

RPS



National Secondary Road Study

OmniTRANS and its Utilization for this project

Justin McGurk
Senior Technician



- Mandate
 - Authority's primary function, under the Roads Act 1993, is 'to secure the provision of a safe and efficient network of national roads'. For this purpose, it has overall responsibility for planning and supervision of construction and maintenance works on these roads.
- Specific Functions
 - Preparing, or arranging for the preparation of road designs, maintenance programmes and schemes for the provision of traffic signs on national roads
 - Securing the carrying out of construction, improvement and maintenance works on national roads.
 - Allocating and paying grants for national roads.
 - Training, research or testing activities in relation to any of its functions

Source: www.nra.ie

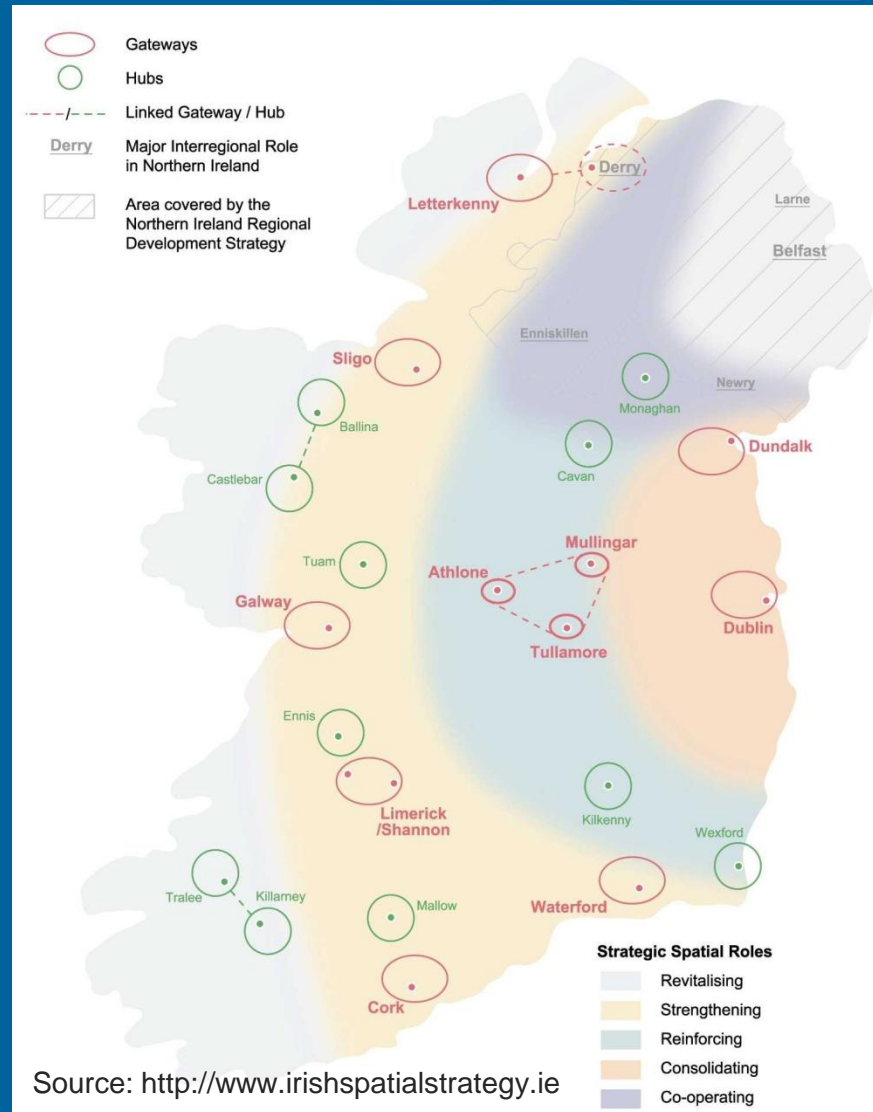


- Informing Documents and Policies
 - National Spatial Strategy
 - Transport 21
 - National Development Plan
 - Smarter Travel – A Sustainable Transport Future
- Common Appraisal Framework
 - Economic
 - Safety
 - Environment
 - Integration
 - Accessibility and Social Inclusion



