ignore their responsibility to apply the Policy and perform a proper anti-degradation analysis. Simply clarifying that the Policy applies to groundwater is not enough, the State Board must *mandate that Regional Boards implement the Policy and perform a proper anti-degradation analysis on both surface and groundwater*.

The Workplan should include an action to provide statewide Ag Waiver standards to protect groundwater quality. Discharges from irrigated lands affect water quality by transporting pollutants including pesticides, sediment, nutrients, salts (including selenium and boron), pathogens, and heavy metals from cultivated fields into groundwater. Many groundwater basins are impaired because of agricultural pollution from pesticides, nitrates, and salt contamination. Statewide, approximately 9,493 miles of rivers/streams and some 513,130 acres of lakes/reservoirs are listed on the 303(d) list as being impaired by irrigated agriculture. Likewise, groundwater basins are so degraded from agricultural activities that Regional Boards have resisted any regulatory oversight. The State Board should *develop and adopt statewide meaningful standards for irrigated lands.*

The Workplan should include an action to enforce stronger regulatory controls for septic tanks. In 2000, the Legislature passed Assembly Bill 885, directing the State Water Board to adopt a statewide septic systems policy to protect water quality, public health, and aquatic habitats from wastewater discharges. Septic systems regulations are long overdue. The Workplan should include an action to *develop meaningful septic tank regulations*, including:

- Limit discretion of local agencies to regulate septic systems;
- Require regulation of all existing septic systems;

- Require septic systems to upgrade to advanced treatment within five years, unless covered under a TMDL or actively pursuing a sewer connection;
- Require more protective requirements and performance criteria for advanced treatment systems;
- Require implementation plans with compliance deadlines for EPA-adopted nutrient and pathogen TMDLs.

b. Require collection and reporting of raw groundwater data—not just aggregated data—to increase transparency and accountability to better inform the public.

California cannot meaningfully manage its groundwater without comprehensively monitoring. Nitrate pollution is widespread throughout California, and has impacted significant portions of aquifers in the southern Central Valley and Central Coast Regions, and in part of the Los Angeles Region. However, information is not available to the public to understand if they are at risk from nitrate contamination. Nitrates can cause significant risks to public health. The health risks of nitrate pollution include methemoglobinemia or "blue baby syndrome", non-Hodgkin's lymphoma, diabetes, Parkinson's disease, Alzheimers, endrocrine disruption, and cancer of the organs. The public should be made aware of these health risks, and where groundwater supplies offer the most acute risk to human health. To increase transparency and accountability, the Workplan should identify actions to establish monitoring standards, and developing a management framework that will be implemented by regional and local agencies.[3] Specifically, the Workplan should include an activity for the State Board to require *raw data be made available by local agencies and groundwater dischargers*, not just aggregate data as is being done in the Central Valley and on the Central Coast for groundwater.

Groundwater basins throughout the State have industrial impacts from various sources such as manufacturing sites, leaking underground storage tanks, and chemical spills located primarily around urban and commercial land use areas. Sharing pollutant source data with the public and regulators would allow for better decisions in all areas of groundwater management including prioritizing groundwater cleanup in high-use areas. The Workplan should include an action to *identify and prioritize cleanup of industrial pollution hot spots by collecting pollutant source data through groundwater monitoring*.

c. Require fertilizer reporting and control nitrate applications.

With the Administration's anticipated 2014 Budget allocating authority of California's Drinking Water Program to the State Board, the Board must take action to address nitrate pollution. Nitrogen fertilizer is pervasive in agriculture practices, and is linked to water quality and human health concerns. According to a 2012 report to the Legislature by the University of California, 96 percent of nitrate contamination is cropland treated with synthetic fertilizer or animal manure, which can leach from the root zone into groundwater below.

Data limitations and misinformation often constrain the development of solutions to regulate nitrate applications. To properly regulate nitrates, the State Board should evaluate existing data on nitrogen use, estimate typical nitrogen fertilization rates for common crops, analyze historical trends in nitrogen use, compare typical nitrogen use to research-established guidelines and identify cropping systems that have significant influence on the state's nitrogen cycle. To minimize nitrate pollution in California's groundwater basins, the Workplan should require statewide Ag Waiver guidance to require *fertilizer reporting and specific best management practices (BMPs) to control nitrate applications*.

[3] Rhead Enion, Under Water: Monitoring and Regulating Groundwater in California, Anthony Pritzker Environmental Law and Policy Briefs: Policy Brief No. 1, pg. 2 (July 2011).

d. Utilize other state agencies to regulate nitrate application, and improve efficacy of well construction and cross-contamination.

