August 30, 2019

Nancy Vogel
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Sacramento, CA 95814

Submitted electronically to: input@waterresilience.ca.gov

RE: CALIFORNIA WATER RESILIENCE PORTFOLIO INITIATIVE

Dear Director Vogel:

As members of WaterNow Alliance (WaterNow), we write to support the State of California's development of a Water Resilience Portfolio (Portfolio) and appreciate this opportunity to provide our input on the Portfolio's ongoing development. WaterNow is a nonprofit forum for local water leaders dedicated to sustainable, affordable, and climate resilient water strategies. These comments are responsive to Executive Order N-10-19 and the public engagement questions set out by the Agencies[1] here, and cover these topics:

- How the state can help communities ensure safe, affordable drinking water and deliver the most meaningful water use efficiency gains by supporting accelerated investments in localized water infrastructure;
- How the state can better enable local and regional water districts to capture, store and move water by supporting broad deployment of distributed green infrastructure;
- How the state can begin to close data gaps and strengthen partnerships with local water providers.

Expanded and Accelerated Investment in Localized, Onsite Water Infrastructure is a Critical Path to Helping Communities Ensure Safe, Affordable Drinking Water and Deliver Meaningful Water Use Efficiency Gains.

As set out in Executive Order No-10-19, the Portfolio is intended to embody several guiding principles:

- Prioritize multi-benefit approaches that meet multiple needs at once
- Utilize natural infrastructure such as forests and floodplains
- Embrace innovation and new technologies
- Strengthen partnerships with local, federal and tribal governments, water agencies and irrigation districts, and other stakeholders

Localized water infrastructure strategies embody each of these principles. State support for expanded and accelerated investments in these resilient, sustainable solutions would be

[1] By Agencies we mean the California Natural Resources Agency, the California Environmental Protection Agency, and the California Department of Food and Agriculture, as set out in Executive Order N-10-19.

one of the most impactful ways that the State could help California's water providers ensure safe, affordable drinking water and deliver the most meaningful water use efficiency gains. This support could come in the form of both: (1) providing better access to state funding for these solutions, and (2) just as critically, state support for local agencies to expand their capacity to finance these solutions themselves.

Cities, towns, and public water utilities provide drinking water to almost the entire U.S. population and represent 95% of all spending on urban drinking, wastewater, and stormwater water infrastructure nationwide.[2] California is no different.[3] These local agencies, like ours, manage challenges with ensuring access to clean, safe, and reliable water, and integrate these functions to the maximum extent possible with wastewater and stormwater management. A new generation of localized water solutions is coming online with extraordinary but as yet untapped potential to address these supply, water quality, and environmental contamination challenges. Localized, "distributed infrastructure" includes a wide range of water saving and managing technologies and solutions installed at properties dispersed across communities. These technologies and practices serve the same functions as conventional, centralized infrastructure—they provide clean drinking water and manage wastewater and stormwater. However, these strategies are often more sustainable and resilient because they use resources more efficiently, are often implemented as nature-based solutions, and have greater flexibility to respond to environmental change.[4] In its *Climate Ready Water Utilities: Final Report of the National Drinking Water Advisory Council*, the National Drinking Water Advisory Council identified use of localized infrastructure as a key element of water resource management by climate-ready utilities given their flexibility and cost-effectiveness.[5]

Localized strategies also represent new technologies and provide innovation opportunities, as California works to modernize its infrastructure.[6] Far more so than conventional water infrastructure, decentralized water strategies are able to provide multiple benefits for local communities and the environment, including increased wildlife habitat, improved water quality, improved air quality, local green jobs, increased property values, keeping rates low, increased energy efficiency, reduced greenhouse gases, increased open space,

