Industry navigation data making

1 Overview

This document takes Beijing data as an examples to describe how to create business navigation data.

1.1 Introduction of route net data

Dataset name	Dataset type	Number of object	Index type	Projection information	Field information
NG_T	Line dataset	39832	Non index	GCS_WGS_1984	...

1.2 Tool

Product name	Version
iDesktop	9.0.0

2 Data process

2.1 Topology checking/Processing data in topology Contents

For detail operation about processing line data in topology, please reference iDesktop help document.

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2.2 Construct network dataset Contents

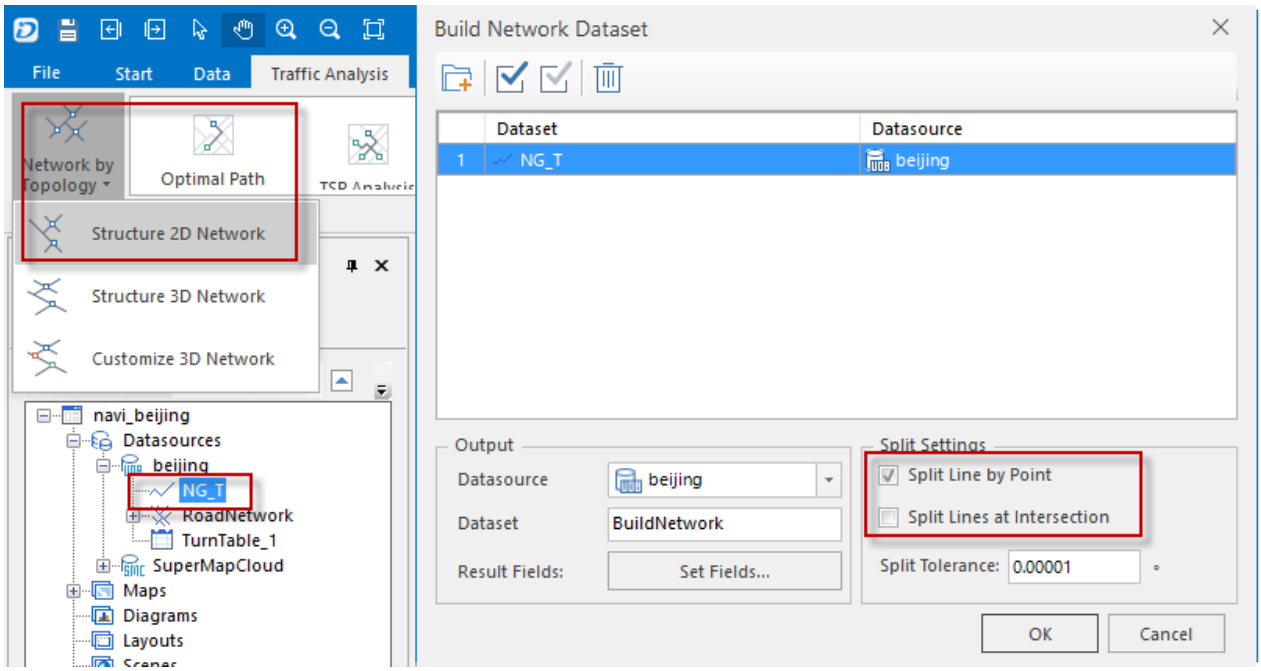

Figure 2-2-1 Construct network dataset

Detail steps:

1. Select a line dataset to create network dataset.
2. Click "Data" tab.
3. Click "Network by Topology" > "Structure 2D Network"
4. The dataset name can be modified, but checkbox "Split Line by Point" and "Spilt lines at Interaction" can't be checked.

For other parameters, you can modify them according to your needs.

There are some field information added after constructing network dataset successfully.

	Name	Alias	Type	Length	Default	Required
7	*SmResistanceA	SmResistanceA	Double	8	1	Yes
8	*SmResistanceB	SmResistanceB	Double	8	1	Yes
9	*SmLength	SmLength	Double	8	0	Yes
10	*SmTopoError	SmTopoError	Int	4	0	Yes
11	*SmFNode	SmFNode	Int	4	-1	Yes
12	*SmTNode	SmTNode	Int	4	-1	Yes
13	*SmEdgeID	SmEdgeID	Int	4	0	Yes

Figure 2-2-2 New added fields

2.3 Add turn table(Optional) Contents

Create turn table

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Detail steps:

1. Open a network dataset to create turn table
2. Click "Traffic Analysis" tab.
3. Click "Environment Settings"
4. Click "Create Turn Table".
5. Click "OK".

