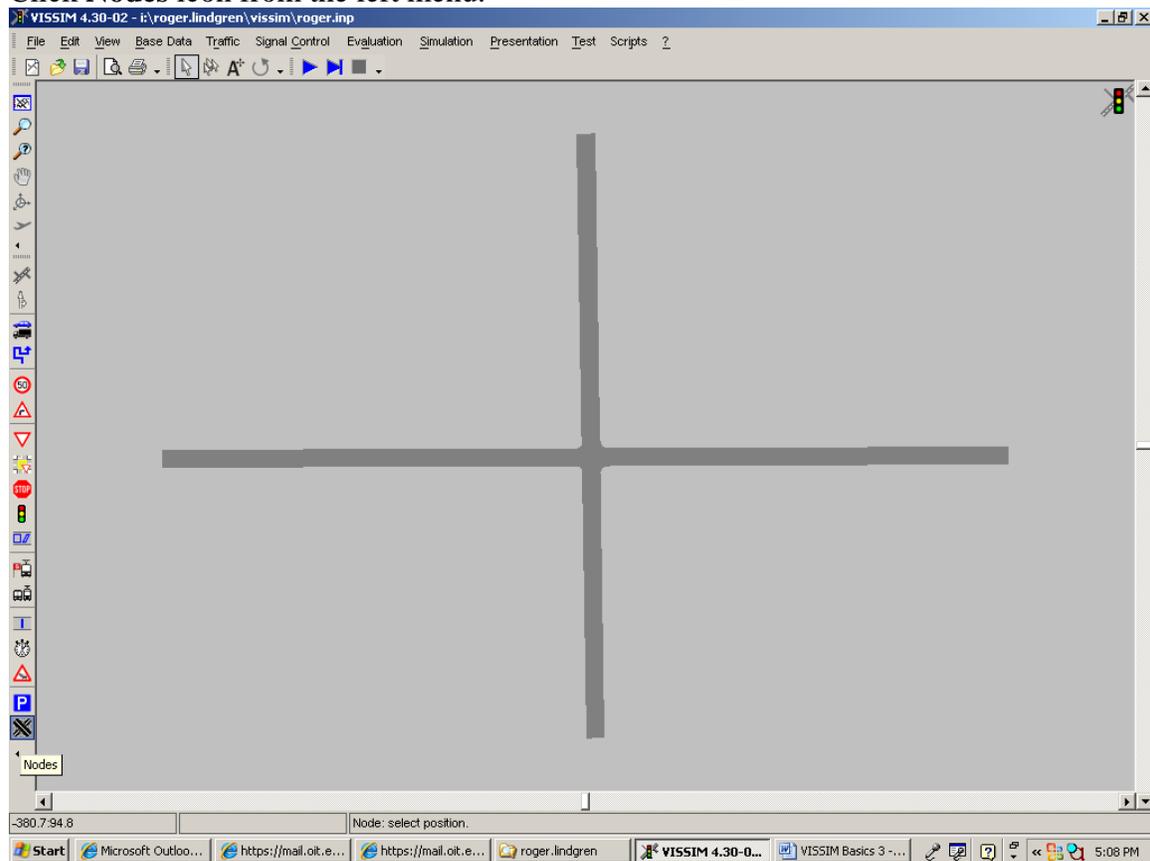


There are many types of data that can be extracted from a properly built and calibrated traffic simulation model. The most basic, and needed, data for traffic engineering studies is the computation of average delay per vehicle for a particular movement (left, straight, right) at an intersection OR the delay of the entire intersection. As per the material presented in CIV 371, delay is an important measure of effectiveness at an intersection and is typically used in determining the level of service (LoS). This tutorial presents a basic method for collecting delay data and determining intersection LoS.

## 1. Establishing Nodes

VISSIM 4.3 has greatly improved the process of running simulation(s) and processing results. One of the features is the **Node** command. This allows the modeler to gather *intersection level* results.