The State Board should acknowledge that the Department of Pesticide Regulation (DPR) should obtain public trust responsibilities over pesticides and their discharge into our waterways. To mitigate and restore waters degraded by fertilizer application, DPR should set a steep fertilizer tax to raise money for communities impacted by agricultural activities. Furthermore, DPR should register and control similar agricultural pesticides. The Workplan should *encourage DPR to regulate fertilizer and pesticide application* simultaneously to provide a funding source for disadvantaged communities, dis-incentivize the over application of fertilizers and like-pesticides, and to track the location and quantities of fertilizer application.

The State Board should improve coordination with the Department of Water Resources (DWR) on issues such as well construction and aquifer cross-contamination. 20 years has passed since DWR last updated its Water Well Standards.[4] Updates to the standards are apparent, with over 4,000 public drinking-water wells shut down since 1984 as a result of groundwater contamination.[5] Specifically, there is a need for stronger standards to prevent cross-contamination of aquifers. Many groundwater basins in California have been shown to have 1,000 or more abandoned wells and significant cross-contamination of aquifers.[6] The Workplan should include an action to *coordinate with DWR to update and strengthen the current Water Well Standards, and to prevent future cross-contamination of aquifers.*

III. THE WORKPLAN SHOULD IDENTIFY PRECISE ACTIONS TO CONTROL GROUNDWATER PUMPING AND ADDRESS OVERDRAFT.

It is no secret that California's lack of groundwater oversight is directly contributing to overdraft. California is the nation's largest producer of groundwater, extracting nearly twice as much as the next state, Texas.[7] Approximately 30 percent of California's urban and agricultural water needs are supplied by groundwater in an average year, a figure that rises to 40 percent or more during periods of drought. Unfortunately, California is pumping more groundwater than recharging into aquifers – the definition of overdraft. Overdraft is associated with a variety of harms, including land subsidence, pumping failures and water quality problems.[8] Decreased groundwater pressure near the coast allows salt water intrusion; and allows polluted water to contaminate cleaner parts of a groundwater basin.[9] Less water also means less dilution of harmful pollutants in the basin, again resulting in degradation of water quality and loss of water supply potential.[10]

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[4] Department of Water Resources website, Well Standards webpage (last visited on December 13, 2013), *available at* http://www.water.ca.gov/groundwater/well_info_and_other/well_standards.cfm.
[5] Anthony Saracino and Harrison Phipps, Groundwater Contaminants and Contaminant Sources, pg. 1 (2002), available at http://groundwater.ucdavis.edu/files/136257.pdf.
[6] *Id* at 8.
[7] Noah Garrison, Robert Wilkinson, and Richard Horner, A Clear Blue Future, pg. 18 (August 2009), available at http://www.nrdc.org/water/lid/files/lid_hi.pdf.
[8] *Supra* Note 2, at 5.
[9] *See, e.g.*, Water Replenishment District of Southern California, *Battling Seawater Intrusion in the Central & West Coast Basins*, 13 WRD Technical Bulletin (Fall 2007), http://www.wrd.org/engineering/seawater-intrusion-los-angeles.php.
[10] UCLA, 8; Ella Foley-Gannon, *Institutional Arrangements for Conjunctive Water Management in California and Analysis of Legal Reform Alternatives*, 14 Hastings W.-N.W. J. Envtl. L. & Pol'y 1105, 1107 (2008) (*originally published in* 6 Hastings W.-N.W. J. Envtl. L. & Pol'y 273).

a. Develop an official Board position recognizing that groundwater and surface water are physically interconnected.

California's groundwater laws are the most archaic in the nation. Only California continues to treat groundwater separate from surface water, despite our scientific understanding of the physical connection between the two.[11] The scientific community has overwhelmingly found that groundwater and surface water are connected, such that withdrawal of groundwater from a basin may affect the water level of nearby surface streams and rivers and vice versa.[12]

California's groundwater laws must be updated to accurately reflect the physical interconnection of surface water and groundwater. For example, in the Klamath watershed, numerous rivers and tributaries are impaired by flows due to groundwater overdraft from nearby farmland. Recognizing the interconnectedness of ground and surface water flows in the Workplan is a significant step in addressing the depletion of surface flows from groundwater pumping. The Workplan should include an action to *adopt a resolution officially recognizing the physical interconnection between surface and ground waters.*

Furthermore, the Workplan should *address not only groundwater overdraft, but seasonal drawdown of groundwater tables that reduce surface water flows*. As a recent study has demonstrated on the Scott River, groundwater drawdown reduces seasonal surface water flows even if the aquifer recharges every winter.[13]

b. Apply water rights permitting to groundwater pumping.

