## Site selection

Every 12 months, site selection is invoked for choosing a single investment, $v$, in a specific number of neighborhoods that is established by budgetary constraints. Formally, this involves using 0-1 (or binary) programming model (Dykstra 1984) in which the objective function $F(y)$ maximizes the total suitability score for a given budget. In this way, the model simulates a preference for investing in the neighborhoods where infrastructure is most needed; formally:

$$Maximize\ F(y) = \sum_{v}^{V}\sum_{j}^{J} d_{jvk}y_{jv}$$

subject to

$$\sum_{v}^{V}\sum_{j}^{J} y_{jv} \leq B_v$$

$$\sum_{v}^{V} y_{jv} \leq N_k$$

$$y_{jv} = 0,1$$

where $B_v$ is the number of neighborhoods where actions take place; $y_{jv}$, is the 0-1 decision variable (equals 1, if census block $j$ is selected for action $v$,or 0 otherwise); and

$N_k$ is the number of possible actions according with scenario $k$.

Operationally, the census blocks are sorted in descending order by their suitability scores. Each action has a budget assigned ($B_v$). Census blocks are selected sequentially 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 it is most needed.