DAFTAR PUSTAKA

- Apriliani, Vingka. 2017. Analisis Kinerja Lalu Lintas terhadap Emisi Gas Uang Kendaraan pada Simpang Parameswara Kota Palembang. Palembang : Universitas Sriwijaya.
- BAPEDAL.1998. Pedoman Teknis Perhitungan dan Pelaporan Serta Informasi Indeks Standar Pencemar Udara. Jakarta: Kepala Bapedal.
- Gastaldi, Massimiliano., Claudio, dkk. 2014. Evaluation of air pollution impacts of a signal control to roundabout conversion using microsimulation. Sevilla, Spain : University of Padova.
- Irawati, Iin.2016. Analisis Emisi Gas Buang Kendaraan Bermotor Pada Kawasan Pasar Tradisional dengan Pendekatan Mikrosimulasi.Semarang : USM.
- Linna Sengkey, Sandry dkk. 2011. *Tingkat Pencemaran Udara Co Akibat Lalu Lintas dengan Model Prediksi Polusi Udara Skala Mikro*. Manado : Universitas Sam Ratulangi.
- Muziansyah, Devianti., Rahayu Sulistyorini., & Syukur Sebayang3).2015. Model Emisi Gas Buangan Kendaraan Bermotor Akibat Aktivitas Transportasi. Lampung : Universitas Lampung.
- Novriana T, Risha. Dkk. 2013. Pengaruh Volume Kendaraan terhadap Konsentrasi NOx pada Udara Ambien. Depok : Universitas Indonesia
- PERMEN LH RI .2012. Peraturan Menteri Negara Lingkungan Hidup Republik Indonesia Nomor 10 Tahun 2012 tentang Baku Mutu Emisi Gas Buang Kendaraan Bermotor Tipe Baru Kategori L3.Jakarta : MENLH RI.

Prabhandhari, Diah. 2014. Analisis Status Kualitas Udara Lima Kota Metropolitan di Indonesia. Bogor : FTP IPB



www.balesio.com

dya Yuliani. 2017. Analisis Pengaruh Beban Emisi Co Dan No2 Dari endaraan Bermotor terhadap Kualitas Udara Ambien Roadside. Medan : niversitas Sumatera Utara.

- Quassdorf, Christina & Rafael Borge. 2016. Microscale Traffic Simulation and emission estimation in a heavily trafficked roundabout in Madrid, Spanyol. Madrid : Environmental Modelling Laboratory.
- Radytia, Jevon.2011. Pengaruh Volume Kendaraan terhadap Konsentrasi NOx Udara Ambien di Pintu Tol. Depok : Universitas Indonesia
- Suryani Hormansyah, Dhebys., Very Sugiarto., Eka Larasati Amalia.2016. *Penggunaan Vissim Model Pada Jalur Lalu Lintas Empat Ruas*. Malang : Politeknik Negeri Malang.
- Tiarani, Velida Lustria., Endro Sutrisno & Haryono Setyo Huboyo. 2016. Kajian Beban Emisi Pencemar Udara (TSP, NOx, SO₂, HC, CO) Dan Gas Rumah Kaca (CO₂, CH4, N₂O) Sektor Transportasi Darat Kota Yogyakarta Dengan Metode Tier 1 Dan Tier 2. Semarang : UNDIP.
- Widyawati Boediningsih.2011. Dampak Kepadatan Lalu Lintas Terhadap Polusi Udara Kota Surabaya. Surabaya : Fakultas Hukum Universitas Narotama.
- Wiyandari, Miranti. 2010. Hubungan Volume Kendaraan terhadap Konsentrasi NOx di Udara (Jalan Margonda Raya Depok). Depok : Teknik Lingkungan Universitas Indonesia.
- Yanismai. 2003. Hubungan Antara Kepadatan Lalu Lintas Dengan Kualitas Udara Di Kota Padang. Padang : Ujung Pandan.



LAMPIRAN



Lampiran 1 Hasil Simulasi Vissim Bundaran Samata

SimRu	Timelen	Movement	Qlen	Qlenm	Vehs(all)	Pers(all	LOS (AII)	LOSVal(/	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
77	0-3600	1: samata 7 - 2: JI.TunAbdulRazak-JI.TunAbdR-MKS@48	126.32	143.7	49	49	LOS_C	3	22.184947	22.184947	15.22784	1.714286	51.62659	10.044658	11.964961	0.738578
77	0-3600	1: samata 7 - 2: JI.TunAbdulRazak-JI.AbdKad-Antang@	117.07	165.6	989	989	LOS_D	4	26.082713	26.082713	12.235749	3.746208	1434.749116	279.150043	332.516963	20.525738
77	0-3600	1: samata 7 - 2: JI.TunAbdulRazak- JI.YasLimp-Gowa@	126.32	143.7	905	905	LOS_D	4	28.065768	28.065768	12.887144	3.710497	1342.217899	261.14683	311.071959	19.201973
77	0-3600	1: samata 7 - 2: JI.TunAbdulRazak - 9: JI.MDB masuk@4	126.32	143.7	229	229	LOS_E	5	36.224934	36.224934	17.086188	5.759825	456.032521	88.727357	105.68994	6.52407
77	0-3600	1: samata 7 - 5: JI.AbdKad- JI.TunAbdR-MKS@48.6	78.436	89.18	140	140	LOS_C	6	529.02495	529.02495	440.73605	78.885714	935.868132	182.085931	216.896477	13.388671
77	0-3600	1: samata 7 - 5: JI.AbdKad- JI.AbdKad-Antang@42.2	78.436	89.18	0	0	LOS_A						0	0	0	0
77	0-3600	1: samata 7 - 5: JI.AbdKad- 6: JI.YasLimp-Gowa@43.8	78.436	89.18	520	520	LOS_C	6	513.595553	513.595553	420.03063	108.759398	3714.00264	722.609956	860.755977	53.133085
77	0-3600	1: samata 7 - 5: JI.AbdKad - 9: JI.MDB masuk@41.7	78.436	89.18	329	329	LOS_C	6	623.979755	623.979755	505.32805	152.26087	2612.105264	508.220767	605.380619	37.369174
77	0-3600	1: samata 7 - 7: JI.YasLimp- 3: JI.TunAbdR-MKS@48.6	138.67	156.2	615	615	LOS_A	1	8.424543	8.424543	1.218819	0.793496	418.188798	81.364344	96.919292	5.982672
77	0-3600	1: samata 7 - 7: JI.YasLimp - 4: JI.AbdKad-Antang@42.2	138.67	156.2	528	528	LOS_C	3	20.114001	20.114001	5.748892	2.82197	662.63216	128.92414	153.571402	9.479716
77	0-3600	1: samata 7 - 7: JI.YasLimp - 6: JI.YasLimp-Gowa@43.8	138.67	156.2	0	0	LOS_A						0	0	0	0
77	0-3600	1: samata 7 - 7: JI.YasLimp - 9: JI.MDB masuk@41.7	138.67	156.2	412	412	LOS_A	1	7.994445	7.994445	1.148522	0.604369	249.811845	48.604307	57.896307	3.573846
77	0-3600	1: samata 7 - 8: JI.MDB- JI.TunAbdR-MKS@48.6	148.32	166.3	353	353	LOS_A	1	7.496402	7.496402	2.541481	0.974504	209.737733	40.807341	48.608745	3.00054
77	0-3600	1: samata 7 - 8: JI.MDB- 4: JI.AbdKad-Antang@42.2	148.32	166.3	651	651	LOS_B	2	14.086301	14.086301	4.514077	2.193548	623.306643	121.272823	144.457334	8.917119
77	0-3600	1: samata 7 - 8: JI.MDB-: JI.YasLimp-Gowa@43.8	148.32	166.3	259	259	LOS_C	3	17.124047	17.124047	6.346081	2.640927	276.801877	53.855587	64.151508	3.95997
77	0-3600	1: samata 7 - 8: JI.MDB-JI.MDB masuk@41.7	148.32	166.3	0	0	LOS_A						0	0	0	0
77	0-3600	1: samata 7	121.76	166.3	5227	5227	LOS_E	5	43.199372	43.199372	27.610104	7.821121	12860.88093	2502.260094	2980.633348	183.989713
SimRun	Timelen	Movement	Qlen	Qlenma	Vehs(all)	Pers(all	LOS (AII)	LOSVal(/	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
SimRun 13	Timelen 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41	Qlen 119.88	Qlenma 144.9	Vehs(all) 58	Pers(all 58	LOS_A	LOSVal(/	VehDelay(All) 4.119302	PersDelay(Al 4.119302	Stops(All) 0.610276	Stops(All) 0.448276	EmissionsCO 34.079129	EmissionsNOx 6.63056	EmisssionsVOC 7.898167	FuelConsumption 0.487541
SimRun 13 13	Timelen 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbduIRazak- 4: JI.AbdKad-Antang	Qlen 119.88 110.61	Qlenma 144.9 135.5	Vehs(all) 58 1088	Pers(all 58 1088	LOS_A LOS_A LOS_A	LOSVal(/ 1 1	VehDelay(All) 4.119302 6.391006	PersDelay(Al 4.119302 6.391006	Stops(All) 0.610276 0.452904	Stops(All) 0.448276 0.293199	EmissionsCO 34.079129 560.725059	EmissionsNOx 6.63056 109.096721	EmisssionsVOC 7.898167 129.953447	FuelConsumption 0.487541 8.021818
SimRun 13 13 13	Timelen 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbduIRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbduIRazak-: JI.YasLimp-Gowa@	Qlen 119.88 110.61 119.88	Qlenma 144.9 135.5 144.9	Vehs(all) 58 1088 918	Pers(all 58 1088 918	LOS (AII) LOS_A LOS_A LOS_A	LOSVal(/ 1 1	VehDelay(All) 4.119302 6.391006 6.661788	PersDelay(Al 4.119302 6.391006 6.661788	Stops(All) 0.610276 0.452904 0.483709	Stops(All) 0.448276 0.293199 0.344227	EmissionsCO 34.079129 560.725059 527.578738	EmissionsNOx 6.63056 109.096721 102.647651	EmisssionsVOC 7.898167 129.953447 122.271467	FuelConsumption 0.487541 8.021818 7.547621
SimRun 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbduIRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbduIRazak-: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbduIRazak- 9: JI.MDB masuk@5	Qlen 119.88 110.61 119.88 119.88	Qlenma 144.9 135.5 144.9 144.9	Vehs(all) 58 1088 918 244	Pers(all 58 1088 918 244	LOS (AII) LOS_A LOS_A LOS_A LOS_A	LOSVal(/ 1 1 1 1	VehDelay(All) 4.119302 6.391006 6.661788 8.549604	PersDelay(Al 4.119302 6.391006 6.661788 8.549604	Stops(All) 0.610276 0.452904 0.483709 1.176252	Stops(All) 0.448276 0.293199 0.344227 0.569672	EmissionsCO 34.079129 560.725059 527.578738 164.895978	EmissionsNOx 6.63056 109.096721 102.647651 32.082765	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235	FuelConsumption 0.487541 8.021818 7.547621 2.359027
SimRun 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbduIRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbduIRazak-: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbduIRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad-: JI.TunAbdR-MKS@41.3	Qlen 119.88 110.61 119.88 119.88 119.88	Qlenma 144.9 135.5 144.9 144.9 86.28	Vehs(all) 58 1088 918 244 135	Pers(all 58 1088 918 244 135	LOS (AII) LOS_A LOS_A LOS_A LOS_A LOS_C	LOSVal() 1 1 1 1 6	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963	PersDelay(Al 4.119302 6.391006 6.661788 8.549604 351.499963	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702
SimRun 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbduIRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbduIRazak-: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbduIRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad-: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5	Qlen 119.88 110.61 119.88 119.88 71.872 71.872	Qlenma 144.9 135.5 144.9 144.9 86.28 86.28	Vehs(all) 58 1088 918 244 135 0	Pers(all 58 1088 918 244 135 0	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C	LOSVal(/ 1 1 1 1 6	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963	PersDelay(Al 4.119302 6.391006 6.661788 8.549604 351.499963	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0
SimRun 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbduIRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbduIRazak- 9: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbduIRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad-: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad-: JI.YasLimp-Gowa@52.1	Olen 119.88 110.61 119.88 119.88 71.872 71.872 71.872	Qlenma 144.9 135.5 144.9 144.9 86.28 86.28 86.28	Vehs(all) 58 1088 918 244 135 0 596	Pers(all 58 1088 918 244 135 0 596	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C	LOSVal(/ 1 1 1 6 6	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963	PersDelay(Al 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877
SimRun 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbduIRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbduIRazak- 9: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbduIRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad-: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 2: JI.YasLimp-Gowa@52.1 1: samata 8 - 5: JI.AbdKad - 9: JI.MDB masuk@54.0	Qlen 119.88 110.61 119.88 119.88 71.872 71.872 71.872 71.872 71.872	Qlenma 144.9 135.5 144.9 144.9 86.28 86.28 86.28 86.28	Vehs(all) 58 1088 918 244 135 0 596 305	Pers(all 58 1088 918 244 135 0 596 305	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C	LOSVal(/ 1 1 1 6 6 6 6	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267	PersDelay(Al 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196
SimRun 13 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbdulRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk@5 1: samata 8 - 2: JI.AbdKad-: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 9: JI.MDB masuk@54.0 1: samata 8 - 7: JI.YasLimp 3: JI.TunAbdR-MKS@41.3	Qlen 119.88 110.61 119.88 119.88 71.872 71.872 71.872 71.872 71.872 11.872 11.872 11.872 11.872 11.872	Qlenma 144.9 135.5 144.9 144.9 86.28 86.28 86.28 86.28 86.28 104.5	Vehs(all) 58 1088 918 244 135 0 596 305 597	Pers(all 58 1088 918 244 135 0 596 305 597	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C	LOSVal(/ 1 1 1 6 6 6 3	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665	PersDelay(Ai 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528 4.435097	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738 2.432161	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184 661.648717	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662 128.732798	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171 153.343479	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196 9.465647
SimRun 13 13 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbduIRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbduIRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbduIRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad-: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad - 9: JI.MDB masuk@54.0 1: samata 8 - 7: JI.YasLimp 3: JI.TunAbdR-MKS@41.3 1: samata 8 - 7: JI.YasLimp-4: JI.AbdKad-Antang@36.5	Qlen 119.88 110.61 119.88 71.872 71.872 71.872 71.872 71.872 14.941	Qlenma 144.9 135.5 144.9 144.9 86.28 86.28 86.28 86.28 86.28 104.5	Vehs(all) 58 1088 918 244 135 0 596 305 597 415	Pers(all 58 1088 918 244 135 0 596 305 597 415	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C LOS_C LOS_D	LOSVal() 1 1 1 6 6 6 6 3 4	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039	PersDelay(Ai 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528 4.435097 6.787175	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738 2.432161 4.014458	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184 661.648717 652.866991	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662 128.732798 127.024193	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171 153.343479 151.30823	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196 9.465647 9.340014
SimRun 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbdulRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad-: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad - 9: JI.MDB masuk@54.0 1: samata 8 - 7: JI.YasLimp 3: JI.TunAbdR-MKS@41.3 1: samata 8 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@36.5 JI.YasLimp - 6: JI.YasLimp-Gowa@52.1	QJen 119.88 110.61 119.88 119.88 71.872 71.872 71.872 71.872 14.941 14.941	Qlenma 144.9 135.5 144.9 86.28 86.28 86.28 86.28 86.28 104.5 104.5 104.5	Vehs(all) 58 1088 918 244 135 0 596 305 597 415 0	Pers(all 58 1088 918 244 135 0 596 305 597 415 0	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C LOS_C LOS_C LOS_D LOS_A	LOSVal() 1 1 1 6 6 6 3 4	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039	PersDelay(Ai 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528 4.435097 6.787175	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738 2.432161 4.014458	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184 661.648717 652.866991 0	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662 128.732798 127.024193 0	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171 153.343479 151.30823 0	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196 9.465647 9.340014 0
SimRun 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbdulRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad- 3: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 9: JI.MDB masuk@54.0 1: samata 8 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@36.5 JI.YasLimp- 6: JI.YasLimp-Gowa@52.1 JI.YasLimp- 1: JI.MDB masuk@54.0	OJen 119.88 110.61 119.88 119.88 71.872 71.872 71.872 14.941 14.941 14.941	Qlenma 144.9 135.5 144.9 86.28 86.28 86.28 86.28 86.28 104.5 104.5 104.5	Vehs(all) 58 1088 918 244 135 0 596 305 597 415 0 413	Pers(all 58 1088 918 244 1355 0 596 305 597 415 0 413	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C LOS_C LOS_C LOS_D LOS_A LOS_C	LOSVal(/ 1 1 1 6 6 6 3 4 3	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 18.260039	PersDelay(Ai 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 18.260039	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528 4.435097 6.787175 4.680651	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738 2.432161 4.014458 2.20339	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184 661.648717 652.866991 0 449.627338	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662 128.732798 127.024193 0 87.481142	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171 153.343479 151.30823 0 104.205477	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196 9.465647 9.340014 0 6.432437
SimRun 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbdulRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad- 3: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 9: JI.MDB masuk@54.0 1: samata 8 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@36.5 JI.YasLimp- 6: JI.YasLimp-Gowa@52.1 JI.YasLimp- 6: JI.YasLimp-Gowa@52.1 JI.YasLimp - 6: JI.YasLimp-Gowa@52.1 JI.YasLimp - 6: JI.YasLimp-Gowa@52.1 JI.YasLimp - 6: JI.YasLimp-Gowa@52.1 JI.YasLimp - 3: JI.TunAbdR-MKS@41.3	Olen 119.88 110.61 119.88 119.88 71.872 71.872 71.872 71.872 14.941 14.941 14.941 141.84	Qlenmi 144.9 135.5 144.9 144.9 86.28 86.28 86.28 86.28 104.5 104.5 104.5 104.5 104.5	Vehs(all) 58 1088 918 244 135 0 596 305 597 415 0 413 470	Pers(all 58 1088 918 244 135 0 596 305 597 415 0 413 470	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C LOS_C LOS_C LOS_D LOS_A LOS_C LOS_A LOS_C	LOSVal(/ 1 1 1 6 6 6 3 4 - 3 1	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 18.260039 5.03047	PersDelay(Ai 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 18.260039 5.03047	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528 4.435097 6.787175 4.680651 0.900761	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738 2.432161 4.014458 2.20339 0.495745	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184 661.648717 652.866991 0 449.627338 209.89039	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662 128.732798 127.024193 0 87.481142 40.837043	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171 153.343479 151.30823 0 104.205477 48.644125	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196 9.465647 9.340014 0 6.432437 3.002724
SimRun 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbdulRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad- 3: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 9: JI.MDB masuk@54.0 1: samata 8 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@36.5 JI.YasLimp- 6: JI.YasLimp-Gowa@52.1 JI.YasLimp - 4: JI.AbdKad-Antang@36.5	Ojen 119.88 110.61 119.88 119.88 71.872 71.872 71.872 71.872 71.872 14.941 14.941 14.941 14.941 14.941 14.941	Qlenmi 144.9 135.5 144.9 86.28 86.28 86.28 86.28 104.5 104.5 104.5 104.5 104.5 104.5	Vehs(all) 58 1088 918 244 135 0 596 305 597 415 0 413 470 569	Pers(all 58 1088 918 244 135 0 596 305 597 415 0 413 470 569	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C LOS_C LOS_C LOS_A LOS_C LOS_A LOS_C LOS_A LOS_A	LOSVal(/ 1 1 1 6 6 6 3 4 - 3 1 1	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 18.260039 5.03047 9.562521	PersDelay(Ai 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 5.03047 9.562521	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528 4.435097 6.787175 4.680651 0.900761 2.015646	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738 2.432161 4.014458 2.20339 0.495745 1.507909	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184 661.648717 652.866991 0 449.627338 209.89039 415.337595	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662 128.732798 127.024193 0 87.481142 40.837043 80.809604	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171 153.343479 151.30823 0 104.205477 48.644125 96.258498	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196 9.465647 9.340014 0 6.432437 3.002724 5.941883
SimRun 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbdulRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad- 3: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 9: JI.MDB masuk@54.0 1: samata 8 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@36.5 JI.YasLimp- 6: JI.YasLimp-Gowa@52.1 JI.YasLimp- 6: JI.YasLimp-Gowa@52.1 JI.MDB - 4: JI.AbdKad-Antang@36.5 JI.MDB - 4: JI.AbdKad-Antang@36.5 JI.MDB - 4: JI.AbdKad-Antang@36.5 JI.MDB - 6: JI.YasLimp-Gowa@52.1	Ojen 119.88 110.61 119.88 119.88 71.872 71.872 71.872 71.872 71.872 14.941 14.941 14.941 144.84 141.84 141.84	Qlenmi 144.9 135.5 144.9 86.28 86.28 86.28 86.28 104.5 104.5 104.5 104.5 104.5 104.5 104.5 104.5	Vehs(all) 58 1088 918 244 135 0 596 305 597 415 0 413 470 569 269	Pers(all 58 1088 918 244 135 0 596 305 597 415 0 413 470 569 269	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C LOS_C LOS_C LOS_A LOS_C LOS_A LOS_A LOS_A LOS_A LOS_A	LOSVal(/ 1 1 1 6 6 6 3 4 - 3 1 1 2	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 18.260039 5.03047 9.562521 10.271625	PersDelay(Ai 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 5.03047 9.562521 10.271625	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528 4.435097 6.787175 4.680651 0.900761 2.015646 2.18791	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738 2.432161 4.014458 2.20339 0.495745 1.507909 1.263941	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184 661.648717 652.866991 0 449.627338 209.89039 415.337595 195.632308	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662 128.732798 127.024193 0 87.481142 40.837043 80.809604 38.062938	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171 153.343479 151.30823 0 104.205477 48.644125 96.258498 45.339676	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196 9.465647 9.340014 0 6.432437 3.002724 5.941883 2.798745
SimRun 13 13 13 13 13 13 13 13 13 13	Timelen 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600 0-3600	Movement 1: samata 8 - 2: JI.TunAbdulRazak-JI.TunAbdR-MKS@41 1: samata 8 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Antang 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.YasLimp-Gowa@ 1: samata 8 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk@5 1: samata 8 - 5: JI.AbdKad- 3: JI.TunAbdR-MKS@41.3 1: samata 8 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@36.5 1: samata 8 - 5: JI.AbdKad- 9: JI.MDB masuk@54.0 1: samata 8 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@36.5 JI.YasLimp - 6: JI.YasLimp-Gowa@52.1 JI.YasLimp - 6: JI.YasLimp-Gowa@52.1 JI.MDB - 3: JI.TunAbdR-MKS@41.3 JI.MDB - 4: JI.AbdKad-Antang@36.5 JI.MDB - 4: JI.AbdKad-Antang@36.5 JI.MDB - 9: JI.MDB masuk@54.0	Olen 119.88 110.61 119.88 119.88 71.872 71.872 71.872 71.872 71.872 14.941 14.941 144.941 144.84 141.84 141.84	Qlenmi 144.9 135.5 144.9 86.28 86.28 86.28 86.28 104.5 104.5 104.5 104.5 104.5 104.5 104.5 104.5 104.5	Vehs(all) 58 1088 918 244 135 0 596 305 597 415 0 413 470 569 269 0	Pers(all 58 1088 918 244 135 0 596 305 597 415 0 413 470 569 269 0	LOS (AII) LOS_A LOS_A LOS_A LOS_C LOS_C LOS_C LOS_C LOS_C LOS_C LOS_A LOS_C LOS_A LOS_A LOS_A LOS_A LOS_A	LOSVal(/ 1 1 1 6 6 6 3 4 1 1 2 	VehDelay(All) 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 18.260039 5.03047 9.562521 10.271625	PersDelay(Ai 4.119302 6.391006 6.661788 8.549604 351.499963 385.267963 392.141267 18.461665 26.219039 18.260039 5.03047 9.562521 10.271625	Stops(All) 0.610276 0.452904 0.483709 1.176252 282.69274 299.42083 304.05528 4.435097 6.787175 4.680651 0.900761 2.015646 2.18791	Stops(All) 0.448276 0.293199 0.344227 0.569672 40.185185 78.067227 79.655738 2.432161 4.014458 2.20339 0.495745 1.507909 1.263941	EmissionsCO 34.079129 560.725059 527.578738 164.895978 349.758782 0 2533.656676 1318.677184 661.648717 652.866991 0 449.627338 209.89039 415.337595 195.632308 0	EmissionsNOx 6.63056 109.096721 102.647651 32.082765 68.05035 0 492.957522 256.566662 128.732798 127.024193 0 87.481142 40.837043 80.809604 38.062938 0	EmisssionsVOC 7.898167 129.953447 122.271467 38.216235 81.059975 0 587.199401 305.616171 153.343479 151.30823 0 104.205477 48.644125 96.258498 45.339676 0	FuelConsumption 0.487541 8.021818 7.547621 2.359027 5.003702 0 36.246877 18.865196 9.465647 9.340014 0 6.432437 3.002724 5.941883 2.798745 0

