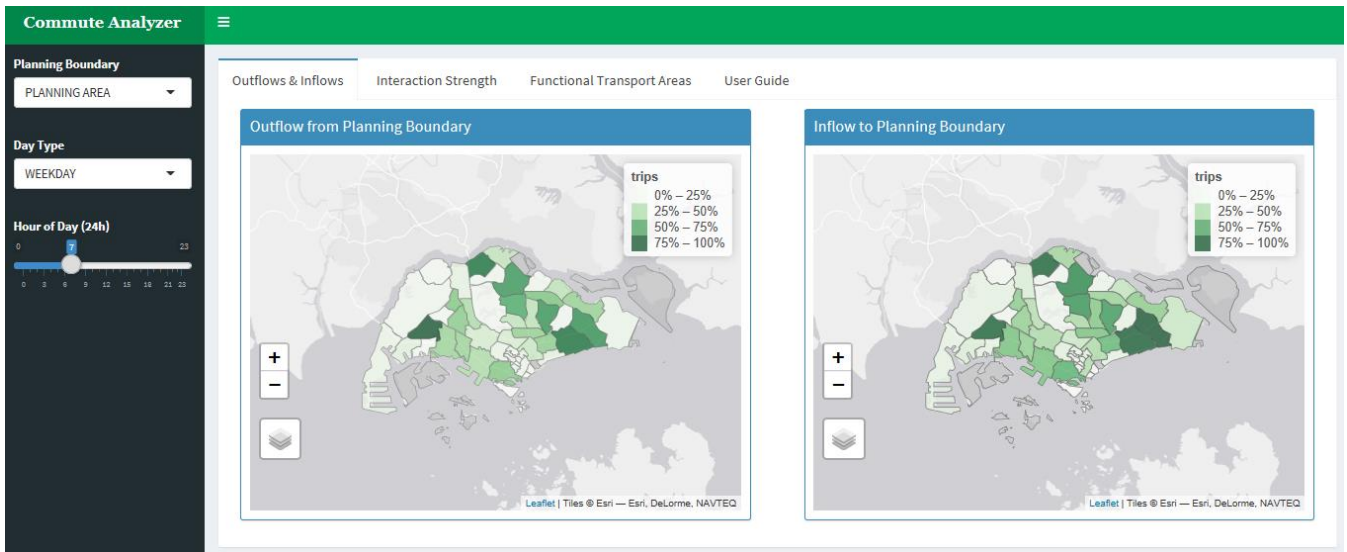## USER GUIDE FOR COMMUTE ANALYZER

This guide is intended to provide the user with step-by-step instructions to use the RShiny Commute Analyzer Application.

Main Filters

Three main filters – Planning Boundary, Day Type and Hour of Day(24h) that apply across tabs have been provided.

i. Planning Boundary – Dropdown options include "PLANNING AREA" and "SUBZONE". Allows to visualize and perform analysis on planning area or subzone level.
ii. Day Type – Dropdown options includes "WEEKDAY" and "WEEKENDS/HOLIDAY".
iii. Hour of Day (24h) – Slider with hours from 0 to 24. Default is set to 7A.M.
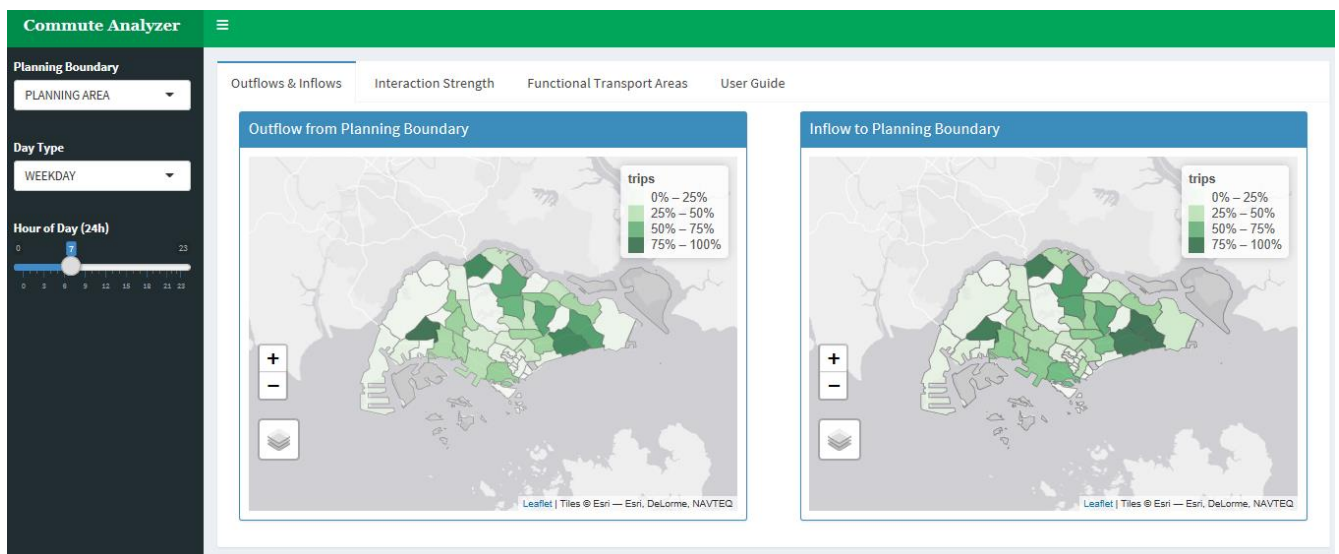
Outflows & Inflows

