Enough to make a variable Cijvqw where costs are from *i* to *j* for vehicle *v* and its maximum load *q* and maksimum travel distance *w*? My thought is that for each proposed solution I will have two variables q and w that is updated to the maximum load and distance for each vehicle and then those will determine in which part of the cost-matrix you are? Lets say Cijv looks like this:

|  |  |  |  |
| --- | --- | --- | --- |
|  | w<100tonn | w<200 tonn | w>200tonn |
| q<100 km | 100 | 200 | 350 |
| q<200 km | 200 | 250 | 450 |
| q>200 km | 300 | 350 | 550 |

Then given a max weight over the whole tour of 150 tonn and the total travel distance of 175 km we end up at the cost 250 (or a cost per km which then should be multiplied by distance).

Would this be an ok way to formulate this mathematically?

Is it possible to keep track of time windows with the proposed solution? Thi of tuples (Tik, Tik)? Not sure if this is the best way to keep track of the time windows.. Also not sure what to do with the constraints here. Since the time to pickup a specific order only has to be within any one of the time windows and not one specific one. Maybe you have some good tips on a paper where they do this or some idea?

Constraint for Docks ok? (eq 8) Or do I need additional constraints.