Optimization Software:

SimRun Timelen	Movement	Qlen	Qlenma	Vehs(all)	Pers(all	LOS (AII)	LOSVal(/	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
47 0-3600	1: samata 9 - 2: JI.TunAbdulRazak 3: JI.TunAbdR-MKS	128.71	144.4	43	43	LOS_C	3	22.129116	22.129116	13.190541	2.627907	53.055088	10.322592	12.296029	0.759014
47 0-3600	1: samata 9 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Antang	119.43	167.9	977	977	LOS_D	4	26.696526	26.696526	11.413286	4.113613	1469.904017	285.989909	340.66445	21.02867
47 0-3600	1: samata 9 - 2: JI.TunAbdulRazak-6: JI.YasLimp-Gowa	128.71	144.4	908	908	LOS_D	4	31.07024	31.07024	13.525473	4.938326	1586.724908	308.719009	367.73882	22.699927
47 0-3600	1: samata 9 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk@5	128.71	144.4	237	237	LOS_E	5	35.199362	35.199362	15.545989	5.472574	462.35668	89.957809	107.155625	6.614545
47 0-3600	1: samata 9 - 5: JI.AbdKad- JI.TunAbdR-MKS@56.6	80.496	95.77	177	177	LOS_C	6	340.748598	340.748598	268.01625	66.365854	754.18981	146.737931	174.790771	10.789554
47 0-3600	1: samata 9 - 5: JI.AbdKad- JI.AbdKad-Antang@31.5	80.496	95.77	0	0	LOS_A						0	0	0	0
47 0-3600	1: samata 9 - 5: JI.AbdKad-: JI.YasLimp-Gowa@48.0	80.496	95.77	519	519	LOS_C	6	387.127179	387.127179	308.5721	77.392308	2676.837557	520.815319	620.382953	38.295244
47 0-3600	1: samata 9 - 5: JI.AbdKad-: JI.MDB masuk@57.6	80.496	95.77	370	370	LOS_C	6	434.190977	434.190977	347.36968	81.60241	1783.467568	346.997982	413.335831	25.514557
47 0-3600	1: samata 9 - 7: JI.YasLimp- 3: JI.TunAbdR-MKS@56.6	141.04	156.9	543	543	LOS_B	2	10.304602	10.304602	2.52881	0.909761	402.557831	78.323126	93.296665	5.759053
47 0-3600	1: samata 9 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@31.5	141.04	156.9	382	382	LOS_C	3	21.809318	21.809318	7.068803	3.363874	528.552278	102.837067	122.497095	7.561549
47 0-3600	1: samata 9 - 7: JI.YasLimp - 6: JI.YasLimp-Gowa@48.0	141.04	156.9	0	0	LOS_A						0	0	0	0
47 0-3600	1: samata 9 - 7: JI.YasLimp- 9: JI.MDB masuk@57.6	141.04	156.9	364	364	LOS_B	2	10.667132	10.667132	3.067853	1.107143	282.313515	54.927951	65.428883	4.03882
47 0-3600	1: samata 9 - 8: JI.MDB- 3: JI.TunAbdR-MKS@56.6	150.91	166.9	455	455	LOS_B	2	10.324271	10.324271	3.889955	1.169231	312.104141	60.724125	72.333149	4.465009
47 0-3600	1: samata 9 - 8: JI.MDB- 4: JI.AbdKad-Antang@31.5	150.91	166.9	650	650	LOS_C	3	16.320661	16.320661	5.505324	2.573846	674.331872	131.200479	156.282923	9.647094
47 0-3600	1: samata 9 - 8: JI.MDB-6: JI.YasLimp-Gowa@48.0	150.91	166.9	207	207	LOS_C	3	19.94409	19.94409	6.962748	3.101449	248.768876	48.401384	57.654589	3.558925
47 0-3600	1: samata 9 - 8: JI.MDB- 9: JI.MDB masuk@57.6	150.91	166.9	0	0	LOS_A						0	0	0	0
47 0-3600	1: samata 9	124.12	167.9	5020	5020	LOS_E	5	40.073099	40.073099	23.824309	6.871912	11190.63273	2177.290487	2593.537198	160.094889

SimRu	n Timelen	Movement	Qlen	Qlenma	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
	4 0-3600	1: samata 10 - 2: JI.TunAbdulRazak- 3: JI.TunAbdR-MI	128.85	163	44	44	LOS_A	1	3.963161	3.963161	0.811889	0.477273	25.947486	5.048438	6.01358	0.371209
	1 0-3600	1: samata 10 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Ant	118.85	153.7	1039	1039	LOS_A	1	6.815939	6.815939	0.843046	0.405197	570.811777	111.05923	132.291141	8.16612
	1 0-3600	1: samata 10 - 2: JI.TunAbdulRazak- 6: JI.YasLimp-Go	128.85	163	950	950	LOS_A	1	7.940338	7.940338	1.220313	0.630526	638.236963	124.177721	147.917579	9.130715
	1 0-3600	1: samata 10 - 2: JI.TunAbdulRazak-9: JI.MDB masuk(128.85	163	258	258	LOS_A	1	8.793653	8.793653	1.147222	0.879845	184.308143	35.859667	42.715192	2.63674
	1 0-3600	1: samata 10 - 5: JI.AbdKad- 3: JI.TunAbdR-MKS@40.8	80.031	91.76	129	129	LOS_C	6	322.411047	322.411047	245.55627	59.170732	634.103872	123.373572	146.959696	9.071586
	1 0-3600	1: samata 10 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@39	80.031	91.76	0	0	LOS_A						0	0	0	0
	1 0-3600	1: samata 10 - 5: JI.AbdKad-6: JI.YasLimp-Gowa@64.5	80.031	91.76	495	495	LOS_C	6	324.030458	324.030458	244.08602	62.35	2722.431849	529.686311	630.949871	38.947523
	1 0-3600	1: samata 10 - 5: JI.AbdKad- 9: JI.MDB masuk@43.5	80.031	91.76	380	380	LOS_C	6	347.041008	347.041008	260.16175	69.252427	1859.331099	361.758268	430.917937	26.599873
	1 0-3600	1: samata 10 - 7: JI.YasLimp- 3: JI.TunAbdR-MKS@40.8	21.95	122.7	545	545	LOS_D	4	25.993372	25.993372	7.997145	3.304587	745.353393	145.018686	172.742846	10.663139
	1 0-3600	1: samata 10 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@39	21.95	122.7	333	333	LOS_D	4	32.242369	32.242369	9.742729	5.690691	663.665494	129.125189	153.810887	9.494499
	1 0-3600	1: samata 10 - 7: JI.YasLimp- 6: JI.YasLimp-Gowa@64	21.95	122.7	0	0	LOS_A						0	0	0	0
	1 0-3600	1: samata 10 - 7: JI.YasLimp- 9: JI.MDB masuk@43.5	21.95	122.7	360	360	LOS_C	3	23.166301	23.166301	7.356943	2.752778	452.677721	88.074635	104.912433	6.476076
	1 0-3600	1: samata 10 - 8: JI.MDB- 3: JI.TunAbdR-MKS@40.8	150.24	185.5	444	444	LOS_A	1	4.825274	4.825274	1.061735	0.77027	223.420927	43.469594	51.779957	3.196294
	4 0-3600	1: samata 10 - 8: JI.MDB- 4: JI.AbdKad-Antang@39.8	150.24	185.5	635	635	LOS_A	1	9.835904	9.835904	1.837802	1.848819	516.229901	100.43958	119.641265	7.385263
	1 0-3600	1: samata 10 - 8: JI.MDB- 6: JI.YasLimp-Gowa@64.5	150.24	185.5	133	133	LOS_A	1	8.977726	8.977726	1.046823	1.112782	97.910742	19.049873	22.69176	1.400726
	1 0-3600	1: samata 10 - 8: JI.MDB-9: JI.MDB masuk@43.5	150.24	185.5	0	0	LOS_A						0	0	0	0
	4 0-3600	1: samata 10	99.983	185.5	5045	5045	LOS_D	4	31.853795	31.853795	17.901699	5.382359	9283.936548	1806.316696	2151.641947	132.817404

SimRu	n Timeler	Movement		Qlen	Qlenma	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
1	0-3600	1: samata 11	- 2: JI.TunAbdulRazak- 3: JI.TunAbdR-M	121.47	154.6	43	43	LOS_A	1	4.349734	4.349734	0.465854	0.348837	24.943397	4.853079	5.780873	0.356844
1	0-3600	1: samata 11	- 2: JI.TunAbdulRazak- 4: JI.AbdKad-Ant	121.47	154.6	1078	1078	LOS_A	1	7.57132	7.57132	0.504096	0.430427	595.53707	115.869873	138.021467	8.519844
1	0-3600	1: samata 11	- 2: JI.TunAbdulRazak- 6: JI.YasLimp-Go	121.47	154.6	1140	1140	LOS_A	1	8.599041	8.599041	0.537678	0.476316	754.422815	146.783266	174.844773	10.792887
1	0-3600	1: samata 11	 2: JI.TunAbdulRazak-9: JI.MDB masuk 	121.47	154.6	284	284	LOS_A	1	9.341932	9.341932	0.95955	0.75	205.125243	39.909918	47.539756	2.934553
1	0-3600	1: samata 11	- 5: JI.AbdKad-3: JI.TunAbdR-MKS@43.2	83.419	99.32	320	320	LOS_C	6	487.194237	487.194237	376.14452	139.03077	2289.860672	445.523679	530.697323	32.759094
1	0-3600	1: samata 11	- 5: JI.AbdKad-4: JI.AbdKad-Antang@32	83.419	99.32	0	0	LOS_A						0	0	0	0
-	_		5: JI.AbdKad- 6: JI.YasLimp-Gowa@67	83.419	99.32	515	515	LOS_C	6	448.408842	448.408842	343.8956	113.00769	3678.743852	715.749877	852.584412	52.628667
-		al.	5: JI.AbdKad-9: JI.MDB masuk@55.4	83.419	99.32	220	220	LOS_C	6	483.295215	483.295215	368.36468	131.57895	1838.401121	357.686055	426.067213	26.300445
	EN ES		 7: JI.YasLimp- 3: JI.TunAbdR-MKS@43. 	38.397	124.4	475	475	LOS_E	5	37.942045	37.942045	13.211018	5.204211	893.921575	173.924655	207.174957	12.788578
	120		 7: JI.YasLimp- 4: JI.AbdKad-Antang@3 	38.397	124.4	334	334	LOS_E	5	44.349496	44.349496	13.992686	6.760479	789.196433	153.548948	182.903894	11.290364
	Section of Concession		7: JI.YasLimp- 6: JI.YasLimp-Gowa@6	38.397	124.4	0	0	LOS_A						0	0	0	0
	1	AD.	7: JI.YasLimp- 9: JI.MDB masuk@55.4	38.397	124.4	489	489	LOS_E	5	37.853484	37.853484	12.562566	4.852761	916.867506	178.3891	212.492898	13.116846
		ANY	8: JI.MDB 3: JI.TunAbdR-MKS@43.2	154.61	187.1	508	508	LOS_A	1	4.943024	4.943024	1.014006	0.547244	238.986254	46.498041	55.387372	3.418974
		70	8: JI.MDB- 4: JI.AbdKad-Antang@32.7	154.61	187.1	644	644	LOS_A	1	9.997063	9.997063	1.958615	1.524845	476.097635	92.631299	110.340224	6.811125
-		_	8: JI.MDB-6: JI.YasLimp-Gowa@67.6	154.61	187.1	182	182	LOS_B	2	11.637795	11.637795	2.843348	1.60989	157.408425	30.62596	36.480922	2.251909
		C-Automation	8: JI.MDB- 9: JI.MDB masuk@55.4	154.61	187.1	0	0	LOS_A						0	0	0	0
pumi	zation	Software:	1: samata 11	99.475	187.1	5429	5429	LOS_E	5	36.972986	36.972986	20.443426	7.573955	12579.37767	2447.489789	2915.392249	179.962484
www	v.bales	sio.com															

SimRun	Timeler	Movement	Qlen	Qlenm	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
15 (0-3600	1: samata 12 - 2: JI.TunAbdulRazak-3: JI.TunAbdR-M	122.65	153.4	48	48	LOS_A	1	9.109526	9.109526	1.904911	1.354167	40.294422	7.83983	9.338621	0.576458
15 (0-3600	1: samata 12 - 2: JI.TunAbduIRazak-4: JI.AbdKad-Ant	113.19	143.4	1058	1058	LOS_B	2	10.373342	10.373342	1.805199	1.360113	821.819437	159.896199	190.464591	11.757073
15 (0-3600	1: samata 12 - 2: JI.TunAbdulRazak- 6: JI.YasLimp-G	122.65	153.4	1055	1055	LOS_B	2	11.779732	11.779732	2.045827	1.513744	948.390305	184.522291	219.798612	13.567816
15 (0-3600	1: samata 12 - 2: JI.TunAbdulRazak- 9: JI.MDB masu	122.65	153.4	361	361	LOS_B	2	13.271406	13.271406	2.294533	1.878116	357.721755	69.599655	82.905471	5.117622
15 (0-3600	1: samata 12 - 5: JI.AbdKad- 3: JI.TunAbdR-MKS@60.5	74.817	94.1	328	328	LOS_C	6	197.235894	197.235894	151.52752	40.694656	1529.075859	297.502599	354.378096	21.875191
15 (0-3600	1: samata 12 - 5: JI.AbdKad-4: JI.AbdKad-Antang@37	74.817	94.1	0	0	LOS_A						0	0	0	0
15 (0-3600	1: samata 12 - 5: JI.AbdKad- 6: JI.YasLimp-Gowa@68	74.817	94.1	550	550	LOS_C	6	172.869232	172.869232	128.12968	43.660793	2470.684316	480.705389	572.604949	35.345984
15 (0-3600	1: samata 12 - 5: JI.AbdKad-9: JI.MDB masuk@58.1	74.817	94.1	310	310	LOS_C	6	193.156625	193.156625	148.70598	43.050847	1240.358804	241.328751	287.46513	17.744761
15 (0-3600	1: samata 12 - 7: JI.YasLimp- 3: JI.TunAbdR-MKS@60	18.682	113	453	453	LOS_D	4	28.87414	28.87414	12.272407	7.284768	997.496129	194.0765	231.17936	14.270331
15 (0-3600	1: samata 12 - 7: JI.YasLimp-4: JI.AbdKad-Antang@3	18.682	113	548	548	LOS_D	4	28.464541	28.464541	10.523115	7.15146	1206.646815	234.769624	279.652052	17.262472
15 (0-3600	1: samata 12 - 7: JI.YasLimp- 6: JI.YasLimp-Gowa@6	18.682	113	0	0	LOS_A						0	0	0	0
15 (0-3600	1: samata 12 - 7: JI.YasLimp- 9: JI.MDB masuk@58.1	18.682	113	465	465	LOS_D	4	25.332233	25.332233	11.137799	5.335484	834.752373	162.412479	193.461923	11.942094
15 (0-3600	1: samata 12 - 8: JI.MDB- 3: JI.TunAbdR-MKS@60.5	143.06	175.9	442	442	LOS_A	1	2.849248	2.849248	0.326643	0.384615	196.196656	38.17274	45.47047	2.806819
15 (0-3600	1: samata 12 - 8: JI.MDB- 4: JI.AbdKad-Antang@37.2	143.06	175.9	716	716	LOS_A	1	6.14154	6.14154	0.680444	0.747207	392.796579	76.423941	91.0344	5.619407
15 (0-3600	1: samata 12 - 8: JI.MDB-6: JI.YasLimp-Gowa@68.4	143.06	175.9	136	136	LOS_A	1	8.615536	8.615536	0.849575	1.169118	101.75376	19.797584	23.582417	1.455705
15 (0-3600	1: samata 12 - 8: JI.MDB- 9: JI.MDB masuk@58.1	143.06	175.9	0	0	LOS_A						0	0	0	0
15 (0-3600	1: samata 12	94.479	175.9	5758	5758	LOS_D	4	28.445469	28.445469	15.40867	6.02032	11091.21729	2157.947857	2570.496712	158.672637

