

**SIMULATION AND MODELING OF TRAFFIC FLOW AT INTERSECTION  
IN MANGGAHAN, GENERAL TRIAS CITY, CAVITE**

**Design Project**

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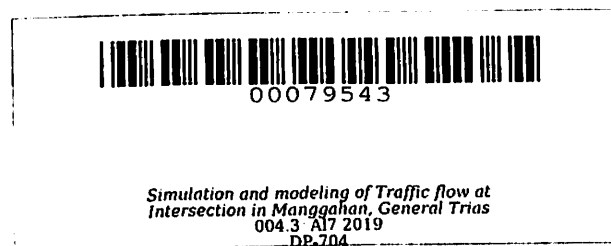
**June 2019**



# **SIMULATION AND MODELING OF TRAFFIC FLOW AT INTERSECTION IN MANGGAHAN, GENERAL TRIAS CITY, CAVITE**

Undergraduate Design Project  
Submitted to the faculty of  
College of Engineering and Information Technology  
Cavite State University  
Indang, Cavite

In partial fulfillment  
Of the requirements for the degree  
Bachelor of Science in Civil Engineering



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June 2019

## ABSTRACT

**ALTAR, JEFFERSON D. and PARUNGAO, JOSEPH JOSUA A. Simulation And Modeling Of Traffic Flow At Intersection In Manggahan, General Trias City , Cavite.** Undergraduate Thesis. Bachelor of Science in Civil Engineering. College of Engineering and Information Technology. Cavite State University, Indang, Cavite. June 2019. Adviser: Engr. Larry E. Rocela.

This study was undertaken at the intersection in Manggahan, General Trias City, Cavite from August 2018 to April 2019 to evaluate the traffic flow along with the parameters such as time allotted for each legs and volume of vehicle and eventually be able to suggest possible optimized time for each leg.

Data were gathered such as number of vehicles entering routes of Amadeo-Dasmariñas, Amadeo-General Trias, Amadeo-Trece Martires, Dasmariñas-Amadeo, Dasmariñas-General Trias, Dasmariñas-Trece Martires, General Trias-Amadeo, General Trias-Dasmariñas, General Trias-Trece Martires, Trece Martires-Amadeo, Trece Martires-Dasmariñas, and Trece Martires-General Trias through video recording and then manually counted. Length of each route were also measured. Time indicated on the traffic lights allotted for each leg were then recorded.

MATLAB software was used for this study for the simulation and training of the data provided. Three simulation and training process were done aiming to optimize time with respect to traffic volume, average speed of all vehicles with respect to traffic volume, and optimized time and optimized speed with respect to traffic volume and length of each routes, treating the length and optimized time as independent outputs.

In simulation and training of data a target data, input data, and output data were needed. Time and speed served as output data where trial-and-error method was done

changing their values to produce most acceptable and consistent model. Target data were taken from the data of number of vehicles for each routes and left were then treated as input data. The pattern of model served as the basis in choosing the optimized value of corresponding outputs.

## TABLE OF CONTENTS

	<b>Page</b>
<b>APPROVAL SHEET .....</b>	ii
<b>BIOGRAPHICAL DATA .....</b>	iii
<b>ACKNOWLEDGEMENT .....</b>	v
<b>ABSTRACT .....</b>	ix
<b>LIST OF APPENDIX FIGURES .....</b>	xii
<b>LIST OF APPENDIX TABLES .....</b>	xvi
<b>LIST OF APPENDICES .....</b>	xxv
<b>INTRODUCTION .....</b>	1
Statement of the Problem .....	2
Objectives of the Study .....	2
Significance of the Study .....	3
Scope and Limitation of the Study .....	3
Time and Place of the Study .....	3
Definition of Terms .....	3
<b>REVIEW OF RELATED LITERATURE .....</b>	5
<b>METHODOLOGY .....</b>	39
Gathering of Data .....	39
Simulation of Parameters .....	39
Analysis of Data Model .....	40