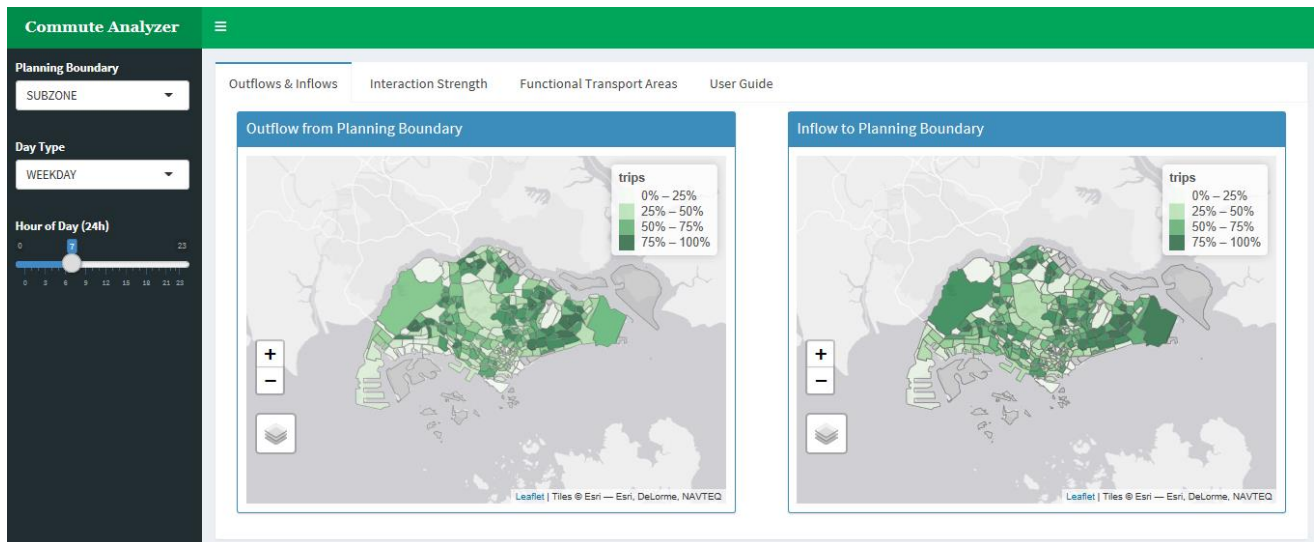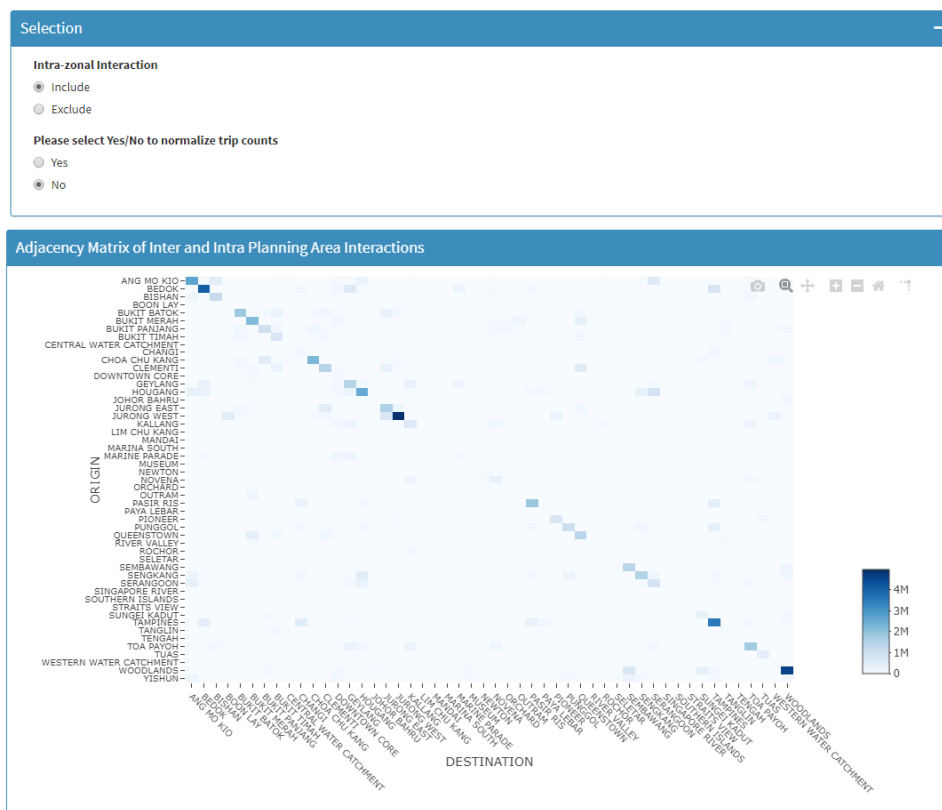*Figure 1: Outflows & Inflows at Planning Area Weekday 7A.M*