SimRun Timeler	Movement	Qlen	Qlenma	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
3 0-3600	1: samata 1 - 2: JI.TunAbdulRazak-3: JI.TunAbdR-MK	128.16	144.5	42	42	LOS_A	1	4.503391	4.503391	1.433395	0.595238	26.496189	5.155196	6.140748	0.379058
3 0-3600	1: samata 1 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Anta	118.95	135.2	825	825	LOS_A	1	5.698334	5.698334	0.316086	0.283636	406.923694	79.172564	94.308496	5.821512
3 0-3600	1: samata 1 - 2: JI.TunAbdulRazak- 6: JI.YasLimp-Gov	128.16	144.5	1063	1063	LOS_A	1	6.506123	6.506123	0.38183	0.341486	619.87115	120.604401	143.661125	8.867971
3 0-3600	1: samata 1 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk(128.16	144.5	314	314	LOS_A	1	8.459447	8.459447	1.161756	0.605096	216.235578	42.071586	50.114683	3.093499
3 0-3600	1: samata 1 - 5: JI.AbdKad- 3: JI.TunAbdR-MKS@47.6	79.919	95.85	213	213	LOS_C	6	449.786163	449.786163	338.39596	108.47059	1372.333175	267.006168	318.051465	19.632807
3 0-3600	1: samata 1 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@31.	79.919	95.85	0	0	LOS_A						0	0	0	0
3 0-3600	1: samata 1 - 5: JI.AbdKad- 6: JI.YasLimp-Gowa@57.4	79.919	95.85	530	530	LOS_C	6	432.908774	432.908774	326.47903	111.99291	3871.931288	753.337132	897.357466	55.392436
3 0-3600	1: samata 1 - 5: JI.AbdKad- 9: JI.MDB masuk@57.4	79.919	95.85	274	274	LOS_C	6	476.183975	476.183975	360.71809	134.76563	2111.725886	410.865122	489.412866	30.210671
3 0-3600	1: samata 1 - 7: JI.YasLimp-3: JI.TunAbdR-MKS@47.6	8.8752	67.94	437	437	LOS_C	3	16.109349	16.109349	4.156061	2.06865	452.075966	87.957556	104.772971	6.467467
3 0-3600	1: samata 1 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@31	8.8752	67.94	517	517	LOS_C	3	22.229584	22.229584	5.697314	3.558994	732.491252	142.516181	169.761921	10.479131
3 0-3600	1: samata 1 - 7: JI.YasLimp- 6: JI.YasLimp-Gowa@57.	8.8752	67.94	0	0	LOS_A						0	0	0	0
3 0-3600	1: samata 1 - 7: JI.YasLimp- 9: JI.MDB masuk@57.4	8.8752	67.94	346	346	LOS_B	2	14.120075	14.120075	3.458957	1.604046	318.179894	61.906246	73.741263	4.55193
3 0-3600	1: samata 1 - 8: JI.MDB-3: JI.TunAbdR-MKS@47.6	149.03	167	544	544	LOS_A	1	4.541844	4.541844	0.761763	0.523897	256.727429	49.949829	59.499061	3.672782
3 0-3600	1: samata 1 - 8: JI.MDB- 4: JI.AbdKad-Antang@31.6	149.03	167	725	725	LOS_A	1	9.224557	9.224557	1.867772	1.641379	539.069716	104.883378	124.934612	7.712013
3 0-3600	1: samata 1 - 8: JI.MDB- 6: JI.YasLimp-Gowa@57.4	149.03	167	163	163	LOS_B	2	11.220256	11.220256	2.34038	1.742331	143.279845	27.877051	33.206488	2.049783
3 0-3600	1: samata 1 - 8: JI.MDB- 9: JI.MDB masuk@57.4	149.03	167	0	0	LOS_A						0	0	0	0
3 0-3600	1: samata 1	96.987	167	5232	5232	LOS_D	4	31.216178	31.216178	18.267941	6.845948	11026.72347	2145.399703	2555.549646	157.749978

SimRu	n Timelen	Movement		Qlen	Qlenmi	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
3	0-3600	1: samata 2 - 2	2: JI.TunAbdulRazak-3: JI.TunAbdR-MK	128.54	144.5	44	44	LOS_A	1	6.83041	6.83041	2.217139	0.909091	32.058153	6.237352	7.429786	0.458629
3	0-3600	1: samata 2 - 2	2: JI.TunAbdulRazak-4: JI.AbdKad-Anta	120.72	135.2	913	913	LOS_B	2	12.060142	12.060142	2.827256	1.308872	724.857123	141.030856	167.992638	10.369916
3	0-3600	1: samata 2 - 2	2: JI.TunAbdulRazak- 6: JI.YasLimp-Gov	128.54	144.5	993	993	LOS_B	2	14.011081	14.011081	3.458412	1.545821	889.988769	173.159474	206.263492	12.732314
3	0-3600	1: samata 2 - 2	2: JI.TunAbduIRazak- 9: JI.MDB masuk(128.54	144.5	290	290	LOS_C	3	18.415399	18.415399	5.562527	2.724138	345.291268	67.181134	80.024586	4.939789
3	0-3600	1: samata 2 -	5: JI.AbdKad- 3: JI.TunAbdR-MKS@54.0	81.868	95.89	190	190	LOS_C	6	817.665432	817.665432	692.98333	154.33333	1002.392101	195.029078	232.314049	14.340373
-		1	5: JI.AbdKad- 4: JI.AbdKad-Antang@40.	81.868	95.89	0	0	LOS_A						0	0	0	0
6	_		5: JI.AbdKad- 6: JI.YasLimp-Gowa@50.7	81.868	95.89	465	465	LOS_C	6	839.627232	839.627232	715.48107	141.09333	3073.897053	598.068668	712.405325	43.975637
0		100	5: JI.AbdKad-9: JI.MDB masuk@42.9	81.868	95.89	238	238	LOS_C	6	856.168298	856.168298	715.93651	187.14286	1130.184078	219.892753	261.931074	16.168585
	E DE		7: JI.YasLimp-3: JI.TunAbdR-MKS@54.0	139.85	157	469	469	LOS_A	1	6.880522	6.880522	0.854199	0.673774	302.336015	58.823602	70.069291	4.325265
			7: JI.YasLimp- 4: JI.AbdKad-Antang@40	139.85	157	456	456	LOS_C	3	17.142277	17.142277	4.32168	2.653509	540.403562	105.142896	125.243744	7.731095
	Section of Concession		7: JI.YasLimp- 6: JI.YasLimp-Gowa@50.	139.85	157	0	0	LOS_A						0	0	0	0
12	10	City	7: JI.YasLimp- 9: JI.MDB masuk@42.9	139.85	157	311	311	LOS_A	1	6.021868	6.021868	0.719533	0.369775	165.912055	32.280457	38.451721	2.373563
		ARY	8: JI.MDB- 3: JI.TunAbdR-MKS@54.0	149.65	167	397	397	LOS_A	1	6.411397	6.411397	1.772021	0.823678	223.359476	43.457638	51.765715	3.195415
		7 0	8: JI.MDB- 4: JI.AbdKad-Antang@40.2	149.65	167	726	726	LOS_B	2	11.11142	11.11142	2.909716	1.640496	575.333515	111.938996	133.339098	8.230809
<u> </u>	1		8: JI.MDB- 6: JI.YasLimp-Gowa@50.7	149.65	167	184	184	LOS_B	2	13.099766	13.099766	3.495483	1.744565	161.438411	31.410049	37.414911	2.309562
			8: JI.MDB - 9: JI.MDB masuk@42.9	149.65	167	0	0	LOS_A						0	0	0	0
Optimi	zation	Software:	1: samata 2	124.13	167	4903	4903	LOS_D	4	32.037463	32.037463	20.213689	5.151132	8834.25073	1718.824176	2047.422916	126.384131
		CALOR STATES OF A STATES															

SimRu	Timelen	Movement	Qlen	Qlenma	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
11	0-3600	1: samata 3 - 2: JI.TunAbdulRazak- 3: JI.TunAbdR-MK	134.08	147	65	65	LOS_A	1	6.753219	6.753219	0.916854	0.723077	43.328054	8.430065	10.041695	0.619858
11	0-3600	1: samata 3 - 2: JI.TunAbdulRazak- 4: JI.AbdKad-Anta	124.84	137.7	1249	1249	LOS_A	1	9.817503	9.817503	0.809525	0.620496	774.576545	150.704449	179.515594	11.08121
11	0-3600	1: samata 3 - 2: JI.TunAbdulRazak- 6: JI.YasLimp-Gov	134.08	147	1138	1138	LOS_B	2	10.139976	10.139976	0.806991	0.690685	754.716005	146.84031	174.912722	10.797082
11	0-3600	1: samata 3 - 2: JI.TunAbdulRazak-9: JI.MDB masuk@	134.08	147	303	303	LOS_B	2	11.657342	11.657342	0.87942	0.864686	216.88621	42.198175	50.265474	3.102807
11	0-3600	1: samata 3 - 5: JI.AbdKad-JI.TunAbdR-MKS@39.4	86.079	98.41	133	133	LOS_C	6	558.542477	558.542477	474.80214	80.807692	642.909739	125.086873	149.00054	9.197564
11	0-3600	1: samata 3 - 5: JI.AbdKad - 4: JI.AbdKad-Antang@33	86.079	98.41	0	0	LOS_A						0	0	0	0
11	0-3600	1: samata 3 - 5: JI.AbdKad-6: JI.YasLimp-Gowa@40.0	86.079	98.41	550	550	LOS_C	6	612.91615	612.91615	518.85848	97.761468	3068.230621	596.966187	711.092075	43.894573
11	0-3600	1: samata 3 - 5: JI.AbdKad- 9: JI.MDB masuk@25.5	86.079	98.41	368	368	LOS_C	6	631.77916	631.77916	513.65214	172.07273	2386.821137	464.388662	553.168847	34.146225
11	0-3600	1: samata 3 - 7: JI.YasLimp-3: JI.TunAbdR-MKS@39.4	11.493	76.95	541	541	LOS_C	3	17.53188	17.53188	4.304414	2.45841	591.27419	115.040472	137.033503	8.458858
11	0-3600	1: samata 3 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@33	11.493	76.95	440	440	LOS_C	3	23.058819	23.058819	5.277471	3.325	608.691589	118.429265	141.070154	8.708034
11	0-3600	1: samata 3 - 7: JI.YasLimp- 6: JI.YasLimp-Gowa@40.	11.493	76.95	0	0	LOS_A						0	0	0	0
11	0-3600	1: samata 3 - 7: JI.YasLimp- 9: JI.MDB masuk@25.5	11.493	76.95	313	313	LOS_C	3	16.786563	16.786563	4.119611	2.127796	312.034165	60.71051	72.316931	4.464008
11	0-3600	1: samata 3 - 8: JI.MDB- 3: JI.TunAbdR-MKS@39.4	155.52	169.5	464	464	LOS_A	1	3.287114	3.287114	0.391846	0.338362	184.463704	35.889934	42.751245	2.638966
11	0-3600	1: samata 3 - 8: JI.MDB- 4: JI.AbdKad-Antang@33.4	155.52	169.5	691	691	LOS_A	1	8.461363	8.461363	1.070582	1.183792	450.996192	87.747471	104.522723	6.45202
11	0-3600	1: samata 3 - 8: JI.MDB- 6: JI.YasLimp-Gowa@40.0	155.52	169.5	125	125	LOS_A	1	8.542777	8.542777	1.126183	1.088	83.671043	16.279345	19.391572	1.197011
11	0-3600	1: samata 3 - 8: JI.MDB- 9: JI.MDB masuk@25.5	155.52	169.5	0	0	LOS_A						0	0	0	0
11	0-3600	1: samata 3	102.4	169.5	5519	5519	LOS_D	4	32.102736	32.102736	19.280555	5.193151	9875.67173	1921.44686	2288.782289	141.282857

SimRun Timelen	Movement	Qlen	Qlenm	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
4 0-3600	1: samata 4 - 2: JI.TunAbdulRazak-3: JI.TunAbdR-MK	127.33	156	73	73	LOS_A	1	4.031039	4.031039	0.537961	0.328767	42.111783	8.193423	9.759812	0.602458
4 0-3600	1: samata 4 - 2: JI.TunAbdulRazak-4: JI.AbdKad-Anta	118.09	146.6	1117	1117	LOS_A	1	5.882543	5.882543	0.223941	0.249776	559.834493	108.923449	129.74705	8.009077
4 0-3600	1: samata 4 - 2: JI.TunAbdulRazak 6: JI.YasLimp-G	127.33	156	1052	1052	LOS_A	1	6.330446	6.330446	0.19429	0.280418	600.619221	116.858675	139.199304	8.59255
4 0-3600	1: samata 4 - 2: JI.TunAbdulRazak-9: JI.MDB masuk@	127.33	156	273	273	LOS_A	1	8.723939	8.723939	0.899174	0.684982	187.586144	36.497447	43.4749	2.683636
4 0-3600	1: samata 4 - 5: JI.AbdKad-3: JI.TunAbdR-MKS@47.2	79.146	95.89	185	185	LOS_C	6	339.981391	339.981391	266.10939	67.266667	820.594678	159.657906	190.180741	11.739552
4 0-3600	1: samata 4 - 5: JI.AbdKad- 4: JI.AbdKad-Antang@37.	79.146	95.89	0	0	LOS_A						0	0	0	0
4 0-3600	1: samata 4 - 5: JI.AbdKad- JI.YasLimp-Gowa@57.8	79.146	95.89	510	510	LOS_C	6	336.291706	336.291706	257.89087	72.636943	2998.814018	583.460238	695.004107	42.901488
4 0-3600	1: samata 4 - 5: JI.AbdKad-JI.MDB masuk@47.8	79.146	95.89	375	375	LOS_C	6	411.884723	411.884723	320.1214	102	2505.20646	487.422144	580.605789	35.839864
4 0-3600	1: samata 4 - 7: JI.YasLimp- JI.TunAbdR-MKS@47.2	21.857	115.7	591	591	LOS_D	4	25.142713	25.142713	6.882524	3.585448	833.695561	162.206862	193.216997	11.926975
4 0-3600	1: samata 4 - 7: JI.YasLimp-4: JI.AbdKad-Antang@37.	21.857	115.7	425	425	LOS_D	4	30.538928	30.538928	7.669016	4.910588	778.166025	151.402832	180.347491	11.132561
4 0-3600	1: samata 4 - 7: JI.YasLimp-6: JI.YasLimp-Gowa@57.8	21.857	115.7	0	0	LOS_A						0	0	0	0
4 0-3600	1: samata 4 - 7: JI.YasLimp- 9: JI.MDB masuk@47.8	21.857	115.7	399	399	LOS_C	3	24.043488	24.043488	6.119299	3.704261	585.869453	113.988907	135.780903	8.381537
4 0-3600	1: samata 4 - 8: JI.MDB-3: JI.TunAbdR-MKS@47.2	147.92	178.5	480	480	LOS_A	1	4.507744	4.507744	0.732155	0.495833	222.78387	43.345646	51.632313	3.18718
4 0-3600	1: samata 4 - 8: JI.MDB- 4: JI.AbdKad-Antang@37.2	147.92	178.5	624	624	LOS_A	1	8.21745	8.21745	1.253651	1.211538	414.85516	80.715739	96.146689	5.934981
4 0-3600	1: samata 4 - 8: JI.MDB- 6: JI.YasLimp-Gowa@57.8	147.92	178.5	103	103	LOS_A	1	9.193401	9.193401	1.551589	1.38835	80.39751	15.642434	18.632899	1.150179
4 0-3600	1: samata 4 - 8: JI.MDB- 9: JI.MDB masuk@47.8	147.92	178.5	0	0	LOS_A						0	0	0	0
4 0-3600	1: samata 4	98.869	178.5	5439	5439	LOS_D	4	31.414199	31.414199	17.701276	5.927009	10545.45824	2051.762977	2444.011781	150.864925

5	imRun	Timelen	Movement		Qlen	Qlenma	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
	7	0-3600	1: samata 5 - 2	2: JI.TunAbdulRazak-3: JI.TunAbdR-MK	130.03	164	106	106	LOS_B	2	10.593615	10.593615	3.438063	1.396226	91.611889	17.824345	21.23194	1.310614
	7	0-3600	1: samata 5 - 2	2: JI.TunAbdulRazak-4: JI.AbdKad-Anta	120.89	160.2	1000	1000	LOS_A	1	8.28894	8.28894	2.039729	0.944	673.726086	131.082615	156.142526	9.638428
	7	0-3600	1: samata 5 - 2	2: JI.TunAbdulRazak- 6: JI.YasLimp-Gov	130.03	164	1057	1057	LOS_B	2	10.04188	10.04188	2.515995	1.315989	871.575485	169.576918	201.996035	12.468891
	7	0-3600	1: samata 5 - 2	2: JI.TunAbdulRazak-9: JI.MDB masuk@	130.03	164	423	423	LOS_B	2	12.473268	12.473268	3.379813	1.723404	406.438638	79.07819	94.196079	5.814573
_	7	0-3600	1: samata 5 - 5	5: JI.AbdKad-3: JI.TunAbdR-MKS@52.2	69.226	92.19	135	135	LOS_C	6	203.163762	203.163762	159.93538	36.7	803.240428	156.281399	186.158726	11.491279
	0			5: JI.AbdKad- 4: JI.AbdKad-Antang@41.	69.226	92.19	0	0	LOS_A						0	0	0	0
	1			5: JI.AbdKad-6: JI.YasLimp-Gowa@62.8	69.226	92.19	670	670	LOS_C	6	173.673422	173.673422	135.78886	34.350158	2957.291298	575.381426	685.380816	42.307458
		-		5: JI.AbdKad- 9: JI.MDB masuk@59.8	69.226	92.19	465	465	LOS_C	6	191.130486	191.130486	148.00906	40.848649	1930.057498	375.519055	447.309463	27.611695
				7: JI.YasLimp- 3: JI.TunAbdR-MKS@52.2	73.797	124.1	567	567	LOS_F	6	79.174743	79.174743	44.85109	18.275132	2783.753653	541.617306	645.161791	39.824802
			4.1	7: JI.YasLimp- 4: JI.AbdKad-Antang@41	73.797	124.1	427	427	LOS_F	6	74.963921	74.963921	41.084237	20.76815	2397.177701	466.403673	555.569081	34.294388
			and the second s	7: JI.YasLimp- 6: JI.YasLimp-Gowa@62.	73.797	124.1	0	0	LOS_A						0	0	0	0
	100	_	ALV	7: JI.YasLimp-9: JI.MDB masuk@59.8	73.797	124.1	464	464	LOS_F	6	76.889999	76.889999	45.849544	18.926724	2399.084404	466.774648	556.010978	34.321665
		1	101	8: JI.MDB- 3: JI.TunAbdR-MKS@52.2	152.57	186.5	552	552	LOS_A	1	3.580677	3.580677	0.336301	0.311594	234.46109	45.617608	54.338622	3.354236
				8: JI.MDB-4: JI.AbdKad-Antang@41.7	152.57	186.5	628	628	LOS_A	1	5.914545	5.914545	0.632828	0.708599	343.437409	66.82044	79.594936	4.913268
-				8: JI.MDB-6: JI.YasLimp-Gowa@62.8	152.57	186.5	75	75	LOS_A	1	6.581348	6.581348	0.987219	0.84	48.206748	9.379281	11.172379	0.689653
On	timiz	ation	Software	8: JI.MDB- 9: JI.MDB masuk@59.8	152.57	186.5	0	0	LOS_A						0	0	0	0
op		acion	Jonware.	1: samata 5	109.3	186.5	5881	5881	LOS_E	5	42.63427	42.63427	26.291384	9.060704	15816.50056	3077.316275	3665.626739	226.273255
1	www	.bales	sio.com															