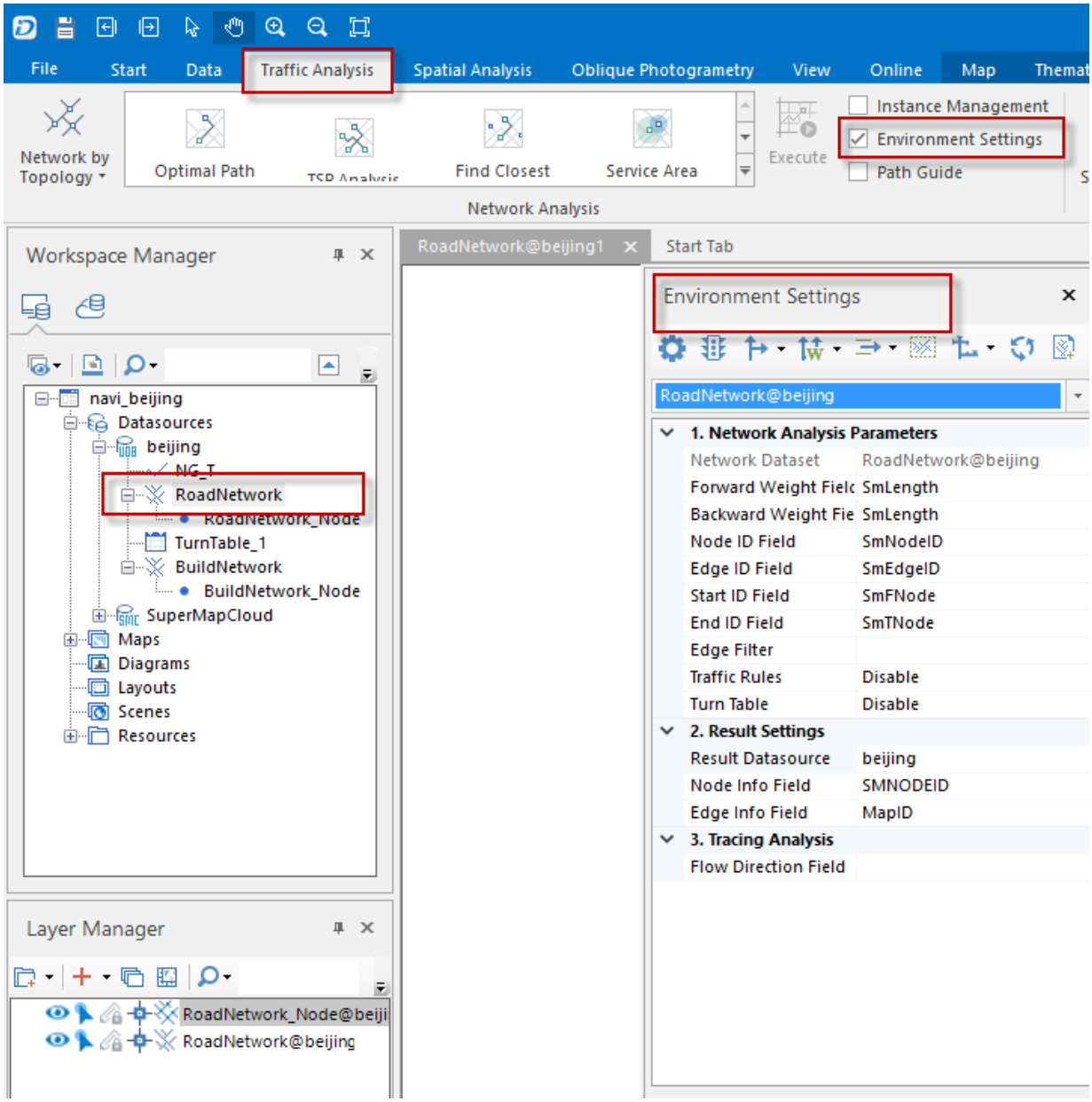

Figure 2-3-1 Create turn table a

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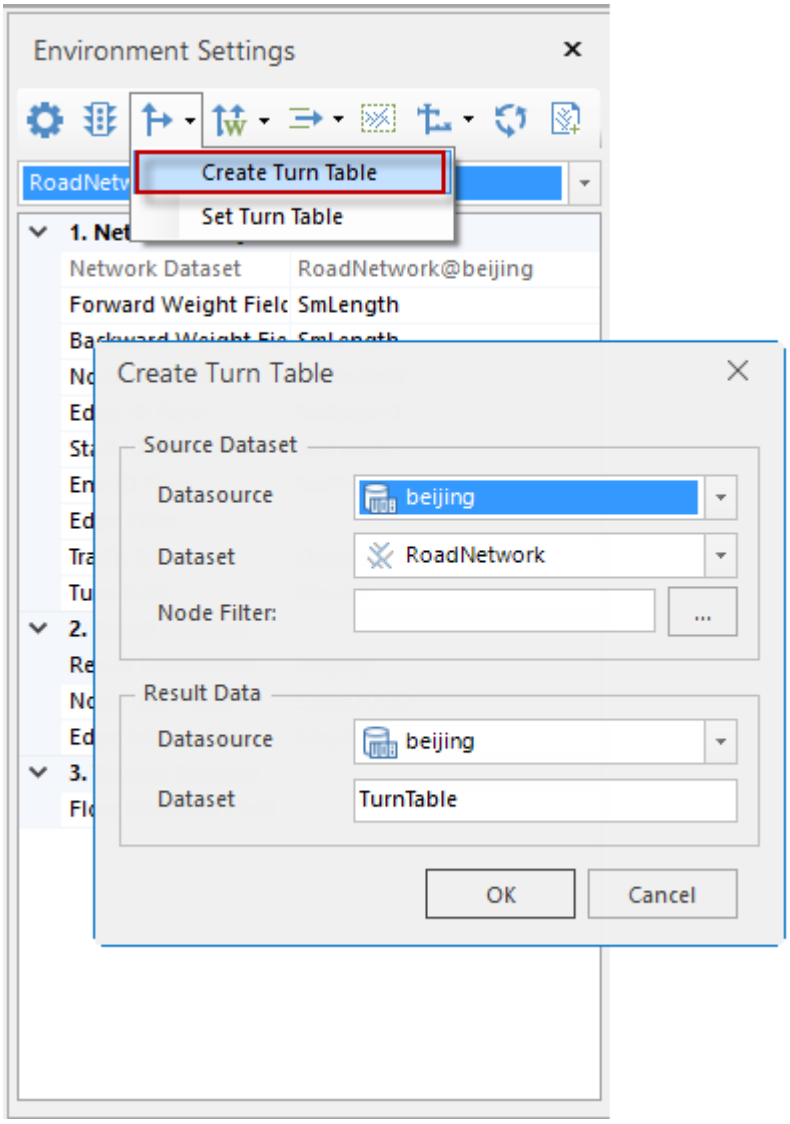

Figure 2-3-2 Create turn table b

All of the value of TurnCost are 0 when a turn table is created successfully. You need to define them.

Edit value of field TurnCost.

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TurnTable_1@beijing | RoadNetwork@beijing1 | Start Tab

No	SmUserID	NodeID	FEdgeID	TEdgeID	TurnCost
1	0	1	43144	43144	-1
2	0	2	42162	42162	-1
3	0	3	42355	42355	-1
4	0	4	41519	41519	-1
5	0	5	41518	41518	2
6	0	6	42578	42578	2
7	0	7	42587	42587	2
8	0	8	42375	42375	3
9	0	9	42376	42376	3
10	0	10	42557	42557	-1

Figure 2-3-3 Edit TurnCost value

According to actual situation to assign value to TurnCost. -1 means turning direction is forbidden. For details, please read iDesktop help document.

2.4 Add traffic rules (Optional) Contents

Add traffic rule field for Network dataset

Field name	Field value
Direction	0：Forbidden lines 1：Two-way 2：One way forward direction 3：One-way reverse direction Note: The field is defined by users with the field name and value can be defined. The value can either be text or number.

Such as:

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Direction
3
1
1
1
1
1
1
1
1
1
1
2
2

2.5 Set road name Contents

Set road name field for Network

Field name	Field value
PathName	Text Note: The field is required by network dataset with its name can be defined by user.

2.6 Create network analysis index Contents

Before performing analysis, creating spatial index and field index for network dataset and its child dataset is suggested to improve analysis performance, otherwise, the analysis operation will be very slow because of device.