Optimize Time and Speed .....	40
Improvements and Recommendations.....	41
<b>RESULTS AND DISCUSSION.....</b>	<b>42</b>
Simulations of Parameters.....	42
Analysis of Data Model .....	45
Optimized Time and Speed.....	45
Improvements and Recommendation .....	46
<b>SUMMARY, CONCLUSION, AND RECOMMENDATIONS.....</b>	<b>47</b>
Summary .....	47
Conclusion .....	48
Recommendations .....	48
<b>REFERENCES.....</b>	<b>50</b>
<b>APPENDICES.....</b>	<b>51</b>

## LIST OF APPENDIX FIGURES

Appendix Figure		Page
1	Video recording location - Little Saints Bakery.....	58
2	Amadeo Leg and Entering Route.....	59
3	Dasmariñas Leg and Entering Route.....	60
4	General Trias Leg and Entering Route.....	61
5	Trece Martires and Entering Route.....	62
6	MATLAB Model.....	63
7	Model of 20 sec as Optimized Time Output for Amadeo-Dasmariñas.....	64
8	Model of 30 sec as Optimized Time Output for Amadeo-General Trias.....	67
9	Model of 30 sec as Optimized Time Output for Amadeo-Trece Martires.....	70
10	Model of 55 sec as Optimized Time Output for Dasmariñas-Amadeo.....	73
11	Model of 15 sec as Optimized Time Output for Dasmariñas-General Trias.....	76
12	Model of 55 sec as Optimized Time Output for Dasmariñas-Trece Martires.....	79
13	Model of 25 sec as Optimized Time Output for General Trias-Amadeo.....	82
14	Model of 20 sec as Optimized Time Output for General Trias-Dasmariñas.....	85
15	Model of 20 sec as Optimized Time Output for General Trias-Trece Martires.....	88

16	Model of 55 sec as Optimized Time Output for Trece Martires-Amadeo.....	91
17	Model of 55 sec as Optimized Time Output for Trece Martires-Dasmariñas.....	94
18	Model of 10 sec as Optimized Time Output for Trece Martires-General Trias.....	97
19	Model of 4.5 mps as Optimized Speed Output for Amadeo-Dasmariñas.....	100
20	Model of 7 mps as Optimized Speed Output for Amadeo-General Trias.....	103
21	Model of 4.5 mps as Optimized Speed Output for Amadeo-Trece Martires Trias.....	106
22	Model of 4.5 mps as Optimized Speed Output for Dasmariñas-Amadeo.....	109
23	Model of 5 mps as Optimized Speed Output for Dasmariñas-General Trias.....	112
24	Model of 4.5 mps as Optimized Speed Output for Dasmariñas-Trece Martires.....	115
25	Model of 7 mps as Optimized Speed Output for General Trias- Amadeo.....	118
26	Model of 8 mps as Optimized Speed Output for General Trias- Dasmariñas.....	121
27	Model of 10 mps as Optimized Speed Output for General Trias- Trece Martires.....	124
28	Model of 8 mps as Optimized Speed Output for Trece Martires-Amadeo.....	127
29	Model of 8 mps as Optimized Speed Output for Trece Martires-Dasmariñas.....	130
30	Model of 4.5 mps as Optimized Speed Output for Trece Martires-General Trias.....	133



31	Model of 5.5 mps as Optimized Speed Output for Amadeo-Dasmariñas with Four Parameters.....	136
32	Model of 6 mps as Optimized Speed Output for Amadeo-General Trias with Four Parameters.....	139
33	Model of 6.33 mps Optimized Speed Output for Amadeo-Trece Martires with Four Parameters.....	142
34	Model of 7 mps as Optimized Speed Output for Dasmariñas-Amadeo with Four Parameters.....	145
35	Model of 6.33 mps as Optimized Speed Output for Dasmariñas-General Trias with Four Parameters.....	148
36	Model of 6.5 mps as Optimized Speed Output for Dasmariñas-Trece Martires with Four Parameters.....	151
37	Model of 6.5 mps as Optimized Speed Output for General Trias-Amadeo with Four Parameters.....	154
38	Model of 8 mps as Optimized Speed Output for General Trias-Dasmariñas with Four Parameters.....	157
39	Model of 7 mps as Optimized Speed Output for General Trias-Trece Martires with Four Parameters.....	160
40	Model of 6 mps as Optimized Speed Output for Trece Martires-Amadeo with Four Parameters.....	163
41	Model of 6.5 mps as Optimized Speed Output for Trece Martires-Dasmariñas with Four Parameters.....	166