SimRun Timeler	Movement	Qlen	Qlenm	Vehs(all)	Pers(all	LOS (AII)	LOSVa	VehDelay(All)	PersDelay(Al	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
8 0-3600	1: samata 6 - 2: JI.TunAbdulRazak - 3: JI.TunAbdR-M	129.94	163.9	89	89	LOS_A	1	9.645975	9.645975	3.42018	1.460674	75.239808	14.638933	17.437552	1.076392
8 0-3600	1: samata 6 - 2: JI.TunAbdulRazak-4: JI.AbdKad-Anta	119.22	157.1	1080	1080	LOS_B	2	10.978088	10.978088	4.216813	1.452778	864.610783	168.22184	200.381898	12.369253
8 0-3600	1: samata 6 - 2: JI.TunAbdulRazak- 6: JI.YasLimp-Go	129.94	163.9	1056	1056	LOS_B	2	11.63039	11.63039	4.178693	1.848485	962.886893	187.3428	223.158336	13.775206
8 0-3600	1: samata 6 - 2: JI.TunAbdulRazak- 9: JI.MDB masuk	129.94	163.9	403	403	LOS_B	2	14.607456	14.607456	5.382275	2.205955	418.523693	81.429503	96.996907	5.987463
8 0-3600	1: samata 6 - 5: JI.AbdKad-3: JI.TunAbdR-MKS@43.3	69.073	87.21	168	168	LOS_C	6	224.913184	224.913184	175.07871	55.628571	1008.038201	196.127604	233.622587	14.421147
8 0-3600	1: samata 6 - 5: JI.AbdKad-4: JI.AbdKad-Antang@38.0	69.073	87.21	0	0	LOS_A						0	0	0	0
8 0-3600	1: samata 6 - 5: JI.AbdKad- 6: JI.YasLimp-Gowa@49.6	69.073	87.21	638	638	LOS_C	6	232.581745	232.581745	184.08751	65.011952	4016.309116	781.427811	930.818422	57.457927
8 0-3600	1: samata 6 - 5: JI.AbdKad- 9: JI.MDB masuk@39.6	69.073	87.21	475	475	LOS_C	6	219.833036	219.833036	172.38435	60.306122	2207.00389	429.40276	511.494464	31.573732
8 0-3600	1: samata 6 - 7: JI.YasLimp-3: JI.TunAbdR-MKS@43.3	69.141	123.9	569	569	LOS_F	6	75.280885	75.280885	41.383872	21.966728	2928.261484	569.733279	678.652876	41.892153
8 0-3600	1: samata 6 - 7: JI.YasLimp- 4: JI.AbdKad-Antang@38	69.141	123.9	422	422	LOS_F	6	73.827396	73.827396	40.876048	23.218009	2539.116771	494.019858	588.464831	36.32499
8 0-3600	1: samata 6 - 7: JI.YasLimp-6: JI.YasLimp-Gowa@49.	69.141	123.9	0	0	LOS_A						0	0	0	0
8 0-3600	1: samata 6 - 7: JI.YasLimp-9: JI.MDB masuk@39.6	69.141	123.9	421	421	LOS_F	6	70.55855	70.55855	39.902949	20.370546	2267.287543	441.131768	525.465783	32.436159
8 0-3600	1: samata 6 - 8: JI.MDB- 3: JI.TunAbdR-MKS@43.3	151.9	186.5	492	492	LOS_A	1	2.949633	2.949633	0.241959	0.264228	186.751055	36.334969	43.28136	2.671689
8 0-3600	1: samata 6 - 8: JI.MDB-4: JI.AbdKad-Antang@38.0	151.9	186.5	504	504	LOS_A	1	5.414788	5.414788	0.583062	0.700397	259.444789	50.478528	60.128835	3.711656
8 0-3600	1: samata 6 - 8: JI.MDB 6: JI.YasLimp-Gowa@49.6	151.9	186.5	84	84	LOS_A	1	6.767608	6.767608	1.623219	0.809524	49.918885	9.712401	11.569184	0.714147
8 0-3600	1: samata 6 - 8: JI.MDB- 9: JI.MDB masuk@39.6	151.9	186.5	0	0	LOS_A						0	0	0	0
8 0-3600	1: samata 6	107.85	186.5	5560	5560	LOS_E	5	43.823155	43.823155	27.379326	11.58741	17539.63172	3412.574983	4064.979024	250.924631

Lampiran Hasil Simulasi Vissim Bundaran Mandiri

SimRun	Timelent	Movement	Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOSV	VehDel	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVO	FuelConsumption
28	0-3600	1: mandiri jam 7 - 1: JlRiburane- JlRiburane	1.4658	33.821	137	137	LOS_A	1	7.044	7.044	1.86995	1.15329	113.707392	22.123327	26.352786	1.626715
28	0-3600	1: mandiri jam 7 - 1: JlRiburane-Jl.UPG	1.4658	33.821	551	551	LOS_A	1	0.672	0.672	0.08624	0.05989	229.480439	44.648555	53.184308	3.282982
28	0-3600	1: mandiri jam 7 - 1: JlRiburane-: Jl.Nusantara	1.4658	33.821	686	686	LOS_A	1	6.413	6.413	1.55628	1.08746	519.035502	100.985448	120.29149	7.425401
28	0-3600	1: mandiri jam 7 - 4: Jl.UPG- : JlRiburane	0.2341	62.101	597	597	LOS_A	1	3.554	3.554	0.74706	0.36181	277.963437	54.081584	64.420711	3.976587
28	0-3600	1: mandiri jam 7 - 4: Jl.UPG- Jl.UPG	0.2341	62.101	3	3	LOS_A	1	4.386	4.386	0.57988	0.33333	1.695089	0.329803	0.392853	0.02425
28	0-3600	1: mandiri jam 7 - 4: Jl.UPG- : Jl.Nusantara	2.2805	46.487	1736	1736	LOS_A	1	1.729	1.729	0.12864	0.10599	605.44124	117.796865	140.316854	8.661534
28	0-3600	1: mandiri jam 7 - 7: Jl.Nusantara- : JlRiburane	0.2341	62.101	1151	1151	LOS_A	1	0.696	0.696	0.00317	0.00869	290.799384	56.578993	67.395565	4.16022
0	0.0000	a	0.2341	62.101	11	11	LOS_A	1	3.831	3.831	0.53047	0.27273	4.426561	0.861248	1.025898	0.063327
d		ım 7 - 7: Jl.Nusantara-: Jl.Nusantara	0.2341	62.101	0	0	LOS_A						0	0	0	0
	PD	am 7	1.3268	62.101	4872	4872	LOS_A	1	2.404	2.404	0.42115	0.2773	2043.990156	397.686211	473.714457	29.241633



SimRun	Timelent	Movement	Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOS	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
1	0-3600	1: mandiri 8 - 1: JlRiburane - : JlRiburane	7.3909	51.09	195	195	LOS_A	1	5.485	5.485	1.15816	0.8359	146.715467	28.545498	34.002726	2.098934
1	0-3600	1: mandiri 8 - 1: JlRiburane - : Jl.UPG	7.3909	51.09	494	494	LOS_A	1	0.529	0.529	0.02361	0.02632	199.570815	38.829229	46.252464	2.85509
1	0-3600	1: mandiri 8 - 1: JlRiburane- : Jl.Nusantara	7.3909	51.09	446	446	LOS_A	1	5.454	5.454	1.2457	0.9148	317.202686	61.716116	73.514786	4.53795
1	0-3600	1: mandiri 8 - 4: Jl.UPG-: JlRiburane-	0.1775	31.912	572	572	LOS_A	1	2.704	2.704	0.39371	0.25874	240.156575	46.725743	55.658605	3.435716
1	0-3600	1: mandiri 8 - 4: Jl.UPG-: Jl.UPG	0.1775	31.912	16	16	LOS_A	1	3.373	3.373	0.40457	0.4375	8.579062	1.669174	1.98828	0.122733
1	0-3600	1: mandiri 8 - 4: Jl.UPG-: Jl.Nusantara	1.5601	80.784	1476	1476	LOS_A	1	1.287	1.287	0.05875	0.06978	470.80784	91.602098	109.114263	6.735448
1	0-3600	1: mandiri 8 - 7: Jl.Nusantara-: JlRiburane	0.1775	31.912	698	698	LOS_A	1	0.537	0.537	0.00802	0.0086	165.914458	32.280925	38.452278	2.373597
1	0-3600	1: mandiri 8 - 7: Jl.Nusantara-: Jl.UPG	0.1775	31.912	376	376	LOS_A	1	7.944	7.944	3.16203	1.04255	219.749573	42.755282	50.929086	3.143771
1	0-3600	1: mandiri 8 - 7: Jl.Nusantara- : Jl.Nusantara	0.1775	31.912	0	0	LOS_A						0	0	0	0
1	0-3600	1: mandiri 8	3.0428	80.784	4273	4273	LOS_A	1	2.487	2.487	0.53967	0.29019	1766.194036	343.63718	409.332523	25.26744

SimRun	Timelent	Movement	Qlen	Qlenmax	Vehs(all)	Pers(all) L	OS (All) I	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOO	FuelConsumption
13	0-3600	1: mandiri 9 - 1: JlRiburane- 2: JlRiburane-Jl.Ahma	8.1861	64.868	142	142 L0	OS_A	1	7.064	7.064	2.16217	1.30282	123.165484	23.963528	28.54479	1.762024
13	0-3600	1: mandiri 9 - 1: JlRiburane- 5: Jl.UPG-Rotterdam@2	8.1861	64.868	616	616 L	OS_A	1	0.945	0.945	0.13669	0.05844	262.264621	51.027165	60.782359	3.751997
13	0-3600	1: mandiri 9 - 1: JlRiburane- 6: Jl.Nusantara kiri dar	8.1861	64.868	601	601 L	OS_A	1	5.552	5.552	1.22635	0.80865	418.276328	81.381374	96.939578	5.983925
13	0-3600	1: mandiri 9 - 4: Jl.UPG - : JlRiburane-Jl.Ahmad Y@3	0.3277	40.82	251	251 L	OS_A	1	2.973	2.973	0.53897	0.28287	109.155719	21.237737	25.297892	1.561598
13	0-3600	1: mandiri 9 - 4: Jl.UPG - 5: Jl.UPG-Rotterdam@29.9	0.3277	40.82	0	0 L(OS_A						0	0	0	0
13	0-3600	1: mandiri 9 - 4: Jl.UPG - 6: Jl.Nusantara kiri dari bur	1.4677	59.63	487	487 L	OS_A	1	1.449	1.449	0.08153	0.06982	146.702455	28.542967	33.999711	2.098748
13	0-3600	1: mandiri 9 - 7: Jl.Nusantara-BundranMob@4.8 - 2:	0.3277	40.82	1129	1129 L	OS_A	1	0.847	0.847	0.0062	0.01152	305.033645	59.348463	70.694493	4.363858
13	0-3600	1: mandiri 9 - 7: Jl.Nusantara-BundranMob@4.8 - 5:	0.3277	40.82	329	329 L	OS_A	1	8.887	8.887	3.60467	1.0152	199.858643	38.88523	46.319171	2.859208
13	0-3600	1: mandiri 9 - 7: Jl.Nusantara-BundranMob@4.8 - 6:	0.3277	40.82	0	0 L(OS_A						0	0	0	0
13	0-3600	1: mandiri 9 - 10008: konektorUPGmot@9.9 - 2: JlRi	0.3277	40.82	304	304 L	OS_A	1	2.642	2.642	0.49317	0.28947	141.342624	27.500139	32.757518	2.022069
13	0-3600	1: mandiri 9 - 10008: konektorUPGmot@9.9 - 5: Jl.UF	0.3277	40.82	8	8 L(OS_A	1	7.578	7.578	1.89853	1	5.628906	1.095181	1.304553	0.080528
13	0-3600	1: mandiri 9 - 10008: konektorUPGmot@9.9 - 6: Jl.Nu	1.4677	59.63	1003	1003 L	OS_A	1	1.246	1.246	0.05915	0.06082	330.416598	64.287063	76.577237	4.72699
13	0-3600	1: mandiri 9	3.3272	64.868	4870	4870 L	DS_A	1	2.54	2.54	0.55865	0.27023	2039.12864	396.740336	472.587754	29.172084

	SimRun	Timelent	Movement		Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
	7	0-3600	1: mandiri 1	10 - 1: JlRiburane-Bundaran@78.9 - 2: Jl	6.3392	65.366	126	126	LOS_A	1	6.254	6.254	1.58475	0.96825	98.730802	19.209427	22.881817	1.412458
	7	0-3600	1: mandiri 1	10 - 1: JlRiburane-Bundaran@78.9 - 5: Jl	6.3392	65.366	520	520	LOS_A	1	0.598	0.598	0.07456	0.03462	208.009865	40.471161	48.208295	2.975821
_	7	0-3600	1: mandiri 1	LO - 1: JlRiburane-Bundaran@78.9 - 6: Jl	6.3392	65.366	465	465	LOS_A	1	5.176	5.176	1.27288	0.86882	315.041327	61.295594	73.01387	4.507029
	1			LO - 4: Jl.UPG - 2: JlRiburane-Jl.Ahmad Y@	0.3757	37.829	574	574	LOS_A	1	2.355	2.355	0.3769	0.21777	235.119927	45.745794	54.491314	3.363661
	1			LO - 4: Jl.UPG- 5: Jl.UPG-Rotterdam@22.1	0.3757	37.829	9	9	LOS_A	1	6.362	6.362	1.6583	0.55556	5.30683	1.032516	1.229909	0.07592
		PDI		10 - 4: Jl.UPG- 6: Jl.Nusantara kiri dari bu	1.3205	84.62	1307	1307	LOS_A	1	1.092	1.092	0.06166	0.05815	382.332782	74.388066	88.609314	5.469711
			37	10 - 7: Jl.Nusantara - 2: JlRiburane-Jl.Ahn	0.3757	37.829	1133	1133	LOS_A	1	0.759	0.759	0.00604	0.01589	279.978098	54.473564	64.887628	4.005409
		J.	U	LO - 7: Jl.Nusantara - 5: Jl.UPG-Rotterdam(0.3757	37.829	359	359	LOS_A	1	6.683	6.683	2.04216	0.74652	185.210681	36.035268	42.924364	2.649652
-	-		-	10 - 7: Jl.Nusantara - 6: Jl.Nusantara kiri o	0.3757	37.829	0	0	LOS_A						0	0	0	0
Op	timiz	ation S	oftware:	10	2.6784	84.62	4493	4493	LOS_A	1	2.137	2.137	0.41891	0.23058	1707.239592	332.166788	395.669262	24.424029
			Contraction of the second															

SimRun	Timelent	Movement	Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
4	0-3600	1: mandiri 11 - 1: JlRiburane-Bundaran@84.3 - 2: Jl	12.206	95.579	442	442	LOS_A	1	6.456	6.456	1.24194	0.82579	333.349728	64.857744	77.257018	4.768952
4	0-3600	1: mandiri 11 - 1: JlRiburane-Bundaran@84.3 - 5: Jl	12.206	95.579	624	624	LOS_A	1	1.144	1.144	0.06999	0.0593	264.030099	51.370663	61.191525	3.777255
4	0-3600	1: mandiri 11 - 1: JlRiburane-Bundaran@84.3 - 6: Jl	12.206	95.579	540	540	LOS_A	1	5.345	5.345	0.83729	0.62037	358.189532	69.690667	83.013883	5.124314
4	0-3600	1: mandiri 11 - 4: Jl.UPG-BundaranMob@3.8 - 2: JlR	0.7429	63.013	465	465	LOS_A	1	3.544	3.544	0.68443	0.33763	201.495777	39.203756	46.698592	2.882629
4	0-3600	1: mandiri 11 - 4: Jl.UPG-BundaranMob@3.8 - 5: Jl.U	0.7429	63.013	10	10	LOS_A	1	8.446	8.446	2.63368	1.3	7.49312	1.457889	1.736603	0.107198
4	0-3600	1: mandiri 11 - 4: Jl.UPG-BundaranMob@3.8 - 6: Jl.N	2.74	76.301	1098	1098	LOS_A	1	1.915	1.915	0.18282	0.1357	368.208041	71.639905	85.335769	5.26764
4	0-3600	1: mandiri 11 - 7: Jl.Nusantara-BundranMob@5.5 - 2	0.7429	63.013	1012	1012	LOS_A	1	1.114	1.114	0.02459	0.04249	245.809744	47.825644	56.968782	3.516591
4	0-3600	1: mandiri 11 - 7: Jl.Nusantara-BundranMob@5.5 - 5	0.7429	63.013	436	436	LOS_B	2	10.9	10.9	4.81679	1.37156	300.036098	58.376122	69.536263	4.292362
4	0-3600	1: mandiri 11 - 7: Jl.Nusantara-BundranMob@5.5 - 6	0.7429	63.013	0	0	LOS_A						0	0	0	0
4	0-3600	1: mandiri 11	5.2295	95.579	4627	4627	LOS_A	1	3.494	3.494	0.80292	0.36676	2071.977017	403.131437	480.200682	29.642017

SimRun	Timelent	Movement	Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
5	0-3600	1: mandiri 12 - 1: JlRiburane - 2: JlRiburane-Jl.Ahm	10.301	49.321	341	341	LOS_A	1	5.115	5.115	0.8849	0.70381	244.241433	47.520508	56.605311	3.494155
5	0-3600	1: mandiri 12 - 1: JlRiburane- 5: Jl.UPG-Rotterdam@	10.301	49.321	587	587	LOS_A	1	0.77	0.77	0.03853	0.0477	240.736972	46.838667	55.793118	3.44402
5	0-3600	1: mandiri 12 - 1: JlRiburane- 6: Jl.Nusantara kiri da	10.301	49.321	437	437	LOS_A	1	4.811	4.811	0.90646	0.63616	283.574779	55.173347	65.721193	4.056864
5	0-3600	1: mandiri 12 - 4: Jl.UPG- 2: JlRiburane-Jl.Ahmad Y@	1.0073	107.86	436	436	LOS_A	1	2.309	2.309	0.23819	0.18578	171.119655	33.293667	39.658632	2.448064
5	0-3600	1: mandiri 12 - 4: Jl.UPG-5: Jl.UPG-Rotterdam@24.8	1.0073	107.86	2	2	LOS_A	1	3.733	3.733	0	0	0.871905	0.169641	0.202072	0.012474
5	0-3600	1: mandiri 12 - 4: Jl.UPG- 6: Jl.Nusantara kiri dari bu	1.3545	80.375	937	937	LOS_A	1	0.969	0.969	0.05857	0.06297	276.830322	53.861121	64.1581	3.960377
5	0-3600	1: mandiri 12 - 7: Jl.Nusantara- : JlRiburane-Jl.Ahma	1.0073	107.86	1121	1121	LOS_A	1	0.897	0.897	0.01085	0.02587	263.19748	51.208666	60.998558	3.765343
5	0-3600	1: mandiri 12 - 7: Jl.Nusantara - 5: Jl.UPG-Rotterdam	1.0073	107.86	503	503	LOS_A	1	9.427	9.427	3.78858	1.13917	313.464674	60.988835	72.648465	4.484473
5	0-3600	1: mandiri 12 - 7: Jl.Nusantara- 6: Jl.Nusantara kiri d	1.0073	107.86	0	0	LOS_A						0	0	0	0
5	0-3600	1: mandiri 12	4.2211	107.86	4364	4364	LOS_A	1	2.743	2.743	0.64094	0.29514	1788.843633	348.043969	414.581786	25.591468
	1															

	SimRun	Timelent	Movement		Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
[5	0-3600	1: mandiri :	1			0	0	LOS_A						0	0	0	0
	5	0-3600	2: mndiri 1	- 1: Jl.Riburane - 2: JlRiburane-Jl.Ahmad	8.2064	60.154	146	146	LOS_A	1	6.593	6.593	1.40215	0.91781	112.484768	21.885448	26.069431	1.609224
	5	0-3600	2: mndiri 1	- 1: JlRiburane- 5: Jl.UPG-Rotterdam@27	8.2064	60.154	575	575	LOS_A	1	1.091	1.091	0.13531	0.08174	244.869903	47.642785	56.750965	3.503146
				- 1: JlRiburane- 6: Jl.Nusantara kiri dari	8.2064	60.154	529	529	LOS_A	1	5.732	5.732	1.21225	0.76371	362.278124	70.486159	83.961454	5.182806
	d			- 4: Jl.UPG- 2: JlRiburane-Jl.Ahmad Y@19	0.864	89.09	643	643	LOS_A	1	3.844	3.844	0.7888	0.46501	293.901326	57.182518	68.11447	4.204597
		Ph		- 4: Jl.UPG- 5: Jl.UPG-Rotterdam@27.2	0.864	89.09	8	8	LOS_A	1	5.073	5.073	1.16581	0.75	4.844746	0.942612	1.122817	0.06931
				- 4: Jl.UPG- 6: Jl.Nusantara kiri dari bund	3.159	87.108	1451	1451	LOS_A	1	1.935	1.935	0.1914	0.18952	485.579174	94.476063	112.537663	6.946769
		-7		- 7: Jl.Nusantara-2: JlRiburane-Jl.Ahmad	0.864	89.09	996	996	LOS_A	1	0.862	0.862	0.02178	0.03313	237.895027	46.285728	55.13447	3.403362
			0	- 7: Jl.Nusantara- 5: Jl.UPG-Rotterdam@2	0.864	89.09	403	403	LOS_A	1	7.328	7.328	2.58231	0.86601	223.945695	43.571695	51.901577	3.203801
	-			- 7: Jl.Nusantara- 6: Jl.Nusantara kiri dar	0.864	89.09	0	0	LOS_A						0	0	0	0
Op	otimiza	ation So	oftware:		4.0765	89.09	4751	4751	LOS_A	1	2.895	2.895	0.58523	0.32562	1961.850519	381.704822	454.677803	28.066531
5.																		