Create spatial index

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Select "Rebuild Spatial Index" by right clicking a selected network dataset

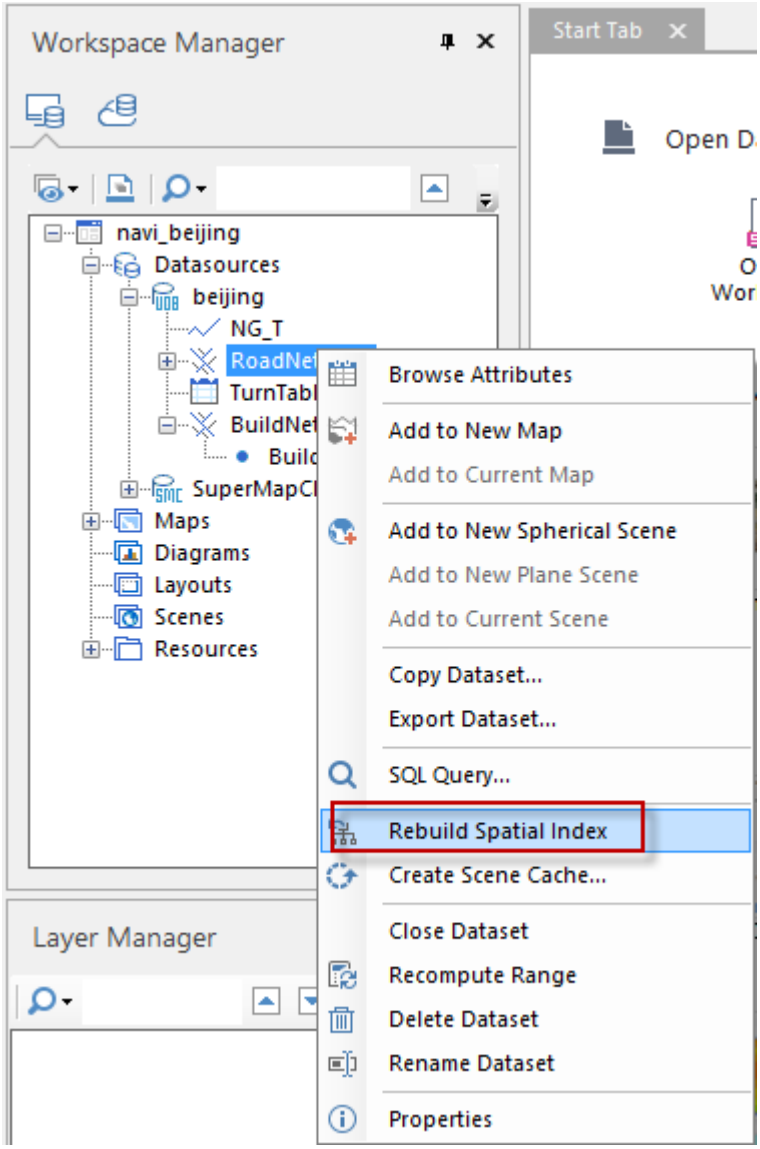

Figure 2-6-1 Create spatial index

Set the index type as R-tree index, and then click "OK".