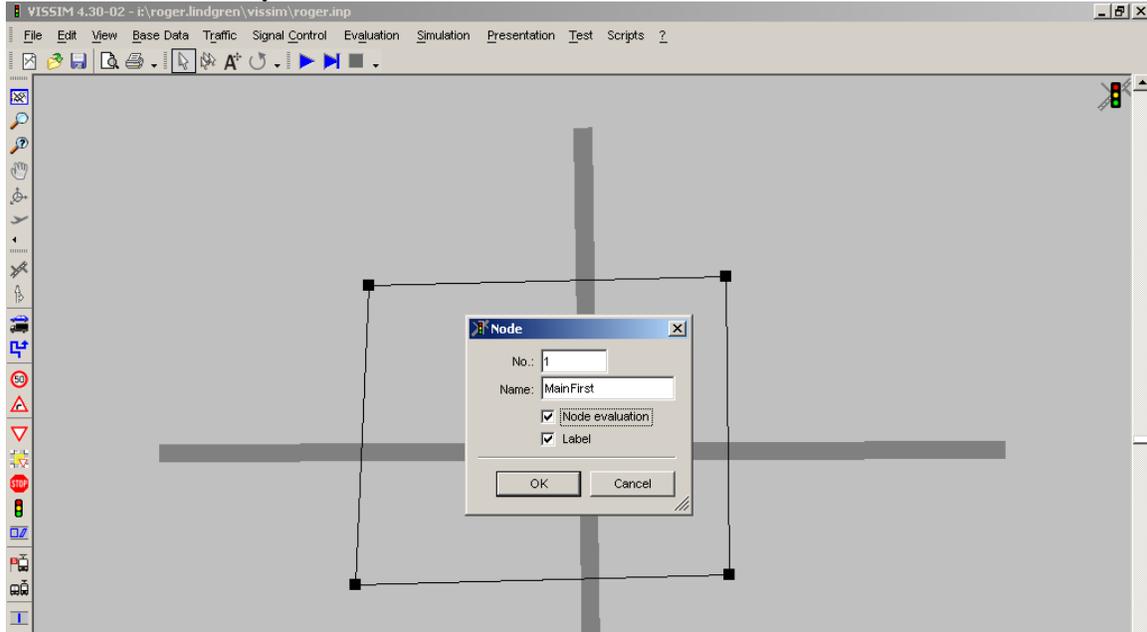
Click **Nodes** icon from the left menu.



## VISSIM Basics #3 – Collecting Delay Data for Intersections

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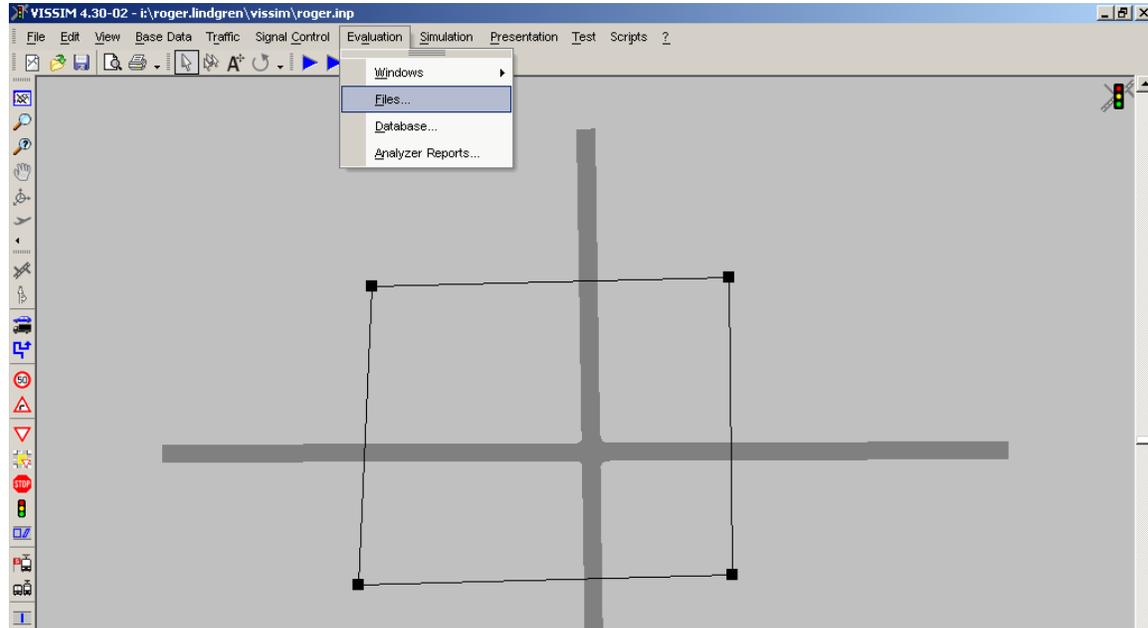
Name the node and ensure the **Node evaluation** box is checked. Then repeat this step for each intersection in your network.