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[2] Not Everything is Broken, pp. 38, 60, RAND 2017, available at https://www.rand.org/pubs/research_reports/RR1739.html, accessed January 16, 2019.
[3] California Water Plan Update 2018, p. 1-8, available at https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2018/Final/California-Water-Plan-Update-2018.pdf.
[4] Nancey Green Leigh & Heonyeong Lee, *Sustainable and Resilient Urban Water Systems*, pp. 8-9, Sustainability, Vol. 11 (2019), https://www.researchgate.net/publication/331066784_Sustainable_and_Resilient_Urban_Water_Systems_The_Role_of_Decentralization_and_Planning; Optimizing the Structure and Scale of Urban Water Infrastructure: Integrating Distributed Systems, p. 5, The Johnson Foundation at Wingspread, August 2014, available at https://www.johnsonfdn.org/sites/default/files/reports_publications/CNW-DistributedSystems.pdf, last accessed January 3, 2019.
[5] https://www.epa.gov/sites/production/files/2015-10/documents/6crwu-ndwac-final-report-12-09-10-2.pdf
[6] See, e.g., Nancey Green Leigh & Heonyeong Lee, *Sustainable and Resilient Urban Water Systems*, p. 13, Sustainability, Vol. 11 (2019), https://www.researchgate.net/publication/331066784_Sustainable_and_Resilient_Urban_Water_Systems_The_Role_of_Decentralization_and_Planning, last accessed August 7, 2019.

improved public health, and reduced crime.[7] The potential for widescale adoption of localized technology and strategies to address California's urban water challenges is significant. The Pacific Institute has estimated that with existing technologies and policies Californians could reduce current urban water use by 3-5 million acre-feet per year depending on the level of local investment in these systems.[8]

While many local utilities such as ours have adopted these initiatives, including conservation, efficiency, onsite reuse, or distributed green infrastructure programs, these programs are usually relatively small scale. Investing in localized solutions, particularly for efficiency, at much higher levels is essential if California is to realize the benefits that can accrue from these solutions in the aggregate. By deploying efficiency and other onsite water management strategies to their full potential, California's urban water providers can better ensure that communities of all sizes have affordable and reliable access to clean, healthy drinking water, maximize water use efficiency gains, manage stormwater runoff using nature-based solutions, and treat contaminants in environmentally sustainable ways.

For these reasons, we respectfully recommend that the Portfolio elevate these strategies and support widely expanded and accelerated investment in localized water infrastructure. Our specific recommendations in this regard are below.

Recommendations for Supporting Accelerated Investments in Localized Water Infrastructure

The Portfolio can support accelerated investments in localized water infrastructure in several tangible, actionable ways. We have described 5 categories of opportunities with corresponding recommendations highlighted in blue below.

1. Prioritize Localized Strategies in the State Revolving Fund Program

California operates two revolving funds to finance drinking water and water quality investments through grants and low-interest loans: (1) the Clean Water Act State Revolving Fund (CWSRF) and (2) the Drinking Water State Revolving Fund (DWSRF).[9]

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[7] See Moving Toward a Multi-Benefit Approach for Water Management, pp. VII-VIII, 17, 27-28, 34-35, https://pacinst.org/wp-content/uploads/2019/04/moving-toward-multi-benefit-approach.pdf, last accessed July 23, 2019; see also The Impact of *Green City, Clean Waters* on Philadelphia: Measuring the Triple Bottom Line Impact of Green Stormwater Infrastructure pp. 18-26 (detailing the crime reduction and health benefits of Philadelphia's program), https://www.sbnphiladelphia.org/wp-content/uploads/2019/04/Impact-of-Green-City-Clean-Waters-on-Philadelphia-2019.pdf, last accessed July 23, 2019; see also Santa Fe Water Division: Fostering a long-standing culture of water efficiency, WaterNow Case Study, p. 5, https://tapin.waternow.org/wp-content/uploads/sites/2/2019/04/SantaFeWaterUtilitiesDivision.pdf, last accessed July 23, 2019.

[8] Urban Water Conservation and Efficiency Potential in California, p. 2, Pacific Institute, June 2014, available at http://freshwater.issuelab.org/resource/urban-water-conservation-and-efficiency-potential-in-california.html, accessed January 16, 2019.

[9] See Clean Water State Revolving Fund, State Water Resources Control Board, Brochure, available at: https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/pubs/cwsrf_small_brochure.pdf ("Since its inception in 1989, the CWSRF has provided below-market rate financing for the construction of wastewater treatment and water recycling facilities, for implementation of nonpoint source and storm drainage pollution control solutions, and for the development and implementation of estuary plans to protect and promote the health, safety, and welfare of all Californians."); see also Drinking Water State Revolving Fund, State Water

The Intended Use Plans for both acknowledge that conservation, efficiency, and green infrastructure programs are eligible for funding under the programs and state that certain types of distributed systems including conservation and recycling should be prioritized.[10]

