Take action

**Water authority actions and changes on census-blocks’ attributes**

Once the water authorities evaluate the census block using the distance metric, and the census blocks are sorted for investment, a set of actions are invoked. These actions change specific attributes of the landscape. Here we explain the actions and its consequences on the census-block attributes. Table 2 summarize these actions and the original explanation contained in the matrix input files.

*Maintenance*

Maintenance reduces the average age of infrastructure systems inside each census block selected for investments in maintenance.

*Create new Infrastructure*

The action “create new infrastructure” changes the proportion of the population in the census blocks covered with infrastructure systems. In addition, when the action new-infrastructure is invoked, the wells in census-block are replaced by new ones. The new well is located in the same place and inherits the same extraction rate as the old one.

*Water distribution*

The action “water distribution” is the action of supplying water to areas that had a disruption in the supply of water by the system pipes, . When the water distribution procedure is invoked, a set of census-blocks, defined by the site selection procedure and the budget, are scheduled to receive water by system of “trucks”.

*Water extraction*

The action water extraction represents the yearly increment in the system of wells. We assume that in each year census-blocks can receive a single new well.