

SmartRoads ver 7.1.2

SmartRoads ver 7.1.3

28 Oct 2015



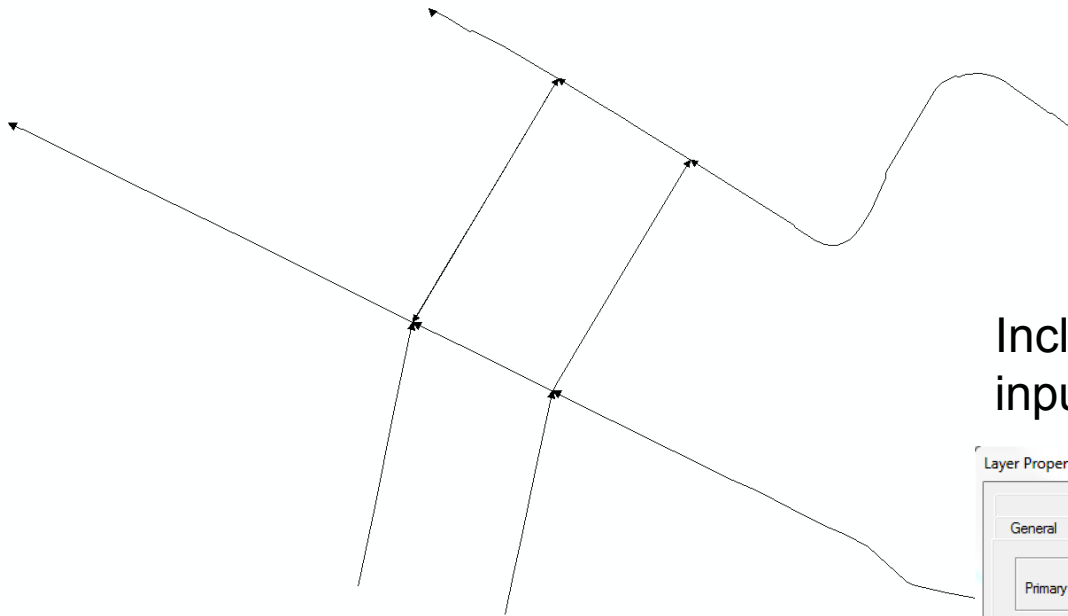
Introduction

- SmartRoads version 6.2.6 was developed by VicRoads (2013)
- SmartRoads version 7.1.3 was developed by ARRB (2015)
- Version 7.1.3 uses the same methodology and formulas as version 6.2.6
- GIS interface was introduced in version 7.1.3 to allow users the option to visualise and edit in a GIS interface and to easily translate SmartRoads files to/from GIS shapefiles
- This user guide illustrates the GIS interface functionality
- For details on the method and formula refer to version 6.2.6 user guide
- For feedback/support contact: nopsupport@arrb.com.au

Key application files

CsvHelper.dll	9/10/2015 4:09 PM	Application extens...	79 KB
CsvHelper.pdb	29/09/2015 3:52 PM	PDB File	262 KB
CsvHelper	9/10/2015 4:09 PM	XML Document	218 KB
DotSpatial.Data.dll	9/10/2015 4:09 PM	Application extens...	395 KB
DotSpatial.Mono.dll	9/10/2015 4:09 PM	Application extens...	5 KB
DotSpatial.Projections.dll	9/10/2015 4:09 PM	Application extens...	19,360 KB
DotSpatial.Topology.dll	9/10/2015 4:09 PM	Application extens...	318 KB
NFA	21/10/2015 4:30 PM	ClickOnce Applica...	2 KB
NFA	21/10/2015 4:30 PM	Application	837 KB
NFA.exe	22/09/2015 3:16 PM	XML Configuratio...	3 KB
NFA.exe.manifest	21/10/2015 4:30 PM	MANIFEST File	9 KB
NFA.pdb	21/10/2015 4:30 PM	PDB File	708 KB
NFA	21/10/2015 4:30 PM	XML Document	72 KB
NFAconfig	1/10/2015 4:50 PM	Text Document	17 KB
NFAhelp	16/08/2013 1:46 PM	Text Document	83 KB
NFANetwork field mapping	28/09/2015 12:36 ...	Microsoft Excel C...	3 KB
NFANetwork.cpg	29/09/2015 11:12 ...	CPG File	1 KB
NFANetwork	28/10/2015 1:41 PM	Microsoft Excel C...	4 KB
NFANetwork.dbf	20/10/2015 4:52 PM	DBF File	42 KB
NFANetwork	28/10/2015 1:41 PM	ESRI ArcMap Doc...	405 KB
NFANetwork	28/10/2015 1:41 PM	NFA File	80 KB
NFANetwork.prj	13/10/2015 11:33 ...	PRJ File	1 KB
NFANetwork.sbn	20/10/2015 4:52 PM	SBN File	1 KB
NFANetwork.sbx	20/10/2015 4:52 PM	SBX File	1 KB
NFANetwork.shp	20/10/2015 4:52 PM	SHP File	4 KB
NFANetwork.shx	20/10/2015 4:52 PM	SHX File	1 KB
NFANetwork	13/10/2015 11:33 ...	XML Document	2 KB

