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CEE 598: Traffic Sim Model Application

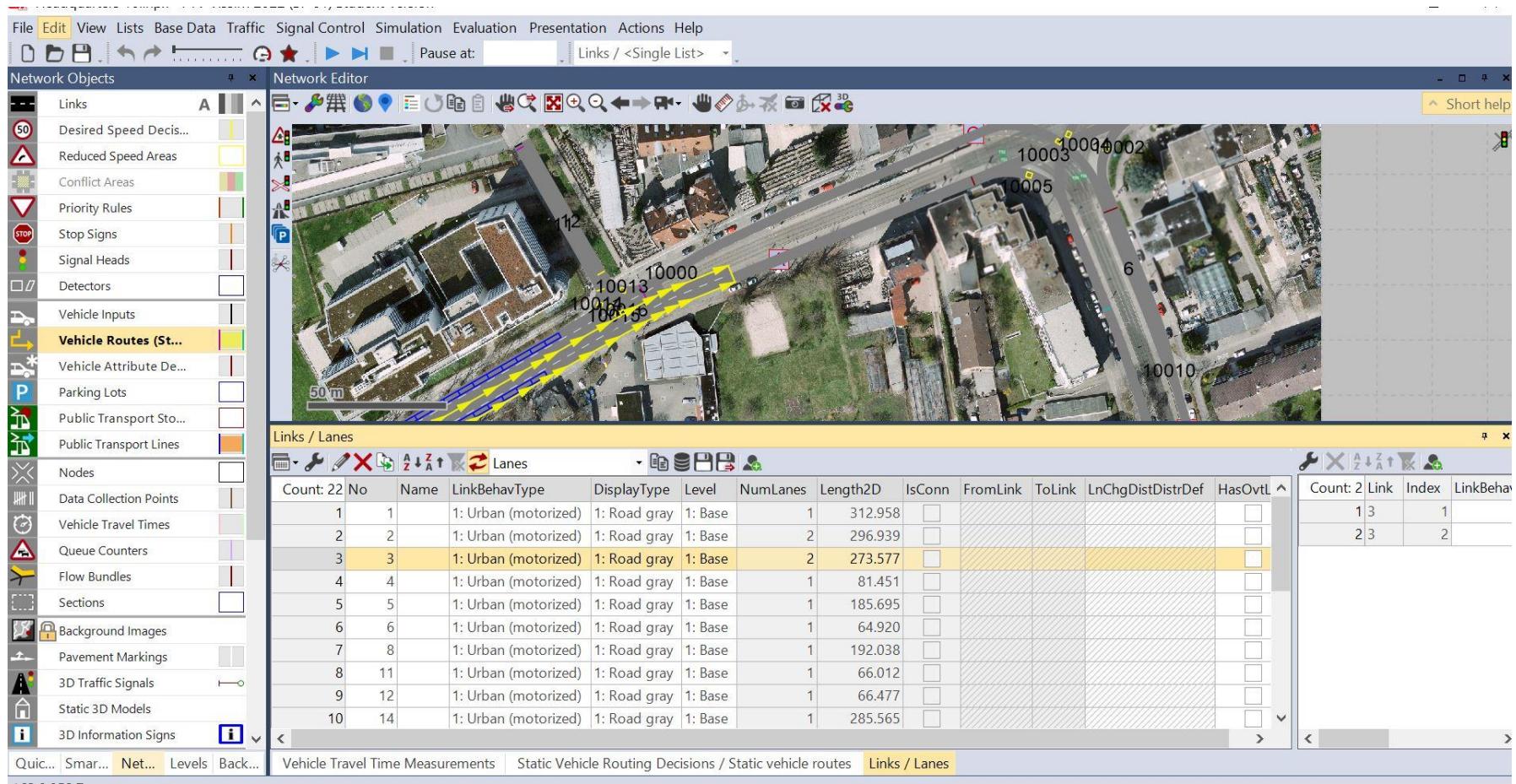
Dr. Zhou

11/10/2021

## Assignment #3

1.

## Links



The links network object tab contains 10 different links (not including connectors). The first link labeled “Link 1” is a 313m urban road with 1 lane That passes through one intersection.

## Desirable Speed Conditions

The screenshot shows the Network Editor interface with a map of a street intersection. Three specific locations on the road are highlighted with colored boxes and numbered 1, 2, and 3. A legend on the left indicates that these boxes represent "Desired Speed Decisions". Below the map is a table titled "Desired Speed Decisions / Desired speed distributions".

Count	No	Name	Lane	Pos	TimeFrom	TimeTo	DesSpeedDistr(1)	DesSpeedDistr(10)	DesSpeedDistr(20)	DesSpeedDistr(50)
1	1		12 - 1	11.332	0	99999	30: 30 km/h			
2	2		10014 - 1	1.182	0	99999	50: 50 km/h			
3	3		10016 - 1	1.080	0	99999	50: 50 km/h			

Below the table, another table shows a summary:

Count	VehClass	DesSpeedDistr
1	All	50: 50 km/h

At the bottom of the interface, there are tabs for "Vehicle Inputs / Vehicle volumes by time interval", "Links / Lanes", and "Desired Speed Decisions / Desired speed distributions".