However, in practice, these funds are not tapped to support onsite water innovation to the extent that they could and should be. This could be addressed by shifting SRF funding priorities at the state level. For example, notwithstanding the well-established ability of distributed efficiency programs to meaningfully address water supply reliability challenges,[11] the DWSRF 2018-2019 Intended Use Plan section focusing on reliability does not prioritize funding for projects designed to reduce gallons per capita per day (GPCD) of water use such as low water use appliances, turf change outs, or graywater reuse programs.[12] Nor is it clear that the plan awards "sustainability points" for efficiency, conservation, or green infrastructure projects.[13] Similarly, the Policy for Implementing the Clean Water State Revolving Fund priority scoring process does not identify efficiency, conservation, or green infrastructure projects as the types of projects that will be awarded high scores and thus receive priority for funding under the CWSRF.[14] Changes to these policies would be relatively cost-free and easy to implement at the state level.

Accordingly, we respectfully recommend that the Portfolio include actions to make the following changes to the State's SRF Intended Use Plans, and related implementation policies, to be issued for the 2020-2021 fiscal year[15] and going forward:

- Prioritization Category D of the DWSRF Intended Use Plan should specifically list

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Resources Control Board, Brochure, available at: https://www.waterboards.ca.gov/drinking_water/services/funding/documents/srf/dwsrf_brochure.pdf ("Established by an amendment to the federal Safe Drinking Water Act in 1996, the DWSRF provides low-interest loans, additional subsidy (principal forgiveness), and technical assistance to public water systems for infrastructure improvements to correct system deficiencies and improve drinking water quality for the health, safety, and welfare of all Californians.")

[10] DWSRF Intended Use Plan, pp. 11, 21, available at: https://www.waterboards.ca.gov/drinking_water/services/funding/documents/srf/iup_2018/dwsrf_iup_sfy2018_19_final.pdf; CWSRF Intended Use Plan, pp. 9-10, 33, 74, available at: https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/cwsrf_iup_sfy2018_19_final.pdf.

[11] See, e.g., Urban Water Conservation and Efficiency Potential in California, p. 5, https://pacinst.org/wp-content/uploads/2014/06/ca-water-urban.pdf, last accessed July 30, 2019 (finding that indoor water efficiency improvements in California are estimated to save a potential of 1.6 million acre-feet per year); Overview of Greywater Reuse: The Potential of Greywater Systems to Aid Sustainable Water Management, p. 26, https://pacinst.org/wp-content/uploads/2010/11/greywater_overview3.pdf, last accessed July 30, 2019 (estimating that 40% of wastewater generated from households can be reused as graywater for non-potable purposes with graywater representing 50% of all household water use); OC Register: Moulton Niguel innovation to save money, water and power: October 17, 2017, available at https://www.mnwd.com/oc-register-moulton-niguel-water-district/.

[12] DWSRF Intended Use Plan, p. 24, available at: https://www.waterboards.ca.gov/drinking_water/services/funding/documents/srf/iup_2018/dwsrf_iup_sfy2018_19_final.pdf.

[13] DWSRF Intended Use Plan, p. 25, available at: https://www.waterboards.ca.gov/drinking_water/services/funding/documents/srf/iup_2018/dwsrf_iup_sfy2018_19_final.pdf.

[14] Policy for Implementing the Clean Water State Revolving Fund, pp. 6-8, available at: https://www.waterboards.ca.gov/water_issues/programs/grants_loans/srf/docs/final_policy_1118.pdf.

[15] We've used the 2020-2021 timeframe given that the comment period on the DWSRF and CWSRF 2019-2020 Intended Use Plans closed June 6, 2019 and May 28, 2019, respectively.

consumer rebate programs designed to incentivize conservation and efficiency as funding priorities.

- The Sustainability Score process set out in the DWSRF Intended Use Plan should award sustainability points for projects that will have calculable GPCD reductions designed to meet an urban water providers' water use objective as defined in Water Code Section 10609 *et seq*.
- The Priority Score process set out in the Policy for Implementing the Clean Water State Revolving Fund should award a secondary score of 3 for projects that will have calculable GPCD reductions designed to meet an urban water providers' water use objective as defined in Water Code Section 10609 *et seq*.

As explained in more detail below, prioritizing localized infrastructure projects for DWSRF and CWSRF funding will help integrate the Portfolio's actions with existing efficiency requirements and targets and foster local water providers' ability to meet their water use objectives.