The failure of California's legislature to include groundwater in the modern Water Code of 1913 and its subsequent failure to regulate groundwater have resulted in the fragmented and often ineffective management of our precious groundwater resources.[14] Among Western states, only California and Texas still allow the use of groundwater without a permit or other means of tracking and regulating users.[15] The Water Code provides the State Board with authority to regulate the pumping from "subterranean streams," but not "percolating water." As legal scholar Joseph Sax has noted, "'subterranean streams' and 'percolating groundwater' bear little, if any, relationship to geological realities. Indeed, these water law terms are geographic concepts fundamentally at odds with science's understanding of water's movement."[16] In fact, the State Board agreed, calling this legal distinction "meaningless."[17] Other legal scholars have called for legal reform, recommending the scientifically unsupportable distinction between percolating groundwater and subterranean streams be eliminated from the California Water Code.[18]

California's Legislative Analyst's Office (LAO) has also called for an end to the unsupportable distinction between subterranean streams and percolating water. The LAO recently recommended that California "realign the water rights system" and "establish a state-administered water rights system for

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[11] *Supra* Note 1, at 1.
[12] *Id* at 5.
[13] *See* S.S. PAPADOPULOS & ASSOCIATES, INC., Groundwater Conditions in Scott Valley (March 2012), *available at* http://www.karuk.us/images/docs/press/2012/Groundwater_Conditions_in_Scott_Valley.pdf.
[14] Ellen Hanak et al., Managing California's Water: From Conflict to Reconciliation, pg. 111 (2011).
[15] *Supra* Note 2, at 1.
[16] Joseph L. Sax, *We Don't Do Groundwater: A Morsel of California Legal History*, 6 U. Denv. Water L. Rev. 269, 271 – 72. (2003).
[17] Joseph L. Sax, *We Don't Do Groundwater: A Morsel of California Legal History*, 6 U. Denv. Water L. Rev. 269, 273 (2003); Barton H. Thompson, Jr., *Beyond Connections: Pursuing Multidimensional Conjunctive Management*, 47 Idaho L. Rev. 273, 280 & n.27 (2011) (describing how Arizona, California, Oklahoma and Texas have not integrated surface and groundwater management, although Arizona courts have moved that direction by broadly defining river subflow).
[18] *Supra* Note 2, at 2.

groundwater."[19] According to the LAO, "reevaluating how groundwater is managed is necessary if it is to achieve its full potential as a reliable source of water."[20] The LAO goes further, recommending to "[r]emove the legal distinction between percolating groundwater and subterranean streams."[21] This, the LAO claims, will bring the "law in line with modern science [and] serve to reduce litigation costs for both private and public entities."[22] The Workplan should incorporate these recommendations and call on the Legislature to *revise the Water Code to remove the distinction between percolating groundwater and subterranean streams, and apply water rights permitting to all groundwater pumping.*

c. Apply and enforce the Waste and Unreasonable Use Doctrine to groundwater pumping.

The Workplan accurately states that "the State Water Board has broad constitutional authority to prevent the waste and unreasonable use of the State's water resources (including groundwater)." The California constitution prohibits "the waste or unreasonable use" of waters of the state, and further notes that the right to water "shall be limited to such water as shall be reasonably required for the beneficial use to be served."[23] In addition, Water Code Section 275 authorizes the State Board to "take all appropriate proceedings or actions" to "prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion."[24] The State Board has rarely exercised its authority under these provisions, but the authority exists.

The current management of groundwater leads to waste and unreasonable use. The state does not record most groundwater use, even though groundwater makes up over 30 percent of total use. And though there has been some progress since the early 1990s, water use is still unmetered—and not priced by volume—in some agricultural and urban districts.[25] Imposing needed water conservation programs in urban areas will be set back if municipalities turn to exploitation of groundwater resources. Encouraging farmers to switch crops to increase water conservation or to implement more water-efficient irrigation techniques to reduce runoff pollution will be difficult if groundwater is cheap, available and unregulated.[26] In order for groundwater to be priced by volume, and to encourage laudable conservation efforts to move forward, the Workplan should include an action for the State Board to *apply the Unreasonable Use Doctrine to groundwater pumping*.

Specifically the Workplan should identify an action to use its existing authority under Water Code Section 275 to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of groundwater pumping, and its existing authority under the Article X, Section 2 of the California Constitution to limit the use of groundwater to such water as shall be reasonably required for the beneficial use to be served. Moreover, the Workplan should include an activity to create a Reasonable Water Use Unit within the State Board, with a mission to enforce the prohibition against the waste or unreasonable use of groundwater.

