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FIVEWAYS FRUIT FARM SITE, STANWAY, COLCHESTER, ESSEX

TRANSPORT ASSESSMENT Volume 2: Appendices

REPORT REF. F960-01 PROJECT NO. F960 JUNE 2009

### FIVEWAYS FRUIT FARM SITE, STANWAY, COLCHESTER, ESSEX

# TRANSPORT ASSESSMENT Volume 2: Appendices

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PROJECT NO. F960 JUNE 2009

#### **APPENDICES**

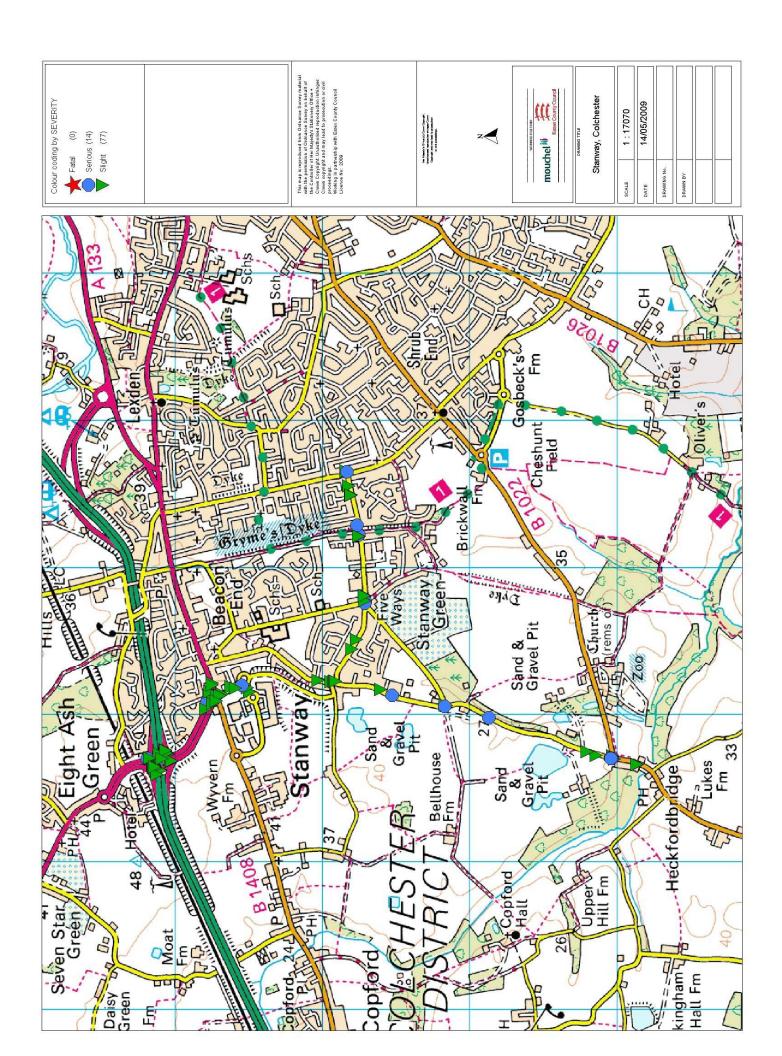
- A. Accident Data
- B. Outline Residential Travel Plan
- C. Census data
- D. 2009 Traffic Survey Results
- E. Results of PICADY capacity assessment: Blackberry Road/Dyers Road junction
- F. Results of PICADY capacity assessment: Blackberry Road/Winstree Road/Peartree Road/Heath Road junction
- G. Results of PICADY capacity assessment: proposed Dyers Road/Heath Road (realigned)/northern site access junction
- H. Results of ARCADY capacity assessment: Straight Road/Dugard Avenue mini roundabout
- I. Results of PICADY capacity assessment: Warren Lane/Dyers Road junction
- J. Results of ARCADY capacity assessment: proposed Warren Lane/Taylor Wimpey site/Western Bypass roundabout
- K. Results of ARCADY capacity assessment: Warren Lane/Blackberry Road mini roundabout
- L. Results of ARCADY capacity assessment: Villa Road/Church
  Road mini roundabout
- M. Results of ARCADY capacity assessment: Stanway Western Bypass/Tollgate West roundabout
- N. Results of ARCADY capacity assessment: Stanway Western Bypass/B1408 London Road roundabout
- O. Results of ARCADY capacity assessment: Stanway Western Bypass/Stane Park/Danny Watts site roundabout
- P. Results of TRANSYT capacity assessment: Eight Ash Green roundabout with full signalisation

#### **DOCUMENT CONTROL SHEET**

REV	ISSUE PURPOSE	AUTHOR	CHECKED	REVIEWED	APPROVED	DATE
	1 <sup>st</sup> Draft for client review	ML/RMA	SAF	SAF	ML	23/06/09
	2 <sup>nd</sup> Draft with client comments	ML/RMA	SAF	SAF	ML	24/06/09
	Final with further client comments	ML/RMA	SAF	SAF	ML	25/06/09

Appendix A

**Accident Data** 



Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E01890404 12/04/2004 Time 1245 Vehicles 2 Casualties 1 Slight

E::94,720 N::22,140 First Road: U Road Type Dual carriageway

Speed limit: 40 Junction Detail: T & Stag Jct 5 Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight: street lighting unknown Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Inattention		Possible
2nd:	Failed to look		Possible
3rd:	Lack of judgement of own path		C
4th:	Surroundings - stationary or parked vehicle		C
5th:	, ,		
6th:			

Other Cause: Precipitating Factor: Failed to Give Way

VEH 2 (CAR) WAS TRAVELLING ALONG WARREN LANE TOWARDS TOLLGATE. THE TRAFFIC IN THE OPPOSITE LANE WAS STATIONARY. THE STATIONARY TRAFFIC HAD LEFT A GAP FOR VEH 1 (CAR) TO PULL OUT OF A JUNCTION. VEH 1 PULLED OUT OF THE JUNCTION TO GO IN THE SAME DIRECTIO N AS VEH 2. VEH 2 HAD TO TAKE EVASIVE ACTION AND SKIDDED AND WENT UP THE KERB TO AVOID HITTING VEH 1. VEH 1 WAS DISPLAYING L PLATES.

Occurred on WARREN LANE APPROX 100M FROM B1022 MALDON ROAD JCN

Vehicle Reference 1 Car Turning right

Vehicle movement from E to N No tow / articulation Entering the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Did not impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver

Non-stop, not hit Breath test Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from S to N No tow / articulation On the main road

On main carriageway Skidded

Location at impact Cleared junction or waiting/parker First impact Hit vehicle:

Hit object in road None Off road: Oth perm objects

Did not leave carr Age of Driver 32 Male

Hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 32 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months

Selection: Notes:

Selected using Build Query: Stanway, Colchester

E02610404 24/04/2004 Time 955 Vehicles 2 Casualties 1 Slight

E: 194,650 N: 125,150 First Road: A 12 Road Type 1

Speed limit: 70 Junction Detail: Roundabout 5

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look		Very Likely
2nd:	Lack of judgement of own path		Very Likely
3rd:	Behaviour - in a hurry		C
4th:	Following too close		C
5th:	-		
6th:			

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

VEH 2 (CAR) APPROACHED THE ROUNDABOUT ON THE SLIP ROAD ON THE A12 NORTHBOUND J/W HALSTEAD ROAD AND YEOMANRY WAY A604. VEH 2 WAITED AT THE ROUNDABOUT TO TURN LEFT. VEH 1 (CAR) DID NOT STOP AND COLLIDED INTO THE REAR OF VEH 2.

Occurred on A12 NORTHBOUND ONSLIP ROAD ROUNDABOUT J/W HALSTEAD ROAD AND ESSEXYEOMANR'

Vehicle Reference 1 Car Going ahead other

Vehicle movement from W to E No tow / articulation Entering the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving roundabout First impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver Male

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from W to E No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving roundabout First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 34 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 34 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E01910404 26/04/2004 Time 1505 Vehicles 2 Casualties 1 Slight

E: 195,060 N: 123,160 First Road: U Road Type Single carriageway

Speed limit: 60 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Looked but did not see		Possible
2nd:	Inattention		Possible
3rd:	Lack of judgement of own path		
4th:	-		
5th:			
6th:			

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

VEH 2 STATIONARY IN WARREN LANE WAITING TO TURN RIGHT INTO DYERS RD. VEH 1 TRAVELLING WARREN LANE TOWARDS TOLLGATE VEH 1 COLLIDED WITH REAR OF VEH 2.

Occurred on WARREN LANE AT IT J/W DYERS RD

Vehicle Reference 1 Car Going ahead other

Vehicle movement from N to S No tow / articulation On the main road

On main carriageway Skidded

Hit object in road None Off road: None

Did not leave carr Age of Driver 55 Female

Not hit and run Breath test Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Car Waiting to turn right

Vehicle movement from S to NE No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 31 Female

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 31 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles 1930 2 Casualties E02110404 28/04/2004 Slight First Road: Road Type E: 95.070 N: :24.780 A 1124 1 Speed limit: Junction Detail: 5 30 B 1408 Roundabout Crossing: Control Facilities: Road surface None Central reservation Dry Daylight:street lights present Fine without high winds Carriageway Hazards: Special Conditions at Site None Place accident reported: DfT Special Projects: Elsewhere Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look		Possible
2nd:	Lack of judgement of own path		Possible
3rd:	3 6		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

VEH 2 (CAR) WAS IN THE LEFT HAND LANE OF ESSEX YEOMANRY WAS STATIONARY AT THE ROUNDABOUT JUNCTION WITH LONDON ROAD. VEH 1 WAS TRAVELLING IN THE SAME DIRECTION BEHIND VEH 2 AND COLLIDED WITH THE REAR OF VEH 2, FAILING TO STOP.

Occurred on ON ROUNDABOUT AT JCN WITH A1124 AND B1408 LONDON ROAD

Vehicle Reference 1 Car Going ahead other

Vehicle movement from NW to SE No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver

Hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from NW to SE No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 53 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 53 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E02100504 01/05/2004 Time 1138 Vehicles 2 Casualties 1 Slight

E: 95,210 N: 24,750 First Road: A 1124 Road Type Single carriageway

Speed limit: 30 Junction Detail: Pri Drive 5 Unclassified

Crossing: Control None Facilities: Zebra crossing Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Faiure to judge other person's path or speed		Very Likely
2nd:	Failed to look		Very Likely
3rd:	Looked but did not see		Possible
4th:	Inexperience of driving		Possible
5th:			
6th:			

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

VEH 2 (CAR) TRAVELLING OUTSIDE LANE OF LONDON ROAD IN DIRECTION OF A12. VEH 1 (MOPED) PULLED OUT OF A DRIVEWAY ONTO LONDON ROAD. TRAFFIC WAS STATIONARY IN THE INSIDE LANE BUT MOVING SLOWING IN OUTSIDE LANE. VEH 1 PULLED INTO THE OUTSIDE LANE AND WAS HI T IN THE SIDE BY VEH 2 CAUSING RIDER TO FALL OFF VEH 1.

#### Occurred on LONDON ROAD BY TOLLGATE RAB

Vehicle Reference 1 Motorcycle 50cc and under Turning right

Vehicle movement from S to W No tow / articulation Entering the main road

9 No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Offside Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 17 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 17 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Overtaking stat vehicle O/S

Vehicle movement from E to W No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 22 Female

Not hit and run Breath test Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles Casualties 1849 2 E02660604 01/06/2004 Slight First Road: Road Type E: 95.230 N: :24.030 U Single carriageway Speed limit: Junction Detail: 5 30 Other Unclassified Crossing: Control Facilities: Road surface None None within 50m Dry Daylight:street lights present Fine without high winds Carriageway Hazards: Special Conditions at Site None Place accident reported: DfT Special Projects: At scene Causation Factor: Participant: Confidence: 1st: Impairment - drugs Very Likely 2nd: 3rd: 4th: 5th: 6th: Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway VEH 2 (CAR) TRAVELLING ALONG VILLA ROAD IN DIRECTION OF LONDON ROAD SLOWS DUE TO A PARKED VEH ON THE O/S. WHILST IT WAS SLOWING VEH 1 (CAR) CAME OUT OF THE JCN OF HOLLY ROAD

AND CONNECTED WITH THE FRONT O/S OF VEH 2.

Occurred on VILLA ROAD TWDS LONDON ROAD 5 YARDS FROM J/W HOLLY ROAD

Vehicle Reference Turning left Vehicle movement from E to N No tow / articulation Leaving the main road No skidding, jack-knifing or overturning On main carriageway Location at impact Hit vehicle: First impact Front Leaving roundabout Off road: Hit object in road None None Age of Driver Did not leave carr 24 Female Breath test Hit and run Failed to provide Driver Postcode: VRM: Driver/rider 1 1 24 Female Severity: Slight Casualty Reference: Vehicle: Age: Not a pupil Postcode Seatbelt Vehicle Reference Going ahead other Car Vehicle movement from S to N No tow / articulation On the main road On main carriageway No skidding, jack-knifing or overturning Hit vehicle: Location at impact First impact Front Jct Approach Hit object in road Off road: None None Age of Driver Did not leave carr 40 Male Breath test Not hit and run Negative Driver Postcode: VRM:

Sel	cidents between dates ection: lected using Build Query		4 and	31/03/2009	(60) me Note Star		ester			
E: 95	· · · · · · · · · · · · · · · · · · ·	First Road:	854 U	Vehicles Ro	3 ad Type	Casualties 1	2		Slight	
Speed	limit: 30 Junction Detail	rtoundaoou			5				Ţ	Jnclassified Jnclassified
	ing: Control None	Fa	cilities:	None with			Roads	surface	Dry	
	ght:street lights present al Conditions at Site None	2			Fin	e without hig Carriageway H		one		
Place	accident reported: A	t scene		DfT Special P	rojects:					
				Ca	ausation					
	Factor:					Participan	t:	Cor	nfid ence :	
1st: 2nd: 3rd: 4th: 5th:	Impairment - drugs		David	ation Frankers					ery Likely	
Othe	er Cause:		Precipita	ating Factor:	Failed to a	avoid Vehicle	or Object	in carria	ageway	
TOI	COLLIDED WITH REALEAVE THE ROAD.  Tred on TOLLGATE 1  Vehicle Reference 1	AR OF VEH 2, ROAD TWDS I Car				ST OF TOLI		ABOUT		G IT
	Vehicle movement from	W to E		No tow / a	rticulation	•	•	the main	n road	
	On main carriageway Location at impact Hit object in road Non	Cleared junction	or wai	N		g, jack-knifin Front		ning	Hit vehicle:	
	Did not leave carr Hit and run Driver Postcode:	Breat VRI		Failed to p	orovide	Age o	of Driver	24	Femal	e
	Casualty Reference:	1 Vehic	le: 1	Age:	24 Fer	nale D	river/rider		Severity:	Slight
	Not a pupil			Postcode			S	eatbelt	-	٥
	Vehicle Reference 2	Car				Going ahe	ead other			
	Vehicle movement from	W to E		No tow / a	rticulation	•		the main	n road	
	On main carriageway Location at impact Hit object in road Non	Cleared junction	or wai		o skidding First impact Off road	g, jack-knifin Back <sup>d:</sup> None	g or overtui		Hit vehicle:	
	Did not leave carr Not hit and run Driver Postcode:	Breat VR	h test M:	Negative		Age o	of Driver	28	Male	
	Casualty Reference:	2 Vehic	le: 2	Age:	28 Ma	le D	river/rider		Severity:	Slight

Postcode

Seatbelt

Not a pupil

TRAFFMAP INTERPRETED LISTING Run on: 14/05/2009

AccsMap - Accident Analysis System

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 3 Car Going ahead other

On main carriageway No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Back Hit vehicle:

Hit object in road Kerb Off road: None

Did not leave carr Age of Driver 56 Male

Not hit and run Breath test Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E03010604 23/06/2004 Time 1540 Vehicles 2 Casualties 1 Slight

E: 195,060 N: 123,160 First Road: U Road Type Single carriageway

Speed limit: 60 Junction Detail: T & Stag Jct 5 Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight: no street lighting Fine with high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd:	Inattention Faiure to judge other person's path or speed		Very Likely Very Likely
3rd:	Looked but did not see		C C
4th: 5th:	Behaviour - in a hurry		C
6th:			

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

### VEH 2 (CAR) STATIONARY WAITING TO TURN RIGHT INTO DYERS ROAD. VEH 1 (LGV) TRAVELLING TOWARDS TOLLGATE COLLIDES WITH REAR OF VEH 2.

#### Occurred on WARREN LANE JCN DYERS ROAD

Vehicle Reference 1 Goods 3.5 tonnes mgw and under Going ahead other

Vehicle movement from S to N No tow / articulation On the main road

On main carriageway Skidded

Hit object in road None Off road: None

Did not leave carr Age of Driver 47 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Waiting to turn right

Vehicle movement from S to NE No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 63 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 63 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E03560704 15/07/2004 Time 1632 Vehicles 3 Casualties 5 Slight

E: 95,810 N: 23,710 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causa tion

Factor:	Participant:	Confidence:
Faiure to judge other person's path or speed		Possible
		C
\$ 1.1. <b>§</b> 1.1. 1.1.		
	Factor:  Faiure to judge other person's path or speed Following too close	Faiure to judge other person's path or speed

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

ALL VEHS TRAVELLING TOWARDS STRAIGHT ROAD IN A LINE OF TRAFFIC. VEH 2 AND 3 BEGAN SLOWING AND VEH 2 WAS HIT FROM BEHIND BY VEH 1 AND SHUNTED INTO VEH 3.

Occurred on PEARTREE ROAD 50YARDS FROM J/W FIVEWAYS, TRAVELLING FROM BLACKBERRYROAD

Vehicle Reference 1 Car Going ahead other

Vehicle movement from E to W No tow / articulation On the main road

On main carriageway Skidded

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 56 Male

Not hit and run

Breath test

Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Vehicle Reference Car Going ahead but held up Vehicle movement from to W Е No tow / articulation On the main road On main carriageway No skidding, jack-knifing or overturning First impact Hit vehicle: Location at impact Back Not at, or within 20M of Jct Hit object in road Off road: None None Age of Driver Did not leave carr 31 Female Breath test Not hit and run Negative Driver Postcode: VRM: 2 Casualty Reference: 1 Vehicle: Age: 31 Female Driver/rider Severity: Slight Not a pupil Postcode Seatbelt 2 2 07 Male Passenger Severity: Slight Casualty Reference: Vehicle: Age: Not a pupil Postcode Seatbelt Back seat 3 2 Casualty Reference: Vehicle: 26 Female Passenger Slight Severity: Age: Not a pupil Postcode Seatbelt Front seat 2 07 Casualty Reference: 4 Vehicle: Age: Male Passenger Severity: Slight Not a pupil Postcode Seatbelt Back seat Vehicle Reference 3 Car Going ahead but held up Vehicle movement from to W Е No tow / articulation On the main road On main carriageway No skidding, jack-knifing or overturning Location at impact Hit vehicle: First impact Back Not at, or within 20M of Jct Off road: Hit object in road None None Age of Driver Did not leave carr 52 Female Not hit and run Breath test Negative Driver Postcode: VRM: 5 3 52 Female Driver/rider Casualty Reference: Vehicle: Age: Severity: Slight Not a pupil Postcode Seatbelt

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E03650704 31/07/2004 Time 1700 Vehicles 2 Casualties 1 Slight

E:194,740 N: 125,060 First Road: A 12 Road Type Dual carriageway

Speed limit: 70 Junction Detail: T & Stag Jct 5 A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st: 2nd:	Looked but did not see Failed to look		Possible Possible
3rd:	Following too close		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

VEH 1 EXITING A12 ON OFFSLIP STATIONARY AT J/W A1124 (J26) SOUTHBOUND. VEH 2 IN FRONT OF VEH 1. VEH 1 PULLS AWAY AND HITS REAR OF VEH 2.

Occurred on A12 OFFSLIP J/W A1124

Vehicle Reference 1 Car Turning left

Vehicle movement from E to W No tow / articulation Leaving the main road

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 22 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Turning left

Vehicle movement from E to W No tow / articulation Leaving the main road

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 61 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 61 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months

Selection: Notes:

Selected using Build Query: Stanway, Colchester

E03830804 09/08/2004 Time 1930 Vehicles 2 Casualties 1 Slight

E::94,730 N::25,050 First Road: A 12 Road Type 1

Speed limit: 60 Junction Detail: Roundabout 5 A 1124

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Daylight: street lighting unknown
Special Conditions at Site None
Raining without high winds
Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd:	Faiure to judge other person's path or speed Inattention		Possible Possible
3rd:			
4th:			
5th: 6th:			
oth:			

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

### VEH 2 STATIONARY ON SLIP RD STANWAY, J/W ESSEX YEOMANRY WAY WHEN IT WAS HIT FROM BEHIND BY VEH 1.

#### Occurred on A12 SLIP RD STANWAY EXIT J/W ESSEX YEOMANRY WAY

Vehicle Reference 1 Car Going ahead other

Vehicle movement from E to W No tow / articulation Leaving the main road

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver Male

Not hit and run Breath test Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from E to W No tow / articulation Leaving the main road

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 55 Male

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 55 Male Driver/rider Severity: Slight

Accidents between dates Selection:	01/04/2004	and 31/03/2009 (60	0) months Notes:			
Selected using Build Query	:		Stanway, Colchester			
E04520904 21/09/200		_		1	Slight	
E::94,700 N::25,170 Speed limit: 60 Junction Detail	First Road: l: Roundabout	A 1124 Road Typ	Give way or contro	lled		A 12
Crossing: Control None  Daylight:street lights present Special Conditions at Site Non	Facilii e	None within 501	n Fine without high wi Carriageway Hazard		Dry	
Place accident reported:	t scene	DfT Special Projects	:			
		Causation	1			

	Factor:	Parti	icipant:	Confidence:
1st:	Faiure to judge other person's path or speed			Very Likely
2nd:	Looked but did not see			Very Likely
3rd:	Lack of judgement of own path			
4th:	, ,			
5th:				
6th:				
Otho	Draginitation Footaw			· .

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

VEH 2 STATIONARY AT THE RBT WAITING TO GET ONTO THE SLIP RD OF A12 WHEN VEH 1 FAILED TO STOP IN TIME AND COLLIDED WITH THE REAR OF VEH 2.

Occurred on ESSEX YEOMANARY WAY J/W A12 ON SLIP ON A112

Vehicle Reference Car Waiting to turn left Vehicle movement from N to S No tow / articulation On the main road

No skidding, jack-knifing or overturning On main carriageway

Hit vehicle: Location at impact First impact Offside 2 Cleared junction or waiting/parked

Off road: Hit object in road None None

Age of Driver Did not leave carr 24 Female

Breath test Not hit and run Negative

Driver Postcode: VRM:

Vehicle Reference 2 Waiting to turn left Car

Vehicle movement from N to S No tow / articulation On the main road

No skidding, jack-knifing or overturning On main carriageway

Hit vehicle: Location at impact Offside Cleared junction or waiting/parked First impact

Off road: Hit object in road None None

Did not leave carr Age of Driver Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 69 Female Severity: Slight Age: Passenger

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E04981004 17/10/2004 Time 1435 Vehicles 1 Casualties 2 Serious

E: 94,700 N: 25,190 First Road: A 12 Road Type Single carriageway

Speed limit: 60 Junction Detail: Not within 20m of junction

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Daylight: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Behaviour - careless/thoughtless/reckless		Very Likely
2nd:	Excessive Speed		Very Likely
3rd:	Aggresive driving		Possible
4th:	Lack of judgement of own path		Possible
5th:			
6th:			

Other Cause: Precipitating Factor: Loss of Control of Vehicle

VEH 1 MOVED OUT INT LANE 3 TO OVERTAKE A VEH IN LANE 2 DURING THE MANOUVERE VEH 1 LEFT THE CARRAIGEWAY TO THE N/S AFTER LOSING CONTROL.

Occurred on A12 IPSWITCH TRACK DIRECTLY UNDER JUNCTION 26

Vehicle Reference 1 Car Overtaking nearside

Vehicle movement from N to S No tow / articulation On the main road

On main carriageway Skidded and overturned

Location at impact Not at, or within 20M of Jct First impact Nearside Hit vehicle:

Hit object in road None Off road: None

Nearside Age of Driver 22 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 19 Male Passenger Severity: Serious

Not a pupil Postcode Seatbelt

Back seat

Casualty Reference: 2 Vehicle: 1 Age: 22 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E05231004 30/10/2004 Time 1610 Vehicles 2 Casualties 1 Slight

E: 94,620 N: 25,100 First Road: A 12 Road Type 1

Speed limit: 70 Junction Detail: Roundabout 5 A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd: 3rd: 4th: 5th:	Faiure to judge other person's path or speed Lack of judgement of own path Inattention		Possible Possible
6th:			

Other Cause: Precipitating Factor: Loss of Control of Vehicle

### VEH 2 STATIONARY AT RBT INDICATING TO TURN RIGHT ONTO A12 TOWARDS CHELMSFORD. VEH 1 THEN COLLIDED WITH THE REAR OF VEH 2 SHUNTING IT FORWARD

Occurred on HALSTEAD RD J/W A12 RBT

Vehicle Reference 1 Car Starting

Vehicle movement from N to E No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver Female

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from N to E No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 38 Male

Not hit and run

Breath test

Not applicable

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 38 Male Driver/rider Severity: Slight

Accidents between dates Selection: Selected using Build Query:	01/04/2004 and	31/03/2009	(60) mor		ter		
E05641104 22/11/2004 E:i95,770 N: !23,710 Speed limit: 30 Junction Detail:	Time 1129 First Road: U Roundabout	Vehicles Roa	1 d Type Giv	Casualties  1  ve way or cor	1 ntrolled	Serious  Unclassifie	ed
Crossing: Control None  Daylight: no street lighting  Special Conditions at Site None  Place accident reported: At s	Facilities:	Central rese	Fine	without high Carriageway Haz		Diy	
		Cau	ısation				
Factor:  1st Faiure to judge other per 2nd: 3rd: 4th: 5th: 6th: Other Cause:		ating Factor: F	ailed to a	Participant:	an (Pedestrian	Very Likely not to blame)	
VEH 1 TRAVELLING WEST A STATION AND HITS CAS WE		E RD TURNS G THE ENTR.	RIGHT (I ANCE TO	NORTH)INT	O FIVE WA	YS PETROL	

Occurred on AGARTREE RD J/W FIVEWAYS PETROL STATION

Vehicle Reference Turning right Car Vehicle movement from Е to W On the main road No tow / articulation No skidding, jack-knifing or overturning On main carriageway Hit vehicle: Location at impact First impact Offside Leaving roundabout Off road: Hit object in road None None Age of Driver Did not leave carr 59 Male Breath test Not hit and run Negative Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 83 Female Pedestrian Severity: Serious

Not a pupil Postcode Seatbelt

In cent carr Direction Unknown

Driver's offside

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E05831204 01/12/2004 Time 2120 Vehicles 3 Casualties 1 Slight

E: 195,120 N: 124,770 First Road: A 1124 Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Impairment - illness		Very Likely
2nd:	Distraction - stress/emotional state of mind		Very Likely
3rd:	Behaviour - careless/thoughtless/reckless		Very Likely
4th:	Aggresive driving		Very Likely
5th:	•		
6th:			

Other Cause: Precipitating Factor: Failed to avoid Vehicle or Object in carriageway

VEH 1 CONTAINING A SUSPECT (ARMED) FOR RAPE HAD BEEN STOPPED BY VEH 2 AND VEH 3.DRIVER OF VEH 1 THEN REVERSED INTO VEH 2 AND THEN DROVE FORWARD INTO VEH 3.

Occurred on TOLLGATE RBT LONDON RD J/W TOLLGATE RD

Vehicle Reference 1 Goods 3.5 tonnes mgw and under Reversing

Vehicle movement from S to N No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 35 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Stopping

Vehicle movement from S to N No tow / articulation On the main road

On main carriageway No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 32 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: Male Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 3 Car Stopping

On main carriageway No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Offside Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 37 Male

Not hit and run Breath test Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00370205 01/02/2005 Time 0822 Vehicles 2 Casualties 2 Serious

E: 95,758 N: 23,714 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: Zebra crossing Road surface Wet/Damp

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	1 1 3		
3rd:			
4th:			
5th:			
6th:			

Other Cause: 1 Precipitating Factor:

### VEH 1 THE PEDAL CYCLIST ENTERED THE ZEBRA PEDESTRIAL CROSSING FROM THE STH SIDE INTO PATH OF VEH 2 WHICH WAS TRAVELLING IN A WESTERLY DIRECTION

Occurred on BLACKBERRY ROAD J/W DYERS ROAD

Vehicle Reference 1 Pedal Cycle Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 12 Male

Not hit and run

Breath test

Not applicable

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 12 Male Driver/rider Severity: Serious

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead other

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 24 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 2 Vehicle: 2 Age: 24 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00430205 02/02/2005 Time 1300 Vehicles 3 Casualties 1 Slight

E::94,748 N::25,066 First Road: A 12 Road Type 1

Speed limit: 40 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: 1 Precipitating Factor:

VEHS INVOLVED WERE ALL ON THE A12 OFF SLIP AT SPRING LANE WAITING TO ENTER ON TO THE RBT, VEH 2 STOPPED BEHIND VEH 3 AT WHICH POINT VEH 1 COLLIDED WITH THE REAR OF VEH 2 PUSHING VEH 2 INTO THE REAR OF VEH 3.

Occurred on A12 OFF SLIP J/W SPRING LANE RBT

Vehicle Reference 1 Car Stopping

Vehicle movement from NW to SE No tow / articulation

Tram/Light rail track No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 30 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from NW to SE No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 41 Male

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 41 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 3 Car Stopping

Vehicle movement from \$NW\$ to \$SE\$  $$No\ tow\ /\ articulation$ 

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver Not traced

Not hit and run Breath test Driver not contacted

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00510205 08/02/2005 Time 1721 Vehicles 3 Casualties 1 Slight

E: 94,745 N: 22,203 First Road: U Road Type Single carriageway

Speed limit: 60 Junction Detail: Not within 20m of junction

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:		Participant:	Confidence:
1st:	Loss of control		Vehicle 1	Very Likely
2nd:	Careless/Reckless/In a hurry		Vehicle 1	Very Likely
3rd:	j			
4th:				
5th:				
6th:				
Othe	er Cause: 1	Precipitating Factor:	I	I

1

VEH 1 TRAVELLING SOUTH ON WARREN LANE LOSES CONTROL WHEN APPROACHING STATIONARY TRAFFIC, RIDER COMES OFF, VEH 1 SLIDES INTO NORTH CARRIAGEWAY AND COLLIDES WITH VEH 2, RIDER OF VEH 1 SLIDES ALONG AND HITS REAR OF VEH 3 WHICH WAS STATIONARY.

Occurred on WARREN LANE 150 METRES NORTH OF B1022 MALDON ROAD

Vehicle Reference 1 Motor Cycle over 125 cc and up to 500cc Going ahead other

Vehicle movement from N to SW No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 22 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 22 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead other

Vehicle movement from SW to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 51 Male

Not hit and run

Breath test

Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 3 Car Going ahead other

Vehicle movement from N to SW No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 52 Male

Not hit and run Breath test Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00570205 08/02/2005 Time 1435 Vehicles 2 Casualties 1 Slight

E: 94,728 N: 25,050 First Road: A 12 Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Junction overshoot	Vehicle 1	Possible
2nd:	Loss of control	Vehicle 1	Possible
3rd:	Careless/Reckless/In a hurry	Vehicle 1	
4th:	•		
5th:			
6th:			

Other Cause: 1 Precipitating Factor:

VEH 2 STATIONARY ON THE A12 SLIP ROAD WAITING TO TURN RIGHT DIRECTION, ESSEX YEOMANRY WAY WHEN VEH 1 TRAVELLING IN THE SAME DIRECTION COLLIDED INTO THE REAR OF VEH 2, DETAILS EXCHANGED AT THE SCENE.

Occurred on A12 J/W A1124 ESSEX YEOMANRY WAY

Vehicle Reference 1 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway Skidded

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Stopping

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 35 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 35 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00960305 15/03/2005 Time 1855 Vehicles 2 Casualties 1 Slight

E: 95,775 N: 23,715 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Crossroads Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
3rd:	Following too close	Vehicle 1	Possible
4th:	Failed to judge other persons path or speed	Vehicle 1	Possible
5th:			
6th:			
		I I	I I

Other Cause: 1 Precipitating Factor:

## VEH 2 WAS STATIONARY ON WINSTREE ROAD J/W PEARTREE ROAD, WAITIGN TO TURN LEFT. VEH 1 COLLIDED INTO REAR OF VEH 2.

#### Occurred on WINSTREE ROAD AT J/W PEARTREE ROAD

Vehicle Reference 1 Car Going ahead other

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Waiting to turn left

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 32 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 32 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E01260305 24/03/2005 Time 1610 Vehicles 2 Casualties 3 Slight

E: 94,695 N: 22,018 First Road: B 1022 Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causa tion

	Factor:	Participant:	Confidence:
1st:	Junction restart	Vehicle 1	Very Likely
2nd:	Failed to look properly	Vehicle 1	Possible
3rd:	1 1 7		
4th:			
5th:			
6th:			

Other Cause: 1 Precipitating Factor:

DRIVER OF VEH 12 TRAVELLING FROM BIRCH TOWARDS COLCHESTER, BEING FOLLOWED BY VEH 1 AS THE DRIVER DROVE INTO WARREN LANE FROM MALDON ROAD HE BRAKED AT A GIVE WAY JUNCTION ALLOWING TRAFFIC TO ENTER WARREN LANE COMING FROM COLCHESTER. DRIVER OF VEH 1 FAILED TO STOP AND COLLIDED WITH THE REAR OF VEH 2

Occurred on B1022 MALDON ROAD J/W WARREN LANE, COLCHESTER

Vehicle Reference 1 Car Starting

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 63 Female

Not hit and run Breath test Not requested

Not a pupil

Back seat

01/04/2004 and 31/03/2009 Accidents between dates (60) months Selection: Notes: Selected using Build Query: Stanway, Colchester Vehicle Reference Car Stopping Vehicle movement from to N S No tow / articulation On main carriageway No skidding, jack-knifing or overturning Hit vehicle: Location at impact First impact Back Jct Approach Hit object in road Off road: None None Age of Driver Did not leave carr 64 Male Breath test Not hit and run Not requested Driver Postcode: VRM: 2 1 Casualty Reference: Vehicle: Age: 63 Female Passenger Severity: Slight Not a pupil Postcode Seatbelt Back seat 2 Casualty Reference: 2 Vehicle: Age: 66 Male Passenger Severity: Slight Not a pupil Postcode Seatbelt Front seat Casualty Reference: 3 Vehicle: 2 Age: 67 Female Passenger Severity: Slight

Postcode

Seatbelt

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E01270305 26/03/2005 Time 1510 Vehicles 2 Casualties 1 Slight

E: 195,447 N: 123,802 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			
011	D 1115 E 1		I .

Other Cause: 1 Precipitating Factor:

VEH 1 DROVE HIS VEH OUT OF HIS DRIVEWAY ON BLACKBERRY ROAD 50 METERS FROM ROSE AVE TO REVERSE BACK INTO HIS DRIVE. WHEN VEH 2 WAS DRIVING ALONG BLACKBERRY ROAD. VEH 2 COLLIDED INTO VEH 1 CAUSING DAMAGE AND INJURY TO DRIVER OF VEH 1.

Occurred on BLACKBERRY ROAD 50 METERS EAST OF ROSE AVE

Vehicle Reference 1 Car Reversing

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 68 Male

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 68 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 19 Male

Not hit and run

Breath test

Driver not contacted

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E:194,679 N: 125,032 First Road: A 1124 Road Type Dual carriageway

Speed limit: 60 Junction Detail: Roundabout Give way or controlled A 12

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd:	Failed to judge other persons path or speed	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

### VEH 2 WAS DRIVING OFF THE A12 ONTO DUEL CARRIAGEWAY WHILST PASSING VEH 1 VEH 1 CHANGED LANE COLLDING WITH VEH 2 BOTH DRIVERS STOPPED & EXCHANGED DETAILS

Occurred on ESSEX YEOMANRY WAY, STANWAY J/W A12

Vehicle Reference 1 Car Changing lane to right

Vehicle movement from S to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Straight ahead at Jun

Age of Driver

Male

Not hit and run Breath test Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving roundabout First impact Nearside Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 45 Female

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 45 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E01570405 27/04/2005 Time 0708 Vehicles 2 Casualties 1 Slight

E: 94,719 N: 22,029 First Road: B 1022 Road Type Single carriageway

Speed limit: 30 Junction Detail: Multi Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Inexperienced or learner driver/rider	Vehicle 1	Possible
2nd:	Failed to look properly	Vehicle 1	Possible
3rd:	1 1 2		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING SOUTH WEST ALONG MALDON ROAD TURNED RIGHT INTO WARREN LANE WITHOUT NOTICING A CYCLIST TRAVELLING NORTH EAST ALONG B1022 MALDON ROAD. THE CYCLIST COULD NOT AVOID THE CAR AND COLLIDED WITH THE REAR NEAR SIDE.

Occurred on B1022 MALDON ROAD AT J/W WARREN LANE

Vehicle Reference 1 Car Turning right

Vehicle movement from E to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 19 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Pedal Cycle Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 35 Male

Not hit and run

Breath test

Not applicable

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 35 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E02470605 11/06/2005 Time 0753 Vehicles 2 Casualties 4 Slight

E::94,638 N: :25,139 First Road: A 12 Road Type 1

Speed limit: 60 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:	
1st:	Loss of control	Vehicle 1	Possible	
2nd:	Careless/Reckless/In a hurry	Vehicle 1	Possible	
3rd:	Careless/Reckless/In a hurry	Vehicle 1		
4th:				
5th:				
6th:				
2nd: 3rd: 4th: 5th:	Loss of control Careless/Reckless/In a hurry Careless/Reckless/In a hurry	Vehicle 1		

Other Cause: Precipitating Factor:

# VEH 2 EXITED A12 UP SLIP & STOPPED AT ROUNDABOUT GIVING WAY TO TRAFFIC .VEH 1 THROUGH DRIVER ERROR FAILED TO STOP COLLIDING WITH REAR OF VEH 2 SHUNTING IT ONTO ROUNDABOUT

### Occurred on A1124 ESSEX YEOMANRY WAY J/W A12 JUNCTION 26,COLCHESTER

Vehicle Reference 1 Goods 3.5 tonnes mgw and under Stopping

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 40 Male

Not hit and run

Breath test

Negative

01/04/2004 and 31/03/2009 Accidents between dates (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Vehicle Reference Car Going ahead but held up Vehicle movement from to N S No tow / articulation On main carriageway No skidding, jack-knifing or overturning Hit vehicle: Location at impact First impact Back 1 Entering roundabout Hit object in road Off road: None None Age of Driver Did not leave carr 65 Male Breath test Not hit and run Negative Driver Postcode: VRM: 2 1 Driver/rider Casualty Reference: Vehicle: Age: 65 Male Severity: Slight Not a pupil Postcode Seatbelt Casualty Reference: 2 Vehicle: 2 77 Male Passenger Severity: Slight Age: Not a pupil Postcode Seatbelt Front seat 3 Vehicle: 2 60 Female Passenger Casualty Reference: Severity: Slight Age: Not a pupil Postcode Seatbelt Back seat Passenger 4 2 72 Female Casualty Reference: Vehicle: Age: Severity: Slight Not a pupil Postcode Seatbelt Back seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles Casualties 1140 2 Serious E03220705 14/07/2005 First Road: Road Type E: 95.083 N: :24.785 A 1124 Speed limit: 30 Junction Detail: Roundabout Give way or controlled

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causa tion

	Factor:	Participant:	Confidence:
1st:	Junction restart	Vehicle 1	Very Likely
2nd:	Failed to look properly	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			
			I

Other Cause: Precipitating Factor:

VEH 2 TRAVELLING FROM LONDON ROAD HAVING TRAVELLED FROM DIRECTION OF COPFORD. WHILST CYCLING AROUND TOLGATE ROUNDABOUT VEH 1, WHICH WAS TRAVELLING ALONG ESSEX YEOMANRY WAY FROM DIRECTION OF A12 FAILED TO SEE CYCLIST AND COLLIDED WITH VEH 2 ON ROUNDABOUT.

Occurred on A1124 ESSEX YEOMANRY WAY AT J/W A1124 TOLLGATE ROUNDABOUT

Vehicle Reference 1 Car Going ahead other

Vehicle movement from NW to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 41 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Pedal Cycle Going ahead other

Vehicle movement from SW to NE No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Nearside Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 49 Male

Not hit and run

Breath test

Not applicable

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 49 Male Driver/rider Severity: Serious

Not a pupil Postcode Seatbelt

A 1124

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E03060705 20/07/2005 Time 1400 Vehicles 1 Casualties 1 Slight

E: 194,760 N: 125,070 First Road: A 12 Road Type Slip road

Speed limit: 70 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causa tion

	Factor:	Participant:	Confidence:
1st:	Tyres illegal, defective or under inflated	Vehicle 1	Very Likely
2nd:	Other	Vehicle 0	Very Likely
3rd:			
4th:			
5th:			
6th:			
011	D 1115 E 1		l .

Other Cause: SUDDEN Precipitating Factor:

TYRE

DEFLATION (BLOWOUT)

VEH1 ONLY VEH INVOLVED, TRAVELLING A12 LONDON BOUND, LEAVES A12 ONTO OFFSLIP TO A1124 R/ABOUT. SUFFERS F/N/S TYRE DEFLATION AND LEAVES C/WAY TO O/S GOING DOWN EMBANKMENT AND COMES TO REST IN LANE 1 OFF MAIN A12 C/WAY.

Occurred on A12 OFFSIP LONDON BOUND TO A1124

Vehicle Reference 1 Goods over 3.5 tonnes and under 7.5 tonn Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: Near / off crash barrier

O/S Age of Driver 54 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 35 Male Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Not car passenger

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E03670805 30/08/2005 Time 1400 Vehicles 2 Casualties 1 Slight

E: 194,701 N: 125,174 First Road: A 12 Road Type Slip road

Speed limit: 70 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causa tion

	Factor:	Participant:	Confidence:
1st: 2nd:	Careless/Reckless/In a hurry	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

### VEH 2 WAS TRAVELLING ALONG THE A12 SOUTHBOUND ON THE SLIP RD J/W ESSEX YEOMANRY WAY A1124 COLCHESTER WHEN DRIVER OF VEH 1 COLLIDED INTO REAR OF VEH 2

Occurred on A12 SLIP RD J/W ESSEX YEOMANRY WAY (A1124)

Vehicle Reference 1 Car Going ahead other

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver Not traced

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 20 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 20 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E03730805 31/08/2005 Time 2015 Vehicles 2 Casualties 2 Slight

E: 195,124 N: 124,735 First Road: A 1124 Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: Zebra crossing Road surface Dry

Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to judge other persons path or speed	Vehicle 1	Possible
2nd:	Inexperienced or learner driver/rider	Vehicle 1	Possible
3rd:	•		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 2 ON ROUNDABOUT PASSING LONDON ROAD EXIT WHEN VEH 1 ENTERED ROUNDABOUT FROM LONDON ROAD CAUSING VEH 2 TO HIT REAR OFFSIDE OF VEH 1.VEH 1 SPUN COMING TO REST ON (LONDON ROAD B1408)

Occurred on A1124 LONDON ROAD J/W TOLLGATE ROAD, COLCHESTER

Vehicle Reference 1 Car Going ahead other

Vehicle movement from W to SE No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 17 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from E to SW No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Front Hit vehicle: 1

Hit object in road None Off road: None

Nearside Age of Driver 33 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 08 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Back seat

Casualty Reference: 2 Vehicle: 2 Age: 33 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E04120905 17/09/2005 Time 1150 Vehicles 2 Casualties 1 Slight

E::94,682 N: :25,026 First Road: A 12 Road Type 1

Speed limit: 40 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Careless/Reckless/In a hurry	Vehicle 1	Possible
3rd:	Failed to look properly	Vehicle 1	Possible
4th:	Careless/Reckless/In a hurry	Vehicle 1	Possible
5th:	•		
6th:			

Other Cause: Precipitating Factor:

VEH 2 WAS TRAVELLING ALONG ESSEX YEOMANRY WAY JUNCTION WITH A12 ROUNDABOUT.VEH 2 WAS STATIONARY WAITING FOR TRAFFIC WHICH WAS ON THE ROUNDABOUT.VEH 1 THOUGHT THAT VEH 2 HAD GONE.VEH 1 MOVED OFF COLLIDING WITH VEH 2

Occurred on A1124 ESSEX YEOMANRY WAY J/W A12 ROUNDABOUT, COLCHESTER

Vehicle Reference 1 Car Starting

Vehicle movement from  $\hspace{1cm} E \hspace{1cm} \text{to} \hspace{1cm} W \hspace{1cm} \text{No tow / articulation}$ 

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 40 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 37 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 37 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

 $E04281005 \qquad 05/10/2005 \qquad \text{Time} \qquad 1140 \qquad \text{Vehicles} \qquad 2 \qquad \text{Casualties} \qquad 1 \qquad \qquad \text{Slight}$ 

E:/94,700 N: /25,099 First Road: A 12 Road Type Dual carriageway

Speed limit: 70 Junction Detail: Not within 20m of junction

Not applicable

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: Other object in carriageway

Place accident reported: At scene DfT Special Projects:

Causa tion

	Factor:	Participant:	Confidence:
1st:	Animal or object in carriageway	Vehicle 1	Very Likely
2nd:	, ,		
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

### UNKNOWN VEH 1 DROPPED LOAD OF TIMBER IN CARRIAGEWAY. VEH 2 SKIDDED ON TIMBER & CRASHED INTO NEARSIDE BANK.BOTH VEH'S TRAVELLING LONDON BOUND

Occurred on A12 LONDON TRACK UNDER A1124 ROAD BRIDGE, COLCHESTER

Vehicle Reference 1 Goods over 3.5 tonnes and under 7.5 tonn Going ahead other

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Did not impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Unknown

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from E to W No tow / articulation

On main carriageway Skidded

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road Other object Off road: None

Nearside Age of Driver 29 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 29 Male Driver/rider Severity: Slight

2nd: 3rd: 4th: 5th:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles Casualties 1155 2 E04551005 20/10/2005 Slight First Road: Road Type E: 94.658 N: !25.153 A 1124 Speed limit: Junction Detail: 60 Roundabout Give way or controlled A 12 Crossing: Control Facilities: Road surface None None within 50m Dry Daylight:street lights present Fine without high winds Special Conditions at Site Carriageway Hazards: None Place accident reported: DfT Special Projects: At scene Causation Factor: Participant: Confidence: 1st: Failed to look properly Vehicle 1 Very Likely

6th: Other Cause: Precipitating Factor:

VEH 1 ENTERING SPRING LANE R/A/B FROM A12 SLIP RD DRIVER FAILS TO OBSERVE VEH 2 CYCLIST APPROACHING JUNC & ENTERS R/A/B ACROSS HIS PATH VEH'S COLLIDE

Occurred on EXIT SLIP RD A12 J/W SPRING LANE R/A/B

Vehicle Reference 1 Car Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Offside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 45 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Vehicle Reference 2 Pedal Cycle Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Front Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 67 Male

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 67 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 95,036 N: 24,793 First Road: A 1124 Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction Not applicable

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st: 2nd: 3rd: 4th: 5th:	Failed to look properly Following too close Sudden braking	Vehicle 1 Vehicle 1 Vehicle 2	Possible Possible
6th:			

Other Cause: Precipitating Factor:

# VHE 2 WAS STATIONARY AT THE ABOVE JUNC WAITING TO TRAVEL ROUND THE R/A/B TO GO DOWN THE A1124 LONDON RD VEH 1 COLLIDED WITH THE REAR OF VEH 2 CAUSING DAMAGE

Occurred on ESSEX YOMANARY WAY COLCHESTER 50 M WEST FROM JUNC ON R/A/B LEADING TO A1124 L

Vehicle Reference 1 Car Stopping

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver Male

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 44 Female

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 44 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 95,061 N: 23,169 First Road: U Road Type Single carriageway

Speed limit: 60 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causa tion

	Factor:	Participant:	Confidence:
1st: 2nd:	Poor turn or manoevre	Vehicle 1	Very Likely
3rd:			
4th: 5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 2 TRAVELLING ALONG WARREN LANE FROM DIRECTION OF COLCHESTER.VEH 1 TRAVELLING ALONG WARREN LANE FROM DIRECTION OF TIPTREE.AS VEH 2 REACHES JUNCTION WITH DYERS ROAD, VEH 1 TURNS RIGHT INTO DYERS ROAD

INTO PATH OF VEH 2 & COLLIDES HEAD ON WITH VEH 2

Occurred on WARREN LANE J/W DYERS ROAD, COLCHESTER

Vehicle Reference 1 Car Turning right

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving main road First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 35 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 35 Female Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead other

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Front Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 19 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 2 Vehicle: 2 Age: 19 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 194,634 N: 125,136 First Road: A 1124 Road Type 1

Speed limit: 60 Junction Detail: Roundabout Give way or controlled A 12

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Inexperienced or learner driver/rider	Vehicle 1	Very Likely
3rd:	•		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

V2 & V1 ON OFF SLIP FROM A12 TO JUNC 26 (SOUTH BOUND) V2 PULLED ONTO R/A/B BRAKED SUDDENLY FOR VEH ALREADY ON R/A/B AT SPEED FROM V2'S RIGHT V1 THOUGHT V2 HAD PULLED AWAY & FOLLOWING OUT ONTO R/A/B & RAN INTO REAR OF V2

Occurred on ESSEX YEOMANRY WAY J/W A12 OFF SLIP SOUTH BOUND JUNC 26 (A1124)

Vehicle Reference 1 Car Starting

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 18 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Stopping

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 26 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 26 Female Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 2 Age: 18 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 195,511 N: 123,771 First Road: U Road Type 2

Speed limit: 30 Junction Detail: Pri Drive Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causa tion

	Factor:	Participant:	Confidence:
1st:	Slippery road (due to weather)	Vehicle 2	Possible
2nd:	Poor turn or manoevre	Vehicle 1	Very Likely
3rd:	Failed to look properly	Vehicle 1	Possible
4th:	Stationary or parked vehicle	Vehicle 1	Possible
5th:	Failed to look properly	Vehicle 1	Very Likely
6th:	• • •		

Other Cause: Precipitating Factor:

VEH 2 TRAVELLING TWDS DUGARD AVE FROM DIRECTION OF VILLA RD. VEH 1 HAD BEEN VISITING A LOCAL BAKERY AND PARKED AT THE SIDE OF POST OFFICE. VEH 1 THEN PULLED OUT OF PARKING AREA ONTO BLACKBERRY ROAD FAILING TO SEE VEH 2. VEH 2 COLLIDED WITH O/S OF VEH 1.