Sample network



Includes 116
input fields

Test.dbf	20/10/2015 4:52 PM	DBF File	42 KB
test	26/10/2015 4:42 PM	ESRI ArcMap Doc...	405 KB
Test	20/10/2015 5:37 PM	NFA File	80 KB
Test.prj	13/10/2015 11:33 ...	PRJ File	1 KB
Test.sbn	20/10/2015 4:52 PM	SBN File	1 KB
Test.sbx	20/10/2015 4:52 PM	SBX File	1 KB
Test.shp	20/10/2015 4:52 PM	SHP File	4 KB
Test.shp	13/10/2015 11:33 ...	XML Document	2 KB
Test.shx	20/10/2015 4:52 PM	SHX File	1 KB

Layer Properties

Hatches | Joins & Relates | HTML Popup

General | Source | Selection | Display | Symbology | Fields | Definition Query | Labels | Routes

Primary Display Field: NFA_ID

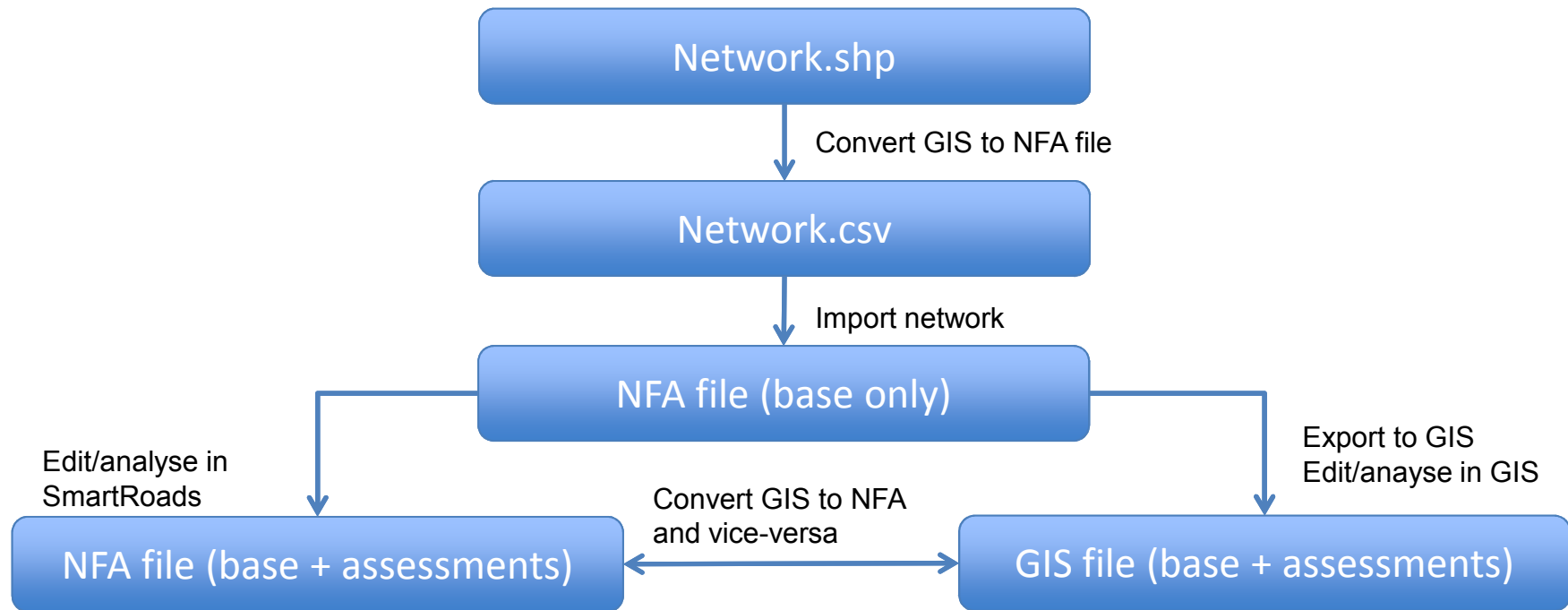
Choose which fields will be visible. Click in the alias column to edit the alias for any field.

Name	Alias	Type	Length	Precision	Scale	Number Format
<input checked="" type="checkbox"/> FID	FID	Object ID	4	0	0	
<input checked="" type="checkbox"/> Shape	Shape	Line				
<input checked="" type="checkbox"/> NFA_ID	NFA_ID	Text	50	0	0	
<input checked="" type="checkbox"/> XSTART	XSTART	Text	50	0	0	
<input checked="" type="checkbox"/> YSTART	YSTART	Text	50	0	0	
<input checked="" type="checkbox"/> XEND	XEND	Text	50	0	0	
<input checked="" type="checkbox"/> YEND	YEND	Text	50	0	0	
<input checked="" type="checkbox"/> DS_LOCAL_N	DS_LOCAL_N	Text	50	0	0	
<input checked="" type="checkbox"/> NFA_ID_OPP	NFA_ID_OPP	Text	50	0	0	
<input checked="" type="checkbox"/> RUH_PED	RUH_PED	Text	50	0	0	

