



Comment Where in-line equalization basins are used, additional damping of the BOD mass loading rate can be obtained by increasing the volume of the basins. Although the flow to a treatment plant was equalized in this example, flow equalization would be used, more realistically, in locations with high infiltration/inflow or peak stormwater flows.

Basin Configuration and Construction. In equalization basin design, the principal factors that must be considered are (1) basin geometry; (2) basin construction including cleaning, access, and safety; (3) mixing and air requirements; (4) operational appurtenances; and (5) pump and pump control systems.

Basin Geometry The importance of basin geometry varies somewhat, depending on whether in-line or off-line equalization is used. If in-line equalization is used to dampen both the flow and the mass loadings, it is important to use a geometry that allows the basin to function as a continuous-flow stirred-tank reactor insofar as possible. Therefore, elongated designs should be avoided, and the inlet and outlet configurations should be arranged to minimize short circuiting. Discharging the influent near the mixing equipment usually minimizes short circuiting. If the geometry of the basins is controlled by the available land area and an elongated geometry must be used, it may be necessary to use multiple inlets and outlets. Provisions should be included in the basin design for access by cleaning equipment such as front-end loaders. Multiple compartments are also desirable to reduce cleaning costs and for odor control.