**import1**

By clicking on this box, the application would ask you to upload a spreadsheet file that contains the locations of all the stores in the required format.

**import2**

This icon appears after a valid file has been uploaded and it is OPTIONAL. It asks you to upload another spreadsheet file that contains the weight of all the stores provided in import1. This file must be in the required format.

**Draw Ellipse**

This feature allows you to draw multiple ellipses. Each ellipse demonstrates a constant cost of travelling from any point on the ellipse (possible location for your distribution center) to all the stores. The required fields are Sub-networks, initial cost, and cost steps. Active Stores is an optional icon that only lists the identity of available stores within the selected Sub-networks. After filling all the required boxes, simply click on Enter to draw the ellipses. This process might take several minutes.

**Find Average**

Find Average as its name suggests, finds the average location for all the selected stores and locates it on the map. Find average is visible on the map as a larger black marker. Note that the average location does NOT represent the most optimum location for your distribution center. Find average is a good tool to approximate the initial cost for Draw Ellipse feature.

**Add a Store**

This feature allows you to manually add a store by manually entering its latitude, longitude and weight. This software also allows you to find the latitude and longitude of your desired location by clicking on any location on the map. In addition you are able to Remove any store on the map by simply double clicking on the red store marker.

**Store Optimiz**

This feature determines a near-optimum delivery routes from your distribution

center to your stores. Firstly, under “Store Optimization” you are prompt to enter the latitude and longitude of your distribution center. Then, you need to select Remove next node or Store Grouping option.

**Remove next node**

Remove next node finds the node that has the highest transportation cost based on its weight and distance. Simply by clicking on “Find” button the store to remove stats to bounce up and down.

**Store Grouping**

Store Grouping displays a near-optimum route on the map originating from your distribution center/centers. After choosing this option, you are asked to choose weather or not you want to consider capacity constraint. Then you are prompt to enter off-route limit, off-route rate, number of trucks, size of population, and truck capacity. By clicking on “OK” button, the calculation begins by displaying a random solution converging to a near-optimum solution. Clicking on “report” opens a new page with a short report about the calculated routes.

Please note that after you enter the location of your distribution center, another dark gray drop down menu appears that gives you the option to add a second distribution center. Please note that clicking on the dark gray bars gives you the option to hide/show.

**required format**

The default format for the spreadsheet that contains store locations has been set to the following format:

Column#2= Store ID#

Column#6= Latitude

Column#7= Longitude

Column#17= Sub-Network

Please note that the default column numbers can be easily changed in the provided “import.js” source code under “readFile1” function.

**the required format**

The default format for the spreadsheet that contains stores’ weights has been set to the following format:

Column#1= Store ID#

Column#2-8= Ambient By Weight

Column#9-15= Frozen By Weight

Column#16-22= Perishable By Weight

Column#23-29= Ambient By Cubic Volume

Column#30-36= Frozen By Cubic Volume

Column#23-29= Perishable By Cubic Volume

Please note that the default column numbers can be easily changed in the provided “import.js” source code under “readFile2” function.

**Sub-networks**

Sub-networks is a drop down menu that shows the sub-networks available based on the provided spreadsheet. Clicking on the dark gray bar gives you the option to hide/show available sub-networks.

**initial cost**

initial cost is a required field in order to draw ellipses. It indicates the cost that you want to set for the initial ellipse. This value has to be a reasonable value in order to draw ellipses. Find Average is a good tool to approximate this value.

**cost step**

cost step is a required field in order to draw ellipses. It indicates the distance between the ellipses. Cost step has to be a reasonable value in order to draw multiple ellipses.

Please note that clicking anywhere on the map shows the total cost from that point to all the stores. You can use this function to approximate a suitable value for cost step.

**Active Stores**

Active stores is a drop down menu that shows that selected stores external ID#. Clicking on the dark gray bar gives you the option to hide/show all the active stores.

**Remove**

In order to manually any store on the map you need to double click on the store marker.

**capacity**

This is an optional feature for delivery routing feature. Capacity is the constraint set by the size of one truck. Checking the box beside capacity adds capacity constraint as an additional variable to the required calculations needed in order to determine delivery routes. Checking this box adds an additional field to be entered called truck capacity.

**off-route limit**

This is a required field to be filled for delivery routing feature. Off route limit refers to the maximum distance that each truck is allowed to travel in addition to its original distance for no extra cost. Original distance is the distance from distribution center to the destination store. Couriers set this variable.

**off-route rate**

This is a required field to be filled for delivery routing feature. Off route rate is set to be a penalty that your courier charges you if a truck’s total distance travelled exceeds the sum of original distance and off-route limit. This rate is a multiple of regular per kilometer charge. For instance, if your courier charges you $1/km, entering 4 for your off-route rate means that your courier charges you $4 for each kilometer that a truck exceeds off-route limit.

**number of trucks**

This is a required field to be filled for delivery routing feature. Number of trucks as its name suggest refers to the quantity of trucks to service your stores.

**size of population**

This is a required field to be filled for delivery routing feature. Size of population is a variable that determines the number of iterations to calculate the delivery routings. Increasing this value increase the accuracy and the time to calculate the routes. However, keep in mind that entering a large number only adds a significant amount of time to the calculations since the accuracy converges to a near-optimum solution after a few iterations. Using report under “Store Optimization” menu you can visually see a graph of convergence to a better solution, which saturates after some point.

**truck capacity.**

Truck capacity is a required field to be filled if you choose to consider capacity. This value refers to the maximum capacity of one truck. It could either be by cubic volume or weight depending on whether you checked by volume or by weight commodities.