

Appendix Q – Traffic Impact Study

(Note: Drat Traffic Impact Study Report is under review by RTA)

August 2018

***Dubai Resource Recovery
Facility (Waste to Energy Plant)
on Plot Number 6220146,
Warsan 2, Dubai***

*Traffic Impact Study Report - Level 1
(TIS-1806-009)*

Prepared for:



Prepared by:



Project Quality Plan

Project Name: Dubai Resource Recovery Facility, Warsan 2

Department: Transportation

Focus Area: Traffic Studies

Product-Process: Traffic Impact Study-TIS Report

Prepared By: RTC Road & Traffic Engineering

Project Quality Plan Version Control:

Version	Date	Author	Checked	Reviewed	Description
1	19-Aug-18	AGR	AM	AEH	TIS Report
TIS Number TIS-1806-009					

Table of Contents

1. Introduction	1
1.1 Site Location	1
1.2 Land Use	1
1.3 Adjacent Land Use	1
2. Trip Generation	3
3. Standard Parameters	4
3.1 Level of Service Criteria	4
4. Site Access Analysis	6
4.1 Site Access Analysis – (Opening Year 2022)	6
5. Parking Demand Supply & Circulation	8
6. Conclusions	10

List of Figures

Figure 1: Location Plan.....	2
Figure 2: Site Access Analysis – Opening Year 2022	7
Figure 3: Access & Circulation Plan - Ground Floor	9

List of Tables

Table 1: Land use Summary	1
Table 2: Trip Generation Rates.....	3
Table 3: Trip Generation Summary	3
Table 4: Standard Parameters	4
Table 5: LOS – Delay	5
Table 6: Site Access Analysis – Opening Year – 2022	6
Table 7: Parking Calculation - DTGPRM 2013	8
Table 8: Parking Calculation – DM.....	8
Table 9: Parking Supply.....	8

Appendices

- Appendix A – Introductory Documents
- Appendix B – Site Access Analysis
- Appendix C – Circulation Plans

Executive Summary

RTC Road & Traffic Engineering has been appointed by GHD Global Pty Ltd to carry out Traffic Impact Study for the proposed Dubai Resource Recovery Facility (Waste to Energy Plant) located on Plot 6220146 in Warsan 2. The project is expected to generate 247 trips during AM peak hour, 303 trips during LT peak hour and 163 trips during PM peak hours with reference to the land use details and in accordance with the Dubai Trip Generation and Parking Rates Manual (DTGPRM) 2013.

Parking demand for the proposed development based on DTGPRM 2013 parking rates is found to be 208 parking spaces and by DM rates is 58 parking spaces. Parking supply within the development is 69 parking spaces which meets the parking space requirement as per DM parking calculation.

Site access analysis is carried out for the opening year 2022 and it can be inferred that the access points will be able to efficiently handle the traffic generated from the development.

1. Introduction

RTC Road & Traffic Engineering has been appointed by GHD Global Pty Ltd to carry out the Traffic Impact Study for the proposed Dubai Resource Recovery Facility on Plot 6220146 in Warsan 2. The purpose of this study is to:

- Determine the impact of the trips generated by the development
- Develop adequate access and parking alternatives within the development

1.1 Site Location

The development is located on Plot 6220146 in Warsan 2. The major roads surrounding the development include Academic City road on the south side and Al Awir road on the north of the development. The location plan of the development is shown in **Figure 1** and is reflected in the affection plan.

1.2 Land Use

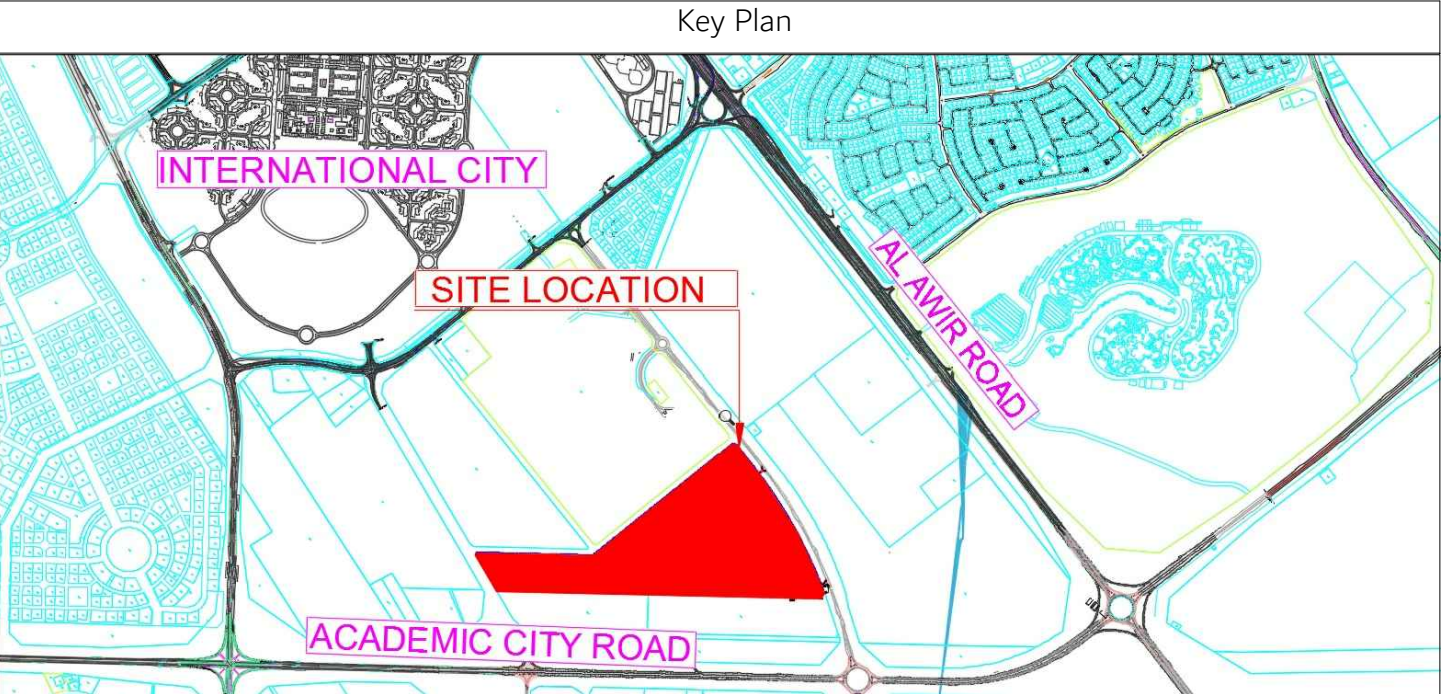
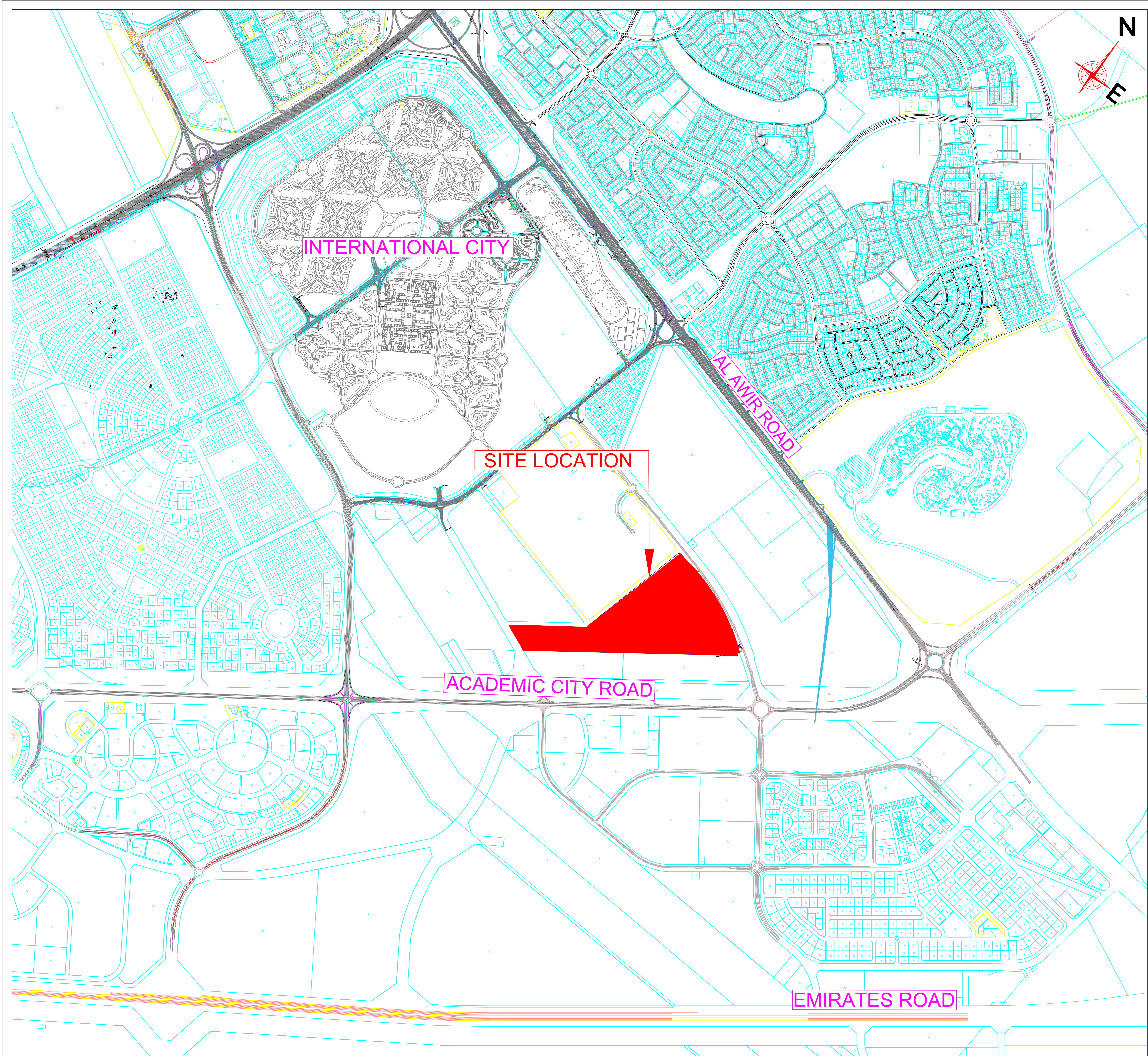
The proposed development falls under industrial group. **Table 1** provides the land use details.