The first desirable speed condition was set on right turning maneuver on link 12 with 1 lane in which the desired speed is set to 30km/h. The condition starts 11m away from the start of link 12 and occurs from time zero to infinity.

## Reduced Speed Conditions

File Edit View Lists Base Data Traffic Signal Control Simulation Evaluation Presentation Actions Help

Network Objects Network Editor Short help

Links  
Desired Speed Decis...  
**Reduced Speed Ar... A**  
Conflict Areas  
Priority Rules  
Stop Signs  
Signal Heads  
Detectors  
Vehicle Inputs  
Vehicle Routes  
Vehicle Attribute De...  
Parking Lots  
Public Transport Sto...  
Public Transport Lines

Nodes  
Data Collection Points  
Vehicle Travel Times  
Queue Counters  
Flow Bundles  
Sections  
Background Images  
Pavement Markings  
3D Traffic Signals  
Static 3D Models  
3D Information Signs

20 m

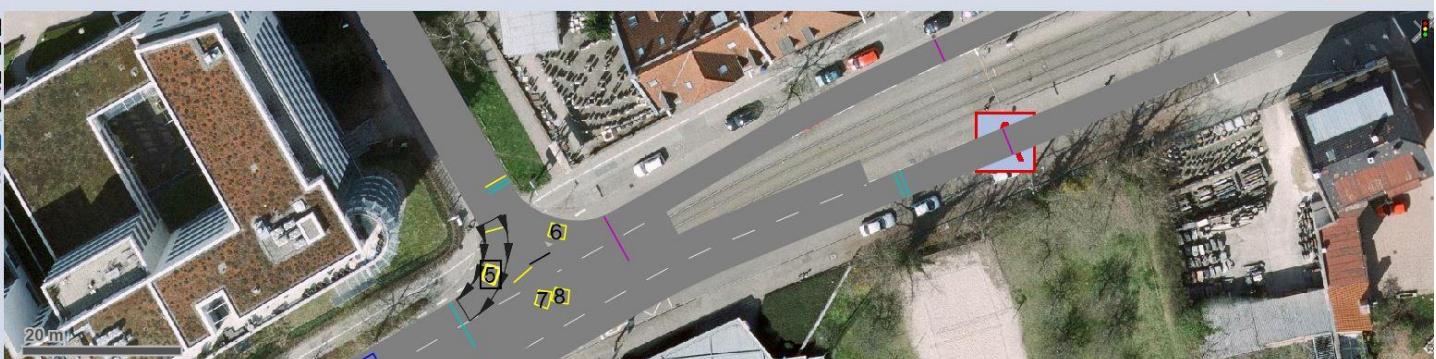
Reduced Speed Areas / Speed reductions

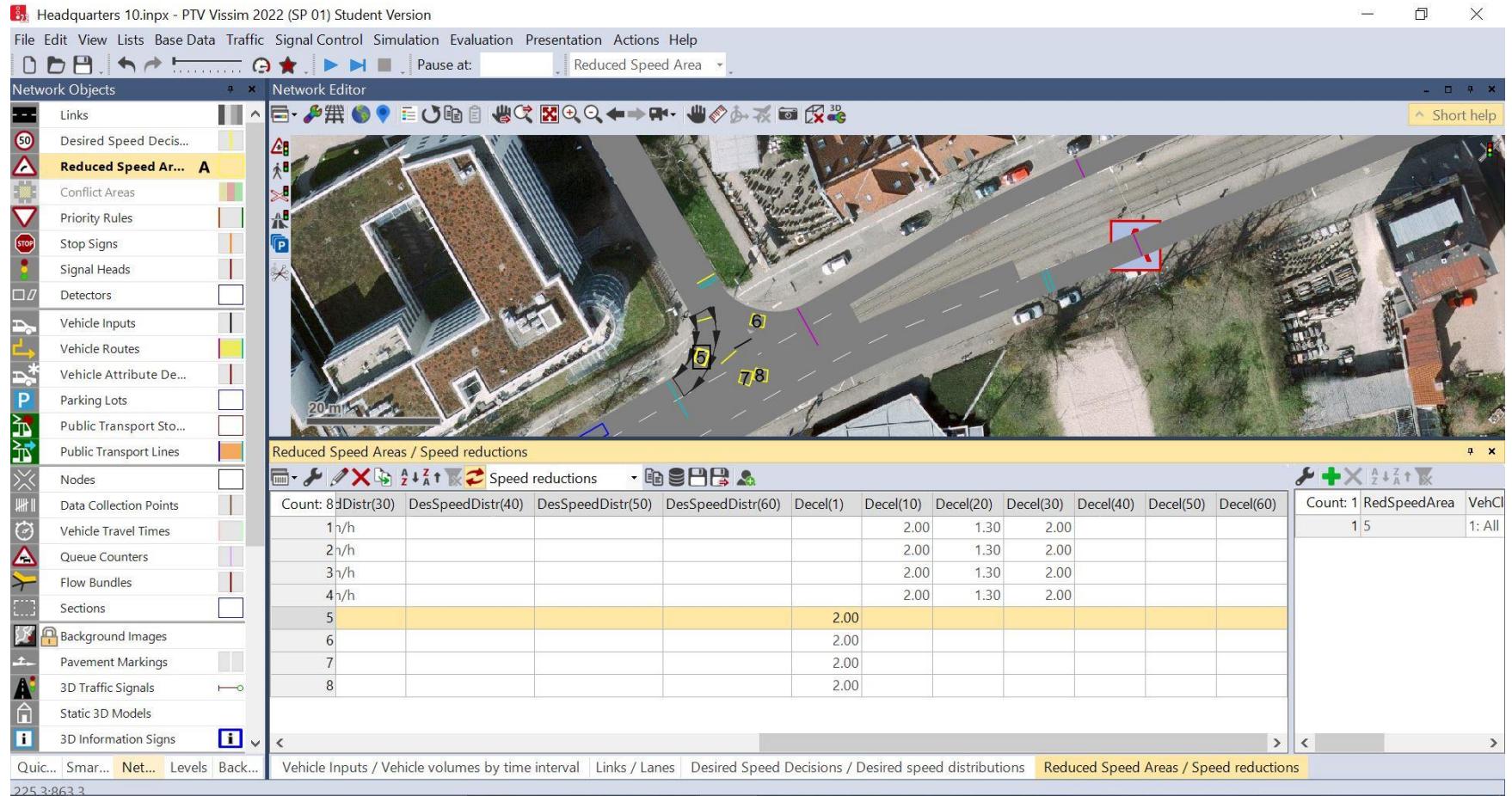
Speed reductions

Count:	8	No	Name	Lane	Pos	Length	TimeFrom	TimeTo	DesSpeedDistr(1)	DesSpeedDistr(10)	DesSpeedDistr(20)	DesSpeedDistr(30)
1	1	10005 - 1	14.501	2.000	0	99999			25: 25 km/h	20: 20 km/h	20: 20 km/h	
2	2	10002 - 1	11.875	2.000	0	99999			25: 25 km/h	20: 20 km/h	20: 20 km/h	
3	3	10003 - 1	20.504	2.000	0	99999			30: 30 km/h	25: 25 km/h	25: 25 km/h	
4	4	10004 - 1	22.765	2.000	0	99999			30: 30 km/h	25: 25 km/h	25: 25 km/h	
5	5	10014 - 1	5.893	2.000	0	99999	12: 12 km/h					
6	6	10013 - 1	6.154	2.000	0	99999	12: 12 km/h					
7	7	10015 - 1	5.307	2.000	0	99999	12: 12 km/h					
8	8	10016 - 1	5.671	2.000	0	99999	20: 20 km/h					

Count: 1 RedSpeedArea VehC  
1 5 1: All