Occurred on BLACKBERRY ROAD APP 250 METRES WEST OF WINSTREE ROAD

Vehicle Reference 1 Goods 3.5 tonnes mgw and under Starting

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Offside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 23 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Motor Cycle over 50 cc and up to 125cc Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Front Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 18 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 18 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00190106 25/01/2006 Time 1940 Vehicles 1 Casualties 1 Slight

E: 94,658 N: 21,862 First Road: B 1022 Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction Not applicable

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: no street lighting Other

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd: 3rd: 4th: 5th:	Animal or object in carriageway Swerved Nervous/Uncertain/Panic	Vehicle 1 Vehicle 1 Vehicle 1	Possible Very Likely
6th:			

Other Cause: Precipitating Factor:

VEH 1 WAS TRAVELLING ALONG THE MALDON ROAD IN THE DIRECTION OF COLCHESTER. THE DRIVER CLIPPED THE KERB NEAR HILL ROYAL BUNGALOW. THE VEH THEN STRUCK THE BUNGALOW WALL ROLLED ONTO ITS ROOF THEN CAME TO A HALT BLOCKING THE ROAD

Occurred on B1022 HECKFORD BRIDGE ,MALDON ROAD

Vehicle Reference 1 Car Going ahead other

Vehicle movement from SW to NE No tow / articulation

Vehicle movement from SW to NE No tow / articulation
On main carriageway Overturned

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road None Off road: Oth perm objects

Did not leave carr Age of Driver 33 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 33 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00280106 31/01/2006 Time 1711 Vehicles 2 Casualties 1 Serious

E: 94,699 N: 22,036 First Road: B 1022 Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Darkness: street lighting unknown Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

Factor:	Participant:	Confidence:
Junction overshoot	Vehicle 1	Very Likely
	Factor:  Junction overshoot	

Other Cause: Precipitating Factor:

VEH 1 AT JUNCTION OF NARROW LANE TURNING RIGHT ONTO B1022 TO MALDON, CONTINUED OVER GIVE WAY LINE ONTO B1022. VEH 2 APPROACHING JUNCTION FROM HECKFORDBRIDGE & COLLIDED WITH OFFSIDE OF VEH 1 AS VEH 1 HAD PULLED ONTO MAIN CARRIAGEWAY

Occurred on WARREN LANE J/W B1022 MALDON ROAD

Vehicle Reference 1 Car Turning right

Vehicle movement from N to S No tow / articulation

On main carriageway

No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Offside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 58 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Motor Cycle over 125 cc and up to 500cc Going ahead right bend

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 35 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 35 Male Driver/rider Severity: Serious

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00710206 11/02/2006 Time 0730 Vehicles 2 Casualties 1 Slight

E: 195,220 N: 123,944 First Road: U Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causa tion

	Factor:	Participant:	Confid ence:
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Failed to judge other persons path or speed	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 2 DRIVING FORM CHURCH LANE INDICATING RIGTH TURN INTO WARREN LANE WHEN HALFWAY ACROSS THE R/A/B WHEN VEH 1 APPROACHING FROM WARREN LANE DROVE OVER TOP OF MINI R/A/B & COLLIDED WITH F/O/S OF VEH 2

Occurred on R/A/B VILLA RD / CHURCH LANE STANWAY COLCHESTER ESSEX

Vehicle Reference 1 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway

No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver Male

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Turning right

Vehicle movement from W to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving roundabout First impact Offside Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 22 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 22 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E00770206 27/02/2006 Time 0915 Vehicles 2 Casualties 1 Slight

E::94,740 N: :25,056 First Road: A 12 Road Type 1

Speed limit: 70 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
2nd:			
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

### VEH 2 STOPPED AT TOP OF OFF SLIP FROM A12(S). VEH 1 FAILED TO STOP & COLLIDED WITH REAR OF VEH 2

Occurred on TOP OF OFF SLIP A12(S) J/W ESSEX YEOMANRY WAY

Vehicle Reference 1 Car Waiting to turn left

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 61 Female

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Waiting to turn left

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 40 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 40 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E02290606 30/06/2006 Time 1730 Vehicles 3 Casualties 2 Slight

E::96,494 N::23,807 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Road layout (eg bend, hill crest)	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TURNED RIGHT FROM PARR DRIVE INTO DUGARD AVE AND WAS IN COLLISION WITH VEH 2 BEING DRING ALONG DUGARD AVE FROM HIS LEFT TWDS PEARTREE RD. THE FORCE OF THE COLLISION PUSHED VEH 1 INTO THE OTHER LANE OF DUGARD AVE WHERE IT WAS INVOLVED IN A HEAD ON COLLISION WITH VEH 3 TRAVELLING DUGARD AVE TWDS STRAIGHT RD.

Occurred on DUGARD AVE J/W PARR DRIVE

Vehicle Reference 1 Car Turning right

Vehicle movement from N to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering main road First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 35 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 35 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 1 Age: 09 Male Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Back seat

Vehicle Reference 2 Car Going ahead other

Vehicle movement from E to W No tow / articulation

On main carriageway Skidded

Hit object in road None Off road: None

Did not leave carr Age of Driver 23 Male

Not hit and run Breath test Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 3 Goods 3.5 tonnes mgw and under Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 52 Male

Not hit and run Breath test Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I29350606 30/06/2006 Time 2135 Vehicles 2 Casualties 1 Serious

E: 95,197 N: 24,547 First Road: U Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Road layout (eg bend, hill etc.)	Vehicle 1	Very Likely
2nd:	Cyclist entering road from pavement	Vehicle 1	Very Likely
3rd:	Loss of control	Vehicle 1	Possible
4th:	Distraction outside vehicle	Vehicle 1	Possible
5th:	Careless/Reckless/In a hurry	Vehicle 1	Possible
6th:	Vegetation	Vehicle 1	Possible

VEH 1 WAS RIDEN DOWN GRASS EMBANKMENT ALONG TOLLGATE RD UNABLE TO STOP CAME OFF PAVEMENT INTO RD VEH 2 WHO HAD JUST COME FROM TOLLGATE WEST ONTO THE R/A/B AT TOLLGATE RD SAW VEH 1 COME INTO HIS PATH VEH 2 SWERVED TO AVOID HITTING VEH 1 CAUSING RIDER OF VEH 2 TO COME OFF HIS VEH

Occurred on TOLLGATE RD COLCHESTER R/A/B 15 YRDS FROM J/W TOLLGATE WEST HEADING ALONG TOI

Vehicle Reference 1 Pedal Cycle Going ahead other

Vehicle movement from NE to SW No tow / articulation

On main carriageway Skidded

Location at impact Entering main road First impact Did not impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 15 Male

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Motor Cycle over 50 cc and up to 125cc Going ahead other

Vehicle movement from N to S No tow / articulation

On main carriageway Skidded

Location at impact Cleared junction or waiting/parker First impact Did not impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 17 Male

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 17 Male Driver/rider Severity: Serious

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time 1645 Vehicles Casualties 29/08/2006 2 I34560806 First Road: Road Type E: 96.553 N: !23.821 U Single carriageway Speed limit: 30 Junction Detail: Not within 20m of junction Not applicable Facilities: Crossing: Control Road surface None None within 50m Daylight:street lights present Raining without high winds Special Conditions at Site Carriageway Hazards: Place accident reported: DfT Special Projects: Elsewhere

Causa tion

Slight

None

Wet/Damp

	Factor:	Participant:	Confidence:
1st:	Slippery road (due to weather)	Vehicle 1	Very Likely
2nd:	,		
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING ALONG DUGARD AVE TWDS STRAIGHT ROAD. AS VEH 1 APPROACHED A OUEUE OF STATIONARY TRAFFIC THE DRIVER APPLIED BRAKES, WHICH LOCKED AND VEH 1 SKIDDED ON WET SURFACE INTO REAR OF VEH 2.

Occurred on DUGARD AVE APP 100YDS J/W STRAIGHT ROAD

Vehicle Reference Stopping

Vehicle movement from W to E No tow / articulation

Skidded On main carriageway

Location at impact Hit vehicle: First impact Front 2 Not at, or within 20M of Jct

Off road: Hit object in road None None

Age of Driver Did not leave carr 17 Male

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

1 1 17 Male Slight Casualty Reference: Vehicle: Passenger Severity: Age:

Not a pupil Postcode Seatbelt

Front seat

Vehicle Reference 2 Car Stopping

Vehicle movement from W to E No tow / articulation

No skidding, jack-knifing or overturning On main carriageway

Hit vehicle: Location at impact Not at, or within 20M of Jct First impact Back 1

Off road: Hit object in road None None

Age of Driver Did not leave carr 25 Female

Not hit and run Breath test Driver not contacted

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 195,775 N: 123,714 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: Zebra crossing Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd:	Failed to look properly	Vehicle 1	Very Likely
3rd:			
4th: 5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING NORTH ALONG HEATH ROAD WHEN IT CROSSED THE JCN OF BLACKBERRY AND PEARTREE ROAD TRAVELLING INTO WINSTREE ROAD WHEN VEH 2 TRAVELLING EAST ALONG BLACKBERRY ROAD AND PEARTREE ROAD IN GEN DIRECTION OF SHRUB END COULD NOT AVOID COLLIDING W

ITH THE SIDE OF VEH 1.

Occurred on WINSTREE ROAD JCN BLACKBERRY ROAD

Vehicle Reference 1 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Nearside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 72 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 2 Vehicle: 1 Age: 72 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Front Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 85 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 83 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I40791006 09/10/2006 Time 1055 Vehicles 2 Casualties 1 Slight

E: 94,736 N: 25,056 First Road: A 1124 Road Type 1

Speed limit: 70 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd:	Failed to judge other persons path or speed	Vehicle 1 Vehicle 1	Very Likely
	Failed to look properly		Very Likely
3rd:	Following too close	Vehicle 1	
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

### VEH 2 STATIONARY NEARSIDE LANE ON OFFSLIP JUNCTION TO A1124.VEH 1 DRIVES INTO REAR OF VEH 2

### Occurred on A1124 JTN CHERRYTREE ROUNDABOUT LONDON BOUND OFFSLIP

Vehicle Reference 1 Goods 3.5 tonnes mgw and under Going ahead other

Vehicle movement from  $E \quad \ \ \text{to} \quad W \qquad \qquad \text{No tow / articulation}$ 

On main carriageway Skidded

Hit object in road None Off road: None

Did not leave carr Age of Driver 37 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 37 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Goods 7.5 tonnes mgw and over Going ahead other

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 59 Male

Not hit and run Breath test Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I45301006 23/10/2006 Time 1253 Vehicles 2 Casualties 1 Slight

E: 195,188 N: 124,622 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
2nd:	Aggressive driving	Vehicle 1	Very Likely
3rd:	26		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

CAS 1 CLIPPED BY VEH 1 LEAVING CAR PARK OF FENN WRIGHTS IN TOLLGATE EAST KNOCKING HER OVER THEN MAKES OFF TURNS RIGHT INTO TOLLGATE RD AGAINST NO RIGHT TURN & KEEP LEFT RD DIRECTIONS SCRAPS O/S TO O/S WITH VEH 2 AS IT ENTERS TOLLGATE EAST VEH 1 FAILS TO STOP DAMAGE TO R/O/S DOOR 1/4 & BUMPER & WHEEL VEH 1

Occurred on STANWAY TOLLGATE EAST J/W TOLLGATE RD

Vehicle Reference 1 Car Going ahead right bend

Vehicle movement from E to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Offside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver Male

Hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 43 Female Pedestrian Severity: Slight

Not a pupil Postcode Seatbelt
Location U/K Standing still

In carr not crossing

Vehicle Reference 2 Car Going ahead left bend

Vehicle movement from  $\ \ N$  to  $\ E$   $\ \ No\ tow\ /$  articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Offside Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 41 Male

Not hit and run Breath test Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I44601006 29/10/2006 Time 1350 Vehicles 2 Casualties 2 Slight

E: 95,137 N: 24,681 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction Not applicable

Crossing: Control None Facilities: Zebra crossing Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:	Swerved	Vehicle 2	Possible
4th:	Failed to signal/Misleading signal	Vehicle 2	Possible
5th:	Poor turn or manoevre	Vehicle 1	Possible
6th:	Poor turn or manoevre	Vehicle 2	Possible

VEH 2 TRAVELLING NORTH ALONG TOLLGATE ROAD TWDS A1124 AND B1408 LONDON ROAD. VEH 1 TRAVELLING SAME DIRECTION FILTERING ON OUTSIDE OF TRAFFIC. VEH 2 MOVES TO CENTRE OF LAND. VEH 1 COLLIDES WITH VEH 2.

Occurred on TOLLGATE ROAD 50 M SOUTH J/W A1124 AND B1408 LONDON ROAD.

Vehicle Reference 1 Motorcycle over 500cc Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 24 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 24 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 1 Age: 26 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Not car passenger

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Offside Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 78 Female

Not hit and run

Breath test

Negative

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Notes: **Selection:** 

Selected using Build Query: Stanway, Colchester

Time Vehicles 3 Casualties 6 Serious 1553 152871206 18/12/2006

E: 95.054 N: !23.172 First Road: U Road Type Single carriageway

Speed limit: 60 Junction Detail: T & Stag Jct Unclassified Give way or controlled

Facilities: Crossing: Control Road surface Wet/Damp None None within 50m

Daylight: no street lighting Fine without high winds

Special Conditions at Site Carriageway Hazards: None

Place accident reported: DfT Special Projects: At scene

### Causa tion

	Factor:	Participant:	Confidence:
1st:	Slippery road (due to weather)	Vehicle 1	Possible
2nd:	Defective brakes	Vehicle 1	Possible
3rd:	Travelling too fast for conditions	Vehicle 1	Possible
4th:	Failed to judge other persons path or speed	Vehicle 1	Possible
5th:	Sudden braking	Vehicle 1	Possible
6th:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely

VEH 1 TRAVELLING WARREN LANE TOWARDS VILLA RD VEH 2 TRAVELLING OPPOSITE DIRECTION VEH 3 STATIC WARREN LANE WAITING TO TURN RIGHT INTO DYERS RD VEH 1 APPROACHES REAR OF VEH 3 BRAKING SHARPLY VEH 1 LOSES CONTROL VEH 3 CLEARS JUNC VEH 1 PASSINTO OPPOSIT E CARRIAGEWAY & COLLIDES WITH VEH 2 HEAD ON

#### Occurred on WARREN LANE J/W DYERS RD 1/2 MILE NRTH OF B1022 MALDON RD

Vehicle Reference		Car				(	Going ahead other			
Vehicle movement from	S	to N		Single tr	ailer					
On main carriageway Location at impact Hit object in road No		proach				ed impact Off road:	Front None		Hit vehicle:	2
Did not leave carr Not hit and run Driver Postcode:			eath test RM:	Negativo	e		Age of Driver	23	Male	
Casualty Reference:	1	Veh	nicle: 1	Age:	22	Femal	e Passenger		Severity:	Serious
Not a pupil				Postcoo	le			Seatbelt		
Back seat										
Casualty Reference:  Not a pupil	2	Veh	nicle: 1	Age:	23	Male	Driver/rid	er Seatbelt	Severity:	Slight
Not a pupii				Posicoo	ie			Seattleft		
Casualty Reference:	3	Veh	nicle: 1	Age:	01	Male	Passenger		Severity:	Slight
Not a pupil Front seat				Postcoo	le			Seatbelt		
Casualty Reference:	4	Veh	nicle: 1	Age:	00	Femal	e Passenger		Severity:	Slight
Not a pupil Back seat				Postcoo	le			Seatbelt		

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Vehicle Reference Car Going ahead other Vehicle movement from to S No tow / articulation On main carriageway No skidding, jack-knifing or overturning Location at impact First impact Front Jct Approach Hit object in road Off road: None None Age of Driver Did not leave carr Breath test Not hit and run Negative Driver Postcode: VRM:

Not a pupil Postcode Seatbelt 6 Vehicle: 2 01 Male Passenger Severity: Serious Casualty Reference: Age:

36

Female

Hit vehicle:

36

Driver/rider

Female

Severity: Slight

1

Not a pupil Postcode Seatbelt

Age:

Front seat

Casualty Reference:

Vehicle Reference 3 Car Waiting to turn right

2

Vehicle:

Vehicle movement from No tow / articulation S to E

On main carriageway No skidding, jack-knifing or overturning

Hit vehicle: Location at impact First impact Did not impact Jct Approach

Off road: Hit object in road None None

Did not leave carr Age of Driver Female

Breath test Not hit and run Driver not contacted

Driver Postcode: VRM:

5

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I55691206 20/12/2006 Time 0730 Vehicles 2 Casualties 1 Slight

E: 195,107 N: 124,727 First Road: A 1124 Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Frost/Ice

Daylight:street lights present Fog or mist

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Slippery road (due to weather)	Vehicle 1	Very Likely
2nd:	Rain, sleet, snow, or fog	Vehicle 1	Possible
3rd:	, , , ,		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

## VEH 2 STATIONARY AT ENTRANCE TO ROUNDABOUT. VEH 1 BEHIND VEH 2. VEH 1 MOVED OFF AND STRUCK REAR OF VEH 2.

Occurred on TOLLGATE ROAD ROUNDABOUT J/W A1124

Vehicle Reference 1 Car Starting

 $\begin{tabular}{lll} Vehicle movement from & S & to & N & No tow / articulation \\ \end{tabular}$ 

On main carriageway Skidded

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 40 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 42 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 17 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I04760107 05/01/2007 Time 1905 Vehicles 1 Casualties 1 Serious

E:194,977 N: 222,870 First Road: U Road Type Single carriageway

Speed limit: 60 Junction Detail: Not within 20m of junction

Not applicable

Crossing: Control None Facilities: None within 50m Road surface Dry

Darkness: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd:	Failed to look properly Failed to judge vehicles path or speed	Casualty 1 Casualty 1	Very Likely Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 WAS TRAVELLING NORTH ALONG WARREN LANE TWDS J/W DYERS ROAD. CAS 1 WAS CROSSING WARREN LANE FROM EAST TO WEST. CAS 1 CROSSED TO THE CENTRE OF THE ROAD FOLLOWING TWO OTHER PEDESTRIANS. VEH 1 SAW THESE PEDESTRIANS AND SLOWED. AS VEH 1 NEARED CAS 1 SHE DARTED ACROSS THE ROAD AND WAS STRUCK BY VEH 1.

Occurred on WARREN LANE, 300 M SOUTH OF J/W DYERS ROAD

Vehicle Reference 1 Car Going ahead other

Vehicle movement from SE to NW No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 25 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 16 Female Pedestrian Severity: Serious

Not a pupil Postcode Seatbelt
In cent carr SW bound

Driver's offside

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I04220107 30/01/2007 Time 1130 Vehicles 2 Casualties 1 Slight

E: 95,130 N: 24,700 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction

Not applicable

Crossing: Control None Facilities: None within 50m Road surface

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

Dry

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	1 1 3		
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

### VEH 2 STATIONARY IN QUE OF TRAFFIC TRAVELLING TOLLGATE RD DIRECTION OF TOLLGATE VEH 1 TRAVELLING BEHIND VEH 2 VEH 1 STRIKED REAR OF VHE 2

Occurred on TOLLGATE RD 30 M TOLGATE SIDE J/W A1124

Vehicle Reference 1 Goods 3.5 tonnes mgw and under Going ahead other

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 20 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 49 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 49 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E::96,223 N::23,754 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Failed to judge vehicles path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING TOWARDS WINSTREE RD THEN TURNED RIGHT INTO INDUSTRAIL ESTATE OPPOSITE MOSS RD INTO PATH OF VEH 2 VEH 2 COLLIDED WITH REAR N/S OF VEH 1 SPINNING IT AROUND CONTINUING ON THEN HAVING HEAD ON WITH VEH 3

Occurred on DUGARD AVE J/W MOSS RD

Vehicle Reference 1 Car Turning right

Vehicle movement from E to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving main road First impact Nearside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 37 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 60 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 60 Female Driver/rider Severity: Serious

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 3 Car Going ahead other

Vehicle movement from  $E \hspace{0.5cm} \text{to} \hspace{0.5cm} W \hspace{1.5cm} \text{No tow / articulation}$ 

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 47 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 2 Vehicle: 3 Age: 47 Female Driver/rider Severity: Serious

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I13610307 31/03/2007 Time 1400 Vehicles 2 Casualties 2 Slight

E: 195,137 N: 124,742 First Road: A 1124 Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled B 1408

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Driver using mobile phone	Vehicle 1	Possible
3rd:	Careless/Reckless/In a hurry	Vehicle 1	
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

### VEH 2 WAS STATIONARY ON A1124 INTENDING TO TURN LEFT INTO TOLLGATE RD VEH 1 HAS FAILED TO BRAKE & HAS RUN INTO THE REAR OF VHE 2

Occurred on R/A/B JUNC OF A1124/B1408

Vehicle Reference 1 Car Going ahead other

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver Female

Not hit and run Breath test Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 41 Female

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 41 Female Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 2 Age: 70 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I13160407 05/04/2007 Time 1309 Vehicles 2 Casualties 2

E: 95,200 N: 24,750 First Road: A 1124 Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction Not applicable

Crossing: Control None Facilities: Zebra crossing Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causa tion

Slight

	Factor:	Participant:	Confidence:
1st:	Following too close	Vehicle 1	Possible
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:	Careless/Reckless/In a hurry	Vehicle 1	
4th:	·		
5th:			
6th:			

Other Cause: Precipitating Factor:

### VEH 2 TRAVELLING ALONG A1124 TWDS COLCHESTER WHEN VEH 1 STRUCK REAR OF VEH 2 WHILST TRAVELLING IN THE SAME DIRECTION.

Occurred on A1124 LONDON ROAD 80 M WEST J/W BARN FIELDS

Vehicle Reference 1 Goods over 3.5 tonnes and under 7.5 tonn Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 50 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 43 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 43 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 2 Age: 10 Male Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

 $E: 96,651 \qquad \text{N: } 23,842 \qquad \qquad \text{First Road:} \qquad \qquad U \qquad \qquad \text{Road Type} \qquad 1$ 

Speed limit: 30 Junction Detail: Mini roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Disobeyed Give Way or Stop sign or markings	Vehicle 1	Very Likely
2nd:	, , , , , , , , , , , , , , , , , , , ,		
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

# VEH 1 TRAVELLING STRAIGHT ROAD TOWARDS LONDON ROAD. VEH 1 TURNING RIGHT FROM DUGARD AVENUE INTO STRAIGHT ROAD. COLLISION OCCURS BETWEEN OFFSIDE OF VEH 2 & FRONT OF VEH 1

Occurred on STRAIGHT ROAD J/W DUGARD AVENUE

Vehicle Reference 1 Goods 7.5 tonnes mgw and over Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway Skidded

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 34 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Turning right

Vehicle movement from W to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Offside Hit vehicle: 1

Hit object in road None Off road: Oth perm objects

Nearside Age of Driver 19 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 19 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I16380407 30/04/2007 Time 1720 Vehicles 1 Casualties 1 Slight

E: 95,177 N: 24,592 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction Not applicable

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Dangerous action in carriageway	Casualty 1	Very Likely
2nd:	Careless/Reckless/In a hurry	Casualty 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 PULLED AWAY IN THE ROAD WHILST CASUALTY ONE WAS STANDING IN THE ROAD AND VEH 1 WING MIRROR COLLIDED WITH CAS 1 VEH 1 TRAVELLING N/W ALONG TOLLGATE ROAD IN GENERAL DIRECTION OF EIGHT ASH GREEN

Occurred on TOLLGATE ROAD 150 YRDS SOUTH OF J/W A1124

Vehicle Reference 1 Car Going ahead other

Vehicle movement from SE to NW No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Did not impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 37 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 34 Female Pedestrian Severity: Slight

Not a pupil Postcode Seatbelt
In carr not crossing Standing still

In carr not crossing

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I17350507 07/05/2007 Time 1620 Vehicles 2 Casualties 1 Slight

E: 195,152 N: 124,765 First Road: A 1124 Road Type Single carriageway

Speed limit: 30 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: Zebra crossing Road surface Wet/Damp

Daylight:street lights present

Special Conditions at Site None

Raining without high winds

Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Inexperienced or learner driver/rider	Vehicle 1	Possible
3rd:	Failed to judge other persons path or speed	Vehicle 1	
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

## VEH 2 STOPPED TO AFFORD PRESEDENCE TO PEDESTRIAN ON ZEBRA CROSSING. VEH 1 COLLIDED WITH REAR OF VEH 2

Occurred on A1124 LONDON ROAD 15yds COLCHESTER SIDE J/W ESSEX YEOMANRY WAY

Vehicle Reference 1 Car Going ahead other

Vehicle movement from W to E No tow / articulation
On main carriageway Skidded

Location at impact Leaving roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 20 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 61 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 61 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes:

Selected using Build Query: Stanway, Colchester

Time 1700 Vehicles Casualties 08/05/2007 Serious I16790507

First Road: U Road Type Single carriageway E: 96.288 N: 123.765 Speed limit: 30 Junction Detail: Not within 20m of junction

Facilities: Crossing: Control Road surface None Central reservation Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site Carriageway Hazards: None

Place accident reported: DfT Special Projects: At scene

Causa tion

Not applicable

	Factor:	Participant:	Confidence:
1st: 2nd: 3rd: 4th: 5th: 6th:	Failed to look properly Failed to judge other persons path or speed Failed to look properly Failed to judge vehicles path or speed	Vehicle 1 Vehicle 1 Casualty 1 Casualty 1	Possible Possible Possible Possible

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING ALONG DUGARD AVENUE TOWARDS LEFT HAND JUNCTION WITH OAKLANDS AVENUE.CASUALTY 1 CROSSING DUGARD AVENUE FROM FOOTPATH TO THE RIGHT OF VEH 1.VEH 1 STRUCK CASUALTY 1 CAUSING SERIOUS INJURIES

Occurred on DUGARD AVENUE 50m WEST OF J/W OAKLANDS AVENUE

Vehicle Reference Going ahead other

Vehicle movement from to E W No tow / articulation

Skidded On main carriageway

Hit vehicle: Location at impact First impact Front Not at, or within 20M of Jct

Hit object in road Off road: None None

Age of Driver Did not leave carr 19 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

> 79 Female Pedestrian 1 1 Severity: Serious Casualty Reference: Vehicle: Age:

Not a pupil Postcode Seatbelt N bound In cent carr

Driver's offside

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I19470507 23/05/2007 Time 1148 Vehicles 2 Casualties 4 Serious

E: 95,129 N: 23,528 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction

Not applicable

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Exceeding speed limit	Vehicle 1	Very Likely
2nd:	Impaired by alcohol	Vehicle 1	Very Likely
3rd:	Impaired by drugs (illicit or medicinal)	Vehicle 1	
4th:	,		
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING WARREN LANE NORTH TWDS TOLLGATE. VEH 2 TRAVELLING IN OPPOSITE DIRECTION. WHILST NEGOTIATING A RIGHT HAND BEND DRIVER OF VEH 1 LOST CONTROL, CROSSED TO O/S OF ROAD AND COLLDIED WITH VEH 2.

Occurred on WARREN LANE APPROX 400 M NORTH DYERS ROAD

Vehicle Reference 1 Car Going ahead right bend

Vehicle movement from S to N No tow / articulation

On main carriageway Skidded

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 22 Male

Not hit and run Breath test Positive

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 22 Male Driver/rider Severity: Serious

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 1 Age: 23 Male Passenger Severity: Serious

Not a pupil Postcode Seatbelt

Back seat

Casualty Reference: 3 Vehicle: 1 Age: 19 Male Passenger Severity: Serious

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 2 Car Going ahead other

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 61 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 4 Vehicle: 2 Age: 61 Male Driver/rider Severity: Serious

Accidents between dates 01/04/2004 and 31/03/2009 (60) months

Selection: Notes:

Selected using Build Query: Stanway, Colchester

E::96,214 N::23,752 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:	J		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 PULLED OUT FROM TRAFFIC QUEUE AND A COLLISION OCCURRED AS VEH 1 MADE ITS WAY ALONG OUTSIDE OF QUEUE AND VEH 2 TURNED RIGHT AT FRONT OF QUEUE.

Occurred on PEARTREE ROAD J/W MOSS ROAD

Vehicle Reference 1 Car Overtaking stat vehicle O/S

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 29 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Other motor vehicle Waiting to turn right

Vehicle movement from S to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 30 Male

Not hit and run

Breath test

Not applicable

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 30 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I28120707 17/07/2007 Time 1530 Vehicles 2 Casualties 1 Slight

E: 195,125 N: 124,714 First Road: A 1124 Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Poor turn or manoevre	Vehicle 1	Very Likely
2nd:	Inexperienced or learner driver/rider	Vehicle 1	Very Likely
3rd:	1		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEHICLE 1 TURNING LEFT ONTO TOLLGATE ROAD FROM LONDON ROAD. VEHICLE 2 TRAVELLING TOLLGATE ROAD TOWARDS LONDON ROAD ROUNDABOUT. VEHICLE 1 VEERS WIDE ON LEAVING ROUNDABOUT AND STRIKES FRONT OF VEHICLE.

Occurred on TOLLGATE ROAD, 15 METERS TOLLGATE SIDE J/W LONDON ROAD.

Vehicle Reference 1 Motorcycle 50cc and under Turning left

Vehicle movement from E to S No tow / articulation

On main carriageway

No skidding, jack-knifing or overturning

Location at impact Cleared junction or waiting/parker First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 16 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 16 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 65 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E::94,703 N::22,044 First Road: B 1022 Road Type Single carriageway

Speed limit: 30 Junction Detail: Multi Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Dazzling sun	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEHICLE 2 WARREN LANE TOWARDS STANWAY AFTER TURNING RIGHT FROM MALDON ROAD. VEHICLE 1 AT GIVE WAY ON WARREN LANE FACING TOWARDS STANWAY. VEHICLE 1 MOVES OUT FROM GIVE WAY COLLIDING WITH VEHICLE 2.

Occurred on WARREN LANE JUNCTION B1022 MALDON ROAD.

Vehicle Reference 1 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering from slip road First impact Offside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 41 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Motorcycle over 500cc Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering main road First impact Nearside Hit vehicle: 1

Hit object in road None Off road: None

O/S Age of Driver 37 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 37 Male Driver/rider Severity: Serious

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I34840807 29/08/2007 Time 0940 Vehicles 2 Casualties 1 Slight

E: 194,734 N: 125,055 First Road: A 12 Road Type Slip road

Speed limit: 40 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causa tion

	Factor:	Participant:	Confid ence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEHICLE 1 EXITING A12 COLLIDED WITH REAR OF VEHICLE 2 AT THE TOP OF THE SLIP ROAD WHERE VEHICLE 2 WAS INTENDING TO TURN LEFT TOWARDS TOLLGATE.

Occurred on A1124 ESSEX YEOMANRY WAY J/W A12 (S) SLIP ROAD (EXIT)

Vehicle Reference 1 Car Going ahead but held up

Vehicle movement from NE to SW No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering from slip road First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 34 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from NE to SW No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving main road First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 50 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 50 Female Driver/rider Severity: Slight

3rd: 4th: 5th: 6th:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles Casualties 1210 2 I36100907 08/09/2007 Slight First Road: Road Type E: 94.653 N: 25.149 A 12 Slip road Speed limit: Junction Detail: 60 Slip Road A 1124 Give way or controlled Crossing: Control Facilities: Road surface None None within 50m Dry Daylight:street lights present Fine without high winds Carriageway Hazards: Special Conditions at Site None Place accident reported: DfT Special Projects: Elsewhere Causation Factor: Participant: Confidence: 1st 2nd:

Other Cause: Precipitating Factor:

VEHS 1 AND 2 WERE TRAVELLING EASTBOUND ALONG ABOVE LOCATION. VEH 2 WAS WAITING TO JOIN RAB. VEH 1 WAS DIRECTLY BEHIND VEH 2. VEH 1 PULLED AWAY COLLIDING WITH REAR OF VEH 2.

Occurred on A12 AT J/W E A1124 ESSEX YEOMANRY WAY

Vehicle Reference 1 Car Starting

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering from slip road First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver Male

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering from slip road First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 49 Female

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 49 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 196,655 N: 123,841 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Mini roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Disobeyed automatic traffic signal	Vehicle 1	Very Likely
2nd:	Junction overshoot	Vehicle 1	Possible
3rd:	Failed to judge other persons path or speed	Vehicle 1	
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING LEXDEN STRAIGHT ROAD TOWARDS LONDON ROAD.VEH 2 LEXDEN STRAIGHT ROAD TOWARDS SHRUB END.AT THE MINI ROUNDABOUT JUNCTION WITH DUGARD AVENUE VEH 2 STOPS GIVES WAY TO RIGHT TO LET A SMALL SILVER CAR ACROSS MINI ROUNDABOUT.VEH RIGHT WAS CL EAR VEH 2 PROGRESSED RIGHT ONTO ROUNDABOUT.VEH 1 FAILED TO GIVE WAY HITTING VEH 2 ON THE NEARSIDE PASSENGER SIDE

Occurred on STRAIGHT RD J/W DUGARD AVENUE

Vehicle Reference 1 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 33 Male

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Car Turning right

Vehicle movement from N to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Nearside Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 38 Female

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 38 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I45331007 30/10/2007 Time 1545 Vehicles 2 Casualties 1 Slight

E: 194,683 N: 125,025 First Road: A 12 Road Type 1

Speed limit: 40 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causa tion

	Factor:	Participant:	Confidence:
1st:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
2nd:	Failed to look properly	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEHICLE 1 WAS TRAVELLING BEHIND VEHICLE 2. VEHICLE 2 STOPPED AT ROUNDABOUT, AND VEHICLE 1 COLLIDED WITH REAR END OF VEHICLE 2.

Occurred on A1124 AT ROUNDABOUT WITH J/W A12.

Vehicle Reference 1 Car Stopping

Vehicle movement from Park to Parked No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 71 Male

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from Park to Parked No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 57 Female

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 57 Female Driver/rider Severity: Slight

Accidents between dates  Selection: Selected using Build Query:	01/04/2004 and 31/0	Notes:	hs ay, Colchester		
I46071107 12/11/2007 E:i94,731 N: !25,110 Fir	Time 0711 V st Road: A 12 oundabout	Vehicles 2 Control Road Type 1	Casualties 1 way or controlled	Slight	A 112
Crossing: Control None  Darkness: street lights present and lit Special Conditions at Site None  Place accident reported: At scene			Road surfa without high winds rriageway Hazards: None	Diy	
Place accident reported: At scene	, Dii	Special Flojects.			
Factor:		Causation	Participant:	Confidence:	
Failed to look properly Following too close  3rd: 4th: 5th: 6th:			Vehicle 1 Vehicle 1	Very Likely Very Likely	
VEHICLE 1 FAILS TO SEE VEHIC CLE 2 CAUSING DAMAGE AND Occurred on ESSEX YEOMANE Vehicle Reference 1	INJURY TO VEHIC	LE AND DRIVER 1. NCTION WITH THI			
Vehicle movement from S On main carriageway Location at impact Enterin Hit object in road None	to N No	o tow / articulation No skidding, ja First impact Off road:	nck-knifing or overturnin Front None	g Hit vehicle:	2
Did not leave carr Not hit and run Driver Postcode:	Breath test No.	egative	Age of Driver 49	) Male	
Vehicle Reference 2	Car		Going ahead but held up		
Vehicle movement from S	to N	tow / articulation			
On main carriageway Location at impact Mid Ju: Hit object in road None	nction - on roundabou		ick-knifing or overturnin Back None	Hit vehicle:	1
Did not leave carr Not hit and run Driver Postcode:	Breath test No VRM:	egative	Age of Driver 36	6 Male	
Casualty Reference: 1	Vehicle: 2	Age: 36 Male	Driver/rider	Severity:	Slight

Postcode

Seatbelt

Not a pupil

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes:

Selected using Build Query: Stanway, Colchester

Time Vehicles Casualties 0830 2 I48291107 23/11/2007 Slight

First Road: Road Type E: 95.220 N: !23.922 U

Speed limit: Junction Detail: 30 Mini roundabout Unclassified Give way or controlled

Facilities: Crossing: Control Road surface Dry None None within 50m

Daylight: no street lighting Fine without high winds

Carriageway Hazards: Special Conditions at Site None

Place accident reported: DfT Special Projects: Elsewhere

#### Causation

	Factor:	Participant:	Confid ence:
1st:	Failed to look properly	Vehicle 1	Possible
2nd:	Failed to judge other persons path or speed	Vehicle 1	Possible
3rd:	Sudden braking	Vehicle 2	Possible
4th:	Swerved	Vehicle 2	Possible
5th:	Inexperienced or learner driver/rider	Vehicle 2	Possible
6th:	-		

Other Cause: Precipitating Factor:

VEHICLE 2 TRAVELLING ALONG VILLA ROAD IN DIRECTION OF BEACON END. VEHICLE 2 RODE OVER MINI ROUNDABOUT, IT WAS CLEAR, APPROACHED 2ND MINI ROUNDABOUT, IT WAS CLEAR TO THE RIGHT AND PROCEEDED TO GO STRIAGHT OVER ROUNDABOUT. VEHICLE 1 PULLED OUT FROM VEH ICLE 2'S LEFT SIDE CAUSING VEHICLE 2 TO BRAKE AND SLIDE ACROSS ROAD, NO IMPACT BETWEEN VEHICLES.

Occurred on VILLA ROAD, J/W CHURCH LANE ROUNDABOUT.

Vehicle Reference 1 Car Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit vehicle: Location at impact First impact Did not impact Entering roundabout

Off road: Hit object in road None None

Did not leave carr Age of Driver Male

Not hit and run Breath test Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Motorcycle 50cc and under Going ahead other

to Ν

On main carriageway Skidded

S

Location at impact First impact Hit vehicle: Did not impact Mid Junction - on roundabout or r

No tow / articulation

Hit object in road Off road: None None

Age of Driver Did not leave carr 16 Male

Breath test Not hit and run Not requested

VRM-Driver Postcode:

Vehicle movement from

Vehicle: 2 16 Male Driver/rider Severity: Slight Casualty Reference: Age:

School pupil to/from school Postcode Seatbelt

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I49091207 01/12/2007 Time 2035 Vehicles 2 Casualties 1 Slight

E::96,490 N::23,809 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Cyclist wearing dark clothing at night	Vehicle 2	Very Likely
2nd:	Failed to look properly	Vehicle 1	Very Likely
3rd:	1 1 3		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING WEST ALONG DUGARD AVENUE IN DIRECTION OF TOLLGATE. VEH 2 TRAVELLING IN THE OPPOSITE DIRECTION IN DIRECTION OF SHRUB END WHEN VEH 1 TURNED IN FRONT OF VEH 2 INTO PARR DRIVE & VEH 2 COLLIDED WITH NEARSIDE OF VEH 1

Occurred on DUGARD AVENUE J/W PARR DRIVE

Vehicle Reference 1 Car Turning right

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Nearside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 45 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Vehicle Reference 2 Motorcycle 50cc and under Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway Skidded

Location at impact Jct Approach First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 17 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 17 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time 1700 Vehicles Casualties 2 150801207 11/12/2007 Slight First Road: Road Type E: 96.492 N: !23.808 U Single carriageway Speed limit: 30 Junction Detail: Other Give way or controlled Unclassified Crossing: Control Facilities: Road surface None None within 50m Wet/Damp Daylight:street lights present Fine without high winds Carriageway Hazards: Special Conditions at Site None Place accident reported: DfT Special Projects: Elsewhere Causation Factor: Participant: Confidence: 1st Vehicle 1 Failed to look properly Very Likely 2nd: 3rd: 4th: 5th: 6th: Other Cause: Precipitating Factor: VEH 2 WAS TRAVELLING ALONG DUGARD AVENUE TOWARDS STRAIGHT ROAD, VEH 1 WAS TRAVELLING DIRECTLY BEHIND VEH 2.VEH 2 STOPPED IN QUEUE OF TRAFFIC.VEH 1 FAILED TO STOP BEHIND VEH 2 & COLLIDED WITH THE REAR END.BOTH VEH'S STOPPED, DETAILS EXCHANGED ALTHOUGH P **OSSIBLY FALSE** Occurred on DUGARD AVENUE J/W PARR DRIVE Vehicle Reference 1 Car Going ahead but held up Vehicle movement from to E W No tow / articulation No skidding, jack-knifing or overturning On main carriageway Location at impact Hit vehicle: First impact Front 2 Mid Junction - on roundabout or r Hit object in road Off road: None None Age of Driver Did not leave carr Male Breath test Not hit and run Driver not contacted Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from \$W\$ to \$E\$ No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 19 Male

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 19 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 96,214 N: 23,755 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Other Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: street lights present and lit

Raining without high winds

Special Conditions at Site None

Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

Factor:	Participant:	Confid ence:
Failed to look properly	Vehicle 1	Very Likely
Failed to judge other persons path or speed	Vehicle 1	Very Likely
Slippery road (due to weather)	Vehicle 2	
	Failed to look properly Failed to judge other persons path or speed	Failed to look properly  Failed to judge other persons path or speed  Vehicle 1  Vehicle 1

Other Cause: Precipitating Factor:

## VEH 2 TRAVELLING TWDS STANWAY. VEH 1 PULLED OUT OF JCN. VEH 2 HAS SWERVED TO AVOID COLLIDING WITH VEH 1 RESULTING IN RIDER COMING OFF VEH.

Occurred on PEARTREE WAY 2 METRES FORM JCN OF MOSS ROAD

Vehicle Reference 1 Car Starting

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 33 Female

Not hit and run Breath test Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Motorcycle 50cc and under Going ahead other

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Front Hit vehicle:

Hit object in road Kerb Off road: None

Did not leave carr Age of Driver 16 Male

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 16 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I03140108 31/01/2008 Time 1430 Vehicles 3 Casualties 1 Serious

E: 96,651 N: 23,835 First Road: U Road Type 1

Speed limit: 30 Junction Detail: Mini roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Possible
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEHICLE 1 CROSSED A ROUNDABOUT COLLIDING WITH VEHICLE 2 PULLING OUT FROM VEHICLE 1'S RIGHT. VEHICLE 1 THEN ACCELERATED OFF AFTER THE COLLISION DRIVING HEAD ON INTO VEHICLE 3.

Occurred on STRAIGHT ROAD J/W DUGARD AVENUE.

Vehicle Reference 1 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Offside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 77 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 77 Female Driver/rider Severity: Serious

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Turning right

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 53 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 3 Bus or coach Stopping

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 35 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I07430208 25/02/2008 Time 0500 Vehicles 2 Casualties 1 Slight

E: 195,225 N: 123,916 First Road: U Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: street lights present and lit Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd: 3rd: 4th: 5th:	Junction overshoot Poor turn or manoevre Failed to judge other persons path or speed	Vehicle 1 Vehicle 1 Vehicle 1	Very Likely Very Likely
6th:			

Other Cause: Precipitating Factor:

VEH 2 WAS TRAVELLING FROM COLCHESTER -> ON VILLA ROAD TWDS WARREN LANE. AS VEH JOINED THE MINI ROUNDABOUT WITH BLACKBERRY ROAD VEH 1, WHICH WAS TRAVELLING ON BLACKBERRY ROAD ONTO WARREN, FAILED TO GIVE WAY AND COLLIDED WITH N/S OF VEH 2 CAUSING IT TO COLLIDE WITH LIT KEEP LEFT BOLLARD AND ROUNDABOUT GIVE WAY SIGN.

Occurred on BLACKBERRY ROAD J/W WARREN LANE

Vehicle Reference 1 Car Turning right

Vehicle movement from E to W No tow / articulation

On main carriageway Skidded

Location at impact Mid Junction - on roundabout or r First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 59 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead other

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Nearside Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 26 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 26 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months

Selection: Notes:

Selected using Build Query: Stanway, Colchester

I23470408 06/04/2008 Time 2044 Vehicles 1 Casualties 1 Slight

E:194,660 N: 21,865 First Road: B 1022 Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction Not applicable

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Travelling too fast for conditions	Vehicle 1	Very Likely
2nd:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
3rd:	·		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEHICLE 1 TRAVELLING ALONG MALDON ROAD IN THE DIRECTION OF COLCHESTER. VEHICLE DOING IN THE EXCESS OF THE SPEED LIMIT AND DRIVER LOSES CONTROL OF THE VEHICLE WHICH WENT OFF ROAD TO THE NEARSIDE THROUGH A WALL AND INTO THE GARDEN OF A PRIVATE HOUSE. V EHICLE ON ITS ROOF, DRIVER GETS OUT WHO IS ONLY OCCUPANT AND VEHICLE CATCHES FIRE.

Occurred on HILL ROYAL HOUSE, B1022, MALDON ROAD, 100 METERS NORTH OF J/W BIRCH ROAD HECKFC

Vehicle Reference 1 Car Going ahead other

Vehicle movement from S to N No tow / articulation

Vehicle movement from S to N No tow / articulation
On main carriageway Overturned

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road Kerb Off road: Tree

Nearside Age of Driver 19 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 19 Male Driver/rider Severity: Slight

2nd: 3rd: 4th: 5th:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles 2001 2 Casualties 2 I13160408 17/04/2008 Slight First Road: Road Type E: 94.645 N: 25.145 A 12 Junction Detail: Speed limit: 40 Roundabout Give way or controlled A 1124 Crossing: Control Facilities: Road surface None None within 50m Dry Darkness: street lights present and lit Fine without high winds Carriageway Hazards: Special Conditions at Site None Place accident reported: DfT Special Projects: At scene Causation Factor: Participant: Confidence: 1st: Failed to look properly Vehicle 1 Very Likely

6th: Other Cause: Precipitating Factor:

VEHICLE 2 TRAVELLING ALONG A12 NORTHBOUND OFF SLIP TOWARDS CHERRY TREE WITH VEHICLE 1 TRAVELLING BEHIND. VEHICLE 2 AND VEHICLE 1 STOP AT ROUNDABOUT. VEHICLE 1 MOVES OFF AND COLLIDES WITH THE REAR OF VEHICLE 2.

Occurred on A12 JUNCTION 26 NORTHBOUND OFFSLIP JUNCTION WITH CHERRY TREE ROUNDABOUT.

Vehicle Reference 1 Goods 3.5 tonnes mgw and under Going ahead other

Vehicle movement from SW to NE No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 42 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from SW to NE No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Hit object in road None Off road: None

Did not leave carr Age of Driver 42 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 42 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 2 Age: 42 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Acc	eidents between dates	01/04/2004 and	31/03/2009	(60) montl	hs		
Selection:				Notes:			
Sel	ected using Build Query:			Stanwa	ay, Colchester		
I1387	70408 21/04/2008	Time 2119	Vehicles	1 (	Casualties	1	Slight
E::95,	,151 N: !24,496	First Road: U	Road	Type Si	ngle carriagew	ay	_
Speed	limit: 30 Junction Detail:	Not within 20m of	junction	Not a	applicable		
Crossi	ng: Control None	Facilities:	None within	50m		Road surfa	ce Dry
Darkn	ness: street lights present an	d lit	Trone within		rithout high wir	nds	3
	l Conditions at Site None				riageway Hazards:		;
Place a	accident reported: At s	cene	DfT Special Proj	ects:			
			Caus	ation			
	Factor:				Participant:		Confidence:
1st: 2nd:	Careless/Reckless/In a hu	urry			Vehicle 1		Very Likely
3rd:							
4th:							
5th:							

VEHICLE 1 TRAVELLING FROM LONDON ROAD TOWARDS SAINSBURY'S, WHEN CLIPPED KERB, SKIDDED AND COLLIDED WITH LAMP POST.

Precipitating Factor:

Occurred on TOLLGATE WEST 300 YARDS SOUTH OF LONDON ROAD.

Vehicle Reference Going ahead left bend Car Vehicle movement from to SW Е No tow / articulation On main carriageway Skidded Hit vehicle: Location at impact First impact Nearside Not at, or within 20M of Jct Off road: Hit object in road None Lamp post Age of Driver Nearside 29 Male Breath test Not hit and run Negative Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 29 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

6th:

Other Cause:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months

Selection: Notes:

Selected using Build Query: Stanway, Colchester

I14980408 27/04/2008 Time 1110 Vehicles 2 Casualties 1 Slight

E: 94,703 N: 25,174 First Road: A 1124 Road Type 1

Speed limit: 60 Junction Detail: Roundabout Give way or controlled A 12

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st: 2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

# VEH 2 DROVE UP TO ROUNDABOUT & STOPPED.VEH 1 TRAVELLING BEHIND VEH 2.DRIVER OF VEH 1 LOOKING TO RIGHT MOVES FORWARD & COLLIDES WITH REAR OF VEH 2 WHICH HAD NOT MOVED

Occurred on A1124 HALSTEAD ROAD J/W RAB JTN 26 A12

Vehicle Reference 1 Car Going ahead other

Vehicle movement from NW to SE No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 72 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 72 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead other

Vehicle movement from NW to SE No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 39 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I18390508 26/05/2008 Time 1941 Vehicles 1 Casualties 3 Serious

E::94,700 N::22,041 First Road: B 1022 Road Type Single carriageway

Speed limit: 60 Junction Detail: T & Stag Jct Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Daylight:street lights present

Special Conditions at Site None

Raining without high winds

Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Slippery road (due to weather)	Vehicle 1	Very Likely
2nd:	Rain, sleet, snow, or fog	Vehicle 1	Very Likely
3rd:	, , , ,		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 TRAVELLING ALONG WARREN LANE IN A SOUTHERLY DIRECTION TOWARDS B1022 MALDON ROAD.DRIVER BRAKED ON APPROACH TO JUNCTION, SKIDDED ON WET ROAD & SLID ONTO CENTRAL RESERVATION HITTING ROAD SIGN

Occurred on WARREN LANE J/W B1022

Vehicle Reference 1 Car Going ahead other

Vehicle movement from  $\phantom{MMMMMMMMMMMMM}N$  to  $\phantom{MMMMMMMMMMMM}N$  to  $\phantom{MMMMMMMMMMM}N$  to  $\phantom{MMMMMMMMM}N$  to  $\phantom{MMMMMMMM}N$  No tow / articulation

On main carriageway Skidded

Hit object in road None Off road: Road sign / ATS

O/S Age of Driver 21 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 21 Female Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 1 Age: 20 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Casualty Reference: 3 Vehicle: 1 Age: 17 Female Passenger Severity: Serious

Not a pupil Postcode Seatbelt

Back seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 194,738 N: 125,060 First Road: A 12 Road Type Slip road

Speed limit: 60 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Junction restart	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 2 WAS STATIONARY AWAITING TO GO ONTO THE A1124 YEOMANRY WAY ON THE OFFSLIP FROM THE A12.VEH 1 WAS BEHIND HER & EXPECTING VEH 2 TO MOVE FORWARDHE HAS MOVED & UNEXPECTEDLY HIT VEH 2

Occurred on A1124 RAB ON ESSEX YEOMANRY WAY J/W OFFSLIP FROM A12 JTN 27

Vehicle Reference 1 Car Going ahead but held up

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 57 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from  $\hspace{1cm} E \hspace{1cm} \text{to} \hspace{1cm} W \hspace{1cm} \text{No tow / articulation}$ 

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 43 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 43 Female Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E::94,754 N::25,066 First Road: A 12 Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Sudden braking	Vehicle 1	Possible
3rd:	5		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEHICLE 2 WAS STOPPED WAITING TO ENTER ROUNDABOUT. VEHICLE 1 APPRAOCHED ROUNDABOUT BEHIND VEHCILE 2. VEHICLE 1 COLLIDED WITH VEHICLE 2.

