FlowMax-Q Manual

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Last Updated 2024-02-23 15:54:17.147981 Europe/Amsterdam

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Preface

This manual is divided into two parts. The first part deals with Creating and Editing Networks in QGIS environment while the second part deals with Using the QGIS plugin.

Part I

Buidling network in QGIS

Chapter 1

Introduction

- Economy based scenarios are to be modified in the trade-databases.
- Resilience based scenarios (GIS) fall into 2 categories: node-based, edge-based. These in turn fall into 2 categories: editing geometries; editing attributes
- Technology based scenarios will affect the demand (freight composition)
- Policy based scenarios will affect the route and mode choices (freight composition)

Chapter 2

Scenarios

The image below shows the underlying structure of constructing scenarios

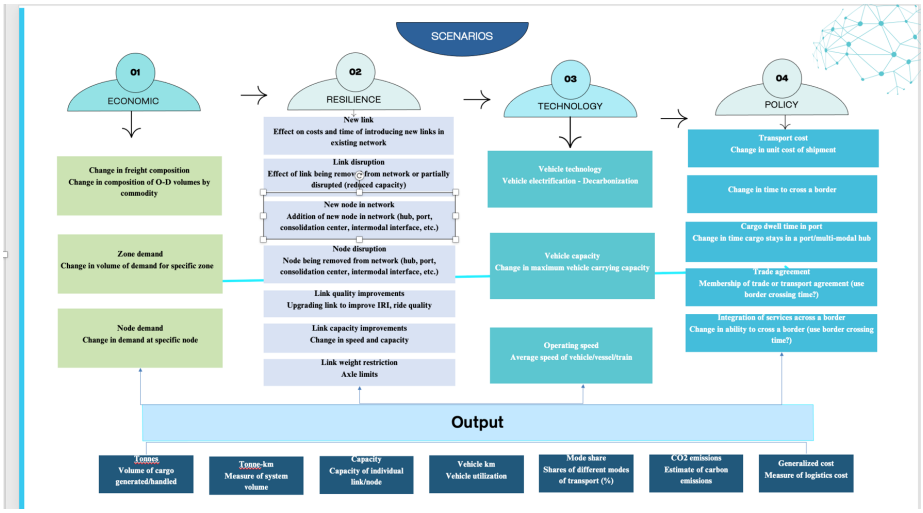

Figure 2.1: Scenarios

Chapter 3

Adding Links

Is the new link connecting to an existing link but not at an existing node location?

- Yes ? First assure that there is a node each for the source and destination of this new link - Yes ? create a line between source and destination nodes. - No? First create a node
- No? Is the new link connecting to an existing node location? - Yes? First assure that there is a node at the new location at the end of the new link (if the link starts from existing node)

Chapter 4

Removing Links

4.1 Removing a Link (disabling links)

It is advised not to remove a link (line-geometry) in GIS. It is recommended that you use the 'active' attribute in the link shapefile: - edit this attribute to a value 0 (integer) instead of 1(integer) for the link in consideration.
- Assigning a 0 will remove the 'active = 0' link(s) from path building of the Flowmax algorithm

4.2 Adding back an Existing (disabled) Link

If you have set the 'active' attribute to 0 to exclude the link(s) from analysis, you can always set the 'active' attribute back to 1 to include the link(s) back into your analysis.

Chapter 5

Modifying Node Attributes

Node file: All nodes come with predefined attributes. Whenever a new node is added, all the attributes should be assigned a value (either a known value or a default value)

To edit: right click the node file > open attribute table > start edit mode. Select any cell and change values as required. After editing, save the edits and close the table.

This applies to all scenarios where attribute values must be changed: capacity, speed, travel time, quality of links etc.

Chapter 6

Modifying Edge Attributes

Link file: All links come with predefined attributes. Whenever a new link is added, all the attributes should be assigned a value (either a known value or a default value)

To edit: right click the link file > open attribute table > start edit mode. Select any cell and change values as required. After editing, save the edits and close the table. This applies to all scenarios where attribute values must be changed: capacity, speed, travel time, quality of links etc.

Part II

QGIS Plugin