Vehicle Inputs / Vehicle volumes by time interval | Links / Lanes | Desired Speed Decisions / Desired speed distributions | **Reduced Speed Areas / Speed reductions**





The reduced speed condition for the first case was a right turn on connector 10005 that has 1 lane. The length of the reduced speed area was 2m and the time range is from zero to infinity. The speeds and deceleration rates can be seen above.

## Conflict Areas

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File Edit View Lists Base Data Traffic Signal Control Simulation Evaluation Presentation Actions Help

Network Objects

- Links
- Desired Speed Decis...
- Reduced Speed Areas
- Conflict Areas** A
- Priority Rules
- Stop Signs
- Signal Heads
- Detectors
- Vehicle Inputs
- Vehicle Routes
- Vehicle Attribute De...
- Parking Lots
- Public Transport Sto...
- Public Transport Lines
- Nodes
- Data Collection Points
- Vehicle Travel Times
- Queue Counters
- Flow Bundles
- Sections
- Background Images
- Pavement Markings
- 3D Traffic Signals
- Static 3D Models
- 3D Information Signs

Network Editor

Conflict Areas

Count:	Link1	VisibLink1	Link2	VisibLink2	Status	FrontGapDef	RearGapDef	MinGapBlockDef	MesoCritGap	SafDistFactDef	AddStopDist	ObsAdjLns	AnticipRout	A
7	2	100.0	10013	100.0	Undetermined	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %	
8	12	100.0	10013	100.0	1 waits for 2	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %	
9	2	100.0	10014	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %	
10	11	100.0	10014	100.0	Undetermined	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %	
11	2	100.0	12	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %	
12	2	100.0	10015	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %	
13	2	100.0	10016	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %	