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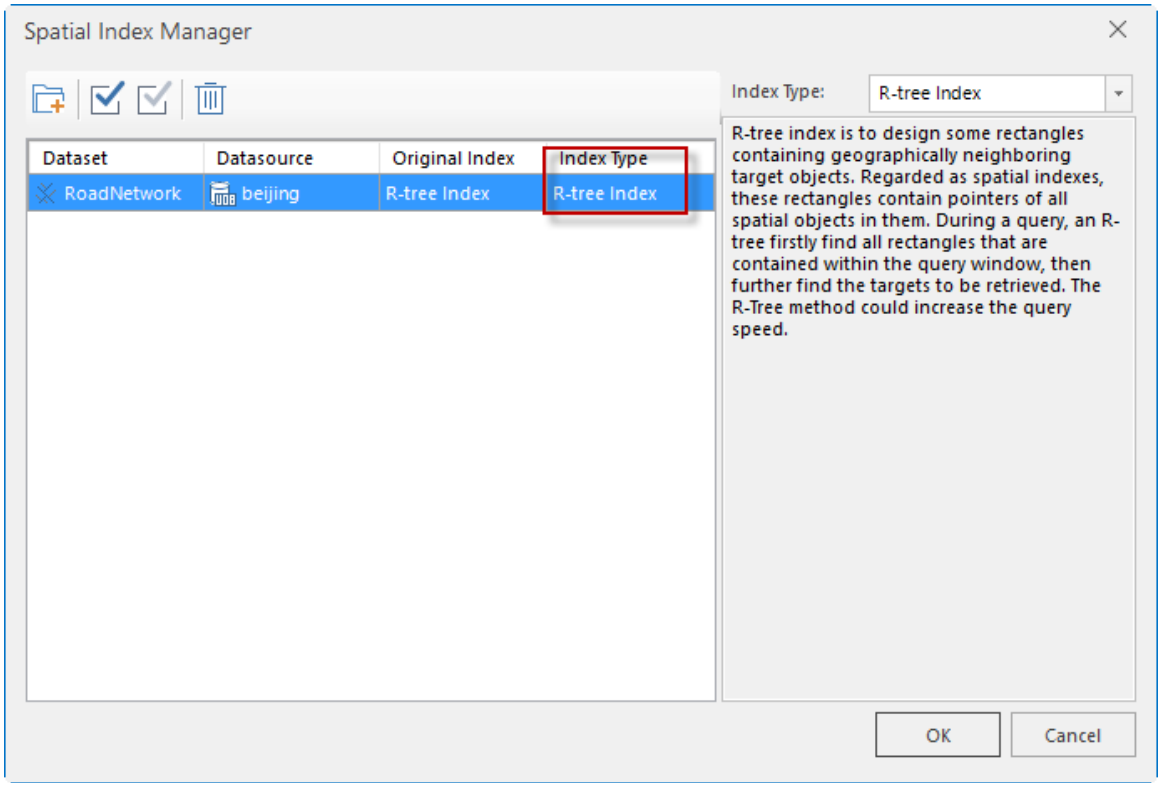

Figure 2-6-2 Create spatial index

Create field index

Click on "Start" tab, then select "Field Index"

Figure 2-6-3 Create field index

Select network dataset and field creating index. The field should identify arc ID (SmEdgeID). Finally click "OK".

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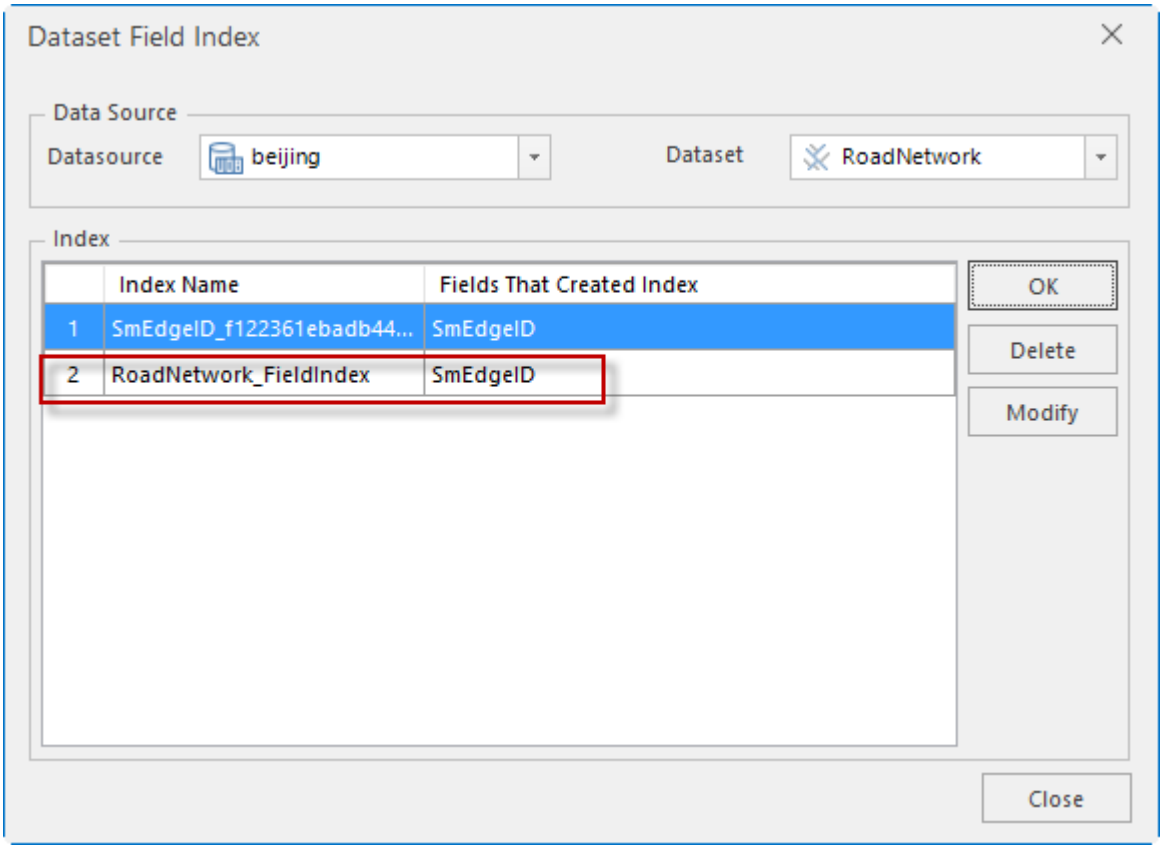

