## Supplementary Materials



Figure S1. Temporal variability of (a-e) specific conductance (SC), (f-j) chloride ( $\mathrm{Cl}^{-}$), ( $\mathbf{k}-\mathbf{o}$ ) dissolved oxygen (DO), and ( $\mathbf{p - t}$ ) pH across sub-basins with dominant land use of urban, agriculture, and forest. Water quality variable scales (red) are marked on the primary y-axis, while daily runoff (light blue) for the mainstem site M3 at Lithia is included in the background as this site is closest to other sites. A, M, J, J, A, S, and O on the x-axis are abbreviations for April, May, June, July, August, September, and October, respectively.


Figure S2. Temporal variability of (a-e) $\mathrm{NO}_{3}-\mathrm{N},(\mathbf{f}-\mathbf{j}) \mathrm{NH}_{4}-\mathrm{N},(\mathbf{k}-\mathbf{o})$ dissolved organic N (DON), ( $\mathbf{p}-\mathbf{t}$ ) particulate organic $\mathrm{N}(\mathrm{PON}),(\mathbf{u}-\mathbf{y})$ dissolved reactive P (DRP), (z-ad) total particulate $P$ (TPP), and (ae-ai) total reactive $P$ (TRP) across sub-basins with dominant land use of urban, agriculture, and forest. Water quality variable scales (red) are marked on the primary y-axis, while daily runoff (light blue) for the mainstem site M3 at Lithia is included in the background as this site is closest to other sites. A, M, J, J, A, S, and O on the x-axis are abbreviations for April, May, June, July, August, September, and October, respectively.