Vehicle Inputs / Vehicle volumes by time interval | Links / Lanes | Desired Speed Decisions / Desired speed distributions | Reduced Speed Areas / Speed reductions | Conflict Areas

File Edit View Lists Base Data Traffic Signal Control Simulation Evaluation Presentation Actions Help

Pause at: Conflict Areas

**Network Objects**

- Links
- Desired Speed Decis...
- Reduced Speed Areas
- Conflict Areas A**
- Priority Rules
- Stop Signs
- Signal Heads
- Detectors
- Vehicle Inputs
- Vehicle Routes
- Vehicle Attribute De...
- Parking Lots
- Public Transport Sto...
- Public Transport Lines
- Nodes
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**Conflict Areas**

Count: 20 Link1 VisibLink1 Link2 VisibLink2 Status FrontGapDef RearGapDef MinGapBlockDef MesoCritGap SafDistFactDef AddStopDist ObsAdjLns AnticipRout Avo

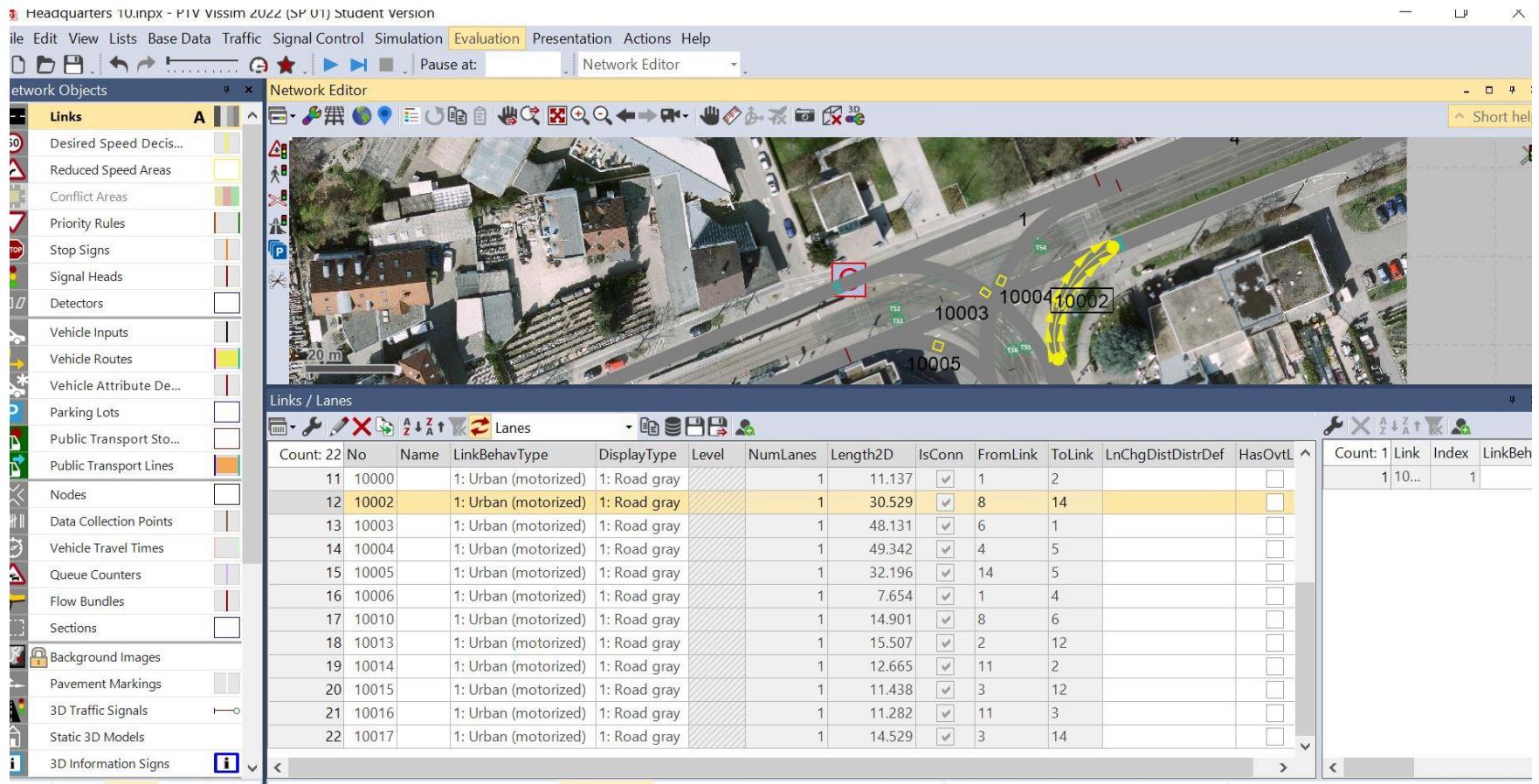
1	10006	100.0	1	100.0	Undetermined	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
2	1	100.0	10003	100.0	Passive	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
3	10003	100.0	10004	100.0	Passive	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
4	10004	100.0	10005	100.0	Passive	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
5	6	100.0	8	100.0	Passive	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
6	8	100.0	10010	100.0	Undetermined	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
7	2	100.0	10013	100.0	Undetermined	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
8	12	100.0	10013	100.0	1 waits for 2	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
9	2	100.0	10014	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
10	11	100.0	10014	100.0	Undetermined	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
11	2	100.0	12	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
12	2	100.0	10015	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
13	2	100.0	10016	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
14	10015	100.0	10016	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
15	14	100.0	10002	100.0	Passive	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
16	14	100.0	10003	100.0	Passive	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
17	14	100.0	10004	100.0	Passive	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
18	14	100.0	10005	100.0	Passive	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
19	3	100.0	10015	100.0	Undetermined	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %
20	3	100.0	10016	100.0	2 waits for 1	0.5	0.5	0.5	3.0	1.5	0.0	<input type="checkbox"/>	0.0 %