SimRun Timelen	t Movement	Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
11 0-3600	1: mandiri 2 - 1: JlRiburane- 2: JlRiburane-Jl.Ahma	8.0188	68.129	144	144	LOS_A	1	5.528	5.528	1.09043	0.77083	113.492512	22.081519	26.302986	1.623641
11 0-3600	1: mandiri 2 - 1: JlRiburane-5: Jl.UPG-Rotterdam@3	8.0188	68.129	498	498	LOS_A	1	0.744	0.744	0.08272	0.07631	212.699459	41.383586	49.295154	3.042911
11 0-3600	1: mandiri 2 - 1: JlRiburane-6: Jl.Nusantara kiri dar	8.0188	68.129	419	419	LOS_A	1	5.072	5.072	1.02612	0.74463	287.524223	55.941766	66.636515	4.113365
11 0-3600	1: mandiri 2 - 4: Jl.UPG- 2: JlRiburane-Jl.Ahmad Y@4	0.8522	73.515	315	315	LOS_A	1	2.714	2.714	0.47002	0.25397	140.067738	27.252092	32.462051	2.00383
11 0-3600	1: mandiri 2 - 4: Jl.UPG- 5: Jl.UPG-Rotterdam@30.9	0.8522	73.515	0	0	LOS_A						0	0	0	0
11 0-3600	1: mandiri 2 - 4: Jl.UPG- 6: Jl.Nusantara kiri dari bun	1.4445	59.609	556	556	LOS_A	1	1.343	1.343	0.12543	0.07734	171.087176	33.287348	39.651105	2.447599
11 0-3600	1: mandiri 2 - 7: Jl.Nusantara- 2: JlRiburane-Jl.Ahma	0.8522	73.515	1049	1049	LOS_A	1	0.99	0.99	0.01408	0.02955	306.424429	59.619059	71.016821	4.383754
11 0-3600	1: mandiri 2 - 7: Jl.Nusantara- 5: Jl.UPG-Rotterdam@	0.8522	73.515	529	529	LOS_A	1	7.007	7.007	2.1442	0.86578	295.038809	57.403831	68.378093	4.22087
11 0-3600	1: mandiri 2 - 7: Jl.Nusantara- 6: Jl.Nusantara kiri da	0.8522	73.515	0	0	LOS_A						0	0	0	0
11 0-3600	1: mandiri 2 - 10008: konektorUPGmot@8.9 - 2: JlRi	0.8522	73.515	268	268	LOS_A	1	2.036	2.036	0.27664	0.1791	122.310063	23.797094	28.346538	1.749786
11 0-3600	1: mandiri 2 - 10008: konektorUPGmot@8.9 - 5: Jl.UF	0.8522	73.515	9	9	LOS_A	1	7.949	7.949	1.53068	0.77778	5.981753	1.163832	1.386329	0.085576
11 0-3600	1: mandiri 2 - 10008: konektorUPGmot@8.9 - 6: Jl.Nu	1.4445	59.609	532	532	LOS_A	1	1.164	1.164	0.07897	0.06391	177.877042	34.608409	41.224722	2.544736
11 0-3600	1: mandiri 2	3.4385	73.515	4319	4319	LOS_A	1	2.518	2.518	0.492	0.26904	1829.317763	355.918764	423.962057	26.170497

SimRun	Timelent	Movement	Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
8	0-3600	1: mandri 3 - 1: JlRiburane-2: JlRiburane-Jl.Ahmad	11.034	64.228	145	145	LOS_A	1	5.751	5.751	1.32363	0.88966	113.098864	22.004929	26.211754	1.618009
8	0-3600	1: mandri 3 - 1: JlRiburane-5: Jl.UPG-Rotterdam@18	11.034	64.228	723	723	LOS_A	1	1.02	1.02	0.09488	0.07054	291.823103	56.778172	67.632822	4.174866
8	0-3600	1: mandri 3 - 1: JlRiburane-6: Jl.Nusantara kiri dari	11.034	64.228	537	537	LOS_A	1	5.203	5.203	1.01429	0.72626	352.665615	68.615914	81.733662	5.045288
8	0-3600	1: mandri 3 - 4: Jl.UPG-2: JlRiburane-Jl.Ahmad Y@30	0.5833	102.88	469	469	LOS_A	1	2.015	2.015	0.22956	0.16418	191.807711	37.318811	44.453289	2.74403
8	0-3600	1: mandri 3 - 4: Jl.UPG- 5: Jl.UPG-Rotterdam@18.5	0.5833	102.88	9	9	LOS_A	1	9.336	9.336	4.88335	1.22222	6.295733	1.224921	1.459097	0.090068
8	0-3600	1: mandri 3 - 4: Jl.UPG- 6: Jl.Nusantara kiri dari bunc	0.7673	75.393	946	946	LOS_A	1	0.914	0.914	0.05619	0.04228	265.463622	51.649575	61.523758	3.797763
8	0-3600	1: mandri 3 - 7: Jl.Nusantara- 2: JlRiburane-Jl.Ahma	0.5833	102.88	1152	1152	LOS_A	1	1.093	1.093	0.02575	0.03212	307.618501	59.851382	71.293558	4.400837
8	0-3600	1: mandri 3 - 7: Jl.Nusantara- 5: Jl.UPG-Rotterdam@:	0.5833	102.88	600	600	LOS_A	1	8.307	8.307	2.86578	1.04833	347.182394	67.549078	80.462872	4.966844
8	0-3600	1: mandri 3 - 7: Jl.Nusantara- 6: Jl.Nusantara kiri da	0.5833	102.88	0	0	LOS_A						0	0	0	0
8	0-3600	1: mandri 3	4.1283	102.88	4581	4581	LOS_A	1	2.729	2.729	0.60229	0.29775	1870.707315	363.971666	433.554485	26.762623

SimRun	Timelent	Movement		Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
7	0-3600	1: mndiri 4				0	0	LOS_A						0	0	0	0
7	0-3600	2: mandiri 4	- 1: JlRiburane-2: JlRiburane-Jl.Ahmad	11.772	71.79	130	130	LOS_A	1	6.202	6.202	1.34886	0.89231	99.875686	19.432179	23.147155	1.428837
7	0-3600	2: mandiri 4	- 1: JlRiburane- 5: Jl.UPG-Rotterdam@1	11.772	71.79	750	750	LOS_A	1	1.007	1.007	0.0963	0.06933	301.801944	58.719691	69.945515	4.317624
7	0.2500	2. mandiri /	- 1: JlRiburane-6: Jl.Nusantara kiri dari	11.772	71.79	597	597	LOS_A	1	5.142	5.142	1.12595	0.74539	405.771909	78.948469	94.041558	5.805034
1			۰4: Jl.UPG-2: JlRiburane-Jl.Ahmad Y@2	0.5491	39.223	523	523	LOS_A	1	2.016	2.016	0.19537	0.14914	204.145447	39.719286	47.312679	2.920536
		-	- 4: Jl.UPG- 5: Jl.UPG-Rotterdam@18.2	0.5491	39.223	9	9	LOS_A	1	7.701	7.701	1.87095	0.44444	5.244002	1.020292	1.215348	0.075021
	PD		l - 4: Jl.UPG- 6: Jl.Nusantara kiri dari bun	0.5774	43.892	930	930	LOS_A	1	1.015	1.015	0.04728	0.04731	282.865619	55.035371	65.556839	4.046718
			- 7: Jl.Nusantara- 2: JlRiburane-Jl.Ahma	0.5491	39.223	1241	1241	LOS_A	1	1.135	1.135	0.02701	0.04513	312.706127	60.841249	72.472665	4.473621
	A	U	- 7: Jl.Nusantara- 5: Jl.UPG-Rotterdam@	0.5491	39.223	566	566	LOS_A	1	8.739	8.739	3.44663	1.06891	332.979824	64.785774	77.17129	4.76366
_		-	l - 7: Jl.Nusantara - 6: Jl.Nusantara kiri da	0.5491	39.223	0	0	LOS_A						0	0	0	0
Optimiz	ation S	oftware:	l .	4.2996	71.79	4746	4746	LOS_A	1	2.75	2.75	0.64624	0.29499	1939.091753	377.276793	449.403239	27.740941
1	In a local	and the second second															

SimRun	Timelent	Movement	Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOSV	VehDela	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
5	0-3600	1: mndri 5 - 1: JlRiburane-2: JlRiburane-Jl.Ahmad Y	16.048	62.737	145	145	LOS_A	1	8.807	8.807	2.17115	1.42069	129.974306	25.288277	30.122801	1.859432
5	0-3600	1: mndri 5 - 1: JlRiburane- 5: Jl.UPG-Rotterdam@28	16.048	62.737	1174	1174	LOS_A	1	1.663	1.663	0.18529	0.10477	514.981744	100.196734	119.351992	7.367407
5	0-3600	1: mndri 5 - 1: JlRiburane- 6: Jl.Nusantara kiri dari l	16.048	62.737	535	535	LOS_A	1	6.81	6.81	1.5959	1.10094	409.29153	79.633259	94.857265	5.855387
5	0-3600	1: mndri 5 - 4: Jl.UPG- 2: JlRiburane-Jl.Ahmad Y@28	1.0624	37.764	619	619	LOS_A	1	2.706	2.706	0.3967	0.24879	266.248281	51.802241	61.70561	3.808988
5	0-3600	1: mndri 5 - 4: Jl.UPG- 5: Jl.UPG-Rotterdam@28.6	1.0624	37.764	11	11	LOS_A	1	4.577	4.577	0.1008	0.54546	6.352889	1.236041	1.472343	0.090885
5	0-3600	1: mndri 5 - 4: Jl.UPG-6: Jl.Nusantara kiri dari bunda	1.5965	62.362	1166	1166	LOS_A	1	1.135	1.135	0.06954	0.06604	376.163056	73.187662	87.179421	5.381446
5	0-3600	1: mndri 5 - 7: Jl.Nusantara- 2: JlRiburane-Jl.Ahmad	1.0624	37.764	1441	1441	LOS_A	1	1.613	1.613	0.05327	0.08119	401.845237	78.184481	93.131514	5.748859
5	0-3600	1: mndri 5 - 7: Jl.Nusantara-5: Jl.UPG-Rotterdam@28	1.0624	37.764	881	881	LOS_A	1	9.609	9.609	3.11813	1.43814	602.773872	117.277892	139.698666	8.623374
5	0-3600	1: mndri 5 - 7: Jl.Nusantara-BundranMob@1.7 - 6: Jl.	1.0624	37.764	0	0	LOS_A						0	0	0	0
5	0-3600	1: mndri 5	6.2355	62.737	5972	5972	LOS_A	1	3.468	3.468	0.75984	0.42515	2697.693318	524.873092	625.216477	38.59361
SimRun	Timelent	Movement	Qlen	Qlenmax	Vehs(all)	Pers(all)	LOS (All)	LOS	VehDel	PersDel	Stops(All)	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
1	0-3600	1: mandri 6 - 1: JlRiburane-Bundaran@73.6 - 2: JlF	14.23	65.579	111	111	LOS_A	1	7.013	7.013	1.55563	0.95496	89.990058	17.508795	20.856065	1.287411
4	0.2600	1. manufati C., 1. II. Dihuranan Bundaran @72.C., 5. II.U	14.32	CE 570	1064	1064	100.4	4	1 011	1 0 1 1	0.11010	0.10493	401 400 410	01.005424	07 671020	6.020076

1	0-3600	1: mandri 6 - 1: JlRiburane-Bundaran@73.6 - 2: JlR	14.23	65.579	111	111	LOS_A	1	7.013	7.013	1.55563	0.95496	89.990058	17.508795	20.856065	1.287411
1	0-3600	1: mandri 6 - 1: JlRiburane-Bundaran@73.6 - 5: Jl.U	14.23	65.579	1064	1064	LOS_A	1	1.311	1.311	0.11019	0.10482	421.432416	81.995434	97.671032	6.029076
1	0-3600	1: mandri 6 - 1: JlRiburane-Bundaran@73.6 - 6: Jl.N	14.23	65.579	613	613	LOS_A	1	6.42	6.42	1.52723	0.96085	443.581811	86.304902	102.804368	6.345949
1	0-3600	1: mandri 6 - 4: Jl.UPG-BundaranMob@18.9 - 2: JlRi	0.6544	33.013	646	646	LOS_A	1	2.276	2.276	0.29267	0.17957	271.478616	52.819874	62.917791	3.883814
1	0-3600	1: mandri 6 - 4: Jl.UPG-BundaranMob@18.9 - 5: Jl.UP	0.6544	33.013	5	5	LOS_A	1	6.481	6.481	0.28	0.2	2.543356	0.494845	0.589447	0.036386
1	0-3600	1: mandri 6 - 4: Jl.UPG-BundaranMob@18.9 - 6: Jl.Nu	1.3745	76.816	922	922	LOS_A	1	1.114	1.114	0.06301	0.06833	281.954952	54.858188	65.345783	4.03369
1	0-3600	1: mandri 6 - 7: Jl.Nusantara-@8.2 - 2: JlRiburane-Jl	0.6544	33.013	1292	1292	LOS_A	1	1.356	1.356	0.03061	0.05341	359.196315	69.886551	83.247215	5.138717
1	0-3600	1: mandri 6 - 7: Jl.Nusantara-@8.2 - 5: Jl.UPG-Rottero	0.6544	33.013	829	829	LOS_A	1	8.945	8.945	3.09507	1.22195	500.470422	97.373358	115.988853	7.159806
1	0-3600	1: mandri 6 - 7: Jl.Nusantara-@8.2 - 6: Jl.Nusantara	0.6544	33.013	0	0	LOS_A						0	0	0	0
1	0-3600	1: mandri 6	5.4196	76.816	5477	5477	LOS_A	1	3.25	3.25	0.74484	0.37758	2363.111103	459.775551	547.673818	33.807026



SimR Timeler	Movement	Qlen	Qlenm	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops(Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
1 0-3600	1: mndai 7 - 1: TOL SUTAMI - 2: TOL SUTAMI@56.9	33.313	80	0	0	LOS_A						0	0	0	0
1 0-3600	1: mndai 7 - 1: TOL SUTAMI- 4: PERINTIS SUDIANG@55.4	33.313	80	605	605	LOS_E	5	75.31373	75.31373	52.15	3.99174	1539.49263	299.529323	356.792282	22.024215
1 0-3600	1: mndai 7 - 1: TOL SUTAMI - 7: PERINTIS MAROS@45.8	33.313	80	485	485	LOS_D	4	46.49517	46.49517	37.25	2.08866	756.578648	147.202713	175.344408	10.823729
1 0-3600	1: mndai 7 - 1: TOL SUTAMI - 9: POROS BANDARA@8.8	33.313	80	547	547	LOS_E	5	72.42067	72.42067	50.55	3.01645	1221.67839	237.694222	283.135765	17.477516
1 0-3600	1: mndai 7 - 3: PERINTIS SUDIANG- 2: TOL SUTAMI@56.9	28.058	67.5	370	370	LOS_C	3	25.71308	25.71308	19.15	3.21892	496.296835	96.56133	115.021584	7.100098
1 0-3600	1: mndai 7 - 3: PERINTIS SUDIANG- 4: PERINTIS SUDIANG@	28.058	67.5	276	276	LOS_D	4	39.20341	39.20341	31.51	3.24275	460.643779	89.624541	106.758644	6.59004
1 0-3600	1: mndai 7 - 3: PERINTIS SUDIANG - 7: PERINTIS MAROS@4	42.203	67.5	67	67	LOS_F	6	96.25006	96.25006	77.38	5.97015	212.385602	41.322521	49.222414	3.038421
1 0-3600	1: mndai 7 - 3: PERINTIS SUDIANG - 9: POROS BANDARA@8	42.203	67.5	682	682	LOS_F	6	95.17892	95.17892	71.35	6.70821	2433.62715	473.49541	564.016592	34.815839
1 0-3600	1: mndai 7 - 5: POROS BANDARA - 2: TOL SUTAMI@56.9	31.435	118	443	443	LOS_F	6	119.7063	119.7063	96.1	6.34763	1714.26249	333.533189	397.296887	24.524499
1 0-3600	1: mndai 7 - 5: POROS BANDARA - 4: PERINTIS SUDIANG@	16.988	118	640	640	LOS_A	1	6.881689	6.881689	4.275	0.22813	362.515971	70.532435	84.016577	5.186208
1 0-3600	1: mndai 7 - 5: POROS BANDARA - 7: PERINTIS MAROS@45	31.435	118	136	136	LOS_F	6	119.678	119.678	94.12	7.10294	551.895975	107.378902	127.907222	7.895508
1 0-3600	1: mndai 7 - 5: POROS BANDARA - 9: POROS BANDARA@8.	31.435	118	0	0	LOS_A						0	0	0	0
1 0-3600	1: mndai 7 - 8: PERINTIS MAROS- 2: TOL SUTAMI@56.9	44.965	83.8	711	711	LOS_F	6	126.6675	126.6675	99.17	12.4669	3902.78372	759.339893	904.507814	55.833816
1 0-3600	1: mndai 7 - 8: PERINTIS MAROS - 4: PERINTIS SUDIANG@5	44.965	83.8	152	152	LOS_F	6	130.3478	130.3478	103	10.7237	749.105436	145.748697	173.612419	10.716816
1 0-3600	1: mndai 7 - 8: PERINTIS MAROS - 7: PERINTIS MAROS@45.	44.965	83.8	0	0	LOS_A						0	0	0	0
1 0-3600	1: mndai 7 - 8: PERINTIS MAROS- 9: POROS BANDARA@8.8	32.386	83.8	217	217	LOS_D	4	40.26382	40.26382	30.61	5.65438	525.694471	102.281042	121.83477	7.520665
1 0-3600	1: mndai 7	26.882	118	5331	5331	LOS_E	5	73.48432	73.48432	55.86	5.21178	14911.7451	2901.283734	3455.940918	213.329686