Table 1: Land use Summary

Land Use	Quantity
Medium Industry	58,089 sqm of GFA

1.3 Adjacent Land Use

The surrounding area of the project is mainly consisting of industrial and residential land uses.



- NOTES
- ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
 - THIS DRAWING CANNOT BE USED FOR CONSTRUCTION PURPOSES.
 - THE CLIENT/ OWNER UNDERSTANDS THAT THE SHOWN CONFIGURATIONS MAY CHANGE DURING DETAIL DESIGN STAGE.
 - THE CLIENT/ OWNER WILL APPOINT AN RTA- APPROVED ROADS CONSULTANT TO PREPARE, SUBMIT AND OBTAIN THE NECESSARY APPROVALS ACCORDING TO RTA AND OTHER RELEVANT AUTHORITIES STANDARDS AND MANUALS DURING DETAIL DESIGN STAGE
 - THE TIS CONSULTANT CONFIRMS THAT THE SHOWN CONFIGURATIONS ARE ACCORDING TO RTA RELEVANT STANDARDS UNLESS CLEARLY HIGHLIGHTED ON THE DRAWING.

APPROVAL LETTER REF NO: _____

TRAFFIC DEPARTMENT _____ NAME/SIGN/DATE _____

ROADS DEPARTMENT _____ NAME/SIGN/DATE _____

R.O.W DEPARTMENT _____ NAME/SIGN/DATE _____

CLIENT _____ NAME/CONTACTS/SIGN/DATE _____

LEAD CONSULTANT _____ NAME/CONTACTS/SIGN/DATE _____

TRAFFIC CONSULTANT _____ NAME/CONTACTS/SIGN/DATE _____

RTC P.O.Box 60833,Dubai
United Arab Emirates
Phone:+971(4)2953440
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Email:rtceng@rtceng.com

TRAFFIC IMPACT STUDY (LEVEL - I)

PROJECT NAME **DUBAI RESOURCE RECOVERY FACILITY (WASTE TO ENERGY PLANT)**

RTA TIS NO:		PLOT NO:	6220146
PROJECT LOCATION	WARSAN SECOND	BUILDINGS STATUS	-
BUILDING DESIGN STAGE	-	TMP STATUS	-

Trip Generation												
Code	Land Use	Units/GFA	Qty.	AM			LT			PM		
				In	Out	Total	In	Out	Total	In	Out	Total
621	Medium Industry	100 sqm of GFA	58,089	126	121	246	142	160	302	80	83	163
	TOTAL			126	121	247	142	160	303	80	83	163

Legend  SITE LOCATION	Parking Demand (DM)	58
	Parking Demand (DTGPRM)	208
	Parking Supply	69

Drawing Title				Drawing No.			
LOCATION PLAN				RTC - 180672 - 1			
Revision Date & Purpose							
Rev/NO.		Date		Approved		Description/Purpose	
PRINTING DATE:				18 AUGUST 2018			
Approved By ABH (Traffic Dept.)			Checked By AR (Traffic Eng.) AM (Road Eng.)			Prepared By GR (Traffic Eng.)	

2. Trip Generation

The traffic expected to be generated by the development is evaluated by applying the rates in the Dubai Trip Generation and Parking Rates Manual 2013. The applicable trip generation rates for the critical AM, LT, PM and Peak Hour Generator are tabulated in **Table 2**.

Table 2: Trip Generation Rates

Land Use	Class	Unit	AM Peak			LT Peak			PM Peak			Peak Hour Generator		
			Rate	In	Out	Rate	In	Out	Rate	In	Out	Rate	In	Out
Medium Industry	621	100 sqm of GFA	0.424	51%	49%	0.52	47%	53%	0.28	49%	51%	0.52	47%	53%

Table 3 provides the trip generation of the development estimated by applying the rates mentioned in Table 2.

Table 3: Trip Generation Summary

Land Use	Unit	Quantity	AM Peak			LT Peak			PM Peak			Peak Hour Generator		
			All	In	Out	All	In	Out	All	In	Out	All	In	Out
Medium Industry	100 sqm of GFA	58,089	247	126	121	303	142	161	163	80	83	303	142	161
Total			247	126	121	303	142	161	163	80	83	303	142	161

3. Standard Parameters

Traffic analysis for site access of the proposed development is performed based on the Highway Capacity Manual (HCM) procedure. To determine the operating conditions of a roadway, the concept of level of service (LOS) is commonly used. The LOS grading system is a rating scale ranging from LOS A to LOS F, where LOS A represents free-flow conditions and LOS F represents congested or jammed conditions. **Table 4** shows the factors and assumptions used in the analysis.

Table 4: Standard Parameters

Factor/Assumption	Value
PHF	0.95
Lane Width	3.65 m
Lane Utilization	Varies
Ideal Intersection Capacity per Lane	1,900
Ideal Freeway Capacity per Lane	2,000
% of Heavy Vehicles	2%

3.1 Level of Service Criteria

Roadway LOS describes the operating conditions determined for a group of vehicles passing over a given segment of the roadway during a specified period of time. It is a qualitative measure of several factors which include speed, travel time, traffic interruptions, freedom to manoeuvre, driver comfort, convenience, safety and vehicle operating costs. The roadway LOS analysis is performed using the method contained in the HCM where six Levels of Service have been established by which we assess roadway performance, designated by the letters A through F. These LOS levels are defined as follows:

- LOS A – Free flow, individual users virtually unaffected by the presence of others;
- LOS B – Stable flow with a high degree of freedom to select operating conditions;
- LOS C – Flow remains stable, but with significant interactions with others;
- LOS D – Approaching unstable flow, freedom to manoeuvre is severely restricted;

- LOS E – Unstable flow, with volumes approaching capacity of the roadway; and
- LOS F – Forced flow in which the traffic exceeds the amount that can be serviced.