National Spatial Strategy

- Gateways: Main Actors National Level
- Hubs: Supported by and supporting the Gateways

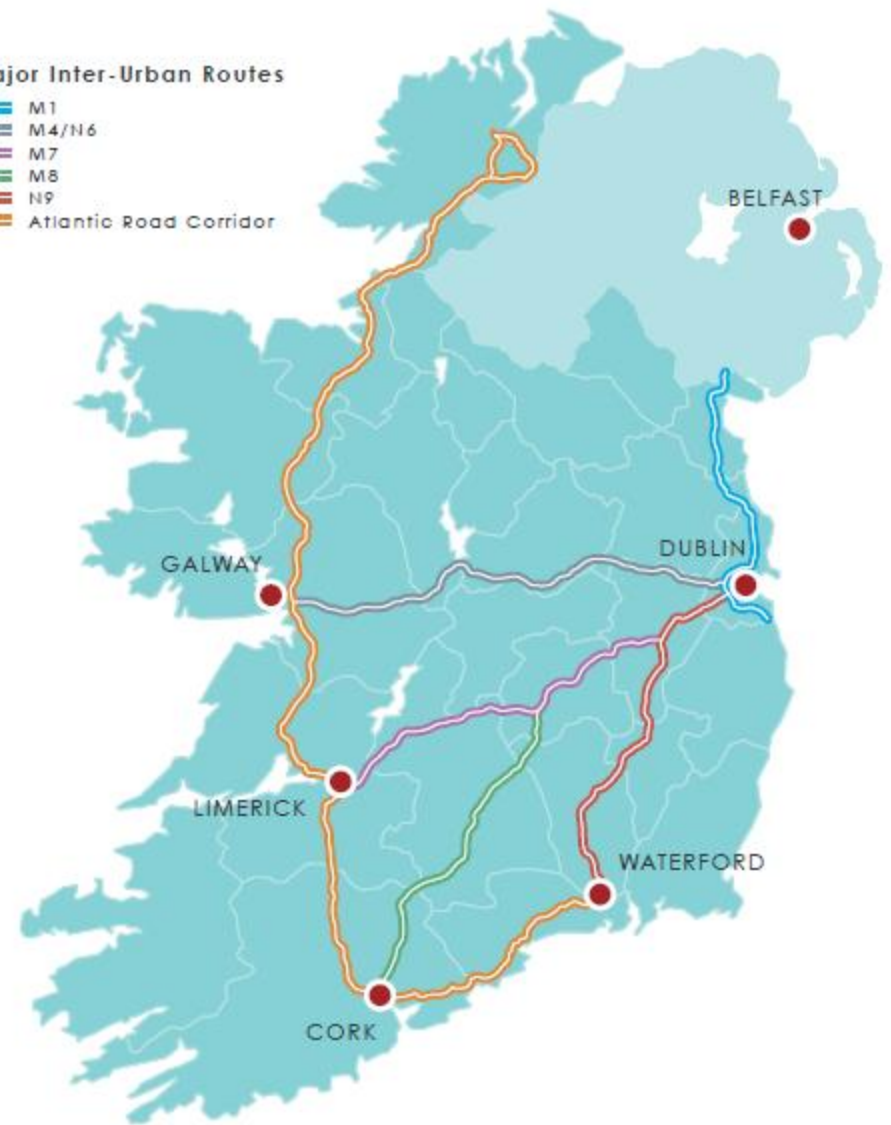


RPS

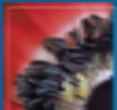
Inter-Urban Routes

Major Inter-Urban Routes

- M1
- M4/N6
- M7
- M8
- N9
- Atlantic Road Corridor



Source: NRA Annual Report and Accounts 2008





Study Context

- National Scope
- 34 National Secondary Routes
- Over 350 Schemes to be assessed

	Road Length (km)	% of Network
National Primary	2740	50.3%
National Secondary	2710	49.7%





- National Highway Model
 - Developed for NRA by Faber Manusull
 - Visum based Model
 - Based on NAVTEQ data set for roads (GPS?)
- NRA Datasets
 - Carriageway Widths
 - Accident Data
- Derived Data
 - 'Bendiness'
 - Change in height from DTM
 - Quality Scores.