Occurred on A12 STANWAY SLIP ROAD J/W A12

Vehicle Reference 1 Car Stopping

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver Male

Not hit and run Breath test Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from Park to Parked No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Entering roundabout First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 46 Male

Not hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 46 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 2 Age: Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents bet	tween dates	01/04/2	004 and	31/03/2009	(60) n	nonths			
Selection:					No	ites:			
Selected us	ing Build Query:				Sta	anway, Colches	ster		
125670708	14/07/2008	Time	2040	Vehicles	1	Casualties	1	S	Slight
	N: !24,697	First Road:	U	Roa	d Type	Single carria	geway		
Speed limit: 3	0 Junction Detail:	Not with	in 20m of	junction					
Crossing: Contro	ol None		Facilities:	None within	n 50m		Road s	urface	Dry
Daylight:stree	t lights present					ne without high	winds		,
Special Conditions at Site None						Carriageway Haz	zards: No	one	
Place accident re	ported: At s	scene		DfT Special Pr	ojects:				
					e.				
Factor:				Cal	usation	Participant:		Confi	dence:
1st: Other						Vehicle 1	[	Ver	y Likely
2nd:									<i>y</i> - <i>y</i>
3rd:									
4th:									
5th:									
6th:									
Other Cause:	CHAIN LOCK		Precipit	ating Factor:					
	ON REAR								
	WHEEL								
	FAULTY								

DRIVER OF VEH 1 TRAVELLING ALONG TOLLGATE WEST TOWARDS THE DIRECTION OF MARKS TEY.THE VEH'S CHAIN HAS LOCKED IN PLACE & THE DRIVER HAS LOST CONTROL HE HAS SKIDDED ALONG THE ROAD & COME TO A STOP ON GRASS VERGE

Occurred on TOLLGATE WEST APPROX 30m FROM J/W B1408 LONDON ROAD

Vehicle Reference Going ahead right bend 1 Car Vehicle movement from SE to NW No tow / articulation Skidded and overturned On main carriageway Hit vehicle: Location at impact First impact Did not impact Not at, or within 20M of Jct Hit object in road Off road: None None Age of Driver Nearside 26 Male Breath test Not hit and run Negative Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 26 Male Driver/rider Severity: Slight

(60) months Accidents between dates 01/04/2004 and 31/03/2009 **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles Casualties 0305 2 2 126970708 27/07/2008 Slight First Road: Road Type E: 95.198 N: :24.748 A 1124 Single carriageway Speed limit: Junction Detail: 30 B 1308 Roundabout Give way or controlled Crossing: Control Facilities: Road surface None Pelican, puffin, toucan etc. Dry Darkness: street lights present and lit Fine without high winds Special Conditions at Site Carriageway Hazards: None Place accident reported: DfT Special Projects: At scene Causation Factor: Confidence: Participant: 1st Aggressive driving Vehicle 1 Very Likely 2nd: 3rd: 4th:

Other Cause: Precipitating Factor:

VEHICLES 1 AND 2 TRAVELLING WEST ALONG A1124. VEHICLE 2 IN FRONT OF VEHICLE 1. VEHICLE 1 OVERTAKES VEHICLE 2 AND PULLS IN SHARPLY COLLIDING WITH VEHICLE 2 CAUSING VEHICLE 2 TO LEAVE ROAD OFFSIDE COLLIDING WITH BRICK WALL AND LAMP POST.

Occurred on A1124 LONDON ROAD, 15 METERS EAST ROUNDABOUT B1408 AND ESSEX YEOMANRY WAY.

Vehicle Reference 1 Car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Did not leave carr Age of Driver Not traced

Hit and run

Breath test

Driver not contacted

Driver Postcode: VRM:

Vehicle Reference 2 Taxi/Private hire car Going ahead other

Vehicle movement from S to N No tow / articulation

On main carriageway Skidded

Location at impact Jct Approach First impact Front Hit vehicle: 1

Hit object in road None Off road: Oth perm objects

O/S Age of Driver 35 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 35 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Casualty Reference: 2 Vehicle: 2 Age: 24 Male Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

2

5th: 6th:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles Casualties 03/08/2008 2014 130870808 Slight E: 94.700 N: !25.091 First Road: Road Type A 12 Dual carriageway Speed limit: 70 Junction Detail: Not within 20m of junction Not applicable Facilities: Crossing: Control Road surface None None within 50m Wet/Damp Darkness: no street lighting Raining without high winds Carriageway Hazards: Special Conditions at Site None Place accident reported: DfT Special Projects: At scene Causa tion Factor: Participant: Confidence: 1st: Slippery road (due to weather) Vehicle 1 Very Likely 2nd: 3rd:

Other Cause: Precipitating Factor:

# VEH 1 TRAVELLING A12 TOWARDS LONDON IN LANE ONE OF TWO.VEH 1 LOST CONTROL TO NEARSIDE COLLIDED WITH NEARSIDE VERGE & ROLLED OVER

Occurred on A12 LONDON BOUND UNDERNEATH J/W A1124

Vehicle Reference 1 Car Going ahead other

Vehicle movement from E to W No tow / articulation

On main carriageway Skidded and overturned

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road None Off road: Oth perm objects

Nearside Age of Driver 59 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 59 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

4th: 5th: 6th:

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 94,591 N: 25,125 First Road: A 12 Road Type Slip road
Speed limit: 70 Junction Detail: Not within 20m of junction Not applicable

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st: 2nd: 3rd: 4th: 5th: 6th:	Failed to look properly Failed to judge other persons path or speed Sudden braking Careless/Reckless/In a hurry	Vehicle 1 Vehicle 1 Vehicle 1 Vehicle 1	Possible Very Likely Very Likely Very Likely

Other Cause: Precipitating Factor:

VEHICLE 1 AND 2 TRAVELLING ON SLIP ROAD IN LANE 2 AND APPROACHING ROUNDABOUT. VEHICLE 1 STOPS DUE TO STATIONARY TRAFFIC IN FRONT. VEHICLE 2 SKIDS IN TO THE REAR OF VEHICLE 1.

Occurred on A12 OFFSLIP, IPSWICH BOUND TRACK, STANWAY APPROX 50 YARDS WEST J/W A1124 HALSTE

Vehicle Reference 1 Car Stopping

Vehicle movement from W to E No tow / articulation

On main carriageway Skidded

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 19 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Stopping

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 39 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 11 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I35821008 09/10/2008 Time 1720 Vehicles 2 Casualties 1 Slight

E: 195,225 N: 123,913 First Road: U Road Type 1

Speed limit: 30 Junction Detail: Roundabout Give way or controlled Unclassified

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Aggressive driving	Vehicle 1	Very Likely
2nd:	Illness or disability, mental or physical	Vehicle 2	Possible
3rd:	J, 1 J		
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 1 ENTERING MINI ROUNDABOUT FROM PEARTREE ROAD. VEH 2 ENTERING ROUNDABOUT FROM CHURCH LANE. COLLISION OCCURS BETWEEN FRONT NEARSIDE VEH 1 & FRONT OFFSIDE VEH 2 IN CENTRE OF ROUNDABOUT

Occurred on VILLA ROAD RAB AT J/W PEARTREE ROAD & CHURCH LANE

Vehicle Reference 1 Car Going ahead other

Vehicle movement from N to S No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Front Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 19 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Vehicle Reference 2 Car Turning right

Vehicle movement from E to N No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Offside Hit vehicle: 1

Hit object in road None Off road: None

Did not leave carr Age of Driver 78 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 78 Male Driver/rider Severity: Slight

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

 $101080109 \hspace{1.5cm} 15/01/2009 \hspace{1.5cm} \text{Time} \hspace{1.5cm} 2236 \hspace{1.5cm} \text{Vehicles} \hspace{1.5cm} 1 \hspace{1.5cm} \text{Casualties} \hspace{1.5cm} 1 \hspace{1.5cm} \text{Slight}$ 

E:195,168 N: 123,606 First Road: U Road Type Single carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction

Not applicable

Crossing: Control None Facilities: None within 50m Road surface Wet/Damp

Darkness: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: Other object in carriageway

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Poor turn or manoevre	Vehicle 1	Very Likely
2nd:	Loss of control	Vehicle 1	Very Likely
3rd:	Travelling too fast for conditions	Vehicle 1	
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH TRAVELLING TOWARDS STANWAY UPON NEGOTIATING RIGHT HAND BEND LOSES CONTROL EXITING CARRIAGEWAY TO ITS NEARSIDE HITTING TREES COMING TO A HALT IN THE CARRIAGEWAY.

#### Occurred on WARREN LANE 500 YRDS NORTH J/W DYERS ROAD

Vehicle Reference 1 Car Going ahead right bend

On main carriageway Skidded

Location at impact Not at, or within 20M of Jct First impact Nearside Hit vehicle:

Hit object in road None Off road: Tree

Nearside Age of Driver 19 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 18 Male Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates (60) months 01/04/2004 and 31/03/2009 **Selection:** Notes: Selected using Build Query: Stanway, Colchester Time Vehicles Casualties 0530 2 103690109 30/01/2009 Slight First Road: Road Type E: 95.071 N: :24.745 A 1124 Speed limit: Junction Detail: 30 Unclassified Roundabout Give way or controlled Crossing: Control Facilities: Road surface None None within 50m Wet/Damp Darkness: street lights present and lit Fine without high winds Special Conditions at Site Carriageway Hazards: None Place accident reported: DfT Special Projects: Elsewhere Causation Factor: Participant: Confidence: 1st Vehicle 1 Possible Failed to look properly 2nd: 3rd: 4th: 5th: 6th: Other Cause: Precipitating Factor: VEH 2 ENTERED R/A FROM LONDON RD TRAVELLING WEST. VEH 1 ENTERED R/A FROM TOLLGATE RD AND COLLIDED WITH REAR WHEEL OF VEH 2 RIDER OF VEH 2 WAS THROWN. BOTH PARTIES EXCHANGED TEL NUMBERS, VEH 1 DROVE RIDER OF VEH 2 HOME.DRIVER 1 FAILED TO CONTACT OR AN SWER HIS PHONE. Occurred on R/A JNT LONDON RD AND TOLLGATE RD Vehicle Reference 1 Car Going ahead other Vehicle movement from to E W No tow / articulation No skidding, jack-knifing or overturning On main carriageway Location at impact Hit vehicle: First impact Front 2 Entering roundabout Hit object in road Off road: None None Did not leave carr Age of Driver Male Breath test Not hit and run Driver not contacted Driver Postcode: VRM:

Vehicle Reference 2 Pedal Cycle Going ahead other

Vehicle movement from Е to W No tow / articulation

No skidding, jack-knifing or overturning On main carriageway

Hit vehicle: Location at impact First impact Nearside Entering roundabout

Hit object in road Off road: None None

Did not leave carr Age of Driver 40 Male

Breath test Not hit and run Driver not contacted

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 40 Male Driver/rider Slight Age: Severity:

Not a pupil Seatbelt Postcode

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I03450209 03/02/2009 Time 1245 Vehicles 3 Casualties 1 Slight

E: 195,811 N: 123,718 First Road: U Road Type Dual carriageway

Speed limit: 30 Junction Detail: Not within 20m of junction

Crossing: Control None Facilities: Pelican, puffin, toucan etc. Road surface Wet/Damp

Daylight: no street lighting Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: Elsewhere DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Poor turn or manoevre	Vehicle 1	Very Likely
2nd:	Failed to look properly	Vehicle 1	Very Likely
3rd:	Loss of control	Vehicle 1	Possible
4th:	Nervous/Uncertain/Panic	Vehicle 1	Possible
5th:	Careless/Reckless/In a hurry	Vehicle 1	Very Likely
6th:	Poor turn or manoevre	Vehicle 3	Possible

VEH 2 WAS STATIC AT A/C VEH 1 REVERSED AT SPEED DUE TO A LORRY REVERSING INTO A JUNCTION SLOWLY THAT WAS GETTING CLOSE TO HER VEH.

DETAILS EXCHANGED , PASSENGER IN VEH 2 HAS WHIPLASH. LORRY RECORDED AS VEH 3 ON T28U SHEET.

Occurred on PEARTREE RD, J/W WINSTREE RD 25YRDS

Vehicle Reference 1 Car Reversing

Vehicle movement from E to W No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Back Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 25 Female

Not hit and run

Breath test

Not requested

Driver Postcode: VRM:

Vehicle Reference 2 Car Going ahead but held up

Vehicle movement from Parket Parked No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Front Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 19 Male

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 2 Age: 17 Female Passenger Severity: Slight

Not a pupil Postcode Seatbelt

Front seat

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Vehicle Reference 3 Goods 7.5 tonnes mgw and over Reversing

Vehicle movement from  $\ E$  to  $\ W$  No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Not at, or within 20M of Jct First impact Did not impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 40 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

AccsMap - Accident Analysis System

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

E: 194,643 N: 125,139 First Road: A 12 Road Type 1

Speed limit: 70 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: None within 50m Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confidence:
1st:	Poor turn or manoevre	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEH 2 HAVEING ENTERD FROM A12 LONDON TRACK WAS GOING AROUND R/A ABOVE A12 TO REGAIN AT A12 IPSWICH TRACK. VEH 1 CAME UP BEHIND VEH 2 AND AS IT GOES TO PAST 3RD JCT VEH 1 ATTEMPTS TO PASS ON ITS OFFSIDE AND GO INTO JCT 3. VEH 1 HITS VEH 2 IN REAR OFFS IDE DOOR.

Occurred on A1124 CHERRY TREE R/A AT 8 ASH GREEN OFF SLIP

Vehicle Reference 1 Motorcycle over 500cc Overtaking moving vehicle O/S

Vehicle movement from S to N No tow / articulation

On main carriageway Skidded

Location at impact Mid Junction - on roundabout or r First impact Nearside Hit vehicle: 2

Hit object in road None Off road: None

Did not leave carr Age of Driver 29 Female

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 29 Female Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead right bend

Vehicle movement from S to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Mid Junction - on roundabout or r First impact Offside Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 44 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

AccsMap - Accident Analysis System

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

I08490309 22/03/2009 Time 1330 Vehicles 2 Casualties 1 Slight

E: 95,089 N: 24,720 First Road: A 1124 Road Type Single carriageway

Speed limit: 30 Junction Detail: Roundabout Give way or controlled A 1124

Crossing: Control None Facilities: Zebra crossing Road surface Dry

Daylight:street lights present Fine without high winds

Special Conditions at Site None Carriageway Hazards: None

Place accident reported: At scene DfT Special Projects:

Causation

	Factor:	Participant:	Confid ence:
1st:	Failed to look properly	Vehicle 1	Very Likely
2nd:	Failed to judge other persons path or speed	Vehicle 1	Very Likely
3rd:			
4th:			
5th:			
6th:			

Other Cause: Precipitating Factor:

VEHS 1 AND 2 ENTER LONDON ROAD FROM ESSEX YEOMANRY WAY TOWARD COLCHESTER TOWN CENTRE. VEH 2 IS AHEAD OF VEH 1. VEH 2 STOPS AT ZEBRA CROSSING TO ALLOW PEDESTRIAN TO CROSS FROM NEARSIDE. VEH 1 CHANGES LANE. LOCKS BRAKES AND FALLS FROM MACHINE. RIDE 1 IS IN COLLISION WITH VEH 2. NO CONTACT BETWEEN VEHICLES.

Occurred on LONDON ROAD AT ROUNDABOUT J/W ESSEX YEOMANRY WAY

Vehicle Reference 1 Motorcycle over 500cc Going ahead left bend

Vehicle movement from W to E No tow / articulation

On main carriageway Skidded

Location at impact Leaving roundabout First impact Did not impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 44 Male

Not hit and run Breath test Negative

Driver Postcode: VRM:

Casualty Reference: 1 Vehicle: 1 Age: 44 Male Driver/rider Severity: Slight

Not a pupil Postcode Seatbelt

Vehicle Reference 2 Car Going ahead left bend

Vehicle movement from W to E No tow / articulation

On main carriageway No skidding, jack-knifing or overturning

Location at impact Leaving roundabout First impact Did not impact Hit vehicle:

Hit object in road None Off road: None

Did not leave carr Age of Driver 25 Female

Not hit and run

Breath test

Negative

Driver Postcode: VRM:

AccsMap - Accident Analysis System

Accidents between dates 01/04/2004 and 31/03/2009 (60) months Selection: Notes:

Selected using Build Query: Stanway, Colchester

Accidents involving:

	Fatal	Serious	Slight	Total
Motor vehicles only (excluding 2-wheels)	0	9	64	73
2-wheeled motor vehicles	0	3	10	13
Pedal cycles	0	3	3	6
Horses & other	0	0	0	0
Total	0	14	77	91

# Casualties:

	Fatal	Serious	Slight	Total
Vehicle driver	0	5	61	66
Passenger	0	6	30	36
Motorcycle rider	0	3	10	13
Cyclist	0	2	3	5
Pedestrian	0	3	2	5
Other	0	0	0	0
Total	0	19	106	125

Appendix B

**Outline Residential Travel Plan** 

# 1.0 INTRODUCTION

- 1.1 Hills Residential is currently seeking the allocation of land at the Fiveways Fruit Farm site at Stanway, Colchester, for residential development in the Site Allocation Development Plan Document (DPD) currently being prepared as part of the emerging Local Development Framework (LDF) by the local planning authority, Colchester Borough Council (CBC).
- 1.1 This Outline Residential Travel Plan (RTP) has been prepared in accordance with guidance set out in *Residential Travel Plans: Making Them Work* published by the Department for Transport (DfT). Its aim is to meet objectives of the local highway authority, Essex County Council (ECC), the local planning authority, Colchester Borough Council (CBC), and the Highways Agency (HA) as highway authority for the A12 which forms part of the Strategic Road Network (SRN).
- 1.2 The aim of the RTP is to reduce car use, in particular single occupancy car trips, by promoting and facilitating the use of alternative modes of travel such as walking, cycling and public transport, amongst residents of the proposed development.
- 1.3 The RTP comprises a package of both "hard" and "soft" measures as both "sticks" and "carrots" to deter car use and encourage the use of other modes.
- 1.4 A Transport Assessment (TA) has also been prepared for submission with the application, and should be read in conjunction with this document in order to provide a fuller description of the development proposal, its accessibility by all modes of travel, and expected weekday peak hour trip generation by each mode.

- 1.5 The site is located within a 10-minute walk of a range of convenience shops on Blackberry Road and Peartree Road. There are also a number of schools (two primaries and one secondary) and leisure and community facilities in the area, all within easy walking and cycling distance of the site.
- 1.6 There are footways along both sides of all roads in the vicinity of the site, apart from Heath Road and Dyers Road which have a footway on one side only.
- 1.7 There are zebra crossings on Blackberry Road between the Dyers Road and Winstree Road/Heath Road junctions, and further west outside the neighbourhood shops. There is also a Toucan crossing on Peartree Road to the east.
- 1.8 There are a number of cycle routes in the vicnity of the site which provide links to the network within Colchester.
- 1.9 The site lies close to bus stops served by routes operating at up to a 10-minute service frequency which provide links to the town centre, North station and retail and employment areas in the town.
- 1.10 Following this introduction, the remainder of this report is structured as follows: -
  - Section 2.0 outlines the proposed development; and
  - Section 3.0 contains details of the Draft Plan.

# 2.0 THE PROPOSED DEVELOPMENT

- 2.1 An allocation for up to around 600 residential units is being sought, to be developed in two phases of 400 and 200 units respectively.
- 3.2 At present the mix of dwelling types is not known but the density is relatively low at approximately 35 40 dph.

#### Access

- 2.2 Two accesses are proposed, both on Dyer's Road. The form and layout of these has not been determined at this stage as agreed with ECC, and would be decided following submission of an application. The accesses could be either priority T-junctions or 3-arm mini roundabouts (as proposed by WSP for the Dyers Road access to the Taylor Wimpey development site) located at appropriate spacings from existing junctions and designed to accommodate the sixe of refuse vehicles used in Colchester, pantechnicons and buses.
- 2.3 It is intended that Heath Road would be stopped-up at its junction with Blackberry Road/Peartree Road so that the existing crossroads becomes a T-junction, with a new link road from the north end of the former through the site to join Dyers Road as the minor arm of another priority T-junction. This will provide a highway safety benefit by removing a priority crossroads, widely considered to be the least safe form of junction.
- 2.4 It is proposed that a new footway would be provided on the south side of Dyers Road along the frontage of the site to be developed. There is also scope for the existing 30mph limit to be extended to the south west, possibly as far as the Warren Lane junction.

# **Parking**

3.3 The level of on site parking provision for cars, motorcycles and pedal cycles would be determined when any future planning application was made following allocation of the site in accordance with the appropriate standards in place at that time.

# **Improved bus services**

3.4 Fiveways is located at the western end of the 65 route, which runs on a 10-minute frequency throughout the daytime on weekdays and Saturdays, reduced to half-hourly in the evenings and all day on Sundays. There is scope to extend the route into the development, also serving the TW site, which would probably require an additional bus to operate the existing daytime service frequency.

# 3.0 THE TRAVEL PLAN

- 3.1 The DfT guidance sets out the concept of the "Travel Plan Pyramid", which comprises five elements as follows: -
  - Promotional Strategy;
  - · Services and Facilities;
  - Co-ordinator;
  - Built Environment; and
  - Location.

# **Promotional Strategy**

#### Residential Travel Packs

3.2 In accordance with current ECC policy it is anticipated that all new households would be issued with Travel Packs upon first occupation, providing details of local public transport services and cycle routes, with replacement bus timetables issued whenever they are revised. Each Pack would contain vouchers redeemable for season tickets for free bus travel in the town for a designated period (currently one year) for all occupants of each household (including children). Packs would be issued by the Sales Office on site to all new occupiers.

# **Services and Facilities**

#### Pedestrian facilities

3.3 Besides the two proposed vehicle accesses on the Dyers Road frontage of the site, other pedestrian accesses are proposed elsewhere along Dyers Road and on Heath Road and Blackberry Road in order to maximise permeability with existing development in

the surrounding area. It is envisaged that a new footway would be provided on Dyers Road along the frontage of the site.

## Cycling

- 3.4 There will be linkage with the existing advisory cycle routes running alongside two sides of the site on Dyers Road and Heath Road which in turn link into the wider network within Colchester.
- 3.5 Secure covered on-site cycle parking for all units without garages will be provided in accordance with the adopted standards= at the time that an application is made.

# **Bus Stops**

- 3.6 The existing bus stops nearest to the site on Peartree Road and Blackberry Road (as shown at **Figure 6**) will be upgraded with new high quality shelters with seating and route/timetable information.
- 3.7 New high quality stops will also be provided within the development itself in conjunction, which it is intended will be served by a diversion of the existing 65 route.

#### **Co-ordinator**

3.8 Following completion of the development, annual travel monitoring will be undertaken by the management company for a five year period. This will include questionnaire surveys to identify residents' normal and occasional main modes of travel to and from work. The results will be compared to the target modal split based on Census Travel to Work data amongst existing residents of Stanway Ward (Colchester Middle Output Area 012) set out in the TA. This gives the following split by main (not initial/final) mode for trips to/from work: -

Car driver: 68%;
 Motor cycle: 1%;
 Car passenger: 7%;
 Bus: 6%;
 National Rail: 7%;
 Pedal cycle: 2%; and
 Walking: 7%.

3.9 In the event of the car driver mode share target being exceeded, there will be a period of six months during which the developer will be required to implement additional measures to reduce car use, at the end of which additional surveys will be undertaken to establish if these have been successful in achieving the targets.

#### **Built Environment**

# Car Parking

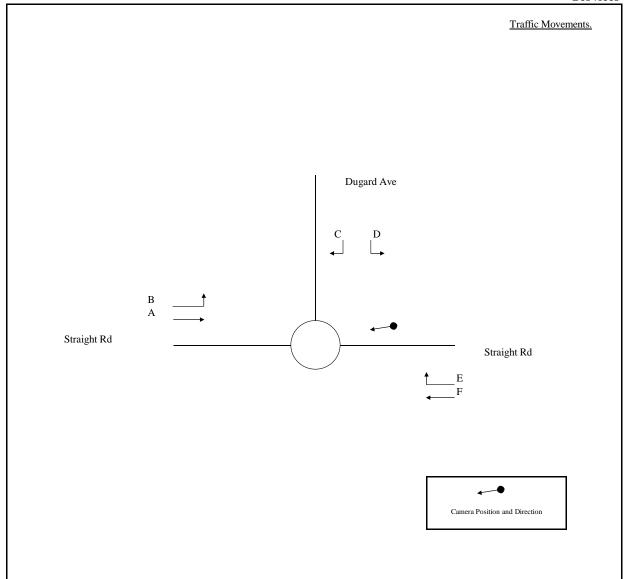
3.10 The level of of-street car parking provision within the development will be in accordance with the adopted standard required when an application is made.

# Location

3.11 In addition, pedestrian, cycle and emergency vehicle accesses will be provided from Dyers Road, Blackberry Road and Heath Road. These will provide linkage to the surrounding nearby existing development, including services such as shops, schools and leisure and community facilities, and to bus stops, and so maximise permeability and encourage walking, cycling and use of public transport.

Appendix C

Census data



Junction 1: Straight Rd/Dugard Ave.

Day: **Thursday** Date: 30/04/2009

Transportation Survey Services

	Movement A					Movement B					Movement C				
	Cars	Λ9T	MGV	HGV	PSV	Cars	Λ9T	MGV	HGV	PSV	Cars	Λ9T	ΛSΜ	ΛÐΗ	PSV
7.30	38	4	4	0	2	70	22	1	0	0	29	18	0	0	0
7.45	39	10	4	1	1	101	24	3	0	0	56	14	4	0	0
Hr Total	77	14	8	1	3	171	46	4	0	0	85	32	4	0	0
8.00	54	6	1	0	2	73	13	2	0	1	59	10	5	0	0
8.15	42	10	4	1	0	97	14	2	0	0	86	10	3	0	1
8.30	67	8	3	4	1	88	11	1	0	0	87	8	1	1	1
8.45	91	11	0	1	0	90	10	1	0	0	79	10	1	0	0
Hr Total	254	35	8	6	3	348	48	6	0	1	311	38	10	1	2
9.00	53	8	3	1	1	95	6	1	0	0	67	6	1	1	0
9.15	44	2	2	2	3	68	10	2	0	0	50	11	3	0	1
Hr Total	97	10	5	3	4	163	16	3	0	0	117	17	4	1	1
16.30	54	8	1	0	3	69	13	0	0	0	74	10	1	0	0
16.45	48	3	3	0	2	75	14	1	0	0	89	17	0	0	0
Hr Total	102	11	4	0	5	144	27	1	0	0	163	27	1	0	0
17.00	53	14	1	0	1	95	7	0	0	0	106	25	1	0	0
17.15	60	5	0	0	1	97	8	1	0	0	106	18	1	0	0
17.30	63	6	0	0	1	80	6	0	0	0	120	20	0	0	0
17.45	54	5	0	0	1	59	4	0	0	0	114	17	1	0	0
Hr Total	230	30	1	0	4	331	25	1	0	0	446	80	3	0	0
18.00	60	7	1	0	2	73	6	0	0	0	122	9	1	0	0
18.15	51	9	0	0	2	70	3	1	0	0	99	9	0	0	0
Hr Total	111	16	1	0	4	143	9	1	0	0	221	18	1	0	0

Junction 1: Straight Rd/Dugard Ave.

Transportation Survey Services Day: Thursday Date: 30/04/2009

		Man	ement	D			ement	D.		Movement F					
		MIOV					MOV		E						
	Cars	TGV	MGV	HGV	PSV	Cars	ΛÐΊ	Λ⅁W	HGV	PSV	Cars	Λ⅁⅂	Λ⅁W	Λ⅁H	PSV
7.30	18	4	0	1	0	20	3	1	0	0	33	12	2	1	2
7.45	12	5	1	0	0	33	10	1	0	0	53	12	3	3	0
Hr Total	30	9	1	1	0	53	13	2	0	0	86	24	5	4	2
8.00	40	4	1	0	0	42	10	0	0	0	50	9	0	2	0
8.15	39	4	0	0	0	55	4	0	1	0	43	10	4	1	0
8.30	43	5	2	0	0	54	7	0	0	0	54	11	3	2	1
8.45	21	5	1	0	0	57	4	2	0	0	89	11	0	1	0
Hr Total	143	18	4	0	0	208	25	2	1	0	236	41	7	6	1
9.00	29	5	1	0	0	49	6	0	0	0	48	10	1	1	0
9.15	35	4	3	0	0	36	8	3	0	0	50	10	2	3	0
Hr Total	64	9	4	0	0	85	14	3	0	0	98	20	3	4	0
16.30	38	1	0	0	0	44	6	0	0	0	64	7	5	0	0
16.45	35	5	0	0	0	43	9	0	0	0	74	3	2	0	0
Hr Total	73	6	0	0	0	87	15	0	0	0	138	10	7	0	0
17.00	43	9	1	0	0	36	5	0	0	0	80	10	3	0	0
17.15	41	3	0	0	0	39	3	0	0	0	72	3	3	0	0
17.30	43	4	0	0	0	44	6	0	0	0	50	6	3	0	0
17.45	42	4	0	0	0	40	2	0	0	0	66	10	2	0	0
Hr Total	169	20	1	0	0	159	16	0	0	0	268	29	11	0	0
18.00	22	2	0	0	0	28	4	0	0	0	53	10	0	0	0
18.15	47	3	0	0	0	41	1	0	0	0	69	6	0	0	0
Hr Total	69	5	0	0	0	69	5	0	0	0	122	16	0	0	0

Junction 1: Straight Rd/Dugard Ave.
Day: Thursday Date:

30/04/2009

	Arm AB	Arm CD	Arm EF
7.30	0	0	2
7.35	0	0	0
7.40	0	1	0
7.45	0	5	2
7.50	0	0	5
7.55	0	1	2
8.00	0	1	2
8.05	1	2	6
8.10	0	0	3
8.15	1	4	0
8.20	0	6	4
8.25	0	2	2
8.30	0	0	0
8.35	0	7	5
8.40	5	8	5
8.45	2	0	5
8.50	2	8	0
8.55	0	7	5
9.00	0	6	4
9.05	0	5	4
9.10	0	5	5
9.15	0	4	4
9.20	0	7	3

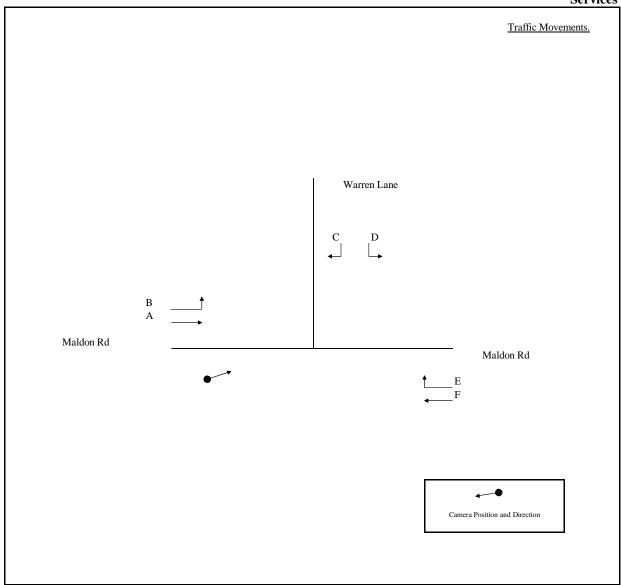
0

9.25

	Arm AB	Arm CD	Arm EF
16.30	3	5	3
16.35	3	3	3
16.40	2	0	4
16.45	2	2	4
16.50	2	4	7
16.55	3	4	7
17.00	2	5	5
17.05	5	4	7
17.10	4	8	7
17.15	2	3	4
17.20	0	2	2
17.25	0	2	2
17.30	2	3	4
17.35	2	4	4
17.40	2	4	4
17.45	2	5	7
17.50	0	8	5
17.55	0	6	4
18.00	0	11	4
18.05	2	3	4
18.10	1	3	3
18.15	1	6	10
18.20	1	4	6
18.25	1	4	4

# Transportation Survey Services

Junction 2: Maldon Rd/Warren Lane.



Junction 2: Maldon Rd/Warren Lane.

Day: Thursday Date: 30/04/2009 Transportation Survey Services

		Mov	ement	A	i	Movement B						Movement C				
	Cars	TGV	MGV	HGV	PSV	Cars	TGV	MGV	HGV	PSV	Cars	TGV	MGV	HGV	PSV	
7.30	40	5	2	0	0	37	6	1	0	0	29	12	0	0	0	
7.45	72	12	1	0	0	49	7	4	1	0	30	9	0	1	0	
Hr Total	112	17	3	0	0	86	13	5	1	0	59	21	0	1	0	
8.00	100	6	4	1	2	63	5	2	1	0	25	8	0	0	0	
8.15	91	7	0	0	0	75	6	1	4	1	41	9	0	1	0	
8.30	76	5	1	0	2	65	6	0	1	0	31	8	0	0	0	
8.45	48	8	2	1	0	55	4	1	1	0	50	1	0	1	0	
Hr Total	315	26	7	2	4	258	21	4	7	1	147	26	0	2	0	
9.00	45	4	1	0	0	53	3	1	0	0	26	4	2	2	0	
9.15	45	7	1	0	1	46	2	2	0	0	26	11	3	1	0	
Hr Total	90	11	2	0	1	99	5	3	0	0	52	15	5	3	0	
		1	,		1			1								
16.30	49	12	3	0	1	32	3	0	0	0	52	12	1	0	0	
16.45	56	14	1	0	0	48	4	0	0	0	41	8	1	1	0	
Hr Total	105	26	4	0	1	80	7	0	0	0	93	20	2	1	0	
17.00	68	8	3	1	1	60	9	1	0	0	36	1	0	1	0	
17.15	54	8	4	0	1	63	4	0	2	0	62	6	0	0	0	
17.30	62	8	0	0	0	61	8	0	0	0	53	8	1	0	0	
17.45	74	9	1	0	1	54	5	1	0	0	54	4	0	0	0	
Hr Total	258	33	8	1	3	238	26	2	2	0	205	19	1	1	0	
18.00	64	5	1	0	0	43	1	0	0	0	54	5	0	0	0	
18.15	47	3	0	0	1	37	7	0	0	0	40	3	0	0	0	
Hr Total	111	8	1	0	1	80	8	0	0	0	94	8	0	0	0	

Junction 2: Maldon Rd/Warren Lane.

Day: **Thursday** 

Hr Total

96

11

0

Transportation
Survey
30/04/2009
Services

9.00		2 uj. 2 2202 5 0200 j						2	- 0,	· -, -	0 0 2	~ ~ ~					
7.30			Movement D					Movement E					Movement F				
7.45         37         12         0         3         0         45         13         1         1         0         72         15         2         1         0           Hr Total         62         18         2         4         0         81         18         3         1         0         128         27         6         1         1           8.00         30         5         2         2         0         40         5         0         0         0         87         2         3         0         1           8.15         43         12         2         2         0         46         8         3         0         0         52         9         1         0         1           8.30         32         6         1         2         1         45         6         2         2         0         52         7         2         0         0           8.45         41         3         1         1         0         47         11         2         1         0         3         0         225         28         6         0         3		Cars	TGV	MGV	HGV	PSV	Cars	TGV	MGV	HGV	PSV	Cars	TGV	MGV	HGV	PSV	
7.45         37         12         0         3         0         45         13         1         1         0         72         15         2         1         0           Hr Total         62         18         2         4         0         81         18         3         1         0         128         27         6         1         1           8.00         30         5         2         2         0         40         5         0         0         0         87         2         3         0         1           8.15         43         12         2         2         0         46         8         3         0         0         52         9         1         0         1           8.30         32         6         1         2         1         45         6         2         2         0         52         7         2         0         0           8.45         41         3         1         1         0         47         11         2         1         0         3         0         225         28         6         0         3																	
7.45         37         12         0         3         0         45         13         1         1         0         72         15         2         1         0           Hr Total         62         18         2         4         0         81         18         3         1         0         128         27         6         1         1           8.00         30         5         2         2         0         40         5         0         0         0         87         2         3         0         1           8.15         43         12         2         2         0         46         8         3         0         0         52         9         1         0         1           8.30         32         6         1         2         1         45         6         2         2         0         52         7         2         0         0           8.45         41         3         1         1         0         47         11         2         1         0         3         0         225         28         6         0         3																	
Hr Total 62 18 2 4 0 81 18 3 1 0 128 27 6 1 1 8 8 0 3 0 5 2 2 0 440 5 0 0 0 0 87 2 3 0 1 8 8 15 43 12 2 2 2 0 46 8 3 0 0 0 52 9 1 0 0 1 8 8 30 32 6 1 2 1 45 6 2 2 0 52 7 2 0 0 0 8 8 45 41 3 1 1 0 47 11 2 1 0 34 10 0 0 0 1 1 8 8 45 41 3 1 1 0 47 11 2 1 0 34 10 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1																	
8.00 30 5 2 2 0 40 5 0 0 0 87 2 3 0 1 8.15 43 12 2 2 0 46 8 3 0 0 52 9 1 0 1 8.30 32 6 1 2 1 45 6 2 2 0 52 7 2 0 0 8.45 41 3 1 1 0 47 11 2 1 0 34 10 0 0 1 Hr Total 146 26 6 7 1 178 30 7 3 0 225 28 6 0 3 9.00 24 5 0 1 0 46 9 2 2 0 37 4 1 0 0 9.15 30 7 3 3 0 35 6 0 0 0 37 5 2 0 1 Hr Total 54 12 3 4 0 81 15 2 2 0 74 9 3 0 1 Hr Total 82 21 2 0 1 126 20 1 2 6 120 19 3 0 3 17.00 41 4 1 1 0 71 11 1 0 0 61 8 1 0 0 17.15 61 10 0 0 0 28 6 0 0 0 58 3 1 0 0 Hr Total 201 28 1 2 0 186 28 1 0 0 261 23 7 0 1 18.00 45 6 1 0 0 51 2 1 0 0 43 3 0 0 1					<b>-</b>												
8.15	Hr Total	62	18		4	0	81	18	3	1	0	128	27		1	1	
8.30	8.00	30	5	2	2	0	40	5	0	0	0	87	2	3	0	1	
8.45	8.15	43	12	2	2	0	46	8	3	0	0	52	9	1	0	1	
Hr Total 146 26 6 7 1 178 30 7 3 0 225 28 6 0 3  9.00 24 5 0 1 0 46 9 2 2 0 37 4 1 0 0  9.15 30 7 3 3 0 35 6 0 0 0 37 5 2 0 1  Hr Total 54 12 3 4 0 81 15 2 2 0 74 9 3 0 1  16.30 38 11 0 0 1 67 8 0 1 5 64 11 1 0 2 2 16.45 44 10 2 0 59 12 1 1 5 68 2 0 1  Hr Total 82 21 2 0 1 126 20 1 2 6 120 19 3 0 3 17.00 41 4 1 1 0 71 11 1 0 0 61 8 1 0 0 17.15 61 10 0 0 0 55 8 0 0 0 0 77 8 0 0 0 17.45 50 8 0 0 0 28 6 0 0 0 0 58 3 1 0 0 1  Hr Total 201 28 1 2 0 186 28 1 0 0 261 23 7 0 1 18.00 45 6 1 0 0 0 51 2 1 0 0 43 3 0 0 1	8.30	32	6	1	2	1	45	6	2	2	0	52	7	2	0	0	
9.00	8.45	41	3	1		0	47	11			0	34	10	0	0		
9.15   30   7   3   3   0   35   6   0   0   0   37   5   2   0   1    Hr Total   54   12   3   4   0   81   15   2   2   0   74   9   3   0   1    16.30   38   11   0   0   1   67   8   0   1   5   64   11   1   0   2    16.45   44   10   2   0   0   59   12   1   1   1   56   8   2   0   1    Hr Total   82   21   2   0   1   126   20   1   2   6   120   19   3   0   3    17.00   41   4   1   1   0   71   11   1   0   0   61   8   1   0   0    17.15   61   10   0   0   0   55   8   0   0   0   77   8   0   0   1    17.30   49   6   0   1   0   32   3   0   0   0   65   4   5   0   0    17.45   50   8   0   0   0   28   6   0   0   0   58   3   1   0   0    Hr Total   201   28   1   2   0   186   28   1   0   0   0   43   3   0   0   1    18.00   45   6   1   0   0   51   2   1   0   0   43   3   0   0   1	Hr Total	146	26	6	7	1	178	30	7	3	0	225	28	6	0	3	
Hr Total 54 12 3 4 0 81 15 2 2 0 74 9 3 0 1  16.30 38 11 0 0 1 67 8 0 1 5 64 11 1 0 2  16.45 44 10 2 0 0 59 12 1 1 1 56 8 2 0 1  Hr Total 82 21 2 0 1 126 20 1 2 6 120 19 3 0 3  17.00 41 4 1 1 0 71 11 1 0 0 61 8 1 0 0  17.15 61 10 0 0 0 55 8 0 0 0 77 8 0 0 1  17.30 49 6 0 1 0 32 3 0 0 0 65 4 5 0 0  17.45 50 8 0 0 0 28 6 0 0 0 58 3 1 0 0  Hr Total 201 28 1 2 0 186 28 1 0 0 261 23 7 0 1  18.00 45 6 1 0 0 51 2 1 0 0 43 3 0 0	9.00	24	5	0	1	0	46	9	2	2	0	37	4	1	0	0	
16.30 38 11 0 0 1 67 8 0 1 5 64 11 1 0 2 16.45 44 10 2 0 0 59 12 1 1 1 56 8 2 0 1 Hr Total 82 21 2 0 1 126 20 1 2 6 120 19 3 0 3 17.00 41 4 1 1 0 71 11 1 0 0 61 8 1 0 0 17.15 61 10 0 0 0 55 8 0 0 0 0 77 8 0 0 1 17.30 49 6 0 1 0 32 3 0 0 0 65 4 5 0 0 17.45 50 8 0 0 0 28 6 0 0 0 58 3 1 0 0 Hr Total 201 28 1 2 0 186 28 1 0 0 261 23 7 0 1 18.00 45 6 1 0 0 51 2 1 0 0 43 3 0 0	9.15	30	7	3	3	0	35	6	0	0	0	37	5	2	0	1	
16.30 38 11 0 0 1 67 8 0 1 5 64 11 1 0 2 16.45 44 10 2 0 0 59 12 1 1 1 56 8 2 0 1 Hr Total 82 21 2 0 1 126 20 1 2 6 120 19 3 0 3 17.00 41 4 1 1 0 71 11 1 0 0 61 8 1 0 0 17.15 61 10 0 0 0 55 8 0 0 0 0 77 8 0 0 1 17.30 49 6 0 1 0 32 3 0 0 0 65 4 5 0 0 17.45 50 8 0 0 0 28 6 0 0 0 58 3 1 0 0 Hr Total 201 28 1 2 0 186 28 1 0 0 261 23 7 0 1 18.00 45 6 1 0 0 51 2 1 0 0 43 3 0 0																	
16.30 38 11 0 0 1 67 8 0 1 5 64 11 1 0 2 16.45 44 10 2 0 0 59 12 1 1 1 56 8 2 0 1 Hr Total 82 21 2 0 1 126 20 1 2 6 120 19 3 0 3 17.00 41 4 1 1 0 71 11 1 0 0 61 8 1 0 0 17.15 61 10 0 0 0 55 8 0 0 0 0 77 8 0 0 1 17.30 49 6 0 1 0 32 3 0 0 0 65 4 5 0 0 17.45 50 8 0 0 0 28 6 0 0 0 58 3 1 0 0 Hr Total 201 28 1 2 0 186 28 1 0 0 261 23 7 0 1 18.00 45 6 1 0 0 51 2 1 0 0 43 3 0 0																	
16.45         44         10         2         0         0         59         12         1         1         1         56         8         2         0         1           Hr Total         82         21         2         0         1         126         20         1         2         6         120         19         3         0         3           17.00         41         4         1         1         0         71         11         1         0         0         61         8         1         0         0           17.15         61         10         0         0         0         55         8         0         0         0         77         8         0         0         1           17.30         49         6         0         1         0         32         3         0         0         0         55         4         5         0         0           17.45         50         8         0         0         28         6         0         0         58         3         1         0         0           Hr Total         201         28         1<	Hr Total	54	12	3	4	0	81	15	2	2	0	74	9	3	0	1	
16.45         44         10         2         0         0         59         12         1         1         1         56         8         2         0         1           Hr Total         82         21         2         0         1         126         20         1         2         6         120         19         3         0         3           17.00         41         4         1         1         0         71         11         1         0         0         61         8         1         0         0           17.15         61         10         0         0         0         55         8         0         0         0         77         8         0         0         1           17.30         49         6         0         1         0         32         3         0         0         0         55         4         5         0         0           17.45         50         8         0         0         28         6         0         0         58         3         1         0         0           Hr Total         201         28         1<																	
16.45         44         10         2         0         0         59         12         1         1         1         56         8         2         0         1           Hr Total         82         21         2         0         1         126         20         1         2         6         120         19         3         0         3           17.00         41         4         1         1         0         71         11         1         0         0         61         8         1         0         0           17.15         61         10         0         0         0         55         8         0         0         0         77         8         0         0         1           17.30         49         6         0         1         0         32         3         0         0         0         55         4         5         0         0           17.45         50         8         0         0         28         6         0         0         58         3         1         0         0           Hr Total         201         28         1<																	
16.45         44         10         2         0         0         59         12         1         1         1         56         8         2         0         1           Hr Total         82         21         2         0         1         126         20         1         2         6         120         19         3         0         3           17.00         41         4         1         1         0         71         11         1         0         0         61         8         1         0         0           17.15         61         10         0         0         0         55         8         0         0         0         77         8         0         0         1           17.30         49         6         0         1         0         32         3         0         0         0         55         4         5         0         0           17.45         50         8         0         0         28         6         0         0         58         3         1         0         0           Hr Total         201         28         1<																	
Hr Total         82         21         2         0         1         126         20         1         2         6         120         19         3         0         3           17.00         41         4         1         1         0         71         11         1         0         0         61         8         1         0         0           17.15         61         10         0         0         0         55         8         0         0         0         77         8         0         0         1           17.30         49         6         0         1         0         32         3         0         0         0         65         4         5         0         0           17.45         50         8         0         0         28         6         0         0         0         58         3         1         0         0           Hr Total         201         28         1         2         0         186         28         1         0         0         43         3         0         0         1           18.00         45         6<	16.30	38	11	0	0	1	67	8	0	1	5	64	11	1	0	2	
17.00     41     4     1     1     0     71     11     1     0     0     61     8     1     0     0       17.15     61     10     0     0     0     55     8     0     0     0     77     8     0     0     1       17.30     49     6     0     1     0     32     3     0     0     0     65     4     5     0     0       17.45     50     8     0     0     0     28     6     0     0     0     58     3     1     0     0       Hr Total     201     28     1     2     0     186     28     1     0     0     261     23     7     0     1       18.00     45     6     1     0     0     51     2     1     0     0     43     3     0     0     1	16.45	44	10	2	0	0	59	12	1	1	1	56	8	2	0	1	
17.15     61     10     0     0     0     55     8     0     0     0     77     8     0     0     1       17.30     49     6     0     1     0     32     3     0     0     0     65     4     5     0     0       17.45     50     8     0     0     0     28     6     0     0     0     58     3     1     0     0       Hr Total     201     28     1     2     0     186     28     1     0     0     261     23     7     0     1       18.00     45     6     1     0     0     51     2     1     0     0     43     3     0     0     1	Hr Total	82	21	2	0	1	126	20	1	2	6	120	19	3	0	3	
17.30     49     6     0     1     0     32     3     0     0     0     65     4     5     0     0       17.45     50     8     0     0     0     28     6     0     0     0     58     3     1     0     0       Hr Total     201     28     1     2     0     186     28     1     0     0     261     23     7     0     1       18.00     45     6     1     0     0     51     2     1     0     0     43     3     0     0     1	17.00	41	4	1	1	0	71	11	1	0	0	61	8	1	0	0	
17.45     50     8     0     0     0     28     6     0     0     0     58     3     1     0     0       Hr Total     201     28     1     2     0     186     28     1     0     0     261     23     7     0     1       18.00     45     6     1     0     0     51     2     1     0     0     43     3     0     0     1	17.15	61	10	0	0	0	55	8	0	0	0	77	8	0	0	1	
17.45     50     8     0     0     0     28     6     0     0     0     58     3     1     0     0       Hr Total     201     28     1     2     0     186     28     1     0     0     261     23     7     0     1       18.00     45     6     1     0     0     51     2     1     0     0     43     3     0     0     1	17.30	49	6	0	1	0	32	3	0	0	0	65	4	5	0	0	
Hr Total 201 28 1 2 0 186 28 1 0 0 261 23 7 0 1 18.00 45 6 1 0 0 51 2 1 0 0 43 3 0 0 1		50	8	0	0	0		6	0	0	0	58		1	0	0	
18.00 45 6 1 0 0 51 2 1 0 0 43 3 0 0 1	Hr Total	201	28	1	2	0	186	28	1	0	0	261	23	7	0	1	
		45	6	1	0	0	51	2	1	0	0	43	3	0	0	1	

74

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0

93

Date:

Transportation Survey Services

Job: Traffic Survey - Colchester, Essex.

Junction 2: Maldon Rd/Warren Lane.