Figure 2: Outflows & Inflows at SubZone Weekday 7A.M

The Chloropleth Maps for Outflows and Inflows can be visualized by utilizing the 3 main filters, at different Planning Boundary, Day Type and Hour of Day (24h)

Interaction Strength

This is the second tab. It has been designed to help visualize the strength of interaction between any two planning areas or within the same planning area by using an Adjacency Matrix. The tab does not allow visualization on the SubZone level and therefore, the Planning Boundary filter will have no effect on this tab. The other 2 main filters, Day Type and Hour of day (24h) can be used to visualize changes.

Apart from these, the tab has been provided with 2 select options:

i. Intra-zonal Interaction - To select if intra-planning area interaction should be included/excluded in the adjacency matrix.
ii. Please select Yes/No to normalize trip counts - To select absolute trip counts or normalized trip counts for visualization.
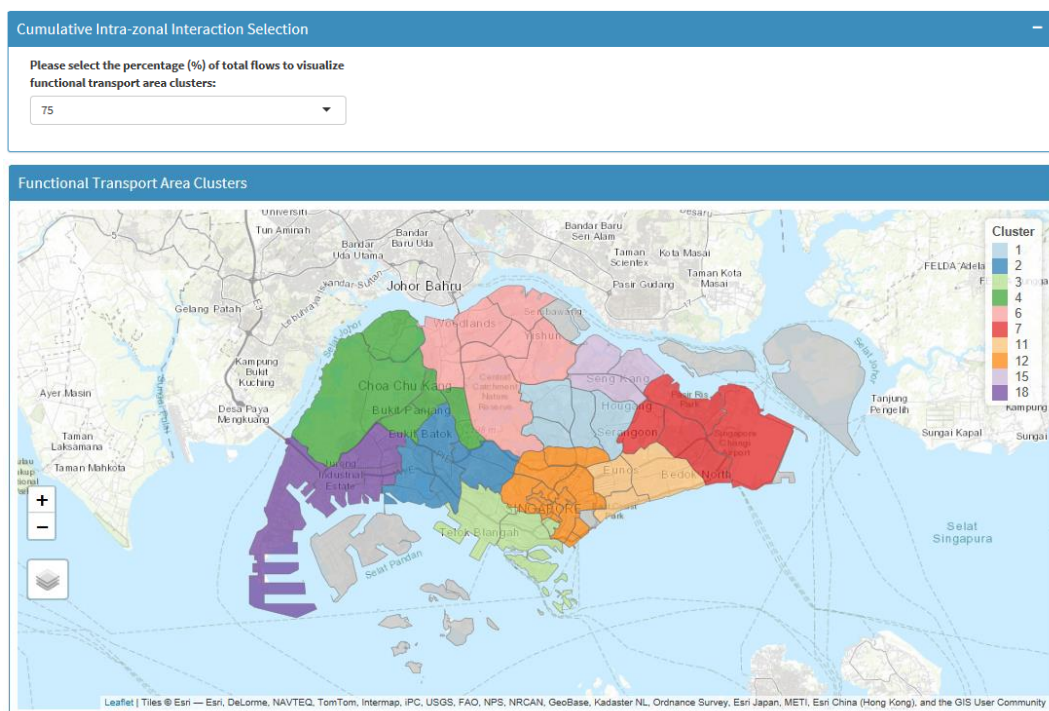
Functional Transport Areas

This is the third tab. It has 2 sub-tabs:

i. Intramax Analysis - Clusters
ii. Intramax Analysis – Dendrogram

Intramax Analysis – Clusters

This sub-tab allows to visualize the functional transport planning areas and subzones on different day types (weekday or weekends/holiday) and at different hours of the day, using the 3 main filters.