- Conversion
 - Domain Mapping
 - Import of data (ESRI)
 - Base year and Future Year
 - Import of Matrices
- Transformation
 - Analysis and Synthesis of existing data
 - Splitting Links to New Link Types based on Quality Score
 - Creating Do-Min Network, Combination of Base Year and Future Year
- Application
 - Developments of procedures and outputs for Multi Criteria Assessment
- Analysis
 - For each scheme



NSR_V3_20100526_Master_No1

The Model

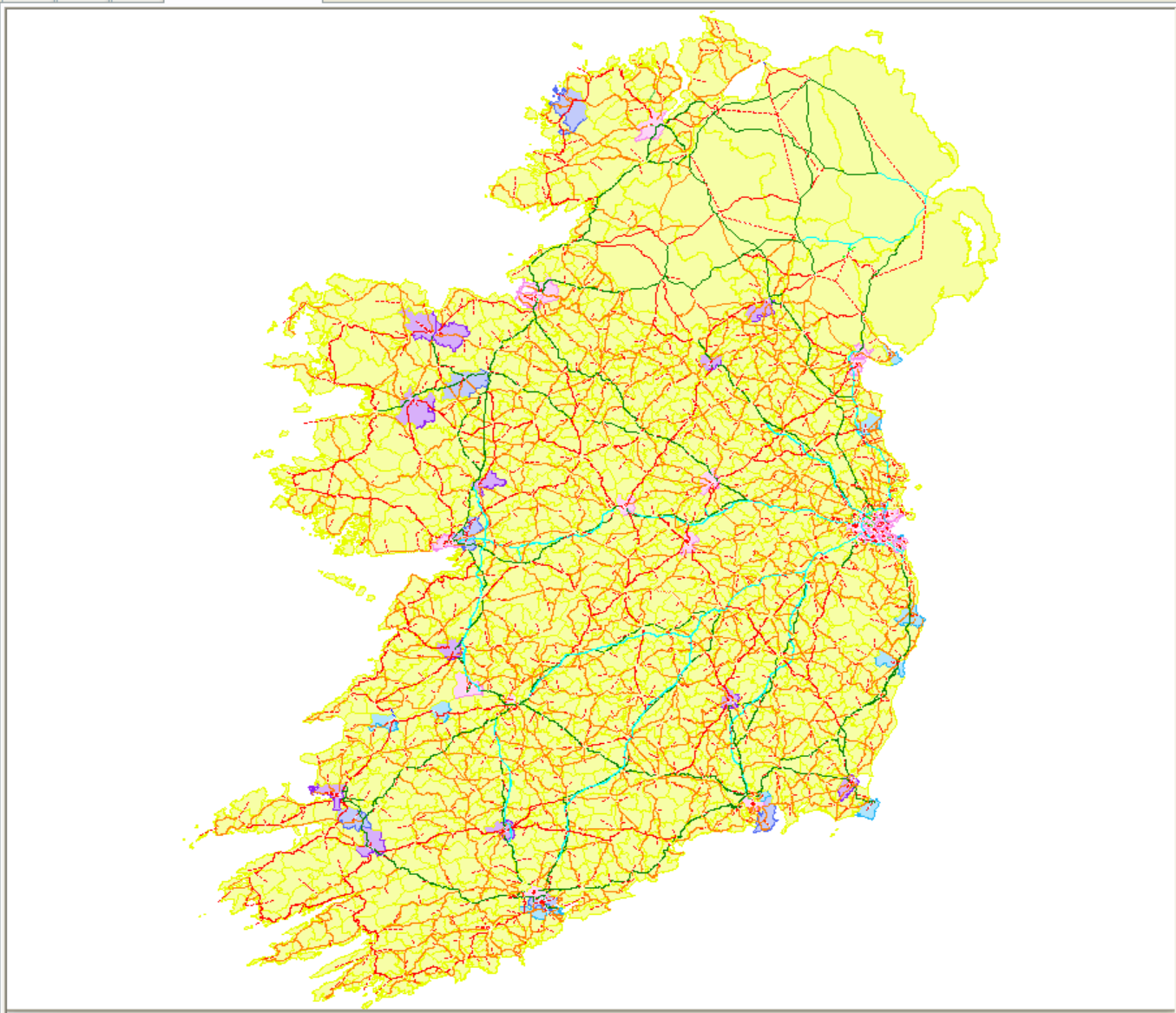
2025_FY_Do_Minimum

2006_BY_FM
Cube: 2006_Base
Parameters: (None)

2025_FY_Vision
Cube: 2025_Medium
Parameters: (None)

2025_FY_Do_Minimum
Cube: 2025_Medium
Parameters: (None)

Info Data Jobs 2025_FY_Do_Minimum



-53388.0;179361.3



- National Model Too Big
 - Do not want 400 variants!
- Cordon's
 - Based on each Corridor
 - Extract Skims for each Variant
 - Economic analysis in TUBA
 - Standard Link Report
 - Used for post processing
 - Accident Data
 - Environmental
 - Zonal Data: Standard Zone Report
 - Accessibility by mapping New Centroid ID's to Hubs and Gateways
 - Allows a job to then access the skim cubes and find out the Min time to Gateway



- `Canned` Operations
 - Get Ruby Jobs to Cycle through variants
 - Matrix Export
 - Assignment
 - Geometry Export
- Standard Reports
 - Onwards Analysis in Access

Standard Link Report dbf Export002

Cordon N68 20100527 No1
2025_FY_Do_Minimum



Inlnr	reccion	RDNc	type	RDNAM	Length	CALoad	CIload	HALoad	HIload	TALoad	TIload	mLoads	Akph	Ikph
25691	1	n84	NS_Q730 to 740	n84	3.21	439.23	275.12	33.09	39.06	472.32	314.18	787	63.73	68.47
25691	2	n84	NS_Q730 to 740	n84	3.21	1027.18	215.63	27.13	30.59	1054.30	246.22	1301	50.80	70.72
60911	1		R_Roundabout 2 Lanes		0.02	215.95	359.38	1.52	16.42	217.47	375.80	593	39.81	39.37
60912	2		R_Single_C/W_Road		1.51	65.00	26.00	0.00	0.00	65.00	26.00	91	62.92	62.99
60912	1		R_Single_C/W_Road		1.51	12.87	23.27	0.00	0.00	12.87	23.27	36	63.00	62.99