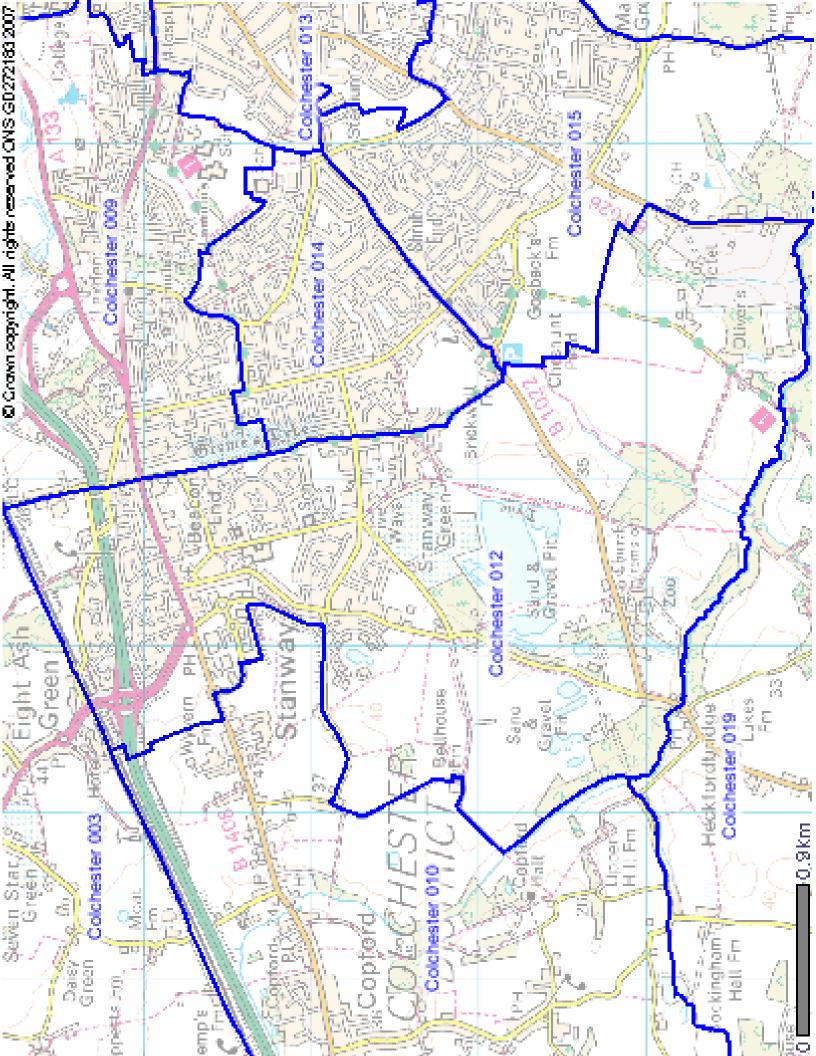
Day: **Thursday** Date: **30/04/2009** 

	Arm AB			Arm	CD	Arn	ı EF
	Movement A	Movement B		Movement C	Movement D	Movement E	Movement F
7.30	na	0		0	0	0	na
7.35	na	0		0	0	0	na
7.40	na	0		0	0	0	na
7.45	na	0		0	0	0	na
7.50	na	0		0	0	0	na
7.55	na	3		8	0	4	na
8.00	na	0		0	0	0	na
8.05	na	0		0	0	0	na
8.10	na	0		0	0	0	na
8.15	na	0		0	0	0	na
8.20	na	0		4	0	6	na
8.25	na	0		6	0	0	na
8.30	na	0		0	0	0	na
8.35	na	0		0	0	0	na
8.40	na	0		0	0	0	na
8.45	na	0		8	0	0	na
8.50	na	0		8	0	0	na
8.55	na	0		8	0	0	na
9.00	na	0		0	0	0	na
9.05	na	0		0	0	0	na
9.10	na	0		0	0	0	na
9.15	na	0		0	0	0	na
9.20	na	0		8	0	0	na
9.25	na	0		4	0	0	na

	Arm AB			Arm	CD	Arn	ı EF
	Movement A	Movement B		Movement C	MovementD	Movement E	Movement F
16.30	na	0		8	0	3	na
16.35	na	0		10	0	3	na
16.40	na	0		12	0	0	na
16.45	na	0		8	0	0	na
16.50	na	0		8	0	0	na
16.55	na	0		4	0	0	na
17.00	na	0		4	0	0	na
17.05	na	0		6	0	0	na
17.10	na	0		22	0	0	na
17.15	na	0		8	0	0	na
17.20	na	0		6	0	0	na
17.25	na	0		6	0	0	na
17.30	na	0		8	0	0	na
17.35	na	0		6	0	0	na
17.40	na	0		6	0	0	na
17.45	na	0		6	0	0	na
17.50	na	0		6	0	0	na
17.55	na	0		6	0	0	na
18.00	na	0		8	0	0	na
18.05	na	0		0	0	0	na
18.10	na	0		0	0	0	na
18.15	na	0		0	0	0	na
18.20	na	0		0	0	0	na
18.25	na	0		0	0	0	na

Appendix D

2009 Traffic Survey Results



DATASET_TITLE	Method of Travel to Work	- Resident Population (	UV39)	FROM	Apr-200	1 Apr-2001	Apr-2001	Apr-200	1 Apr-2001	Apr-2001	Apr-2001	Apr-2001	Apr-2001	Apr-200	1 Apr-2001	Apr-2001	Apr-2001
AREA_TYPE	Super Output Area Middle	e Layer		то	Apr-200	1 Apr-2001	Apr-2001	Apr-200	<ol> <li>Apr-2001</li> </ol>	Apr-2001	Apr-2001	Apr-2001	Apr-2001	Apr-200	1 Apr-2001	Apr-2001	Apr-2001
						Works mainly	Underground,						Motorcycle,				
						at or from	metro, light rail		Bus, minibus		Driving a car or	Passenger in a	scooter or				Not currently
GEO_HIERARCHY	NeSS Geography Hierard	chy		HEADING	All People	home	or tram	Train	or coach	Taxi or minicab	van	car or van	moped	Bicycle	On foot	Other	working
				MEASUREMENT_UNI	Γ Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count	Count
				STATISTICAL_UNIT	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons
GOR_CODE GOR_NA	ME CTY_CODE CTY_NAME	LA_CODE LA_NAME	MSOA_CODE MSOA_NA	ME AREA_METADATA	DATA_VALUE	E DATA_VALUE	DATA_VALUE	DATA_VALUE	E DATA_VALUE	DATA_VALUE	DATA_VALUE	DATA_VALUE	DATA_VALUE	DATA_VALUI	E DATA_VALUE	DATA_VALUE	DATA_VALUE
East of																	
G England	22 Essex	22UG Colchester	E02004517 Colchester	)12	552	1 325	- 5	23	1 216		2362	237	44			14	1711
							0.1%	6.6%	6.2%	0.3%	67.8%	6.8%	1.3%	4.0%	6.5%	0.4%	

Origin Ward	Destination Ward	Local_Authority_Name	Car – driver: All people	Proportion of total	Assigned route
Stanway	Eastbrook	Barking and Dagenham	3	0.1%	A12 (west)
Stanway	Golders Green	Barnet	3	0.1%	A12 (west)
Stanway	Stonebridge	Brent	3	0.1% 0.1%	A12 (west) A12 (west)
Stanway Stanway	Tokyngton Holborn and Covent Garden	Brent Camden	3	0.1%	A12 (west)
Stanway	Regent's Park	Camden	3	0.1%	A12 (west)
Stanway	Southgate	Enfield	3	0.1%	A12 (west)
Stanway	Upper Edmonton Haggerston	Enfield Hacknev	3	0.1% 0.1%	A12 (west) A12 (west)
Stanway		Havering	3	0.1%	A12 (west)
Stanway	Mawneys	Havering	3	0.1%	A12 (west)
Stanway	Romford Town	Havering	4	0.2%	A12 (west)
Stanway	South Hornchurch Heathrow Villages	Havering Hillingdon	3 3	0.1% 0.1%	A12 (west) A12 (west)
Stanway	Bishop's	Lambeth	3	0.1%	A12 (west)
Stanway	Stratford and New Town	Newham	3	0.1%	A12 (west)
Stanway	West Ham	Newham	3	0.1%	A12 (west)
Stanway	Cranbrook Surrey Docks	Redbridge Southwark	3	0.1% 0.1%	A12 (west) A12 (west)
Stanway	Blackwall and Cubitt Town	Tower Hamlets	3	0.1%	A12 (west)
Stanway	Bow East	Tower Hamlets	4	0.2%	A12 (west)
Stanway Stanway	Millwall St James's	Tower Hamlets Westminster	3	0.2% 0.1%	A12 (west) A12 (west)
Stanway	Abercromby	Liverpool	3	0.1%	A12 (west)
Stanway	Beeston	Leeds	3	0.1%	A12 (west)
Stanway	Guildhall	York	3 4	0.1%	A12 (west)
Stanway	Victoria Grays Thurrock	Southend-on-Sea Thurrock	3	0.2% 0.1%	A12 (west) A12 (west)
Stanway	Tilbury Riverside and Thurrock Park	Thurrock	3	0.1%	A12 (west) A12 (west)
Stanway	West Thurrock and South Stifford	Thurrock	3	0.1%	A12 (west)
Stanway	Farnham Newtown	Slough Chiltern	3	0.1% 0.1%	A12 (west) A12 (west)
Stanway	Newtown Hambleden Valley	Wycombe	3		A12 (west) A12 (west)
Stanway	Littleport East	East Cambridgeshire	3	0.1%	A12 (west)
Stanway	Huntingdon North	Huntingdonshire	3	0.1%	A12 (west)
Stanway	Dalston Fryers	Carlisle Basildon	3 4	0.1% 0.2%	A12 (west)
Stanway	Fryerns Laindon Park	Basildon	6	0.2%	A12 (west) A12 (west)
Stanway	Bocking South	Braintree	26	1.1%	A12 (west)
Stanway	Bradwell, Silver End and Rivenhall	Braintree	9	0.4%	A12 (west)
Stanway	Braintree Central Coggeshall and North Feering	Braintree Braintree	12 11	0.5% 0.5%	A12 (west) A12 (west)
Stanway	Gosfield and Greenstead Green	Braintree	5	0.2%	A12 (west)
Stanway		Braintree	11	0.5%	Halstead Road
Stanway	Kelvedon	Braintree Braintree	8	0.3%	A12 (west)
Stanway	Rayne The Three Colnes	Braintree Braintree	18	0.1% 0.8%	A12 (west) Halstead Road
Stanway		Braintree	3		Halstead Road
Stanway	Witham Chipping Hill and Central	Braintree	43	1.8%	A12 (west)
Stanway	Witham South Witham West	Braintree Braintree	8	0.3% 0.1%	A12 (west) A12 (west)
Stanway Stanway	Brentwood North	Brentwood	<u>3</u>	0.1%	A12 (west)
Stanway	Brentwood West	Brentwood	3	0.1%	A12 (west)
Stanway	Warley	Brentwood	4	0.2%	A12 (west)
Stanway	Canvey Island South Canvey Island West	Castle Point Castle Point	3	0.1% 0.1%	A12 (west) A12 (west)
Stanway	Boreham and The Leighs	Chelmsford	5		A12 (west)
Stanway	Broomfield and The Walthams	Chelmsford	7	0.3%	A12 (west)
Stanway	Chelmer Village and Beaulieu Park	Chelmsford	28		A12 (west)
Stanway	Chelmsford Rural West Marconi	Chelmsford Chelmsford	3 21	0.1% 0.9%	A12 (west) A12 (west)
Stanway	Moulsham and Central	Chelmsford	39	1.7%	A12 (west)
Stanway	Patching Hall	Chelmsford	3	0.1%	A12 (west)
Stanway	South Hanningfield, Stock and Margaretting	Chelmsford	3	0.1%	A12 (west)
Stanway Stanway	The Lawns Trinity	Chelmsford Chelmsford	3 16	0.1% 0.7%	A12 (west) A12 (west)
Stanway	Waterhouse Farm	Chelmsford	17	0.7%	A12 (west)
Stanway	Berechurch	Colchester	12		Straight Road north/Villa Road
Stanway Stanway	Birch and Winstree Castle	Colchester Colchester	24 316	1.0% 13.5%	Straight Road south/Maldon Road east Straight Road north/Villa Road
Stanway	Christ Church	Colchester	29	1.2%	Straight Road south/Maldon Road east
Stanway	Copford and West Stanway	Colchester	47	2.0%	B1408 London Road (west)
Stanway Stanway		Colchester Colchester	7 3	0.3% 0.1%	A12 (east) Straight Road north/Villa Road
Stanway		Colchester	25		Straight Road north/Villa Road Straight Road north/Villa Road
Stanway	Great Tey	Colchester	13	0.6%	Halstead Road
Stanway	Harbour	Colchester	44	1.9%	Straight Road south/Maldon Road east
Stanway Stanway		Colchester Colchester	112 67		Straight Road north/Villa Road Straight Road north/Villa Road
Stanway	Marks Tey	Colchester	26	1.1%	A12 (west)
Stanway	Mile End	Colchester	133	5.7%	Straight Road north/Villa Road
Stanway		Colchester	90 30		Straight Road south/Maldon Road east Straight Road south/Maldon Road east
Stanway Stanway		Colchester Colchester	30 4		Straight Road south/Maldon Road east Straight Road south/Maldon Road east
Stanway	St Andrew's	Colchester	23	1.0%	Straight Road south/Maldon Road east
Stanway	St Anne's	Colchester	19	0.8%	Straight Road north/Villa Road
Stanway Stanway	St John's Shrub End	Colchester Colchester	13 62	0.6% 2.7%	Straight Road north/Villa Road Straight Road south/Maldon Road east
Stanway	Stanway	Colchester	418	17.9%	27% Winstree/42% Peartree/25% Tollgate W/5% Church La W
Stanway	Tiptree	Colchester	20	0.9%	Maldon Road (south/west)
Stanway		Colchester	16		Halstead Road
Stanway Stanway	West Mersea Wivenhoe Cross	Colchester Colchester	9 13		Straight Road south/Maldon Road east Straight Road south/Maldon Road east
Stanway	Hastingwood, Matching and Sheering Village	Epping Forest	3	0.1%	A12 (west)
Stanway	Great Totham	Maldon	4	0.2%	Maldon Road (south/west)
Stanway		Maldon	3 4		Maldon Road (south/west)
Stanway Stanway		Maldon Maldon	4 13		Maldon Road (south/west) Maldon Road (south/west)
Stanway	Tollesbury	Maldon	3		Maldon Road (south/west)
Stanway		Maldon	7		Maldon Road (south/west)
Stanway Stanway	Wickham Bishops and Woodham Wheatley	Maldon Rochford	3	0.1% 0.1%	Maldon Road (south/west) A12 (west)
otariway	TTHOUGE	Rochford	3	0.1%	7112 (1105t)

Origin Ward	Destination Ward	Local_Authority_Name	Car - driver: All people	Proportion of total	Assigned route
	Alresford	Tendring	3	0.1%	A12 (east)
Stanway	Alton Park	Tendring	3	0.1%	A12 (east)
Stanway	Ardleigh and Little Bromley	Tendring	12	0.5%	A12 (east)
Stanway	Bockings Elm	Tendring	3	0.1%	A12 (east)
Stanway	Brightlingsea	Tendring	8	0.3%	A12 (east)
Stanway	Burrsville	Tendring	3	0.1%	A12 (east)
Stanway	Great Bentley	Tendring	9	0.4%	A12 (east)
Stanway	Hamford	Tendring	3	0.1%	A12 (east)
	Harwich East	Tendring	3	0.1%	A12 (east)
	Harwich East Central	Tendring	3	0.1%	A12 (east)
Stanway	Harwich West	Tendring	3	0.1%	A12 (east)
Stanway	Harwich West Central	Tendring	3	0.1%	A12 (east)
Stanway	Pier	Tendring	18	0.8%	A12 (east)
Stanway	Ramsey and Parkeston	Tendring	3	0.1%	A12 (east)
Stanway	St Pauls	Tendring	3	0.1%	A12 (east)
Stanway	Thorrington, Frating, Elmstead and Great Bromley	Tendring	9	0.4%	A12 (east)
Stanway	Great Dunmow North	Uttlesford	3	0.1%	A12 (west)
Stanway	Great Dunmow South	Uttlesford	4	0.2%	A12 (west)
Stanway	Saffron Walden Audley	Uttlesford	3	0.1%	A12 (west)
Stanway	Stansted North	Uttlesford	3	0.1%	A12 (west)
Stanway	Stansted South	Uttlesford	4	0.2%	A12 (west)
Stanway	Takeley and the Canfields	Uttlesford	13	0.6%	A12 (west)
Stanway	Adeyfield East	Dacorum	3	0.1%	A12 (west)
Stanway	Buntingford	East Hertfordshire	3	0.1%	A12 (west)
Stanway	Symonds Green	Stevenage	3	0.1%	A12 (west)
Stanway	Peartree	Welwyn Hatfield	3	0.1%	A12 (west)
Stanway	Alton	Babergh	3	0.1%	Straight Road north/Villa Road
Stanway	Brook	Babergh		0.2%	A12 (east) Halstead Road
Stanway	Bures St Mary Hadleigh North	Babergh Babergh	3	0.1% 0.1%	A12 (east)
Stanway Stanway	Mid Samford	Babergh	3	0.1%	A12 (east)
Stanway	Nayland	Babergh	7	0.1%	Straight Road north/Villa Road
Stanway	South Cosford	Babergh	3	0.1%	A12 (east)
Stanway	Sudbury East	Babergh	7	0.3%	Halstead Road
Stanway	Sudbury South	Babergh	5	0.2%	Halstead Road
Stanway	Alexandra	Ipswich	23	1.0%	A12 (east)
Stanway	Bridge	Ipswich	3	0.1%	A12 (east)
Stanway	Gipping	Ipswich	11	0.5%	A12 (east)
Stanway	Priory Heath	Ipswich	4	0.2%	A12 (east)
Stanway	Westgate	Ipswich	5	0.2%	A12 (east)
Stanway	Whitehouse	Ipswich	3	0.1%	A12 (east)
Stanway	Needham Market	Mid Suffolk	3	0.1%	A12 (east)
Stanway	Ringshall	Mid Suffolk	3	0.1%	A12 (east)
Stanway	Eastgate	St. Edmundsbury	3	0.1%	A12 (east)
Stanway	Fornham	St. Edmundsbury	3	0.1%	A12 (east)
	Haverhill South	St. Edmundsbury	3	0.1%	A12 (east)
Stanway	Felixstowe North	Suffolk Coastal	3	0.1%	A12 (east)
Stanway	Felixstowe South	Suffolk Coastal	3	0.1%	A12 (east)
	Felixstowe South East	Suffolk Coastal	3	0.1%	A12 (east)
	Felixstowe West	Suffolk Coastal	3	0.1%	A12 (east)
Stanway	Kesgrave East	Suffolk Coastal	3	0.1%	A12 (east)
Stanway	Martlesham	Suffolk Coastal	5	0.2%	A12 (east)
Stanway	Seckford	Suffolk Coastal	3	0.1%	A12 (east)
Stanway	Trimleys with Kirton	Suffolk Coastal	3	0.1%	A12 (east)
Stanway	Dorking North	Mole Valley	3	0.1%	A12 (west)
Stanway	Frimley	Surrey Heath	3	0.1%	A12 (west)
Stanway	Chichester East	Chichester	3	0.1%	A12 (west)
Stanway	Three Bridges	Crawley	3	0.1%	A12 (west)
Stanway	Outside of the UK	Outside of the UK	3	0.1%	A12 (west)

2335

Halstead Road	3.3%
A12 (north)	8.5%
A12 (south)	21.4%
sub-total via A1124 EYW	33.2%
London Road (east)	
London Road (west)	2.0%
sub-total via Tollgate Rd N	35.2%
Tollgate West	4.4%
sub-total via Toligate Rd C	39.6%
Church Lane W	0.9%
sub-total via Tollgate Rd S	40.5%
Churchfields Avenue	
sub-total via Church La E	40.5%
Villa Road	
sub-total via Blackberry Road	40.5%
Winstree Road	5.0%
Heath Road	
Peartree Road/Dugard Avenue	52.0%
Straight Rd (north)/Villa Road	30.4%
Straight Road (south)/Maldon Road (east)	14.0%
Warren Lane (south)	2.4%
Maldon Road (south/west)	2.4%

# Appendix E

Results of PICADY capacity assessment:
Blackberry Road/Dyers Road junction

#### TRI, LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM RELEASE 4.0 (SEPT 2008)

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TRL SOFTWARE BUREAU
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EMAIL: Software@trl.co.uk

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

"Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\PICADY\Blackberry-Dyers\ Blackberry-Dyers existing.vpi" (drive-on-the-left) at 11:06:16 on Friday, 12 June 2009

# .RUN INFORMATION

RUN TITLE : Blackberry Road/Dyers Road junction (existing layout)

LOCATION : Stanway : 18/05/09 DATE

: Mersea Homes/Hills Residential : mlast [ARDENT23] : F960 CLIENT

ENUMERATOR

JOB NUMBER

STATUS DESCRIPTION

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A)

MINOR ROAD (ARM B)

ARM A IS Blackberry Road (east)

ARM B IS Dyers Road

ARM C IS Blackberry Road (west)

# STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

WIDTH AT 20 M FROM JUNCTION

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

## GEOMETRIC DATA

DATA ITEM I MINOR ROAD B I T (W ) 6.00 M. I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH

CENTRAL RESERVE WIDTH I (WCR ) 0.00 M. I I (WC-B) 2.20 M. MAJOR ROAD RIGHT TURN - WIDTH - VISIBILITY - BLOCKS TRAFFIC I (VC-B)200.00 M. I YES I (VB-C) 21.0 M. MINOR ROAD - VISIBILITY TO LEFT - VISIBILITY TO RIGHT
- LANE 1 WIDTH
- LANE 2 WIDTH I (VB-A) 120.0 M. I (WB-C) I (WB-A) WIDTH AT 0 M FROM JUNCTION WIDTH AT 5 M FROM JUNCTION 10.00 M. 4.50 M. WIDTH AT 10 M FROM JUNCTION WIDTH AT 15 M FROM JUNCTION 3.30 M. 3.00 M.

- LENGTH OF FLARED SECTION I DERIVED: 0 PCU I

3.00 M.

(NB:Streams may be combined, in which case capacity will be adjusted)

I Intercept For Slope For Opposing Slope For Opposing I STREAM B-C STREAM A-B I

1 0.00 0.00 0.00 0.00 I

\* Due to the presence of a flare, data is not available

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing I STREAM B-A STREAM A-C STREAM A-B STREAM C-B I

I 0.00 0.00 0.00 0.00 0.00 0.00 I

\* Due to the presence of a flare, data is not available

I Intercept For Slope For Opposing Slope For Opposing I STREAM C-B STREAM A-C STREAM A-B I

I 689.79 0.27 0.27 I

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I

I A I 100 I

I B I 100 I

I C I 100 I

.Demand set: 2023 Base Case weekday am peak

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

.Demand set: 2023 Base Case weekday am peak

I		I					OPORTIONS	I
1		Ι			.T.(	JRNING CO	UNTS	1
I		Ι		(	PI	ERCENTAGE	OF H.V.S	) I
I								
I	TIME	Ι	FROM/	TO	Ι	ARM A I	ARM B I	ARM C I
T	07.45 - 08.00	т			т	т	т	т
Ī	07.15	_	ARM	А	_	_	0.148 I	0.852 I
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I		Ι			Ι		0.0 I	
I		Ι					( 0.0)I	( 0.0)I
I		Ι			Ι	I	_	I
I		Ι	ARM	C		0.975 I		0.000 I
I		Ι			Ι		14.0 I	0.0 I
I		Ι				( 3.0)I	( 0.0)I	( U.O)I
I		Ι			Ι	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS AND FOR TIME PERIOD

I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DELAY I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVING I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (MIN) I O7.45-08.00 I I B-C 0.38 9.33 0.040 0.00 0.00 0.04 0.6 0.11 I

I	C-AB C-A	6.75 0.92	6.65 14.16	0.257 0.022		0.00	0.34	4.8		0.20 0.07	I I I I
 I I I		(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	(PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I
Ι	B-A C-AB C-A A-B A-C	0.42	6.12	0.051 0.333 0.029		0.04 0.34 0.03	0.05 0.49 0.04	0.8 7.0 0.6		0.12 0.24 0.07	I I I I I
· I I		DEMAND	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY	FLOW	START QUEUE	END QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I
I I I	B-C B-A C-AB C-A A-B A-C	0.55 2.50 0.59 9.74 1.34	8.15 5.38 15.39	0.068 0.464 0.039		0.05 0.49 0.04	0.07 0.83 0.05	1.1 11.7 0.8		0.13 0.34 0.07	I I I I I
I		(VEH/MIN)		CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I ) I
I I I I	B-A C-AB C-A A-B A-C	0.55 2.50 0.60 9.74 1.34	5.38	0.068 0.464 0.039			0.07 0.85 0.05	1.1 12.6 0.8		0.13 0.35 0.07	I I I I I I
I		(VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I ) I
I I	B-A C-AB C-A A-B A-C	0.45 2.04 0.42 8.02 1.09		0.051 0.333 0.029		0.85	0.51	0.8 8.1 0.6		0.12 0.25 0.07	I I I I I
I		(VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY		QUEUE	QUEUE		GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I ) I
I I I I I I	B-A C-AB C-A A-B A-C	0.38 1.71 0.32 6.75 0.92 5.26	6.65 14.16			0.04	0.35			0.11 0.20 0.07	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII
*W.	ARNING* 1 UEUE FOR	NO MARGINAI STREAM	L ANALYSIS B-C		TIES AS MAJO						
	SEGMENT ENDING 08.00 08.15 08.30 08.45 09.00 09.15	IN QU 0. 0. 0. 0.	DF CLES JEUE .0 .1 .1								

QUEUE FOR STREAM B-A
TIME NO. OF
SEGMENT VEHICLES

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IN QUEUE
   ENDING
    08.00
                                0.3
    08.15
                                   0.5
     08.30
                                    0.8
     08.45
                                    0.8
     09.00
                                    0.5
     09.15
 QUEUE FOR STREAM C-AB
   TIME
                             NO. OF
    SEGMENT
                              VEHICLES
   ENDING
                             IN QUEUE
     08.00
    08.15
                                   0.0
     08.30
                                    0.1
    08.45
                                   0.1
     09.00
                                   0.0
     09.15
                                 0.0
                              QUEUEING DELAY INFORMATION OVER WHOLE PERIOD
 I (VEH) (VEH/H) I (MIN)
 Т
                                                                         (MTN/VEH) T (MTN)
                                                                                                                             (MTN/VEH) T
                                                           5.0 I 0.12 I 5.0 I
49.7 I 0.27 I 49.7 I
      B-C I 41.3 I 27.5 I
B-A I 187.2 I 124.8 I
                                          27.5 I
 I
                                                                                                                                   0.12
    C-AB I 39.9 I 26.6 I
C-A I 735.0 I 490.0 I
A-B I 100.5 I 67.0 I
A-C I 576.7 I 384.5 I
                                                             3.5 I
                                                                                 0.09
                                                                                                         3.5
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I
I
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                                                                                                                         I
 I ALL I 1680.6 I 1120.4 I 58.3 I 0.03 I
                                                                                                            58 3 T 0 03 T
 * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
    INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
  A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.
 ******END OF RUN*****
 .SLOPES AND INTERCEPT
   (NB:Streams may be combined, in which case capacity will be adjusted)
 I Intercept For Slope For Opposing I
                             STREAM A-C
                                                                          STREAM A-B
  _____
 * Due to the presence of a flare, data is not available
 I Intercept For Slope For Opposing Slope For Opposi
 I STREAM B-A STREAM A-C STREAM A-B STREAM C-A STREAM C-B I
              0.00 0.00
                                                                                   0.00
                                                                                                                                 0.00
* Due to the presence of a flare, data is not available
 I Intercept For Slope For Opposing \mbox{\footnotemark} Stream C-B \mbox{\footnotemark} Stream A-B \mbox{\footnotemark}
                      -----
 I 689.79 0.27
                                                                                  0.27 T
   (NB These values do not allow for any site specific corrections)
.TRAFFIC DEMAND DATA
 -----
 I ARM I FLOW SCALE(%) I
```

0.00 I

.Demand set: 2023 Base Case weekday pm peak

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

I т

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

I A I 100 I B I 100 I C I 100

\_\_\_\_\_

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

THE DEPART OF REAL PROPERTIES OF ILVES OF SEASON STATE OF SEAS	ARM	I FLOW STA I TO RIS	RTS I TOP E I IS	OF PEAK I H REACHED I H	RT WHEN I FLOW STOPS I FALLING I	BEFORE PEAK	I AT TO	P I AFTER AK I PEAK	I I	
EM DI 15.00 I 45.00 I 75.00 I 1,23 I 1.34 I 1.32 I  BEN C I 15.00 I 45.00 I 75.00 I 1,23 I 1.34 I 2.3 I  BEN C I 15.00 I 45.00 I 75.00 I 1.23 I 1.34 I 2.3 I  BEN C I 15.00 I 45.00 I 75.00 I 1.23 I 1.34 I 2.3 I  BEN C I 15.00 I 45.00 I 75.00 I 1.23 I 1.34 I 2.3 I  BEN C I 15.00 I 45.00 I 75.00 I 1.35 I 1.34 I 2.3 I 1  TURN I FUNDING PROPERTIONS I I I THE STRUMM TO LARM B I ARR C I  TIME I FUNDING PROPERTIONS I I I I I I I I I I I I I I I I I I I									_	
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TIME	nand se	t:	2023 Base	Case weekda	ay pm peak					
TIME   I FROM/TO   ARM A   ARM B   ARM C							I I			
16.45 - 17.00			I	( PERCENTAC	GE OF H.V.S					
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T	16.45	- 17.00	I ARM A	I 0.000	I 0.197 I	0.803	I.			
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I			I ARM B	I 0.867	I 0.000 I	0.133	Ι			
TARM C   T   0.957   T   0.043   T   0.00   T   T   1   T   1   1   1   1   1   1			I	I ( 0.0)	I(0.0)I	( 0.0)	Ι			
I			I ARM C	I 0.957	I 0.043 I	0.000	Ι			
Color			I	I ( 1.0)	I(0.0)I	( 0.0)	Ι			
QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT							-			
FOR COMBINED DEMAND SETS   AND FOR TIME PERIOD   2										
FOR COMBINED DEMAND   START   END   DELAY   GEOMETRIC DELAY   AVERAGE DEF										
TIME		FOR AND	COMBINED D	EMAND SETS ERIOD	2					
B-C 0.16 9.69 0.017 0.00 0.02 0.2 0.10 0.10 C-AB 0.67 14.95 0.045 0.045 0.00 0.18 2.6 0.10 0.07 C-A 7.59 A-B 1.12 A-C 4.54			CAPACITY (VEH/MIN)	DEMAND/ CAPACITY	PEDESTRIAN FLOW	N START QUEUE	END QUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELA PER ARRIVING
B-A			9.69	0.017						0.10
A-B 1.12 A-C 4.54  TIME DEMAND CAPACITY DEMAND/ (VEH/MIN) (VEH/MIN) (VEH/MIN) (RFC) (PEDS/MIN) (VEHS) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. CAPACITY DEMAND/ (PEDS/MIN) (VEHS) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. CAPACITY DEMAND/ (VEH/MIN) (VEH	B-A	1.07	6.82	0.156						
TIME   DEMAND   CAPACITY   DEMAND   PEDESTRIAN   START   END   DELAY   GEOMETRIC DELAY   PER ARRIVII										
TIME   DEMAND   CAPACITY   DEMAND   PEDESTRIAN   START   END   DELAY   GEOMETRIC DELAY   AVERAGE DELAY   PEDESTRIAN   START   END   DELAY   CAPACITY   PEDESTRIAN   START   END   DELAY   CAPACITY   PEDESTRIAN   START   END   DELAY   CAPACITY   PEDESTRIAN   START   END   DELAY   GEOMETRIC DELAY   AVERAGE DELAY   PEDESTRIA	A-C	4.54								
CRFC   CPEDS/MIN   (VEHS)   TIME SEGMENT   TIME SEGMENT   VEHICLE (M. 1.27	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	I START	END	DELAY	GEOMETRIC DELAY	
B-C 0.19 9.32 0.021 0.02 0.02 0.3 0.18 0.25 0.62 0.20 0.20 0.20 0.3 0.18 0.25 0.60 0.20 0.20 0.20 0.20 0.20 0.20 0.20		(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN
C-AB 0.98 15.90 0.062 0.06 0.10 1.5 0.07  C-A 8.88 A-B 1.33 A-C 5.42  TIME DEMAND CAPACITY DEMAND/ (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVII) (VEH.MIN) (VEH.MIN/ PER ARRIVII) (VEH.MIN) (VEH.MIN/ PER ARRIVII) (VEH.MIN										0.11
A-B 1.33 A-C 5.42  TIME DEMAND CAPACITY DEMAND/ (VEH/MIN) (VEH/MIN) (VEH/MIN) (VEH/MIN) (VEH/MIN) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M: (M: M: M										
TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DEL (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVII) PER ARRIVII) PER ARRIVII DELAY SEGMENT) TIME SEGMENT) VEHICLE (M. 17.15-17.30  B-C 0.24 8.79 0.027 0.02 0.03 0.4 0.12  B-A 1.56 5.52 0.282 0.25 0.38 5.5 0.25  C-AB 1.45 16.93 0.086 0.10 0.16 2.5 0.06  C-A 10.62 A-B 1.63  A-C 6.64  TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DEL (VEH/MIN) (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVII) PER ARRIVII) (VEH/MIN) (VEH/MIN) (VEH/MIN) (VEH/MIN) (VEH/MIN) (VEH) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. 17.30-17.45  B-C 0.24 8.79 0.027 0.03 0.03 0.4 0.4 0.12  B-A 1.56 5.52 0.282 0.38 0.39 5.8 0.25  C-AB 1.45 16.93 0.086 0.16 0.17 2.5										
CVEH/MIN   CVEH/MIN   CAPACITY										
(RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. O.12 B-A 1.56 5.52 0.282 0.25 0.38 5.5 0.25 0.25 0.26 0.25 0.38 5.5 0.25 0.25 0.26 0.26 0.10 0.16 0.16 0.16 0.16 0.16 0.16 0.1										
B-C 0.24 8.79 0.027 0.02 0.03 0.4 0.12 B-A 1.56 5.52 0.282 0.25 0.38 5.5 0.25 C-AB 1.69 0.086 0.10 0.16 2.5 0.06 C-A 10.62 A-B 1.63 A-C 6.64  TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DENOMINATION (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVII) (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M: 17.30-17.45 B-C 0.24 8.79 0.027 0.03 0.03 0.4 0.12 B-A 1.56 5.52 0.282 0.38 0.39 5.8 0.25 C-AB 1.45 16.93 0.086 0.16 0.17 2.5 0.06			(VEH/MIN)							
C-AB 1.45 16.93 0.086 0.10 0.16 2.5 0.06 C-A 10.62 A-B 1.63 A-C 6.64  TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DEI (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVII) (RFC) (PEDS/MIN) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. 17.30-17.45 B-C 0.24 8.79 0.027 0.03 0.03 0.4 0.12 B-A 1.56 5.52 0.282 0.38 0.39 5.8 0.25 C-AB 1.45 16.93 0.086 0.16 0.17 2.5 0.066	B-C	0.24								
A-B 1.63 A-C 6.64  TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DEMAND (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVII) (VEH.MIN/ PER ARRIVII	C-AB	1.45								
TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DEI (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVI) (V.30-17.45  B-C 0.24 8.79 0.027 0.03 0.03 0.4 0.12  B-A 1.56 5.52 0.282 0.38 0.39 5.8 0.25  C-AB 1.45 16.93 0.086 0.16 0.17 2.5 0.06	A-B	1.63								
TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DEL (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVII) (VEH.S) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. 17.30-17.45  B-C 0.24 8.79 0.027 0.03 0.03 0.4 0.12  B-A 1.56 5.52 0.282 0.38 0.39 5.8 0.25  C-AB 1.45 16.93 0.086 0.16 0.17 2.5 0.06	A-C	6.64								
TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DEL (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVII) (VEH.MIN/ VEH.MIN/ VEH.CLE (M. 17.30-17.45  B-C 0.24 8.79 0.027 0.03 0.03 0.4 0.12  B-A 1.56 5.52 0.282 0.38 0.39 5.8 0.25  C-AB 1.45 16.93 0.086 0.16 0.17 2.5 0.06										
(VEH/MIN)         (VEH/MIN)         CAPACITY         FLOW         QUEUE         QUEUE         (VEH.MIN/         (VEH.MIN/         PER ARRIVII           17.30-17.45         B-C         0.24         8.79         0.027         0.03         0.03         0.4         0.12           B-A         1.56         5.52         0.282         0.38         0.39         5.8         0.25           C-AB         1.45         16.93         0.086         0.16         0.17         2.5         0.06										
17.30-17.45  B-C 0.24 8.79 0.027 0.03 0.03 0.4 0.12  B-A 1.56 5.52 0.282 0.38 0.39 5.8 0.25  C-AB 1.45 16.93 0.086 0.16 0.17 2.5 0.06				CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
B-A 1.56 5.52 0.282 0.38 0.39 5.8 0.25 C-AB 1.45 16.93 0.086 0.16 0.17 2.5 0.06			8.79						•	
				0.282		0.38	0.39	5.8		0.25
C-A 10.02 A-B 1.63		1 4 F	16 02	በ በይፍ		0 16	0 17	2 5		0.06

I		I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	17.45-1	8.00									I
I	B-C	0.19	9.32	0.021		0.03	0.02	0.3		0.11	I
I	B-A	1.27	6.28	0.203		0.39	0.26	4.0		0.20	I
I	C-AB	0.98	15.91	0.062		0.17	0.10	1.6		0.07	I
I	C-A	8.88									I
I	A-B	1.33									I
I	A-C	5.42									I
I											I

I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DELAY I

(VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVING I

(RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (MIN) I I 18.00-18.15 0.3 I B-C 0.16 I B-A 1.07 I C-AB 0.67 0.02 0.02 9.69 0.017 6.82 0.156 14.95 0.045 0.26 0.19 0.10 0.07 2.9 0.17 C-A 7.59 1.12 A-B A-C 4.54 I

\*WARNING\* NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR	STREAM	B-C
TIME	NO.	. OF
SEGMENT	VEI	HICLES
ENDING	IN	QUEUE
17.00		0.0
17.15		0.0
17.30		0.0
17.45		0.0
18.00		0.0
18.15		0.0
QUEUE FOR	STREAM	B-A

JOEUE FOR	SIREAM	B-A
TIME	NO.	. OF
SEGMENT	VEI	HICLES
ENDING	IN	QUEUE
17.00		0.2
17.15		0.3
17.30		0.4
17.45		0.4
18.00		0.3
18.15		0.2

QUEUE	FOR	SIREAM	C-AB
TIME		NO.	OF

TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
17.00	0.1
17.15	0.1
17.30	0.2
17.45	0.2
18.00	0.1
18.15	0.1

# OUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I STREAM I		I I I	TOTAL	. 1	DEMAND	I I	* QUEUEI	I * INCLUSIVE QUEUEING * I * DELAY *					
I		I	(VEH)		(VEH/H)	I	(MIN)	(MIN/VEH)	Ι	(MIN)		(MIN/VEH)	I
_	B-C B-A C-AB	I I I	17.9 117.0 93.1	I	78.0 62.1	I	2.0 I 24.5 I 10.0 I	0.11 0.21 0.11	I I I	24.5	I I I	0.11 0.21 0.11	I I I
_	C-A A-B A-C	I I	812.6 122.5 498.3	I	541.7 81.7 332.2	I	I I I		I I		I I		I I
I	ALL	I	1661.3	I	1107.6	I	36.5 I	0.02	I	36.5	I	0.02	I

\*\*\*\*\*\*END OF RUN\*\*\*\*\*

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS

A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

#### TRI, LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM RELEASE 4.0 (SEPT 2008)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

"Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\PICADY\Blackberry-Dyers\ Blackberry-Dyers prop.vpi"

(drive-on-the-left) at 11:13:10 on Friday, 12 June 2009

# .RUN INFORMATION

RUN TITLE : Blackberry Road/Dyers Road junction (prop improved layout, Heath Rd realigned)

LOCATION : Stanway : 18/05/09 DATE

: Mersea Homes/Hills Residential : mlast [ARDENT23] : F960 CLIENT

ENUMERATOR

JOB NUMBER

STATUS DESCRIPTION

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A) MINOR ROAD (ARM B)

ARM A IS Blackberry Road (east)

ARM B IS Dyers Road

ARM C IS Blackberry Road (west)

# STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

## GEOMETRIC DATA

DATA ITEM I MINOR ROAD B I I (W ) 6.00 M. I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH CENTRAL RESERVE WIDTH I (WCR ) 0.00 M. I I (WC-B) 2.20 M. MAJOR ROAD RIGHT TURN - WIDTH - VISIBILITY - BLOCKS TRAFFIC I (VC-B)200.00 M. I YES I (VB-C) 21.0 M. MINOR ROAD - VISIBILITY TO LEFT - VISIBILITY TO RIGHT - LANE 1 WIDTH - LANE 2 WIDTH I (VB-A) 110.0 M. T (WB-C) I (WB-A) WIDTH AT 0 M FROM JUNCTION WIDTH AT 5 M FROM JUNCTION 10.00 M. 7.30 M. WIDTH AT 10 M FROM JUNCTION WIDTH AT 15 M FROM JUNCTION 6.00 M. 5.50 M. WIDTH AT 20 M FROM JUNCTION 5.00 M. - LENGTH OF FLARED SECTION I DERIVED: 3 PCU I (NB:Streams may be combined, in which case capacity will be adjusted)

	Intercept For STREAM B-C	Slope For Opposing STREAM A-C	Slope For Opposing	J I
I	0.00	0.00	0.00	I
_				

\* Due to the presence of a flare, data is not available

		Lope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing STREAM C-A	Slope For OpposingI STREAM C-B I
I	0.00	0.00	0.00	0.00	0.00 I

 $\mbox{\scriptsize \star}$  Due to the presence of a flare, data is not available

I Intercept For Slope For Opposing Slope For Opposing I STREAM C-B STREAM A-C STREAM A-B I

I 689.79 0.27 0.27 I

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I

I A I 100 I

I B I 100 I

I C I 100 I

.Demand set: 2023 Dev't Case weekday am peak

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I	I	NUI	MBER OF	MINU	TES FROM	ST	ART WHEN	Ι	RATE	OI	F FLOW (	VEF	H/MIN)	I
I ARM	I	FLOW	STARTS	I TO	P OF PEAK	I	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER	I
I	I	TO	RISE	I I	S REACHED	I	FALLING	Ι	PEAK	I	OF PEAK	Ι	PEAK	I
I	I			I		I		Ι		Ι		I		I
I ARM	ΑI		15.00	I	45.00	I	75.00	Ι	6.32	Ι	9.49	Ι	6.32	I
I ARM	ΒΙ		15.00	I	45.00	I	75.00	Ι	4.30	I	6.45	Ι	4.30	I
I ARM	CI	:	15.00	I	45.00	Ι	75.00	Ι	7.59	Ι	11.38	Ι	7.59	I

.Demand set: 2023 Dev't Case weekday am peak

	Ι			Т	JRNING PRO	OPORTIONS	I
	Ι			ΤŢ	JRNING COU	JNTS	I
	Ι		(	PE	ERCENTAGE	OF H.V.S)	I
TIME	Ι	FROM/	TO	Ι	ARM A I	ARM BIA	ARM C I
07 45 - 08 00	т			т	т	т	т
07.15	T	ARM	А	_	_	0.213 T	0.787 T
	I			I			398.0 I
	Ι			Ι	( 0.0)I	(5.0)I	( 1.0)I
	Ι			Ι	I	I	I
	Ι	ARM	В	Ι	0.843 I	0.000 I	0.157 I
	Ι			Ι	290.0 I	0.0 I	54.0 I
	Ι			Ι	( 1.0)I	( 0.0)I	( 0.0)I
	Ι			Ι	I	I	I
	Ι	ARM	C	Ι	0.888 I	0.112 I	0.000 I
	Ι			Ι	539.0 I	68.0 I	0.0 I
	Ι			Ι	( 3.0)I	( 0.0)I	( 0.0)I
	Ι			Ι	I	I	I
	TIME 07.45 - 08.00	TIME I 07.45 - 08.00 I I I I I I I I I I I I I I I I I I I	TIME I FROM/ 07.45 - 08.00 I I ARM I I I ARM I I I ARM I	TIME I FROM/TO  07.45 - 08.00 I I ARM A I I I ARM B I I I ARM B I I I I ARM C I I ARM C I	TIME I FROM/TO I  07.45 - 08.00 I I I I I I I I I I I I I I I I I I	TIME I FROM/TO I ARM A I  07.45 - 08.00 I I I I 0.000 I I I 0.000 I I I 0.000 I I I I	TIME I FROM/TO I ARM A I ARM B I FROM/TO I ARM A I O.000 I 0.213 I I I I 0.0 I 108.0 I I I I 0.0 I 108.0 I I I I I I I I I I I I I I I I I I I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

_											
·I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	Ι
Ι		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	07.45-08	3.00									I
I	B-C	0.68	7.68	0.088		0.00	0.10	1.4		0.14	I

I B-A I C-AB I A-B I A-C I	1.36	7.22 9.77	0.504 0.087		0.00	0.98 0.10	13.5 1.5		0.27 0.11	I I I I
I TIME I I I 08.00-0	(VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY		QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I
T B-C	0.81 4.35 1.02 1.62 5.96	6.48 6.59 9.43	0.125 0.660 0.108			0.14 1.80 0.13	2.0 24.4 2.0		0.18 0.43 0.12	I I I I I
I	(VEH/MIN)		CAPACITY		QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I
I 08.15-0: I B-C I B-A I C-AB I A-B I A-C I	0.99 5.32 1.25	5.72	0.447 0.931 0.139		1.80	0.74 6.28 0.18	70.1			I I I I I
I	(VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY	PEDESTRIAN FLOW (PEDS/MIN)	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I
I 08.30-0 I B-C I B-A I C-AB I A-B I A-C I	0.99 5.32 1.25 1.98	1.04 5.71 8.97	0.957 0.931 0.139		0.74 6.28 0.18	3.25 7.86 0.19	33.7 107.3 2.8		3.02 1.58 0.13	I I I I I
I	(VEH/MIN)		CAPACITY		QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I
I 08.45-00 I B-C I B-A I C-AB I A-B I A-C	0.81 4.35	5.87 6.58 9.43	0.138 0.660 0.108		7.86	0.16 2.12 0.13	3.8 44.8 2.0			I I I I I I
 I TIME I	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN FLOW (PEDS/MIN)	START	END	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	·
I 09.00-0	9.15 0.68 3.64	7.59	0.089		0.16 2.12		1.5 17.1			I I I I I
				TIES AS MAJOR						
	STREAM									
TIME SEGMENT ENDING	IN QU	CLES JEUE								
08.00 08.15 08.30	0 . 0 . 0 .	. 1								
08.45 09.00 09.15	3. 0. 0.	.3 *** .2								
	STREAM									
TIME SEGMENT ENDING 08.00		OF CLES JEUE								
08.15 08.30	1 6	.8 ** .3 ****								
08.45 09.00	7.		***							