LOS describing the operation of the access is based on delay occurring for vehicles. **Table 5** shows the LOS and corresponding delay used to evaluate traffic conditions at the access points.

Table 5: LOS – Delay

LOS	Delay (in seconds)
F	50 and above
E	35 – 50
D	25 – 35
C	15 – 25
B	10 – 15
A	0 – 10

4. Site Access Analysis

Providing effective and efficient access to the development is an important aspect to be considered to ensure that safe and efficient flow of traffic is achieved through the access / egress system.

The development has two access points. Access point 1 has both has both exit and exit accesses while Access point 2 has only entry access.

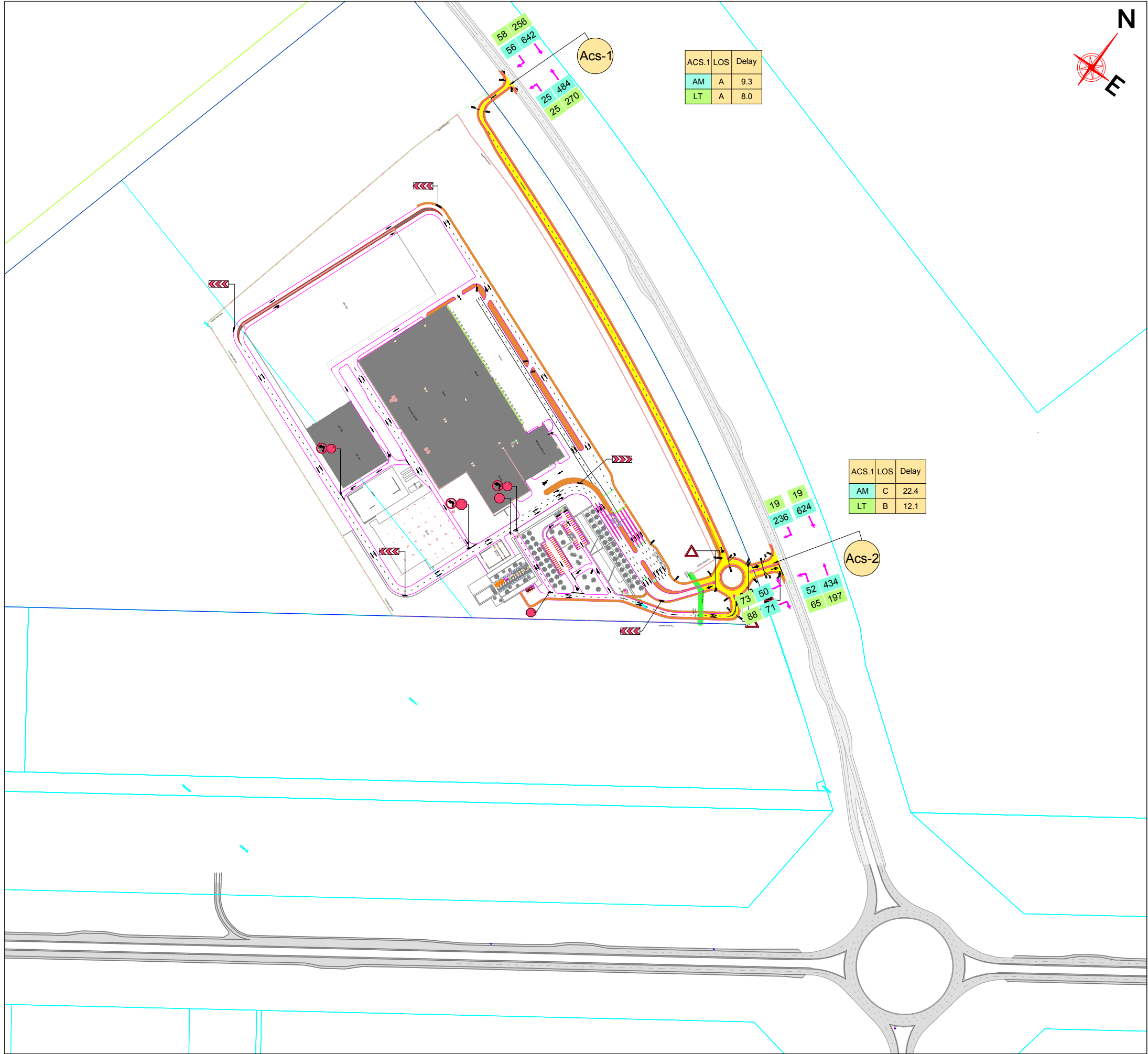
Access analysis is carried out for the opening year 2022 by adding the project trips with the project traffic count.

4.1 Site Access Analysis – (Opening Year 2022)

Site access analysis has been carried out at the access points to determine the impact of generated trips on the existing road traffic. The access locations are analysed using HCS 7 software. The resulting delay and LOS are shown in **Table 6** and illustrated in **Figure 2**. Detailed analysis results of the site access are provided in **Appendix B**. The below table indicate that the access point will work at an acceptable LOS for the opening year 2022 during AM and PM peak hours.

Table 6: Site Access Analysis – Opening Year – 2022

Access	AM		PM	
	LOS	Delay(s)	LOS	Delay(s)
Access-1	A	9.3	A	8.0
Access-2	C	22.4	B	12.1



Key Plan

NOTES

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APPROVAL LETTER REF NO:

TRAFFIC DEPARTMENT

NAME/SIGN/DATE

ROADS DEPARTMENT

NAME/SIGN/DATE

ROW DEPARTMENT

NAME/SIGN/DATE

CLIENT

NAME/CONTACTS/SIGN/DATE

LEAD CONSULTANT

NAME/CONTACTS/SIGN/DATE

TRAFFIC CONSULTANT

NAME/CONTACTS/SIGN/DATE

GHD GLOBAL PTY.LTD

GHD GLOBAL PTY.LTD

RTC
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TRAFFIC IMPACT STUDY (LEVEL - I)

PROJECT NAME

DUBAI RESOURCE RECOVERY FACILITY (WASTE TO ENERGY PLANT)

RTA TIS NO:

PLOT NO: **6220146**

PROJECT LOCATION

WARSAN SECOND

BUILDINGS STATUS

-

BUILDING DESIGN STAGE

-

TMP STATUS

-

Trip Generation

Code	Land Use	Units/GFA	Qty.	AM			LT			PM		
				In	Out	Total	In	Out	Total	In	Out	Total
621	Medium Industry	100 sqm of GFA	58,089	126	121	246	142	160	302	80	83	163
TOTAL				126	121	247	142	160	303	80	83	163

Legend

AM TRIPS

LT TRIPS

Parking Demand (DM)	58
Parking Demand (DTGPRM)	208
Parking Supply	69

Drawing Title: **SITE ACCESS ANALYSIS-OPENING YEAR 2022**

Drawing No: **RTC - 180672 - 2**

Revision Date & Purpose

RevNO	Date	Approved	Description/Purpose

PRINTING DATE: 18 AUGUST 2018

Approved By: **ABH** (Traffic Dept.)

Checked By: **AR** (Traffic Eng) / **AM** (Road Eng.)

Prepared By: **GR** (Traffic Eng.)

5. Parking Demand Supply & Circulation

The number of parking spaces required for the development is estimated from the DTGPRM 2013 parking rates and DM regulations. It is ensured that proper parking arrangement as well as internal circulation is provided. **Table 9 and 10** reflect the parking calculation of the development as per DTGPRM 2013 parking rates and DM guidelines. **Table 11** gives the parking supply of the development.