42	Model of 12 mps as Optimized Speed Output for Trece Martires-General Trias with Four Parameters.....	169
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## LIST OF APPENDIX TABLES

Appendix Table		Page
1	Signal Time Allotted for Each Way and Length taken by the Vehicles.....	173
2	Speed of modified vehicular class.....	174
3	Summary sheet of class 1 vehicles from Amadeo going Dasmariñas for every 35 seconds as per traffic lights.....	175
4	Summary sheet of class 2 vehicles from Amadeo going Dasmariñas for every 35 seconds as per traffic lights.....	177
5	Summary sheet of class 3 vehicles from Amadeo going Dasmariñas for every 35 seconds as per traffic lights.....	179
6	Summary sheet of class 4 vehicles from Amadeo going Dasmariñas for every 35 seconds as per t traffic lights.....	181
7	Summary sheet of class 5 vehicles from Amadeo going Dasmariñas for every 35 seconds as per traffic lights.....	183
8	Summary sheet of total vehicles from Amadeo going Dasmariñas for every 35 seconds as per traffic lights.....	185
9	Summary sheet of class 1 vehicles from Amadeo going General Trias for every 35 seconds as per traffic lights.....	187
10	Summary sheet of class 2 vehicles from Amadeo going General Trias for every 35 seconds as per traffic lights.....	189

11	Summary sheet of class 3 vehicles from Amadeo going General Trias for every 35 seconds as per traffic lights.....	191
12	Summary sheet of class 4 vehicles from Amadeo going General Trias for every 35 seconds as per traffic lights.....	193
13	Summary sheet of class 5 vehicles from Amadeo going General Trias for every 35 seconds as per traffic lights.....	195
14	Summary sheet of total vehicles from Amadeo going General Trias for every 35 seconds as per traffic lights.....	197
15	Summary sheet of class 1 vehicles from Amadeo going Trece Martires for every 35 seconds as per traffic lights.....	199
16	Summary sheet of class 2 vehicles from Amadeo going Trece Martires for every 35 seconds as per traffic lights.....	201
17	Summary sheet of class 3 vehicles from Amadeo going Trece Martires for every 35 seconds as per traffic lights.....	203
18	Summary sheet of class 4 vehicles from Amadeo going Trece Martires for every 35 seconds as per traffic lights.....	205
19	Summary sheet of class 5 vehicles from Amadeo going Trece Martires for every 35 seconds as per traffic lights.....	207
20	Summary sheet of total vehicles from Amadeo going Trece Martires for every 35 seconds as per traffic lights.....	209
21	Summary sheet of class 1 vehicles from Dasmariñas going Amadeo for every 50 seconds as per traffic lights.....	211

22	Summary sheet of class 2 vehicles from Dasmariñas going Amadeo for every 50 seconds as per traffic lights.....	213
23	Summary sheet of class 3 vehicles from Dasmariñas going Amadeo for every 50 seconds as per traffic lights.....	215
24	Summary sheet of class 4 vehicles from Dasmariñas going Amadeo for every 50 seconds as per traffic lights.....	217
25	Summary sheet of class 5 vehicles from Dasmariñas going Amadeo for every 50 seconds as per traffic lights.....	219
26	Summary sheet of total vehicles from Dasmariñas going Amadeo for every 50 seconds as per traffic lights.....	221
27	Summary sheet of class 1 vehicles from Dasmariñas going General Trias for every 50 seconds as per traffic lights.....	223
28	Summary sheet of class 2 vehicles from Dasmariñas going General Trias for every 50 seconds as per traffic lights.....	225
29	Summary sheet of class 3 vehicles from Dasmariñas going General Trias for every 50 seconds as per traffic lights.....	227
30	Summary sheet of class 4 vehicles from Dasmariñas going General Trias for every 50 seconds as per traffic lights.....	229
31	Summary sheet of class 5 vehicles from Dasmariñas going General Trias for every 50 seconds as per traffic lights.....	231
32	Summary sheet of total vehicles from Dasmariñas going General Trias for every 50 seconds as per traffic lights.....	233