```
09.15
                                1.1 *
 QUEUE FOR STREAM C-AB
                              NO OF
   TIME
   SEGMENT
                              VEHICLES
   ENDING
                              IN QUEUE
    08.00
                                    0.1
     08.15
     08.30
                                    0.2
                                    0.2
     08.45
     09.00
                                    0.1
    09.15
                                   0.1
                              OURIETING DELAY INFORMATION OVER WHOLE PERIOD
 * DELAY *
      I I * DELAY * I
                  I (VEH) (VEH/H) I (MIN)
                                                                              (MIN/VEH) I
                                                       I (PIN) (PIN/VEN) I (PIN) (PIN/
    B-C I 74.3 I 49.6 I
B-A I 399.2 I 266.1 I
C-AB I 93.6 I 62.4 I
                                                                                                             52.1 I 0.70
277.2 I 0.69
12.6 I 0.13
                                                              52.1 I 0.70 I
                                                              277.2 I
                                                                                    0 69
      C-AB I 93.6 I 62.4 I
A-B I 148.7 I 99.1 I
A-C I 547.8 I 365.2 I
                                                                                0.13
                                                              12.6 I
                                                                                                               12.6 I
                                                                                                                                    0.13
 I ALL I 2005.5 I 1337.0 I 341.8 I 0.17 I 341.9 I 0.17 I
  * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
    INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
  A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.
 ******END OF RUN*****
  .SLOPES AND INTERCEPT
   (NB:Streams may be combined, in which case capacity will be adjusted)
 I Intercept For Slope For Opposing I
 I STREAM B-C STREAM A-C
                                                               -----
                                               0.00
 * Due to the presence of a flare, data is not available
 I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Stream B-A Stream A-C Stream A-B Stream C-A Stream C-B I
 I Intercept for Stope for opposing Stope for opposi
                                              0.00
                                                                                       0.00
                                                                                                                                   0.00
* Due to the presence of a flare, data is not available
 I Intercept For Slope For Opposing Slope For Opposing I STREAM C-B STREAM A-C STREAM A-B I
 I 689.79
                                              0.27
                                                                                      0.27
  (NB These values do not allow for any site specific corrections)
.TRAFFIC DEMAND DATA
 T ARM T FLOW SCALE(%) T
 ΤA
            I
                          100
    В
                           100
 I C I
                          100
.Demand set: 2023 Dev't Case weekday pm peak
 TIME PERIOD BEGINS 16.45 AND ENDS 18.15
 LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.
DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA
    I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN) I
ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER I
I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK I
I I I I I I
I I I I I I I
```

I ARM	ΑI	15.00	I	45.00	I	75.00	I	6.40	I	9.60	I	6.40	I
I ARM	ΒI	15.00	I	45.00	I	75.00	I	2.79	I	4.18	I	2.79	I
I ARM	CI	15.00	I	45.00	I	75.00	I	9.49	I	14.23	I	9.49	I

.Demand set: 2023 Dev't Case weekday pm peak

I		I			Т	URNING PRO	OPORTIONS	I
I		Ι			ΤŪ	URNING COU	JNTS	I
I		I			(PI	ERCENTAGE	OF H.V.S)	I
I		-						
I	TIME	Ι	FROM	/T0	Ι	ARM A I	ARM B I	ARM C I
I	16.45 - 17.00	Ι			Ι	I	I	I
I		Ι	ARM	Α	Ι	0.000 I	0.316 I	0.684 I
I		Ι			Ι	0.0 I	162.0 I	350.0 I
I		Ι			Ι	( 0.0)I	( 0.0)I	( 1.0)I
I		I			I	I	I	I
I		Ι	ARM	В	Ι	0.879 I	0.000 I	0.121 I
I		I			I	196.0 I	0.0 I	27.0 I
I		I			I	( 0.0)I	( 0.0)I	( 0.0)I
I		I			I	I	I	I
I		I	ARM	C	I	0.813 I	0.187 I	0.000 I
I		I			I	617.0 I	142.0 I	0.0 I
I		I			I	( 1.0)I	( 0.0)I	( 0.0)I
I		I			I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

_			COMBINED DE		2						
I I I				CAPACITY	PEDESTRIAN FLOW (PEDS/MIN)	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	Ι
Ι	16.45-1										Ι
I	B-C	0.34 2.46 1.78	8.20	0.041		0.00	0.04	0.6		0.13	Ι
I	B-A	2.46	6.90	0.356		0.00	0.54	7.6		0.22	Ι
Ι	C-AB	1.78	9.77	0.182		0.00	0.25	0.6 7.6 3.7		0.12	Ι
I	A-B	2.03 4.39									Ι
I		4.39									I
 I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	 I
I		(VEH/MIN)							(VEH.MIN/		
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	17.00-1										Ι
Ι		0.40	7.56	0.054		0.04	0.06	0.8		0.14	Ι
I		2.94	6.17 9.43	0.476		0.54	0.88	12.4 5.2		0.31 0.14	I
	C-AB A-R	2.13	9.43	0.226		0.25	0.35	5.4		0.14	I
T	A-C	2.43 5.24									I
I											I
 I					PEDESTRIAN		END	DELAY			
I		(VEH/MIN)	(VEH/MIN)		FLOW				(VEH.MIN/		
I		7 20		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	
I	17.15-1 B-C	0.50	5 95	0.085		0.06	0 00	1 2		0.19	I
I				0.697		0.88	2.04	1.3 26.7		0.58	Ī
I	C-AB	2.61		0.291		0.35	0.55	8.1		0.16	I
I	A-B	2.97 6.42									Ι
		6.42									Ι
											I 
I					PEDESTRIAN FLOW		OHEHE	DELAY (VEH MIN/	GEOMETRIC DELAY (VEH.MIN/		
Ī		(VEII/PIEIV)	( V 1117 ( 11117 )			(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ī
I	17.30-1	7.45		, -,	, ,	,	, ,	,	,	,	Ι
I	B-C	0.50 3.60	5.69	0.087		0.09		1.4		0.19	Ι
I	B-A	3.60	5.16	0.697			2.16			0.63	Ι
I	C-AB	2.61 2.97	8.97	0.291		0.55	0.55	8.4		0.16	I
I											I
	A-C	0.42									T
I					PEDESTRIAN		END		GEOMETRIC DELAY		
I		(VEH/MIN)	(VEH/MIN)		FLOW				(VEH.MIN/		
I	17.45-1	8 00		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	AFHICTE (WIN)	I
I			7.48	0.054		0.09	0.06	0.9		0.14	I
I		2.94	7.48 6.16	0.477		2.16	0.95	0.9 15.6		0.33	I
Ι	C-AB			0.226		0.55		5.5		0.14	Ι

I A-B 2.43 I A-C 5.24	
I A-C 5.24	I I
	I 
I	
I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEO	METRIC DELAY AVERAGE DELAY I
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/	(VEH.MIN/ PER ARRIVING I
I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TI	ME SEGMENT) VEHICLE (MIN) I
I 18.00-18.15	I
I B-C 0.34 8.17 0.041 0.06 0.04 0.7	0.13 I
I B-A 2.46 6.89 0.357 0.95 0.57 9.0	0.23 I
I C-AB 1.78 9.77 0.182 0.36 0.26 3.9	0.13 I
I A-B 2.03	I
I A-C 4.39	I
I	I
*WARNING* NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR	

QUEUE FOR	STREAM	B-C
TIME SEGMENT ENDING 17.00 17.15 17.30 17.45 18.00	VEH	OF CICLES QUEUE 0.0 0.1 0.1
18.15		0.0

QUEUE FOR STREAM B-A TIME SEGMENT ENDING 17.00 17.15 17.30 17.45 18.00 18.15 NO. OF VEHICLES

VEHICLES IN QUEUE 0.5 0.9 2.0 2.2 0.9 0.6 

QUEUE FOR STREAM C-AB

		_
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
17.00	0.3	
17.15	0.3	
17.30	0.5	*
17.45	0.6	*
18.00	0.4	
18.15	0.3	

## QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I I	STREAM	I I	TOTAL	. 1	DEMAND	I I	* QUEUE:	*	I	* DE	LA:	QUEUEING *	I
I		I	(VEH)	_	(VEH/H)	I	(MIN)			(MIN)		(MIN/VEH)	-
I	B-C	I	37.2	Ι	24.8	I	5.7 I	0.15	I	5.7	I	0.15	I
Ι	B-A	Ι	269.8	I	179.9	I	102.9 I	0.38	Ι	103.0	Ι	0.38	Ι
Ι	C-AB	Ι	195.5	Ι	130.3	Ι	34.9 I	0.18	I	34.9	I	0.18	I
Ι	A-B	Ι	223.0	Ι	148.7	Ι	I		I		I		I
I	A-C	I	481.7	Ι	321.2	Ι	I		I		I		I
I	ALL	I	2056.4	I	1370.9	I	143.5 I	0.07	Ι	143.5	I	0.07	I

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES

WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

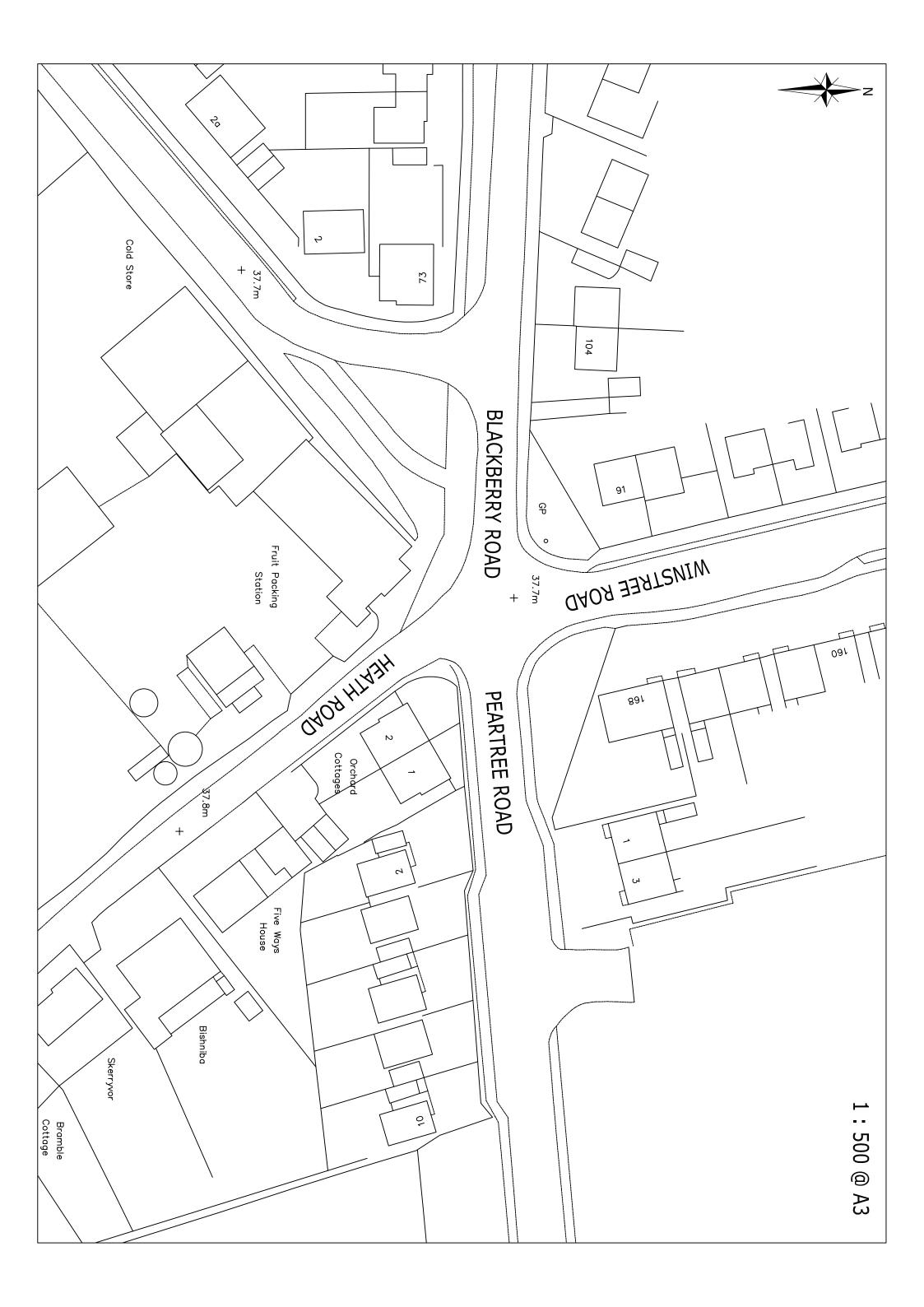
\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS

A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

<sup>\*\*\*\*\*\*</sup>END OF RUN\*\*\*\*\*

# Appendix F

Results of PICADY capacity assessment: Blackberry Road/ Winstree Road/Peartree Road/Heath Road junction



TRI, LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM RELEASE 4.0 (SEPT 2008)

ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT BY PERMISSION OF THE CONTROLLER OF HMSO

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PROGRAM ADVICE AND MAINTENANCE CONTACT:
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EMAIL: SOftware@trl.co.uk

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

"Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\PICADY\
Blackberry-Winstree-Peartree\Blackberry-Winstree-Peartree-Heath crossroads.vpi"
(drive-on-the-left) at 12:10:24 on Friday, 12 June 2009

## .RUN INFORMATION

RUN TITLE : Blackberry Road/Winstree Road/Peartree Road/Heath Road crossroads (existing)

: Stanway : 19/05/09 LOCATION DATE

: Mersea Homes/Hills Residential : mlast [ARDENT23] : F960 CLIENT

ENUMERATOR

JOB NUMBER

STATUS DESCRIPTION

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MINOR ROAD (ARM D) MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A) MINOR ROAD (ARM B)

ARM A IS Blackberry Road (west)

ARM B IS Winstree Road (north)
ARM C IS Peartree Road (east)

ARM D IS Heath Road (south)

## .STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

## .GEOMETRIC DATA

I	DATA ITEM	I	MINOR ROAD B	I	MINOR ROAD D	I
I I I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH CENTRAL RESERVE WIDTH		( W ) 7.20 M. (WCR ) 0.00 M.		( W ) 7.20 M. (WCR ) 0.00 M.	I I I
I I	MAJOR ROAD RIGHT TURN - WIDTH - VISIBILITY - BLOCKS TRAFFIC		(WC-B) 2.20 M. (VC-B)180.00 M. YES	I	(WA-D) 2.20 M. (VA-D)200.00 M. YES	I I I
I	MINOR ROAD - VISIBILITY TO LEFT	I	(VB-C) 75.0 M.	I	(VD-A) 90.0 M.	I
I	- VISIBILITY TO RIGHT - LANE 1 WIDTH		(VB-A) 40.0 M. (WB-C) -		(VD-C) 14.0 M. (WD-A) -	I
I	- LANE 2 WIDTH WIDTH AT 0 M FROM JUNCTION	I	(WB-A) - 10.00 M.		(WD-C) - 10.00 M.	I
I	WIDTH AT 5 M FROM JUNCTION WIDTH AT 10 M FROM JUNCTION	I	4.50 M. 3.80 M.	I	4.40 M. 3.90 M.	I

I Slope For Opposing Slope For Opposing Slope For Opposing STREAM C-B STREAM C-C STREAM	
(NB:Streams may be combined, in which case capacity will be adjusted)  STREAM B-C  I Intercept For Slope For Opposing Slope For Opposing I I STREAM B-C STREAM A-C STREAM A-B I I 0.00 0.00 0.00 I I Due to the presence of a flare, data is not available  STREAM D-A  I Intercept For Slope For Opposing Slope For Opposing I STREAM D-A STREAM C-A STREAM C-D I I STREAM D-A STREAM C-A STREAM C-D I I I Due to the presence of a flare, data is not available  STREAM B-A  I Intercept For Slope For Opposing Slope For Opposing I STREAM B-A STREAM A-C STREAM A-D STREAM D-A STREAM D-A STREAM I I Intercept For Slope For Opposing Slope For Opposing I STREAM B-A STREAM A-C STREAM A-D STREAM D-A STREAM D-C STREAM D-C STREAM D-C STREAM D-C STREAM C-A STREAM D-C STREAM D-C STREAM C-A STREAM C-B STREAM D-C STREAM D-C STREAM C-A STREAM C-B STREAM D-C STREAM D-C STREAM C-A STREAM C-B STREAM D-C STREAM D-C STREAM C-A STREAM D-C STREAM D-C STREAM C-B STREAM D-C STREAM C-B STREAM D-C	
STREAM	
I Intercept For Slope For Opposing Slope For Opposing I STREAM B-C STREAM A-C STREAM A-B I  I 0.00 0.00 0.00 I  Due to the presence of a flare, data is not available STREAM D-A  I Intercept For Slope For Opposing Slope For Opposing I STREAM D-A STREAM C-A STREAM C-D I  I 0.00 0.00 0.00 I  Due to the presence of a flare, data is not available STREAM B-A  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Slope For Opposing STREAM B-A  I Intercept For Slope For Opposing Slope For Opposing STREAM D-A STREAM A-D STREAM D-A STREAM B-A STREAM A-B STREAM A-B STREAM A-B STREAM C-A STREAM C-B STREAM C-B STREAM C-B STREAM D-C  I Slope For Opposing STREAM C-B STREAM C-B STREAM C-B STREAM D-C  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Slope For Opposing STREAM C-B STREAM C-B STREAM C-B STREAM D-C  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Slope For Opposing STREAM D-C STREAM C-A STREAM C-B STREAM B-C STREAM E  I 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0	
I Intercept For Slope For Opposing Slope For Opposing I STREAM B-C STREAM A-C STREAM A-B I I I 0.00 0.00 0.00 I STREAM D-A  I Intercept For Slope For Opposing Slope For Opposing I STREAM D-A STREAM C-A STREAM C-D I I STREAM D-A STREAM C-A STREAM C-D I I I Intercept For Slope For Opposing Slope For	
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I Intercept For Slope For Opposing Slope For Opposing I STREAM D-A STREAM C-A STREAM C-D I  I 0.00 0.00 0.00 I  Due to the presence of a flare, data is not available  STREAM B-A  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Slope For I STREAM B-A STREAM A-C STREAM A-D STREAM D-A STREAM D-A STREAM D-A STREAM D-D STREAM D-D D.  I Slope For Opposing Slope For I STREAM A-B STREAM C-A STREAM C-B STREAM D-D D.  Due to the presence of a flare, data is not available  STREAM D-C  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Slope For Opposing STREAM D-C STREAM C-B STREAM D-C STREAM C-B STREAM D-C STREAM C-B STREAM D-C STREAM D-C STREAM C-B STREAM D-C STREAM C-B STREAM D-C STREAM D-C STREAM C-B STREAM D-C STREAM D-C STREAM C-B	
I Intercept For Slope For Opposing Slope For Opposing I STREAM D-A STREAM C-A STREAM C-D I  I 0.00 0.00 0.00 I  Due to the presence of a flare, data is not available STREAM B-A  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing STREAM D-A STREAM D-A STREAM D-A STREAM D-A STREAM D-A STREAM D-A STREAM D-D D-D D-D D-D D-D D-D D-D D-D D-D D-	
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I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing STREAM D-A STREAM D-D D.00 0.00 0.00 0.00 0.00 0.00 0.00	
I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Stream D-A STREAM A-D STREAM D-A STREAM D-C STRE	
I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Stream B-A STREAM A-C STREAM A-D STREAM D-A	
I Slope For Opposing Stream CD Opposing Stream CD Opposing Slope For Opposing Stream DD Opposing Slope For Opposing Slope For Opposing Slope For Opposing Stream CD O	OpposingI O-B I
I Slope For Opposing Slope For Opposing Slope For Opposing Slope For Opposing STREAM C-B STREAM C-B STREAM C-B  I 0.00 0.00 0.00 0.00 0.00 0.00  Due to the presence of a flare, data is not available  STREAM D-C  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing STREAM C-B S	00 I
I STREAM A-B STREAM C-A STREAM C-B STREAM D  I 0.00 0.00 0.00 0.00 0.00  Due to the presence of a flare, data is not available  STREAM D-C  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Slope For STREAM B-C STREAM B-C STREAM D-C STREAM C-A STREAM C-B STREAM B-C STREAM B	
Due to the presence of a flare, data is not available  STREAM D-C  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing STREAM B-C STREAM A-D STREAM B-C STR	)-C I
Due to the presence of a flare, data is not available  STREAM D-C  I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing STREAM B-C STR	00 I
I 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.	OpposingI B-D I
I STREAM C-D STREAM A-C STREAM A-D STREAM E	00 I
I STREAM C-D STREAM A-C STREAM A-D STREAM E	
0.00 0.00 0.00 0.00	B-A I
	00 I
Due to the presence of a flare, data is not available	
STREAM C-B	
Intercept For Slope For Opposing Slope For Opposing I STREAM C-B STREAM A-C STREAM A-D I	
[ 678.20	
STREAM A-D	
I Intercept For Slope For Opposing Slope For Opposing I I STREAM A-D STREAM C-A STREAM C-B I	
I 689.79 0.25 0.36 I	
3-D Stream From Left Hand Lane	
: Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Slope For STREAM B-D STREAM A-C STREAM A-D STREAM A-B STREAM CONTROL OF STREAM CONT	: OpposingI !-B I
I Slope For Opposing Slope For Opposing Slope For Opposing Slope For I STREAM C-A STREAM C-D	00 I
0.00 0.00	00 I

B-D Stream Fro	esence of a flare, da m Right Hand Lane	ta is not available		
I Intercept Fo I STREAM B-D	r Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B	STREAM C-B I
I 0.00	0.00	0.00	0.00	0.00 I
I	Slope For Opposing STREAM C-A	STREAM C-D	Slope For Opposing	Slope For OpposingI
I	0.00	0.00		I
D-B Stream Fro	esence of a flare, da			
I STREAM D-B	r Slope For Opposing STREAM C-A	STREAM C-B	STREAM D-C	STREAM A-D I
I 0.00	0.00	0.00	0.00	0.00 I
I I	Slope For Opposing STREAM A-C		Slope For Opposing	Slope For OpposingI
I	0.00	0.00		
	esence of a flare, da			

D-B	Stream	From	Riaht	Hand	Lane

D D DCTCGIN TTOIN				
I Intercept For I STREAM B-D	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-B	Slope For Opposing STREAM C-D	Slope For OpposingI STREAM A-D I
I 0.00	0.00	0.00	0.00	0.00 I
I	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-B	Slope For Opposing	Slope For OpposingI
I	0.00	0.00		I

\* Due to the presence of a flare, data is not available

## .TRAFFIC DEMAND DATA

_					
Ι	ARM	I	FLOW	SCALE(%)	1
Ι	A	Ι		100	1
Ι		Ι		100	1
Ι	-	Ι		100	1
Ι	D	Ι		100	1

.Demand set: 2023 Base Case weekday am peak

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I			Ι	NUI	MBER OF	M	INUTI	ES FROM	ST	ART WHEN	Ι	RATE	01	F FLOW (	VE	H/MIN)	I
I	ARM		Ι	FLOW	STARTS	3 I	TOP	OF PEAK	I	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER	I
I			Ι	TO	RISE	I	IS	REACHEL	I	FALLING	Ι	PEAK	I	OF PEAK	I	PEAK	I
I			Ι			Ι			I		Ι		Ι		Ι		I
I	ARM	Α	Ι	-	15.00	I		45.00	Ι	75.00	Ι	6.91	Ι	10.37	Ι	6.91	I
I	ARM	В	Ι	-	15.00	I		45.00	Ι	75.00	Ι	5.81	Ι	8.72	Ι	5.81	I
I	ARM	C	Ι		15.00	I		45.00	I	75.00	I	7.30	I	10.95	Ι	7.30	I
I	ARM	D	Ι		15.00	I		45.00	I	75.00	Ι	0.63	Ι	0.94	Ι	0.63	I

.Demand set:	2023 Base Case weekday am peak	
I	I TURNING PROPORTIONS I TURNING COUNTS	I
I	I (PERCENTAGE OF H.V.S)	I
I TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM D	I
I 07.45 - 08.00	I I I I I I I I I I I I I I I I I I I	I I

I	I		I	0.0 I	124.0 I	417.0 I	12.0 I
I	I		I	( 0.0)I	( 7.0)I	( 2.0)I	( 0.0)I
I	I		I	I	I	I	I
I	I	ARM B	I	0.247 I	0.000 I	0.742 I	0.011 I
I	I		I	115.0 I	0.0 I	345.0 I	5.0 I
I	I		I	( 6.0)I	( 0.0)I	( 2.0)I	( 0.0)I
I	I		I	I	I	I	I
I	I	ARM C	I	0.594 I	0.380 I	0.000 I	0.026 I
I	I		I	347.0 I	222.0 I	0.0 I	15.0 I
I	I		I	( 4.0)I	( 1.0)I	( 0.0)I	( 0.0)I
I	I		I	I	I	I	I
I	I	ARM D	I	0.480 I	0.120 I	0.400 I	0.000 I
I	I		I	24.0 I	6.0 I	20.0 I	0.0 I
I	I		I	( 0.0)I	( 0.0)I	( 0.0)I	( 0.0)I
I	I		I	I	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

					ON FOR EACH 1						
		FOR (	COMBINED DE	EMAND SETS ERIOD							
·I	TIME				PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY (REC)	FLOW (PEDS/MIN)	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING	I
I	07.45-08	3.00		(100)	(PEDS/MIN)	(VEIID)	(VEIID)	TIPE DEGREENT)	TIME DEGREENT,		Т
Ι	B-CD	4.37	9.53	0.459		0.00	0.83	11.6		0.19 0.25 0.07	Ι
I	B-AD A-BCD	1.47	5.35	0.274		0.00	0.37	5.2		0.25	I
I	A-B	1.53	13.72	0.020		0.00	0.02	0.1		0.07	I
Ι	A-C	5.14									Ι
I	D-AB	0.34	9.21 5.34	0.037		0.00	0.04	0.6		0.11	I
I	C-ABD	4.36	12.47	0.350		0.00	0.73	10.8		0.11 0.20 0.12	I
Ι	C-D	0.12									Ι
I	C-A	2.84									I
·I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
Ι		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/	PER ARRIVING	Ι
I		15		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)		I
I	B-CD	5.22	8.99	0.581		0.83	1.33	18.8		0.26	I
Ι	B-AD	1.75	4.77	0.366		0.37	0.56	7.9		0.26 0.33 0.07	Ι
I	A-BCD A-B	0.37	14.17	0.026		0.02	0.03	0.5		0.07	I
I	A-C	6.10									I
I	D-AB	0.41	8.83	0.046		0.04	0.05	0.7		0.12 0.24 0.14	I
I	D-BC	0.34	4.58	0.075		0.06	0.08	1.1		0.24	I
I	C-ABD	0.12	12.60	0.455		0.73	1.10	17.5		0.14	I
I	C-A	2.84									I
											Ι
•											
									CEOMETRIC DELAY		
I	TIME	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/	PER ARRIVING	I
Ι				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	08.15-08	3.30	0 17	0 704		1 22	2 16	40.0		0 50	I
T	B-CD B-AD	2.13	3.97	0.784		0.56	1.08	14.7		0.50	T
I	A-BCD	0.53	14.80	0.036		0.03	0.05	40.8 14.7 0.7		0.50 0.52 0.07	I
I	A-B	2.20									I
T T	A-C D-AB	0.50	8.23	0.061		0.05	0.06	0.9		0.13	I
I	D-BC	0.42	3.53	0.118		0.08	0.13	1.9		0.13 0.32 0.19	I
I	C-ABD	8.19	13.27	0.617		1.16	2.30	34.5		0.19	Ι
	C-D	0.10		0.784 0.536 0.036 0.061 0.118 0.617							I
I	0 11	2.15									I
•											
I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	(REC)	(PEDS/MIN)	(VEHS)	(VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)	
Т	08.30-08	3.45									I
I	B-CD	6.40	8.14	0.787 0.539 0.036		3.16	3.39	49.5 16.6 0.7		0.56 0.54 0.07	Ι
I	B-AD A-RCD	2.13 0.53	3.96 14 78	0.539		1.08	1.12	16.6 0.7		0.54	I
I	A-BCD	2.20	17./0	0.030		0.05	0.05	0.7		0.07	I
I	A-C	7.41		0.6							Ι
I	D-AB D-BC	0.50	8.21	0.061 0.120		0.06 0.13	0.06	1.0 2.0 36.4		0.13	I
I	C-ABD	8.23	13.30	0.619		2.30	2.37	36.4			I
I	C-D	0.10	8.21 3.48 13.30								I
I	C-A	2.39									I
_											-

	GE DELAY I RRIVING I LE (MIN) I
I (VEH/MIN) (VEH/MIN) CAPACITY FLOW OUEUE OUEUE (VEH.MIN/ VEH.MIN/ PER A	
	LE (MIN) I
I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHIC	
I 08.45-09.00	1
I B-CD 5.22 8.95 0.583 3.39 1.46 24.2	.29 I
I B-AD 1.75 4.74 0.368 1.12 0.60 9.7	.34 I
I A-BCD 0.37 14.15 0.026 0.05 0.03 0.5	.07 I
I A-B 1.81	I
I A-C 6.10	I
I D-AB 0.41 8.80 0.046 0.06 0.05 0.8	.12 I
I D-BC 0.34 4.51 0.076 0.13 0.08 1.3	.24 I
I C-ABD 5.83 12.84 0.454 2.37 1.23 18.9	.15 I
I C-D 0.12	I
I C-A 2.80	I
I	I

Ι	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELA	Y
Ι		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
Ι				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN	) :
Ι	09.00-09	9.15									]
Ι	B-CD	4.37	9.50	0.460		1.46	0.87	13.8		0.20	]
Ι	B-AD	1.47	5.33	0.275		0.60	0.39	6.1		0.26	]
Ι	A-BCD	0.28	13.70	0.020		0.03	0.02	0.4		0.07	3
Ι	A-B	1.53									3
Ι	A-C	5.14									I
Ι	D-AB	0.34	9.19	0.037		0.05	0.04	0.6		0.11	3
Ι	D-BC	0.29	5.30	0.054		0.08	0.06	0.9		0.20	I
Ι	C-ABD	4.39	12.49	0.351		1.23	0.76	11.5		0.12	I
I	C-D	0.12									J
Ι	C-A	2.82									J
I											3

QUEUE FOR	STREAM B-CD	_
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
08.00	0.8	*
08.15	1.3	*
08.30	3.2	***
08.45	3.4	***
09.00	1.5	*
09.15	0.9	*

QUEUE FOR	STREAM	B-AI	D
TIME	NO.	OF	
SEGMENT	VEH	ICLES	
ENDING	IN	QUEUE	
08.00		0.4	
08.15		0.6	*
08.30		1.1	*
08.45		1.1	*
09.00		0.6	*
09.15		0.4	

QUEUE FOR	STREAM	A-BCI
TIME	NO	. OF
SEGMENT	VEI	HICLES
ENDING	IN	QUEUE
08.00		0.0
08.15		0.0
08.30		0.0
08.45		0.0
09.00		0.0
09.15		0.0

QUEUE FOR	STREAM	D-AB
TIME	NO	. OF
SEGMENT	VE	HICLES
ENDING	IN	QUEUE
08.00		0.0
08.15		0.0
08.30		0.1
08.45		0.1
09.00		0.0
09.15		0.0

QUEUE FOR	STREAM D-BC
TIME SEGMENT ENDING 08.00 08.15 08.30	NO. OF VEHICLES IN QUEUE 0.1 0.1 0.1
09.00	0.1

09.15 0.1

QUEUE FOR	STREAM	C-AB	D
TIME SEGMENT	NO.	OF TCLES	_
ENDING	IN	QUEUE	
08.00 08.15		0.7 1.2	*
08.30 08.45		2.3	* *
09.00 09.15		1.2	*

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL	L :	DEMAND	I	* QUEU			I	* INCLUSIV * DE		QUEUEING *	I
I		I.							 	-				- I
Ι		I	(VEH)		(VEH/H)	I	(MIN)		(MIN/VEH)	Ι	(MIN)		(MIN/VEH)	I
I	B-CD	I	479.7	I	319.8	Ι	158.6	I	0.33	I	158.7	I	0.33	I
I	B-AD	I	160.3	Ι	106.9	I	60.2	Ι	0.38	Ι	60.2	I	0.38	Ι
Ι	A-BCD	Ι	35.3	Ι	23.6	Ι	3.2	Ι	0.09	Ι	3.2	Ι	0.09	Ι
I	A-B	I	166.4	Ι	110.9	I		Ι		Ι		I		Ι
I	A-C	I	559.5	Ι	373.0	I		Ι		Ι		I		Ι
Ι	D-AB	Ι	37.5	Ι	25.0	Ι	4.5	Ι	0.12	Ι	4.5	Ι	0.12	Ι
Ι	D-BC	Ι	31.3	Ι	20.9	Ι	8.0	Ι	0.26	Ι	8.0	Ι	0.26	Ι
Ι	C-ABD	Ι	551.8	Ι	367.9	Ι	129.6	Ι	0.23	Ι	129.6	Ι	0.23	Ι
Ι	C-D	Ι	10.4	Ι	7.0	Ι		Ι		Ι		Ι		Ι
Ι	C-A	I	241.6	I	161.1	Ι		I		I		I		I
I	ALL	I	2273.9	I	1515.9	I	364.2	I	0.16	I	364.3	I	0.16	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
  WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
  A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*\*END OF RUN\*\*\*\*\*

## .SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

STREAM B-C

Ι	Intercept For	Slope For Opposing	Slope For Opposing	I
Ι	STREAM B-C	STREAM A-C	STREAM A-B	Ι
Ι	0.00	0.00	0.00	I

\* Due to the presence of a flare, data is not available

STREAM D-A

Ι	Intercept For	Slope For Opposing	Slope For Opposing	gІ
Ι	STREAM D-A	STREAM C-A	STREAM C-D	I
Ι	0.00	0.00	0.00	I

\* Due to the presence of a flare, data is not available

	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
	STREAM B-A	STREAM A-C	STREAM A-D	STREAM D-A	STREAM D-B I
I -	0.00	0.00	0.00	0.00	0.00 I
I		Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I		STREAM A-B	STREAM C-A	STREAM C-B	STREAM D-C I
I		0.00	0.00	0.00	0.00 I

 $^{\star}$  Due to the presence of a flare, data is not available

STREAM D-C

	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
	STREAM D-C	STREAM C-A	STREAM C-B	STREAM B-C	STREAM B-D I
I	0.00	0.00	0.00	0.00	0.00 I

I	Slope For Opposing STREAM C-D	STREAM A-C	STREAM A-D	
I	0.00	0.00	0.00	0.00
Due to the pre	sence of a flare, dat	a is not available		
STREAM C-B				
I Intercept For I STREAM C-B	Slope For Opposing STREAM A-C	Slope For Opposing I STREAM A-D I		
I 678.20	0.25	0.36 I		
STREAM A-D				
	Slope For Opposing STREAM C-A	Slope For Opposing I STREAM C-B I		
I 689.79	0.25	0.36 I		
2-D Stream From	Left Hand Lane			
I Intercept For	Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B	
o.00	0.00	0.00	0.00	0.00
 [ [	Slope For Opposing STREAM C-A	Slope For Opposing STREAM C-D	Slope For Opposing	Slope For Opposing
 [	0.00	0.00		
Due to the pre	sence of a flare, dat	ta is not available		
_	sence of a flare, dat Right Hand Lane	ta is not available		
3-D Stream From	Right Hand Lane Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	Slope For Opposing STREAM A-B	Slope For Opposing
3-D Stream From Intercept For	Right Hand Lane Slope For Opposing STREAM A-C	Slope For Opposing STREAM A-D	Slope For Opposing	Slope For Opposing STREAM C-B
B-D Stream From I Intercept For I STREAM B-D I 0.00	Right Hand Lane Slope For Opposing STREAM A-C 0.00	Slope For Opposing STREAM A-D 0.00	Slope For Opposing STREAM A-B 0.00	Slope For Opposing STREAM C-B
B-D Stream From Intercept For STREAM B-D	Right Hand Lane Slope For Opposing STREAM A-C 0.00 Slope For Opposing	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00	Slope For Opposing STREAM A-B 0.00	Slope For Opposing STREAM C-B  0.00  Slope For Opposing
3-D Stream From I Intercept For STREAM B-D I 0.00	Right Hand Lane Slope For Opposing STREAM A-C 0.00 Slope For Opposing STREAM C-A	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00	Slope For Opposing STREAM A-B  0.00  Slope For Opposing	Slope For Opposing STREAM C-B  0.00  Slope For Opposing
B-D Stream From I Intercept For I STREAM B-D I 0.00	Right Hand Lane Slope For Opposing STREAM A-C 0.00 Slope For Opposing STREAM C-A 0.00	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00	Slope For Opposing STREAM A-B 0.00	Slope For Opposing STREAM C-B  0.00  Slope For Opposing
3-D Stream From I Intercept For STREAM B-D I 0.00 I I Due to the pre D-B Stream From I Intercept For	Right Hand Lane Slope For Opposing STREAM A-C 0.00 Slope For Opposing STREAM C-A 0.00 sence of a flare, data Left Hand Lane Slope For Opposing STREAM C-A	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00	Slope For Opposing STREAM A-B  0.00  Slope For Opposing  Slope For Opposing STREAM D-C	Slope For Opposing STREAM C-B  0.00  Slope For Opposing Slope For Opposing STREAM A-D
3-D Stream From I Intercept For STREAM B-D I 0.00 I I Due to the pre D-B Stream From I Intercept For	Right Hand Lane Slope For Opposing STREAM A-C 0.00 Slope For Opposing STREAM C-A 0.00 sence of a flare, data Left Hand Lane Slope For Opposing STREAM C-A	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00  a is not available  Slope For Opposing STREAM C-B	Slope For Opposing STREAM A-B  0.00  Slope For Opposing  Slope For Opposing STREAM D-C	Slope For Opposing STREAM C-B  0.00  Slope For Opposing  Slope For Opposing STREAM A-D
3-D Stream From Intercept For STREAM B-D  0.00  Due to the pre D-B Stream From Intercept For STREAM D-B  0.00	Right Hand Lane Slope For Opposing STREAM A-C 0.00 Slope For Opposing STREAM C-A 0.00 sence of a flare, dat Left Hand Lane Slope For Opposing STREAM C-A 0.00	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00  a is not available  Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-B	Slope For Opposing STREAM A-B  0.00  Slope For Opposing  Slope For Opposing STREAM D-C  0.00  Slope For Opposing	Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-D  0.00  Slope For Opposing
3-D Stream From I Intercept For I STREAM B-D I 0.00 I I I Due to the pre D-B Stream From I Intercept For I STREAM D-B I 0.00	Slope For Opposing STREAM A-C  0.00  Slope For Opposing STREAM C-A  0.00  ssence of a flare, data Left Hand Lane  Slope For Opposing STREAM C-A  0.00  Slope For Opposing STREAM C-A  0.00	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00  a is not available  Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-B	Slope For Opposing STREAM A-B  0.00  Slope For Opposing  Slope For Opposing STREAM D-C  0.00  Slope For Opposing	Slope For Opposing STREAM C-B  0.00  Slope For Opposing  Slope For Opposing STREAM A-D  0.00  Slope For Opposing
Due to the pre STREAM B-D  Intercept For STREAM B-D  O.00  Intercept For STREAM B-D  O.00	Slope For Opposing STREAM A-C  0.00  Slope For Opposing STREAM C-A  0.00  ssence of a flare, data Left Hand Lane  Slope For Opposing STREAM C-A  0.00  Slope For Opposing STREAM C-A  0.00	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00  Ta is not available  Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-B  0.00	Slope For Opposing STREAM A-B  0.00  Slope For Opposing  Slope For Opposing STREAM D-C  0.00  Slope For Opposing	Slope For Opposing STREAM C-B  0.00  Slope For Opposing Slope For Opposing STREAM A-D  0.00  Slope For Opposing
3-D Stream From I Intercept For I STREAM B-D I 0.00 I 0.00 I I I I I I I I I I I I I I I I I I I	Right Hand Lane Slope For Opposing STREAM A-C 0.00 Slope For Opposing STREAM C-A 0.00 Seence of a flare, data Left Hand Lane Slope For Opposing STREAM C-A 0.00 Slope For Opposing STREAM A-C 0.00 seence of a flare, data Right Hand Lane	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00  Ta is not available  Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-B  0.00	Slope For Opposing STREAM A-B  0.00  Slope For Opposing  Slope For Opposing STREAM D-C  0.00  Slope For Opposing	Slope For Opposing STREAM C-B  0.00  Slope For Opposing Slope For Opposing STREAM A-D  0.00  Slope For Opposing
3-D Stream From I Intercept For I STREAM B-D I 0.00	Right Hand Lane  Slope For Opposing STREAM A-C  0.00  Slope For Opposing STREAM C-A  0.00  Seence of a flare, data A Left Hand Lane  Slope For Opposing STREAM C-A  0.00  Slope For Opposing STREAM A-C  0.00  seence of a flare, data A Right Hand Lane  Slope For Opposing STREAM C-A	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00  Ta is not available  Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-B  0.00  Ta is not available	Slope For Opposing STREAM A-B  0.00  Slope For Opposing Slope For Opposing STREAM D-C  0.00  Slope For Opposing Slope For Opposing	Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM A-D  0.00
B-D Stream From I Intercept For I STREAM B-D I 0.00 I 0.00 I 1 I 1 Due to the pre D-B Stream From I STREAM D-B I 0.00 I 1 I 1 I 0.00 I 1 I 1 I 0.00 I 1 I 1 I 0.00	Right Hand Lane  Slope For Opposing STREAM A-C  0.00  Slope For Opposing STREAM C-A  0.00  Seence of a flare, data Left Hand Lane  Slope For Opposing STREAM C-A  0.00  Slope For Opposing STREAM A-C  0.00  Slope For Opposing STREAM A-C  0.00  Slope For Opposing STREAM A-C  0.00	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00  Ta is not available  Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-B  0.00  Ta is not available	Slope For Opposing STREAM A-B  0.00  Slope For Opposing  Slope For Opposing STREAM D-C  0.00  Slope For Opposing  Slope For Opposing  Slope For Opposing	Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM A-D  Slope For Opposing STREAM A-D  0.00
B-D Stream From I Intercept For I STREAM B-D I 0.00 I 1 I 1 Due to the pre D-B Stream From I Intercept For I STREAM D-B I 0.00 I 1 I 0.00	Right Hand Lane  Slope For Opposing STREAM A-C  0.00  Slope For Opposing STREAM C-A  0.00  Slope For Opposing STREAM C-A  0.00  Slope For Opposing STREAM C-A  0.00  Slope For Opposing STREAM A-C  0.00  Slope For Opposing STREAM C-A  0.00	Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM C-D  0.00  La is not available  Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-B  0.00  La is not available	Slope For Opposing STREAM A-B  0.00  Slope For Opposing Slope For Opposing STREAM D-C  0.00  Slope For Opposing	Slope For Opposing STREAM C-B  0.00  Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM A-D  0.00  Slope For Opposing STREAM A-D  Slope For Opposing STREAM A-D  0.00

.TRAFFIC DEMAND DATA

```
100
100
100
100
I A
I B
I C
I D
```

.Demand set: 2023 Base Case weekday pm peak

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

Ι			I NU	MBER OF	MINU	JTES FROM	ST	ART WHEN	Ι	RATE	OI	FLOW (	VEF	H/MIN)	I
Ι	ARM		FLOW	STARTS	I TO	OP OF PEAK	I	FLOW STOPS	I	BEFORE	Ι	AT TOP	Ι	AFTER	I
I			TO	RISE	I I	S REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I			E .		I		I		I		I		I		I
Ι	ARM	Α :	Ε	15.00	I	45.00	Ι	75.00	Ι	5.31	Ι	7.97	Ι	5.31	I
Ι	ARM	В:	Ε	15.00	I	45.00	Ι	75.00	Ι	3.35	Ι	5.02	Ι	3.35	I
I	ARM	C :	E .	15.00	I	45.00	I	75.00	I	8.39	I	12.58	I	8.39	I
Ι	ARM	D :	Ε	15.00	I	45.00	I	75.00	I	0.46	Ι	0.69	I	0.46	I

.Demand set: 2023 Base Case weekday pm peak

I		Ι						OPORTIO	NS				I
Ι		Ι				JRNING							I
Ι		Ι			(PI	ERCENT	AGE	OF H.V	.S	)			I
Ι													
I	TIME	Ι	FROM,	/TO	Ι	ARM I	A I	ARM B	Ι	ARM C	I	ARM	DI
I	16.45 - 17.00	I			I		I		I		I		I
I		Ι	ARM	Α	Ι	0.00	O I	0.176	I	0.781	I	0.0	42 I
I		I			I	0.0	O I	75.0	I	332.0	I	18	.0 I
I		I			I	( 0.0	I(C	( 5.0	)I	( 1.0	)I	( 0	.0)I
I		I			I		I		I		Ι		I
I		I	ARM	В	I	0.16	В І	0.000	Ι	0.784	I	0.0	49 I
I		Ι			I	45.	I C	0.0	Ι	210.0	Ι	13	.0 I
I		I			I	( 9.1	I(C	( 0.0	)I	( 1.0	)I	( 0	.0)I
I		I			I		I		Ι		Ι		I
I		Ι	ARM	C	Ι	0.58	3 I	0.385	Ι	0.000	Ι	0.0	33 I
I		Ι			Ι	391.	I C	258.0	Ι	0.0	Ι	22	.0 I
I		Ι			Ι	( 0.	I(C	( 0.0	)I	( 0.0	)I	( 0	.0)I
I		I			I		I		Ι		Ι		I
I		I	ARM	D	Ι	0.35	1 I	0.243	I	0.405	I	0.0	00 I
Ι		Ι			Ι	13.	O I	9.0	I	15.0	Ι	0	.0 I
I		Ι			Ι	( 0.	I(C	( 0.0	)I	( 0.0	)I	( 0	.0)I
I		Ι			Ι		I		I		Ι		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA
THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS AND FOR TIME PERIOD

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	16.45-1	7.00									I
I	B-CD	2.73	10.29	0.265		0.00	0.36	5.1		0.13	I
I	B-AD	0.64	5.33	0.120		0.00	0.13	1.9		0.21	I
I	A-BCD	0.37	12.47	0.029		0.00	0.04	0.6		0.08	I
I	A-B	0.92									I
I	A-C	4.05									I
I	D-AB	0.22	8.68	0.026		0.00	0.03	0.4		0.12	I
I	D-BC	0.24	5.67	0.043		0.00	0.04	0.6		0.18	I
I	C-ABD	5.25	13.38	0.392		0.00	0.88	12.9		0.12	I
I	C-D	0.17									I
I	C-A	3.00									I
I											I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
Ι				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
Ι	17.00-17	7.15									Ι
Ι	B-CD	3.26	9.91	0.329		0.36	0.48	7.0		0.15	Ι
Ι	B-AD	0.76	4.79	0.158		0.13	0.18	2.7		0.25	Ι
Ι	A-BCD	0.49	12.71	0.038		0.04	0.05	0.8		0.08	Ι
Ι	A-B	1.08									Ι
Ι	A-C	4.80									Ι
I	D-AB	0.27	8.21	0.032		0.03	0.03	0.5		0.13	I
Ι	D-BC	0.29	5.02	0.058		0.04	0.06	0.9		0.21	Ι
Ι	C-ABD	7.00	13.87	0.505		0.88	1.42	21.4		0.15	Ι
Ι	C-D	0.16									Ι
Ι	C-A	2.89									Ι
Ι											Ι

I I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DI PER ARRIV: VEHICLE (I
	17.15-1									
T	B-CD B-AD	4.00 0.92	9.33	0.428		0.48	0.73	10.6 4.1		0.19 0.32
-	3 505	0 74	12 05	0 056		0 0 5	0 00	1 2		0.08
Ι	A-B	1.30								
Ι	A-C	5.76								
I	D-AB	0.33	7.52	0.044		0.03	0.05	0.7		0.14
I	C-ABD	9.91	14.54	0.682		1.42	3.01	44.8		0.20
I	C-D	0.13								
I I	C-A	2.27								
 T	TIME		CADACITY	DEMAND /	DEDECTRIAN		FND		GEOMETRIC DELAY	AVEDAGE DE
Ι		(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVI VEHICLE (M
I	B-CD	4.00	9.32	0.429		0.73	0.74	11.1		0.19
Ι	B-AD	4.00 0.92 0.74	4.03	0.228		0.29	0.29	11.1 4.3 1.3		0.19 0.32 0.08
Ι	A-BCD	0.74	13.23	0.056		0.09	0.09	1.3		0.08
T	A-B A-C	1.30 5.76								
I	D-AB	0.33	7.49	0.044		0.05	0.05	0.7		0.14
Ι	D-BC	0.35	4.10	0.086		0.09	0.09	1.4		0.27
Ι	C-ABD	9.98	14.58	0.684		3.01	3.12	48.2		0.14 0.27 0.22
I	C-D	0.12 2.21								
I	C-A	2.21								
I I	TIME	DEMAND	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY	AVERAGE DE PER ARRIVI
Ι				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	VEHICLE (M
I	17.45-1	3.00	0 00	0 220		0.74	0 50	7 0		0.15
I	B-AD	3.26 0.76 0.49	4.75	0.159		0.74	0.19	7.8 3.0 0.8		0.15 0.25 0.08
I	A-BCD	0.49	12.67	0.039		0.09	0.05	0.8		0.08
Ι	A-B	1.08								
I	A-C	4.80	0 17	0 022		0.05	0.02	0 5		0 12
I	D-AB D-BC	0.27	4.98	0.032		0.05	0.03	1.0		0.13
I	C-ABD	7.06	13.92	0.507		3.12	1.52	23.6		0.13 0.21 0.15
Ι	C-D	0.16 2.83								
I I	C-A	2.83								
I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DE
Ι		(VEH/MIN)	(VEH/MIN)	(RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVI VEHICLE (M
Ι	B-CD	2.73						5.6		0.13
	B-AD	0.64 0.37		0.120			0.14			0.21
I				0.030		0.05	0.04	0.0		0.08
I		4.05								
Ι	D-AB	0.22		0.026		0.03	0.03	0.4		0.12
I		0.24		0.043		0.06	0.05	0.7		0.19
I		5.31 0.17	⊥3.42	0.396		1.52	0.93	14.0		0.13
		2.94								
Ι										

TIME NO. OF SEGMENT VEHICLES ENDING IN QUEUE	_
ENDING IN OHEHE	
EMPTING IN ÄGEGE	
17.00 0.4	
17.15 0.5	
17.30 0.7	*
17.45 0.7	*
18.00 0.5	
18.15 0.4	
QUEUE FOR STREAM B-AL	
TIME NO. OF	-
SEGMENT VEHICLES	
ENDING IN QUEUE	
17.00 0.1	
17.15 0.2	
17.30 0.3	