Table 7: Parking Calculation - DTGPRM 2013

Land Use	Unit	Quantity	Parking Rate	Parking Demand
Medium Industry	Sqm of GFA	58,089	0.357	208
Total				208

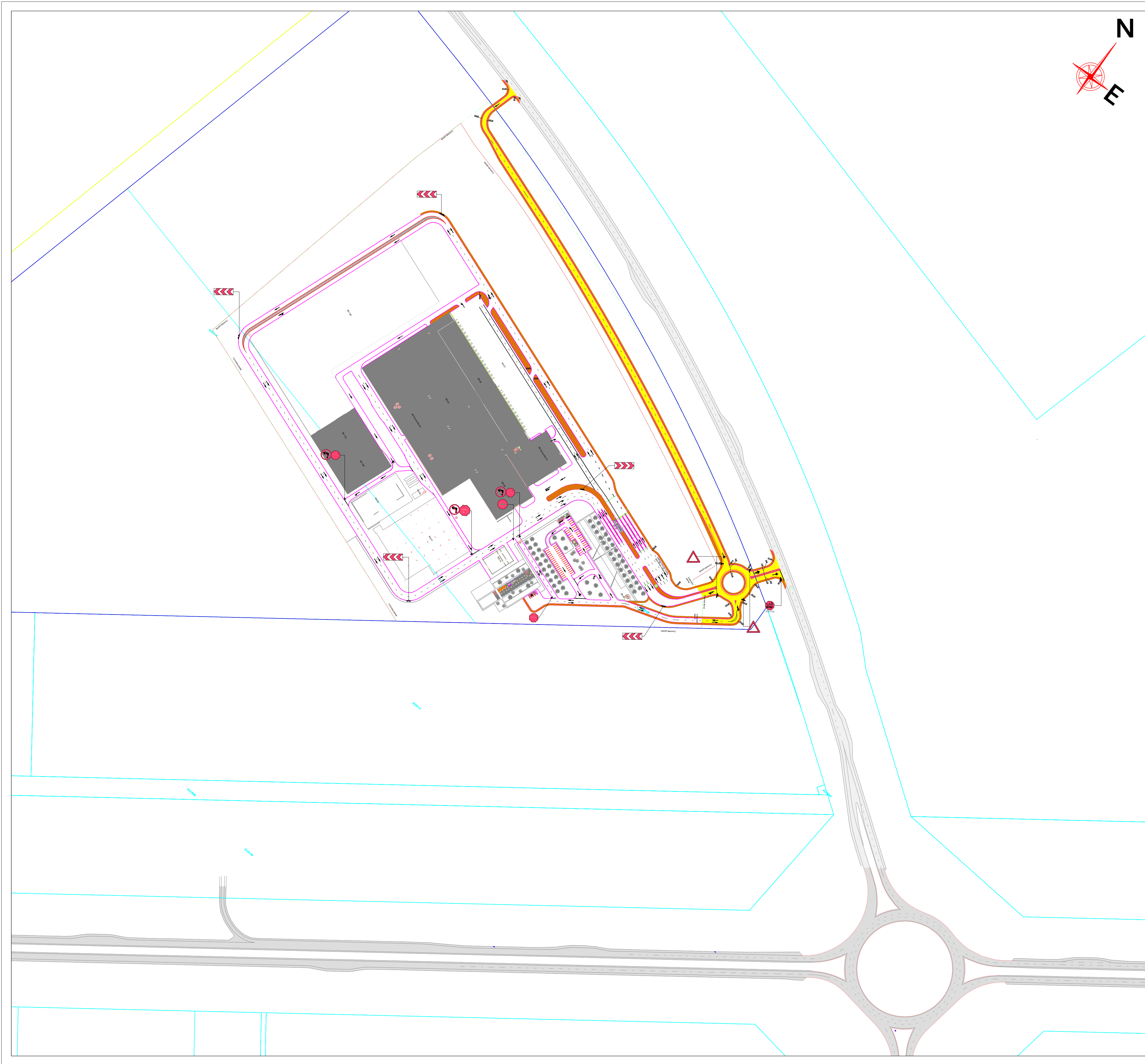
Table 8: Parking Calculation – DM

Land Use	Unit	Quantity	Parking Rate	Parking Demand
Medium Industry	Sqm of GFA	58,089	1 parking per 750 sq.ft of office area	58
Total				58

Table 9: Parking Supply

Parking Level	No of Parking
Ground Floor	69

Review of the above table indicates that the proposed development will adequately meet the parking demand in accordance with DM parking regulations. The traffic circulation within the project site has been designed to ensure no delay is formed at the access points. The circulation plans along with the swept path analysis is provided in **Appendix C**.



Key Plan

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APPROVAL LETTER REF NO:

TRAFFIC DEPARTMENT	NAME/SIGN/DATE
ROADS DEPARTMENT	NAME/SIGN/DATE
R.O.W DEPARTMENT	NAME/SIGN/DATE

CLIENT

GHD GLOBAL PTY.LTD

LEAD CONSULTANT

GHD GLOBAL PTY.LTD

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TRAFFIC IMPACT STUDY (LEVEL - I)

PROJECT NAME

DUBAI RESOURCE RECOVERY FACILITY (WASTE TO ENERGY PLANT)

RTA TIS NO:		PLOT NO:	6220146
PROJECT LOCATION	WARSAN SECOND	BUILDINGS STATUS	-
BUILDING DESIGN STAGE	-	TMP STATUS	-

Trip Generation

Code	Land Use	Units/GFA	Qty.	AM			LT			PM		
				In	Out	Total	In	Out	Total	In	Out	Total
621	Medium Industry	100 sqm of GFA	58,089	126	121	246	142	160	302	80	83	163
		TOTAL		126	121	247	142	160	303	80	83	163

Legend

- PROPOSED UPSTAND CURB
- PROPOSED PARKING SUPPLY
- PROPOSED FLUSH CURB
- PROPOSED ROAD MARKING
- PROPOSED HEEL CURB
- PLOT LIMIT
- R.O.W.
- PROPOSED ASPHALT
- PROPOSED INTERLOCKING AREA (60mm)
- EXISTING ROAD

Parking Demand (DM)	58
Parking Demand (DTGPRM)	208
Parking Supply	69

Drawing Title		Drawing No.	
ACCESS AND CIRCULATION PLAN		RTC - 180672 - 3	
Revision Date & Purpose			
Rev/NO	Date	Approved	Description/Purpose
PRINTING DATE: 18 AUGUST 2018			
Approved By AR (Traffic Dept.)	Checked By AR (Traffic Eng.) AM (Road Eng.)	Prepared By GR (Traffic Eng.)	

6. Conclusions

The proposed development Dubai Resource Recovery Facility (Waste to Energy Plant) is located in Warsan 2, Dubai. It is expected to generate 247, 303 & 163 trips during AM, LT and PM peak hours respectively.

- The development has two access points. Access point 1 has both has both exit and exit accesses while Access point 2 has only entry access.
- Site access analysis has been carried out for the opening year 2022 and it is found that the access points will work at an acceptable level of service during AM and PM peak hours.
- Parking supply within the development is found to be sufficient and meet the parking requirements of the development as per the DM parking regulations.

Appendix A

Introductory Documents

Traffic Impact Study (TIS)

Introductory Letter

This information MUST be completed by consultant before a TIS number will be issued.
Please follow the example shown, and e-mail to:
Ahmed.Shahin@RTA.AE

حكومة دبي
Government of Dubai

هيئة الطرق والمواصلات
ROADS & TRANSPORT AUTHORITY



DO NOT CHANGE THE FORMAT OF THE DOCUMENT

Last Update: Sep 2014

1	Project Name:	Dubai Resource Recovery Facility (Waste to Energy Plant)			
	Plot Number:	6220146	Location:	Warsan Second	
2	Was a TIS submitted for this project before? If yes, Please indicate name, Date of submittal and reason for re-submittal.	☐ Yes ☒ No Explain if yes:			
3	Consultant Name:	RTC Road & Traffic Engineering			
	Liaison Consultant Traffic Engineer:	Ganesh Raja			
	Address:	P.O. Box: 60833			
	Phone #	04 2953440			
	Fax	04 2953445			
	E-mail Address	rtceng@rtceng.com			
4	Developer:	GHD Pty Ltd			
	Owner's Name:	Dubai Municipality - Properties Department			
	Address:	P.O. Box 45921, Abu Dhabi, UAE			
	Phone #	02 696 8700			
	Fax	02 447 2915			
	E-mail Address	www.ghd.com			
5	Letter of Appointment by developer attached:	☒ Yes	☐ No		
6	Location map & Land Use attached:	☒ Yes	☐ No		
7	Adopted Trip Generation Codes Based On Dubai Trip Generation Manual: Please list as follow: Code, Land Use Area,CBD, Non CBD or Outer CBD	Code621 - Medium Industry - 58088.55 GFA			
8	Total Trip generated (in/out) for AM, LT, PM and peak hour generator per Dubai Trip Generation and Parking Rate Manual:	AM	LT	PM	Peak Hr. Generator
		126	142	80	142
		121	161	83	161
		247	303	163	303
9	Level of the TIS (1,2, or 3) per Circular 28/2006 (Total Trips without applying any reduction due to Public Transportation or Mix used) a) Level 1: Less than 500 b) Level 2: 500 to 1500 Trips c) Level 3: More than 1500 Trips	☒ Level 1	☐ Level 2	☐ Level 3	
10	Is the project located within a Master Plan, If yes, please state the name of the development:	☐ Yes	☒ No		
This section will be completed by RTA		RTA approval: ☐ YES ☐ NO			
Comments					
Traffic Impact Study Number if Approved:					
Applicant Name and Signature		Ganesh Raja			
RTA Liaison Engineer Name--					
Prepared By --		Date:			