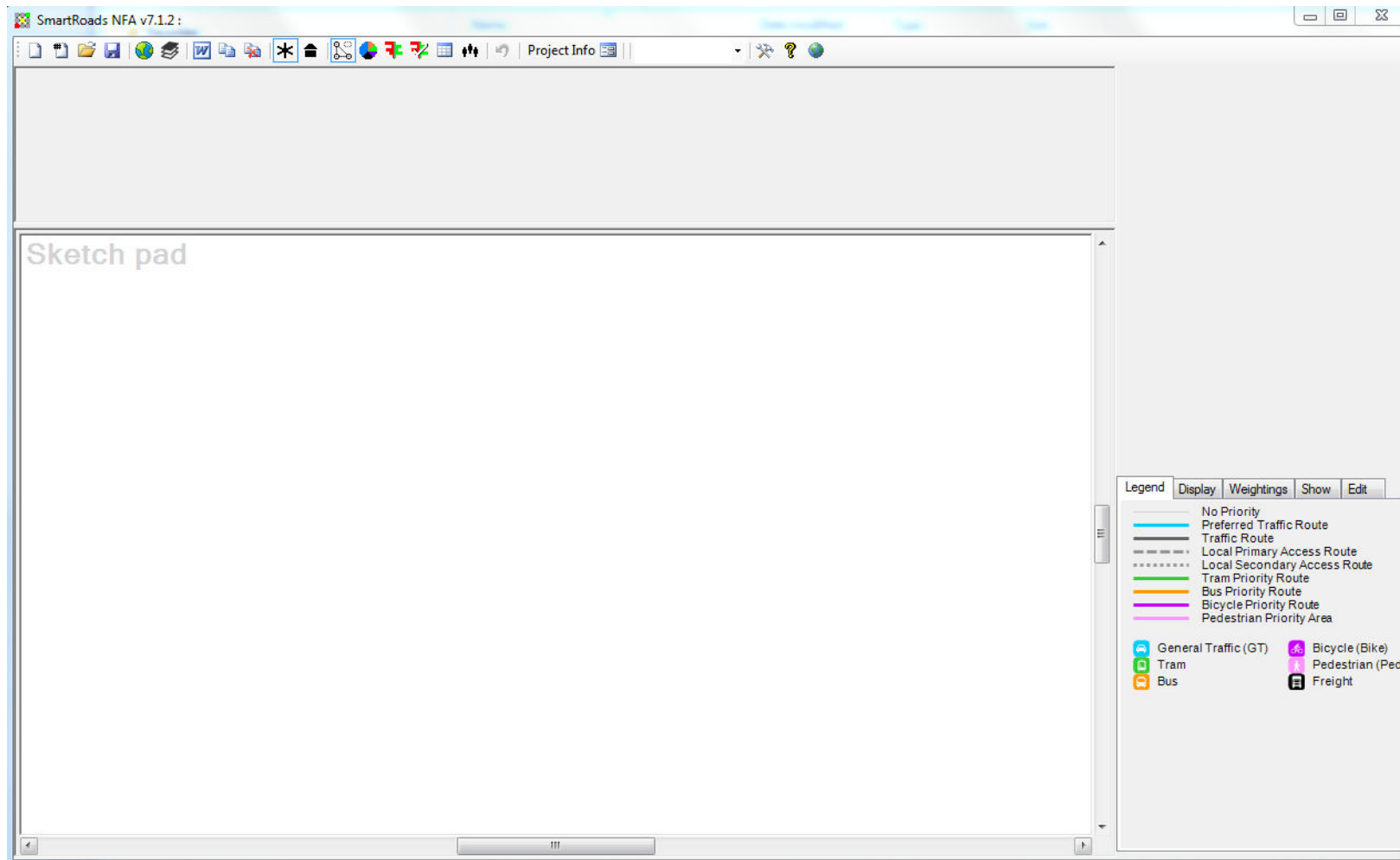
Select All | Clear All

OK | Cancel | Apply