2. ***Encourage and Support Public Water Utilities in Accessing Capital Financing to Expand Adoption of Localized Solutions and Technologies in Their Communities***

As established above, urban water utilities and our ratepayers shoulder the vast majority of the cost for non-agricultural, local water infrastructure.[16] We all work to balance our responsibility to provide high quality, safe water for our communities with the obligation to keep rates affordable and ensure water accessibility for all. To this end, tax-free municipal bonds are generally the investment vehicle of choice since they often represent the lowest cost financing available for large-scale projects.

It is well documented that localized solutions, largely implemented through consumer rebates or direct installation programs, are often far less expensive than conventional infrastructure alternatives while meeting the same water management needs.[17] However, in surveys and polling of water leaders in California and beyond, WaterNow has found that determining *how* to pay for these solutions can be a major barrier to upscaling adoption of distributed water innovation and efficiency programs. As others have noted, the opportunity to scale distributed systems requires that utilities be empowered to access capital for these investments in the same way that they access capital for conventional infrastructure.[18]

To this end, as a result of efforts by WaterNow and our partners, in May 2018, the Governmental Accounting Standards Board (GASB) issued new guidance clarifying that public water providers are authorized to access capital to finance localized water programs

[16] California Water Plan Update 2018, pp. 1-8, 4-4, available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2018/Final/California-Water-Plan-Update-2018.pdf.
[17] See, e.g., Conservation Limits Rate Increases for a Colorado Utility, pp. 6-8, Alliance for Water Efficiency, November 2013, available at http://www.allianceforwaterefficiency.org/WorkArea/DownloadAsset.aspx?id=8671, accessed January 16, 2019.
[18] See, generally, Bond Financing Distributed Water Systems: How to Make Better Use of Our Most Liquid Market for Financing Water Infrastructure, Ceres, https://www.ceres.org/sites/default/files/reports/2017-05/Ceres_WaterBondFinancing_082814.pdf, accessed December 6, 2018.

just as they do for their tangible assets.[19] The new GASB guidance is a game changer for California's local public utilities.[20] If even a tiny percent of the annual capital spending for water infrastructure in California is redeployed, or expanded, to distributed solutions, it would represent vast new investment capacity and a major expansion in the adoption of these technologies and programs across the Golden State. Indeed, the California Water Plan Update 2018 specifically recognizes the opportunity to expand the definition of capital investment to include localized and decentralized water solutions and the option of using capital to finance these solutions at the local level.[21]

Consistent with the California Water Plan Update 2018, and to support broader socialization of this option, we respectfully recommend that the Portfolio include the following language to highlight the fact that California's cities, towns, and other water resource managers now have the option of accessing their capital financing for consumer rebates (and direct installations):

- **Local municipal bond financing for onsite, distributed water infrastructure:** GASB Statement 62 allows public agencies to book the cost of "business-type activities" as assets instead of annual expenses. These are called "regulatory assets" and can be capitalized by public water resource entities including cities, towns, and other local and regional entities. The regulated assets approach is a complete alternative to traditional public agency accounting for capital assets. This means that public entities can now treat consumer rebates, or direct installation programs, as capital expenses and can use municipal bond proceeds or other forms of debt-financing to pay for these programs. To meet the regulated assets approach and access debt-financing for localized infrastructure, local water providers need to meet three criteria: (1) they must have a governing board empowered to set rates, (2) their board can set rates at levels to cover the cost of the specific incentive programs to be financed, and (3) the board can commit to setting rates in the future to pay for the cost of these programs. Virtually all public water providers in California are positioned to meet these criteria. Local municipal bond financing could be used to support public water utility investment in a wide variety of local decentralized infrastructure programs including but not limited to water efficiency rebates, turf replacement programs, onsite non-potable

[19] Implementation Guide No. 2018-1, *Implementation Guidance Update—2018*, p. 2, Governmental Accounting Standards Board, available at https://www.gasb.org/jsp/GASB/Document_C/DocumentPage?cid=1176170563952&acceptedDisclaimer=true; see also Little-Known Accounting Policy Could Fuel Green Infrastructure Surge, KQED, May 23, 2018, https://www.kqed.org/science/1924341/little-known-accounting-policy-could-fuel-green-infrastructure-surge; see also Financing the Future of Water Infrastructure Just Got a Whole Lot Easier Part 3: Capital, Cash and Scale, WaterNow Alliance, May 2018, available at https://waternow.org/financing-the-future-of-water-infrastructure-just-got-a-whole-lot-easier-part-3-capital-cash-and-scale/; For more information on this policy clarification and how to use bond proceeds to debt finance distributed infrastructure see generally Go Green: Muni Bond Financing for Distributed Water Infrastructure, Earth Economics et al., June 2018, https://waternow.org/go-green-muni-bond-financing-for-distributed-water-solutions/, accessed January 11, 2019.