09 May 2018

Head of Traffic Department
Roads and Transport Authority
PO Box 118899
Dubai United Arab Emirates

Our ref: 76/10735/43077

Your ref:

Dear Sirs,

**Dubai Resource Recovery Facility (Waste-to-Energy Plant on Plot No. 622-109)
Appointment of Consultant for Traffic Impact Study**

We are pleased to confirm the appointment of M/s RTC Road & Traffic Engineering, PO Box. 60833, Dubai – UAE to carry out Traffic Impact Study for the above mentioned project.

The affection plan/ site plan for the proposed development is attached with this letter.

This is for your information and record.

Thanking you,

Best regards
GHD Global Pty Ltd

Andrew Saunders

Manager - Transport and Infrastructure
971 2 696 8700



Encl: As mentioned above

Cc: David Wright

Table 1: Land Use Details

Land Use	Class	Rate Per	Quantity
Medium Industry	621	100 sqm of GFA	58,089

Table 2: Trip Generation Rates

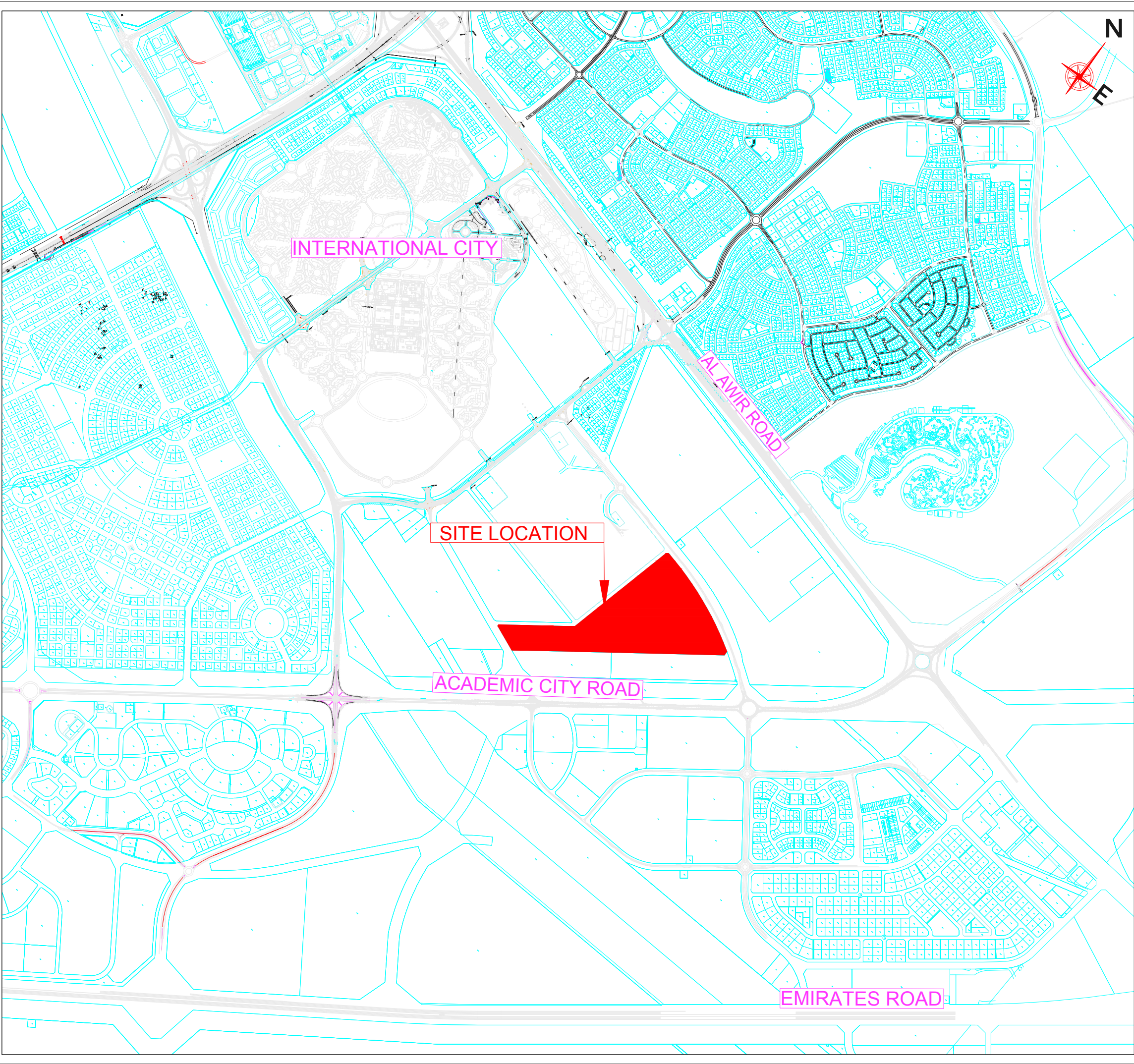
Land Use	Class	Rate Per	AM Peak			LT Peak			PM Peak			Peak Hour Generator		
			Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out	Rate	% In	% Out
Medium Industry	621	100 sqm of GFA	0.424	51%	49%	0.52	47%	53%	0.28	49%	51%	0.52	47%	53%

Table 3: Trip Generation Calculation

Land Use	Quantity	Rate Per	AM Peak			LT Peak			PM Peak			Peak Hour Generator		
			Total	In	Out	Total	In	Out	Total	In	Out	Total	In	Out
Medium Industry	58,089	100 sqm of GFA	246	126	121	302	142	160	163	80	83	302	142	160
Total			247	126	121	303	142	161	163	80	83	303	142	161

Table 4: Parking Rate and Demand

Land Use	Quantity	Rate Per	Parking Rate	Parking Demand
Medium Industry	58,089	100 sqm of GFA	0.357	207
Total			1	208



Key Plan

NOTES

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APPROVAL LETTER REF NO:

NAME/SIGN/DATE

TRAFFIC DEPARTMENT

NAME/SIGN/DATE

ROADS DEPARTMENT

NAME/SIGN/DATE

ROW DEPARTMENT

NAME/SIGN/DATE

CLIENT

NAME/CONTACTS/SIGN/DATE

GOVERNMENT OF DUBAI -
DUBAI REAL ESTATE CORPORATION -NURSERY

LEAD CONSULTANT

NAME/CONTACTS/SIGN/DATE



TRAFFIC CONSULTANT

NAME/CONTACTS/SIGN/DATE



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Email:rtceng@rtceng.com

TRAFFIC IMPACT STUDY (LEVEL - II)

PROJECT NAME

RESIDENTIAL DEVELOPMENT BUILDING

RTA TIS NO:

PLOT NO: 6220146

PROJECT LOCATION

WARSAN SECOND

BUILDINGS STATUS

-

BUILDING DESIGN STAGE

-

TMP STATUS

-

Legend

SITE LOCATION

Drawing Title

LOCATION PLAN

Drawing No.

RTC - 180599 - 1.1

Revision Date & Purpose

Rev/NO	Date	Approved	Description/Purpose

PRINTING DATE: 30 APRIL 2018

Approved By
Ahmed Eliele
(Traffic Dept.)