SimR Timelen	Movement	Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops(Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
3 0-3600	1: mndai 8 - 1: TOL SUTAMI - 2: TOL SUTAMI@57.7	30.881	66.1	0	0	LOS_A						0	0	0	0
3 0-3600	1: mndai 8 - 1: TOL SUTAMI- 4: PERINTIS SUDIANG@63.	30.881	66.1	532	532	LOS_D	5	76.45711	76.45711	54.97	3.98872	1363.19963	265.229112	315.934678	19.502141
3 0-3600	1: mndai 8 - 1: TOL SUTAMI - 7: PERINTIS MAROS@68.3	30.881	66.1	697	697	LOS_F	5	56.90508	56.90508	44.45	3.55811	1476.64699	287.301846	342.227199	21.125136
3 0-3600	1: mndai 8 - 1: TOL SUTAMI - 9: POROS BANDARA@30.9	30.881	66.1	510	510	LOS_E	5	71.47701	71.47701	51.49	2.92745	1146.77078	223.119922	265.775202	16.405877
3 0-3600	1: mndai 8 - 3: PERINTIS SUDIANG- 2: TOL SUTAMI@57	7 28.671	76	395	395	LOS_C	3	29.526	29.526	22.47	1.61818	381.178689	74.163522	88.341842	5.4532
3 0-3600	1: mndai 8 - 3: PERINTIS SUDIANG- 4: PERINTIS SUDIAN	6@ 45.184	76	141	141	LOS_E	5	74.91139	74.91139	63.72	8.22835	433.678265	84.378032	100.509126	6.204267
3 0-3600	1: mndai 8 - 3: PERINTIS SUDIANG - 7: PERINTIS MAROS	@6 45.184	76	61	61	LOS_E	6	112.7191	112.7191	90.57	5.55738	206.655009	40.207555	47.894294	2.956438
3 0-3600	1: mndai 8 - 3: PERINTIS SUDIANG - 9: POROS BANDARA	@\$ 45.184	76	668	668	LOS_E	6	104.2392	104.2392	80.2	8.26946	2755.4546	536.111337	638.603211	39.419951
3 0-3600	1: mndai 8 - 5: POROS BANDARA - 2: TOL SUTAMI@57.7	36.514	93.9	523	523	LOS_F	6	119.5525	119.5525	92.41	15.5296	3337.11519	649.281353	773.40867	47.741276
3 0-3600	1: mndai 8 - 5: POROS BANDARA- 4: PERINTIS SUDIANG	<u>ම</u> 6 23.394	93.9	990	990	LOS_A	1	4.365067	4.365067	1.07	0.28586	564.245483	109.781668	130.769339	8.072181
3 0-3600	1: mndai 8 - 5: POROS BANDARA - 7: PERINTIS MAROS@	68 36.514	93.9	210	210	LOS_E	5	73.11281	73.11281	51.68	5.96191	672.840778	130.910366	155.937348	9.625762
3 0-3600	1: mndai 8 - 5: POROS BANDARA - 9: POROS BANDARA@	30 36.514	93.9	0	0	LOS_A						0	0	0	0
3 0-3600	1: mndai 8 - 8: PERINTIS MAROS - 2: TOL SUTAMI@57.7	28.826	60.3	638	638	LOS_F	6	87.41893	87.41893	65.74	9.98903	2775.66672	540.043883	643.287566	39.709109
20,2600	1. modoi 8 - 8: PERINTIS MAROS - 4: PERINTIS SUDIANG	@6 28.826	60.3	170	170	LOS_D	5	73.46248	73.46248	57	4.46471	437.221121	85.067343	101.330217	6.254952
6	PERINTIS MAROS - 7: PERINTIS MAROS@	68. 28.826	60.3	0	0	LOS_A						0	0	0	0
	PERINTIS MAROS - 9: POROS BANDARA@	30 14.413	60.3	188	188	LOS_C	3	21.08009	21.08009	17.35	0.70745	149.394905	29.06682	34.623712	2.137266
D D D	DE	23.405	93.9	5699	5699	LOS_F	5	64.67911	64.67911	48.69	5.36024	15631.4606	3041.314222	3622.741941	223.626046



SimR	Timelen	Movement	Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops(Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
2	0-3600	1: mandai 9 - 1: TOL SUTAMI - 2: TOL SUTAMI@55.7	32.669	75.8	0	0	LOS_A						0	0	0	0
2	0-3600	1: mandai 9 - 1: TOL SUTAMI - 4: PERINTIS SUDIANG@65.5	32.669	75.8	554	554	LOS_E	5	73.47052	73.47052	52.39	3.7148	1361.10261	264.821108	315.448673	19.47214
2	0-3600	1: mandai 9 - 1: TOL SUTAMI - 7: PERINTIS MAROS@63.9	32.669	75.8	818	818	LOS_E	5	67.34094	67.34094	53.03	3.70782	1883.42753	366.446559	436.502518	26.9446
2	0-3600	1: mandai 9 - 1: TOL SUTAMI - 9: POROS BANDARA@15.5	32.669	75.8	528	528	LOS_E	5	70.1898	70.1898	51.97	2.46023	1098.52101	213.73227	254.592851	15.715608
2	0-3600	1: mandai 9 - 3: PERINTIS SUDIANG - 2: TOL SUTAMI@55.7	44.24	76.9	320	320	LOS_D	4	42.53382	42.53382	34.7	3.656	434.784004	84.593168	100.765392	6.220086
2	0-3600	1: mandai 9 - 3: PERINTIS SUDIANG- 4: PERINTIS SUDIANG	57.684	76.9	180	180	LOS_E	6	201.2494	201.2494	174.8	20.2772	859.801667	167.286161	199.267339	12.300453
2	0-3600	1: mandai 9 - 3: PERINTIS SUDIANG - 7: PERINTIS MAROS@	57.684	76.9	45	45	LOS_F	6	145.3483	145.3483	125.1	4.86111	132.675299	25.813792	30.748782	1.898073
2	0-3600	1: mandai 9 - 3: PERINTIS SUDIANG- 9: POROS BANDARA@	57.684	76.9	767	767	LOS_F	6	170.9943	170.9943	137.4	19.3898	4484.14683	872.45203	1039.24433	64.150885
2	0-3600	1: mandai 9 - 5: POROS BANDARA - 2: TOL SUTAMI@55.7	43.518	143	540	540	LOS_F	6	116.0144	116.0144	89.7	8.72222	2422.06423	471.245686	561.336774	34.650418
2	0-3600	1: mandai 9 - 5: POROS BANDARA- 4: PERINTIS SUDIANG@	29.869	143	833	833	LOS_C	3	24.09015	24.09015	15.2	2.09844	1109.56315	215.88067	257.151974	15.873579
2	0-3600	1: mandai 9 - 5: POROS BANDARA - 7: PERINTIS MAROS@6	43.518	143	218	218	LOS_F	6	123.2513	123.2513	95.82	9.64679	1061.04464	206.440731	245.907342	15.179466
2	0-3600	1: mandai 9 - 5: POROS BANDARA - 9: POROS BANDARA@1	43.518	143	0	0	LOS_A						0	0	0	0
2	0-3600	1: mandai 9 - 8: PERINTIS MAROS- 2: TOL SUTAMI@55.7	28.351	67.3	752	752	LOS_F	6	82.26362	82.26362	60.33	6.3446	2434.85482	473.734271	564.301117	34.833402
2	0-3600	1: mandai 9 - 8: PERINTIS MAROS - 4: PERINTIS SUDIANG@	28.351	67.3	196	196	LOS_F	6	80.3577	80.3577	60.17	6.57653	629.976727	122.570579	146.00319	9.012543
2	0-3600	1: mandai 9 - 8: PERINTIS MAROS - 7: PERINTIS MAROS@6	28.351	67.3	0	0	LOS_A						0	0	0	0
2	0-3600	1: mandai 9 - 8: PERINTIS MAROS - 9: POROS BANDARA@1	17.063	67.3	241	241	LOS_C	3	30.07496	30.07496	23.15	1.78008	292.428936	56.896045	67.77323	4.183533
2	0-3600	1: mandai 9	30.716	143	5622	5622	LOS_F	6	81.7237	81.7237	62.72	6.31359	18168.847	3534.997422	4210.805752	259.926281

SimR	Timelen	Movement	Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops(Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
21	0-3600	1: mandai 10 - 1: TOL SUTAMI - 2: TOL SUTAMI@77.8	30.712	77.2	0	0	LOS_A						0	0	0	0
21	0-3600	1: mandai 10 - 1: TOL SUTAMI- 4: PERINTIS SUDIANG@54.	30.712	77.2	288	288	LOS_E	5	67.43596	67.43596	49.35	2.54861	607.154419	118.130187	140.7139	8.686043
21	0-3600	1: mandai 10 - 1: TOL SUTAMI - 7: PERINTIS MAROS@74.0	30.712	77.2	639	639	LOS_D	4	53.37448	53.37448	42.06	1.89515	1077.64657	209.670863	249.754999	15.416975
21	0-3600	1: mandai 10 - 1: TOL SUTAMI- 9: POROS BANDARA@7.0	30.712	77.2	469	469	LOS_E	5	66.60709	66.60709	50.33	1.66098	864.490194	168.198378	200.353951	12.367528
21	0-3600	1: mandai 10 - 3: PERINTIS SUDIANG - 2: TOL SUTAMI@77.	56.586	88.1	510	510	LOS_E	5	68.26425	68.26425	55.24	4.27073	928.716713	180.694525	215.239066	13.286362
21	0-3600	1: mandai 10 - 3: PERINTIS SUDIANG - 4: PERINTIS SUDIAN	70.101	88.1	114	114	LOS_E	6	122.0268	122.0268	105.8	3.4079	223.128177	43.412635	51.71211	3.192106
21	0-3600	1: mandai 10 - 3: PERINTIS SUDIANG- 7: PERINTIS MAROS@	70.101	88.1	65	65	LOS_E	6	115.2553	115.2553	96.49	3.90769	200.266927	38.964667	46.413794	2.865049
21	0-3600	1: mandai 10 - 3: PERINTIS SUDIANG - 9: POROS BANDARA	70.101	88.1	438	438	LOS_E	6	120.6865	120.6865	99.12	3.89041	1389.39711	270.32619	322.006197	19.876926
21	0-3600	1: mandai 10 - 5: POROS BANDARA - 2: TOL SUTAMI@77.8	17.194	72.8	294	294	LOS_E	5	66.21117	66.21117	51.45	5.32313	851.249072	165.622137	197.285193	12.178098
21	0-3600	1: mandai 10 - 5: POROS BANDARA- 4: PERINTIS SUDIANG	8.799	72.8	839	839	LOS_A	1	3.939053	3.939053	0.776	0.236	441.605015	85.920289	102.346227	6.317668
21	0-3600	1: mandai 10 - 5: POROS BANDARA- 7: PERINTIS MAROS@	17.194	72.8	181	181	LOS_B	2	16.75241	16.75241	10.29	0.93923	198.93338	38.705207	46.104732	2.845971
21	0-3600	1: mandai 10 - 5: POROS BANDARA - 9: POROS BANDARA@	17.194	72.8	0	0	LOS_A						0	0	0	0
21	0-3600	1: mandai 10 - 8: PERINTIS MAROS - 2: TOL SUTAMI@77.8	37.138	82.8	536	536	LOS_F	6	97.95844	97.95844	77.38	4.3694	1629.06665	316.957173	377.551926	23.305674
21	0-3600	1: mandai 10 - 8: PERINTIS MAROS- 4: PERINTIS SUDIANG@	37.138	82.8	134	134	LOS_E	5	70.02968	70.02968	54.81	3.62687	306.071359	59.550365	70.934993	4.378703
21	0-3600	1: mandai 10 - 8: PERINTIS MAROS - 7: PERINTIS MAROS@	37.138	82.8	0	0	LOS_A						0	0	0	0
21	0-3600	1: mandai 10 - 8: PERINTIS MAROS - 9: POROS BANDARA@	18.583	82.8	207	207	LOS_C	3	28.86656	28.86656	22.91	1.2029	217.566391	42.330514	50.423112	3.112538
21	0-3600	1: mandai 10	28.378	88.1	4576	4576	LOS_E	5	60.32549	60.32549	47.26	2.55726	8950.24786	1741.393002	2074.30637	128.043603

	SimR	Timelen	Movement		Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay(PersDelay	Stops(Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
	3	0-3600	1: mndai 11 - 1:	TOL SUTAMI- 2: TOL SUTAMI@65.4	80.895	94.1	0	0	LOS_A						0	0	0	0
	3	0-3600	1: mndai 11 - 1:	TOL SUTAMI - 4: PERINTIS SUDIANG@70.1	80.895	94.1	395	395	LOS_E	6	259.88	259.88	222.6	11.7224	1731.39292	336.866148	401.267029	24.76957
	3	0-3600	1: mndai 11 - 1:	TOL SUTAMI- 7: PERINTIS MAROS@72.0	80.895	94.1	703	703	LOS_E	6	291.8981	291.8981	253.4	19.7271	4296.14654	835.874005	995.673447	61.461324
	3	0-3600	1: mndai 11 - 1:	TOL SUTAMI - 9: POROS BANDARA@15.1	80.895	94.1	385	385	LOS_E	6	263.5339	263.5339	227.1	12.1577	1864.39744	362.743993	432.092109	26.672352
_	3	0-3600	1: mndai 11 - 3:	PERINTIS SUDIANG- 2: TOL SUTAMI@65.4	17.924	75.2	429	429	LOS_B	2	13.25935	13.25935	8.84	0.74825	233.128774	45.358388	54.029845	3.335176
		-		PERINTIS SUDIANG - 4: PERINTIS SUDIANG	29.571	75.2	136	136	LOS_D	4	51.94172	51.94172	45.29	1.47794	191.73267	37.304211	44.435898	2.742957
	_		1	PERINTIS SUDIANG - 7: PERINTIS MAROS@	29.571	75.2	88	88	LOS_E	5	59.70055	59.70055	48.25	4.64773	203.388624	39.572036	47.137278	2.909709
	- 11	-		PERINTIS SUDIANG- 9: POROS BANDARA@	29.571	75.2	443	443	LOS_E	5	57.5256	57.5256	44.6	2.54628	859.88178	167.301748	199.285906	12.301599
		P)		POROS BANDARA - 2: TOL SUTAMI@65.4	21.272	88.6	432	432	LOS_D	5	56.48414	56.48414	42.4	2.08333	822.957873	160.117698	190.728434	11.77336
		L		POROS BANDARA - 4: PERINTIS SUDIANG@	12.147	88.6	715	715	LOS_A	1	2.981671	2.981671	0.289	0.1049	369.195092	71.831949	85.564528	5.281761
			Contraction of the local division of the loc	POROS BANDARA - 7: PERINTIS MAROS@7	21.272	88.6	174	174	LOS_D	4	53.63458	53.63458	37.06	3.44828	394.893898	76.832003	91.520474	5.649412
				POROS BANDARA- 9: POROS BANDARA@1	21.272	88.6	0	0	LOS_A						0	0	0	0
			501	PERINTIS MAROS - 2: TOL SUTAMI@65.4	21.597	55.1	425	425	LOS_E	5	57.09522	57.09522	43.12	3.10824	860.291988	167.38156	199.380976	12.307468
			20	PERINTIS MAROS - 4: PERINTIS SUDIANG@	21.597	55.1	97	97	LOS_E	5	58.84941	58.84941	47.66	1.60825	155.27353	30.210587	35.98614	2.221367
_	_			PERINTIS MAROS - 7: PERINTIS MAROS@7:	21.597	55.1	0	0	LOS_A						0	0	0	0
0-	+1		Cathurner	PERINTIS MAROS - 9: POROS BANDARA@1	10.799	55.1	198	198	LOS_B	2	13.34949	13.34949	10.23	0.36869	112.368962	21.862917	26.042592	1.607567
Op	um	ization	i Software:		23.234	94.1	4100	4100	LOS_E	6	92.15881	92.15881	76.47	4.93951	12214.214	2376.442208	2830.762042	174.738398

SimR Timeler	Movement	Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
2 0-3600	1: mndai 12 - 1: TOL SUTAMI- 2: TOL SUTAMI@70.5	64.59	94.1	0	0	LOS_A						0	0	0	0
2 0-3600	1: mndai 12 - 1: TOL SUTAMI- 4: PERINTIS SUDIANG@74.8	64.59	94.1	284	284	LOS_E	6	148.0476	148.0476	120.3	5.97535	1147.7318	223.306902	265.997927	16.419625
2 0-3600	1: mndai 12 - 1: TOL SUTAMI - 7: PERINTIS MAROS@56.6	64.59	94.1	624	624	LOS_E	6	170.6416	170.6416	144.3	9.50962	3206.69627	623.906569	743.182825	45.875483
2 0-3600	1: mndai 12 - 1: TOL SUTAMI - 9: POROS BANDARA@17.1	64.59	94.1	378	378	LOS_E	6	146.4648	146.4648	120.1	6.18783	1509.34093	293.6629	349.804336	21.59286
2 0-3600	1: mndai 12 - 3: PERINTIS SUDIANG - 2: TOL SUTAMI@70.5	19.885	72.7	407	407	LOS_B	2	17.21291	17.21291	12.07	0.73956	246.242691	47.90988	57.069122	3.522785
2 0-3600	1: mndai 12 - 3: PERINTIS SUDIANG - 4: PERINTIS SUDIANG	36.13	72.7	121	121	LOS_E	5	55.12854	55.12854	47.42	1.19008	166.576428	32.40972	38.605696	2.383068
2 0-3600	1: mndai 12 - 3: PERINTIS SUDIANG- 7: PERINTIS MAROS@	36.13	72.7	93	93	LOS_E	5	65.39789	65.39789	50.85	4.5914	219.870978	42.778903	50.957222	3.145508
2 0-3600	1: mndai 12 - 3: PERINTIS SUDIANG - 9: POROS BANDARA@	36.13	72.7	593	593	LOS_E	5	67.15283	67.15283	49.81	3.89376	1437.56796	279.698488	333.170258	20.566065
2 0-3600	1: mndai 12 - 5: POROS BANDARA- 2: TOL SUTAMI@70.5	26.92	86.3	516	516	LOS_D	5	64.16145	64.16145	47.61	4.68798	1390.17166	270.476889	322.185706	19.888007
2 0-3600	1: mndai 12 - 5: POROS BANDARA- 4: PERINTIS SUDIANG@	16.174	86.3	699	699	LOS_A	1	3.788663	3.788663	0.497	0.14306	384.090661	74.730086	89.01672	5.494859
2 0-3600	1: mndai 12 - 5: POROS BANDARA - 7: PERINTIS MAROS@5	26.92	86.3	147	147	LOS_E	5	55.64545	55.64545	38.61	4.28571	362.61744	70.552177	84.040093	5.18766
2 0-3600	1: mndai 12 - 5: POROS BANDARA - 9: POROS BANDARA@1	26.92	86.3	0	0	LOS_A						0	0	0	0
2 0-3600	1: mndai 12 - 8: PERINTIS MAROS- 2: TOL SUTAMI@70.5	23.086	56.9	418	418	LOS_E	5	62.05634	62.05634	46.25	3.84211	953.703617	185.556068	221.030023	13.643829
2 0-3600	1: mndai 12 - 8: PERINTIS MAROS - 4: PERINTIS SUDIANG@	23.086	56.9	105	105	LOS_E	5	62.23393	62.23393	49.68	1.72381	176.634661	34.366687	40.936788	2.526962
2 0-3600	1: mndai 12 - 8: PERINTIS MAROS - 7: PERINTIS MAROS@5	23.086	56.9	0	0	LOS_A						0	0	0	0
2 0-3600	1: mndai 12 - 8: PERINTIS MAROS - 9: POROS BANDARA@1	11.549	56.9	221	221	LOS_B	2	15.29447	15.29447	11.17	0.46606	137.742699	26.799724	31.923201	1.970568
2 0-3600	1: mndai 12	22.83	94.1	4606	4606	LOS E	5	74.52434	74.52434	59.08	3.9492	11389.9026	2216.06116	2639.719912	162.945674