Apart from the main filters, the user has also been provided with a select option in this tab, to select the percent (%) of total flows at which he/she wishes to visualize the clusters. This select input is - Please select the percentage (%) of total flows to visualize functional transport area clusters.

By default, the map type is WorldGrayCanvas – tooltips have been provided for the planning areas or subzones. The layers option on the map can be used to switch between different maps such as WorldGrayCanvas, OpenStreetMap and WorldTopoMap. The user may also use the map controls to zoom in (+) or zoom out (-).

Intramax Analysis – Dendrogram

This sub-tab allows to visualize all the interactions between each planning boundary during each stage of the intramax clustering process, where fusion occurs between regions that have the strongest interaction. All main filters can be used to change visualization.
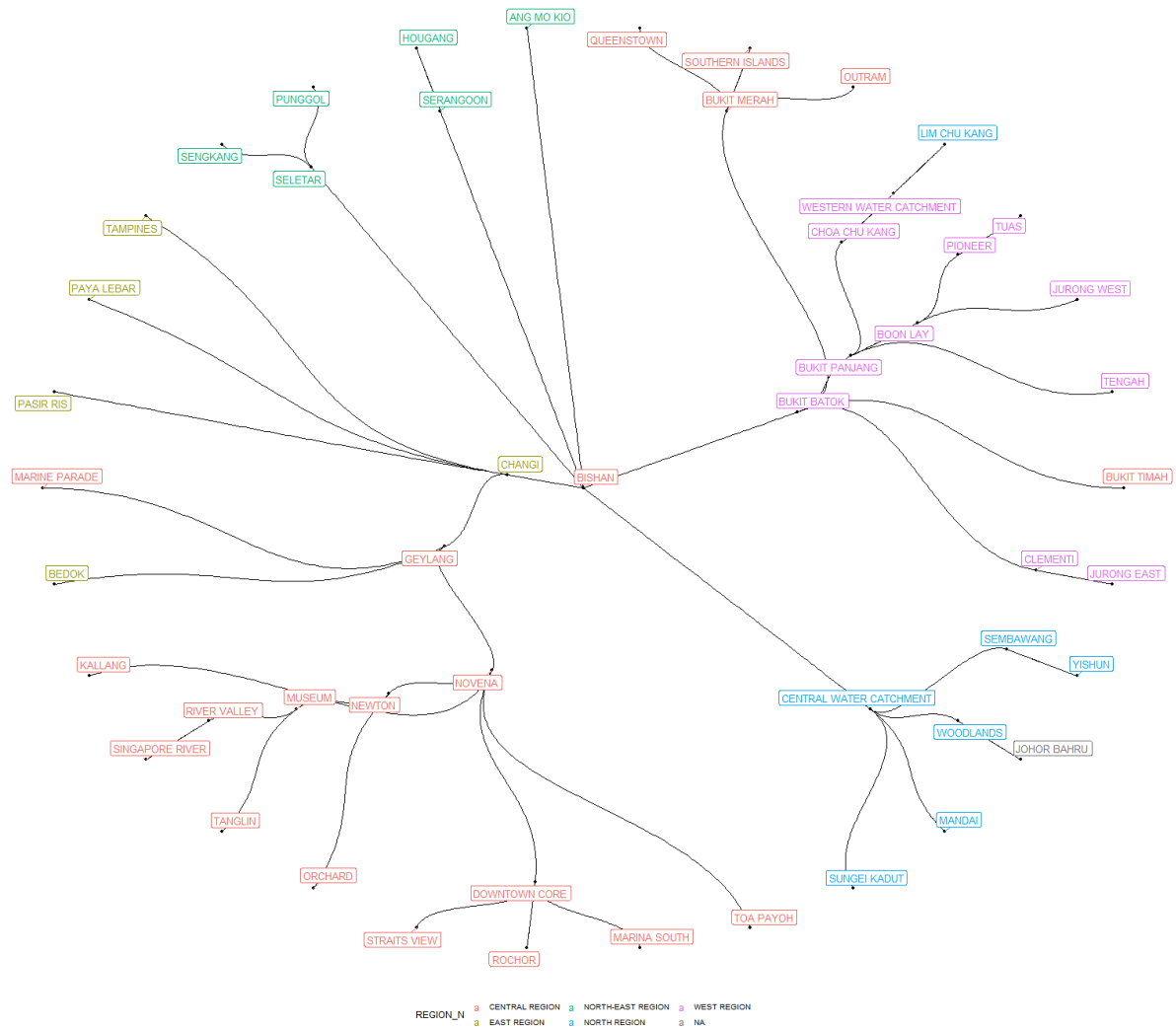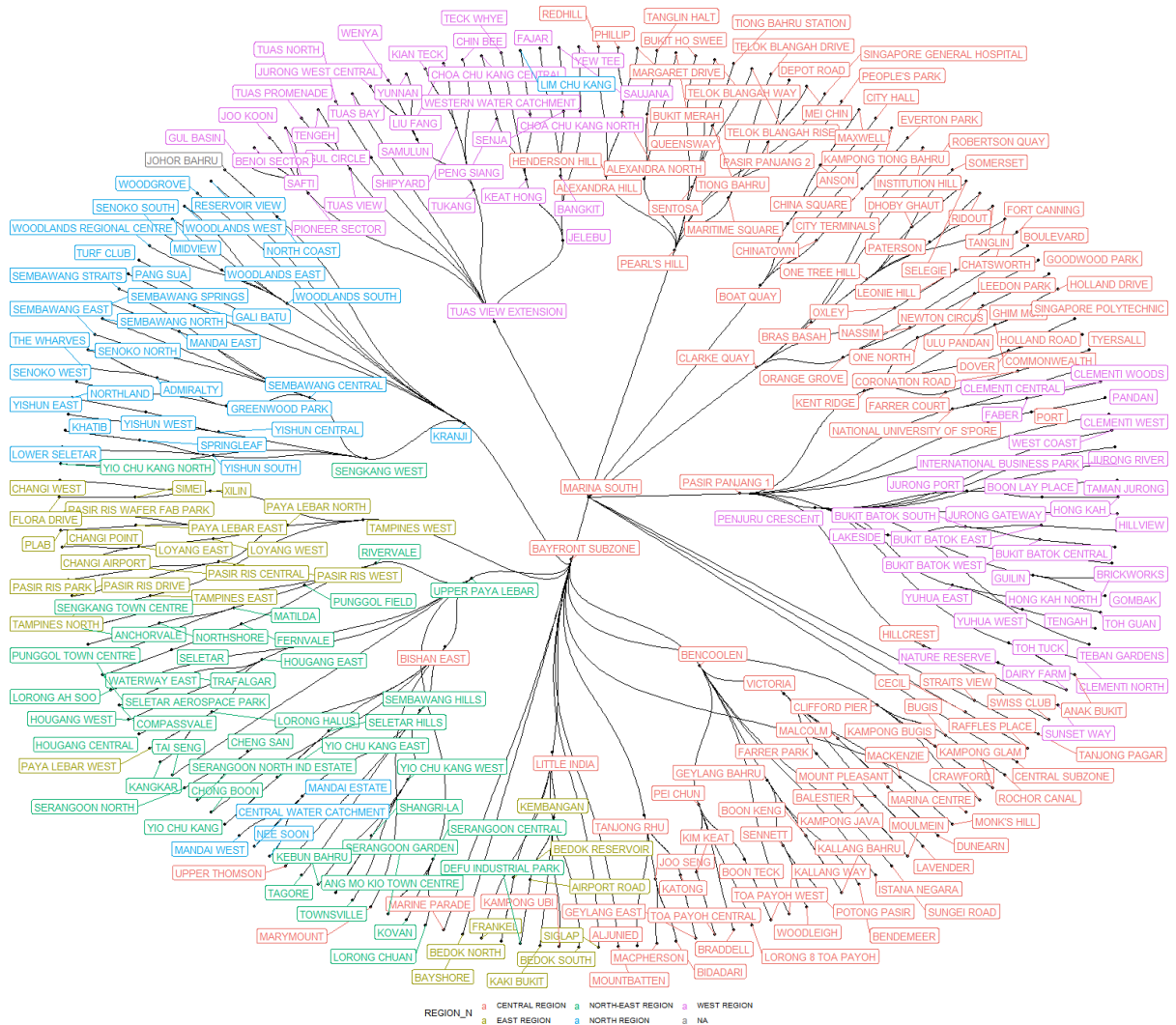
Figure 3: Dendrogam at Planning Area Weekday 7A.M

REGION_N   a CENTRAL REGION   a NORTH-EAST REGION   a WEST REGION
           a EAST REGION   a NORTH REGION   a NA

Figure 4: Dendrogam at SubZone Weekday 7A.M