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[19] Cal. Legis. Analyst's Office, Water Rights. Issues and Perspectives (2009), 10, 11. http://www.lao.ca.gov/handouts/resources/2009/water_rights_issues_perspectives_031009.pdf.
[20] Taylor, Mac, Cal. Legis. Analyst's Office, Liquid Assets: Improving Management of the State's Groundwater Resources. Improving Management of the State's Groundwater Resources (2010), 3. http://www.grac.org/laobrief.pdf.
[21] Legislative Analyst's Office, Improving Management of the State's Groundwater Resources, pg. 7 (February 2011), *available at* http://www.lao.ca.gov/handouts/resources/2011/Improving_Management_of_Groundwater_Resources_020111.pdf.
[22] *Id*.
[23] Cal. Const. Art. X §2.
[24] Water Code Section 275 states, "The department and board shall take all appropriate proceedings or actions before executive, legislative, or judicial agencies to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of water in this state."
[25] Supra Note 14, at 14.
[26] *Supra* Note 2, at 2.

d. Require adjudication of groundwater basins impacted by water quality.

We understand the State Board's limited legal authority to regulate groundwater pumping. Unlike most other western states, California relies on local users to manage groundwater. Unfortunately, only a few areas—principally urbanized parts of Southern California and the Silicon Valley—have established local management entities that exercise direct control over groundwater through adjudicated basins or special management districts that regulate pumping volumes and charge for water.[27] However, the State Board does have the authority to adjudicate groundwater basins when excessive groundwater pumping leads to water quality impairment. For example, the Salinas Groundwater Basin should have been adjudicated by the State Board decades ago due to the declining groundwater quality resulting from overdraft. The Workplan should include an action to *conduct a test-case adjudication of a groundwater basin with water quality impairments due to groundwater overdraft.*

e. Require mapping of groundwater overdraft basins; provide overdraft regulations for those areas, including pumping of underground channels that are depleting surface water flows.

First, we applaud the Workplan's action to "[c]omplete CASGEM Program implementation, including: (1) statewide prioritization of basins; (2) conducting groundwater elevation monitoring in areas where voluntary monitoring is not occurring; and (3) identifying basins subject to critical overdraft." CASGEM Program implementation should be identified as a critical priority in the Workplan.

Additionally, the State Board needs to begin conjunctively managing California's surface and ground waters. Most western states, unlike California, have moved to integrate groundwater and surface water management.[28] Other states, including Colorado and Arizona, have statewide groundwater management regulations or permit groundwater use just as they permit surface water appropriation.[29] A necessary step for California to begin integrating its surface and ground water management is to *map and identify situations where groundwater pumping is depleting surface waters, and at a minimum, regulate those situations when the pumping occurs in underground channels.*

f. Identify local ordinances to be advanced as best management practices, and establish groundwater management guidelines for local governments.

The Workplan states that "local and regional groundwater management efforts have produced impressive results in many areas of the State." Rather than making this blanket statement, the Workplan should include specific examples of where local efforts have produced "impressive results." The Workplan should also provide an action to *identify local ordinances as best management practices*. For example, Monterey enacted an ordinance requiring all groundwater pumping to be reported. The identification of best management practices, such as the Monterey ordinance, should be used to *establish statewide groundwater management guidelines for local governments*.

[27] *Supra* Note 14, 17.
[28] Barton H. Thompson, Jr., *Beyond Connections: Pursuing Multidimensional Conjunctive Management*, 47 Idaho L. Rev. 273, 279 & n.27 (2011) (describing how Arizona, California, Oklahoma and Texas have not integrated surface and groundwater management, although Arizona courts have moved that direction by broadly defining river subflow).
[29] *See* Barbara T. Andrews & Sally K. Fairfax, *Groundwater and Intergovernmental Relations in the Southern San Joaquin Valley of California: What Are All Those Cooks Doing to the Broth?*, 55 U. Colo. L. Rev. 145, 152–54 (1984); The Governor's Commission to Review California Water Rights Law, Cal. Exec. Order No. B-26-77 (May 11, 1977) [hereinafter "Governor's Commission"].

g. The Department of Fish and Wildlife should be actively involved in California's groundwater management to prevent further reductions of instream flows.