SimR	Timelen	Movement	Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
5	0-3600	1: mandai 1 - 1: TOL SUTAMI@13.5 - 2: TOL SUTAMI@61.2	81.727	99.5	0	0	LOS_A						0	0	0	0
5	0-3600	1: mandai 1 - 1: TOL SUTAMI@13.5 - 4: PERINTIS SUDIANG	81.727	99.5	460	460	LOS_E	6	219.9207	219.9207	184.3	8.67037	1526.97322	297.093501	353.890788	21.84511
5	0-3600	1: mandai 1 - 1: TOL SUTAMI@13.5 - 7: PERINTIS MAROS@	81.727	99.5	675	675	LOS_E	6	255.8089	255.8089	219.1	12.7342	3404.53496	662.398791	789.033854	48.705793
5	0-3600	1: mandai 1 - 1: TOL SUTAMI@13.5 - 9: POROS BANDARA@	81.727	99.5	541	541	LOS_E	6	218.2074	218.2074	184.6	7.43027	1838.94595	357.792059	426.193482	26.30824
5	0-3600	1: mandai 1 - 3: PERINTIS SUDIANG@41.8 - 2: TOL SUTAMI	16.682	81.4	478	478	LOS_A	1	5.626855	5.626855	3.334	0.28243	155.080357	30.173002	35.94137	2.218603
5	0-3600	1: mandai 1 - 3: PERINTIS SUDIANG@41.8 - 4: PERINTIS SU	26.364	81.4	74	74	LOS_E	5	57.93087	57.93087	49.68	1.36487	105.332774	20.49393	24.411888	1.506907
5	0-3600	1: mandai 1 - 3: PERINTIS SUDIANG@41.8 - 7: PERINTIS M/	26.364	81.4	79	79	LOS_D	4	51.63909	51.63909	43.32	1.6076	120.837161	23.510521	28.005179	1.728715
5	0-3600	1: mandai 1 - 3: PERINTIS SUDIANG@41.8 - 9: POROS BANI	26.364	81.4	499	499	LOS_E	5	58.83844	58.83844	45.12	1.64529	896.074241	174.343486	207.673858	12.819374
5	0-3600	1: mandai 1 - 5: POROS BANDARA@60.5 - 2: TOL SUTAMI@	21.946	110	571	571	LOS_D	5	58.47932	58.47932	44.62	2.57443	1172.22357	228.072111	271.674132	16.770008
5	0-3600	1: mandai 1 - 5: POROS BANDARA@60.5 - 4: PERINTIS SUD	21.946	110	0	0	LOS_A						0	0	0	0
5	0-3600	1: mandai 1 - 5: POROS BANDARA@60.5 - 7: PERINTIS MAR	21.946	110	159	159	LOS_E	5	61.438	61.438	47.01	3.13837	364.544068	70.927029	84.486608	5.215223
5	0-3600	1: mandai 1 - 5: POROS BANDARA@60.5 - 9: POROS BAND	21.946	110	0	0	LOS_A						0	0	0	0
5	0-3600	1: mandai 1 - 5: POROS BANDARA@60.5 - 10003@78.4	2.8555	72.6	927	927	LOS_A	1	7.344282	7.344282	3.187	0.35383	544.155033	105.872796	126.113184	7.784764
5	0-3600	1: mandai 1 - 8: PERINTIS MAROS@13.8 - 2: TOL SUTAMI@	27.012	63.2	521	521	LOS_E	5	61.60671	61.60671	47.72	3.78723	1178.12589	229.220489	273.042053	16.854448
5	0-3600	1: mandai 1 - 8: PERINTIS MAROS@13.8 - 4: PERINTIS SUD	27.012	63.2	104	104	LOS_E	5	61.95972	61.95972	48.56	3.21154	203.733179	39.639073	47.217132	2.914638
5	0-3600	1: mandai 1 - 8: PERINTIS MAROS@13.8 - 7: PERINTIS MAR	27.012	63.2	0	0	LOS_A						0	0	0	0
5	0-3600	1: mandai 1 - 8: PERINTIS MAROS@13.8 - 9: POROS BANDA	13.506	63.2	296	296	LOS_C	3	25.00821	25.00821	18.96	0.89189	279.732312	54.425743	64.830665	4.001893
5	0-3600	1: mandai 1	23.843	110	4785	4785	LOS_E	6	81.55688	81.55688	66.51	3.53563	11880.7914	2311.570278	2753.488126	169.968403

	SimR	Timelen	Movement		Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops(Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
	3	0-3600	1: mandai 2 - 1:	: TOL SUTAMI@30.5 - 2: TOL SUTAMI@69.7	99.656	125	0	0	LOS_A						0	0	0	0
	3	0-3600	1: mandai 2 - 1:	: TOL SUTAMI@30.5 - 4: PERINTIS SUDIANG	99.656	125	390	390	LOS_E	6	275.975	275.975	237.1	10.1634	2101.40944	408.857916	487.02193	30.063082
	3	0-3600	1: mandai 2 - 1:	: TOL SUTAMI@30.5 - 7: PERINTIS MAROS@	99.656	125	692	692	LOS_E	6	322.9371	322.9371	282.6	16.0054	4920.80468	957.40978	1140.444003	70.397778
	3	0-3600	1: mandai 2 - 1:	: TOL SUTAMI@30.5 - 9: POROS BANDARA@	99.656	125	480	480	LOS_E	6	282.798	282.798	242.9	13.2365	2756.41606	536.298404	638.82604	39.433706
	3	0-3600	1: mandai 2 - 3:	PERINTIS SUDIANG@48.1 - 2: TOL SUTAMI	16.656	83.1	650	650	LOS_A	1	8.059639	8.059639	3.991	0.38615	277.476973	53.986936	64.307968	3.969628
1		_		PERINTIS SUDIANG@48.1 - 4: PERINTIS SU	26.087	83.1	83	83	LOS_E	5	69.21463	69.21463	58.34	1.79518	143.152347	27.852245	33.176939	2.047959
		1		PERINTIS SUDIANG@48.1 - 7: PERINTIS MA	26.087	83.1	69	69	LOS_D	4	49.0616	49.0616	40.14	1.15942	100.295266	19.513814	23.244396	1.434839
	1			PERINTIS SUDIANG@48.1 - 9: POROS BAND	26.087	83.1	420	420	LOS_E	5	58.68867	58.68867	44.36	1.84048	785.694669	152.867632	182.092327	11.240267
				POROS BANDARA@57.5 - 2: TOL SUTAMI@	23.267	77.6	383	383	LOS_D	5	64.71449	64.71449	47.67	3.15405	884.038845	172.001835	204.884539	12.647194
				POROS BANDARA@57.5 - 4: PERINTIS SUD	13.079	77.6	975	975	LOS_A	1	3.174057	3.174057	0.276	0.10872	466.425675	90.749487	108.098654	6.672756
			and the second se	POROS BANDARA@57.5 - 7: PERINTIS MAR	23.267	77.6	212	212	LOS_E	5	62.37247	62.37247	46.33	2.38679	449.943409	87.542637	104.27873	6.436959
		-		POROS BANDARA@57.5 - 9: POROS BANDA	23.267	77.6	0	0	LOS_A						0	0	0	0
			SIDI	PERINTIS MAROS@14.7 - 2: TOL SUTAMI@	40.623	71.2	526	526	LOS_F	6	91.58844	91.58844	72.42	5.52852	1690.10548	328.833111	391.698265	24.178905
				PERINTIS MAROS@14.7 - 4: PERINTIS SUDI	40.623	71.2	106	106	LOS_F	6	82.6085	82.6085	67.84	2.10377	216.883036	42.197558	50.264738	3.102762
_	-			PERINTIS MAROS@14.7 - 7: PERINTIS MAR	40.623	71.2	0	0	LOS_A						0	0	0	0
On	timi	Tation	Coffurara	PERINTIS MAROS@14.7 - 9: POROS BANDA	36.848	71.2	296	296	LOS_D	4	53.53042	53.53042	44.41	2.58108	533.457576	103.79146	123.633945	7.631725
Ob	unn	zatioi	i Sonware:		33.26	125	4929	4929	LOS_E	6	104.4573	104.4573	87.11	4.77967	15483.5796	3012.541959	3588.469098	221.510438

SimF	Timelen	Movement	Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
3	3 0-3600	1: mandai 3 - 1: TOL SUTAMI@6.1 - 2: TOL SUTAMI@68.5	77.051	95.5	0	0	LOS_A						0	0	0	0
3	3 0-3600	1: mandai 3 - 1: TOL SUTAMI@6.1 - 4: PERINTIS SUDIANG@	77.051	95.5	270	270	LOS_E	6	221.6724	221.6724	189.1	8.89175	1126.56222	219.188072	261.091673	16.11677
3	3 0-3600	1: mandai 3 - 1: TOL SUTAMI@6.1 - 7: PERINTIS MAROS@7	77.051	95.5	765	765	LOS_E	6	233.4813	233.4813	198.9	12.9085	4007.24896	779.665034	928.718643	57.328311
3	3 0-3600	1: mandai 3 - 1: TOL SUTAMI@6.1 - 9: POROS BANDARA@2	77.051	95.5	335	335	LOS_E	6	201.236	201.236	170.1	9.98947	1640.57912	319.197081	380.220053	23.470374
3	3 0-3600	1: mandai 3 - 3: PERINTIS SUDIANG@36.1 - 2: TOL SUTAMI	17.664	77.6	539	539	LOS_B	2	10.80239	10.80239	6.09	0.46382	246.441714	47.948602	57.115247	3.525633
3	3 0-3600	1: mandai 3 - 3: PERINTIS SUDIANG@36.1 - 4: PERINTIS SU	27.2	77.6	82	82	LOS_E	5	57.68285	57.68285	48.42	3.95122	172.462919	33.555017	39.969947	2.467281
3	3 0-3600	1: mandai 3 - 3: PERINTIS SUDIANG@36.1 - 7: PERINTIS MA	27.2	77.6	84	84	LOS_D	4	46.20195	46.20195	36.27	2.10714	138.172649	26.883377	32.022846	1.976719
3	3 0-3600	1: mandai 3 - 3: PERINTIS SUDIANG@36.1 - 9: POROS BANI	27.2	77.6	392	392	LOS_E	5	64.2257	64.2257	49.86	3.30867	878.342992	170.893629	203.56447	12.565708
3	3 0-3600	1: mandai 3 - 5: POROS BANDARA@117.6 - 2: TOL SUTAMI	21.326	97	439	439	LOS_E	5	62.36052	62.36052	46.32	2.69704	957.170946	186.230685	221.83361	13.693433
3	3 0-3600	1: mandai 3 - 5: POROS BANDARA@117.6 - 4: PERINTIS SUI	11.945	97	1189	1189	LOS_A	1	4.465046	4.465046	0.684	0.24811	660.628389	128.534279	153.107009	9.45105
3	3 0-3600	1: mandai 3 - 5: POROS BANDARA@117.6 - 7: PERINTIS MA	21.326	97	250	250	LOS_E	5	59.1452	59.1452	42.74	3.948	624.745572	121.552787	144.790819	8.937705
3	3 0-3600	1: mandai 3 - 5: POROS BANDARA@117.6 - 9: POROS BAND	21.326	97	0	0	LOS_A						0	0	0	0
3	3 0-3600	1: mandai 3 - 8: PERINTIS MAROS@7.3 - 2: TOL SUTAMI@6	30.272	65.7	505	505	LOS_E	5	69.1374	69.1374	54.21	3.88317	1232.72821	239.844115	285.696666	17.635597
3	3 0-3600	1: mandai 3 - 8: PERINTIS MAROS@7.3 - 4: PERINTIS SUDIA	30.272	65.7	163	163	LOS_E	5	61.4072	61.4072	51.06	1.78528	271.66461	52.856061	62.960897	3.886475
3	3 0-3600	1: mandai 3 - 8: PERINTIS MAROS@7.3 - 7: PERINTIS MARC	30.272	65.7	0	0	LOS_A						0	0	0	0
3	3 0-3600	1: mandai 3 - 8: PERINTIS MAROS@7.3 - 9: POROS BANDAF	25.829	65.7	253	253	LOS_C	3	34.32461	34.32461	28	1.09091	272.205894	52.961376	63.086344	3.894219
3	3 0-3600	1: mandai 3	26.847	97	4965	4965	LOS_E	5	76.29405	76.29405	61.83	3.87311	12374.0366	2407.53788	2867.802475	177.024844

SimR Timelen	Movement	(Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops(Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
2 0-3600	1: mandai 4 - 1: TOL SUTAMI@14.8 - 2:	: TOL SUTAMI@78.8	96.788	119	0	0	LOS_A						0	0	0	0
2 0-3600	1: mandai 4 - 1: TOL SUTAMI@14.8 - 4:	PERINTIS SUDIANG	96.788	119	410	410	LOS_E	6	239.4646	239.4646	202.6	11.6913	2017.36961	392.50682	467.544889	28.860796
2 0-3600	1: mandai 4 - 1: TOL SUTAMI@14.8 - 7:	: PERINTIS MAROS@	96.788	119	865	865	LOS_E	6	277.1524	277.1524	236.6	19.7024	5665.63948	1102.327568	1313.066662	81.053498
2 0-3600	1: mandai 4 - 1: TOL SUTAMI@14.8 - 9:	: POROS BANDARA@	96.788	119	470	470	LOS_E	6	239.9953	239.9953	202.2	10.2363	2206.97324	429.396795	511.487359	31.573294
2 0-3600	1: mandai 4 - 3: PERINTIS SUDIANG@2	8.3 - 2: TOL SUTAMI	44.467	78.5	460	460	LOS_D	4	47.59308	47.59308	38.1	1.87783	601.945688	117.116758	139.506726	8.611526
2 0-3600	1: mandai 4 - 3: PERINTIS SUDIANG@2	8.3 - 4: PERINTIS SU	56.551	78.5	115	115	LOS_E	6	86.798	86.798	74.84	2.82609	264.260722	51.415534	61.244974	3.780554
2 0-3600	1: mandai 4 - 3: PERINTIS SUDIANG@2	8.3 - 7: PERINTIS M/	56.551	78.5	75	75	LOS_E	6	103.0254	103.0254	88.01	2.4	186.743632	36.333525	43.27964	2.671583
2 0-3600	1: mandai 4 - 3: PERINTIS SUDIANG@2	8.3 - 9: POROS BAND	56.551	78.5	406	406	LOS_E	6	97.17811	97.17811	80.14	3.08621	1078.65595	209.867252	249.988933	15.431416
2 0-3600	1: mandai 4 - 5: POROS BANDARA@83	.4 - 2: TOL SUTAMI@	21.732	111	465	465	LOS_E	5	56.19084	56.19084	42.8	2.82366	985.23902	191.691712	228.338657	14.094979
2 0-3600	1: mandai 4 - 5: POROS BANDARA@83	.4 - 4: PERINTIS SUD	12.903	111	1219	1219	LOS_A	1	8.159063	8.159063	2.696	0.29779	744.205668	144.79538	172.47685	10.646719
2 0-3600	1: mandai 4 - 5: POROS BANDARA@83	.4 - 7: PERINTIS MAR	21.732	111	246	246	LOS_D	4	54.71881	54.71881	39.98	3.49594	558.081692	108.582418	129.340821	7.984001
2 0-3600	1: mandai 4 - 5: POROS BANDARA@83	.4 - 9: POROS BANDA	21.732	111	0	0	LOS_A						0	0	0	0
2 0-3600	1: mandai 4 - 8: PERINTIS MAROS@15.	9 - 2: TOL SUTAMI@	26.36	65.1	471	471	LOS_E	5	65.42907	65.42907	50.71	2.431	957.055014	186.208129	221.806741	13.691774
2 0-3600	1: mandai 4 - 8: PERINTIS MAROS@15.	9 - 4: PERINTIS SUDI	26.36	65.1	122	122	LOS_E	5	55.07359	55.07359	42.26	1.71312	189.29736	36.830388	43.871491	2.708117
1	PERINTIS MAROS@15.	9 - 7: PERINTIS MAR	26.36	65.1	0	0	LOS_A						0	0	0	0
d	PERINTIS MAROS@15.	9 - 9: POROS BANDA	22.584	65.1	247	247	LOS_D	4	40.85229	40.85229	33.98	1.37652	310.956381	60.500812	72.067144	4.448589
D.C.			36.671	119	5068	5068	LOS F	6	98,74679	98,74679	81.11	5.12451	15961.1412	3105,458083	3699.148599	228.342506



SimR Timele	n Movement	Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops	Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
3 0-3600	1: mandai 5 - 1: TOL SUTAMI@5.7 - 2: TOL SUTAMI@68.9	82.855	95.7	0	0	LOS_A						0	0	0	0
3 0-3600	1: mandai 5 - 1: TOL SUTAMI@5.7 - 4: PERINTIS SUDIANG@	82.855	95.7	410	410	LOS_E	6	282.8713	282.8713	247.7	12.1579	1685.69205	327.974419	390.675411	24.115766
3 0-3600	1: mandai 5 - 1: TOL SUTAMI@5.7 - 7: PERINTIS MAROS@5	82.855	95.7	1220	1220	LOS_E	6	333.632	333.632	296	21.0258	6391.77001	1243.606183	1481.354424	91.441631
3 0-3600	1: mandai 5 - 1: TOL SUTAMI@5.7 - 9: POROS BANDARA@	82.855	95.7	401	401	LOS_E	6	264.9493	264.9493	230.9	9.98974	1292.67995	251.508545	299.59106	18.493275
3 0-3600	1: mandai 5 - 3: PERINTIS SUDIANG@32.7 - 2: TOL SUTAM	25.122	78.3	381	381	LOS_C	3	23.48805	23.48805	17.45	1.18373	311.993962	60.702688	72.307614	4.463433
3 0-3600	1: mandai 5 - 3: PERINTIS SUDIANG@32.7 - 4: PERINTIS SU	35.888	78.3	164	164	LOS_E	5	61.24901	61.24901	53.77	1.60366	250.091626	48.658743	57.961149	3.577849
3 0-3600	1: mandai 5 - 3: PERINTIS SUDIANG@32.7 - 7: PERINTIS M	35.888	78.3	102	102	LOS_E	5	62.70168	62.70168	51.17	2.5	191.479339	37.254921	44.377186	2.739332
3 0-3600	1: mandai 5 - 3: PERINTIS SUDIANG@32.7 - 9: POROS BAN	35.888	78.3	437	437	LOS_E	5	65.41913	65.41913	51.77	1.64302	790.070461	153.719002	183.106459	11.302868
3 0-3600	1: mandai 5 - 5: POROS BANDARA@126.4 - 2: TOL SUTAMI	27.777	142	461	461	LOS_D	5	59.18555	59.18555	44.66	3.55315	1060.07565	206.252201	245.682769	15.165603
3 0-3600	1: mandai 5 - 5: POROS BANDARA@126.4 - 4: PERINTIS SU	17.929	142	1370	1370	LOS_B	2	12.70002	12.70002	5.292	0.82774	1081.93371	210.504985	250.748585	15.478308
3 0-3600	1: mandai 5 - 5: POROS BANDARA@126.4 - 7: PERINTIS MA	27.777	142	258	258	LOS_E	5	60.91764	60.91764	45.19	3.44574	592.891009	115.355046	137.408217	8.481989
3 0-3600	1: mandai 5 - 5: POROS BANDARA@126.4 - 9: POROS BAND	27.777	142	0	0	LOS_A						0	0	0	0
3 0-3600	1: mandai 5 - 8: PERINTIS MAROS@20.7 - 2: TOL SUTAMI@	28.371	54.3	471	471	LOS_E	5	63.22253	63.22253	50.61	2.80679	972.148135	189.144702	225.304718	13.907699
3 0-3600	1: mandai 5 - 8: PERINTIS MAROS@20.7 - 4: PERINTIS SUD	28.371	54.3	157	157	LOS_E	5	59.18892	59.18892	46.9	3.51592	319.521815	62.167335	74.052266	4.571128
3 0-3600	1: mandai 5 - 8: PERINTIS MAROS@20.7 - 7: PERINTIS MAR	28.371	54.3	0	0	LOS_A						0	0	0	0
3 0-3600	1: mandai 5 - 8: PERINTIS MAROS@20.7 - 9: POROS BANDA	24.798	54.3	242	242	LOS_D	4	43.28195	43.28195	35.8	1.3843	298.874393	58.150096	69.267027	4.275742
3 0-3600	1: mandai 5	31.222	142	5085	5085	LOS_E	6	95.69332	95.69332	80.11	4.97385	15422.3464	3000.628205	3574.277715	220.634427