Checked By
Abdul (Traffic Eng)
Ramadan (Road Eng.)

Prepared By
Chaitanya (Traffic Eng.)

Appendix B

Site Access Analysis

Appendix B

Site Access Analysis

Access-1

HCS7 Two-Way Stop-Control Report

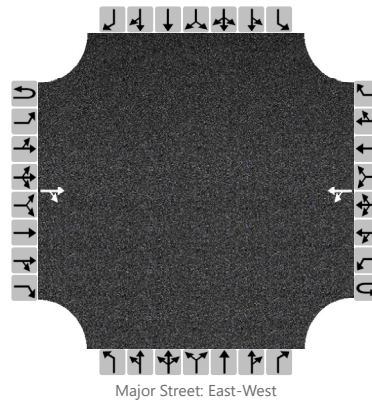
General Information

Analyst	AI
Agency/Co.	RTC
Date Performed	
Analysis Year	2022
Time Analyzed	Opening Year-AM Peak Hour
Intersection Orientation	East-West
Project Description	Dubai Waste to Energy Plant on Plot No. 622-109

Site Information

Intersection	Access 1
Jurisdiction	With Project Scenario
East/West Street	
North/South Street	To Service Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT										
Volume, V (veh/h)			642	56		25	484									
Percent Heavy Vehicles (%)						2										
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						26										
Capacity, c (veh/h)						870										
v/c Ratio						0.03										
95% Queue Length, Q ₉₅ (veh)						0.1										
Control Delay (s/veh)						9.3										
Level of Service, LOS						A										
Approach Delay (s/veh)					0.8											
Approach LOS																

HCS7 Two-Way Stop-Control Report

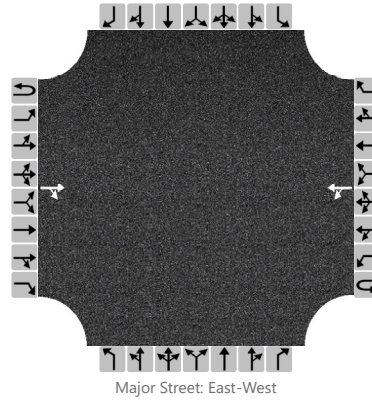
General Information

Analyst	AI
Agency/Co.	RTC
Date Performed	
Analysis Year	2022
Time Analyzed	Opening Year-LT Peak Hour
Intersection Orientation	East-West
Project Description	Dubai Waste to Energy Plant on Plot No. 622-109

Site Information

Intersection	Access 1
Jurisdiction	With Project Scenario
East/West Street	
North/South Street	To Service Road
Peak Hour Factor	0.95
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	0	0		0	0	0
Configuration				TR		LT										
Volume, V (veh/h)			256	58		25	270									
Percent Heavy Vehicles (%)						2										
Proportion Time Blocked																
Percent Grade (%)																
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						26										
Capacity, c (veh/h)						1229										
v/c Ratio						0.02										
95% Queue Length, Q ₉₅ (veh)						0.1										
Control Delay (s/veh)						8.0										
Level of Service, LOS						A										
Approach Delay (s/veh)					0.9											
Approach LOS																

Access-2

HCS7 Two-Way Stop-Control Report

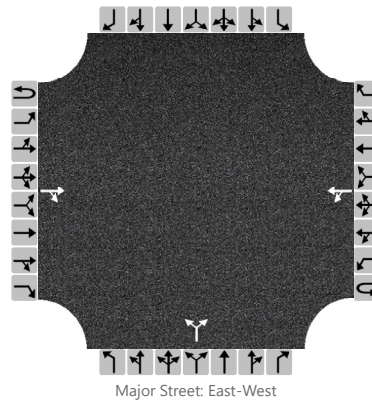
General Information

Analyst	AI
Agency/Co.	RTC
Date Performed	
Analysis Year	2022
Time Analyzed	Opening Year-AM Peak Hour
Intersection Orientation	East-West
Project Description	Dubai Waste to Energy Plant on Plot No. 622-109

Site Information

Intersection	Access 2
Jurisdiction	With Project Scenario
East/West Street	
North/South Street	Development Entry/Exit
Peak Hour Factor	0.95
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			624	19		52	434			50		71				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						55					128					
Capacity, c (veh/h)						914					283					
v/c Ratio						0.06					0.45					
95% Queue Length, Q ₉₅ (veh)						0.2					2.4					
Control Delay (s/veh)						9.2					28.1					
Level of Service, LOS						A					D					
Approach Delay (s/veh)					1.6				28.1							
Approach LOS									D							

HCS7 Two-Way Stop-Control Report

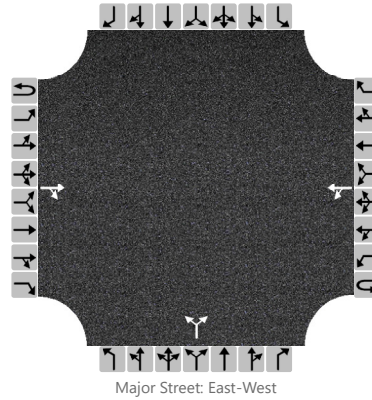
General Information

Analyst	AI
Agency/Co.	RTC
Date Performed	
Analysis Year	2022
Time Analyzed	Opening Year-LT Peak Hour
Intersection Orientation	East-West
Project Description	Dubai Waste to Energy Plant on Plot No. 622-109

Site Information

Intersection	Access 2
Jurisdiction	With Project Scenario
East/West Street	
North/South Street	Development Entry/Exit
Peak Hour Factor	0.95
Analysis Time Period (hrs)	1.00

Lanes



Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	1	0	0	0	1	0		0	1	0		0	0	0
Configuration				TR		LT					LR					
Volume, V (veh/h)			236	19		65	197			73		88				
Percent Heavy Vehicles (%)						2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized	No				No				No				No			
Median Type/Storage	Undivided															

Critical and Follow-up Headways

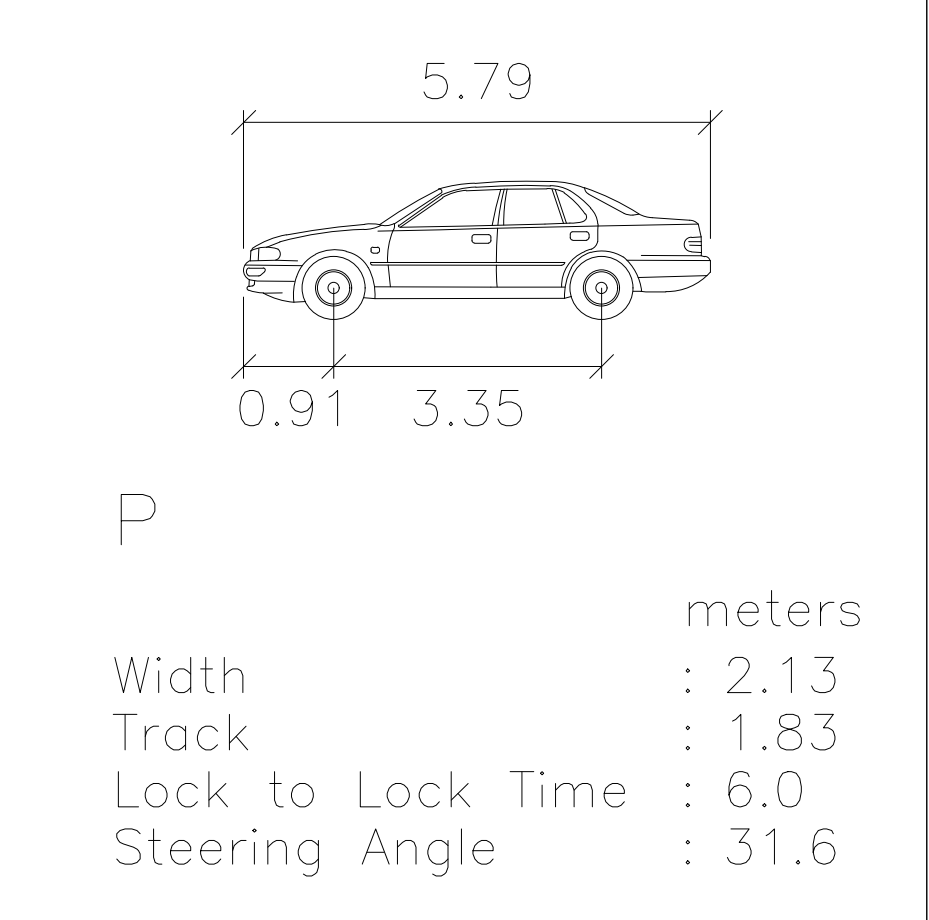
Base Critical Headway (sec)																
Critical Headway (sec)																
Base Follow-Up Headway (sec)																
Follow-Up Headway (sec)																