```
17.45
                    0.3
  18.00
                    0.2
  18.15
                    0.1
QUEUE FOR STREAM
                     A-BCD
 -----
 TIME
                 NO. OF
 SEGMENT
                 VEHICLES
 ENDING
                 IN QUEUE
 17.00
17.15
17.30
17.45
                    0.0
                    0.1
  18.15
                    0.0
QUEUE FOR STREAM
                       D-AB
 TIME
                 NO. OF
 SEGMENT
                 VEHICLES
 ENDING
                 IN QUEUE
 17.00
17.15
                    0.0
  17.30
17.45
                    0.0
  18.00
                     0.0
  18.15
                    0.0
QUEUE FOR STREAM
                     D-BC
TIME
SEGMENT
                 NO. OF
VEHICLES
 ENDING
                 IN QUEUE
 17.00
17.15
                    0.0
 17.30
17.45
                    0.1
 18.00
18.15
                    0.1
QUEUE FOR STREAM
                       C-ABD
 TIME
                 NO. OF
VEHICLES
 SEGMENT
 ENDING
                 IN QUEUE
 17.00
17.15
17.30
17.45
18.00
                    0.9
1.4
3.0
3.1
1.5
0.9
                             ***
  18.15
                  QUEUEING DELAY INFORMATION OVER WHOLE PERIOD
```

I	STREAM	I	TOTAL	LI	DEMAND	I I	* QUEU * DEI		ING * Y *	I I	* INCLUSIV * DE			I
т		т.												– T
I		I	(VEH)		(VEH/H)	Ι	(MIN)		(MIN/VEH)	I	(MIN)		(MIN/VEH)	I
	B-CD		299.4	I	199.6		47.2	Ι	0.16	I	47.2		0.16	 I
I	B-AD	I	69.4	I	46.3	I	18.2	I	0.26	I	18.2	I	0.26	I
I	A-BCD	I	47.9	I	31.9	I	5.4	I	0.11	I	5.4	I	0.11	I
I	A-B	I	99.0	I	66.0	I		I		I		I		I
I	A-C	I	438.1	I	292.1	I		I		I		I		I
I	D-AB	I	24.4	Ι	16.3	Ι	3.1	I	0.13	I	3.1	Ι	0.13	Ι
I	D-BC	I	26.5	Ι	17.7	Ι	5.9	I	0.22	I	5.9	Ι	0.22	Ι
I	C-ABD	I	667.7	I	445.1	I	164.9	I	0.25	I	164.9	I	0.25	I
I	C-D	Ι	13.6	Ι	9.1	I		Ι		I		Ι		Ι
Ι	C-A	Ι	242.3	Ι	161.5	Ι		Ι		Ι		I		Ι
Ι	ALL	I	1928.4	I	1285.6	I	244.7	I	0.13	I	244.8	I	0.13	 I

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES

WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

<sup>\*\*\*\*\*\*</sup>END OF RUN\*\*\*\*\*

## TRI, LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM RELEASE 4.0 (SEPT 2008)

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TY:\ARDIN TPROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\PICADY\
Blackberry-Winstree-Peartree\Blackberry-Winstree-Peartree T-jn.vpi" (drive-on-the-left) at 11:25:04 on Friday, 12 June 2009

## .RUN INFORMATION

RUN TITLE : Blackberry Road/Winstree Road/Peartree Road proposed T-junction

LOCATION : Stanway : 19/05/09 DATE

: Mersea Homes/Hills Residential : mlast [ARDENT23] : F960 CLIENT

ENUMERATOR

JOB NUMBER

STATUS

DESCRIPTION

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A) MINOR ROAD (ARM B)

ARM A IS Blackberry Road (west)

ARM B IS Winstree Road (north)
ARM C IS Peartree Road (east)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

## GEOMETRIC DATA

DATA ITEM I MINOR ROAD B I I (W ) 7.00 M. I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH CENTRAL RESERVE WIDTH I (WCR ) 0.00 M. I I (WC-B) 2.20 M. MAJOR ROAD RIGHT TURN - WIDTH - VISIBILITY - BLOCKS TRAFFIC I (VC-B)180.00 M. I YES I (VB-C) 70.0 M. MINOR ROAD - VISIBILITY TO LEFT - VISIBILITY TO RIGHT - LANE 1 WIDTH - LANE 2 WIDTH I (VB-A) 42.0 M. I (WB-C) I (WB-A) 10.00 M. WIDTH AT 0 M FROM JUNCTION WIDTH AT 5 M FROM JUNCTION 4.50 M. WIDTH AT 10 M FROM JUNCTION WIDTH AT 15 M FROM JUNCTION 4.10 M. 3.70 M. WIDTH AT 20 M FROM JUNCTION 3.70 M. - LENGTH OF FLARED SECTION I DERIVED: 1 PCU I (NB:Streams may be combined, in which case capacity will be adjusted)

Ι	Intercept For	Slope For Opposing	Slope For Opposin	g I
Ι	STREAM B-C	STREAM A-C	STREAM A-B	Ι
Ι	0.00	0.00	0.00	I

\* Due to the presence of a flare, data is not available

I Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B I
I 0.00	0.00	0.00	0.00	0.00 I

 $\mbox{\scriptsize \star}$  Due to the presence of a flare, data is not available

I Intercept For Slope For Opposing Slope For Opposing I STREAM C-B STREAM A-C STREAM A-B I I STREAM C-B STREAM A-C STREAM A-B I 678.20 0.25 0.25 I

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I I A I 100 I B I 100 I C I 100

.Demand set: 2023 Dev't Case weekday am peak

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I			Ι	NUI	MBER C	F	MINUT	ES FROM	ST	ART WHEN	I	RATE	OI	F FLOW (	VE:	H/MIN)	I
I	ARM		Ι	FLOW	START	'S	I TOP	OF PEAK	I	FLOW STOPS	I	BEFORE	I	AT TOP	I	AFTER	I
I			Ι	TO	RISE		I IS	REACHED	Ι	FALLING	I	PEAK	Ι	OF PEAK	I	PEAK	I
Ι			Ι				Ι		Ι		Ι		Ι		Ι		I
Ι	ARM	Α	Ι		15.00		I	45.00	Ι	75.00	Ι	8.73	Ι	13.09	I	8.73	I
Ι	ARM	В	Ι	-	15.00		I	45.00	Ι	75.00	Ι	5.90	Ι	8.85	Ι	5.90	I
I	ARM	C	I		15.00		I	45.00	I	75.00	Ι	7.43	I	11.14	I	7.43	I

2023 Dev't Case weekday am peak

I I I		I I			ΤŢ	JRNING JRNING ERCENT	COT	JNTS			I
T	TTME	Ţ.	FROM/		Ţ	7 DM	7 T	ADM .	 В Т	A DM	O T
1	TIME	Τ	FROM/	10	1	ARM .	A I	ARM .	вт	ARM	CI
I	07.45 - 08.00	I			I		I		I		I
I		Ι	ARM .	A	Ι	0.00	0 I	0.20	9 I	0.7	91 I
I		Ι			Ι	0.	0 I	146.	0 I	552	2.0 I
I		Ι			Ι	( 0.	0)I	(6.	0)I	( 1	.0)I
I		I			Ι		I		I		I
I		I	ARM	В	Ι	0.26	9 I	0.00	0 I	0.7	31 I
I		I			Ι	127.	0 I	0.	0 I	345	.0 I
I		I			Ι	(5.	0)I	( 0.	0)I	( 2	2.0)I
I		I			Ι		I		I		I
I		I	ARM	C	Ι	0.62	6 I	0.37	4 I	0.0	000 I
I		I			Ι	372.	0 I	222.	0 I	C	0.0 I
I		I			Ι	(4.	0)I	( 1.	0)I	( 0	1(0.C
I		Ι			I		I		I		I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS AND FOR TIME PERIOD

٠,	TIME	DEMAND	CAPACITY	DEMAND /	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	т
	[		(VEH/MIN)		FLOW	OUEUE		(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
-	-	(VEII/PILIN)	(VEII/PILIN)	(RFC)	(PEDS/MIN)	~ -	(VEHS)	TIME SEGMENT)	(	VEHICLE (MIN)	
-	r 07.45-0	0.00		(RFC)	(PEDS/MIN)	(VEDS)	(VEDS)	TIME SEGMENT)	IIME SEGMENI)	APUTCHE (MIN)	
-											
	E B-C	4.33	8.62	0.502		0.00	0.98	13.6		0.23	

I	B-A C-AB A-B A-C	1.83	4.66 8.97	0.342		0.00	0.50 0.45	6.9 6.6		0.32 I 0.16 I I I
I I	08.00-0	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	(PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING I VEHICLE (MIN) I I
I	B-A C-AB A-B A-C	5.17 1.90 3.33 2.19 8.27	7.40 3.55 8.54	0.698 0.536 0.390		0.98 0.50 0.45	2.12 1.07 0.63	28.4 14.4 9.5		0.42 I 0.58 I 0.19 I I I
I		(VEH/MIN)		CAPACITY	PEDESTRIAN FLOW (PEDS/MIN)	OUEUE	OUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING I
I I	B-C B-A C-AB A-B A-C	6.33 2.33	2.05	1.148 1.139 0.513		1.07	17.58 8.07 1.07			2.29 I 3.20 I 0.26 I I I
I	TIME 08.30-0	(VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY	PEDESTRIAN FLOW (PEDS/MIN)	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING I
I I I	B-C B-A C-AB A-B A-C	6.33 2.33 4.07	5.31 2.03 7.94	1.192 1.148 0.513		17.58 8.07 1.07	33.40 13.40 1.09	383.1 161.7 16.7		5.03 I 5.97 I 0.26 I I
				CAPACITY		QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING I
I	B-A C-AB A-B A-C	5.17 1.90 3.33	6.22 2.35 8.54	0.831 0.809 0.390		33.40 13.40 1.09	20.37 9.13 0.66	403.3 168.9 10.1		4.44 I 5.03 I 0.19 I I
I	TIME 09.00-0	DEMAND (VEH/MIN)	CAPACITY	DEMAND/	PEDESTRIAN FLOW (PEDS/MIN)	START	END	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING I VEHICLE (MIN) I
I I I	B-C B-A C-AB A-B A-C	4.33 1.59 2.79	3.90	0.562 0.409 0.311		9.13		81.6 30.1 6.9		0.76 I 0.75 I 0.16 I I
· * W.	ARNING*		ANALYSIS		TIES AS MAJOR					
		NO. C VEHIC IN QU	DF CLES DEUE 0 * 1 ** 6 **** 4 ****	******* ********	*****	****				
	UEUE FOR	STREAM	B-A							
:	FIME SEGMENT ENDING 08.00 08.15 08.30 08.45 09.00	NO. C VEHIC IN QU 0. 11. 8.	DF CLES JEUE .5 * .1 * .1 ****	*****						

```
09.15
                                 0.7 *
 QUEUE FOR STREAM C-AB
                               NO OF
   TIME
   SEGMENT
                               VEHICLES
   ENDING
                               IN QUEUE
     08.00
                                     0.4
     08.15
     08.30
                                     1.1
     08.45
                                     1.1
     09.00
     09.15
                                    0.5
                                OURUEING DELAY INFORMATION OVER WHOLE PERIOD
 * DELAY *
      I I * DELAY * I
                                                                 MIN) (MIN/VEH) I
                  I (VEH) (VEH/H) I (MIN)
     B-C I 474.9 I 316.6 I 1067.1 I 2.25 I 1067.2 I 2.25
B-A I 174.8 I 116.5 I 456.8 I 2.61 I 456.9 I 2.61
C-AB I 305.6 I 203.7 I 65.7 I 0.21 I 65.7 I 0.21
                                                                                 0.21
 I A-B I 201.0 I 134.0 I
I A-C I 759.8 I 506.5 I
                                                                   I
 I ALL I 2428.0 I 1618.7 I 1589.6 I 0.65 I 1589.8 I 0.65 I
  * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
     INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
  A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.
 ******END OF RUN*****
  .SLOPES AND INTERCEPT
   (NB:Streams may be combined, in which case capacity will be adjusted)
 I Intercept For Slope For Opposing I
 I STREAM B-C STREAM A-C
                                                                -----
                                                0.00
 * Due to the presence of a flare, data is not available
 I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing Stream B-A Stream A-C Stream A-B Stream C-A Stream C-B I
 I Intercept for Stope for opposing Stope for opposi
                                               0.00
                                                                                         0.00
* Due to the presence of a flare, data is not available
 I Intercept For Slope For Opposing Slope For Opposing I STREAM C-B STREAM A-C STREAM A-B I
 I 678.20
                                               0.25
                                                                                        0.25
  (NB These values do not allow for any site specific corrections)
.TRAFFIC DEMAND DATA
 T ARM T FLOW SCALE(%) T
 ΤA
            I
                           100
     В
                           100
 I C I
                          100
.Demand set: 2023 Dev't Case weekday pm peak
 TIME PERIOD BEGINS 16.45 AND ENDS 18.15
 LENGTH OF TIME PERIOD - 90 MIN.
LENGTH OF TIME SEGMENT - 15 MIN.
DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA
    I NUMBER OF MINUTES FROM START WHEN I RATE OF FLOW (VEH/MIN) I
ARM I FLOW STARTS I TOP OF PEAK I FLOW STOPS I BEFORE I AT TOP I AFTER I
I TO RISE I IS REACHED I FALLING I PEAK I OF PEAK I PEAK I
I I I I I I
I I I I I I I
```

I ARM	ΑI	15.00	I	45.00	I	75.00	I	6.50	I	9.75	I	6.50	I
I ARM	ΒI	15.00	I	45.00	I	75.00	I	3.55	I	5.32	I	3.55	I
I ARM	CI	15.00	I	45.00	I	75.00	I	8.69	I	13.03	I	8.69	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

_				EMAND SETS	2					
I I				CAPACITY		QUEUE			(VEH.MIN/	PER ARRIVING
I	16.45-1	7 00		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
T		2.63	9 87	0.267		0 00	0.36	5 2		0.14
Ī		0.03	г оо	0 170		0.00	0.21	3.0		0.23
I	C-AB	3.24	9.64	0.179		0.00	0.50	5.2 3.0 7.4		0.15
I										
I		5.37								
I										
•										
	TIME	DEMAND		DEMAND /	DEDEGERAN		END	DEL M	GROWERDIG DELAY	AVEDAGE DELAY
I					PEDESTRIAN				GEOMETRIC DELAY (VEH.MIN/	
Ī				(DEG)	(DDDC (MTM)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
I	17.00-1	7.15							,	- , -=,
I	B-C	3.15	9.31	0.338		0.36	0.50	7.3 4.5		0.16
I	B-A	1.11	4.54	0.244						0.29
I	C-AB	3.87 1.38	9.32	0.415		U.50	0.71	10.6		0.18
	A-B	6.41								
I		0.11								
_										
·I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	
	17.15-1			0.465						
I		3.85	8.29	0.465		0.50	0.85	12.0 8.0		0.22 0.43
T	B-A C-AB	4.73	8.87	0.374 0.534		0.32	1.18	17.5		0.24
		1.69								***=
		1.69 7.85								
I										
•										
	TIME	DEMAND	CADACTTY	DEMAND /	DEDECTRIAN	CTADT	END	DELAY	CEOMETRIC DELAY	AVEDACE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	PEDESTRIAN FLOW	OHERE		(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/	
Ī		( * 2217, 17221 )	( 1211, 11211,						TIME SEGMENT)	
	17.30-1	7.45							,	,
		3.85		0.467		0.85	0.86	12.8		0.23
	B-A	1.36	3.62	0.375		0.57	0.59	8.7		0.44
	C-AB	4.73	8.87	0.534		1.18	1.20	18.4		0.24
I	A-B A-C									
I		7.05								
. I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
	17.45-1									
I	B-C	3.15	9.29	0.339		0.86	0.52	8.2 5.3		0.16
I			4.53 9.32	0.245			0.33			0.30 0.19
1	C-MD	3.07	2.34	0.413		1.20	0.74	11.0		0.19

_	A-B A-C	1.38 6.41								I I
I	TIME	DEMAND (VEH/MIN)	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW (PEDS/MIN)		DELAY	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY	I
Ι	18.00-1	8.15								Ι
I I I	B-C B-A C-AB A-B	2.63	9.85 5.18 9.64	0.267 0.179 0.336		0.22 0.52	5.7 3.5 7.8		0.14 0.24 0.16	I I I I
		NO MARGINAI			TIES AS MAJOR					

QUEUE FOR	STREAM	B-C
TIME	NO. C	
SEGMENT	VEHIC	
ENDING 17.00	IN QU	
17.15	0.	-
17.30	0.	-
17.45	0.	9 *
18.00	0.	.5 *
18.15	0.	. 4

QUEUE FOR STREAM B-A NO. OF TIME SEGMENT VEHICLES ENDING 17.00 17.15 17.30 17.45 VEHICLES IN QUEUE 0.2 0.3 0.6 0.6 18.00 18.15 0.3

QUEUE FOR STREAM C-AB TIME NO. OF TIME SEGMENT ENDING 17.00 17.15 17.30 17.45 18.00 VEHICLES IN QUEUE 0.5 0.7 1.2 1.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I I	STREAM	I T	TOTAI	I	DEMAND	I T	* QUEUEI		I Ţ	* INCLUSIV		-	I
I		_								(MIN)			-
 I	B-C	 I	289.0	I	192.7	 I	51.2 I	0.18	 I	51.2	 I	0.18	 I
I		I		_		_	33.0 I	0.32	I	33.0 72.9	I	0.32	I
I	C-AB A-B	I	126.6	I	236.7 84.4	I	72.9 I	0.21	I	72.9	I	0.21	I
	A-C	 1	589.1		392.7								
Ι	ALL	Ι	2063.3	Ι	1375.5	I	157.1 I	0.08	I	157.1	Ι	0.08	I

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES

WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS

A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

<sup>\*\*\*\*\*\*</sup>END OF RUN\*\*\*\*\*

Appendix G

Results of PICADY capacity assessment: proposed Dyers Road/Heath Road (realigned)/northern site access junction

TRI, LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM RELEASE 4.0 (SEPT 2008)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

"Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\PICADY\
Dyers-Heath (realigned)\Dyers-Heath (realigned).vpi"
(drive-on-the-left) at 11:16:43 on Friday, 12 June 2009

## .RUN INFORMATION

RUN TITLE : Proposed junction of Dyers Road with realigned Heath Road/northern site access

: Stanway : 27/05/09 LOCATION DATE : Hills Residential : mlast [ARDENT23] : F960 CLIENT

ENUMERATOR JOB NUMBER STATUS DESCRIPTION

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

INPUT DATA

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A) MINOR ROAD (ARM B)

ARM A IS Dyers Road (north) ARM B IS Heath Road (realigned) ARM C IS Dyers Road (south)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

## GEOMETRIC DATA

I	DATA ITEM	I	MINOR	ROAD	В	I
I I I I	TOTAL MAJOR ROAD CARRIAGEWAY WIDTH CENTRAL RESERVE WIDTH MAJOR ROAD RIGHT TURN - WIDTH - VISIBILITY	I I I	(WC) (WC-B) (VC-B)	0.00 2.20 35.00	м.	I I I I
I I I I	- BLOCKS TRAFFIC  MINOR ROAD - VISIBILITY TO LEFT - VISIBILITY TO RIGHT - LANE 1 WIDTH - LANE 2 WIDTH	I	(VB-C) (VB-A) (WB-C) (WB-A)	18.0 3.40	M. M.	I I I I I

.SLOPES AND INTERCEPT

(NB:Streams may be combined, in which case capacity will be adjusted)

I Intercept For Slope For Opposing I Stream B-C STREAM A-C STREAM A-B I

I 660.71 0.24 0.10 I

I Intercept For Slope For Opposing Slope For Opposing Slope For Opposing I STREAM B-A STREAM A-C STREAM A-B STREAM C-A STREAM C-B I 512.02 0.23 0.09 0.14 0.32 I

I Intercept For Slope For Opposing Slope For Opposing I STREAM C-B STREAM A-C STREAM A-B I

I 594.23 0.22 0.22 I

(NB These values do not allow for any site specific corrections)

### .TRAFFIC DEMAND DATA

\_\_\_\_\_

.Demand set: 2023 Dev't Case weekday am peak

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

.Demand set: 2023 Dev't Case weekday am peak

I		Ι			Т	JRNING PRO	OPORTIONS	I
I		Ι			TU	JRNING COU	JNTS	I
I		I			PI	ERCENTAGE	OF H.V.S)	I
I								
I	TIME	Ι	FROM/	TO	Ι	ARM A I	ARM B I	ARM C I
т	07.45 - 08.00	т			т.	т	т	т
T	07.45 - 00.00	_	ARM	70	-	-	0.347 I	-
_		_	ARM	Α				
I		Ι			Ι	0.0 I	61.0 I	115.0 I
I		Ι			Ι	( 0.0)I	( 0.0)I	( 1.0)I
I		Ι			Ι	I	I	I
I		I	ARM	В	I	0.564 I	0.000 I	0.436 I
I		I			I	114.0 I	0.0 I	88.0 I
I		I			I	( 0.0)I	( 0.0)I	( 0.0)I
I		I			I	I	I	I
I		I	ARM	C	I	0.846 I	0.154 I	0.000 I
I		I			I	230.0 I	42.0 I	0.0 I
I		Ι			Ι	( 1.0)I	( 0.0)I	( 0.0)I
I		Ι			Ι	I	I	I

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS AND FOR TIME PERIOD

Ι	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
Ι		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	07.45-0	8.00									I
I	B-AC	2.53	8.63	0.294		0.00	0.41	5.8		0.16	I
I	C-AB	0.70	11.37	0.061		0.00	0.10	1.4		0.09	I
I	C-A	2.71									I
I	A-B	0.77									I
I	A-C	1.44									I
I											I

	(VEH/MIN)		CAPACITY	PEDESTRIAN FLOW (PEDS/MIN)	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING
08.00-08 B-AC	3.03	8.46	0.358 0.076		0.41	0.55	7.9		0.18
C-AB	0.88	11.66	0.076			0.12	1.9		0.09
C-A A-B	3.20 0.91								
A-C	1.72								
TIME				PEDESTRIAN				GEOMETRIC DELAY	
			CAPACITY				(VEH.MIN/		PER ARRIVING
00 15 00	20		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
08.15-08 B-AC	3.71	8.23	0.450		0.55	0.80	11.4		0.22
C-AB		12.10	0.098		0.12	0.17	2.6		0.09
C-A A-B	3.81 1.12								
A-C									
TIME				PEDESTRIAN				GEOMETRIC DELAY	
			CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
00 20 00	) /E		(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
08.30-08 B-AC	3.45	8.23	0.450		0.80	0.81	12.1		0.22
C-AB	1.18	12.10				0.17			0.09
C-A A-B	3.81 1.12								
A-B A-C									
		CADACTTV	DEMAND /	PEDESTRIAN			DFI.AV	GEOMETRIC DELAY	AVEDAGE DELAY
								(VEH.MIN/ TIME SEGMENT)	
			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
08.45-09	3.03	9 16	0.358		0.81	0.57	8.9		0.19
G 3D	0.00		0.336			0.37			0.09
C-AB C-A A-B A-C	3.19								
A-B A-C	0.91 1.72								
TIME									
				PEDESTRIAN FLOW	QUEUE	OUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/	PER ARRIVING
								TIME SEGMENT)	
09.00-09 B-AC	2.53	8 63	0 294		0.57	0.42	6.5		0.16
C-AB	0.70	11.37	0.294 0.062			0.10			0.09
C-A	2.71								
A-B A-C	0.77 1.44								
	O MARGINAI	ANALYSIS	OF CAPACIT	TIES AS MAJOR	ROAD E	BLOCKING	MAY OCCUR		
	STREAM								
TIME	NO. (								
SEGMENT	VEHIC								
ENDING 08.00	IN QU								
08.15	0								
08.30	0								
08.45 09.00	0.								
09.15	0								
	STREAM								
TIME SEGMENT	NO. 0								
ENDING	IN O								
08.00	0								
08.15 08.30	0.								
08.30	0.								
09.00	0	.1							
09.15	0 .	.1							
03.13	^	TETATA POT	Z TRIDODS	OM OTTER THE					
				ON OVER WHOL					

				(MIN/VEH)	, = (	(1-12)	N/VEH) I	
I C-A I C-A I A-E	AB I 82 A I 291	.0 I 185 .9 I 55 .5 I 194 .0 I 56	.4 I 52.7 .3 I 11.9 .3 I	I 0.14		2.7 I 1.9 I I I		
			.5 I 64.5					
* DELA * INCI WHICH * THES A LAR	AY IS THAT LUSIVE DEL ARE STILL SE WILL ON	OCCURRING AY INCLUDE QUEUEING LY BE SIGNEMAINING	G ONLY WITHI ES DELAY SUF AFTER THE E NIFICANTLY D AT THE END	N THE TIME EFERED BY VEHION OF THE TILEFERENT IF	PERIOD HICLES IME PERIOD THERE IS			
	ES AND INT  Streams ma		ined, in whi	ch case capa	acity will	be adjust	ed)	
I Inte I STRE	ercept For EAM B-C	Slope Fo	r Opposing A-C	Slope For C	Opposing I 3 I			
	660.71		0.24	0.10				
I Inte	ercept For EAM B-A	Slope Fo	r Opposing A-C	Slope For C	Opposing 3	Slope For STREAM C	Opposing -A	Slope For Opposir STREAM C-B
I	512.02		0.23	0.09	9	0	.14	0.32
I Inte	ercept For	Slope Fo	r Opposing	Slope For C	Opposing I			
			A-C  0.22	STREAM A-E				
		0 I 0 I						
			Dev't Case w		. 1			
LENGTH LENGTH	H OF TIME	PERIOD - SEGMENT -	90 MIN. 15 MIN. SYNTHESISED		NG COUNT DA	λΤΑ		
LENGTE LENGTE DEMAND I I I ARM I	H OF TIME H OF TIME D FLOW PRO I NU I FLOW I TO	PERIOD - SEGMENT - FILES ARE 	90 MIN. 15 MIN. SYNTHESISED INUTES FROM TOP OF PEAK IS REACHED	FROM TURNIN START WHEN I FLOW STOE I FALLING I	I RATI PS I BEFORI I PEAK I	E OF FLOW E I AT TOP I OF PEAL	I AFTER K I PEAK I	 I I I
LENGTH LENGTH DEMAND I I ARM I I ARM I ARM	H OF TIME H OF TIME D FLOW PRO I NU I I FLOW I TO I A I B I C I	PERIOD - SEGMENT - FILES ARE	90 MIN. 15 MIN. SYNTHESISED  INUTES FROM TOP OF PEAK IS REACHED  45.00 45.00 45.00	FROM TURNIN START WHEN I FLOW STOI I FALLING I I 75.00 I 75.00 I 75.00	I RATH PS I BEFORM I PEAK I I 3.80 I 1.45 I 2.89	E OF FLOW E I AT TOP I OF PEAL I I 5.70 I 2.18 I 4.33	I AFTER K I PEAK I I 3.80 I 1.45 I 2.89	I
LENGTH LENGTH DEMAND I I ARM I ARM I ARM	H OF TIME H OF TIME O FLOW PRO I NU I IFLOW I TO I B I C I	PERIOD - SEGMENT - FILES ARE  MBER OF M STARTS I RISE I 15.00 I 15.00 I 15.00 I	90 MIN. 15 MIN. SYNTHESISED  INUTES FROM TOP OF PEAK IS REACHED  45.00 45.00 45.00 Dev't Case w	FROM TURNIN START WHEN I FLOW STOI I FALLING I 75.00 I 75.00 I 75.00	I RATH PS I BEFORE I PEAK I I 3.80 I 1.45 I 2.89	E OF FLOW E I AT TOP I OF PEAI I I 5.70 I 2.18 I 4.33	I AFTER K I PEAK I I 3.80 I 1.45 I 2.89	I I I I
LENGTH LENGTH DEMAND I I ARM I ARM I ARM I ARM	H OF TIME H OF TIME O FLOW PRO I NU I IFLOW I TO I B I C I	PERIOD - SEGMENT - FILES ARE  MBER OF M STARTS I RISE I	90 MIN. 15 MIN. SYNTHESISED  INUTES FROM TOP OF PEAK IS REACHED  45.00 45.00 45.00 TOP't Case w  TURNI TURNI	FROM TURNIN START WHEN I FLOW STOI I FALLING I 75.00 I 75.00 I 75.00 I 75.00	I RATI PS I BEFORI I PEAK I I 3.80 I 1.45 I 2.89	C OF FLOW C I AT TOP I OF PEAL I 5.70 I 2.18 I 4.33	I AFTER K I PEAK I I 3.80 I 1.45 I 2.89	I I I I
LENGTH LENGTH DEMAND I ARM I ARM I ARM I ARM Demand	H OF TIME H OF TIME O FLOW PRO I NU I I FLOW I TO I B I C I	PERIOD - SEGMENT - FILES ARE  MBER OF M STARTS I RISE I 15.00 I 15.00 I 15.00 I 1 I 1 I I I I I I I I I I I I I I I I	90 MIN. 15 MIN. SYNTHESISED  INUTES FROM TOP OF PEAK IS REACHED  45.00 45.00 45.00  Dev't Case w TURNI TURNI (PERCE	FROM TURNIN START WHEN I FLOW STOI I FALLING I 75.00 I 75.00 I 75.00 I 75.00 Reckday pm pe	I RATI PS I BEFORI I PEAK I I 3.80 I 1.45 I 2.89  DNS V.S)	C OF FLOW C I AT TOP I OF PEAL I 5.70 I 2.18 I 4.33	I AFTER K I PEAK I I 3.80 I 1.45 I 2.89	I I I I

# 

	Ĩ		INFORMATIC  EMAND SETS						
	AND I	FOR TIME P	ERIOD	2					
			CAPACITY		QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING
16.45-17									
B-AC C-AB	1.46		0.183 0.132			0.22			0.15 0.11
C-A	1.54	10.25	0.132		0.00	0.10	2.7		0.11
A-B									
A-C	2.31								
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)	(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	(VEH.MIN/ TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
17.00-17	7.15		(112 0 )	(1220)11211)	( * 1110 )	( 12110 )	111111 0201121117	TITE ODGEDATY	V2111022 (11111)
	1.74		0.225		0.22	0.29	4.2		0.17
C-AB		10.39	0.163		0.18	0.24	3.6		0.11
C-A A-B	1 00								
A-C	2.76								
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
			CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING
17.15-17				,			,	,	,
			0.287			0.40			0.19
C-AB C-A	2.19 2.05	10.52	0.209		0.24	0.33	5.0		0.12
A-B	2.05								
A-C	3.38								
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	
	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)
17.30-17									
B-AC	2.13	7.41 10.52	0.287		0.40		6.0 5.1		0.19
C-AB C-A	2.19	10.52	0.209		0.33	0.33	5.1		0.12
A-B									
A-C	3.38								
								GEOMETRIC DELAY	
	(VEH/MIN)	(VEH/MIN)						(VEH.MIN/ TIME SEGMENT)	
17.45-18	8.00		(RFC)	(PEDS/MIN)	(VEDS)	(VEDS)	IIME SEGMENI)	IIME SEGMENI)	AFUICTE (MIN)
	1.74	7.74	0.225		0.40	0.29	4.6		0.17
C-AB		10.39	0.163		0.33	0.25	3.7		0.12
C-A									
A-B A-C	1.80 2.76								
								GEOMETRIC DELAY	
								(VEH.MIN/	
TIME	DEMAND		CAPACITTY						
	DEMAND			(PEDS/MIN)	(VEHS)				
TIME	DEMAND (VEH/MIN) 8.15	(VEH/MIN)	(RFC)					111111 0201121117	
TIME 18.00-18 B-AC	DEMAND (VEH/MIN) 8.15	(VEH/MIN) 7.97	(RFC) 0.183		0.29	0.23	3.5	THE CECHENTY	0.15
TIME 18.00-18 B-AC C-AB	DEMAND (VEH/MIN) 8.15 1.46 1.36	(VEH/MIN) 7.97	(RFC)		0.29			11112 020112111,	
TIME  18.00-18  B-AC  C-AB  C-A	DEMAND (VEH/MIN) 8.15 1.46 1.36 1.54	(VEH/MIN) 7.97	(RFC) 0.183		0.29	0.23	3.5	11112 020121117	0.15
TIME  18.00-18  B-AC  C-AB  C-A	DEMAND (VEH/MIN) 8.15 1.46 1.36 1.54 1.51	(VEH/MIN) 7.97	(RFC) 0.183		0.29	0.23	3.5	2202	0.15

. \*WARNING\* NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

SEGMENT ENDING 17.00 17.15 17.30 17.45 18.00	VEHICLES IN QUEUE 0.2 0.3 0.4 0.4
18.15	0.2
QUEUE FOR	STREAM C-AB
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
17.00	0.2
17.15	0.2
17.30	0.3
17.45	0.3
18.00	0.2
18.15	0.2

## QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	STREAM	I	TOTAL		DEMAND	I	* QUEUE	ING *	I,	* INCLUSIV	ΕÇ	UEUEING *	I
I		I				I	* DELA	Y *	I	* DE	LAY	*	Ι
I		I-											- I
Ι		I	(VEH)		(VEH/H)	I	(MIN)	(MIN/VEH)	I	(MIN)		(MIN/VEH)	I
I	B-AC	I	159.7	Ι	106.4	Ι	27.1 I	0.17	I	27.1	Ι	0.17	Ι
I	C-AB	I	157.5	Ι	105.0	Ι	22.9 I	0.15	I	22.9	Ι	0.15	Ι
I	C-A	I	160.5	Ι	107.0	Ι	I		I		Ι		Ι
I	A-B	I	165.2	Ι	110.1	Ι	I		I		Ι		Ι
I	A-C	I	253.3	Ι	168.8	I	I		I		Ι		Ι
Ι	ALL	I	896.1	Ι	597.4	I	49.9 I	0.06	I	49.9	Ι	0.06	Ι

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
  WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
  A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\*\*\*\*\*\*END OF RUN\*\*\*\*\*

# Appendix H

Results of ARCADY capacity assessment: Straight Road/Dugard Avenue mini roundabout



```
_ ARCADY 6 __
ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY
Analysis Program: Release 5.0 (JANUARY 2009)
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Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\ Dugard Avenue - Straight Road Mini\Dugard-Straight am.vai" (drive-on-the-left ) at 09:54:08 on Friday, 12 June 2009

## .FILE PROPERTIES

RUN TITLE: Dugard Avenue / Straight Road Mini Roundabout weekday am peak

LOCATION: Stanway DATE: 20/05/09

CLIENT: Hills Residential ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960 STATUS: Preliminary

DESCRIPTION:

.INPUT DATA

ARM A - Straight Road (south) ARM B - Dugard Avenue (west) ARM C - Straight Road (north)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL ROAD SURFACE CONDITION: NORMAL

	V (M)	I	E (M)	I	Lm(M)	I	Vm(M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	II	INTERCEPT (PCU/MIN)	I
I ARM A I I ARM B I I ARM C I		I	3.00 3.10 3.00	I	2.00	I	4.10	I	9.00 7.20 14.80	I	5.00	I	0.00	I	0.643	I	6.451 19.871 12.229	I

V = approach half-width Lm = effective flare length A = distance between arms K= entry corner kerb line Vm = minimum approach half-width E = entry width G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I I A I 100 T B т 100 I C I Ι 100

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) LENGTH OF TIME PERIOD - ( 90) MINUTES
LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Base Case weekday am peak

																					113
Ι			Ι	NUN	MBER OF	M	INUTE	ES F	ROM S	STA	ART WE	IEN	Ι	RATE	OF	FL	OW (	VEF	H/MIN)	Ι	
I	ARM		I	FLOW	STARTS	Ι	TOP	OF	PEAK	I	FLOW	STOPS	Ι	BEFORE	Ι	AΤ	TOP	Ι	AFTER	Ι	
I			I			Ι				I			Ι		Ι			Ι		Ι	
I			I	TO	RISE	I	IS	REA	CHED	I	FALLI	NG	I	PEAK	Ι	OF	PEAK	Ι	PEAK	I	
I	ARM	Α	I	1	L5.00	I		45.	00	I	75	5.00	I	9.57	Ι	14	.36	Ι	9.57	I	
Ι	ARM	В	Ι	1	L5.00	Ι		45.	00	Ι	75	5.00	Ι	7.13	Ι	10	1.69	Ι	7.13	Ι	
Ι	ARM	C	Ι	1	L5.00	Ι		45.	00	Ι	75	5.00	Ι	8.48	Ι	12	.71	Ι	8.48	Ι	

DEMAND	SET	TITLE:	2023	Base	Case	weekday	$\operatorname{am}$	peak	
--------	-----	--------	------	------	------	---------	---------------------	------	--

DEMAND	SET TITLE:				e weekday 		
I		I			URNING PRO		
I		I		T	URNING CO	JNTS	I
I					ERCENTAGE		
I							
I	TIME	I	FROM/	TO I	ARM A I	ARM B I	ARM C I
I 07	.45 - 09.15	I		I	I		
I		I	ARM	ΑI	0.000 I	0.493 I	0.507 I
I		I		I	0.0 I	378.0 I	388.0 I
I		I		I	( 0.0)I	( 6.0)I	( 1.0)I
I		I		I	I	I	I
I		I	ARM	вІ	0.623 I	0.000 I	0.377 I
I		I		I	355.0 I	0.0 I	215.0 I
I		I			( 3.0)I		
I		I			I		
I		I	ARM		0.537 I		
I		I			364.0 I		
I		I			( 5.0)I		
I		I			I	I	_

## . QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END			AVERAGE DELAY	
I	(VEH/MIN)							(VEH.MIN/		PER ARRIVING	
I								TIME SEGMENT)		VEHICLE (MIN)	I
-											-
I 07.45											I
I ARM A	9.61 7.15	4.75	2.024	-		0.0	73.9	560.4 9.6	-	8.217	I
						0.0	0.7	9.6	-	0.093	I
I ARM C	8.51	9.61	0.886	-		0.0	5.5	63.7	-	0.584	I
I											I
	DEMAND	CADACTTV	DEMAND /		PEDESTRIAN	יים גיים	END	DELAY		AVERAGE DELAY	 -
I		(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
I	(VEII/PILIN)	(VEII/PILIV)						TIME SEGMENT)		VEHICLE (MIN)	
_			(RFC)		(FEDS/MIN)	( 01113 )	( VEIIO )	TIME SEGMENT)		VEHICLE (MIN)	_
I 08.00	-08.15										I
τ άρμ δ	11 48	4 60	2 495	_		73 9	177 1	1882 3	_	27.576	T
T ARM R	8 54	17 89	0 477	_					_	0.107	_
T ARM C	8.54 10.16	9 16	1 109	_		5.7	23 7	13.1 226.8	_		I
I ARM C	10.10	9.10	1.100	_	_	٠.٥	43.1	220.0	_	1.207	T
I TIME					PEDESTRIAN			DELAY		AVERAGE DELAY	I
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
-											-
I 08.15											I
I ARM A	14.06	4.67	3.008	-		177.1		3711.7	-		I
I ARM B	10.46 12.44	17.87	0.585	-		0.9	1.4	19.9	-		I
	12.44	8.56	1.454	-		23.7	82.2	795.0	-	6.429	I
I											I
I TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	т
	(VEH/MIN)				FLOW			(VEH.MIN/		PER ARRIVING	
I	( * 2217 / 17214 )	( * 211 / 1121 )	(RFC)					TIME SEGMENT)		VEHICLE (MIN)	
_			(101 0 )		(1220)11111)	( 1212)	( 12110 )	TITLE DEGLETT,		VEHICLE (HILL)	_
I 08.30	-08.45										I
	14.06	4.67	3.008	_		317.8	458.6	5822.9	_	85.850	Ī
I ARM B		17.87					1.4		_		Ť
	12.44								_		ī
I Andre		0.55				52.2		_0,1.0		12.003	I
T TIME	DEMAND	CADACITE	DEMAND /		PEDESTRIAN	CTADE	END	DELAY		AVERAGE DELAY	 T
	(VEH/MIN)	(AFH/MTN)						(VEH.MIN/		PER ARRIVING	
I			(RFC)		(FEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	_
- I 08.45	-09 00										I
		4 56	2 514	_		458 6	562 2	7656.1	_	113.674	I
T ADM D	11.48 8.54	17 90	0.314	_		1 4	0 9	14.4	_		T
T WAY T	10.16	9 14	1 111	_				2224.9	_	16.321	I
I ARM C	10.10	2.14	1.111	_	_	110./	130.0	2227.2	_	10.321	Ť
-											_

	DEMAND ( VEH/MIN) (V		CAPACITY		QUEUE	QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
09.00-09.	15								
ARM A	9.61	4.49	2.139		562.2	639.0	9009.5	_	133.989
ARM B		17.92			0.9		10.3	_	0.093
ARM C	8.51	9.59			156.0		2224.9	-	15.574
QUEUE AT ARI	M A								
TIME SEGME									
ENDING	VEHICLES IN QUEUE								
08.00	73.9	*****	******	*****	*****	*****	******	*****	*
08.15	177.1						******		
08.30	317.8						******		
08.45	458.6						******		
09.00	562.2						******		
09.15	639.0	*****	*****	******	*****	******	******	******	******
QUEUE AT ARI									
TIME SEGME	NT NO. OF								
ENDING	VEHICLES IN QUEUE								
08.00	0.7	*							
08.15	0.9	*							
08.30	1.4	*							
08.45	1.4								
09.00	0.9								
09.15	0.7	*							
QUEUE AT ARI									
TIME SEGME	NT NO. OF								
ENDING	VEHICLES IN QUEUE								
08.00		*****							
08.15		*****							
08.30							******		
08.45							******		
09.00							******		
09.15	140.7	*****	******	*****	*****	******	******	******	******

I I (VEH) (VEH/H) I (MIN) (MIN/VEH) I (MIN) (MIN/VEH) I

I A I 1054.3 I 702.9 I 28642.9 I 27.17 I 74074.6 I 70.26 I

I B I 784.6 I 523.0 I 88.1 I 0.11 I 88.2 I 0.11 I

C I 933.2 I 622.1 I 7207.0 I 7.72 I 8239.3 I 8.83 I I ALL I 2772.1 I 1848.1 I 35938.0 I 12.96 I 82402.1 I 29.73 I

END OF JOB

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

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_ ARCADY 6 _
ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY
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Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS

IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\ Dugard Avenue - Straight Road Mini\Dugard-Straight am.vai" (drive-on-the-left ) at 09:55:47 on Friday, 12 June 2009

## .FILE PROPERTIES

RUN TITLE: Dugard Avenue / Straight Road Mini Roundabout weekday am peak

LOCATION: Stanway

DATE: 20/05/09

CLIENT: Hills Residential ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960 STATUS: Preliminary

DESCRIPTION:

.INPUT DATA

ARM A - Straight Road (south)

ARM B - Dugard Avenue (west) ARM C - Straight Road (north)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL ROAD SURFACE CONDITION: NORMAL

Lm(M) I I INTERCEPT I Vm(M) I A (M) I K (M) I G (%) I SLOPE I 3.00 I 3.10 I 3.00 I 9.00 I 7.20 3.00 4.10 I ARM B I 3.50 2.00 5.00 0.00 0.643 19.871 I ARM C I 3.00 3.20 14.80 I 13.10 0.00 I 0.509 12.229

V = approach half-width Lm = effective flare length A = distance between arms

K= entry corner kerb line Vm = minimum approach half-width E = entry width G=gradient over 50 m

## .TRAFFIC DEMAND DATA

Only sets included in the current run are shown

## .SCALING FACTORS

IARM I FLOW SCALE(%) I T B 100 I C 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

т			т	NITIN	MBER OF	M	NIITI	S FR	OM S	т2	ART WH	EN	т	RATE	OF	יים. זים י	.OW (	VEL	I/MTN)	т т	13
I	ARM													BEFORE					. ,		
Ι			Ι			I				Ι			I		Ι			Ι		I	
Ι			Ι	TO	RISE	I	IS	REAC	HED	Ι	FALLI	NG	Ι	PEAK	Ι	OF	PEAK	Ι	PEAK	I	
I	ARM	Α	I	1	15.00	I		45.0	0	Ι	75	.00	I	9.57	I	14	1.36	I	9.57	I	
Ι	ARM	В	Ι	1	15.00	Ι		45.0	0	Ι	75	.00	Ι	8.29	Ι	12	2.43	Ι	8.29	I	
Ι	ARM	C	Ι	1	15.00	Ι		45.0	0	Ι	75	.00	Ι	8.48	Ι	12	2.71	Ι	8.48	I	

DEMAND SET TITLE:	2023 Dev't Case weekday am peak	2
 I т	I TURNING PROPORTIONS I	2
I	I (PERCENTAGE OF H.V.S) I	
I I TIME	I FROM/TO I ARM A I ARM B I ARM C I	
I 07.45 - 09.15 I	I I I I I I I I I I I I I I I I I I I	
I I	I I ( 0.0)I ( 1.0)I ( 6.0)I I I I I I I I I ARM B I 0.535 I 0.000 I 0.465 I	
I I	I I 355.0 I 0.0 I 308.0 I I I ( 3.0)I ( 0.0)I ( 2.0)I I I I I I	
I I	I ARM C I 0.537 I 0.463 I 0.000 I I I 364.0 I 314.0 I 0.0 I	
I I	I I ( 5.0)I ( 1.0)I ( 0.0)I I I I I I I	

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

I I		DEMAND (VEH/MIN)	CAPACITY	DEMAND/ CAPACITY	I	PEDESTRIAN FLOW	START QUEUE	END QUEUE			AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
	07.45-0		4 75	2 026			0.0	72.0	560.7		8.232	I I
	ARM A	9.01	17 00	0.020						-	0.104	I
	ARM C	9.61 8.32 8.51	9 61	0.407			0.0	5.5	12.4 63.7			T
I												I 
·	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	 I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
	08.00-0											I
Ι	ARM A	11.48	4.60	2.497			73.9	177.2	1883.4	-	27.592	I
Ι	ARM B	9.93	17.83	0.557			0.9	1.2	1883.4 17.8 226.6	-	0.126	
		10.16	9.16	1.109			5.5	23.7	226.6	-	1.964	
Ι												I 
	TIME					PEDESTRIAN					AVERAGE DELAY	
Ι		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)		VEHICLE (MIN)	I
	08.15-0											I
I	ARM A	14.06	4.67	3.010			177.2	318.0	3713.5	-		I
	ARM B	12.17	17.81	0.683			1.2	2.1	29.4	-		I
I	ARM C	12.44	8.56	1.453		-	23.7	82.1	794.1	-	6.422	I
	TIME					PEDESTRIAN					AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
_				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I -
	08.30-0											I
		14.06								-	85.910	
1	ARM B	12.17	17.81	0.683			2.1	2.1	31.6	-		I
I	ARM C	12.44	8.55	1.456		-	82.1	140.6	1670.1	-	12.798	I
I	TIME					PEDESTRIAN			DELAY		AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
I	08.45-0	09.00										I
		11.48	4.56	2.515			458.8	562.5	7659.3	-	113.726	I
I	ARM B	9.93	17.84	0.557			2.1	1.3	20.1	-	0.128	I
	ARM C	10.16	9.14	1.112			140.6	155.9	2223.9	-	16.319	I
I												I

I TIME I		CAPACITY (VEH/MIN)	CAPACITY	I	FLOW	QUEUE	QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAS PER ARRIVING VEHICLE (MIN
- [ 09.00-09	3 15									
	9.61	1 10	2 140		_	562 5	630 3	9013.1		134.064
I ARM B		17.87			_	1 2	Λ 0	12 7		0.105
ARM C		9.58			_	155 9	140.7	2224.7	_	15.588
QUEUE AT A										
	MENT NO. OF									
ENDING	VEHICL IN QUE									
08.00								******		
08.15										******
08.30	318.	O *****		. * * * * * ;	. * * * * * *	*****	* * * * * * * * *			* * * * * * * * * * * * * * * * * * *
08.45										* * * * * * * * * * * * * * * * * * *
09.00										******
09.15	639.	3 ******								
UEUE AT A										
TIME SEG	MENT NO. OF									
ENDING	VEHICL									
	IN QUE									
08.00	0	9 *								
08.15		2 *								
08.30		1 **								
08.45		1 **								
09.00		3 *								
09.15		9 *								
09.13	0.	2								
UEUE AT A										
TIME SEGN	MENT NO. OF									
ENDING	VEHICL									
	IN QUE	UE								
08.00		5 *****								
08.15		7 *****								
08.30								******		
08.45										******
09.00										*****
09.15	140.	7 *****	******	*****	*****	*****	******	*******	******	******

I I (VEH) (VEH/H) I (MIN) (MIN/VEH) I (MIN) (MIN/VEH) I

I A I 1054.3 I 702.9 I 28655.5 I 27.18 I 74149.8 I 70.33 I

I B I 912.6 I 608.4 I 125.0 I 0.14 I 125.0 I 0.14 I

I C I 933.2 I 622.1 I 7203.0 I 7.72 I 8235.6 I 8.82 I I ALL I 2900.1 I 1933.4 I 35983.5 I 12.41 I 82510.3 I 28.45 I

END OF JOB

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

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_ ARCADY 6 __
ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY
Analysis Program: Release 5.0 (JANUARY 2009)
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Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\ Dugard Avenue - Straight Road Mini\Dugard-Straight pm.vai" (drive-on-the-left ) at 09:59:23 on Friday, 12 June 2009

## .FILE PROPERTIES

RUN TITLE: Dugard Avenue / Straight Road Mini Roundabout weekday pm peak

LOCATION: Stanway DATE: 20/05/09

CLIENT: Hills Residential ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960 STATUS: Preliminary

DESCRIPTION:

.INPUT DATA

ARM A - Straight Road (south) ARM B - Dugard Avenue (west) ARM C - Straight Road (north)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

I ARM I I I	V (M)	I	E (M)	I	Lm(M)	I	Vm (M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A I I ARM B I I ARM C I	3.50	I	3.10	I	2.00	I	4.10	I	7.20	I	5.00	I	0.00	I	0.643	I		I

V = approach half-width Lm = effective flare length A = distance between arms K= entry corner kerb line Vm = minimum approach half-width E = entry width G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I I A I 100 T B т 100 I C I Ι 100

TIME PERIOD BEGINS(16.45)AND ENDS(18.15) LENGTH OF TIME PERIOD - ( 90) MINUTES
LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Base Case weekday pm peak

т		т	NITIN	MBER OF	мт	INITTE	S FROM	ST	ART WHE	N	т	RATE	OF	וים י	OW (7	7E.F	I/MTN)	т т	1.
Ī	ARM								FLOW S								. ,		
I		I			I			I			Ι		I			I		I	
I		I	TO	RISE	I	IS	REACHE	) I	FALLING	G :	Ι	PEAK	I	OF	PEAK	I	PEAK	I	
I.	ARM	ΑI		15.00	Ι		45.00	I	75.	00	Ι	9.10	Ι	13	3.65	Ι	9.10	I	
I.	ARM	ΒΙ	- :	15.00	I		45.00	I	75.	00	Ι	8.24	Ι	12	2.36	Ι	8.24	I	
I.	ARM	CI	- :	15.00	I		45.00	I	75.	00	Ι	8.04	Ι	12	2.06	Ι	8.04	I	

DEMAND SET TITLE: 2023 Base Case weekday pm peak

									T33
I		Ι			ΤŢ	JRNING PRO	OPORTIONS	I	
I		Ι			Т	JRNING COU	JNTS	I	
I		Ι			(PI	ERCENTAGE	OF H.V.S	) I	
I		-							
I	TIME	I	FROM/	TO	Ι	ARM A I	ARM B I	ARM C I	
	16.45 - 18.15	т			т	т	т	т	
T	10.43 - 10.13	T		70	_	_	0.544 I	-	
T		T	MRM	А	T		396.0 I		
T		T			_				
-		_					( 1.0)I		
I		Ι			Ι	I	I	I	
I		Ι	ARM	В			0.000 I		
I		Ι			Ι	429.0 I	0.0 I	230.0 I	
I		Ι			Ι	( 1.0)I	( 0.0)I	( 2.0)I	
I		Ι			Ι	I	I	I	
I		Ι	ARM	C	Ι	0.613 I	0.387 I	0.000 I	
I		Ι			I	394.0 I	249.0 I	0.0 I	
I		Ι			Ι	( 4.0)I	( 0.0)I	( 0.0)I	
I		Ι			Ι	I	I	I	

#### QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

-	TIME		CAPACITY			PEDESTRIAN		END	DELAY		AVERAGE DELAY	
		(VEH/MIN)							(VEH.MIN/		PER ARRIVING	
									TIME SEGMENT)		VEHICLE (MIN)	
												-
	16.45-1	7.00										Ι
į	ARM A	9.13	5.14	1.776	-		0.0	61.1	466.1	-	6.312	I
į	ARM B	8.27	18.10	0.457	-		0.0	0.8	12.0	-	0.101	I
1	ARM C	8.27 8.07	9.25	0.872	-		0.0	5.1	12.0 59.0	-	0.570	Ι
												Ι
_												
	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	Ι
		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
	17.00-1	7.15										_ T
1	ARM A	10.91	5.02	2.171	_		61.1	149.4	1578.8	-		I
-	ARM B	9.87	18.11	0.545	_		0.8	1.2	17.1	_		Ī
-	ARM C	9.87 9.63	8.72	1.105	_		5.1	22.2	211.8	_	1.953	
•												Ī
-												
-	TIME	DEMVND.	CADACTTV	DEMAND /		PEDESTRIAN	ייקעיי	END	DELAY		AVERAGE DELAY	
									(VEH.MIN/		PER ARRIVING	
		( A TO II \ 1.1 T IA )	( A TO II / I-I T IN )						TIME SEGMENT)		VEHICLE (MIN)	
				(RFC)		(LEDO/MIN)	(ATUS)	(VEDS)	TIME SEGMENI)		ADDITION (MIN)	_
	17.15-1											I
1	ARM A	13.36 12.09	5.10	2.618	-		149.4	273.2	3169.6 27.7	-	41.768	Ι
i	ARM B	12.09	18.09	0.669	_		1.2	2.0	27.7	_	0.164	Ι
		11.80								_	6.600	Ι
												Ι
_ :												
	TIME					PEDESTRIAN		END	DELAY		AVERAGE DELAY	Ι
		(VEH/MIN)	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
												-
	17.30-1											Ι
i	ARM A	13.36 12.09 11.80	5.10	2.618	-		273.2	397.1	5027.3	-		Ι
ì	ARM B	12.09	18.09	0.669	-		2.0	2.0	29.6	-	0.167	Ι
i	ARM C	11.80	7.99	1.477	-		79.3	136.5	1618.3	-	13.154	Ι
_												I
_												
	TIME					PEDESTRIAN		END			AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)			FLOW			(VEH.MIN/		PER ARRIVING	
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
												-
	17.45-1											Ι
		10.91			-					-		Ι
	ARM B	9.87	18.12	0.545	-		2.0		19.1	-		Ι
i												
1	ARM C	9.63	8.69	1.108	-		136.5	150.6	2153.4	-	16.586	Ι

I TIME I I	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)		FLOW	QUEUE	QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
- 10 00 10	2.15								
I 18.00-18	9.13	1 92	1.856		485.8	549 N	7760.4	_	105.378
I ARM B	8.27		0.456		1.2		13.1	_	0.102
I ARM C	8.07		0.874		150.6		2135.9	-	15.532
I									
.QUEUE AT A									
TIME SEC	MENT NO. OF								
ENDING	VEHICL								
	IN QUE								
17.00							*****		
17.15								*****	
17.30								****************	
17.45	397.	_						******	
18.00 18.15								******	
.QUEUE AT A									
TIME SEGN	MENT NO. OF								
ENDING	VEHICI IN QUE								
17.00		8 *							
17.15		2 *							
17.30		0 **							
17.45		0 **							
18.00 18.15		2 *							
10.15	0.	0 "							
.QUEUE AT A									
TIME SEGN	MENT NO. OF	i							
ENDING	VEHICI IN QUE								
17.00	5.	1 ****							
17.15	22.	2 *****	*****	*****					
17.30								******	
17.45								*****	
18.00								*****	
18.15	134.	2 *****	*******	*****	*****	******	******	******	**********

#### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I ARM I TOTAL DEMAND I \* QUEUEING \* I \* INCLUSIVE QUEUEING \* I
I I \* DELAY \* I \* DELAY \* I
I I------I I I (VEH) (VEH/H) I (MIN) (MIN/VEH) I (MIN) (MIN/VEH) I

I A I 1002.0 I 668.0 I 24623.4 I 24.57 I 55237.2 I 55.12 I

I B I 907.1 I 604.7 I 118.5 I 0.13 I 118.5 I 0.13 I

C I 885.0 I 590.0 I 6939.8 I 7.84 I 7915.0 I 8.94 I I ALL I 2794.1 I 1862.8 I 31681.7 I 11.34 I 63270.7 I 22.64 I

END OF JOB

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

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_ ARCADY 6 __
ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY
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Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\ Dugard Avenue - Straight Road Mini\Dugard-Straight pm.vai" (drive-on-the-left ) at 09:59:53 on Friday, 12 June 2009

#### .FILE PROPERTIES

RUN TITLE: Dugard Avenue / Straight Road Mini Roundabout weekday pm peak

LOCATION: Stanway

DATE: 20/05/09

CLIENT: Hills Residential ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960 STATUS: Preliminary

DESCRIPTION:

.INPUT DATA

ARM A - Straight Road (south)

ARM B - Dugard Avenue (west) ARM C - Straight Road (north)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL ROAD SURFACE CONDITION: NORMAL

I ARM I I I	V (M)	I	E (M)	I	Lm(M)	I	Vm(M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A I I ARM B I I ARM C I	3.50	I	3.10	I	2.00	I	4.10	I	7.20	I	5.00	I	0.00	I	0.643	I		I

V = approach half-width Lm = effective flare length A = distance between arms

K= entry corner kerb line Vm = minimum approach half-width E = entry width G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I I A I 100 TR 100 I C 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

I		I	NUN	BER OF	MI	INUTE	ES FROM	ST	ART WHEN	I	RATE	OI	FI	OW (	VE	H/MIN)	Ι
I AF	RM	I	FLOW	STARTS	Ι	TOP	OF PEAK	Ι	FLOW STOPS	3 I	BEFORE	Ι	AT	TOP	Ι	AFTER	Ι
I		I			Ι			Ι		Ι		Ι			Ι		Ι
I		I	TO	RISE	Ι	IS	REACHED	Ι	FALLING	Ι	PEAK	Ι	OF	PEAK	Ι	PEAK	Ι
I ARM	vi P	A I	1	5.00	Ι		45.00	Ι	75.00	Ι	9.10	Ι	13	3.65	Ι	9.10	Ι
I ARM	√I E	3 I	1	5.00	Ι		45.00	Ι	75.00	Ι	9.10	Ι	13	3.65	Ι	9.10	Ι
I ARM	vi c	ı.	1	5.00	I		45.00	I	75.00	I	8.04	Ι	12	2.06	I	8.04	I

DEM	MAND SET TITLE:	2023				y pm peak		тзз
·I		I				OPORTIONS		100
I		I		T	URNING CO	UNTS	I	
I		I		(P	ERCENTAGE	OF H.V.S	) I	
I								
I	TIME	I	FROM/	TO I	ARM A I	ARM B I	ARM C I	
I	16.45 - 18.15	I		I	I	I	I	
I		I	ARM	ΑI	0.000 I	0.544 I	0.456 I	
I		I		I	0.0 I	396.0 I	332.0 I	
I		I		I	( 0.0)I	( 1.0)I	( 3.0)I	
I		I		I	I	I	I	
I		I	ARM	ΒI	0.620 I	0.000 I	0.380 I	
I		I		I	451.0 I	0.0 I	277.0 I	
I		I		I	( 1.0)I	( 0.0)I	( 2.0)I	
I		I		I	I	I	I	
I		I	ARM	CI	0.613 I	0.387 I	0.000 I	
I		I		I	394.0 I	249.0 I	0.0 I	
I		I		I	( 4.0)I	( 0.0)I	( 0.0)I	
I		I		I	I	I	I	

#### . QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

I 16.45-17.00  I 16.45-17.00  I 16.45-17.00  I 1 ARM A	-											
I ARM A 9.13 5.15 1.775 0.0 61.1 465.7 - 6.299 1 ARM B 9.13 18.09 0.505 0.00 1.0 14.4 - 0.110 1 ARM B 0.13 18.09 0.505 0.00 5.5 62.5 - 0.605 1 I ARM B 10.91 18.10 0.603 1.00 0.000 0.	I TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY	P	EDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/		AVERAGE DELAY PER ARRIVING	I I
I ARM A 9.13 5.15 1.775 0.0 61.1 465.7 - 6.299 1 ARM B 9.13 18.09 0.505 0.00 1.0 14.4 - 0.110 1 ARM B 0.13 18.09 0.505 0.00 5.5 62.5 - 0.605 1 I ARM B 10.91 18.10 0.603 1.00 0.000 0.	- - 16 4E	17 00										_ _
I ARM B 9.13 18.09 0.505 0.0 1.0 14.4 - 0.110 1 ARM C 8.07 9.12 0.885 0.0 5.5 62.5 - 0.605 1 I ARM C 8.07 9.12 0.885 0.0 5.5 62.5 - 0.605 1 I I I TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY AVERAGE DELAY 1 VEHICLE (MIN) PER ARRIVING 1 ARM B 10.91 5.04 2.163 6.61.1 149.0 1575.7 - 20.874 1 ARM B 10.91 18.10 0.605 5.55 24.4 230.8 - 2.145 1 I C (VEH/MIN)			5 15	1 775		_	0.0	61 1	465 7	_	6 299	I
I ARM C 8.07 9.12 0.885 0.0 5.5 62.5 - 0.605	I ARM B	9.13	18.09	0.505						_		Ī
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I TIME DEMAND CAPACITY DEMAND/ (FEC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)  I TIME DEMAND CAPACITY DEMAND/ (FEC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT)  I 17.15-17.30  I ARM A 13.36 5.13 2.603 149.0 272.4 3161.1 - 41.416 1 ARM B 13.36 18.07 0.739 24.4 84.4 816.8 - 7.225 1 TIME DEMAND CAPACITY (FEC) (PEDS/MIN) (VEHS) (VEH	I ARM B	10.91	18.10	0.603		_	1.0	1.5	21.3	-	0.138	I
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I TIME   DEMAND   CAPACITY   DEMAND   PEDESTRIAN   START   END   DELAY   (VEH.MIN)   PER ARRIVING   1   17.15-17.30   1   17.18-18.00   1   17.45-18.00   1   1   1   1   1   1   1   1   1	I 											I 
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I (VEH/MIN) (VEH/MIN) (VEH/MIN) (APACITY FLOW QUEUE QUEUE (VEH.MIN/ PER ARRIVING I VEHICLE (MIN) I VEHICLE (MIN) I VEHICLE (MIN) I I 17.45-18.00 I ARM A 10.91 5.02 2.172 395.8 484.1 6599.4 - 89.030 I ARM B 10.91 18.11 0.602 2.8 1.5 24.5 - 0.142 I ARM C 9.63 8.52 1.131 144.7 161.4 2295.4 - 17.936 I I I I I I I I I I I I I I I I I I I	I											I
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I (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) VEHICLE (MIN) I  1 17.45-18.00  I ARM A 10.91 5.02 2.172 395.8 484.1 6599.4 - 89.030 I  I ARM B 10.91 18.11 0.602 2.8 1.5 24.5 - 0.142 I  I ARM C 9.63 8.52 1.131 144.7 161.4 2295.4 - 17.936 I  I												
I 17.45-18.00 I ARM A 10.91 5.02 2.172 395.8 484.1 6599.4 - 89.030 I I ARM B 10.91 18.11 0.602 2.8 1.5 24.5 - 0.142 I I ARM C 9.63 8.52 1.131 144.7 161.4 2295.4 - 17.936 I I	Ī	(VEII/MIN)	(VEII/PIIN)									I
I ARM A 10.91 5.02 2.172 395.8 484.1 6599.4 - 89.030 I ARM B 10.91 18.11 0.602 2.8 1.5 24.5 - 0.142 I ARM C 9.63 8.52 1.131 144.7 161.4 2295.4 - 17.936 I I	I 17.45-	18.00										I
I ARM B			5.02	2.172		_	395.8	484.1	6599.4	-	89.030	Ī
I	I ARM B	10.91	18.11	0.602		_				-		I
	I ARM C	9.63	8.52	1.131		-	144.7	161.4	2295.4	-	17.936	I
	I											I

I TIME I I	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY PER ARRIVING VEHICLE (MIN
-									
[ 18.00-18 [ ARM A	9.13	4.94	1 9/19		484.1	547 0	7733.2	_	104.573
I ARM B	9.13		0.504		1.5		16.0	_	0.112
ARM C	8.07		0.888		161.4		2312.7		17.074
I									
QUEUE AT A									
	MENT NO. OF								
ENDING	VEHICL								
	IN QUE	UE							
17.00							******		
17.15							*****		
17.30							******		
17.45							******		
18.00	484		*****	*****	*****	*****	******		
18.15 QUEUE AT A	547. ARM B	0 *****	*****		*****	*****	******	*******	•••••
18.15 QUEUE AT <i>I</i>	547. ARM B	ES	*****		****	*****	*******	******	*******
18.15  QUEUE AT I	ARM B MENT NO. OF VEHICL IN QUE	ES	*****		****	*****	*******	******	*******
18.15  QUEUE AT A  TIME SEGNET ENDING	ARM B MENT NO. OF VEHICL IN QUE	ES UE	*****		****	*****	*******	************	******
18.15  QUEUE AT A  TIME SEGN ENDING	547.  ARM B  MENT NO. OF VEHICL IN QUE  1.	ES UE 0 *	*****		****	*****	******	***********	*******
18.15  QUEUE AT I TIME SEGN ENDING  17.00 17.15	547.  ARM B MENT NO. OF VEHICL IN QUE 1. 2.	ES UE 0 * 5 *	*****		****	*****	*******	***********	*******
18.15  QUEUE AT 7  TIME SEGN ENDING  17.00 17.15 17.30	ARM B MENT NO. OF VEHICL IN QUE  1. 2.	ES UE 0 * 5 * 7 ***	******		*****	*****	*******	***********	******
18.15  QUEUE AT 1  TIME SEGN ENDING  17.00 17.15 17.30 17.45	547.  ARM B  MENT NO. OF VEHICL IN QUE  1. 2. 2.	ES UE 0 * 5 * 7 *** 8 ***	*****		*****	****	*******	***********	*******
18.15  QUEUE AT 1  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15	ARM B MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1.	ES UE 0 * 5 * 7 *** 8 *** 5 **	*******		*****	*****	*******	*************	******
18.15  QUEUE AT 1  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15	ARM B MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1.	ES UE 0 * 5 * 7 *** 8 *** 5 ** 0 *	*******		*****	*****	*******	***************************************	******
18.15  QUEUE AT 1  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15  QUEUE AT 1	ARM B MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1. MENT NO. OF	0 * 5 * 7 *** 8 *** 5 ** 0 *	******		*****	*****	*******	******	******
18.15  QUEUE AT 1  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15	ARM B MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1.	ES UE 0 * 5 * 7 *** 8 *** 5 ** 0 *	*******		*****	*****	*******	***************************************	******
18.15  QUEUE AT 1  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15  QUEUE AT 1	ARM B MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1.  ARM C MENT NO. OF VEHICL IN QUE	ES UE 0 * 5 * 7 *** 8 *** 5 ** 0 *	******		****	*****	*******	***************************************	******
18.15  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15  TIME SEGN ENDING	ARM B MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1. 1. IN QUE IN QUE IN QUE S. 24.	ES UE  0 * 7 *** 8 *** 5 ** 0 *	*****	******					
18.15  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15  UUUUE AT 2  TIME SEGN ENDING	ARM B MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1. ARM C MENT NO. OF VEHICL IN QUE 5. 24. 84.	ES UE  0 * * * * * * * * * * * * * * * * * *	******	******	****	****	*****	******	******
18.15  DUEUE AT 1  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15  DUEUE AT 1  TIME SEGN ENDING  17.00 17.15	MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1.  ARM C	ES UE  0 * 5 *** 8 *** 5 ** 0 *  ES UE  4 ****** 4 ******	******	******	****	****	******	******	******
18.15  UEUE AT 1  TIME SEGN ENDING  17.00 17.15 17.30 17.45 18.00 18.15  TIME SEGN ENDING  17.15 17.30 17.15 17.30	MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 1.  ARM C	ES UE  0 * 5 *** 8 *** 5 ** 0 *  ES UE  4 ****** 4 ******	******	******	****	****	*****	******	******

#### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I I I	ARM	I I I-				I	* Q1 * 1	JEI DE:	UEING * LAY *	I	* INCLUSI	VE DEI	QUEUEING *	I	т75
I		Ι	(VEH)		(VEH/H)	Ι	(MIN)		(MIN/VEH)	Ι	(MIN)		(MIN/VEH)	Ι	
I	A	I	1002.0	Ι	668.0	I	24547.1	Ι	24.50	I	54813.2	_	54.70	I	
I	B C	_		_		_	154.7 7436.3	_		I	154.8 8624.8	_	0.15 9.75	I	
 I	ALL	I	2889.1	I	1926.1	I	32138.2	I	11.12	 I	63592.7	 I	22.01	 I	

END OF JOB

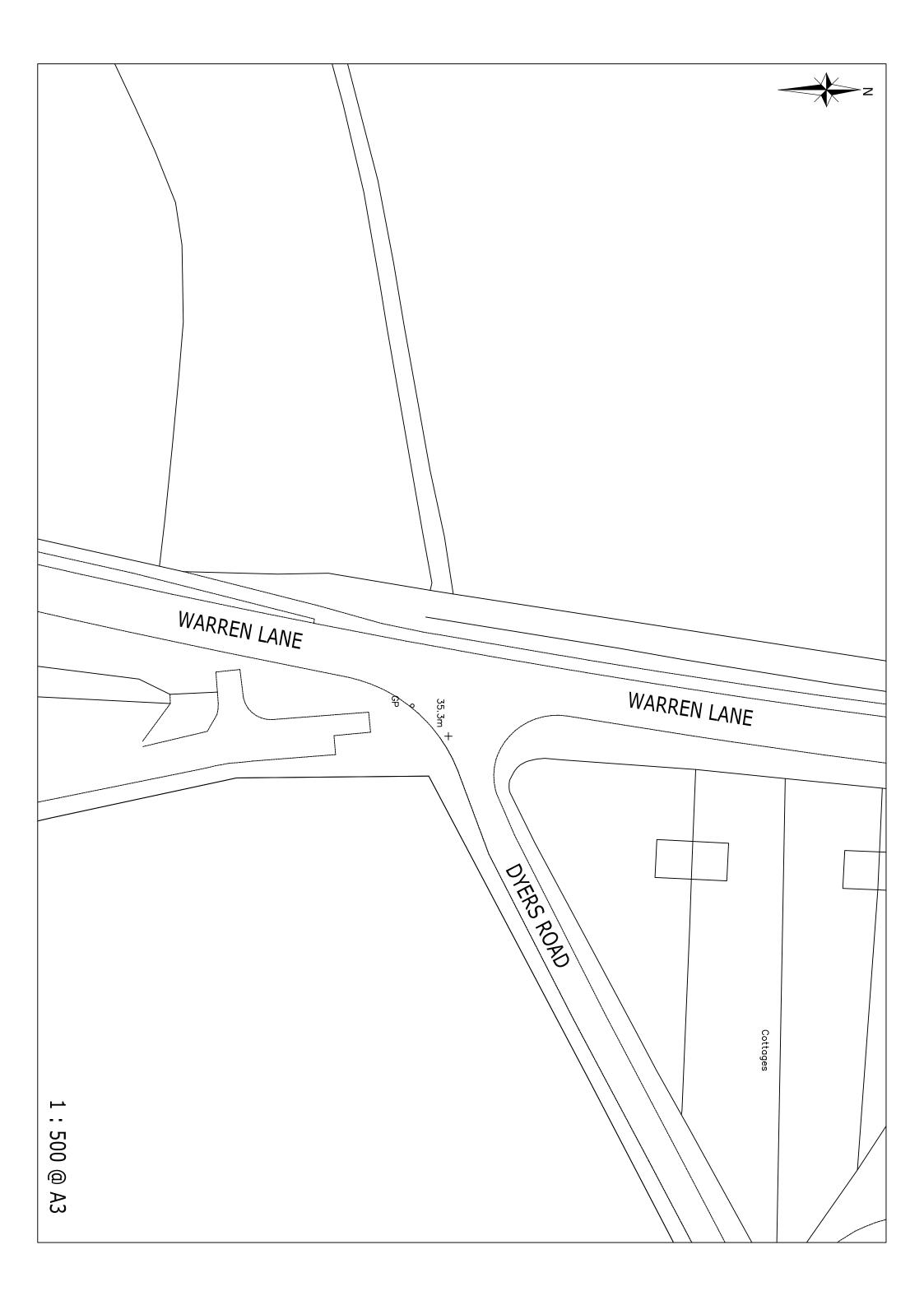
<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

## Appendix I

Results of PICADY capacity assessment:
Warren Lane/Dyers Road junction



#### TRI, LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM RELEASE 4.0 (SEPT 2008)

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PROGRAM ADVICE AND MAINTENANCE CONTACT:
TRL SOFTWARE BUREAU
TEL: CROWTHORNE (01344) 770758, FAX: 770356

EMAIL: Software@trl.co.uk

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF HIS/HER RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

"Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\PICADY\Warren-Dyers\ Warren-Dyers existing.vpi"

(drive-on-the-left) at 16:23:05 on Thursday, 11 June 2009

#### .RUN INFORMATION

RUN TITLE : Warren Lane/Dyers Road T-junction

LOCATION : Stanway : 22/05/09 DATE

CLIENT : Hills Residential
ENUMERATOR : mlast [ARDENT23]
JOB NUMBER : F960

STATUS

DESCRIPTION

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A) MINOR ROAD (ARM B)

ARM A IS Warren Lane (north) ARM B IS Dyers Road

ARM C IS Warren Lane (south)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

#### GEOMETRIC DATA

DATA ITEM I MINOR ROAD B I T (W ) 7.40 M. I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH CENTRAL RESERVE WIDTH I (WCR ) 0.00 M. I I (WC-B) 2.20 M. MAJOR ROAD RIGHT TURN - WIDTH - VISIBILITY - BLOCKS TRAFFIC I (VC-B)250.00 M. I YES MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 53.0 M. - VISIBILITY TO RIGHT
- LANE 1 WIDTH
- LANE 2 WIDTH I (VB-A) 77.0 M. I (WB-C) I (WB-A) 10.00 M. WIDTH AT 0 M FROM JUNCTION WIDTH AT 5 M FROM JUNCTION 6.80 M. WIDTH AT 10 M FROM JUNCTION WIDTH AT 15 M FROM JUNCTION 2.80 M. 2.30 M. WIDTH AT 20 M FROM JUNCTION - LENGTH OF FLARED SECTION I DERIVED: 1 PCU I (NB:Streams may be combined, in which case capacity will be adjusted)

Ι	Intercept For	Slope For Opposing	Slope For Opposin	g I
Ι	STREAM B-C	STREAM A-C	STREAM A-B	Ι
Ι	0.00	0.00	0.00	I

\* Due to the presence of a flare, data is not available

	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
	STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B I
I	0.00	0.00	0.00	0.00	0.00 I

 $\mbox{\scriptsize \star}$  Due to the presence of a flare, data is not available

I Intercept For Slope For Opposing Slope For Opposing I STREAM C-B STREAM A-C STREAM A-B I

I 718.74 0.26 0.26 I

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I
I A I 100 I
I B I 100 I
I C I 100 I

.Demand set: 2023 Base Case weekday am peak

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

I			Ι	NUI	MBER OF	M	INUT	ES FROM	ST.	ART WHEN	Ι	RATE	OI	F FLOW (	VE:	H/MIN)	I
Ι	ARM		Ι	FLOW	STARTS	Ι	TOP	OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER	I
I			I	TO	RISE	Ι	IS	REACHED	I	FALLING	Ι	PEAK	I	OF PEAK	I	PEAK	I
Ι			Ι			I			I		Ι		Ι		Ι		I
Ι	ARM	Α	Ι	:	15.00	Ι		45.00	Ι	75.00	Ι	9.79	Ι	14.68	I	9.79	I
Ι	ARM	В	Ι		15.00	Ι		45.00	I	75.00	Ι	1.00	Ι	1.50	I	1.00	I
I	ARM	C	Ι		15.00	Ι		45.00	I	75.00	Ι	12.27	Ι	18.41	I	12.27	I

.Demand set: 2023 Base Case weekday am peak

I		Ι			Т	JRNING E	PRC	PORTIO	NS			Ι
I		Ι			ΤŪ	JRNING (	COU	INTS				Ι
I		Ι		(	PI	ERCENTAC	ΞE	OF H.V	. s	)		Ι
I												-
I	TIME	Ι	FROM/	TO	Ι	ARM A	Ι	ARM B	Ι	ARM	C	Ι
I	07.45 - 08.00	Ι							 I			I
I		Ι	ARM	Α	Ι	0.000	Ι	0.010	Ι	0.9	90	Ι
I		I			Ι	0.0	Ι	8.0	I	775	. 0	Ι
I		Ι			Ι	( 0.0	) I	( 0.0	) I	( 11	.0)	Ι
I		Ι			Ι		Ι		I			Ι
I		Ι	ARM	В	Ι	0.038	Ι	0.000	Ι	0.9	62	Ι
I		Ι			Ι	3.0	Ι	0.0	I	77	. 0	Ι
I		Ι			Ι	( 0.0	) I	( 0.0	) I	( 2	.0)	Ι
I		I			Ι		Ι		I			Ι
I		I	ARM	C	Ι	0.863	Ι	0.137	I	0.0	00	Ι
I		I			Ι	847.0	Ι	135.0	I	0	.0	Ι
I		I			Ι	( 4.0	) I	( 2.0	) I	( 0	.0)	Ι
I		Ι			Ι		I		Ι			Ι

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS AND FOR TIME PERIOD

					=						
I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	Ι
Ι		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
Ι				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
Ι	07.45-0	08.00									Ι
I	B-C	0.97	9.02	0.107		0.00	0.12	1.7		0.12	Ι

I	C-AB C-A A-B A-C	7.56 0.10	4.38 16.20	0.009 0.294		0.00	0.01 0.85	0.1 12.4		0.23 0.09	I I I I
I I I I I I	08.00-0 B-C B-A C-AB C-A A-B A-C	8.15 1.15 0.04 7.38 7.34		(RFC)	PEDESTRIAN FLOW (PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	VEHICLE (MIN) 0.14 0.30	
I I I I I	08.15-0 B-C B-A C-AB C-A A-B A-C	(VEH/MIN) 8.30 1.41 0.06 13.33 4.69	(VEH/MIN)	CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)	
I I I I	08.30-0 B-C B-A C-AB C-A A-B A-C	(VEH/MIN) 8.45 1.41 0.06 13.62	(VEH/MIN) 7.69 2.06	CAPACITY (RFC) 0.184 0.027	FLOW (PEDS/MIN)	QUEUE (VEHS) 0.22 0.03	QUEUE (VEHS) 0.22 0.03	(VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN) 0.16	
I I I I I	08.45-0 B-C B-A C-AB C-A A-B A-C	DEMAND (VEH/MIN) 9.00 1.15 0.04	CAPACITY (VEH/MIN) 8.47 3.37	DEMAND/ CAPACITY (RFC)	(PEDS/MIN)	START QUEUE (VEHS) 0.22 0.03	END QUEUE (VEHS)	TIME SEGMENT)  2.5 0.2	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	VEHICLE (MIN) 0.14 0.30	
	09.00-0 B-C B-A C-AB C-A A-B A-C	(VEH/MIN)  9.15  0.97  0.04  4.83  7.49  0.10  9.72	9.02 4.36 16.25	CAPACITY (RFC) 0.107 0.009 0.297		QUEUE (VEHS) 0.16 0.01 1.74	(VEHS) 0.12 0.01 0.89	(VEH.MIN/ TIME SEGMENT) 1.9 0.1 13.7	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN) 0.12 0.23 0.09	I I I I I I I I I
	UEUE FOR TIME SEGMENT ENDING 08.00 08.15 08.30 08.45 09.00 09.15	STREAM NO. (	B-C DF CLES JEUE .1 .2 .2 .2 .2 .1	OF CAPACI	TIES AS MAJOI	R ROAD I	BLOCKING	MAY OCCUR			

QUEUE FOR STREAM B-A
TIME NO. OF
SEGMENT VEHICLES

```
IN QUEUE
   ENDING
     08.00
                              0.0
     08.15
                                    0 0
     08.30
                                     0.0
     08.45
                                     0.0
     09.00
                                     0.0
     09.15
 QUEUE FOR STREAM C-AB
   TIME
                               NO. OF
    SEGMENT
                               VEHICLES
   ENDING
                              IN QUEUE
     08.00
     08.15
                                    1.6
     08.30
                                     5.0
                                                 ****
                                                 ****
                                    5.4
1.7
     08.45
     09.00
     09.15
                                    0.9
                                 QUEUEING DELAY INFORMATION OVER WHOLE PERIOD
 I STREAM I TOTAL DEMAND I * QUEUEING * I I DELAY *
                                                                                         I * INCLUSIVE QUEUEING * I
I * DELAY * I
       I I * DELAY * I * DELAY * I
                 I (VEH) (VEH/H) I (MIN)
 Т
                                                                           (MTN/VEH) T (MTN)
                                                                                                                                (MTN/VEH) T
    B-C I 106.0 I 70.7 I
B-A I 4.1 I 2.8 I
C-AB I 773.9 I 515.9 I
C-A I 577.8 I 385.2 I
A-B I 11.0 I 7.3 I
A-C I 1066.7 I 711.2 I
                                                              14.9 I 0.14 I 14.9 I
1.4 I 0.35 I 1.4 I
234.7 I 0.30 I 234.7 I
 I
                                                                                                                                        0.14
                                                                                                                                        0.35
                                                                                                                                        0.30
                                                                       Ī
                                                                                                   I
                                                                                                                             I
 I ALL I 2539.5 I 1693.0 I 251.0 I 0.10 I 251.1 I 0.10 I
 * DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD
     INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
 WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
 * THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS
  A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.
 ******END OF RUN*****
 .SLOPES AND INTERCEPT
   (NB:Streams may be combined, in which case capacity will be adjusted)
 I Intercept For Slope For Opposing I
                               STREAM A-C
                                                                             STREAM A-B
  _____
 * Due to the presence of a flare, data is not available
 I Intercept For Slope For Opposing Slope For Opposi
 I STREAM B-A STREAM A-C STREAM A-B STREAM C-A STREAM C-B I
             0.00 0.00
                                                                                      0.00
                                                                                                                                     0.00
* Due to the presence of a flare, data is not available
 I Intercept For Slope For Opposing \mbox{\footnotemark} Stream C-B \mbox{\footnotemark} Stream A-B \mbox{\footnotemark}
 I 718.74 0.26
                                                                                     0.26 T
  (NB These values do not allow for any site specific corrections)
.TRAFFIC DEMAND DATA
 -----
 I ARM I FLOW SCALE(%) I
```

0.00 I

.Demand set: 2023 Base Case weekday pm peak

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

I т

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

I A I 100 I B I 100 I C I 100

\_\_\_\_\_

ARM	I NUMBER I FLOW STAI I TO RIS	RTS I TOP (	OF PEAK I F		BEFORE PEAK	I AT TO	AK I PEAK	I I I	
ARM A	A I 15.00 B I 15.00 C I 15.00		45.00 I 45.00 I 45.00 I				06 I 11.38 16 I 0.98 19 I 12.46		
	set:								
		I I	TURNING F TURNING C (PERCENTAG	ROPORTIONS	]	- - - -			
	TIME	I FROM/TO	O I ARM A	I ARM B I	ARM C				
16.4	45 - 17.00	I ARM A		I 0.004 I	0.996				
		I	I ( 0.0)	I 4.0 I I ( 0.0)I	( 1.0)				
		I ARM B		I 0.000 I					
		I I		I 0.0 I I ( 0.0)I					
			I 0.908	I 0.092 I I 92.0 I	0.000	:			
		I	I ( 2.0)	I ( 0.0)I	( 0.0)				
 RNING	PROPORTIONS								
E PERO	CENTAGE OF H								
				N FOR EACH			MENT		
	AND I	FOR TIME P	EMAND SETS ERIOD						
TIME	DEMAND (VEH/MIN)		DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELA PER ARRIVING
B-C B-A C-AE		9.04 3.95 16.75	0.108 0.000 0.205		0.00	0.12 0.00 0.59	1.7 0.0 8.7		0.12 0.00 0.07
C-A	9.07								
C-A A-B A-C	9.07 0.05 11.37								
A-B A-C	0.05 11.37	CAPACITY	DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY	AVERAGE DELA
A-B A-C  TIME	0.05 11.37 	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY	AVERAGE DELA PER ARRIVING VEHICLE (MIN
A-B A-C TIME 17.00- B-C B-A	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00	CAPACITY (VEH/MIN) 8.46 3.07	DEMAND/ CAPACITY (RFC) 0.138 0.000	PEDESTRIAN FLOW	START QUEUE (VEHS) 0.12 0.00	END QUEUE (VEHS) 0.16 0.00	DELAY (VEH.MIN/ TIME SEGMENT) 2.3 0.0	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.14 0.00
A-B A-C TIME 17.00- B-C B-A C-AF C-A A-B A-C	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57	CAPACITY (VEH/MIN) 8.46 3.07 17.98	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59	END QUEUE (VEHS) 0.16 0.00 1.05	DELAY (VEH.MIN/ TIME SEGMENT) 2.3 0.0 15.7	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08
A-B A-C TIME 17.00- B-C B-A C-AH C-A A-B A-C	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57	CAPACITY (VEH/MIN)  8.46 3.07 17.98	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59	END QUEUE (VEHS) 0.16 0.00 1.05	DELAY (VEH.MIN/ TIME SEGMENT) 2.3 0.0 15.7	GEOMETRIC DELAY (VEH. MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH. MIN/	AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08
A-B A-C TIME 17.00- B-C B-A C-AE C-A A-B A-C	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57 DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)  8.46 3.07 17.98	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301 DEMAND/ CAPACITY (RFC)	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59  START QUEUE (VEHS)	END QUEUE (VEHS)  0.16 0.00 1.05  END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)  2.3 0.0 15.7  DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08  AVERAGE DELA PER ARRIVING VEHICLE (MIN
A-B A-C A-C A-B A-C A-B A-C A-B A-C B-A A-B A-C B-A B-C B-A B-C B-A B-C B-B-B-B-B-B-B-B-B-B-B-B-B-B-B-B-B-B	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57 DEMAND (VEH/MIN) -17.30	CAPACITY (VEH/MIN)  8.46 3.07 17.98  CAPACITY (VEH/MIN)  7.64 1.87	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301 DEMAND/ CAPACITY (RFC) 0.187 0.000	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59  START QUEUE (VEHS)	END QUEUE (VEHS) 0.16 0.00 1.05	DELAY (VEH.MIN/ TIME SEGMENT)  2.3 0.0 15.7  DELAY (VEH.MIN/ TIME SEGMENT)  3.3 0.0	GEOMETRIC DELAY (VEH. MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH. MIN/	AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08  AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.16 0.00
A-B A-C TIME  17.000 B-C B-A C-AH C-AH A-B A-C TIME	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57 DEMAND (VEH/MIN) -17.30 1.43 0.00 3 10.08 8.22	CAPACITY (VEH/MIN)  8.46 3.07 17.98  CAPACITY (VEH/MIN)  7.64	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301 DEMAND/ CAPACITY (RFC) 0.187 0.000	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59  START QUEUE (VEHS)	END QUEUE (VEHS) 0.16 0.00 1.05	DELAY (VEH.MIN/ TIME SEGMENT)  2.3 0.0 15.7  DELAY (VEH.MIN/ TIME SEGMENT)  3.3	GEOMETRIC DELAY (VEH. MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH. MIN/	AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08  AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.16
A-B A-C TIME  17.00-B-C B-C A-B A-C TIME  17.15-B-C B-A C-B-A C-AA C-AA C-AA C-AA C-AA	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57 DEMAND (VEH/MIN) -17.30 1.43 0.00 3 10.08 8.22 0.07 16.63	CAPACITY (VEH/MIN)  8.46 3.07 17.98  CAPACITY (VEH/MIN)  7.64 1.87 19.84	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301 DEMAND/ CAPACITY (RFC) 0.187 0.000 0.508	PEDESTRIAN FLOW (PEDS/MIN) PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59  START QUEUE (VEHS) 0.16 0.00 1.05	END QUEUE (VEHS) 0.16 0.00 1.05 END QUEUE (VEHS) 0.23 0.00 2.64	DELAY (VEH.MIN/ TIME SEGMENT)  2.3 0.0 15.7  DELAY (VEH.MIN/ TIME SEGMENT)  3.3 0.0 39.2	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08  AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.16 0.00 0.10
A-B A-C TIME  17.000 B-C B-A C-AE C-AE A-B A-C TIME  17.15-B-C B-C C-AE C-AE A-C TIME	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57 DEMAND (VEH/MIN) -17.30 1.43 0.00 3 10.08 8.22 0.07 16.63	CAPACITY (VEH/MIN)  8.46 3.07 17.98  CAPACITY (VEH/MIN)  7.64 1.87 19.84	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301 DEMAND/ CAPACITY (RFC) 0.187 0.000 0.508	PEDESTRIAN FLOW (PEDS/MIN) PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59  START QUEUE (VEHS) 0.16 0.00 1.05	END QUEUE (VEHS) 0.16 0.00 1.05 END QUEUE (VEHS) 0.23 0.00 2.64	DELAY (VEH.MIN/ TIME SEGMENT)  2.3 0.0 15.7  DELAY (VEH.MIN/ TIME SEGMENT)  3.3 0.0 39.2	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08  AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.16 0.00 0.10
A-B A-C TIME  17.00-B-C A-B A-C A-B A-C B-A A-B B-A C C-AF C-AF C-AF C-AF C-AF C-AF C-AF	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57 DEMAND (VEH/MIN) -17.30 1.43 0.00 3 10.08 8.22 0.07 16.63	CAPACITY (VEH/MIN)  8.46 3.07 17.98  CAPACITY (VEH/MIN)  7.64 1.87 19.84	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301 DEMAND/ CAPACITY (RFC) 0.187 0.000 0.508	PEDESTRIAN FLOW (PEDS/MIN) PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59  START QUEUE (VEHS) 0.16 0.00 1.05	END QUEUE (VEHS) 0.16 0.00 1.05 END QUEUE (VEHS) 0.23 0.00 2.64	DELAY (VEH.MIN/ TIME SEGMENT)  2.3 0.0 15.7  DELAY (VEH.MIN/ TIME SEGMENT)  3.3 0.0 39.2	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08  AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.16 0.00 0.10  AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.16 0.00 0.10
A-B A-C TIME  17.00- B-C E-A E-A A-B A-C TIME  17.15- B-C C-A C-A C-A C-A C-A C-A C-A C-A C-A C	0.05 11.37 DEMAND (VEH/MIN) -17.15 1.17 0.00 3 5.41 9.52 0.06 13.57 DEMAND (VEH/MIN) -17.30 1.43 0.00 3 10.08 8.22 0.07 16.63	CAPACITY (VEH/MIN)  8.46 3.07 17.98  CAPACITY (VEH/MIN)  7.64 1.87 19.84  CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301 DEMAND/ CAPACITY (RFC) 0.187 0.000 0.508	PEDESTRIAN FLOW (PEDS/MIN) PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59  START QUEUE (VEHS) 0.16 0.00 1.05	END QUEUE (VEHS) 0.16 0.00 1.05 END QUEUE (VEHS) 0.23 0.00 2.64	DELAY (VEH.MIN/ TIME SEGMENT)  2.3 0.0 15.7  DELAY (VEH.MIN/ TIME SEGMENT)  3.3 0.0 39.2	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08  AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.16 0.00 0.10  AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.16 0.00 0.10
A-B A-C TIME  17.00- B-C E-A E-A A-B A-C TIME  17.15- B-C C-A C-A C-A C-A C-A C-A C-A C-A C-A C	0.05 11.37  DEMAND (VEH/MIN) -17.15  1.17 0.00 3 5.41 9.52 0.06 13.57  DEMAND (VEH/MIN) -17.30  1.43 0.00 3 10.08 8.22 0.07 16.63  DEMAND (VEH/MIN) -17.45 1.43 0.00 3 10.08	CAPACITY (VEH/MIN)  8.46 3.07 17.98  CAPACITY (VEH/MIN)  7.64 1.87 19.84	DEMAND/ CAPACITY (RFC) 0.138 0.000 0.301  DEMAND/ CAPACITY (RFC) 0.187 0.000 0.508  DEMAND/ CAPACITY (RFC) 0.187 0.000 0.187 0.000	PEDESTRIAN FLOW (PEDS/MIN) PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.12 0.00 0.59  START QUEUE (VEHS) 0.16 0.00 1.05  START QUEUE (VEHS) 0.23	END QUEUE (VEHS)  0.16 0.00 1.05  END QUEUE (VEHS)  0.23 0.00 2.64  END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)  2.3 0.0 15.7  DELAY (VEH.MIN/ TIME SEGMENT)  3.3 0.0 39.2  DELAY (VEH.MIN/ TIME SEGMENT)  3.4	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)  GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.14 0.00 0.08  AVERAGE DELA: PER ARRIVING VEHICLE (MIN 0.16 0.00 0.10  AVERAGE DELA: PER ARRIVING VEHICLE (MIN VEHICLE (MIN

I		I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	17.45-1	8.00									I
I	B-C	1.17	8.46	0.138		0.23	0.16	2.5		0.14	I
I	B-A	0.00	3.05	0.000		0.00	0.00	0.0		0.00	I
I	C-AB	5.49	18.07	0.304		2.72	1.11	17.5		0.08	I
I	C-A	9.45									I
I	A-B	0.06									I
I	A-C	13.57									I
I											I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	Ι
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	18.00-1	8.15									I
I	B-C	0.98	9.04	0.108		0.16	0.12	1.9		0.12	I
I	B-A	0.00	3.93	0.000		0.00	0.00	0.0		0.00	Ι
I	C-AB	3.48	16.79	0.207		1.11	0.62	9.4		0.08	Ι
I	C-A	9.03									I
I	A-B	0.05									I
I	A-C	11.37									I
I											I

\*WARNING\* NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR	STREAM B-C
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
17.00	0.1
17.15	0.2
17.30	0.2
17.45	0.2
18.00	0.2
18.15	0.1
	CTDEAM DA

******	
TIME	NO. OF
SEGMENT	VEHICLES
ENDING	IN QUEUE
17.00	0.0
17.15	0.0
17.30	0.0
17.45	0.0
10 00	0 0

OUEUE FOR STREAM C-AB

18.15

-----TIME NO. OF SEGMENT VEHICLES ENDING IN QUEUE 17.00 17.15 0.6 1.0 17.30 17.45 2.6 18.00 18.15 0.6

0.0

#### OUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I (VEH) (VEH/H) I (MIN) (MIN/VEH) I (MIN) (MIN/VEH) I I B-C I 107.4 I 71.6 I I B-A I 0.0 I 0.0 I I C-AB I 571.2 I 380.8 I I C-A I 801.1 I 534.0 I I A-B I 5.5 I 3.7 I I A-C I 1247.0 I 831.4 I 15.2 I 0.14 I 15.2 I 0.00 I 0.0 I 0.23 I 132.3 I 0.0 I 132.3 I 0.00 0.23 I ALL I 2732.2 I 1821.5 I 147.5 I 0.05 I 0.05 I 147.5 I

\*\*\*\*\*\*END OF RUN\*\*\*\*\*

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

<sup>\*</sup> INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD
\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS

A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

#### TRI, LIMITED

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CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

PICADY 5.1 ANALYSIS PROGRAM RELEASE 4.0 (SEPT 2008)

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"Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\PICADY\Warren-Dyers\ Warren-Dyers existing.vpi"

(drive-on-the-left) at 16:20:00 on Thursday, 11 June 2009

#### .RUN INFORMATION

RUN TITLE : Warren Lane/Dyers Road T-junction

LOCATION : Stanway : 22/05/09 DATE

CLIENT : Hills Residential
ENUMERATOR : mlast [ARDENT23]
JOB NUMBER : F960

STATUS

DESCRIPTION

.MAJOR/MINOR JUNCTION CAPACITY AND DELAY

MAJOR ROAD (ARM C) ----- MAJOR ROAD (ARM A) MINOR ROAD (ARM B)

ARM A IS Warren Lane (north)

ARM B IS Dyers Road ARM C IS Warren Lane (south)

.STREAM LABELLING CONVENTION

STREAM A-B CONTAINS TRAFFIC GOING FROM ARM A TO ARM B

STREAM B-AC CONTAINS TRAFFIC GOING FROM ARM B TO ARM A AND TO ARM C

ETC.

#### GEOMETRIC DATA

DATA ITEM I MINOR ROAD B I T (W ) 7.40 M. I TOTAL MAJOR ROAD CARRIAGEWAY WIDTH CENTRAL RESERVE WIDTH I (WCR ) 0.00 M. I I (WC-B) 2.20 M. MAJOR ROAD RIGHT TURN - WIDTH - VISIBILITY - BLOCKS TRAFFIC I (VC-B)250.00 M. I YES MINOR ROAD - VISIBILITY TO LEFT I (VB-C) 53.0 M. - VISIBILITY TO RIGHT
- LANE 1 WIDTH
- LANE 2 WIDTH I (VB-A) 77.0 M. I (WB-C) I (WB-A) 10.00 M. WIDTH AT 0 M FROM JUNCTION WIDTH AT 5 M FROM JUNCTION 6.80 M. WIDTH AT 10 M FROM JUNCTION WIDTH AT 15 M FROM JUNCTION 2.80 M. 2.30 M. WIDTH AT 20 M FROM JUNCTION - LENGTH OF FLARED SECTION I DERIVED: 1 PCU I (NB:Streams may be combined, in which case capacity will be adjusted)

I Intercept For Slope For Opposing Slope For Opposing I STREAM B-C STREAM A-C STREAM A-B I

I 0.00 0.00 0.00 I

 $\mbox{\scriptsize *}$  Due to the presence of a flare, data is not available

I	Intercept For	Slope For Opposing	Slope For Opposing	Slope For Opposing	Slope For OpposingI
I S	STREAM B-A	STREAM A-C	STREAM A-B	STREAM C-A	STREAM C-B I
I	0.00	0.00	0.00	0.00	0.00 I

\* Due to the presence of a flare, data is not available

I Intercept For Slope For Opposing I STREAM C-B STREAM A-C STREAM A-B I

I 718.74 0.26 0.26 I

(NB These values do not allow for any site specific corrections)

.TRAFFIC DEMAND DATA

I ARM I FLOW SCALE(%) I
I A I 100 I
I B I 100 I
I C I 100 I

.Demand set: 2023 Dev't Case weekday am peak

TIME PERIOD BEGINS 07.45 AND ENDS 09.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN.

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

																		-
I			Ι	NUN	MBER OF	MI	NUT	ES FROM	ST.	ART WHEN	I	RATE	OI	F FLOW (	VEI	H/MIN)		Ι
I	ARM		Ι	FLOW	STARTS	Ι	TOP	OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER		Ι
I			Ι	TO	RISE	Ι	IS	REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	:	Ι
I			Ι			I			I		Ι		Ι		Ι			Ι
																		-
I	ARM	Α	Ι	1	L5.00	Ι		45.00	Ι	75.00	Ι	10.49	Ι	15.73	Ι	10.49		Ι
I	ARM	В	Ι	1	L5.00	Ι		45.00	Ι	75.00	Ι	3.13	Ι	4.69	Ι	3.13		Ι
I	ARM	C	Ι	1	L5.00	I		45.00	I	75.00	I	12.57	I	18.86	I	12.57		Ι

.Demand set: 2023 Dev't Case weekday am peak

								_
I		Ι			Т	JRNING PR	OPORTIONS	I
I		Ι			ΤŢ	JRNING CO	UNTS	Ι
I		Ι		(	(PI	ERCENTAGE	OF H.V.S)	Ι
I								-
I	TIME	Ι	FROM/	TO	Ι	ARM A I	ARM B I ARM C	Ι
т	07.45 - 08.00	т			т	т	т	- Т
T	07.15 00.00	T	ARM	А	_	0.000 I	_	-
I		I			I		64.0 I 775.0	
I		Ι			Ι	( 0.0)I	( 0.0)I ( 11.0)	I
I		Ι			Ι	I	I	Ι
I		Ι	ARM	В	Ι	0.492 I	0.000 I 0.508	Ι
I		Ι			Ι	123.0 I	0.0 I 127.0	Ι
I		Ι			Ι	( 0.0)I	( 0.0)I ( 1.0)	Ι
I		I			I	I	I	I
I		I	ARM	C	I	0.842 I	0.158 I 0.000	Ι
I		I			I	847.0 I	159.0 I 0.0	Ι
I		Ι			Ι	( 4.0)I	( 2.0)I ( 0.0)	Ι
I		Ι			Ι	I	I	Ι

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA THE PERCENTAGE OF HEAVY VEHICLES VARIES OVER TURNING MOVEMENTS

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS AND FOR TIME PERIOD

AY I
YX T
3 I
1) I
I
I

T 0 3		4.47 16.14	0.345 0.358		0.00	0.51 1.09	7.0 16.0		0.33
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING : VEHICLE (MIN)
I B-A I C-AB I C-A I A-B	1.90 1.84 8.97 6.10	6.15 3.34 17.28	0.309 0.553 0.519		0.26 0.51 1.09	0.44 1.13 2.21	6.3 15.1 33.2		0.23 0.64 0.12
I	(VEH/MIN)		CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING : VEHICLE (MIN) :
	2.33 2.26 16.34 2.12 1.17		1.265 1.240 0.861		0.44 1.13 2.21	10.00 9.64 10.50	85.6 86.2 141.4		3.86 4.05 0.33
 I TIME I	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)						GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	
I 08.30-0	2.33 2.26 17.20	1.79 1.73 19.33					214.4 207.4 212.7		7.71 7.73 0.52
I A-B I A-C I									
I I	(VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING : VEHICLE (MIN)
I B-A I C-AB I C-A	1.90 1.84 9.61	2.86 2.77 17.77	0.666 0.666 0.541		18.53 17.95 13.65	6.38 6.25 2.59	186.8 181.4 54.2		4.65 4.76 0.15
 I TIME I			CAPACITY	PEDESTRIAN FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY	PER ARRIVING
I I 09.00-0 I B-C I B-A I C-AB I C-A I A-B I A-C	1.59 1.54 5.87 6.75 0.80		0.219 0.354	(PEDS/MIN)	6.38 6.25	0.28 0.57 1.17	8.4 16.4	TIME SEGMENT)	0.20 0.47 0.10
*WARNING* QUEUE FOR	NO MARGINAI	L ANALYSIS B-C		TIES AS MAJO					
TIME SEGMENT ENDING 08.00 08.15 08.30 08.45 09.00	0 0 10 18	DF CLES JEUE .3 .4 .0 ****	*****	****					
09.15 QUEUE FOR	0 STREAM	B-A							
TIME	NO. (	OF							