Quic... Smar... Net... Levels Back... Vehicle Travel Time Measurements Static Vehicle Routing Decisions / Static... Links / Lanes Desired Speed Decisions / Desired spee... Reduced Speed Areas / Speed reductio... Conflict Areas

351.1-858.0

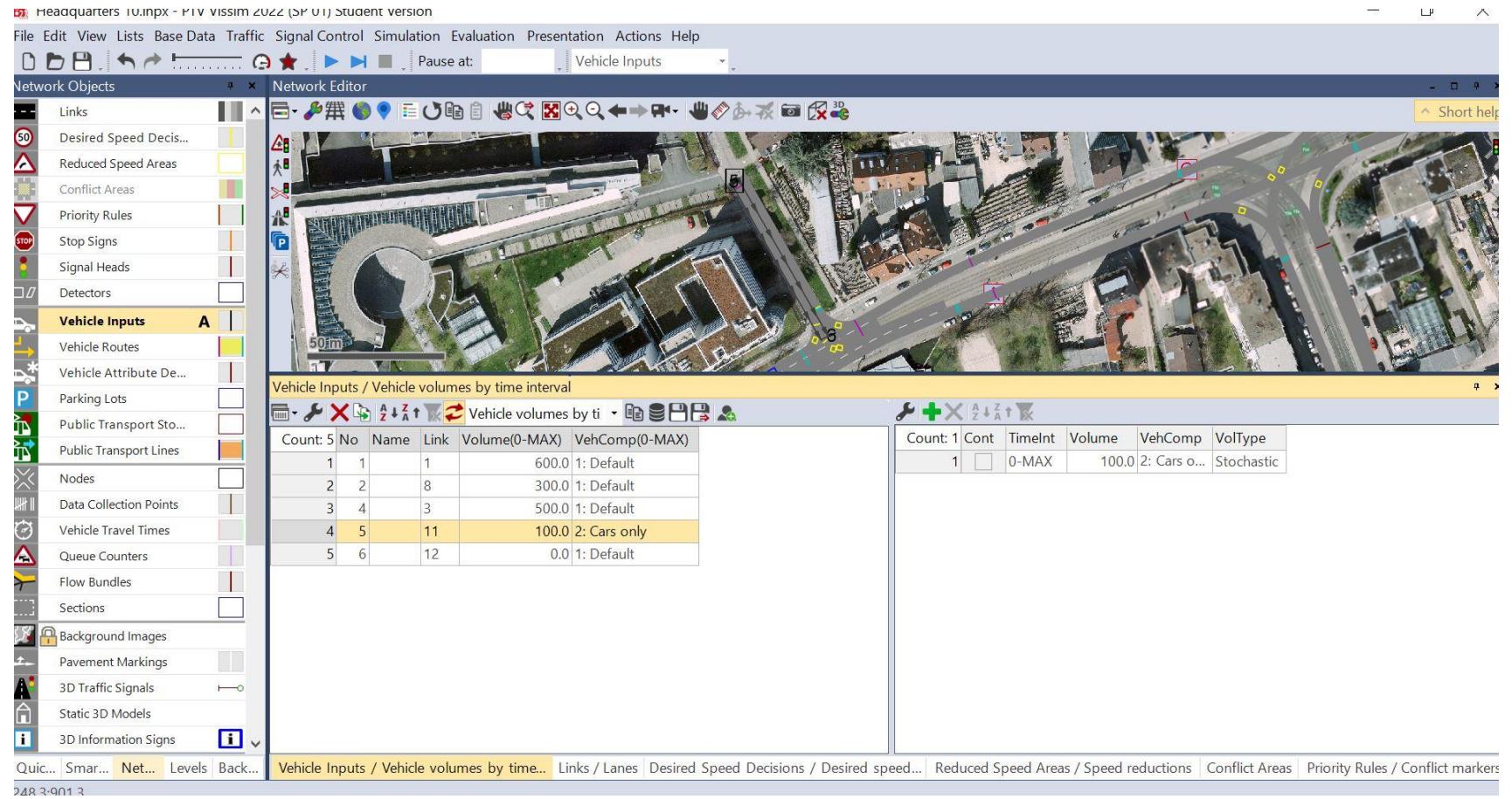
Conflict area 1 occurs between link 10006 and link 1 and the details are described in the table above. The conflict area occurs where vehicles are deciding whether to enter lane 2 or remain in lane 1 when the road expands.