[20] A layperson's guide to this policy change can be found here: https://waternow.org/wp-content/uploads/2019/01/WaterLeaderGuide-Handout.pdf.

[21] California Water Plan Update 2018, p. 4-8, Table 4-4, available at: https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/California-Water-Plan/Docs/Update2018/Final/California-Water-Plan-Update-2018.pdf.

> reuse systems, lead service line replacements, green infrastructure, and even direct installation programs. California already allows communities to access the Clean Water State Revolving Fund or the Drinking Water State Revolving Fund (SRFs) to pay for consumer incentives for distributed systems and lead service line replacements. Cities and local utilities may now use local municipal bond proceeds as matching funds needed to pay the required proportionate match for SRF eligible projects. Combining these mechanisms would enhance opportunities for local governments and water agencies to maximize their access to State administered water infrastructure funding.

Planning and budgeting for consumer rebates for localized systems as capital programs will allow California utilities to invest in these solutions, as appropriate for their communities. Just as with conventional infrastructure, this innovation will allow utilities to amortize costs over decades instead of paying for them entirely upfront while reaping the benefits over time. This in turn will keep rates affordable and in many cases may be able to reduce or eliminate the need for building larger, more expensive transmission and treatment systems.

3. Eliminate Potential Tax Barriers to Localized Strategies

California has a long and ongoing history of enacting urban water conservation and efficiency legislation. Utility-sponsored financial incentives, including consumer rebates, are among the most important and cost-effective tools available to local water providers to achieve water use efficiency objectives, particularly for turf replacement and other high cost water-saving options. To foster participation in these consumer rebate programs, it has been long-standing California policy to exclude the amounts individuals and businesses receive as rebates from gross income. These income exclusions permanently apply to rebates or other financial incentives received for water-efficient toilets, water- and energy-efficient clothes washers, and plumbing devices necessary to serve certain recycled water uses.[22] And amounts received as a rebate, voucher, or other financial incentive for participation in a turf removal water conservation program before January 1, 2019, were excluded from gross income.[23]

Rebate programs statewide provide a much-needed incentive to lower water consumption on a long-term basis regardless of fluctuating water supply conditions. Reducing that financial incentive by taxing these amounts would undermine the success of these programs. To help maintain this important California water policy, we respectfully recommend that the Portfolio articulate the following:

- Rebates and other financial incentives issued by a local water agency for participation in a turf removal water conservation program should not be subject to state income taxes. [24]

[22] Revenue & Taxation Code § 17138.
[23] Revenue & Taxation Code §§ 17138.2, 24308.2.
[24] See, e.g., AB 533 (Holden), available at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201920200AB533 (if enacted, excluding financial incentives received for turf replacements from gross income).

- Rebates and other financial incentives designed to encourage participation in water conservation or efficiency programs not already identified in the California Revenue and Taxation Code the primary purpose of which are to reduce consumption of water or to improve the management of water demand should not be subject to state income taxes.
- Rebates and other financial incentives designed to encourage participation in a water runoff management improvement program the primary purpose of which is to reduce the amount or manage the quality of stormwater runoff should not be subject to state income taxes.

Eliminating potential tax barriers to water efficiency consumer rebate programs will ensure water providers have the ability to implement sustainable water programs at scale and use all the necessary tools at their disposal.

4. Partner with Local Water Providers to Foster Statewide Resilience

The State's support of local water providers' efforts to implement sustainable, resilient water solutions for their service areas is an important element of success, as Governor Newsom's Executive Order recognizes.[25] The State can provide this support in several ways, including:

- Creating and maintaining ongoing State messaging on the need for year-round efficiency and conservation by all Californians.
- Creating standardized year-round efficiency and conservation outreach and messaging materials that local water providers could use to communicate with their customers.
- Conducting a stakeholder process to establish: (1) guidelines on water data gathering and study design to build trust in the ultimate results,[26] (2) a common understanding on who the audiences are and how data can be accessed and used,[27] and (3) ways to coordinate existing and future studies to avoid the need duplication in more than one service area. This process could coincide with the State Water Resources Control Board and Department of Water Resources study and methodology development currently taking place pursuant to Water Code Sections 10609.6, 10609.8, 10609.10, and 10609.16, as well as the ongoing implementation of AB 1755.
- Identifying and highlighting localized infrastructure success stories as examples of available options so that other communities might avoid reinventing the wheel. WaterNow has begun to compile these success stories from across the country. In California these include Moulton Niguel Water District's efficiency programs that

[25] See Executive Order N-10-19, p. 9 (stating that a guiding principle is to strengthen partnerships with water agencies).
[26] See, e.g., Internet of Water: Sharing and Integrating Water Data for Sustainability, pp. 7-8, May 2017, available at: https://assets.aspeninstitute.org/content/uploads/2017/05/Internet-of-Water-Report-May-2017.pdf?_ga=2.72998357.797360963.1565895367-34825243.1565110135, last accessed August 15, 2019.
[27] See, e.g., INTERNET OF WATER REVISITED – Building an Internet of Water, pp. 8-9, July 2019, available at: https://assets.aspeninstitute.org/content/uploads/2019/07/Addendum-to-IoW.pdf?_ga=2.61666666.797360963.1565895367-34825243.1565110135, last accessed August 15, 2019.

save an average of 4,000 acre-feet of water annually, San Francisco Public Utilities Commission's advanced onsite reuse program with the ability to reduce water use in a building by 25% to 75%, and Los Angeles Sanitation District's One Water LA Plan with an estimated economic impact of $1.97 for every $1 spent.[28] Examples from other states include the City of Santa Fe where conservation programs have reduced daily demand by 42% with GPCD at 90 in 2017,[29] the City of Atlanta where distributed green infrastructure projects now manage 950 million gallons of stormwater annually,[30] and the City of Madison where 8,000 lead service lines were replaced for a savings of $2.5 million as of 2018.[31]

Harnessing these avenues for collaboration will help make the Portfolio a meaningful tool for statewide water resilience.

5. ***Integrate Portfolio Actions with Existing Requirements & Targets***

In May 2018, Governor Brown signed two companion bills—SB 606 (Hertzberg) and AB 1668 (Friedman)—to put California on the path to greater water use efficiency in light of climate change and the reality that water utilities are facing a "new normal."[32] This new legislation builds on the foundation of California's historic water conservation initiatives. California's urban water providers are currently working to comply with the new efficiency legislation, which among other mandates, requires that they calculate their water use objectives by November 2023. To effectively meet these requirements, water providers will need access to a full range of water efficiency strategies. (See the discussion above for how the Portfolio can provide examples of these strategies.)

In this regard, we respectfully recommend that the Portfolio articulate that:

- The actions identified in the Portfolio are aimed at supporting urban retail water suppliers' compliance with Division 6, Chapter 9, Section 10609 *et seq.* of the California Water Code.[33]
- The actions identified in the Portfolio are aimed at facilitating an adaptive management approach that allows time for implemented localized water solutions to be evaluated and adjusted based on information learned.
- Water providers are encouraged to take a One Water and triple bottom line approach to water management, and offer a menu of options of innovative

[28] See WaterNow's Tap into Resilience online resources for additional details available at: tapin.waternow.org; see also One Water LA 2040 Plan Executive Summary, available at: https://tapin.waternow.org/resources/one-water-la-2040-plan/; San Francisco Public Utilities Commission, WaterNow Case Study, available at: https://tapin.waternow.org/resources/san-francisco-public-utilities-commission/, last accessed August 15, 2019.
[29] Santa Fe Water Division: Fostering a long-standing culture of water efficiency, WaterNow Case Study, available at: https://tapin.waternow.org/wp-content/uploads/sites/2/2019/04/SantaFeWaterUtilitiesDivision.pdf, last accessed August 15, 2019.
[30] Atlanta Dept. of Watershed Management, WaterNow Case Study, https://tapin.waternow.org/resources/coming-soon-atlanta-department-of-watershed-management/, last visited August 15, 2019.
[31] Madison Water Utility, WaterNow Case Study, available at: https://tapin.waternow.org/wp-content/uploads/sites/2/2019/02/WaterNow_Madison_CaseStudy_FINAL.pdf, last accessed August 15, 2019.
[32] Water Code §§ 10609-10609.38.
[33] *Ibid*.

