

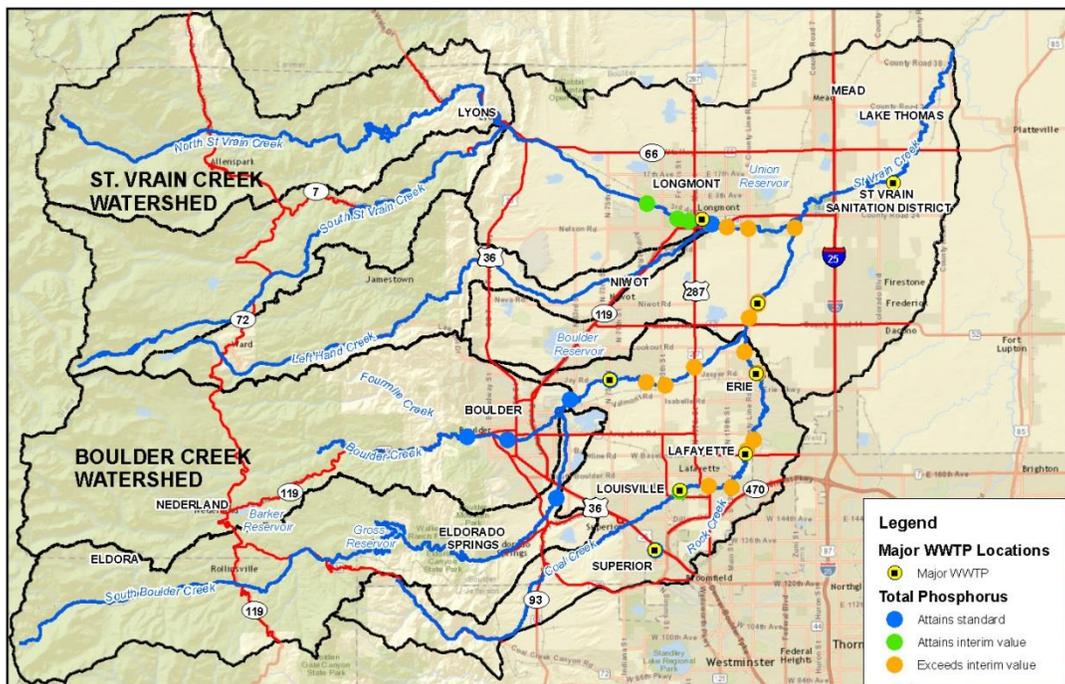
Nutrients

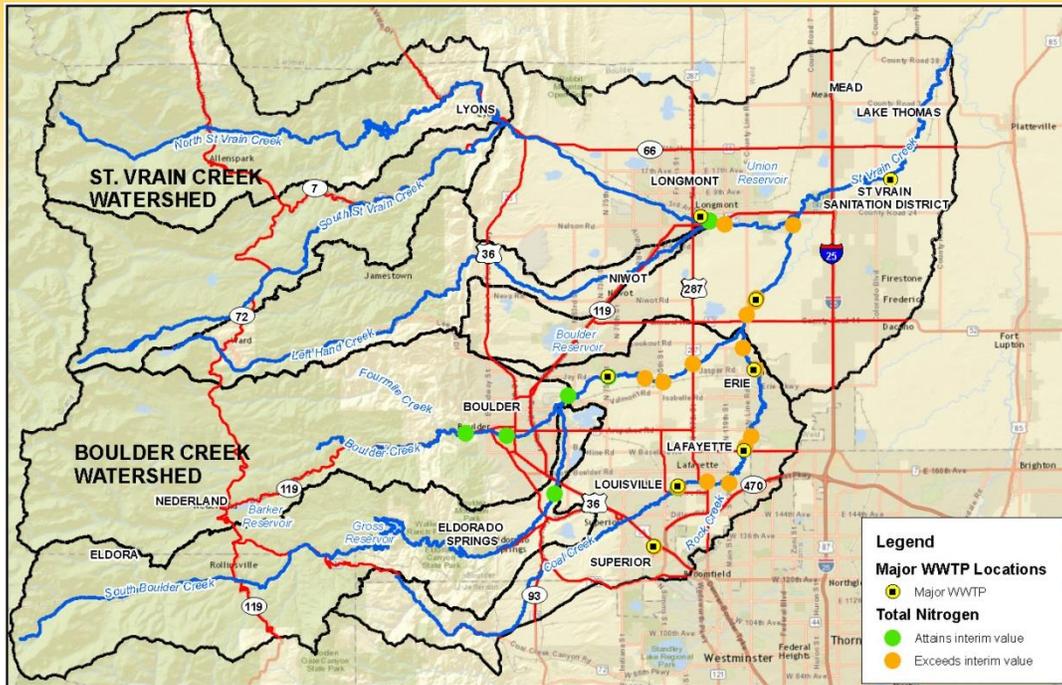
Human Activity Increases Nutrients in Our Streams