## Connectors



The first connector offers a connection between link 1 and link 2 and is 11m long. The number of lanes in the connector is 1 and it is an urban road.

## Vehicle Inputs



The first vehicle input was that the maximum volume for link 1 was 600vph and the vehicle composition was set to default

## Vehicle Routes

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Network Objects Network Editor

Links  
Desired Speed Decis...  
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**Vehicle Routes (St... A**  
Vehicle Attribute De...  
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3D Information Signs

50m

5 1 6

Static Vehicle Routing Decisions / Static vehicle routes

Count: 6 No Name Link Pos AllVehTypes VehClasses RouteChoiceMeth

1	1	14	4.001	<input checked="" type="checkbox"/>		Static
2	2	1	10.731	<input checked="" type="checkbox"/>		Static
3	3	8	65.106	<input checked="" type="checkbox"/>		Static
4	4	3	20.767	<input checked="" type="checkbox"/>		Static
5	5	11	2.913	<input checked="" type="checkbox"/>		Static
6	6	1	283.803	<input checked="" type="checkbox"/>		Static

Count: 2 VehRoutDec No Name Formula DestLink DestPos RelFlow(0-MAX)

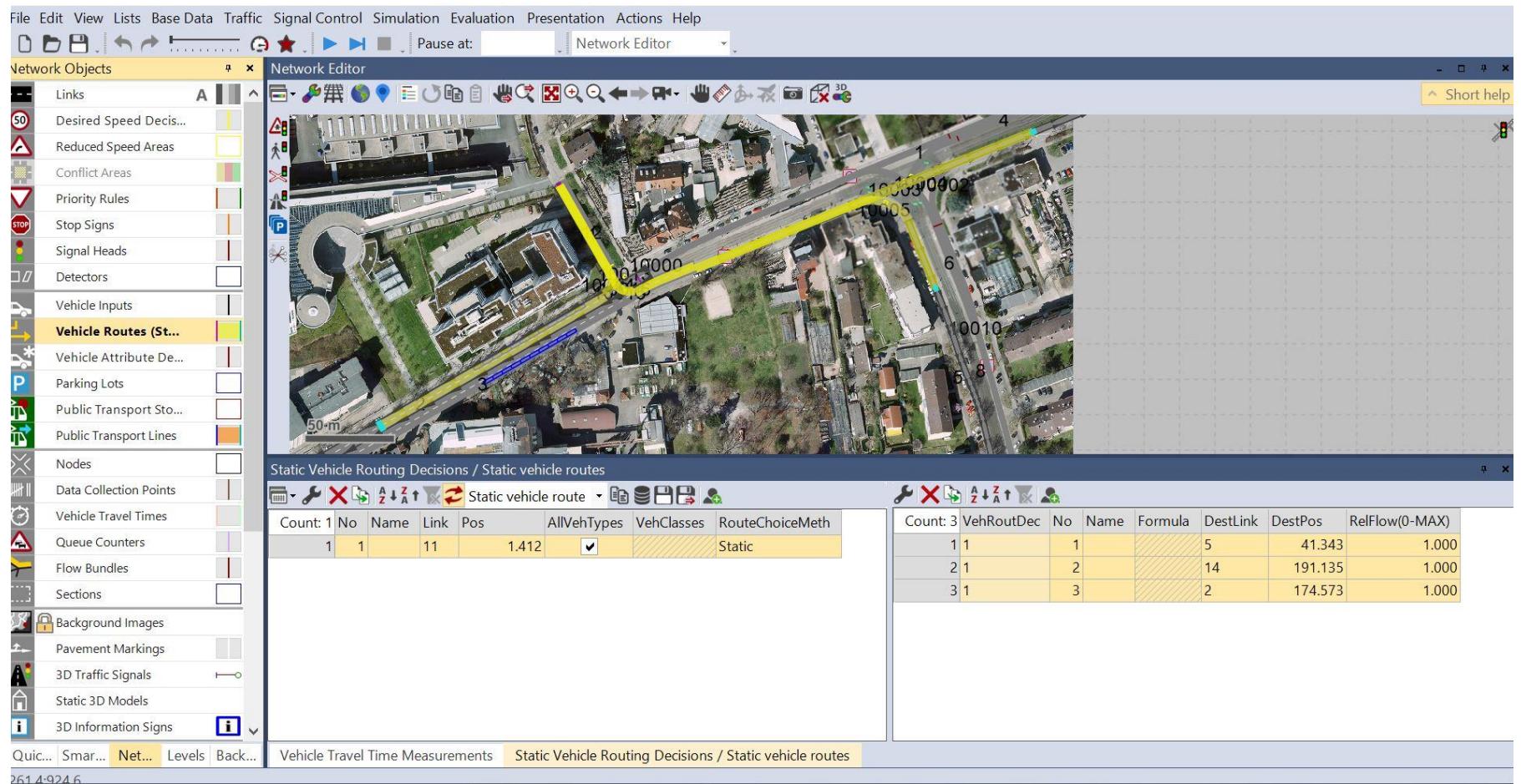
1	5	1		2	29.328	3.000
2	5	2		10017	4.457	1.000