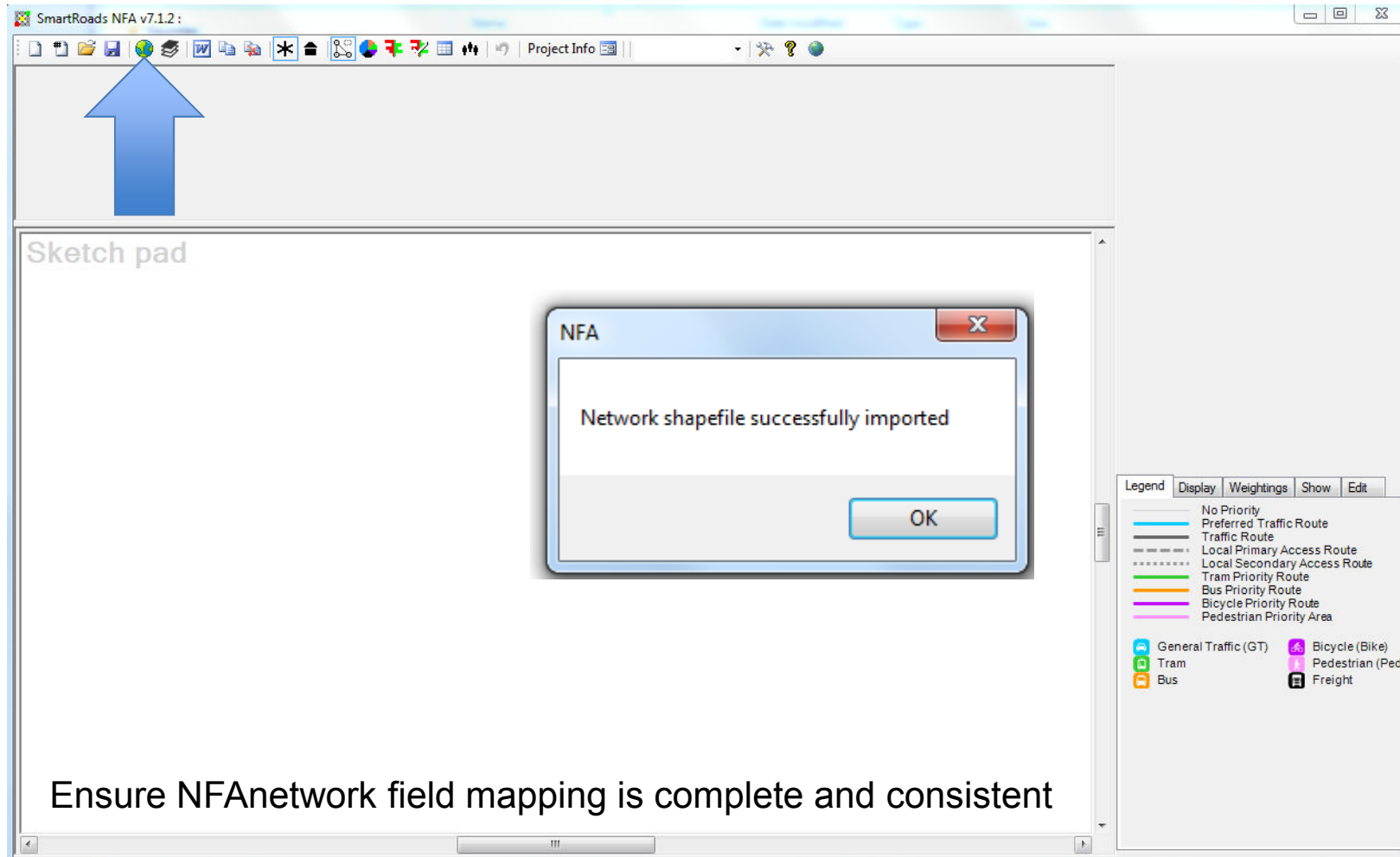
Overview of process



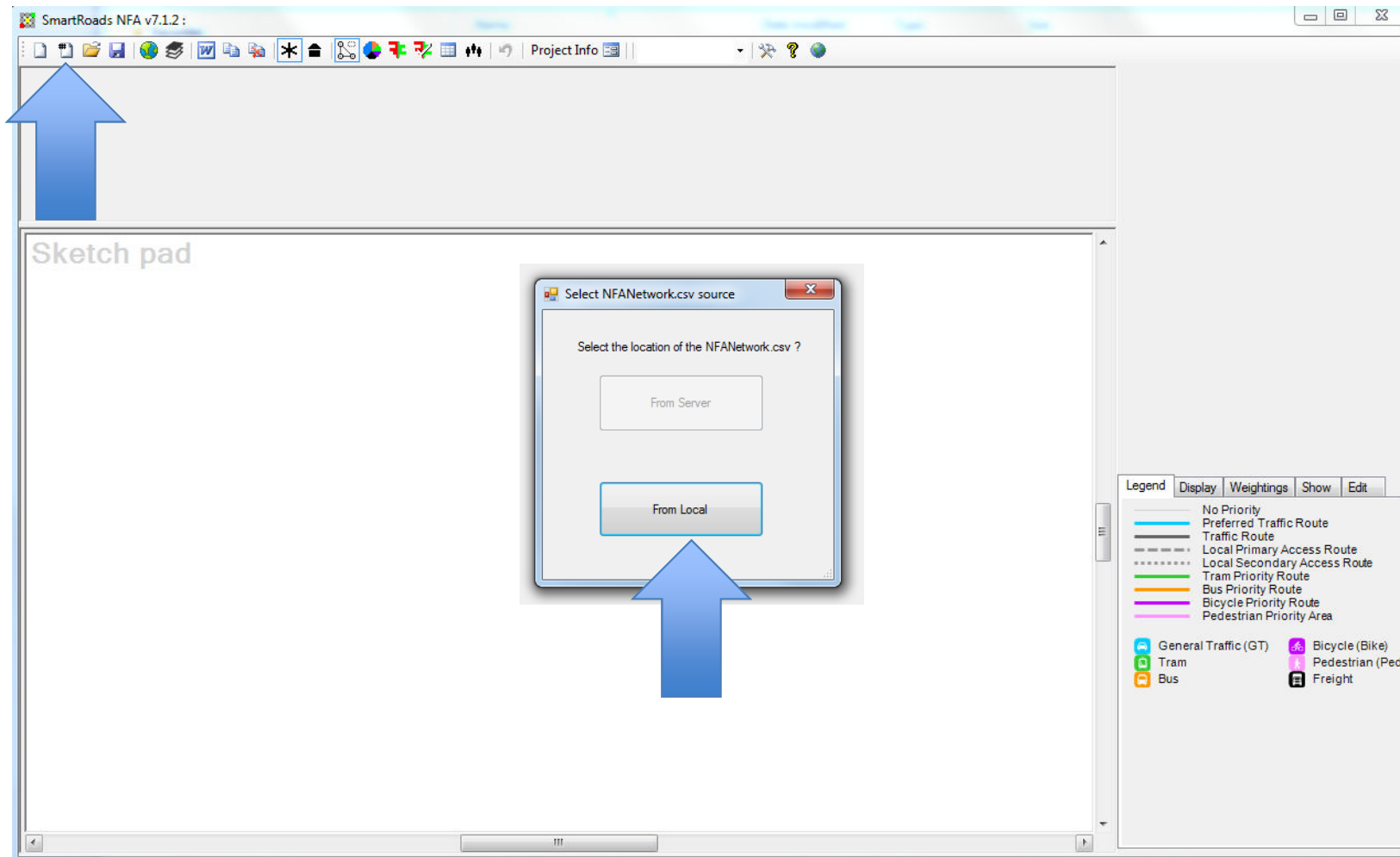
