Site selection

Every year site selection is invoked by the water authorities for choosing a single investment on 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:

(2)

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);