Abstract. Stream flow routing process is an important step during the unimpaired flow (UIF) development for the surface water availability assessment of State of Georgia's State Water Plan. In an ideal world, the hydrological routing provides a routed upstream flow that overlaps with the downstream flow in a perfect manner, with all of the peaks and valleys perfectly aligned between the two time series. However, it is practically impossible to achieve such ideal routing due to the incompleteness of stream flow observations and water use and the hydrological routing mechanism. This work is to evaluate the effectiveness of the stream flow routing process during the UIF development.