

Number of Nodes

The Number of Nodes in Solution field sets the maximum number of decision nodes passed into the Integer Solver. This field affects the analysis as follows:

- The system runs a linear programming solution (LPS) iteratively. It uses this type of solution because it is fast.
- For road sections in the LPS result whose "portion to include [treat]" into the optimal result is close to 0 or 1, the system rejects or includes these sections entirely in the solution.
- The system repeats steps 1 and 2 on the reduced set of sections until there are only N nodes (sections) left in the undetermined state (that is neither accepted [treated] or rejected [not treated]).
- For these remaining nodes (sections), run the integer program (where the 0/1 solutions from LPS are hard-wired as inputs into the integer program).

Note: The objective of linear programming is to pick the portion of each road section to treat that will optimize the objective function, while the objective of integer programming is to pick / reject each section to treat in its entirety.