Step 1: Open NFA application



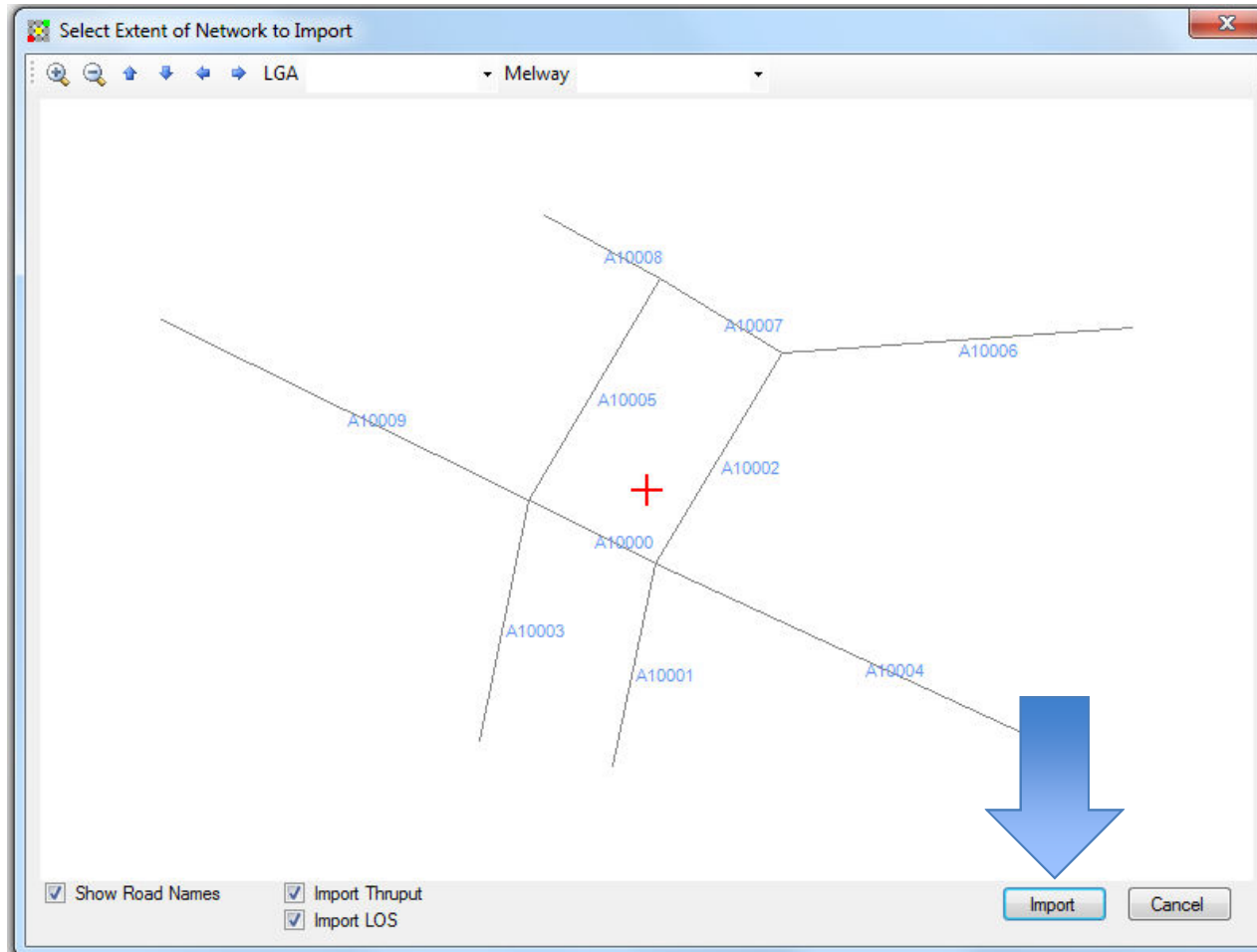
Step 2: Import shapefile 'test.shp'