33	Summary sheet of class 1 vehicles from Dasmariñas going Trece Martires for every 50 seconds as per traffic lights.....	235
34	Summary sheet of class 2 vehicles from Dasmariñas going Trece Martires for every 50 seconds as per traffic lights.....	237
35	Summary sheet of class 3 vehicles from Dasmariñas going Trece Martires for every 50 seconds as per traffic lights.....	239
36	Summary sheet of class 4 vehicles from Dasmariñas going Trece Martires for every 50 seconds as per traffic lights.....	241
37	Summary sheet of class 5 vehicles from Dasmariñas going Trece Martires for every 50 seconds as per traffic lights.....	243
38	Summary sheet of total vehicles from Dasmariñas going Trece Martires for every 50 seconds as per traffic lights.....	245
39	Summary sheet of class 1 vehicles from General Trias going Amadeo for every 30 seconds as per traffic lights.....	247
40	Summary sheet of class 2 vehicles from General Trias going Amadeo for every 30 seconds as per traffic lights.....	249
41	Summary sheet of class 3 vehicles from General Trias going Amadeo for every 30 seconds as per traffic lights.....	251
42	Summary sheet of class 4 vehicles from General Trias going Amadeo for every 30 seconds as per traffic lights.....	253
43	Summary sheet of class 5 vehicles from General Trias going Amadeo for every 30 seconds as per traffic lights.....	255

44	Summary sheet of total vehicles from General Trias going Amadeo for every 30 seconds as per traffic lights.....	257
45	Summary sheet of class 1 vehicles from General Trias going Dasmariñas for every 30 seconds as per traffic lights.....	259
46	Summary sheet of class 2 vehicles from General Trias going Dasmariñas for every 30 seconds as per traffic lights.....	261
47	Summary sheet of class 3 vehicles from General Trias going Dasmariñas for every 30 seconds as per traffic lights.....	263
48	Summary sheet of class 4 vehicles from General Trias going Dasmariñas for every 30 seconds as per traffic lights.....	265
49	Summary sheet of class 5 vehicles from General Trias going Dasmariñas for every 30 seconds as per traffic lights.....	267
	<b>Summary sheet of total vehicles from General Trias going Dasmariñas for every 30 seconds as per traffic lights.....</b>	<b>269</b>
51	Summary sheet of class 1 vehicles from General Trias going Trece Martires for every 30 seconds as per traffic lights.....	271
52	Summary sheet of class 2 vehicles from General Trias going Trece Martires for every 30 seconds as per traffic lights.....	273
53	Summary sheet of class 3 vehicles from General Trias going Trece Martires for every 30 seconds as per traffic lights.....	275
54	Summary sheet of class 4 vehicles from General Trias going Trece Martires for every 30 seconds as per traffic lights.....	277

55	Summary sheet of class 5 vehicles from General Trias going Trece Martires for every 30 seconds as per traffic lights.....	279
56	Summary sheet of total vehicles from General Trias going Trece Martires for every 30 seconds as per traffic lights.....	281
57	Summary sheet of class 1 vehicles from Trece Martires going Amadeo for every 60 seconds as per traffic lights.....	283
58	Summary sheet of class 2 vehicles from Trece Martires going Amadeo for every 60 seconds as per traffic lights.....	285
59	Summary sheet of class 3 vehicles from Trece Martires going Amadeo for every 60 seconds as per traffic lights.....	287
60	Summary sheet of class 4 vehicles from Trece Martires going Amadeo for every 60 seconds as per traffic lights.....	289
61	Summary sheet of class 5 vehicles from Trece Martires going Amadeo for every 60 seconds as per traffic lights.....	291
62	Summary sheet of total vehicles from Trece Martires going Amadeo for every 60 seconds as per traffic lights.....	293
63	Summary sheet of class 1 vehicles from Trece Martires going Dasmariñas for every 60 seconds as per traffic lights.....	295
64	Summary sheet of class 2 vehicles from Trece Martires going Dasmariñas for every 60 seconds as per traffic lights.....	297
65	Summary sheet of class 3 vehicles from Trece Martires going Dasmariñas for every 60 seconds as per traffic lights.....	299