Figure 2-6-4 Create field index

And then select child dataset of network dataset and field creating index. Also, the field should identify arc ID (SmEdgeID). Finally click "OK".

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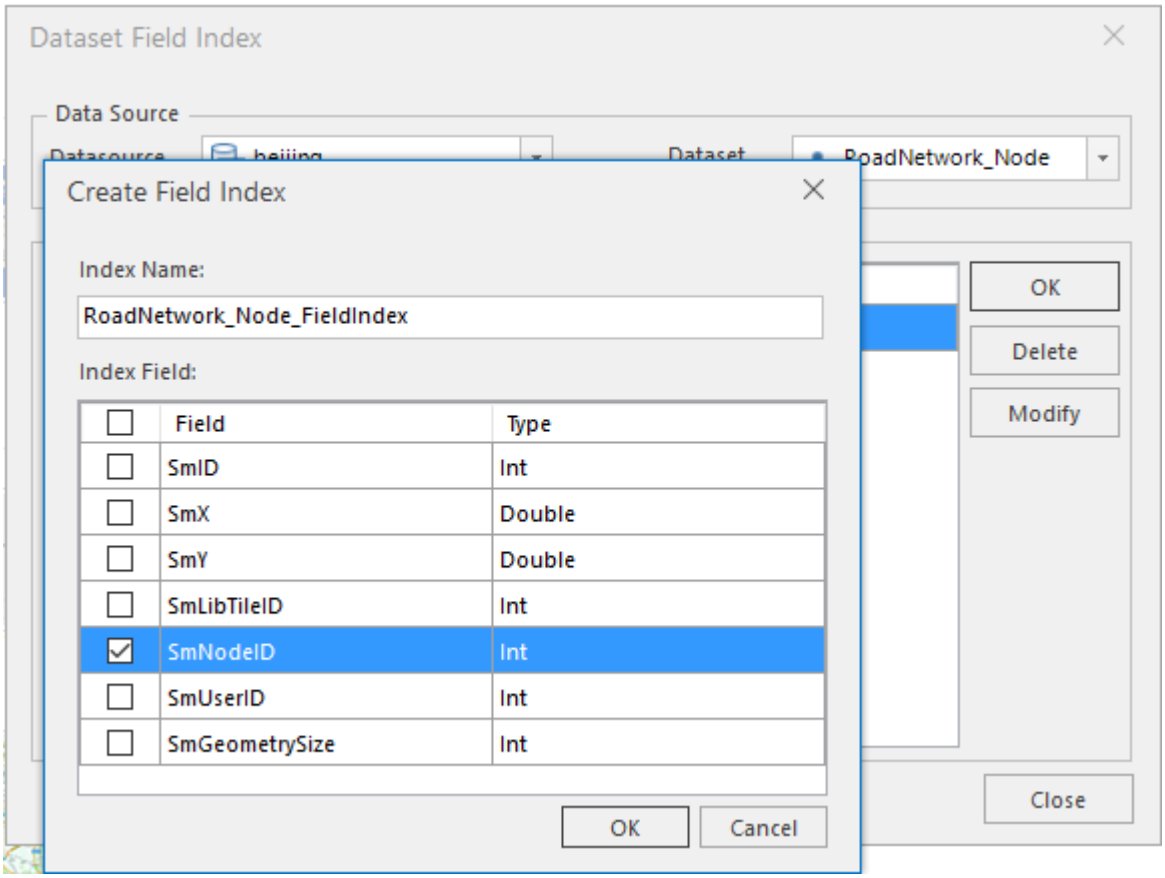

Figure 2-6-5 Create field index

2.7 Create network analysis index Contents

Detail steps:

1. Open a network dataset to create index.
2. Click "Traffic Analysis" tab
3. Click "Environment Settings" button.
4. Set traffick rules(Optional), turn table(Optional) and arc info field (road name field), in turn.
5. Click "Network Model File" button, and specify file path, then click "OK".