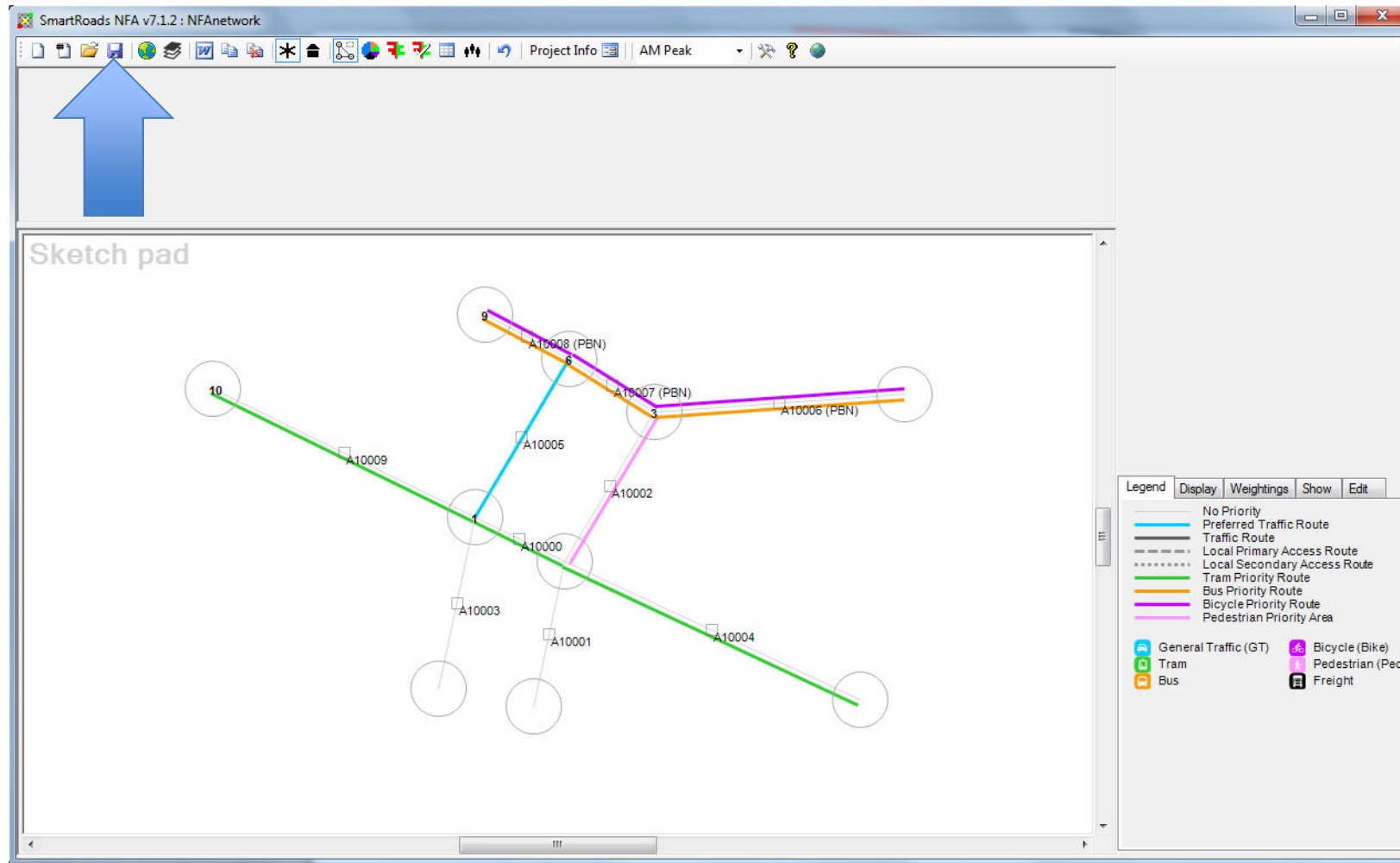
Step 3: Import network



Step 4: Zoom out to include all



Step 5: Save file



Step 6: edit/analyse then save

The screenshot displays the SmartRoads NFA v7.1.2 software interface. At the top, a table lists various traffic modes and their assessment parameters. Below this, the 'Assessment mode (Operations)' window shows a network diagram with nodes and links. A legend on the right side provides details on route types and assessment changes.

A10005 (NE approach)	Base ThruPut	Base LOS	Assess ThruPut	Assess LOS	Change	Confid	RPF	REF	MSF	PW	OG	Worst	Best	CommentsA	CommentsB	CommentsC
General Traffic	1900 vph	D	3100	F	H-	L	2	1.55	1	1	17.05	-7.22	-4.12			
Tram	51 trams/hr	C	51	A-	H-	L	1	1.75	1.6	1	0.46	1.40	2.81			
Bus	59 buses/hr	A	59	F	H-	L	1	1.01	1.6	1	6.49	-7.03	-5.40			
Bicycle	100	E	100	B+	H+	L	1	0.03	1.6	1	0.02	0.13	0.17			
Pedestrian	1000	C	1000	F	H-	L	1	0.34	1.6	1	2.20	-1.83	-1.28			
Freight	100	D	100	C+	M+	L	1.5	0.10	1.6	1	0.33	0.16	0.49			

Assessment mode (Operations)

Note: options must be named (in Project Info > Project Options)

Step 7: Export file to GIS

SmartRoads NFA v7.1.2 : NFAnetwork

Project Info | AM Peak

Sketch pad

Finished exporting data

OK

Legend

- No Priority
- Preferred Traffic Route
- Traffic Route
- Local Primary Access Route
- Local Secondary Access Route
- Tram Priority Route
- Bus Priority Route
- Bicycle Priority Route

Data Conversion

Action

- Export network and assessment data to a set of Shapefiles
- Import set of data files from a folder

Folder

C:\Users\ian.espada\Dropbox\Projects\Austroads NOP tool\Web...