60913	1		R_Single_C/W_Road		0.01	4.41	0.00	0.00	0.00	4.41	0.00	4	63.00	63.00
60914	1		NP_Dual_C/W 2 Lanes		0.01	746.70	449.28	121.78	46.56	868.48	495.85	1364	96.45	99.03
60915	1		R_Single_C/W_Road		0.01	0.00	0.00	0.00	0.00	0.00	0.00	0	63.00	63.00
60916	1		R_Single_C/W_Road		0.37	4.41	0.00	0.00	0.00	4.41	0.00	4	63.00	63.00
60916	2		R_Single_C/W_Road		0.37	0.00	0.00	0.00	0.00	0.00	0.00	0	63.00	63.00
60917	1		NP_Dual_C/W 2 Lanes		3.03	746.70	449.28	121.78	46.56	868.48	495.85	1364	96.45	99.03
60918	2		NP_Dual_C/W 2 Lanes		2.07	60.59	26.00	0.00	0.00	60.59	26.00	87	99.99	100.00
60918	1		NP_Dual_C/W 2 Lanes		2.07	458.20	534.63	94.19	61.59	552.38	596.22	1149	98.76	98.51
60919	1		NP_Dual_C/W 2 Lanes		0.02	60.59	26.00	0.00	0.00	60.59	26.00	87	99.99	100.00
60920	1		R_Single_C/W_Road		0.01	505.93	537.35	94.19	61.59	600.11	598.95	1199	53.41	53.44
60921	1		R_Single_C/W_Road		0.06	60.59	26.00	0.00	0.00	60.59	26.00	87	62.93	62.99
60921	2		R_Single_C/W_Road		0.06	12.87	23.27	0.00	0.00	12.87	23.27	36	63.00	62.99
60922	2		R_Single_C/W_Road		0.02	458.20	534.63	94.19	61.59	552.38	596.22	1149	54.82	53.52
61779	1		NP_Dual_C/W 2 Lanes		0.78	816.05	506.31	88.84	28.09	904.89	534.40	1439	96.10	98.85
61780	1		NP_Roundabout 2 Lanes		0.01	0.00	10.21	0.00	0.26	0.00	10.47	10	40.00	40.00
61781	2		NP_Roundabout 2 Lanes		0.02	816.05	516.52	88.84	28.36	904.89	544.87	1450	37.97	39.32
61782	2		NP_Roundabout 2 Lanes		0.01	816.05	516.52	88.84	28.36	904.89	544.87	1450	37.97	39.32
61783	2		NP_Roundabout 2 Lanes		0.02	816.05	516.52	88.84	28.36	904.89	544.87	1450	37.97	39.32
61784	1		NP_Dual_C/W 2 Lanes		0.76	153.80	114.14	0.00	1.14	153.80	115.28	269	99.94	99.97
61785	2		NP_Roundabout 2 Lanes		0.02	525.90	465.92	85.44	28.09	611.34	494.01	1105	39.13	39.45
61786	2		NP_Roundabout 2 Lanes		0.02	679.70	580.06	85.44	29.24	765.14	609.30	1374	38.58	39.13
61787	2		NP_Roundabout 2 Lanes		0.01	139.34	114.14	0.00	1.14	139.34	115.28	255	39.97	39.98

