**NASA DEVELOP National Program**

****NASA Langley Research Center

**Summer 2015**

**Short Title: Colorado Water Resources II**

**Updated Abstract**

The September 2013 flooding in Denver, Colorado and uncharacteristic weather of spring 2015 created community concerns regarding the effect of excessive runoff on watershed structure and hydrology.  The NASA DEVELOP team worked with public agency Denver Water to determine erosion mitigation sites in the Ralston Creek Watershed. This research integrated information from NASA’s Landsat 8 with high resolution ancillary data, which provided Denver Water with an enhanced decision-making foundation. The Revised Universal Soil Loss Equation (RUSLE) model was used to determine areas at high risk for soil erosion, which can lead to increased pollutant contamination in nearby waters. This model combines rainfall, slope, land cover, and conservation practices to predict soil loss. Mitigation sites were calculated using network analysis based on their physical accessibility and the RUSLE model output.