SimR Timeler	Movement	Qlen	Qlenn	Vehs(a	Pers(all)	LOS (All)	LOSVa	VehDelay	PersDelay	Stops(Stops(All)	EmissionsCO	EmissionsNOx	EmisssionsVOC	FuelConsumption
2 0-3600	1: mandai 6 - 1: TOL SUTAMI@30.4 - 2: TOL SUTAMI@63.6	106.76	125	0	0	LOS_A						0	0	0	0
2 0-3600	1: mandai 6 - 1: TOL SUTAMI@30.4 - 4: PERINTIS SUDIANG	106.76	125	412	412	LOS_E	6	261.8253	261.8253	219	11.8635	1750.96965	340.675067	405.804124	25.049637
2 0-3600	1: mandai 6 - 1: TOL SUTAMI@30.4 - 7: PERINTIS MAROS@	106.76	125	1004	1004	LOS_E	6	273.5072	273.5072	230.4	15.2258	5230.08522	1017.584536	1212.122756	74.822392
2 0-3600	1: mandai 6 - 1: TOL SUTAMI@30.4 - 9: POROS BANDARA@	106.76	125	402	402	LOS_E	6	257.0501	257.0501	214.7	8.47807	1422.58812	276.783955	329.698534	20.351761
2 0-3600	1: mandai 6 - 3: PERINTIS SUDIANG@46.6 - 2: TOL SUTAM	38.38	84.1	346	346	LOS_D	4	44.51201	44.51201	35.83	1.91471	447.918499	87.148664	103.809438	6.40799
2 0-3600	1: mandai 6 - 3: PERINTIS SUDIANG@46.6 - 4: PERINTIS SU	49.379	84.1	218	218	LOS_F	6	81.86227	81.86227	69.87	3.50459	512.686618	99.750186	118.820074	7.334572
2 0-3600	1: mandai 6 - 3: PERINTIS SUDIANG@46.6 - 7: PERINTIS M	49.379	84.1	107	107	LOS_F	6	90.96598	90.96598	76.32	3.8972	285.20373	55.490282	66.098719	4.080168
2 0-3600	1: mandai 6 - 3: PERINTIS SUDIANG@46.6 - 9: POROS BAN	49.379	84.1	418	418	LOS_F	6	84.42124	84.42124	68.13	3.93301	1163.5055	226.37589	269.653634	16.645286
2 0-3600	1: mandai 6 - 5: POROS BANDARA@74.9 - 2: TOL SUTAMI@	25.018	157	439	439	LOS_D	5	57.97063	57.97063	43.61	4.78588	1148.84494	223.523478	266.255908	16.43555
2 0-3600	1: mandai 6 - 5: POROS BANDARA@74.9 - 4: PERINTIS SUD	15.775	157	1385	1385	LOS_B	2	10.29328	10.29328	3.322	0.45054	961.736177	187.118913	222.891646	13.758744
2 0-3600	1: mandai 6 - 5: POROS BANDARA@74.9 - 7: PERINTIS MAR	25.018	157	234	234	LOS_E	5	66.53311	66.53311	50.77	5.31197	675.456921	131.419372	156.543664	9.663189
2 0-3600	1: mandai 6 - 5: POROS BANDARA@74.9 - 9: POROS BANDA	25.018	157	0	0	LOS_A						0	0	0	0
2 0-3600	1: mandai 6 - 8: PERINTIS MAROS@42.5 - 2: TOL SUTAMI@	28.279	65.9	505	505	LOS_E	5	56.97585	56.97585	44.92	2.05149	904.577438	175.997899	209.644556	12.941022
2 0-3600	1: mandai 6 - 8: PERINTIS MAROS@42.5 - 4: PERINTIS SUD	28.279	65.9	205	205	LOS_E	5	59.0469	59.0469	46.78	1.95122	345.071026	67.138283	79.973543	4.936638
2 0-3600	1: mandai 6 - 8: PERINTIS MAROS@42.5 - 7: PERINTIS MAR	28.279	65.9	0	0	LOS_A						0	0	0	0
2 0-3600	1: mandai 6 - 8: PERINTIS MAROS@42.5 - 9: POROS BANDA	24.479	65.9	196	196	LOS_D	4	42.48655	42.48655	35.55	1.22449	255.536225	49.718064	59.222988	3.65574
2 0-3600	1: mandai 6	37.718	157	5184	5184	LOS_E	6	93.90374	93.90374	76.1	4.64043	15330.2245	2982.704625	3552.927568	219.316517



LAMPIRAN 2

TUTORIAL PTV VISSIM 9

Langkah – langkah dalam penggunaan aplikasi PTV Vissim 9.0 :

- 1) Instalasi Pengenalan Tampilan Layar Program Vissim
 - **1.** Buka program PTV Vissim 9.0 yang ada pada desktop.



2. Selanjutnya kita menunggu proses running. Catatan : Vissim hanya bisa dijalankan menggunakan Windows bawahan yang Original.





2) Pembangunan Jaringan Jalan

1. Mengatur terlebih dahulu *network setting*, setelah itu kita memilih *traffic regulation* yang di mana *traffic regulation* di Indonesia adalah sebelah kiri jadi kita memilih *left hand traffic*.





D

2. Selanjutnya mengatur skala display pada Vissim dengan meng-*scroll* kearah bawah pada mouse yang digunakan.



3. Langkah awal untuk membuat model simulasi yaitu memasukkan obyek atau layout gambar yang akan menjadi patron dalam membuat jaringan jalan pada vissim, jadi kita insert background Mages terlebih dahulu seteleh itu kita memilih layout gambar yang akan dibuat jaringan jalan pada Vissim





Selanjutnya kita memilih gambar yang kita inginkan yang tersimpan.

Select Bitmap File								×		0
👝 🚽 🛧 🚺 > This PC	> New Volume (D:) > Gog	agle Earth Bundaran				~ Ö	/ Search Goggle /	Earth Bundaran 🔎		
Organize • New folder								= · • 0		
CneDrive	^			100		Martin	1.000	1 1 Martin		
This PC	1990	Sec. Sec.	Sime Shir	Sec. 12	The local	AND IL ALL		10 C 20	LETO?	REA
3D Objects	bundaran	bundaran	bundaran	Bundaran	Bundaran	Bundaran	Bundaran	bundaran samata	and the second s	AN S
A360 Drive	bandara all	bandara lagi	bandara	Bandara	Mandai-JI Perintis dan Jalan	Mandai-Poros Bandara 500 m	Mandai-Poros Maros dan il	500 m	8 10 8	747
Desktop					lr sutami 500 m		dakota 500 m			1
Documents		Cale Ale	- Andrews	Creat Stre						-
Downloads	A STATE	Town the Party		ALL MARKED						Tr-
h Music	Bundaran Tugu	Tugu Mandiri	Tugu Mandiri	Tugu Mandiri					and the second	1
Pictures	Mandiri	Bundaran	Bundaran1	Bundaran3						
Wideos										and a
Local Disk (C:)										
New Volume (D:)										
Alaturati	~									
File name	Trum Mandin Pundaran						All image file	"hmotiont.of y		
	Tugu Manum bunueran						All mage mea,	(".bmp; .jpg; .g.		
							Open	Cancel		
Background Images										
Pavement Markings	· ·									
vork Obj Levels Backgroun	ids					1 million				
«View •	×			R						
									- All and -	
	-								Jac .	
	\$3000 Cmi	4								
ick View Smart Map										

4. Setelah muncul gambar pada monitor vissim kita kembali mengatur skala pada gambar dengan klik kanan pada gambar – Pilih Set Scale setelah itu seret garis sesuai pada skala yang diinginkan kemudian masukkan panjang atau nilai skala tersebut.



5. Setelah gambar atau layout yang menjadi objek terskalakan selanjutnya kita membangun jaringan atau jalan di atas layout tersebut dengan memilih

mode **Links** insert link pada tools yang ada pada vissim, dengan memasukkan nama jalan, jumlah lajur, dan ukuran/dimensi lajur.





6. Setelah jaringan selesai dibuat seluruhnya, langkah berikutnya kita menghubungkan jaringan jalan tersebut dengan *mode connector*. Tiap jaringan dihubungkan satu sama lain dengan Clik Kanan + SHIFT setelah kita tarik penghubung dari link yang satu ke link yang lainnya sehingga semuanya dapat terhubung.





Selanjutnya ketika semua sudah terhubung kita menekan Ctrl + A untuk menunjukkan perbedaan antara jaringan utama dan penghubung pada gambar di bawah ini, garis biru menunjukkan jaringan utama sedangkan garis merah muda menunjukkan jaringan penghubungan.



3) Pemasukan Data



1. Tahap selanjutnya kita menginput jumlah kendaraan serta arah route kendaran yang akan melaju pada jaringan jalan yang kita buat, untuk memasukkan kendaraan kita memilih mode Vehicle Input Vehicle Inputs

catatan : jumlah kendaraan yang di Input dalam satuan kend/jam



2. Setelah kendaraan selesai di Input, selanjutnya mengatur route kendaraan, memilih mode vehicle Routes Kemudian memilih mode *static*, setelah itu memilih link pertama sebagai route awal berikutnya klik kanan pilih *Add New Vehicle Routing Decition* selanjutnya insert route yang diinginkan lalu arahkan kearah pergerakan kendaraan yang sesuai dengan arah pergerakan lalu lintas.





Selanjutnya kita akan mengatur komposisi kendaraan yang bergerak lurus dan berbelok sesuai arah route pergerakan yang di insert masuk pada

File Edit View Lists Base Data Traffic Signal Control Simulation Evaluation Pre m . 10 参照 🌒 (5 R) Jih C? Reduced Speed Areas Conflict Area 11 Priority Rule: Stop Signs Vehicle Routes (Data Col 1 ehicle Travel Tin Queue Co int Marie B . . ct lavout · & + X & 2+ 31 3 + × 21 11 2 oun No Name unt: 4 VehType Des 100: City Car 1047 City Car 048: Bu 049: MP w] 🌆 4) 10

jaringan jalan catatan : komposisi kendaraan bisa dalam satuan % atau satuan jumlah kendaraan

Setelah insert volume kendaraan dan arah pergerakan kendaraan selesai selanjutnya kita mengatur komposisi jenis kendaraan yang melintas. Jenis

 jenis kendaraan pada Vissim dibagi enam yaitu Car, HGV, SUV, Bus, Bike, dan Tram pada kasus kali ini kita memasukkan City Car, Sedan, MVP, SUV, Angkutan, PickUp, Bus, Truk, Motor Matic, Motor Bebek, Motor Sport sebagai objek, langkah awal kita memilih tools *Traffic – Vehicle Composition*.



5. Setelah masuk kedalam text boxnya atau menu kita dapat menambahkan jenis kendaraan yang kita inginkan dengan cara klik kanan kemudian pilih add selanjutnya kita pilih jenis kendaraan yang ingin kita masukkan pada program vissim.



6. Kemudian kita mengatur kecepatan kendaraan pada *desired speed distribution*





7. Setelah selesai selanjutnya kita mengatur komposisi jenis kendaran pada *relatif flow. Catatan : satuan digunakan % kendaraan*



8. Karena default display jenis kendaraan bike itu adalah sepeda roda dua jadi kita harus menginput ulang display kendaraan bike tersebut dengan display sepeda motor dengan masuk ke menu *Base data – 2D/3D Models Segment*





Setelah masuk menu 2D/3D Models Segment kita mencari jenis kendaraan bike kemudian klik kanan + edit selanjutnya kita pilih display kendaraan

bermotor yaitu motorbike kemudian pilih ok ,catatan : dapat juga ditambahkan display jenis sepeda motor yang lain seperti motor matic



4) Proses Analisis Data



Setelah selesai penginputan data volume dan kecepatan pada studi kasus ini, selanjutnya yaitu pengaturan kalibrasi dengan mengatur *driving behavior* pada simpang tersebut. Mengatur *average standstill distance*,

uı	siunce.												
👸 P	TV Vissim 9.00-11 Stud	ent Version - Network: D:\TUGU MANDIRI VISSI	/\Mandiri jam 1.inpx								-	٥	\times
File	Edit View Lists Ba	s 🚦 Driving Behavior		?	×								
	DB. Sr												
Netw	ork Objects	No.: D Name: Perilaku per	ngendara									- 01	φ ×
=	Links	Following Lane Change Lateral Signal C	ontrol Meso			30							
Desired Speed		Look ahead distance	Car following model									× R K	
≙	Reduced Speed	min.: 0.00 m	Wiedemann 74		\sim								10
_	Conflict Areas	max.: 50.00 m	Model parameters										
\mathbf{V}	Priority Rules		Average standstill distance:	0.60 m									
	Stop Signs	3 Observed vehicles	Average stands in distance.										
-	Signal Heads	Look back distance	Additive part of safety distance:	0.60									
	Detectors	min.: 0.00 m	Multiplic. part of safety distance:	1.00		 6 							
₽.,	Vehicle Inputs	50.00 m											
۲.	Vehicle Routes	max.: 50.00 m											
Ρ	Parking Lots	Temporary lack of attention				× 2							
2	Public Transpor	Duration: 0 s											
žπ	Public Transpor	Destablisher 0.00 %											
\times	Nodes	Probability: 0.00 /s				The second							
AH I	Data Collection	Smooth closeup behavior											
Ö	Vehicle Travel T	1 - ·				1							
	Queue Counter	Standstill distance for 0.50 m											
::::	Sections	static obstacles:				-							
12	Background I	1										-	1 X
-±+	Pavement Mark											_	~ ~
Net	work Levels Back												
Quick	View (Vehicle Innu					d W74bxMult	LnChgRule	AdvMerg	DesLatPos	OvtLDef	OvtRDef	LatDistDriv	De ^
£	e view (venicie inpui					3,00	Slow lane rule Free lane selection	2	Middle of lane				1.0
<i>•</i>		-				3.00	Free lane selection		Any				1.0
No) 1	-				00.5	Free lane selection	~	Left		2		0.3
Na	ime JI.Rik	0				50 1.00	Free lane selection		Any				0.5 🗸
Ve	IK I: JL Jume(0) 1263			UK Can	ncel								>
Quid	k View (Vehi Smar	t Map Desired Speed Distributi Vehicle Ir	nputs / Vehicle Static Vehicle Routir	ng D Vehicle Compositions	/ Ve	hicle Classes / Ve	hicle Vehicle Ty	pes Link B	ehavior Types /	Dr Links	/Lanes [viving Beha	aviors
112.4	1:-20.5	System i	nitialized!										
											111	29 AM	5
									<u>م</u>	~ ~	^{~~~~} 12/	8/2018	~

safety distance, standstill distance, look ahead distance, dan look back distance.

2. Mengatur *Lane Change* pada *Driving Behavior*, dengan mengubah *General behavior* menjadi *Free Lance Selection*, mengatur jarak antar kendaraan / *min. headway*.

Eile	V Vissim 9.00-11 Stude	ent Version - Network: D:\ I UGU MANDIKI VISSIM\Mandiri jam I.inpx	1					D /
riie i D	Colt view Lists bas							
		No.: 6 Name: Perilaku pengendara						
Netw	ork Objects		20					- 0 4
	Links	Following Lane Change Lateral Signal Control Meso	*					
50 0	Desired Speed	General behavior: Free lane selection						
Δ	Reduced Speed	Necessary lane change (route)						11-
	Conflict Areas	Own Trailing vehicle						
/	Priority Rules	Maximum deceleration: -4.00 m/c2 -3.00 m/c2						
	Stop Signs	Waxingin decereration. How my ac						
8	Signal Heads	- 1 m/s2 per distance: 100.00 m 100.00 m						
0	Detectors	Accepted deceleration: -1.00 m/s2 -1.00 m/s2	Q (6)					
	Vehicle Inputs							
	Vehicle Routes	Waiting time before diffusion: 60.00 s Overtake reduced speed areas						
Ρ	Parking Lots	Min. headway (front/rear): 0.50 m Advanced merging						
2	Public Transpor	To slower lane if collicion time is above 11.00 s Consider subsequent static routing						
Ż	Public Transpor	decisions						
X	Nodes	Safety distance reduction factor: 0.00						
ÅI.	Data Collection	Maximum deceleration for cooperative braking: -3.00 m/s2	0					
a,	Vehicle Travel T	Cooperative Jane change						
λ	Oueue Counter	_ cooperative name enange						
	Sections	Maximum speed difference: 3.00 km/h	<u> </u>					
8	Packground I	Maximum collision time: 10.00 s						
1	Dackground 1							4
	Pavement Mark	Lateral correction of rear end position						
Net	Nork Levels Backe	Maximum speed: 3.00 km/h	d W74bxMult LnChgRule	AdvMerg	DesLatPos	OvtLDef	OvtRDef	LatDistDrivDe
luick	: View (Vehicle Inpu	Active during time period from 1.00 s until 10.00 s after lane change start	00////3,00 Slow lane rule		Middle of lane			1.0
¢,			3,00 Free lane selection		Middle of lane			1.0
No	1		3.00 Free lane selection		Any			1.0
Na	me II.Rih		3.00 Free lane selection		Left			0.3
Lin	k 1: JL.	OK Cancel	1.00 Free lane selection		Any	2	2	0.5
-	lume(0) 1267	OK Cancel						>
Vo	LAC OAL: Court	Man Desired Speed Distribution Vehicle Inputs / Vehicle Static Vehicle Routing Don Vehicle Compositions /	hicle Classes / Vehicle Vehicle Typ	nes Link B	ebavior Types /	De Linke	/ F	viving Rehavio
Vo Quic	K view (veni Smart				charlor types / t	Dim LINKS	/ Lanes L	niving benavio
Vo Quic 12.4	:-20.5	System initialized!			charlor types / t	Dim Links		nving benavio



3. Kemudian mengatur *Lateral* pada *Driving Behavior*, yaitu posisi kendaraan di mana dapat menyiap di lajut mana saja, baik kiri dan kanan, *Desired position* ♠ *Any*. Setelah itu mengatur *Minimum Lateral Distance*, yaitu *distance standing* dan *distance driving*.

ig P	TV Vissim 9.00-11 Stud	ent Version - Network: D:\TUG	U MANDIRI VISSIM\Ma	ndiri jam 1.inpx			_					_	σ	\times
File	Edit View Lists Bas	🚯 Driving Behavior				? ×								
10	DB. Sc													
Netw	ork Objects	No.: b Na	me: Perilaku pengeno	ara									- 0	а х
-	Links	Following Lane Change	Lateral Signal Contro	Meso			30							
60	Desired Speed	Desired anothing at feas fla												
◬	Reduced Speed	Reduced Speed												1
	Conflict Areas	Keep lateral distance to	vehicles on next lane(s)										
∇	Priority Rules	Diamond shaped queui	ng											
•	Stop Signs	Consider next turning o	lirection											
:	Signal Heads	Collision time gain:	2.00 s]										
	Detectors	Minimum longitudinal spe	ed: 1.00 km/h	ĺ			 C 							
ъ.	Vehicle Inputs]										
₫,	Vehicle Routes	Time between direction ch	anges: 0 s	J			C							
Ρ	Parking Lots	Default behavior when over	ertaking vehicles on the	same lane or on adj	acent lanes									
25	Public Transpor	Overtake on same lane	Minimum lateral dis	tance										
Σć	Public Transpor	⊘ On left Distance standing: 0.30 m at 0 km/h												
\times	Nodes	🗹 On right	Distance driving:	0.50 m at 50										
¥П	Data Collection													
Ö	Vehicle Travel T	Exceptions for overtaking	venicles of the followin	g venicie classes										
\triangle	Queue Counter	Coun venciass	UVIL	UVTK	LatUistStand	LatDistDriv								
::::	Sections													
18	Background I													a ×
.t.,	Pavement Mark												_	_
Net	work Levels Backs						1 10720- 44-16	L-Ch-R-I-		Deal at Dea	0.40.6	0.400.4	Latrian	0.0
Quic	k View (Vehicle Inpu						a w/40xiviuit	Encingkule Slow Jana rula	Advivierg	DesLatPos Middle of Jane	OvtLDer	OVIRDer	LatUistUn	1.0
ير							3.00	Free lane selection	~	Middle of lane				1.0
<i>.</i>							0///3.00	Free lane selection		Any				1.0
- NO	0 1						00////3.00	Free lane selection	~	Left				0.3
- ING	ame JI.Kio				_		50 1.00	Free lane selection		Any				0.5 🗸
Ve	nk 1: Ju aluma(0) 1267					OK Cancel								>
Qui	ck View (Vehi Smart	Map Desired Speed Distr	ibuti Vehicle Inputs	/ Vehicle Static W	ehicle Routing D	/ehicle Compositions / \	ehicle Classes / V	ehicle Vehicle Ty	pes Link B	ehavior Types / I	Dr Links	/Lanes [Driving Beh	aviors
112.4	4:-20.5		System initiali:	red!										
		🗢 🖬 👪									8 . •	(du) 11	31 AM	
										Я		12	/8/2018	~

4. Setelah pengaturan *Driving Behavior*, maka ditentukan persimpangan yang akan ditinjau dengan menambahkan *Nodes*. Nodes tersebut berfungsi untuk menentukan titik pembacaan hasil running yang dapat menghasilkan panjang antrian, tundaan dan volume kendaraan.





5. Selanjutnya *Running* akan menghasilkan *Node Results* di mana kita dapat melihat volume kendaraan yang melewati titik simpang, tundaan kendaraan, panjang antrian, dan juga hasil estimasi beban emisi CO dan NOx dari kendaraan bermotor pada *Node* yang telah ditentukan sebelumnya.





LAMPIRAN 3 DOKUMENTASI