Standard Link Report dbf Export002

Cordon N68 20100527 No1
2025_FY_Do_Minimum



Inlnr	reccion	RDNc	type	RDNAM	Length	CALoad	CIload	HALoad	HIload	TALoad	TIload	mLoads	Akph	Ikph
61788	1		Motorway Slip 1 Lane		2.02	505.44	639.17	6.16	20.59	511.59	659.76	1171	74.91	71.19
61789	2		NP_Roundabout 2 Lanes		0.02	644.78	753.31	6.16	21.74	650.93	775.05	1426	39.00	38.54
61790	1		Motorway		1.51	505.44	639.17	6.16	20.59	511.59	659.76	1171	119.40	119.07
61792	2		Motorway_Slip_1_Lane		1.96	540.36	465.92	85.44	28.09	625.80	494.01	1120	72.12	75.29
61793	1		Motorway		0.93	505.44	639.17	6.16	20.59	511.59	659.76	1171	119.40	119.07
61794	1		Motorway_Slip_1_Lane		0.44	0.00	0.00	0.00	0.00	0.00	0.00	0	80.00	80.00
61795	2		Motorway		1.51	540.36	465.92	85.44	28.09	625.80	494.01	1120	119.16	119.44
61796	1		NP_Single_C/W		1.08	37.67	80.40	0.00	8.47	37.67	88.87	127	79.99	79.93
61796	2		NP_Single_C/W		1.08	48.88	64.83	14.81	8.47	63.69	73.30	137	79.97	79.95
61797	1		NP_Roundabout		0.03	86.91	184.88	14.81	8.47	101.72	193.35	295	39.92	39.68

Report Page Setup Columns

Fonts

Title: A A

Subtitles: A A

Header: A A

Groups: A A

Data: A A

Summary: A A

Footer: A A

[Set Font Family...](#)

Titles

Show title block

Title #1:

Title #2:

Title #3:

Show header

Repeat header on all pages

Footer

Page count:

Date format:

Objects	Name	Description	Modified	Create
Tables	Create query in Design view			
Queries	Create query by using wizard			
Forms	Old_BackUP_Q_EnvironmentData	SS: State of Query in Verions 1 of Tool remaining for conmprison purposesOutPut: Environment outputs	26/05/2010 15:02:47	26/05/2010 17:16:53
Reports	QQ_AccidentCalculation_Links	OutPut Accident Data: Individual Links	26/05/2010 17:16:21	16/10/2010 17:16:21
Pages	QQ_AccidentOutput_Test	OutPut Accident Data: Summary Global Figure	26/05/2010 16:45:22	13/10/2010 16:45:22
Macros	Q_1_InnerJoinData	Makes table from source data	24/05/2010 17:06:59	13/10/2010 17:06:59
Modules	Q_2_DoMinOnlyData	Appends do-min only data	24/05/2010 17:19:23	13/10/2010 17:19:23
Groups	Q_3_DoSomethingOnlyData	Appends do-Something only data	26/05/2010 17:18:01	16/10/2010 17:18:01
Favorites	Q_AccidentData	Vital: Do not EDIT Mapping Query of Accident to Link Types	26/05/2010 17:52:19	26/05/2010 17:52:19
	Q_EnvironmentData	OutPut: Environment outputs Takes data from T_LinkOutput and collapses to bi-directional ...	26/05/2010 17:14:58	01/04/2010 17:14:58
	Q_TimeSavingSummary	Output:Summary figure of AADT Time savings	26/05/2010 17:52:19	26/05/2010 17:52:19
	Q_TUNIDir_LinkOutput	Aggregator: Collapses Uni-directional data into bi-directional data using group by: i.e. creates a shadow copy...	26/05/2010 17:17:15	26/05/2010 17:17:15
	Q_V_AccidentRate Without Matching OT_LinkTypes_20091015	Validation Query	27/05/2010 15:53:16	21/05/2010 15:53:16
	Q_V_DM_T_LinkOutPut Without Matching Q_AccidentData	Validation Query: Wha links in T_LinkOutput do not have mappings to Q_Accident Data: Do Min Case: +ve re...	26/05/2010 12:40:32	24/05/2010 12:40:32
	Q_V_Do_Min Without Matching QQ_AccidentCalculation_Links	Validation Query: What Do Min links are not in QQ_AccidentOutput_Test? Should be only CONNECTOR Types	26/05/2010 12:40:13	26/05/2010 12:40:13
	Q_V_Do_Something Without Matching QQ_AccidentCalculation_Links	Validation Query: What Do Something links are not in QQ_AccidentOutput_Test? Should be only CONNECTOR...	27/05/2010 15:51:57	26/05/2010 15:51:57
	Q_V_DS_T_LinkOutPut Without Matching Q_AccidentData	Validation Query: Wha links in T_LinkOutput do not have mappings to Q_Accident Data: Do Something Case: ...	26/05/2010 12:08:23	24/05/2010 12:08:23
	Q_V_List_Linktypes_2010501 No Matching OT_LinkTypes_20091015	Check query: Now redundant	26/05/2010 12:08:56	24/05/2010 12:08:56
	Q_V_OT_LinkTypes_20091015 No Matching List_Linktypes_2010501	Check query: Now redundant	26/05/2010 12:37:11	26/05/2010 12:37:11
	Q_V_OT_LinkTypes_20091015 Without Matching AccidentRate	Validation Query: Type names differ in text between accident and Link type data	26/05/2010 12:37:18	26/05/2010 12:37:18
	Q_V_T_LinkOutPut Without Matching QQ_AccidentCalculation_Links	Validation Query: Do All links in T_Link_Output appear in QQ_AccidentCalculation_Links? Null result means Yes	26/05/2010 16:41:35	15/10/2010 16:41:35
	SS_Q_EnvironmentData	SS: Version 1 query. Saved for reference. OutPut: Environment outputs		




Microsoft Access - [IMPORT AND PROCESS OT DATA]