66	Summary sheet of class 4 vehicles from Trece Martires going Dasmariñas for every 60 seconds as per traffic lights.....	301
67	Summary sheet of class 5 vehicles from Trece Martires going Dasmariñas for every 60 seconds as per traffic lights.....	303
68	Summary sheet of total vehicles from Trece Martires going Dasmariñas for every 60 seconds as per traffic lights.....	305
69	Summary sheet of class 1 vehicles from Trece Martires going General Trias for every 60 seconds as per traffic lights.....	307
70	Summary sheet of class 2 vehicles from Trece Martires going General Trias for every 60 seconds as per traffic lights.....	309
71	Summary sheet of class 3 vehicles from Trece Martires going General Trias for every 60 seconds as per traffic lights.....	311
72	Summary sheet of class 4 vehicles from Trece Martires going General Trias for every 60 seconds as per traffic lights.....	313
73	Summary sheet of class 5 vehicles from Trece Martires going General Trias for every 60 seconds as per traffic lights.....	315
74	Summary sheet of total vehicles from Trece Martires going General Trias for every 60 seconds as per traffic lights.....	317
75	Input data for Amadeo-Dasmariñas.....	319
76	Target data for Amadeo-Dasmariñas.....	321
77	Input data for Amadeo-General Trias.....	322
78	Target data for Amadeo-General Trias.....	324
79	Input data for Amadeo-Trece Martires.....	325

80	Target data for Amadeo-Trece Martires.....	327
81	Output data for Amadeo-Dasmariñas, Amadeo-General Trias and Amadeo-Trece Martires.....	328
82	Input data for Dasmariñas-Amadeo.....	330
83	Target data for Dasmariñas-Amadeo.....	332
84	Input data for Dasmariñas-General Trias.....	334
85	Target data for Dasmariñas-General Trias.....	335
86	Input data for Dasmariñas-Trece Martires.....	336
87	Target data for Dasmariñas-Trece Martires.....	338
88	Output data for Dasmariñas-Amadeo, Dasmariñas- General Trias and Dasmariñas-Trece Martires.....	339
89	Input data for General Trias-Amadeo.....	341
90	Target data for General Trias-Amadeo.....	343
91	Input data for General Trias-Dasmariñas.....	344
92	Target data for General Trias-Dasmariñas.....	346
93	Input data for General Trias-Trece Martires.....	347
94	Target data for General Trias-Trece Martires.....	349
95	Output data for General Trias-Amadeo, General Trias- Dasmariñas and General Trias -Trece Martires.....	350
96	Input data for Trece Martires-Amadeo.....	352
97	Target data for Trece Martires-Amadeo.....	354
98	Input data for Trece Martires-Dasmariñas.....	355
99	Target data for General Trece Martires-Dasmariñas.....	357
100	Input data for Trece Martires-General Trias.....	358
101	Target data for Trece Martires-General Trias.....	360



102	Output data for Trece Martires-Amadeo, Trece Martires-Dasmariñas and Trece Martires-General Trias.....	361
103	Comparison Table for original output and optimized output with only two paramaeters.....	363

## LIST OF APPENDICES

Appendix		Page
1	Appendix Computation.....	52
2	Appendix Figures.....	57
3	Appendix Tables.....	172

# **SIMULATION AND MODELING OF TRAFFIC FLOW AT INTERSECTION IN MANGGAHAN, GENERAL TRIAS, CAVITE**

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An undergraduate design project proposal submitted to the faculty of Department Civil Engineering, College of Engineering and Information Technology Cavite State University, Indang, Cavite in partial fulfillment of the requirements for the degree of Bachelor of Science in Civil Engineering with Contribution No. 2018-19-2-241  
Prepared under the supervision of Engr. Larry E. Rocela

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## **INTRODUCTION**

General Trias is a city in the province of Cavite where industrialization is highly prominent. Due to this, vehicles are in and out to this city which can be observed at Manggahan intersection that causes great traffic. Manggahan Intersection leads the way to Tagaytay through Amadeo, Dasmarinas, General Trias Proper, and Trece Martires City.

Congestion is caused by different factors such as characteristics of existing parameters, demand of intersection at specific time of day and volume of vehicles passing through it. Showing these factors and their behavior through a program model authority would be able to classify what really causes the traffic more or what factor among those highly contributes to the problem.