> solutions, such as the options listed in **Attachment A** that include onsite non-potable reuse, landscape transformation, smart irrigation controllers, distributed green infrastructure, rain water harvesting, graywater reuse, and private lead line replacement.[34]

Integrating the Portfolio's actions with existing efficiency and planning requirements will ensure that the Portfolio sets out a clear sustainable, resilient water management roadmap.

Conclusion

Localized water infrastructure has enormous potential to sustainably manage our water resources now and for future generations, often more affordably than other alternatives. As detailed above, we encourage the Agencies to place decentralized systems at the center of the Portfolio to ensure local water providers have increased access and ability to finance and implement these cost-effective, equitable, and environmentally friendly solutions.

We appreciate the Agencies' thoughtful consideration of our comments and look forward to working with you to transform California's water infrastructure to secure our water future and to participating in the ongoing development and implementation of the Portfolio.

Sincerely,

Glenn Reynolds, Board Member, Coastside County Water District
Kirsten Keith, Board Member, Bay Area Water Supply and Conservation Agency
Daniel Lee, Council Member, Culver City
Eduardo Martinez, City councilmember, City of Richmond, California
Jose Ornelas, Council Member, City of San Joaquin
Patricia Showalter, Former Mayor, City of Mountain View
Meghan Sahli-Wells, Mayor, City of Culver City
Richard Gonzales, Water Utility Manager, City of Monterey Park
Steve Elie, Director, Inland Empire Utilities Agency
Elizabeth Patterson, Mayor, City of Benicia
Michael Kasperzak, Former Mayor, City of Mountain View, CA
Paul Sethy, Member, Board of Directors, Alameda County Water District
Dan Ferons, General Manager, Santa Margarita Water District

[34] Attachment A provides a list of localized water infrastructure strategies that if implemented at scale can help California meet its water resilience challenges.

Attachment A
List of Localized Water Infrastructure Strategies

EXPLORE STRATEGIES

DEEP OPPORTUNITIES FOR LOCALIZED WATER STRATEGIES

Big picture benefits of localized strategies

- **More affordable than rebuilding or replacing centralized infrastructure**
- **Work with the natural environment to enhance water supply resilience and health**
- **Less time-intensive to install than centralized infrastructure**
- **Provide visibility, access, and direct economic benefits to ratepayers.**

A national challenge

Between aging infrastructure, dwindling water supplies, stormwater challenges, and growing equity and water quality concerns, public utilities across the country are in need of an infrastructure overhaul. But refurbishing conventional centralized infrastructure is often costly and time intensive—the US Water Alliance estimates that America's water systems will require $4.8 trillion over the next twenty years. What can your community afford to pay?

Diving into the next chapter

Localized or *on-site* water infrastructure programs provide resilient and affordable water management alternatives that can address a wide range of water resource challenges. These decentralized strategies allow cities, towns, and water agencies to either pay for or subsidize water management on property that it does not own or control. Offering both scalability and long-lasting benefits, localized strategies can effectively safeguard supply and quality, protect ecosystems, and manage urban runoff—all for a lower price tag.

COMMUNITY WATER SUPPLY

Frequent droughts in the West and increased water quality challenges in the Midwest and East are driving leaders across the country to plan for their communities' water futures more carefully and thoughtfully than ever before. Localized water management strategies provide sustainable, affordable, and resilient solutions to address the interlinked issues of water quantity and quality. They help utilities deliver a steady supply of clean water to communities while also helping ratepayers save both water and money. See the strategies that are working for water leaders around the country below.

Community water supply & quality strategies

GRAYWATER REUSE SYSTEMS
The redirection of graywater from sinks, showers, and laundry, to use for irrigation.

HIGH-EFFICIENCY APPLIANCES
Commercial, industrial, and residential appliances, such as machines, dishwashers, air conditioning units, toilets, and more, that are designed to provide the same — or better — level of service as water guzzling devices with substantially less water.

LAND CONSERVATION
The conservation of riparian areas, wetlands, steep hillsides, and other open spaces to provide natural stormwater retention, source water quality protection, and groundwater recharge.

LEAD SERVICE LINE REPLACEMENTS
Financial programs that cover all or part of the cost of replacing lead service lines on customer property to limit damaging health effects caused by lead exposure.

LEAK DETECTION DEVICES
Devices that identify leaks in consumer-side-of-the-meter toilets, pipes, drains, and industrial systems, and send real time notifications to the asset owner.