File Edit View Insert Format Records Tools Window Help

Tahoma 8 B I U

RPS DATA PROCESSING



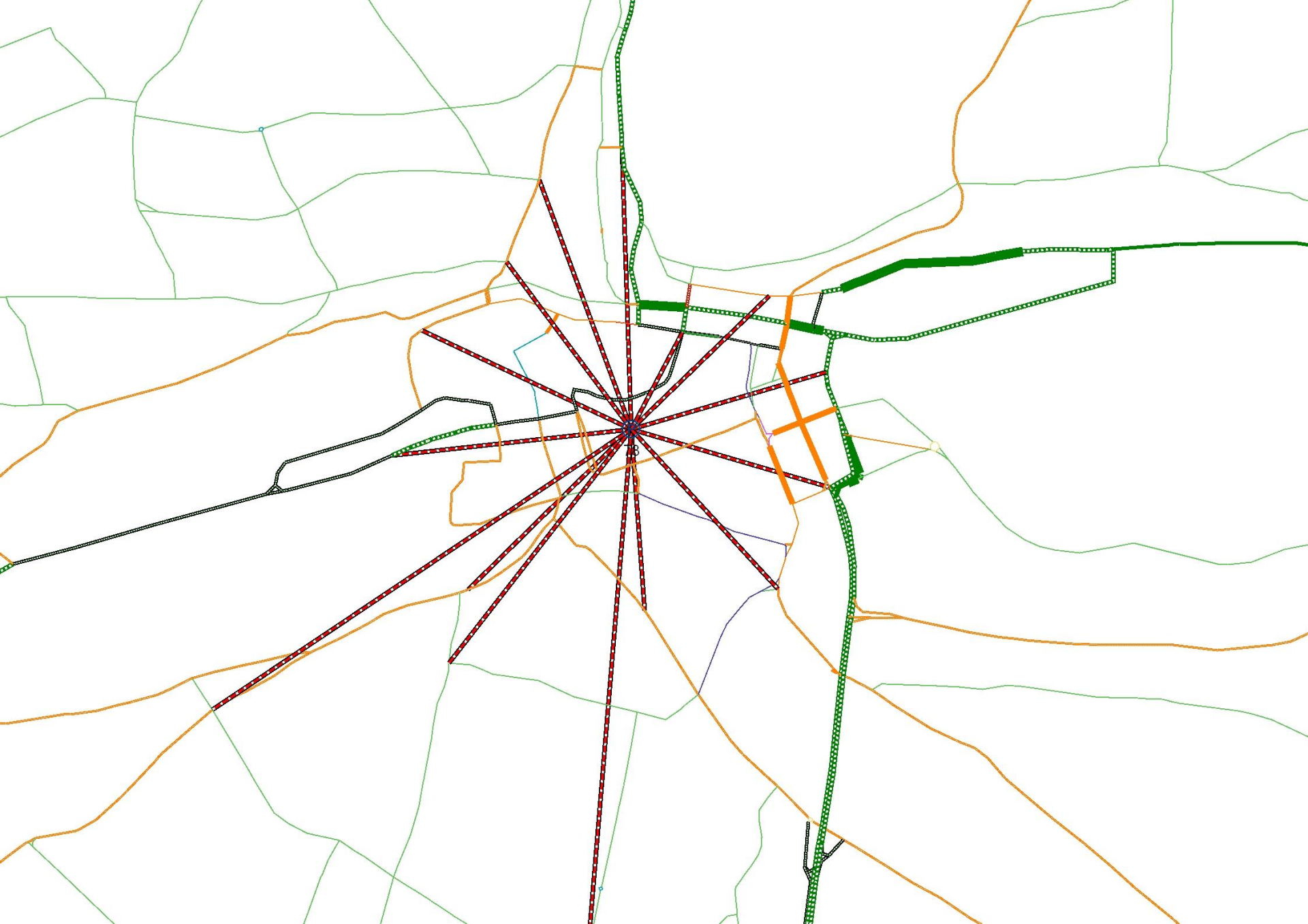
CONFIRM AADT FACTOR BEFORE RUNNING!

Create file
Exported_EnvironmentData.csv
Exported_TimeSavingsData.csv
Into Source folder

Create file Exported_AccidentData.csv
Exported_AccidentData_LinkReport.csv
Into Source folder

Record: 1 of 1

Form View NUM





- Centroids
 - With Many Connections
 - Unstable networks
- Possible Solution
 - Doughnut or Pretzel Cordons?
 - Under development

RPS

The End



Any Questions?