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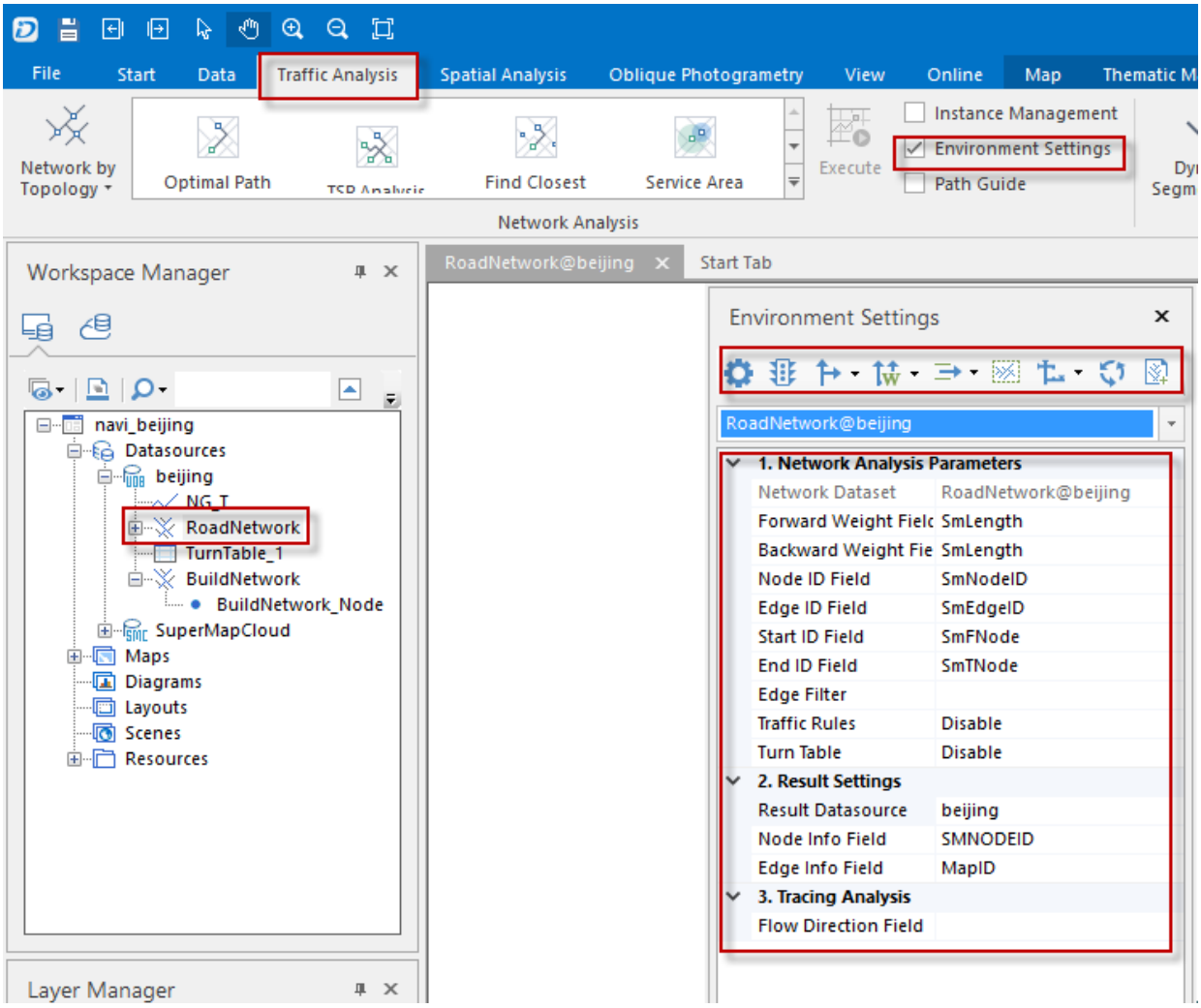

Figure 2-7-1 Create network model file

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