Projection

3111 EPSG code

Step 8: Review output files

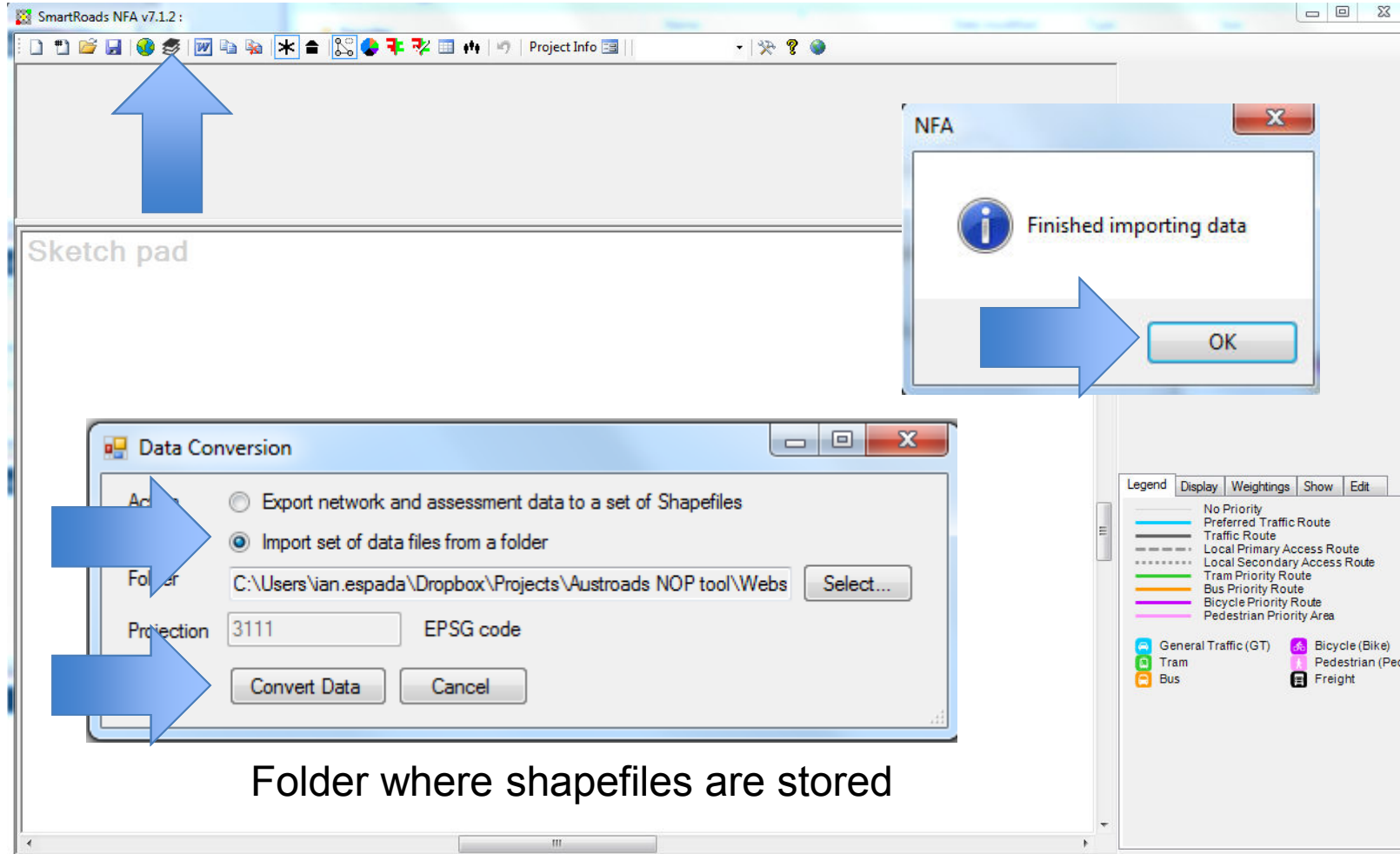
config	28/10/2015 2:18 PM	Text Document	18 KB
nfa-assess.dbf	28/10/2015 2:18 PM	DBF File	1,185 KB
nfa-assess.prj	28/10/2015 2:18 PM	PRJ File	1 KB
nfa-assess.sbn	28/10/2015 1:44 PM	SBN File	3 KB
nfa-assess.sbx	28/10/2015 1:44 PM	SBX File	1 KB
nfa-assess.shp	28/10/2015 2:18 PM	SHP File	53 KB
nfa-assess.shx	28/10/2015 2:18 PM	SHX File	3 KB
nfa-inter.dbf	28/10/2015 2:18 PM	DBF File	36 KB
nfa-inter.prj	28/10/2015 2:18 PM	PRJ File	1 KB
nfa-inter.shp	28/10/2015 2:18 PM	SHP File	1 KB
nfa-inter.shx	28/10/2015 2:18 PM	SHX File	1 KB
nfa-link.dbf	28/10/2015 2:18 PM	DBF File	56 KB
nfa-link.prj	28/10/2015 2:18 PM	PRJ File	1 KB
nfa-link.shp	28/10/2015 2:18 PM	SHP File	3 KB
nfa-link.shx	28/10/2015 2:18 PM	SHX File	1 KB
op-gap.dbf	28/10/2015 2:18 PM	DBF File	365 KB
op-gap.prj	28/10/2015 2:18 PM	PRJ File	1 KB
op-gap.shp	28/10/2015 2:18 PM	SHP File	26 KB
op-gap.shx	28/10/2015 2:18 PM	SHX File	2 KB
table-L1.dbf	28/10/2015 2:18 PM	DBF File	1 KB
table-L1.prj	28/10/2015 2:18 PM	PRJ File	1 KB
table-L1.shp	28/10/2015 2:18 PM	SHP File	1 KB
table-L1.shx	28/10/2015 2:18 PM	SHX File	1 KB
table-L2.dbf	28/10/2015 2:18 PM	DBF File	1 KB
table-L2.prj	28/10/2015 2:18 PM	PRJ File	1 KB
table-L2.shp	28/10/2015 2:18 PM	SHP File	1 KB
table-L2.shx	28/10/2015 2:18 PM	SHX File	1 KB
Test	28/10/2015 1:45 PM	ESRI ArcMap Doc...	44 KB