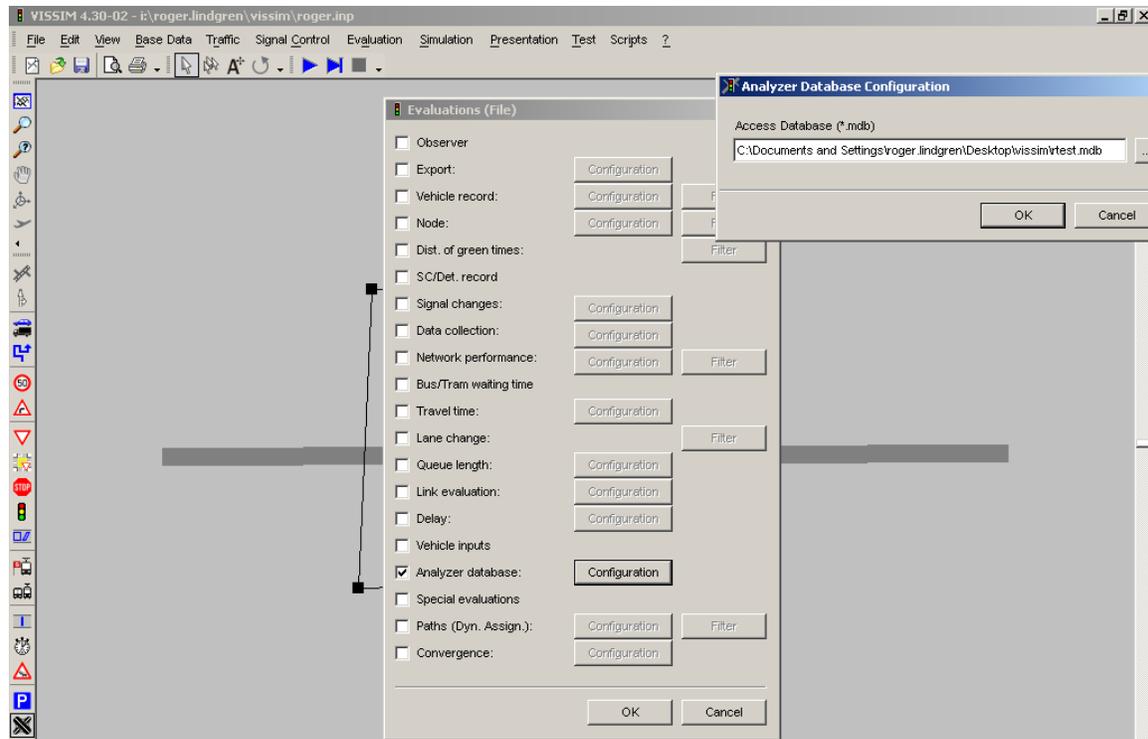
Once all the intersections have been marked with nodes, you can proceed to setting up the file structure for data acquisition.