Nutrients, such as nitrogen and phosphorus, occur naturally in the environment; however, human activities are a common cause of excessive levels of nutrients in rivers and streams. Although nutrients are necessary for the health of aquatic systems, excessive nutrients can result in accelerated algae and other plant growth, which leads to declines in oxygen in streams and potential adverse impacts on aesthetics and aquatic life. Human activities associated with nutrient over-enrichment in waterbodies can include agricultural and urban/residential fertilization, treated sewage effluent, detergents, septic system leaks, sewer overflows, sediment from construction activities, and animal waste. Human activities can also affect natural processes, such as atmospheric deposition (e.g., fuel combustion from vehicles and power plants resulting in nitrogen oxide [NOx] emissions) and stream channel erosion. Phosphorus is often associated with soil particles and organic matter and is primarily transported with eroded sediments in surface runoff. Nitrogen tends to be dissolved and can be transported through surface runoff and move through groundwater.

Nutrient Levels in Boulder Creek and St. Vrain Creek Basins

The local governments participating in the Keep it Clean Partnership (KICP) recently began a joint, annual instream water quality analysis and reporting program, building upon the municipal monitoring programs conducted independently in the watershed. Findings from this analysis show that where the standards are currently applied, above the waste water treatment plants, no streams in the Boulder Creek and St. Vrain Creek Basins are considered impaired for phosphorus or nitrogen. The 2015 median annual total phosphorus and total nitrogen levels are illustrated on the map below. Generally, nutrient concentrations are elevated above Colorado’s “interim values” for nutrients on the portions of stream segments below wastewater treatment plants (WWTP). These interim values do not currently apply as standards below WWTP discharges, but they may be adopted as standards in the future. KICP will use the coordinated monitoring program to identify spatial trends and changes over time.





Residents and Businesses Can Help

Residents and businesses can take small steps to make a difference in protecting our water quality.

Lawn Care

- Do not overwater; excessive water runoff wastes water and lawn chemicals.
- Fertilize only when necessary using the proper amounts and application methods. Have your soil tested before choosing to applying fertilizer.
- Do not fertilize if the forecast calls for rain within the next day or two.

Yard and Landscape Design

- Direct downspouts to a depressed area or a garden bed so water soaks into the yard.
- Consider installing a rain garden and directing roof drains to it.
- Incorporate swales and berms to landscaping so runoff infiltrates into the yard.
- Consider alternative hardscapes (e.g., pea gravel, permeable pavers) instead of paved surfaces.
- Add trees and shrubs to capture and hold rainwater before it can reach the ground.

Irrigation Ditches and Creeks

- Keep a mowing and fertilizing buffer around ditches and creeks.

Exterior Cleaning and Washdown

- Use dry cleanup methods, such as a broom and dust pan, whenever possible.
- If you must use water for cleanup, divert it to landscaping where it can infiltrate into the yard.

Septic Systems

- Ensure that septic systems are properly functioning. Visit www.SepticSmart.org for more information.

Governments are Working to Reduce Nutrient Loading to Streams

To comply with Colorado’s new water quality regulations for nutrients downstream of WWTPs, local governments are working to improve nutrient removal at WWTPs. These improvements will be made over time and will require substantial investments. Every reduction in nutrient pollution to our streams helps. The KICP Program provides guidance on managing stormwater runoff and controlling nutrient sources at

www.KeepItCleanPartnership.org. The Boulder County Public Health [SepticSmart program](#) provides guidance and information about septic system maintenance and function.

