

# Hydrology and the CECSD

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What is hydrology? ([Oxford Languages](#))

hy·drol·o·gy /hī'dräləjē/ *noun*

the branch of science concerned with the properties of the earth's water, and especially its movement in relation to land.

Why is hydrology important? ([www.kingcounty.gov](http://www.kingcounty.gov))

The hydrologic cycle is important because it is how **water** reaches plants, animals and us! Besides providing people, animals and plants with **water**, it also moves things like nutrients, pathogens and sediment in and out of aquatic ecosystems.

# Infrastructure is a modification to the natural flow of water

- Impermeable surfaces – collect water that would have been absorbed by native landscape
- National study highlights roles for local government; CECSD is local gov involved with infrastructure
  - National Academies of Sciences, Engineering, and Medicine. 2019. *Framing the Challenge of Urban Flooding in the United States*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/25381>.
  - Report can be found here <https://www.nap.edu/catalog/25381/framing-the-challenge-of-urban-flooding-in-the-united-states>

# Updated El Dorado County guidance

## *County of El Dorado Drainage Manual (2020)*

Updated in 2020, the County Department of Transportation developed a manual that outlines the procedures necessary to provide uniform methodology for conducting the analysis and design of drainage facilities. The Drainage Manual provides general drainage guidelines regarding hydrology, surface drainage design, hydraulic design of closed conduits, stormwater storage design, hydraulic design of open channels, and hydraulic design of culverts. All drainage improvement projects proposed on the West Slope SWRP will need to comply with the *County of El Dorado Drainage Manual*. – Revised in 2020

<https://edcgov.us/Government/dot/manuals/Documents/Drainage%20Manual%202020%20-%20Print%20Version.pdf>

# The EDC *Drainage Manual* has lots of useful info, including “reasonability” tests

- An upstream property owner that alters or diverts a natural watercourse can be held liable for damage caused to the downstream property owner if the upstream property owner failed to take reasonable steps to avoid damage to the downstream property owner. The downstream property owner is also required to act reasonably to avoid damage. Similarly, a downstream property owner that alters or diverts a natural watercourse can be held liable for damage caused to an upstream property owner if the downstream property failed to act reasonably. The test for reasonableness requires consideration of all relevant circumstances, and anticipates both the upstream and downstream owners will act reasonably. (*EDC Drainage Manual 2020*, Sec A1.1.2 “Basic Drainage Law Requirements”)