Vehicle Inputs / Vehicle volum... Links / Lanes Desired Speed Decisions / De... Reduced Speed Areas / Spe... Conflict Areas Priority Rules / Conflict marke... Static Vehicle Routing Decisio...



The vehicle route for route number 5 started on link 11 3m from the start and ended at link 2. The relative flow for the route was 3 and ended 29m from the start of link 2.

2.



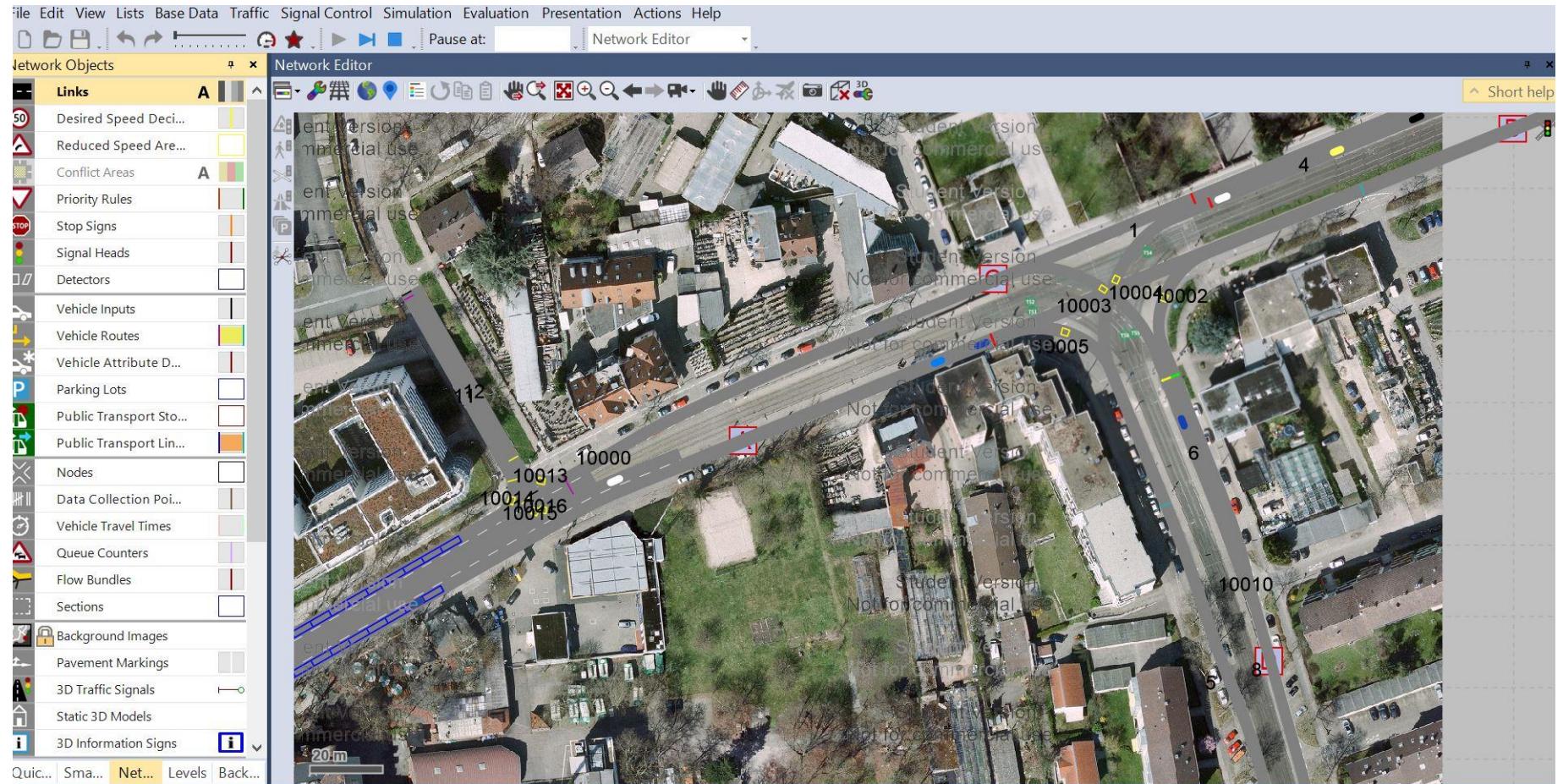
For my evaluation for travel time of three different routes my list of routes are as follows:

For route 1, I started at the beginning of link 11 and ended the route at link 5

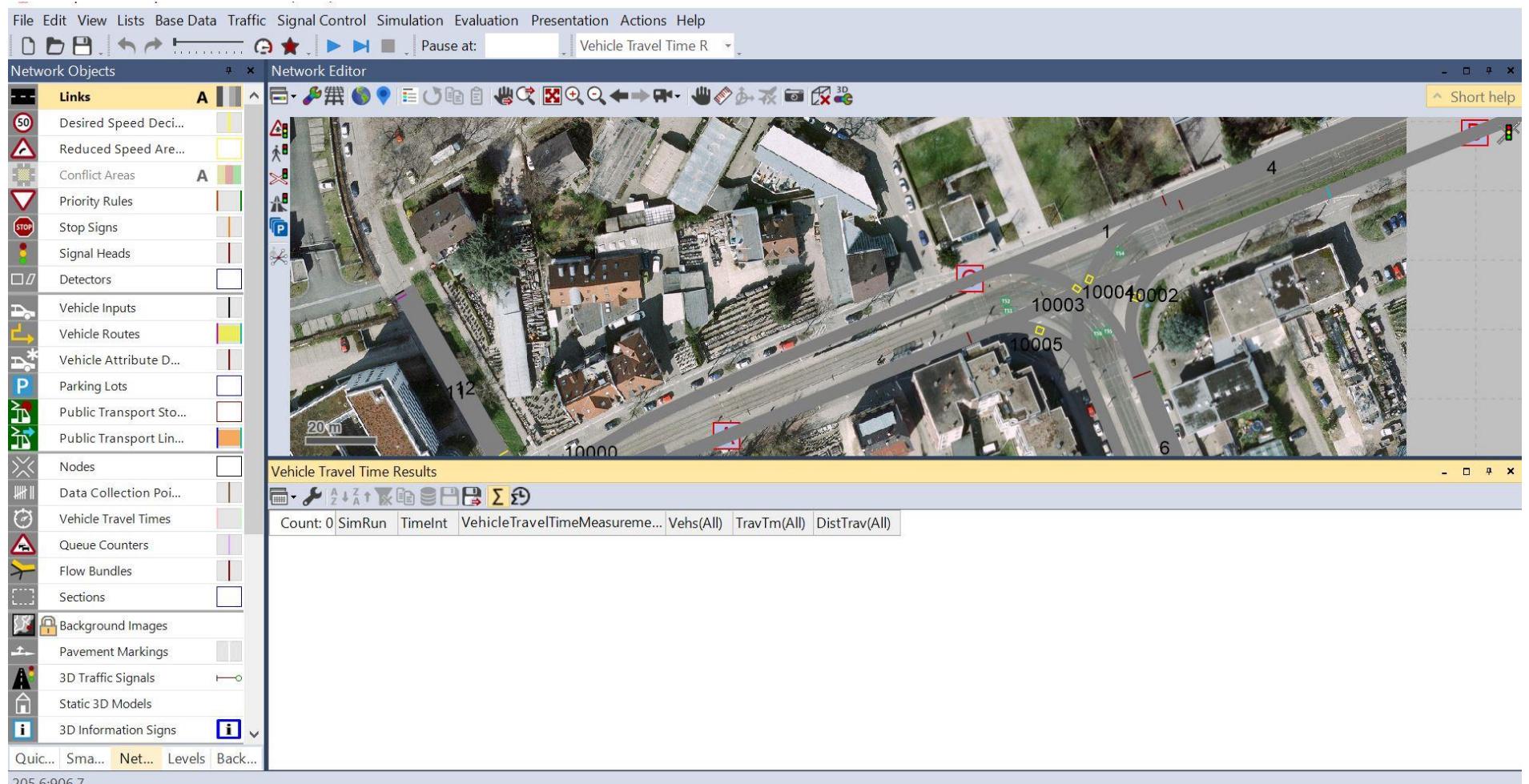
For route 1, I started at the beginning of link 11 and ended the route at link 14

For route 1, I started at the beginning of link 11 and ended the route at link 2

After inputting these routes the simulation was performed



While the simulation was being performed, I noticed vehicles disappearing at certain conflict areas. This could be due to me deleting previously defined routes in the tutorial.



I was unable to get the program to display results for travel time results. This could be due to a requirement or criteria not being defined that travel times for the routes needing to be measured. It could also be due to me deleting routes that were defined in the tutorial.