ON-SITE NON-POTABLE REUSE SYSTEMS
The capture, treatment, and reuse of water generated by large buildings or new community development for irrigation, toilets, and air conditioning.

RAIN WATER HARVESTING
Systems to capture precipitation for use in outdoor landscaping to replace of drinking water.

SMART IRRIGATION CONTROLLERS
Smart sprinklers and irrigation controllers that use data from sensors, weather forecasts, and plant-care databases to determine watering needs and deliver just enough moisture at the right time to reduce lawn water consumption.

SOURCE WATER PROTECTION AND WATERSHED HEALTH
Protecting the lakes, rivers, streams, and groundwater that provide drinking water to reduce contamination at the source and lower water treatment costs.

TURF REPLACEMENT
Removing water - wasting turf and replacing it with landscapes that require less water.

STORMWATER

With land development reducing permeable surfaces and increasing runoff challenges, programs to manage stormwater and mitigate its effects on local water quality have become critical for ensuring environmental health. Water leaders nationwide are turning to on-site, localized infrastructure water strategies to manage stormwater directly where the rain falls to reduce strain on centralized sewer systems and infrastructure, protect local water quality, minimize pollution caused by overflows, treat runoff, and even use runoff as an alternative water source. See the strategies below for managing stormwater through localized infrastructure.

Stormwater management & treatment strategies

BIOSWALES
Engineered landscape elements designed to increase infiltration of stormwater to the groundwater basin and filter out pollutants.

BLUE ROOFS
A non-vegetated roof intended to store stormwater in temporary ponds, then gradually release the water to mitigate runoff.

CONSTRUCTED WETLANDS
Man-made wetlands that mimic the stormwater capture and nutrient load reduction benefits of natural wetlands and treat waste and stormwater with specific vegetation, soils, and bacteria instead of chemicals.

GREEN ROOFS
Vegetated roof with a layer of soil atop a drainage system to filter contaminants, absorb rainfall and delay runoff to reduce stress on stormwater systems, lower energy bills, reduce heat island effects, and improve air quality.

GREEN STREETS
Integration of vegetated areas into street design to facilitate storage, infiltration, and evapotranspiration of stormwater.

LAND CONSERVATION
Conserving riparian areas, wetlands, steep hillsides and other open spaces to provide natural stormwater retention, source water quality protection, and groundwater recharge.

PERMEABLE PAVEMENT
Permeable pavers and porous concrete surfaces that allow water to penetrate pavement and soak slowly into the ground rather than run off into city drains to reduce stress on stormwater systems.

RAIN WATER HARVESTING
Systems to capture precipitation for use in outdoor landscaping to replace of drinking water.

URBAN TREE CANOPIES
Planting trees to absorb stormwater and reduce heat island effects.

WASTEWATER

As both populations and commercial operations grow, so does the amount of wastewater produced within a community. Properly treating wastewater before discharge is essential to ensuring human and environmental health. At the same time, given the advance of technology, treated effluent has significant potential for reuse as non-potable — and even potable — water supply. City water leaders are exploring creative wastewater management tactics for a more efficient, sustainable future. Localized infrastructure systems can safely reuse wastewater on site or redirect to other uses without centralized treatment. See strategies to address your community's wastewater needs below.

Wastewater management & treatment strategies

BIOSWALES
Engineered landscape elements designed to increase infiltration of stormwater to the groundwater basin and filter out pollutants.

CONSTRUCTED WETLANDS
Man-made wetlands that mimic the nutrient load reduction benefits of natural wetlands can effectively treat waste with specific vegetation, soils, and bacteria instead of chemicals.

GREEN ROOFS
Vegetated roof with a layer of soil atop a drainage system to filter contaminants, absorb rainfall and delay runoff to reduce stress on stormwater systems, lower energy bills, reduce heat island effects and improve air quality.

GRAYWATER REUSE SYSTEMS
The redirection of graywater from sinks, showers and laundry, to use for irrigation.

ON SITE NON-POTABLE REUSE SYSTEMS
The capture, treatment and reuse of water generated by large buildings or new community development for irrigation, toilets and air conditioning.

PRIVATE SEWER LATERAL REPLACEMENT
The replacement of cracked and leaky private sewer laterals that contribute to sanitary sewer overflows by allowing groundwater and stormwater to infiltrate into the wastewater collection system.