**Site selection**

The census blocks are sorted in descending order by the distances to the ideal point associated to each action. Each action has a budget assigned. Census blocks, which are further from the ideal point, are selected for investment until the budget is over. Several actions can be applied to a given census block. In this way, the model simulates an investment preference in the census blocks where investments are most needed.

Site selection

Every year site selection is invoked by the water authorities for choosing a single investment on system ,, in a specific number of census-blocks that is established by budgetary constraints specific for each action, . Formally, this involves using 0-1 (or binary) programming model (Dykstra 1984) in which the objective function maximizes . In this way, the model simulates a preference for investing in the census-blocks where investment on infrastructure of system is most needed; formally:

Subject to

where is the number of census-blocks where investment related to action can take place; is the 0-1 decision variable for action for system in census-block at time (, if census-block is selected for investment, or 0 otherwise);