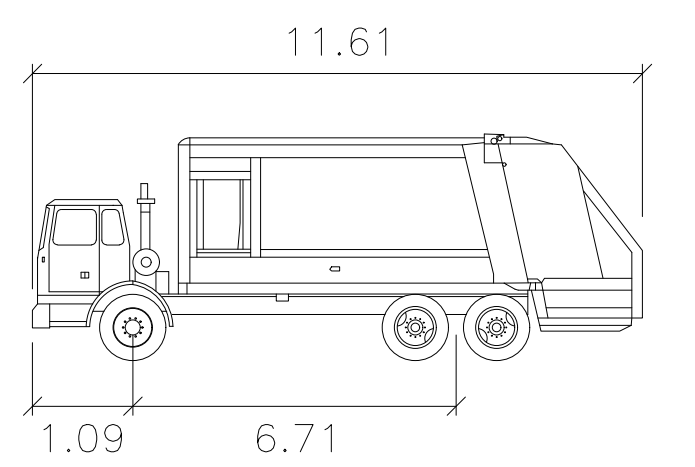
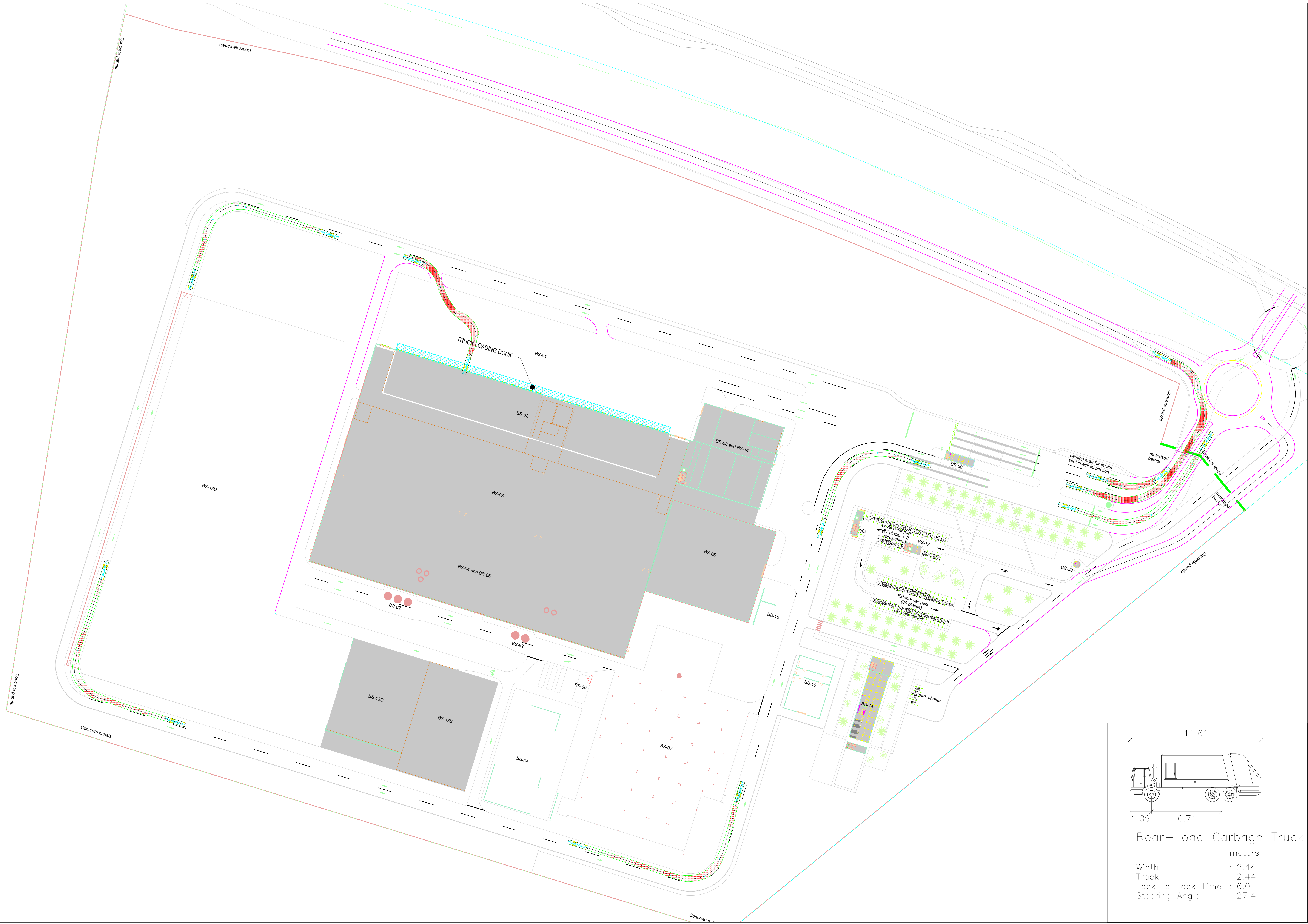
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						68					170					
Capacity, c (veh/h)						1295					577					
v/c Ratio						0.05					0.29					
95% Queue Length, Q ₉₅ (veh)						0.2					1.2					
Control Delay (s/veh)						7.9					13.8					
Level of Service, LOS						A					B					
Approach Delay (s/veh)					2.3				13.8							
Approach LOS									B							