The California Department of Fish and Wildlife (DFW) has enforcement authority over surface waters, and should be more involved in California's management of groundwater given the physical connection between surface and groundwater. Efforts to properly value surface water, while laudable, increases the need for better groundwater management. If users are charged more for surface water supplies, they will naturally switch to less regulated groundwater, undermining water conservation and efficiency programs. Legal scholar Joseph Sax best sums up why DFW needs to be involved in groundwater management:

> People who have access to groundwater can just pump it. They need no one's permission, and no one regulates their use. Water users like it this way; groundwater is a sort of ace-in-the-hole. When surface water supplies are restricted, they can pump groundwater as a substitute, and so it functions as one form of insulation against both drought and increasing regulation.[30]

This is the situation California finds itself in. State agencies attempting to protect instream flows are fighting a losing battle as water users simply move from surface to groundwater supplies. If surface water regulations are to succeed, then agencies such as DFW need to be involved in both surface and groundwater management. The Workplan should identify an action for *DFW to become actively involved in the regulation groundwater when pumping is having an adverse effect on instream surface flows*.

IV. THE WORKPLAN SHOULD IDENTIFY PRECISE ACTIONS TO PROMOTE GROUNDWATER RECHARGE BY ADVANCING STORMWATER CAPTURE.

The potential to use groundwater to increase water supply, by introducing water from another source into the ground as a storage basin, or encouraging the natural refilling of groundwater basins, is a significant option to address California's water supply needs. However, successful implementation of this solution is hampered because groundwater use is generally not regulated or monitored at the state level (in contrast to surface water). The State Board should leverage work already occurring within the stormwater program and the associated stormwater permits to identify key recharge locations to encourage stormwater capture at the local level.

a. Leverage efforts underway by the Water Boards' Stormwater Division to promote stormwater retention and groundwater infiltration through Municipal Stormwater Permits.

To increase groundwater infiltration, the State Board needs to require all municipal stormwater permits to retain stormwater to pre-development standards. This can be accomplished by creating Watershed Management Zones that map the hydraulic potential for groundwater infiltration. In 2007, the Central Coast Water Board formed the Clean Groundwater Team to develop a work plan focusing on creating a groundwater recharge area protection policy (GWRAPP). The objective of the GWRAPP work plan is to identify, prioritize, implement, and monitor groundwater by defining groundwater recharge areas, establishing minimum criteria for groundwater recharge area identification and mapping, providing planning strategies to protect these locations, and identify stakeholders to provide feedback and assist with implementing groundwater recharge area protection strategies. A similar statewide policy is critical to increase groundwater infiltration. The Workplan should include an action to *require statewide development of watershed management zones for all municipal stormwater permits, and to require all municipal stormwater permittees to require stormwater retention to pre-development standards*.

[30] Joseph L. Sax, *We Don't Do Groundwater: A Morsel of California Legal History*, 6 U. Denv. Water L. Rev. 269, 270–71 (2003).

b. Identify incentives to implement stormwater capture at the local level, and compel land use zone planning to encourage groundwater recharge.

Beyond site-specific retention standards in stormwater permits, stormwater capture strategies and techniques can be applied on a watershed scale to substantially increase groundwater recharge. Many local water agencies, especially in southern California, are expanding their efforts to increase their local water supplies due to limitations placed on imported water or increases in local water demands. Rainwater is the primary source that recharges Southern California aquifers, and the Metropolitan Water District of Southern California recently estimated that ground water basins in the southern California region have 3.2 million acre-feet of storage space available for possible recharge.[31] This existing capacity underlines the potential for stormwater capture practices that emphasize infiltration to greatly enhance local groundwater supplies. The Workplan should *compel land use zone planning to encourage groundwater recharge in urbanized areas*.

The Workplan should identify incentives to implement stormwater capture at a watershed level. One of the greatest challenges limiting widespread stormwater capture is lack of funding. Prop 218 has limited local municipalities' efforts to implement stormwater capture projects on a watershed basis. The Workplan should identify the *use of cap-and-trade revenues to fund stormwater capture projects as a means to develop low-energy water supply options*. Moreover, the Workplan should *encourage the Strategic Growth Council to use its Prop 84 funding – intended for water supply projects like stormwater capture – for construction of watershed-scale stormwater capture projects*.

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California is an innovative leader of progressive environmental laws and policies. Unfortunately, California is also notorious for its archaic groundwater regulations—lack thereof. Our state agencies continue to ignore the ever-growing challenges facing groundwater supplies. The State Board's effort to create a groundwater strategic plan is commendable; and we are grateful to the State Board for considering our comments. The Alliance and ENOW will continue working with the State Board to achieve a Workplan that prevents groundwater pollution, reduces groundwater overdraft, and encourages groundwater recharge.

Sincerely,

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[31] Supra Note 7, at 6.