## 2. Setting File Structure for Evaluation

### Click Evaluation-Files



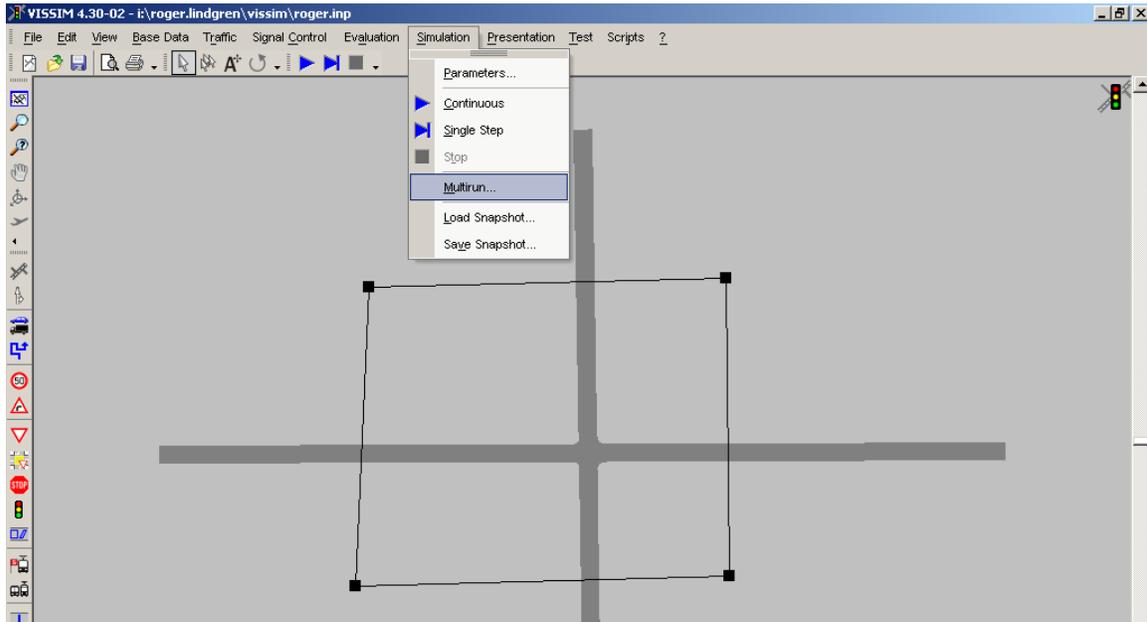
Then check the **Analyzer database** box and name the file (it is important that this file be created in the same folder as the \*.inp and \*.bgr files):