Appendix C

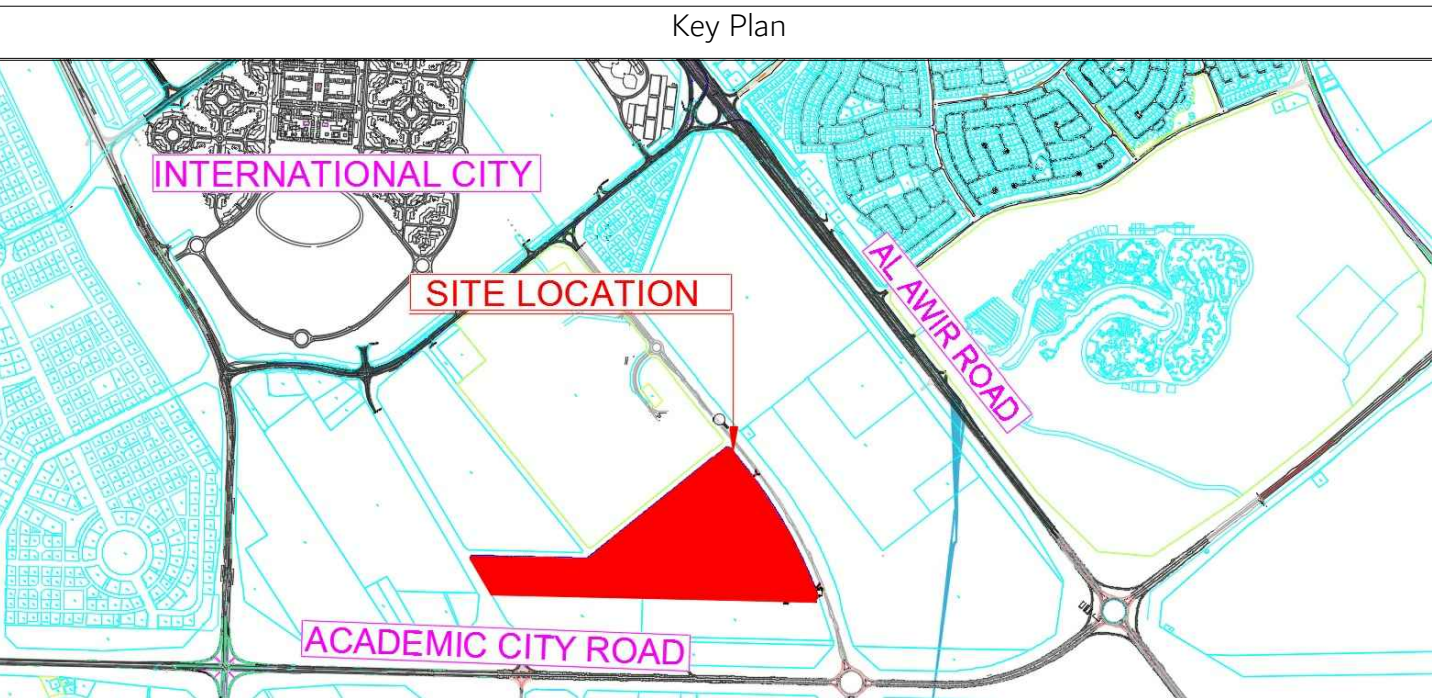
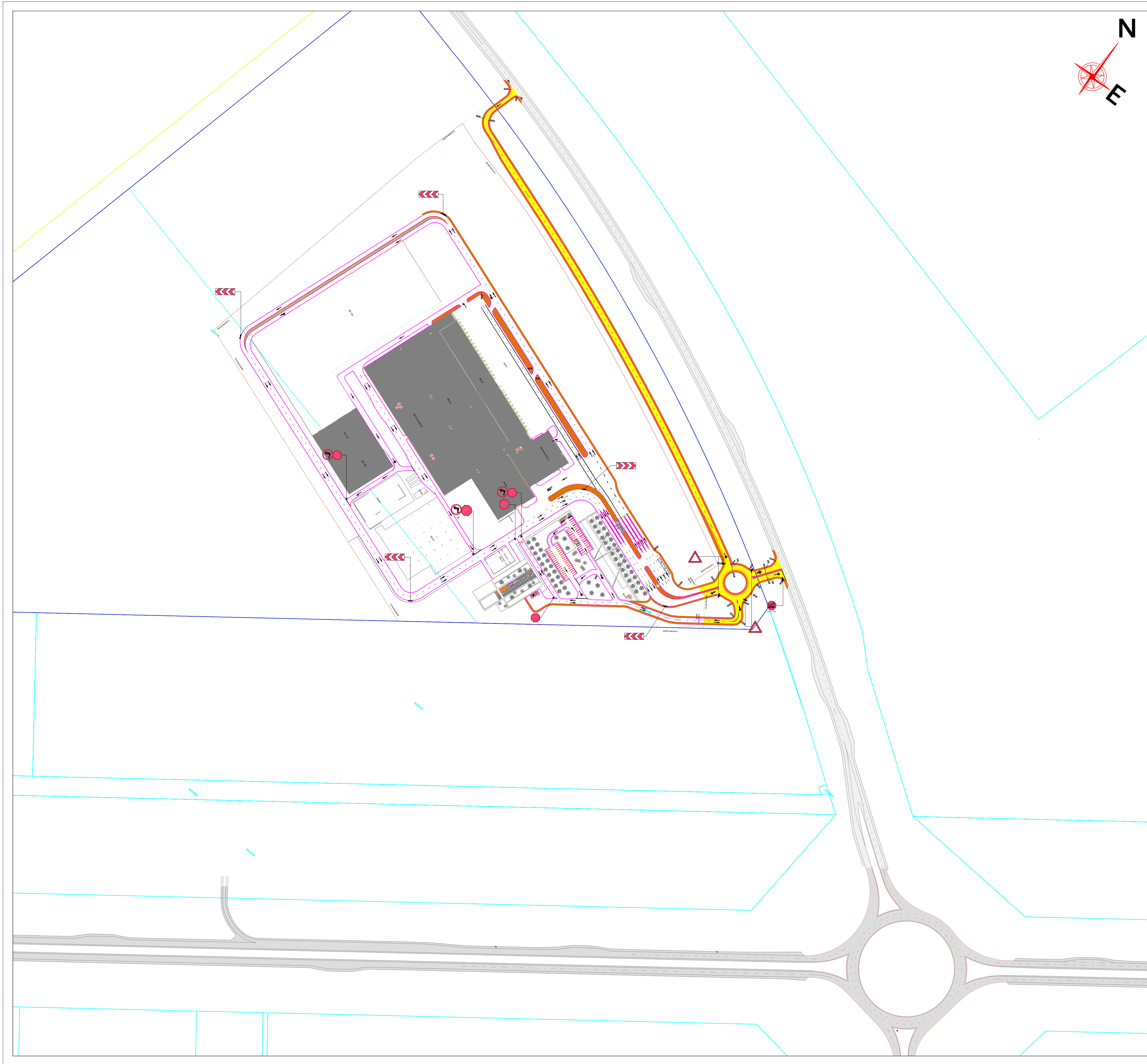
Circulation Plans





Rear-Load Garbage Truck

	units
Width	: 2.44
Track	: 2.44
Lock to Lock Time	: 6.0
Steering Angle	: 27.4



- NOTES
- ALL DIMENSIONS AND LEVELS ARE IN METERS UNLESS OTHERWISE NOTED.
 - THIS DRAWING CANNOT BE USED FOR CONSTRUCTION PURPOSES.
 - THE CLIENT/ OWNER UNDERSTANDS THAT THE SHOWN CONFIGURATIONS MAY CHANGE DURING DETAIL DESIGN STAGE.
 - THE CLIENT/ OWNER WILL APPOINT AN RTA- APPROVED ROADS CONSULTANT TO PREPARE, SUBMIT AND OBTAIN THE NECESSARY APPROVALS ACCORDING TO RTA AND OTHER RELEVANT AUTHORITIES STANDARDS AND MANUALS DURING DETAIL DESIGN STAGE
 - THE TIS CONSULTANT CONFIRMS THAT THE SHOWN CONFIGURATIONS ARE ACCORDING TO RTA RELEVANT STANDARDS UNLESS CLEARLY HIGHLIGHTED ON THE DRAWING.

APPROVAL LETTER REF NO:

TRAFFIC DEPARTMENT NAME/SIGN/DATE

ROADS DEPARTMENT NAME/SIGN/DATE

R.O.W DEPARTMENT NAME/SIGN/DATE

CLIENT NAME/CONTACTS/SIGN/DATE



LEAD CONSULTANT NAME/CONTACTS/SIGN/DATE



TRAFFIC CONSULTANT NAME/CONTACTS/SIGN/DATE



TRAFFIC IMPACT STUDY (LEVEL - I)

PROJECT NAME: DUBAI RESOURCE RECOVERY FACILITY (WASTE TO ENERGY PLANT)

RTA TIS NO:		PLOT NO:	6220146
PROJECT LOCATION	WARSAN SECOND	BUILDINGS STATUS	-
BUILDING DESIGN STAGE	-	TMP STATUS	-

Trip Generation												
Code	Land Use	Units/GFA	Qty.	AM			LT			PM		
				In	Out	Total	In	Out	Total	In	Out	Total
621	Medium Industry	100 sqm of GFA	58,089	126	121	246	142	160	302	80	83	163
	TOTAL			126	121	247	142	160	303	80	83	163

- Legend
- PROPOSED UPSTAND CURB
 - PROPOSED PARKING SUPPLY
 - PROPOSED FLUSH CURB
 - PROPOSED ROAD MARKING
 - PROPOSED HEEL CURB
 - PLOT LIMIT
 - R.O.W.
 - PROPOSED ASPHALT
 - PROPOSED INTERLOCKING AREA (60mm)
 - EXISTING ROAD

Parking Demand (DM)	58
Parking Demand (DTGPRM)	208
Parking Supply	69

Drawing Title ACCESS AND CIRCULATION PLAN			Drawing No. RTC - 180672 - 3		
Revision Date & Purpose					
Rev/NO	Date	Approved	Description/Purpose		
PRINTING DATE:			18 AUGUST 2018		
Approved By ARH (Traffic Dept.)		Checked By AR (Traffic Eng.) AM (Road Eng.)		Prepared By GR (Traffic Eng.)	