Groundwater Recharge and Aquifer Replenishment Partnerships Key to Preparing for Climate Change

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An adequate water supply is essential to California's future. Climate change is significantly reducing the holding capacity of the snow pack, making atmospheric rivers more common and increasing the likelihood of droughts. Capturing flood and storm waters for groundwater recharge and storage in our aquifers is a realistic, least-cost strategy for meeting California's water storage needs and reducing flood risks.

Forward thinking communities have demonstrated that we can address water supply, flood management, and additional challenges with a single project, thus increasing the cost effectiveness of groundwater recharge infrastructure investments.

Innovative local government leaders have successfully brought together multiple government agencies and nonprofits to provide flood management, clean drinking water, habitat protection, and recreational opportunities. Further benefits have included reduced ground subsidence, protection from groundwater salt intrusion, improved groundwater quality, and expanded access to clean water for underserved communities.

In September of 2019, UC Agriculture and Natural Resources and the California Economic Summit convened a fourth annual gathering of 60 leaders from cities, counties, water and flood control districts, environmental groups, and universities. This year they zeroed in on actions needed to **significantly increase multi-benefit groundwater recharge projects**, achieving consensus on three categories of action.

❖ IDENTIFY AND PRESERVE PRIME GROUNDWATER RECHARGE SITES

- Universities have continued to develop and improve tools that allow us to map and monitor prime groundwater recharge sites. State, regional, and/or local entities should make use of existing and new tools to define the "space" for recharge and monitor recharge efforts.
- The state of California should develop tools for land use decision-makers that support the assessment of economic and community effects of protecting identified recharge areas.
- The Legislature should define aquifers as examples of natural infrastructure in the Government Code *(Title 7, division 1, chapter 30)*. This will clarify that groundwater recharge is appropriate for inclusion in local conservation and safety elements and climate change adaptation plans.

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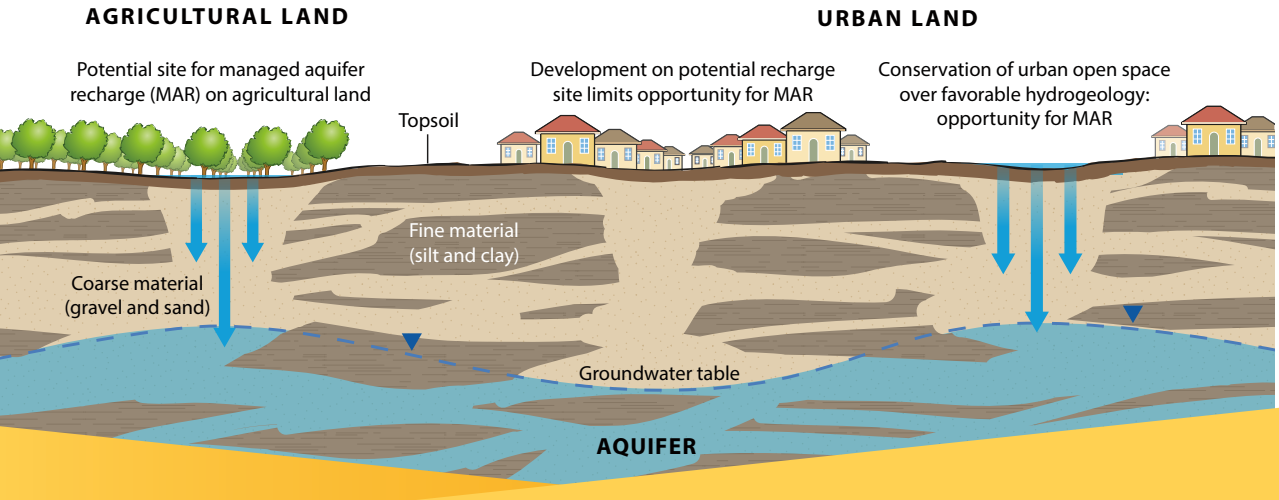
❖ BUILD CAPACITY AND CREATE INCENTIVES FOR MOVING BEYOND SILOS TO MULTI-BENEFIT PARTNERSHIPS

- There are grant opportunities for a variety of water and land management goals but they tend to target distinct objectives and don't reward multi-benefit projects. We need to align and integrate existing grant programs to achieve a **single grant application process** for proposals that achieve more than one objective and involve more than one implementation agency such as local government, special district, university, tribes, or nongovernmental partner.
- Because it requires more time and effort to undertake multi-benefit projects, the state should provide two-phased grants — one would fund planning efforts, and the second would provide implementation funds to those who have achieved success in the first phase.
- We have perfected working in silos for single purpose outcomes but need to develop new capacity for building collaboration. The state should offer training and technical assistance for leaders in bringing together a wide variety of professionals to plan multi-benefit projects including, but not limited to, city and county planning departments, water and flood control districts, irrigation districts, water districts, park districts, resource conservation districts, and UC Cooperative Extension.

❖ RECOGNIZE CALIFORNIA'S AQUIFERS AS NATURAL INFRASTRUCTURE AND CREATE FISCAL AND REGULATORY INCENTIVES AT THE STATE AND LOCAL LEVEL FOR AQUIFER RECHARGE AND REPLENISHMENT PROJECTS

- The state should recognize California's aquifers as natural infrastructure that can provide ecosystem services, and their replenishment as a public benefit. Consequently, actions replenishing over-drafted and/or degraded aquifers — like groundwater recharge — should be eligible for increased state support.
- The state should offer new grants, technical assistance, and/or regulatory alignment to multi-benefit groundwater recharge efforts.
- The state should provide information and incentives to public and private landowners to maintain and expand aquifer replenishment and groundwater recharge on current and repurposed land uses.
- The state should support regions that seek to self-establish funding assessments and expenditure plans supporting multi-benefit water resiliency projects and programs such as Enhanced Infrastructure Financing Districts (EIFD).



New technology now allows us to identify areas with permeable sands and gravel that interconnect from the land surface into the deeper aquifer system. Aquifer recharge through shallow flooding is also possible on certain sites including urban open space and some croplands.

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