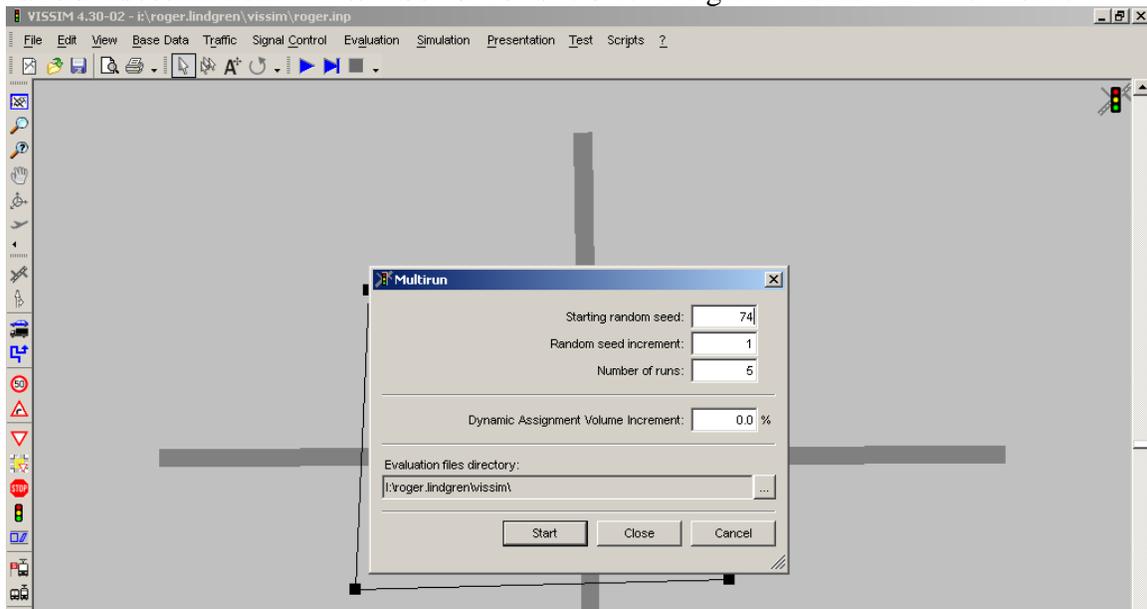
## 3. Multirun Simulation

Now, VISSIM is ready to gather intersection data from simulated “hours” of traffic. For the data to be meaningful, there must be several simulation “runs” each with a unique “seed” number to create random events.

### Click Simulation-Multirun



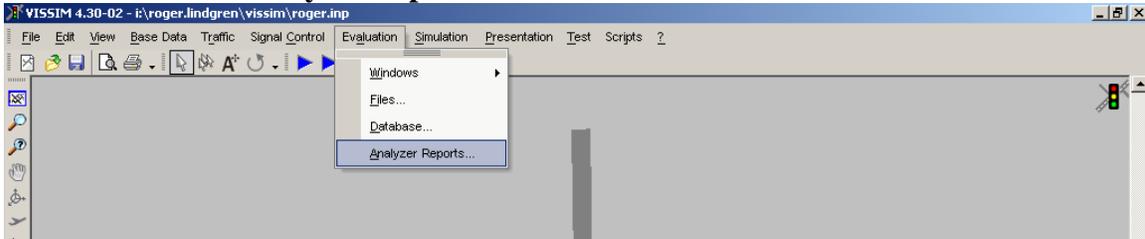
Use a random number generator (on your calculator for example) for the **Starting random seed** and set the **Number of runs** to 5 for the generation of initial statistics.



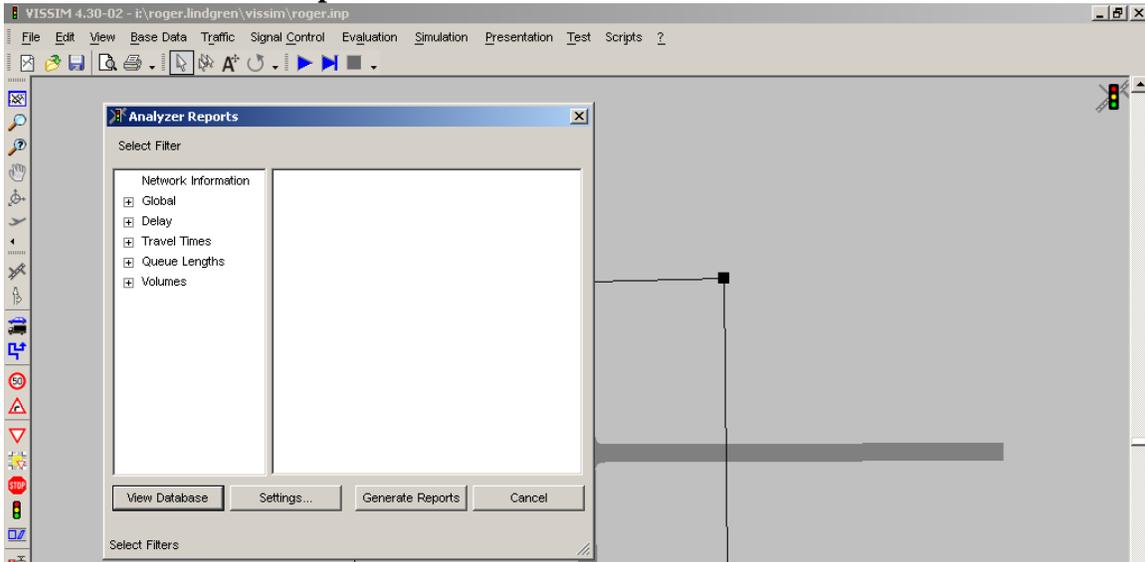
VISSIM will then execute “5” runs and compile the data.