Step 9: Open/edit shapefiles in GIS

The screenshot displays the ArcMap interface. On the left, the 'Layers' panel shows a list of layers including 'table-L2', 'table-L1', 'nfa-inter', 'op-gap', 'nfa-link', and 'nfa-assess'. The main map area shows a network of purple lines. An 'Attributes of nfa-assess' window is open, displaying a table with the following data:

FID	Shape	Link	Direction	Level	Period	Option	Type	Mode	Thruput	BasThruPut	LOSChange	Confidence	OptionLOS	LOSChgPost	ConfidPost	LOSPost	CommentsA	CommentsB	CommentsC
165	Polyline	10005	0	2	3	0	0	3	200 bikes/hr										A
166	Polyline	10005	0	2	3	0	0	4	100 peds/hr										A
167	Polyline	10005	0	2	3	0	0	5	100 trucks/hr										A
168	Polyline	10005	0	2	0	1	0	0	3100 vph	1900 vph	H-	L	F						F
169	Polyline	10005	0	2	0	1	0	1	51 trams/hr	51 trams/hr	H+	L	A-						A-
170	Polyline	10005	0	2	0	1	0	2	59 buses/hr	59 buses/hr	H-	L	F						F
171	Polyline	10005	0	2	0	1	0	3	100 bikes/hr	100 bikes/hr	H+	L	B+						B+
172	Polyline	10005	0	2	0	1	0	4	1000 peds/hr	1000 peds/hr	H-	L	F						F
173	Polyline	10005	0	2	0	1	0	5	100 trucks/hr	100 trucks/hr	M+	L	C+						C+
174	Polyline	10005	1	2	0	0	0	1	51 trams/hr				C						C
175	Polyline	10005	1	2	0	0	0	2	59 buses/hr				A						A
176	Polyline	10005	1	2	0	0	0	0	300 vph				D				AM Comment		D
177	Polyline	10005	1	2	0	0	0	3	100 bikes/hr				E						E
178	Polyline	10005	1	2	0	0	0	4	1000 peds/hr				C						C

Step 10: Import shapefile



Step 11: Edit/analyse then save

SmartRoads NFA v7.1.2: Project Info Option 1 - Assessment Level Time Period AM Peak

A10005 (NE approach)	Base ThruPut	Base LOS	Assess ThruPut	Assess LOS	Change	Confid	RPF	REF	MSF	PW	OG	Worst	Best	CommentsA	CommentsB	CommentsC
General Traffic	1900 vph	D	3100	F	H-	H-	2	1.55	1	1	17.05	-6.20	-6.20			
Tram	51 trams/hr	C	51	A-	H+	H-	1	1.75	1.6	1	0.46	2.34	2.34			
Bus	59 buses/hr	A	59	F	H-	H-	1	1.01	1.6	1	6.49	-6.49	-6.49			
Bicycle	100	E	100	B+	H+	H-	1	0.03	1.6	1	0.02	0.15	0.15			
Pedestrian	1000	C	1000	F	H-	H-	1	0.34	1.6	1	2.20	-1.65	-1.65			
Freight	100	D	100	C+	M+	H-	1.5	0.10	1.6	1	0.33	0.32	0.32			

Assessment mode (Operations)

Level 2, AM Peak Option 1 - Estimated Change Negative

Level 2, All Periods Option 1 - Estimated Change Negative

Legend

- No Priority
- Preferred Traffic Route
- Traffic Route
- Local Primary Access Route
- Local Secondary Access Route
- Tram Priority Route
- Bus Priority Route
- Bicycle Priority Area
- Pedestrian Priority Area

General Traffic (GT) Bicycle (Bike)
 Tram Pedestrian (Ped)
 Bus Freight

Change in assessment
 Positive Negative

Resources, feedback and support

Contact: nopsupport@arrb.com.au

<http://www.austroads.com.au/road-operations/network-operations/publications-resources/smartroads-tool>