## 4. Analyzer Reports

Click **Evaluation-Analyzer Reports**.



Then click **Generate Reports**



VISSIM will launch *Excel* to show the reports:

A screenshot of an Excel spreadsheet titled 'Summary Page'. The spreadsheet contains two main sections: 'Project Summary Information' and 'VISSIM Analysis Database Information'.

Project Summary Information		VISSIM Analysis Database Information	
Project Comment:		Input File Name:	i:\roger.lindgren\vissim\roger.inp
Analysis Date:	04/29/2008	Database File Name:	i:\roger.lindgren\vissim\rttest.mdb
Analysis Time:	17:21:03	Time of Database Creation:	15:39:22
		VISSIM Version:	VISSIM 4.30-02
		Number of Runs:	5
		Random Seeds:	74, 75, 76, 77, 78

# VISSIM Basics #3 – Collecting Delay Data for Intersections

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Click the **Delay** tab

Delay																	
Intersection	Approach Movement	Run										LOS	Average(s)	Standard Deviation(s)	Min(s)	Max(s)	
		1		2		3		4		5							
		Delay(s)	Volume														
MainFirst	Through	10.5	61	10	50	14	53	12.4	63	11.3	52		11.7	10.8	10	14	
	Right 2	8.8	87	8.7	55	11.2	46	12.3	54	15	58		11.5	10.6	8.7	15	
	Left 2	13.2	43	11	48	11.6	47	16.7	48	13.1	48		13.1	11	11	16.7	
	<b>Total</b>	10.7	157	9.8	153	12.3	146	13.9	165	13.2	158		12	10.8	8.7	16.7	
	EB	Through	31.6	70	17.4	77	27	83	25.8	87	23.5	83		25	16.7	17.4	31.6
MainFirst	Right 2	33.6	77	16.7	72	30.2	80	26.6	72	24	82		26.3	17.9	16.7	33.6	
	Left 2	32.6	147	17.1	149	28.6	163	26.2	159	23.7	165		25.6	17.3	16.7	33.6	
	<b>Total</b>	15.2	45	27.7	61	17.5	50	15.8	56	14	57		18.3	13.8	14	27.7	
	SB	Right 2	16.9	52	28.4	48	16.8	54	15.9	53	13.2	49		18.1	14	13.2	28.4
	Left 2	17.5	47	24.7	55	16.1	54	13.7	61	14.3	49		17.3	14.7	13.7	24.7	
MainFirst	<b>Total</b>	16.6	144	26.9	164	16.8	158	15.1	170	13.8	154		17.9	14.2	13.2	28.4	
	WB	Through	31.1	88	16.3	81	18.1	77	27.4	80	24.2	86		23.6	17	16.3	31.1
	Right 2	32.1	83	17.5	78	18	72	28.4	65	24	81		24.1	18.7	17.5	32.1	
	<b>Total</b>	31.6	171	16.9	159	18.1	149	27.8	145	24.1	167		23.8	17.8	16.3	32.1	
	<b>Total</b>	23	619	17.8	625	19.2	616	20.4	639	18.9	644		19.9	16.2	8.7	33.6	
<b>NETWORK TOTAL</b>		23	619	17.8	625	19.2	616	20.4	639	18.9	644		19.9	16.2	8.7	33.6	

From these “base statistics” (the *Average* and *Standard Deviation* of delay compiled from your first 5 runs) you will need to choose a **Number of runs** (n) that will allow you to estimate your parameter (average delay) to a certain level of confidence<sup>1</sup>. Once chosen repeat the above steps (3 and 4) with this new **Number of runs**.

Ultimately you will generate a report and see delays computed on each movement and a LoS<sup>2</sup> for each intersection.

<sup>1</sup> see a textbook or reputable web-based resource on statistics for guidance on choosing this “n”

<sup>2</sup> See the latest version of the Highway Capacity Manual and check that VISSIM’s LoS agrees with the HCM specifications, change if necessary