ENDING		TN (	UEUE											
08.00		(		*										
08.15		1	1	*										
08.30					*****									
08.45		17	7.9	****	******	****	***							
09.00 09.15			5.2 ).6	*										
UEUE FO	R STRI			3										
TIME		NO.		-										
SEGMENT ENDING		VEHI IN (												
08.00		1	1	*										
08.15		1 1 13	2.2	**										
08.30		10	).5		******									
08.45 09.00		1:	8.6 2.6	***	******	***								
09.15			2	*										
							ON OVER							
STREAM											JEUEING *	 I		
	1			1	, DI	LAI		T	~ L	LLAI	*	1		
											(MIN/VEH)			
B-C	I 1	74.8	116	5.5 I	505.2	2 I	2.89	I	505.2	2 I	2.89	I		
B-A	I 16	59.3 1	112	2.9 I	513.4	ł I	3.03	I	513.5	5 I	2.89 3.03 0.50	I		
C-AB	I 95	56.7	637	7.8 I	475.7	/ I	0.50	I	475.7	7 I I	0.50	I		
C-A A-B	T 4	28.U 1 RR 1 1	. 285 58	0.5 I		I		I		I		I		
A-C	I 106	66.7 ]	711	2 I		I		I		I		I		
ALL											0.52			
DELAY														
INCLUS HICH AR THESE A LARGE	E STII WILL ( QUEUI	LL QUE ONLY E E REMA	UEING BE SIG	AFTE NIFIC AT T	ER THE E	ND O	RENT IF	THERE	IS					
THICH AR. THESE A LARGE ******* SLOPES . (NB:Str	E STII WILL ( QUEUI ND OF  AND II eams r	LL QUE DNLY FE REMA RUN**  NTERCE may be	CUEING AINING *****  EPT e comb	S AFTE S AT T	ER THE PARTLY INTERPRETATION OF THE END	END OI DIFFEI OF TI	RENT IF HE TIME	THERE PERIC	IS IS ID.	e adju	usted)			
THESE THESE TALARGE  *******  SLOPES	E STII WILL ( QUEUI ND OF  AND II eams r ept Fc B-C	LL QUE CONLY E E REMA RUN**  NTERCE may be cor Sic	EUEING AINING EPT Comb	S AFTE SNIFIC S AT T Dined, or Opp A-C	ER THE F	ch ca	RENT IF HE TIME  ase capa  pe For ( REAM A-1	THERE PERIC  acity  Opposi	will be	≥ adji	usted)			
HICH AR. THESE 'A LARGE ******E  SLOPES (NB:Str. Interc. STREAM	E STII WILL ( QUEUI  ND OF  AND II eams I  B-C 0.00	LL QUE DNLY FE E REMA RUN**  NTERCE nay be cor Sic	EUEING AINING *****  EPT e comb	E AFTE ENIFIC E AT T Dined, DINED PT OPR A-C	ER THE F	ch ca	ase capa	THERE PERIC	will be	≥ adjų	usted)			
HICH AR. THESE 'A LARGE ******* SLOPES (NB:Str	E STII WILL ( QUEUI ND OF  AND II eams r ept F( B-C 0.00	LL QUE DNLY FE E REM#  RUN**  NTERCE may be ST	EUEING BE SIG AINING ******  EPT P Comb	Dined	ER THE F	ch ca	RENT IF HE TIME ase capa pe For ( REAM A-1	THERE PERIC	will be	e adju	usted)			
HICH AR. THESE 'A LARGE *******E  SLOPES (NB:Str Interc. STREAM	E STII WILL ( QUEUI ND OF  AND II eams r ept Fc B-C the pr	RUN**  NTERCH may be	EUEING BE SIG AINING *****  EPT e comb	pined,	ER THE FANTLY ICHE END  in whith the constant of the constant	ch ca	ase capa pe For ( REAM A-1 0.00	THERE PERIC	will be			ing.	Slope For Organ	ing
HICH AR. THESE 'A LARGE *******E  SLOPES (NB:Str Interc STREAM Due to Interc	E STII WILL ( QUEUI ND OF  AND II eams t 0.00 the pu	RUN**  NTERCHARAL STATE OF SIGNATURE STATE STATE OF SIGNATURE STATE S	CPT  c Comb  cream  cream  cream  cream	er Opropri	er THE FANTLY ITHE END	END OF THE STATE O	ase capa pe For ( not ava	THERE PERIO	will be	 Lope I	For Oppos		Slope For Oppos STREAM C-B	
HICH AR. THESE 'A LARGE *******E  SLOPES (NB:Str. Interc. STREAM  Due to Interc. STREAM	WILL ( QUEUI  ND OF  AND II  East FC  O.00  The properties of the	RUN** RUN** RUN** RUN** RUN** RUN**	EUEINGE SIG	poined,  poi	er THE FANTLY ITHE END	ch ca	ase capa pe For ( REAM A-1  not ava pe For ( REAM A-2  0.00	THERE PERIC	will be	Lope I				 
HICH AR. THESE 'A LARGE *******E  SLOPES (NB:Str Interc STREAM	E STINULL (QUEUI)  AND OF  AND IN  EERS F.C	TEREMAN STANDARD STAN	EVELING E SIG	a fla	ER THE FANTLY ICHE END  in white the consing the consistency that considers the consistency that consistency the consistency the consistency that consistency the cons	ch ca	ase capa pe For ( REAM A-1  not ava pe For ( REAM A-1  0.00	THERE PERIC	will be	Lope I			STREAM C-B 	 
HICH AR. THESE 'A LARGE  ******E  SLOPES (NB:Str. Linterc. STREAM  Due to  Interc. STREAM  Due to  Interc.	E STINULL (QUEUI)  ND OF  AND II  EAST FOR THE PROPERTY OF T	RUN**	EUEINCE SIGNINION CONTROL CONT	S AFTH MINIFICATION OF THE PROPERTY OF THE PRO	in white in white cooking cook	ch ca	ase capa pe For ( REAM A-1  0.00  not ava	THERE PERIC	will be	Lope I			STREAM C-B 	 
HICH AR. THESE 'A LARGE  ******E  SLOPES (NB:Str. Interc. STREAM  Due to  Interc. STREAM  Due to  Interc. STREAM  THESE 'A LARGE  THESE 'A	E STINULL (QUEUI ND OF AND IN COLUMN ND OF B-C COLUMN ND	LL QUI	EUEINCE SIGNINING  ******  CPT  CPT  CPT  CPT  CPT  CPT	s AFTH STATE OF THE STATE OF TH	in white in white cooking cook	ch ca slop str	ase capa  pe For ( REAM A-1  on tava  not ava  pe For ( REAM A-1  0.00	THERE PERIC	will be	Lope I			STREAM C-B 	 
HICH AR. THESE 'A LARGE  ******E  SLOPES (NB:Str. Interc. STREAM  Due to  Interc. STREAM  Due to  Interc. STREAM  THESE 'A LARGE  THESE 'A	E STINULL (QUEUI)  ND OF  AND II  eams r  B-C  0.00  the pr  ept F6  B-A  0.00  cept F6  B-A  8-A  8-A  8-A  8-A  8-A	LL QUI	EUEING E SIG LINING ******  CPT	s AFTH STATE OF APPLICATION OF APPLI	er THE FANTLY ICHE END  in white the control of the	END OILFFEE OF THE STORY OF THE	ase capa pe For ( REAM A-1  0.00  not ava  pe For ( REAM A-2  0.00  not ava	THERE PERICO	will be	ope I	For Oppos C-A		STREAM C-B 	 
HICH AR. THESE 'A LARGE  *******E  SLOPES (NB:Str.  Interc. STREAM  Due to  Interc. STREAM  Due to  Interc.  Theream	E STINULL (QUEUI MILL (QUEUI M	LL QUI	EUEING ESTI LINING E*****  CPT CREAM	s AFTH STATE OF APPLICATION OF APPLI	er THE FANTLY ICHE END  in white the control of the	END OILFFEE OF THE CONTROL OF THE CO	ase capa pe For ( REAM A-1  0.00  not ava  pe For ( REAM A-2  0.00  not ava	THERE PERICO	will be	ope I	For Oppos C-A		STREAM C-B 	: 
HICH AR. THESE 'A LARGE  *******E  SLOPES (NB:Str.  Interc. STREAM  Due to  Interc. STREAM  Oue to  Interc. STREAM  CONTRACTOR  Oue to  ARM I	E STINULL (QUEUI MILL (QUEUI M	LL QUI	EUEING ESTIC LINING EX****  EPT	s AFTH STATE OF APPLICATION OF APPLI	er THE FANTLY ICHE END  in white the control of the	END OILFFEE OF THE CONTROL OF THE CO	ase capa pe For ( REAM A-1  0.00  not ava  pe For ( REAM A-2  0.00  not ava	THERE PERICO	will be	ope I	For Oppos C-A		STREAM C-B 	 
HICH AR. THESE 'A LARGE  ******E:  SLOPES (NB:Str.  Interc. STREAM  Due to  Interc. STREAM  Due to  Interc. STREAM  Out to  ARM I  ARM I	E STINULL ( QUEUI  QUEUI  ND OF  AND IN  Eams t  Eams	LL QUI DNLY I RUN+Y RUN-Y RUN-	EVEINGE SIGNINING  ******  CPT  CPT  CPT  CPT  CPT  CPT	s AFTH STATE OF APPLICATION OF APPLI	er THE FANTLY ICHE END  in white the control of the	END OILFFEE OF THE CONTROL OF THE CO	ase capa pe For ( REAM A-1  0.00  not ava  pe For ( REAM A-2  0.00  not ava	THERE PERICO	will be	ope I	For Oppos C-A		STREAM C-B 	 
HICH AR. THESE 'A LARGE  *******E  SLOPES (NB:Str.  Interc. STREAM  Due to  Interc. STREAM  Oue to  Interc. STREAM  CONTRACTOR  Oue to  ARM I	E STINULL (QUEUI ) QUEUI ) ND OF  AND II	LL QUI	EUEING ESTIC LINING EX****  EPT	s AFTH STATE OF APPLICATION OF APPLI	er THE FANTLY ICHE END  in white the control of the	END OILFFEE OF THE CONTROL OF THE CO	ase capa pe For ( REAM A-1  0.00  not ava  pe For ( REAM A-2  0.00  not ava	THERE PERICO	will be	ope I	For Oppos C-A		STREAM C-B 	I  I

.Demand set: 2023 Dev't Case weekday pm peak

TIME PERIOD BEGINS 16.45 AND ENDS 18.15

LENGTH OF TIME PERIOD - 90 MIN. LENGTH OF TIME SEGMENT - 15 MIN. .DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM  ARM A	I FLOW STAF I TO RISE I I 15.00	RTS I TOP ( I IS I I I I	OF PEAK I I REACHED I I I 45.00 I	75.00 I	BEFORE PEAK 12.91	I AT TO I OF PE I I 19.3	P I AFTER AK I PEAK I 7 I 12.91	I	
				75.00 I 75.00 I			0 1 1.80 5 I 13.10	I I 	
				day pm peak					
		I	TURNING (PERCENTAGE	PROPORTIONS COUNTS GE OF H.V.S)	]				
	TIME			I ARM B I		-			
16.45	- 17.00	I I I ARM B I I I ARM C	I 0.000 I 0.0 I ( 0.0 I I 0.431 I 62.0 I ( 0.0 I I 0.864 I 905.0	I I 0.123 I 1 127.0 I 1 127.0 I I I I I 1 1 1 1 I I I I I I I I I I	0.877 1 906.0 3 ( 1.0)3 0.569 3 82.0 3 ( 0.0)3				
			I  LATED FROM	)I ( 0.0)I I I TURNING COU	I T DATA	-			
_ FERUE	QUEUE	AND DELAY	INFORMATIO	ON FOR EACH	15 MIN 1	CIME SEG			
	FOR C	COMBINED D	EMAND SETS						
TIME			DEMAND/ CAPACITY	PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	
16.45-1 B-C B-A	1.03		0.125 0.186			0.14			0.14 0.29
C-AB C-A A-B A-C	5.61 7.54 1.59	16.57	0.339		0.00	1.07	15.7		0.09
					START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELA
TIME	(VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN
TIME 17.00-1 B-C B-A C-AB C-A A-B	(VEH/MIN) 7.15 1.23 0.93 8.95 6.75 1.90	(VEH/MIN)	CAPACITY (RFC) 0.169 0.302	FLOW (PEDS/MIN)	QUEUE (VEHS) 0.14 0.22	QUEUE (VEHS) 0.20 0.42 2.22	2.9 5.8	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN 0.17 0.46 0.11
TIME 17.00-1 B-C B-A C-AB C-A A-B A-C	(VEH/MIN) 7.15 1.23 0.93 8.95 6.75 1.90 13.57	7.27 3.07 17.80	CAPACITY (RFC) 0.169 0.302 0.503	FLOW (PEDS/MIN)	QUEUE (VEHS) 0.14 0.22 1.07	0.20 0.42 2.22	2.9 5.8 33.3	(VEH.MIN/ TIME SEGMENT)	0.17 0.46 0.11
TIME  17.00-1 B-C B-A C-AB C-A A-B A-C	(VEH/MIN) 7.15 1.23 0.93 8.95 6.75 1.90 13.57 DEMAND (VEH/MIN)	7.27 3.07 17.80	CAPACITY (RFC) 0.169 0.302 0.503	FLOW (PEDS/MIN)	QUEUE (VEHS) 0.14 0.22 1.07	0.20 0.42 2.22	2.9 5.8 33.3		0.17 0.46 0.11
TIME  17.00-1 B-C B-A C-AB C-A A-B A-C TIME  17.15-1 B-C B-A C-AB C-A A-B A-C	(VEH/MIN) 7.15 1.23 0.93 8.95 6.75 1.90 13.57 DEMAND (VEH/MIN) 7.30 1.50 1.14 17.05 2.18 2.33 16.63	7.27 3.07 17.80 CAPACITY (VEH/MIN) 3.91 1.53 19.67	CAPACITY (RFC) 0.169 0.302 0.503 DEMAND/ CAPACITY (RFC) 0.385 0.746 0.867	FLOW (PEDS/MIN)	QUEUE (VEHS) 0.14 0.22 1.07  START QUEUE (VEHS) 0.20 0.42 2.22	0.20 0.42 2.22 END QUEUE (VEHS) 0.60 1.97 11.64	2.9 5.8 33.3 DELAY (VEH.MIN/ TIME SEGMENT) 8.3 22.4 154.6	GEOMETRIC DELAY	0.17 0.46 0.11
TIME  17.00-1 B-C B-A C-AB C-A A-B A-C  TIME  17.15-1 B-C B-A C-AB C-A A-B A-C  TIME	(VEH/MIN) 7.15 1.23 0.93 8.95 6.75 1.90 13.57 DEMAND (VEH/MIN) 7.30 1.50 1.14 17.05 2.18 2.33 16.63 DEMAND (VEH/MIN)	7.27 3.07 17.80 CAPACITY (VEH/MIN)	CAPACITY (RFC) 0.169 0.302 0.503  DEMAND/ CAPACITY (RFC) 0.385 0.746 0.867	FLOW (PEDS/MIN)  PEDESTRIAN FLOW (PEDS/MIN)  PEDESTRIAN FLOW	QUEUE (VEHS) 0.14 0.22 1.07  START QUEUE (VEHS) 0.20 0.42 2.22  START QUEUE	0.20 0.42 2.22 END QUEUE (VEHS) 0.60 1.97 11.64	2.9 5.8 33.3 DELAY (VEH.MIN/ TIME SEGMENT) 8.3 22.4 154.6	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	0.17 0.46 0.11  AVERAGE DELA PER ARRIVING VEHICLE (MIN 0.41 1.78 0.33

I	I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
I	17.45-1	8.00									I
I	B-C	1.23	6.95	0.177		1.30	0.22	3.6		0.18	I
I	B-A	0.93	2.88	0.322		2.77	0.50	10.3		0.60	I
I	C-AB	9.71	18.39	0.528		15.76	2.63	58.3		0.15	I
I	C-A	5.99									I
I	A-B	1.90									I
I	A-C	13.57									I
I											I

I	TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
I	18.00-1	8.15									Ι
I	B-C	1.03	8.19	0.126		0.22	0.15	2.2		0.14	I
I	B-A	0.78	4.14	0.188		0.50	0.24	3.8		0.30	I
I	C-AB	5.71	16.66	0.343		2.63	1.14	17.9		0.09	I
I	C-A	7.44									I
I	A-B	1.59									I
I	A-C	11.37									Ι
I											Ι
_											

\*WARNING\* NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR	STREAM B-C	
		-
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
17.00	0.1	
17.15	0.2	
17.30	0.6	*
17.45	1.3	*
18.00	0.2	
18.15	0.1	
QUEUE FOR	STREAM B-A	

QUEUE FOIL	DIRELIE D II	
TIME	NO. OF	
SEGMENT	VEHICLES	
ENDING	IN QUEUE	
17.00	0.2	
17.15	0.4	
17.30	2.0 *	*
17 45	2 9 *	* 1

17.0	00		0.2		
17.	15		0.4		
17.3	30		2.0		**
17.4	45		2.8		***
18.0	00		0.5		*
18.3	15		0.2		
QUEUE	FOR	STREAM	C	-AB	

TIME SEGMENT ENDING 17.00 17.15 17.30 17.45 18.00 NO. OF VEHICLES IN QUEUE 1.1

11.6 15.8 2.6 18.15

## QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I I T	STREAM	I I T-	TOTA	5 1	DEMAND	I	* QUEUEI * DELAY	*	I	* DE	LAY	UEUEING *	I
I		Ī	(VEH)		(VEH/H)	Ι	(MIN)	(MIN/VEH)	Ι	(MIN)		(MIN/VEH)	I
I	B-C	I	112.9	I	75.2	I	36.0 I	0.32	I	36.0	I	0.32	I
Ι	B-A	Ι	85.3	Ι	56.9	Ι	81.9 I	0.96	I	81.9	Ι	0.96	Ι
I	C-AB	I	977.1	I	651.4	Ι	523.2 I	0.54	I	523.2	I	0.54	Ι
I	C-A	I	465.4	I	310.3	Ι	I		I		I		Ι
I	A-B	Ι	174.8	Ι	116.5	Ι	I		I		I		Ι
I	A-C	Ι	1247.0	Ι	831.4	I	I		I		I		Ι
I	ALL	I	3062.5	I	2041.7	I	641.1 I	0.21	I	641.1	I	0.21	I

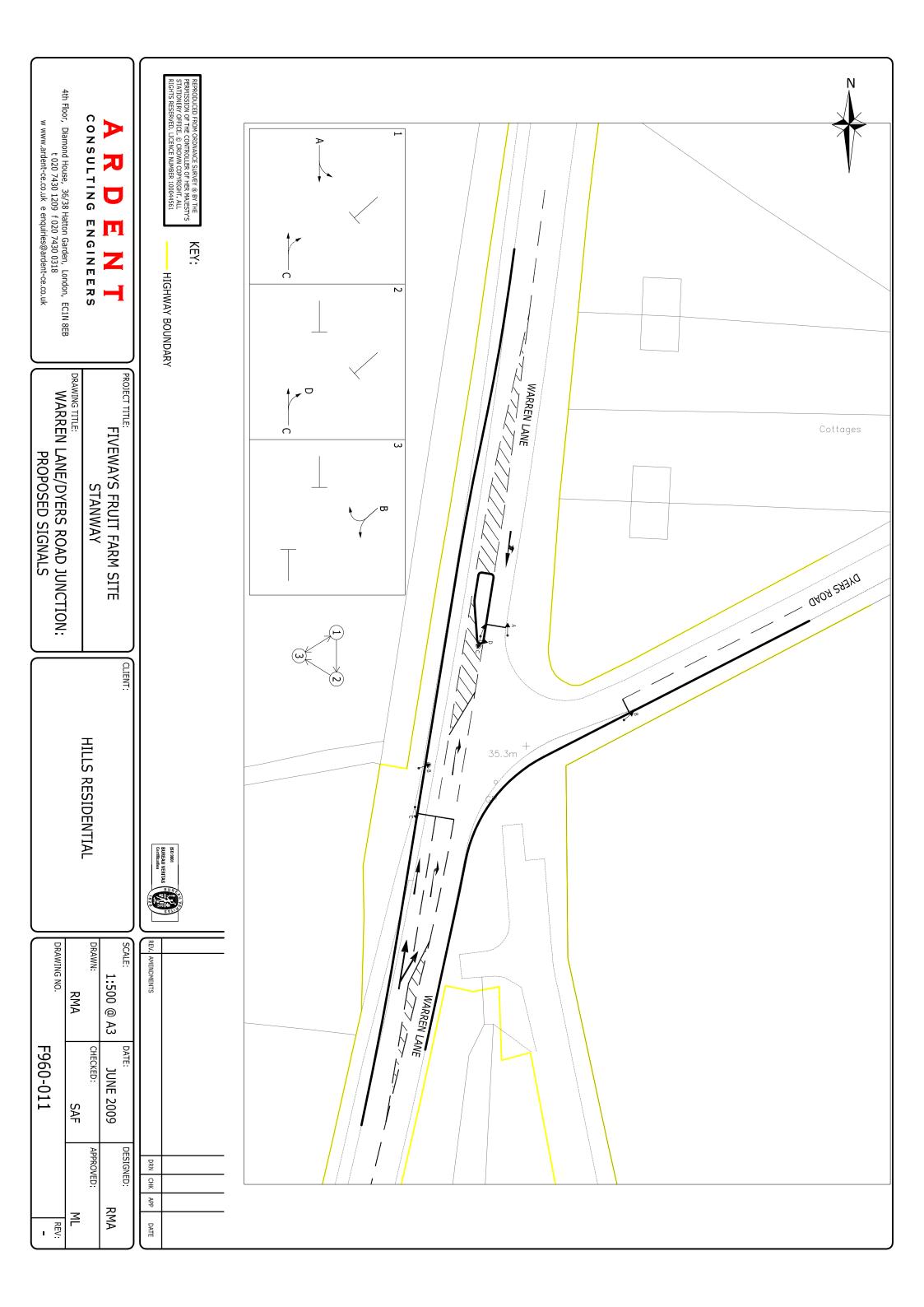
\*\*\*\*\*\*END OF RUN\*\*\*\*\*

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES
WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS

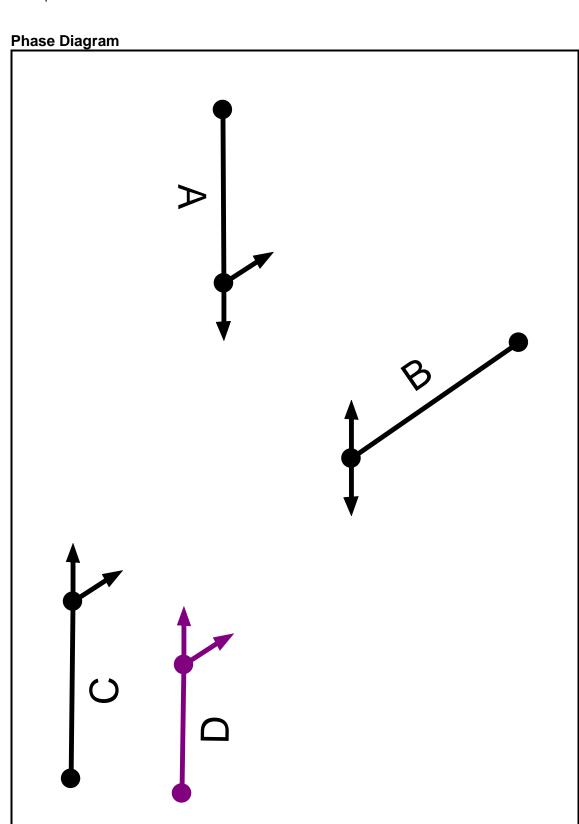
A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.



**User and Project Details** 

Project:	
Title:	
Location:	
File name:	Warren-Dyers.lsgx
Author:	
Company:	
Address:	
Controller:	Generic
SCN:	
Notes:	

Junction Layout Diagram Arm 1 - Warren Lane (north) Arm 4 - Warren Lane (north) exit 4/1 Arm 5 - Dyers Road (exit) Arm 2 - Dyers Road Arm 6 - Warren Lane (south) exit-Árm 3 - Warren Lane (south) 3/2



**Phase Input Data** 

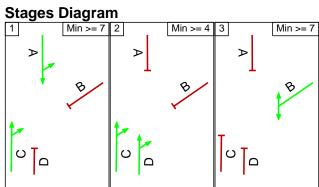
Phase Name	Phase type	Assoc Phase	Street Min	Cont Min
А	Traffic		7	7
В	Traffic		7	7
С	Traffic		7	7
D	Ind. Arrow	С	4	4

### **Phase Intergreens Matrix**

I	Starting Phase						
		Α	В	С	D		
	Α		5	-	5		
Terminating Phase	В	6		6	6		
	С	-	5		-		
	D	5	5	-			

**Phases in Stage** 

Stage No.	Phases in Stage
1	A C
2	CD
3	В



## **Phase Delays**

There are no phase delays defined in this stage stream

## **Prohibited Stage Changes**

	To Stage						
		1	2	3			
From	1		5	5			
Stage	2	5	_	5			
	3	6	6				

## Link Input Data

Arm/ Link	Link Name	Link Type	Num Lanes	Phases	Start Disp.	End Disp.
1/1	Warren Lane (north) Left Ahead	U	1	А	2	3
2/1	Dyers Road Right Left	U	1	В	2	3
3/1	Warren Lane (south) Ahead	U	1	CD	2	3
3/2	Warren Lane (south) Right	0	1	CD	2	3
4/1	Warren Lane (north) exit	U	1		2	3
5/1	Dyers Road (exit)	U	1		2	3
6/1	Warren Lane (south) exit	U	1		2	3

**Give-Way Link Input Data** 

Arm/ Link	Link Name	Movement	Max Flow when Giving Way (PCU/Hr)	Opposing Link	Opp. Link Coeff.	Opp. Mvmnts.	Right Turn Storage (PCU)	RTF	Right Turn Move up time (s)	Max Turns in Intergreen (PCU)
3/2	Warren Lane (south) Right	3/2 to 5/1	1440	1/1	1.09	1/1	2.00	0.50	2	2.00

**Lane Input Data** 

Arm/	Link	Physical Length	Expected Usage	Sat Flow	User Saturation	Lane Width	Gradient	Nearside	Allowed	Turning Radius
Lane	Num	(PCU)	(PCU)	Туре	Flow (PCU/Hr)	(m)	Oracioni.	Lane	Turns	(m)
1/1 (Warren Lane	Link 1 (Warren Lane	Inf	Inf	Geom	1800	3.50	0.00	Y	Arm 5 Left (Dyers Road (exit))	12.00
(north) Lane 1)	(north) Left Ahead)	1111				3.30	0.00		Arm 6 Ahead (Warren Lane (south) exit)	Inf
2/1 (Dyers	Link 1 (Dyers Road	Inf	Inf	Geom	1800	3.00	0.00	Y	Arm 4 Right (Warren Lane (north) exit)	15.00
Road Lane 1)	Right Left)								Arm 6 Left (Warren Lane (south) exit)	25.00
3/1 (Warren Lane (south) Lane 1)	Link 1 (Warren Lane (south) Ahead)	Inf	Inf	User	1800	3.25	0.00	Y	Arm 4 Ahead (Warren Lane (north) exit)	Inf
3/2 (Warren Lane (south) Lane 2)	Link 2 (Warren Lane (south) Right)	Inf	Inf	Geom	1800	3.00	0.00	N	Arm 5 Right (Dyers Road (exit))	10.00
4/1 (Warren Lane (north) exit Lane 1)	Link 1 (Warren Lane (north) exit)	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
5/1 (Dyers Road (exit) Lane 1)	Link 1 (Dyers Road (exit))	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		
6/1 (Warren Lane (south) exit Lane 1)	Link 1 (Warren Lane (south) exit)	Inf	Inf	Inf (Exit)	1800	3.25	0.00	Y		

**Traffic Flow Groups** 

Flow Group	Start Time	End Time	Duration	Formula
1: '2023 Dev't Case weekday am peak hour'	08:00	09:00	01:00	
2: '2023 Dev't Case weekday pm peak hour'	17:00	18:00	01:00	

Flow Group 1: '2023 Dev't Case weekday am peak hour' Traffic Flow Matrix

**Desired Flow:** 

		n			
		Α	В	С	Tot.
	Α	0	64	860	924
Origin	В	123	0	128	251
	С	885	162	0	1047
	Tot.	1008	226	988	2222

### **Link Traffic Flows**

Arm/Link	Flow Group 1: 2023 Dev't Case weekday am peak hour
1/1	924
2/1	251
3/1	885
3/2	162
4/1	1008
5/1	226
6/1	988

## **Lane Saturation Flows**

Lane Saturation i							
Arm/ Lane	Lane Width (m)	th Gradient Nearside		Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1				Arm 5 Left (Dyers Road (exit))	12.00	6.9 %	
(Warren Lane (north) Lane 1)	3.50	0.00	Y	Arm 6 Ahead (Warren Lane (south) exit)	Inf	93.1 %	1948
2/1	3.00	0.00	Y	Arm 4 Right (Warren Lane (north) exit)	15.00	49.0 %	1774
(Dyers Road Lane 1)	0.00	0.00	·	Arm 6 Left (Warren Lane (south) exit)	25.00	51.0 %	
3/1 (Warren Lane (south) Lane 1)		This lane uses a directly entered Saturation Flow					
3/2 (Warren Lane (south) Lane 2)	3.00	0.00	N	Arm 5 Right (Dyers Road (exit))	10.00	100.0 %	1787
4/1 (Warren Lane (north) exit Lane 1)	(Warren Lane (north) Infinite Saturation Flow (on Exit Link)						Inf
5/1 (Dyers Road (exit) Lane 1)	Infinite Saturation Flow (on Exit Link)						Inf
6/1 (Warren Lane (south) exit Lane 1)		I	nfinite Satura	ation Flow (on Exit Lir	nk)		Inf

# Flow Group 2: '2023 Dev't Case weekday pm peak hour' Traffic Flow Matrix

## Desired Flow:

	Destination										
		Α	В	С	Tot.						
	Α	0	127	918	1045						
Origin	В	62	0	82	144						
	С	922	143	0	1065						
	Tot.	984	270	1000	2254						

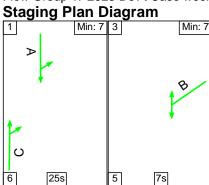
## **Link Traffic Flows**

Arm/Link	Flow Group 2: 2023 Dev't Case weekday pm peak hour
1/1	1045
2/1	144
3/1	922
3/2	143
4/1	984
5/1	270
6/1	1000

## **Lane Saturation Flows**

Arm/ Lane	Lane Width (m)	Gradient	Nearside Lane	Allowed Turns	Turning Radius (m)	Turning Prop.	Sat flow (PCU/Hr)
1/1				Arm 5 Left (Dyers Road (exit))	12.00	12.2 %	
(Warren Lane (north) Lane 1)	3.50	0.00	Y	Arm 6 Ahead (Warren Lane (south) exit)	Inf	87.8 %	1936
2/1	3.00	0.00	Y	Arm 4 Right (Warren Lane (north) exit)	15.00	43.1 %	1778
(Dyers Road Lane 1)	0.00	Arm (Warre		Arm 6 Left (Warren Lane (south) exit)	25.00	56.9 %	
3/1 (Warren Lane (south) Lane 1)		This la	ne uses a dii	ectly entered Saturat	ion Flow		1800
3/2 (Warren Lane (south) Lane 2)	3.00	0.00	OO N Arm 5 Right (Dyers Road (exit)) 10.00 100.0 %				
4/1 (Warren Lane (north) exit Lane 1)		Infinite Saturation Flow (on Exit Link)					
5/1 (Dyers Road (exit) Lane 1)	Infinite Saturation Flow (on Exit Link)						
6/1 (Warren Lane (south) exit Lane 1)		- I	nfinite Satura	ation Flow (on Exit Lir	nk)		Inf

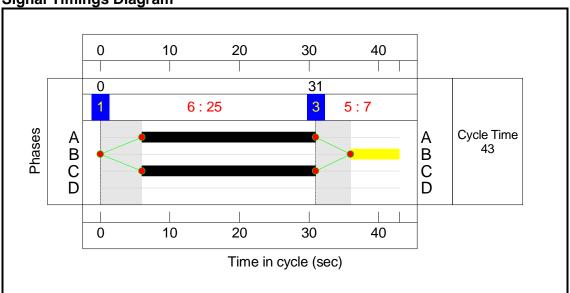
Scenario 1: 'Am peak'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 1: '2023 Dev't Case weekday am peak hour'



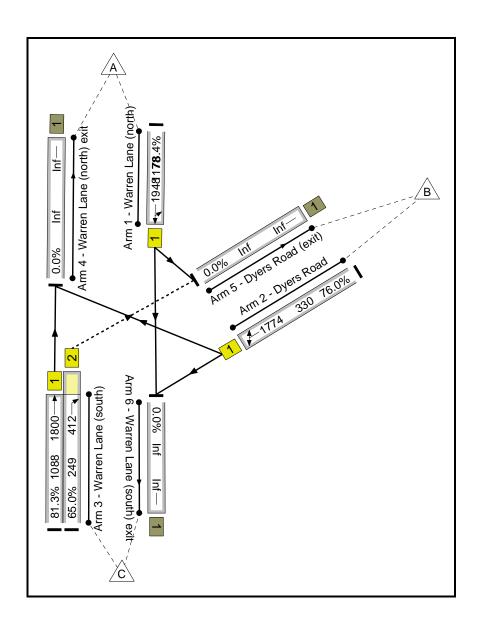
**Stage Timings** 

Stage	1	3
Duration	25	7
Change Point	0	31

**Signal Timings Diagram** 



**Junction Layout Diagram** 

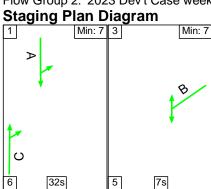


### **Link Results**

Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Warren Lane (north) Left Ahead	U	N/A	N/A	А		1	25	-	924	1948	1948	1178	78.4
2/1	Dyers Road Right Left	U	N/A	N/A	В		1	7	-	251	1774	1774	330	76.0
3/1	Warren Lane (south) Ahead	U	N/A	N/A	С	D	1	25	0	885	1800	1800	1088	81.3
3/2	Warren Lane (south) Right	0	N/A	N/A	С	D	1	25	0	162	1787	412	249	65.0
4/1	Warren Lane (north) exit	U	N/A	N/A	-		-	-	-	1008	Inf	Inf	Inf	0.0
5/1	Dyers Road (exit)	U	N/A	N/A	-		-	-	-	226	Inf	Inf	Inf	0.0
6/1	Warren Lane (south) exit	U	N/A	N/A	1		1	-	-	988	Inf	Inf	Inf	0.0

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)
1/1	924	924	-	-	-	1.6	1.8	-	3.4	13.4	8.2	1.8	10.0
2/1	251	251	-	-	-	1.2	1.5	-	2.7	38.5	2.8	1.5	4.3
3/1	885	885	-	-	-	1.6	2.1	-	3.8	15.3	8.1	2.1	10.2
3/2	162	162	102	0	60	0.2	0.9	0.7	1.7	38.9	0.8	0.9	1.7
4/1	1008	1008	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
5/1	226	226	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
6/1	988	988	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0
	PRC for Signalled Links (%): 10.7 Total Delay for Signalled Links (pcuHr): 11.63 PRC Over All Links (%): 10.7 Total Delay Over All Links(pcuHr): 11.63 Cycle Time (s): 43												

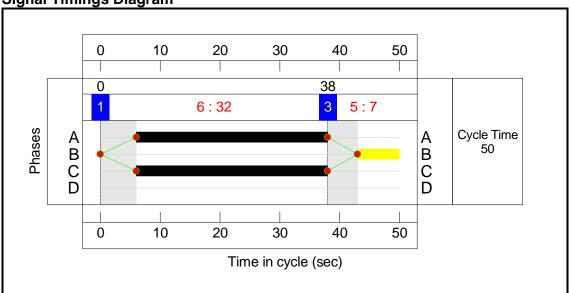
Scenario 2: 'Pm peak'
Staging Plan 1: 'Staging Plan No. 1'
Flow Group 2: '2023 Dev't Case weekday pm peak hour'



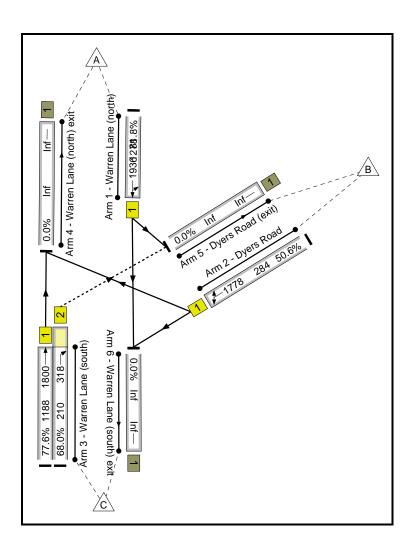
**Stage Timings** 

Stage	1	3
Duration	32	7
Change Point	0	38

Signal Timings Diagram



# **Junction Layout Diagram**



# Full Input Data And Results

# **Link Results**

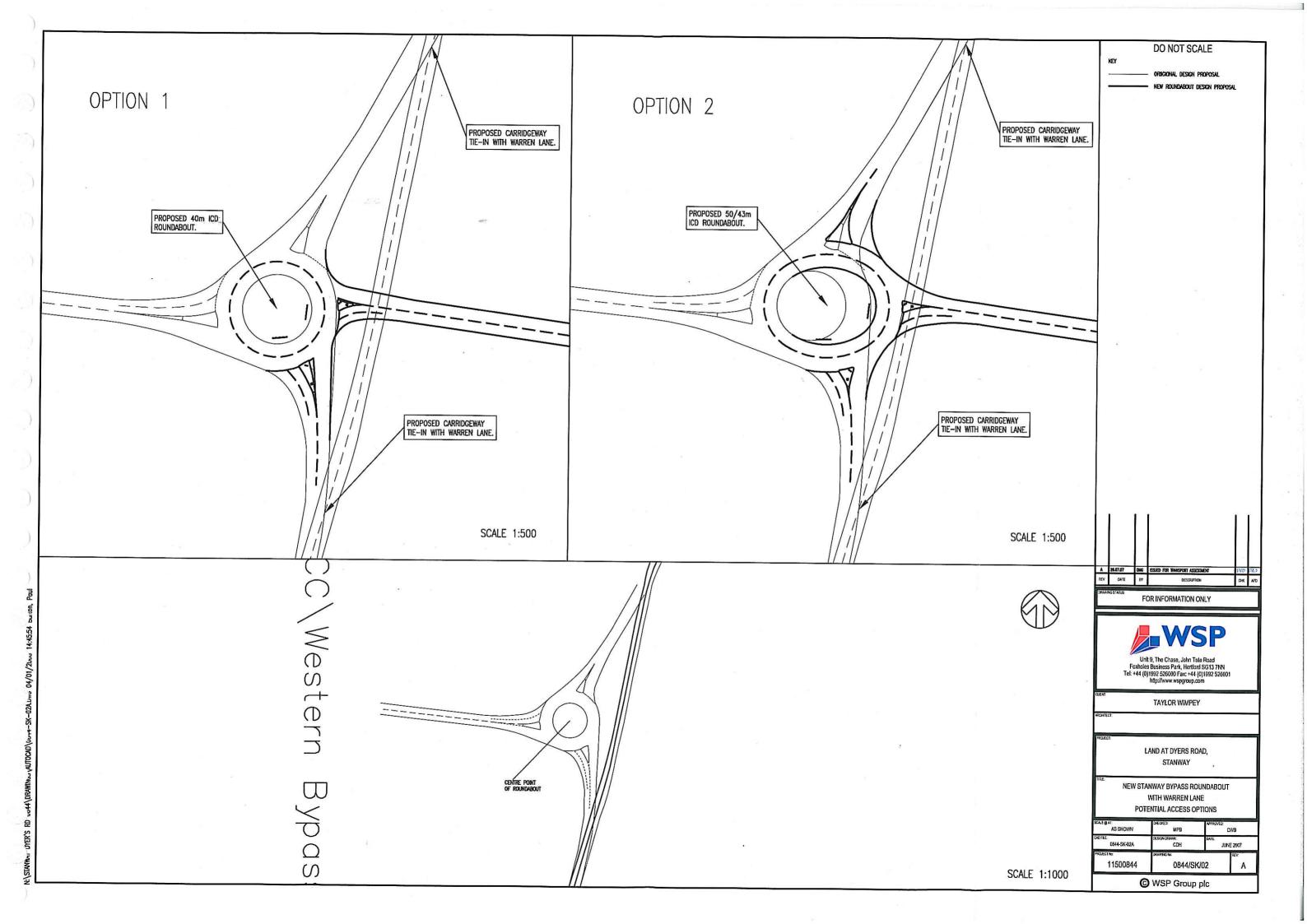
Link Num	Link Desc	Link Type	Stage Stream	Position In Filtered Route	Full Phase	Arrow Phase	Num Greens	Total Green (s)	Arrow Green (s)	Demand Flow (pcu)	Max Sat Flow (pcu/Hr)	Ave Sat Flow (pcu/Hr)	Capacity (pcu)	Deg Sat (%)
1/1	Warren Lane (north) Left Ahead	U	N/A	N/A	А		1	32	-	1045	1936	1936	1278	81.8
2/1	Dyers Road Right Left	U	N/A	N/A	В		1	7	-	144	1778	1778	284	50.6
3/1	Warren Lane (south) Ahead	U	N/A	N/A	С	D	1	32	0	922	1800	1800	1188	77.6
3/2	Warren Lane (south) Right	0	N/A	N/A	С	D	1	32	0	143	1787	318	210	68.0
4/1	Warren Lane (north) exit	U	N/A	N/A	-		-	-	-	984	Inf	Inf	Inf	0.0
5/1	Dyers Road (exit)	U	N/A	N/A	•		-	-	-	270	Inf	Inf	Inf	0.0
6/1	Warren Lane (south) exit	U	N/A	N/A	-		-	-	-	1000	Inf	Inf	Inf	0.0

# Full Input Data And Results

Link Num	Entering (pcu)	Leaving (pcu)	Turners In Gaps (pcu)	Turners When Unopposed (pcu)	Turners In Intergreen (pcu)	Uniform Delay (pcuHr)	Rand + Oversat Delay (pcuHr)	Storage Area Uniform Delay (pcuHr)	Total Delay (pcuHr)	Av. Delay Per Veh (s/pcu)	Max. Back of Uniform Queue (pcu)	Rand + Oversat Queue (pcu)	Mean Max Queue (pcu)	
1/1	1045	1045	-	-	-	1.8	2.2	-	4.0	13.9	10.5	2.2	12.7	
2/1	144	144	-	-	-	0.8	0.5	-	1.3	31.9	1.8	0.5	2.3	
3/1	922	922	-	-	-	1.5	1.7	-	3.2	12.6	8.7	1.7	10.4	
3/2	143	143	78	0	65	0.1	1.0	0.7	1.9	48.0	0.7	1.0	1.7	
4/1	984	984	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
5/1	270	270	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
6/1	1000	1000	-	-	-	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	
	PRO		ed Links (%) All Links (%)		Fotal Delay for S Total Delay	Signalled Link Over All Link		10.44 10.44 Cv	cle Time (s):	50	·L	<u> </u>	<del>'</del>	

Appendix J

Results of ARCADY capacity assessment: proposed Warren Lane/Taylor Wimpey site/Western Bypass roundabout



\_\_ARCADY 6 \_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Warren-Bypass\" Warren-Bypass am.vai"

(drive-on-the-left ) at 15:16:12 on Thursday, 11 June 2009

### .FILE PROPERTIES

RUN TITLE: Proposed Warren Lane/Taylor Wimpey site/Western Bypass roundabout weekday am pk LOCATION: Stanway

DATE: 27/05/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS: DESCRIPTION:

.INPUT DATA

ARM A - Warren Lane (north) ARM B - Taylor Wimpey site ARM C - Warren Lane (south) ARM D - Western Bypass

.GEOMETRIC DATA

																	— T5
I ARM																INTERCEPT (PCU/MIN)	
I ARM	ΑI	3.50	I	6.75	I	13.00	I	10.00	I	40.00	I	35.0	I	0.582	I	25.018	I
I ARM	ΒΙ	3.65	I	5.00	I	10.00	I	10.00	I	40.00	I	54.0	I	0.504	I	20.128	I
I ARM	CI	3.50	I	7.00	I	12.00	I	20.00	I	40.00	I	35.0	I	0.613	I	26.352	I
I ARM	DI	3.65	I	7.50	I	15.00	I	26.00	I	40.00	I	19.0	I	0.683	I	30.547	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

### .SCALING FACTORS

IARM I FLOW SCALE(%) I I 100 ΙB 100 т Ι 100 ID I 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

				115
I	I NUMBER OF	MINUTES FROM ST	TART WHEN	I RATE OF FLOW (VEH/MIN) I
I ARM	I FLOW STARTS	I TOP OF PEAK I	FLOW STOPS	I BEFORE I AT TOP I AFTER I
I	I	I I	[	I I I
I	I TO RISE	I IS REACHED I	FALLING	I PEAK I OF PEAK I PEAK I
I ARM A	I 15.00	I 45.00 I	75.00	I 6.00 I 9.00 I 6.00 I
I ARM B	I 15.00	I 45.00 I	75.00	I 1.25 I 1.88 I 1.25 I
I ARM C	I 15.00	I 45.00 I	75.00	I 10.55 I 15.83 I 10.55 I
I ARM D	I 15.00	I 45.00 I	75.00	I 4.18 I 6.26 I 4.18 I

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# QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND (VEH/MIN)		DEMAND/ CAPACITY		PEDESTRIAN FLOW	START QUEUE	END QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING
07.45-0	08.00									
ARM A	6.02	19.34	0.311	-		0.0	0.4	6.5	-	0.075
ARM B		14.73	0.085	-		0.0	0.1	1.4	-	0.074
ARM C	1.25 10.59	24.60	0.430	-		0.0	0.7	10.9	-	0.071
ARM D	4.19	25.98	0.161	-		0.0	0.2	2.8	-	0.046
									GEOMETRIC DELAY	
	(VEH/MIN)	(VEH/MIN)							(VEH.MIN/ TIME SEGMENT)	
			(Id C)		(I DDD/ MIN)	(VBIID)	(VIIIO)	IIMB DEGMENT)	TIME DEGMENT,	VBIIICBB (FIIIV)
08.00-0	08.15									
ARM A	7.19	18.91	0.380	-		0.4	0.6	8.9	-	0.085
ARM B	1.50	13.66					0.1	1.8	_	0.082
	12.65								_	0.084
ARM D	5.00	25.19	0.199	-		0.2	0.2	3.7	-	0.050
									GEOMETRIC DELAY	
TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
TIME		CAPACITY	DEMAND/ CAPACITY		PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING
TIME	DEMAND	CAPACITY	DEMAND/ CAPACITY		PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY	AVERAGE DELAY PER ARRIVING
TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING
TIME 08.15-0	DEMAND (VEH/MIN) 08.30 8.81	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	_	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING
TIME 08.15-0 ARM A	DEMAND (VEH/MIN) 08.30 8.81	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)	_	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
TIME 08.15-0 ARM A ARM B ARM C	DEMAND (VEH/MIN) 08.30 8.81 1.84 15.49	CAPACITY (VEH/MIN) 18.33 12.22 24.29	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.6 0.1 1.1	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT) 13.3 2.6 24.8	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-0 ARM A ARM B ARM C ARM D	DEMAND (VEH/MIN) 08.30 8.81 1.84	CAPACITY (VEH/MIN) 18.33 12.22 24.29	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.6 0.1 1.1	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT) 13.3 2.6 24.8	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING VEHICLE (MIN) 0.104 0.096
TIME  08.15-0  ARM A  ARM B  ARM C  ARM D	DEMAND (VEH/MIN) 08.30 8.81 1.84 15.49 6.13	CAPACITY (VEH/MIN) 18.33 12.22 24.29 24.12	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638 0.254	- - -	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS) 0.6 0.1 1.1 0.2	END QUEUE (VEHS) 0.9 0.2 1.7 0.3	DELAY (VEH.MIN/ TIME SEGMENT) 13.3 2.6 24.8 5.0	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING VEHICLE (MIN) 0.104 0.096 0.113 0.056
TIME  08.15-0  ARM A  ARM B  ARM C  ARM D	DEMAND (VEH/MIN) 08.30 8.81 1.84 15.49 6.13	CAPACITY (VEH/MIN)  18.33 12.22 24.29 24.12	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638 0.254		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)  0.6 0.1 1.1 0.2	END QUEUE (VEHS) 0.9 0.2 1.7 0.3	DELAY (VEH.MIN/ TIME SEGMENT) 13.3 2.6 24.8 5.0	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN) 0.104 0.096 0.113 0.056
08.15-0 ARM A ARM B ARM C ARM D	DEMAND (VEH/MIN)  08.30  8.81 1.84 15.49 6.13  DEMAND	CAPACITY (VEH/MIN)  18.33 12.22 24.29 24.12  CAPACITY	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638 0.254		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)  0.6 0.1 1.1 0.2	END QUEUE (VEHS) 0.9 0.2 1.7 0.3	DELAY (VEH.MIN/ TIME SEGMENT) 13.3 2.6 24.8 5.0	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.104 0.096 0.113 0.056  AVERAGE DELAY
08.15-0 ARM A ARM B ARM C ARM D	DEMAND (VEH/MIN) 08.30 8.81 1.84 15.49 6.13	CAPACITY (VEH/MIN)  18.33 12.22 24.29 24.12  CAPACITY	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638 0.254		PEDESTRIAN FLOW (PEDS/MIN) PEDESTRIAN FLOW	START QUEUE (VEHS) 0.6 0.1 1.1 0.2 START QUEUE	END QUEUE (VEHS) 0.9 0.2 1.7 0.3	DELAY (VEH.MIN/ TIME SEGMENT)  13.3 2.6 24.8 5.0  DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.104 0.096 0.113 0.056  AVERAGE DELAY PER ARRIVING
O8.15-0 ARM A ARM B ARM C ARM D	DEMAND (VEH/MIN)  08.30  8.81 1.84 15.49 6.13  DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)  18.33 12.22 24.29 24.12  CAPACITY	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638 0.254		PEDESTRIAN FLOW (PEDS/MIN) PEDESTRIAN FLOW	START QUEUE (VEHS) 0.6 0.1 1.1 0.2 START QUEUE	END QUEUE (VEHS) 0.9 0.2 1.7 0.3	DELAY (VEH.MIN/ TIME SEGMENT)  13.3 2.6 24.8 5.0  DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.104 0.096 0.113 0.056  AVERAGE DELAY PER ARRIVING
O8.15-( ARM A ARM B ARM C ARM D TIME	DEMAND (VEH/MIN)  08.30  8.81 1.84 15.49 6.13  DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)  18.33 12.22 24.29 24.12  CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)  0.480 0.150 0.638 0.254  DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN) PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)  0.6 0.1 1.1 0.2  START QUEUE (VEHS)	END QUEUE (VEHS) 0.9 0.2 1.7 0.3 END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)  13.3 2.6 24.8 5.0  DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.104 0.096 0.113 0.056  AVERAGE DELAY PER ARRIVING
08.15-0 ARM A ARM B ARM C ARM D TIME	DEMAND (VEH/MIN)  08.30  8.81 1.84 15.49 6.13  DEMAND (VEH/MIN)  08.45 8.81 1.84	CAPACITY (VEH/MIN)  18.33 12.22 24.29 24.12  CAPACITY (VEH/MIN)  18.33 12.20	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638 0.254 		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)  0.6 0.1 1.1 0.2  START QUEUE (VEHS)  0.9 0.2	END QUEUE (VEHS)  0.9 0.2 1.7 0.3  END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)  13.3 2.6 24.8 5.0  DELAY (VEH.MIN/ TIME SEGMENT)  13.7 2.6	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.104 0.096 0.113 0.056  AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
08.15-0 ARM A ARM B ARM C ARM D TIME	DEMAND (VEH/MIN)  08.30  8.81 1.84 15.49 6.13  DEMAND (VEH/MIN)  08.45 8.81	CAPACITY (VEH/MIN)  18.33 12.22 24.29 24.12  CAPACITY (VEH/MIN)  18.33 12.20	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638 0.254 		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)  0.6 0.1 1.1 0.2  START QUEUE (VEHS)  0.9 0.2	END QUEUE (VEHS)  0.9 0.2 1.7 0.3  END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)  13.3 2.6 24.8 5.0  DELAY (VEH.MIN/ TIME SEGMENT)  13.7 2.6	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.104 0.096 0.113 0.056  AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.105
O8.15-CARM A ARM B ARM CARM D TIME  08.30-CARM A ARM B ARM B ARM B ARM B ARM B ARM C	DEMAND (VEH/MIN)  08.30  8.81 1.84 15.49 6.13  DEMAND (VEH/MIN)  08.45 8.81 1.84	CAPACITY (VEH/MIN)  18.33 12.22 24.29 24.12  CAPACITY (VEH/MIN)  18.33 12.20 24.29	DEMAND/ CAPACITY (RFC) 0.480 0.150 0.638 0.254 		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)  0.6 0.1 1.1 0.2  START QUEUE (VEHS)  0.9 0.2 1.7	END QUEUE (VEHS)  0.9 0.2 1.7 0.3  END QUEUE (VEHS)  0.9 0.2 1.7	DELAY (VEH.MIN/ TIME SEGMENT)  13.3 2.6 24.8 5.0  DELAY (VEH.MIN/ TIME SEGMENT)  13.7 2.6 26.0	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.104 0.096 0.113 0.056  AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.105 0.096

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I I
Т	08.45-0	9.00										T
	ARM A	7.19	18.91	0.380	_		0.9	0.6	9.5	-	0.086	I
I	ARM B	1.50	13.64	0.110	-		0.2	0.1	1.9	-	0.082	I
I	ARM C	12.65	24.47	0.517	-		1.7	1.1	16.8	-	0.085	I
I	ARM D	5.00	25.17	0.199	-		0.3	0.2	3.8	-	0.050	I
I												I
		DEMAND	CAPACITY			PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
Τ.	TIME											
				DEMAND/								-
Ι	11112	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I	111111											_
I -		(VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	_
I - I	09.00-0	(VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	_
		(VEH/MIN)		CAPACITY	_	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	_
I	09.00-0	(VEH/MIN) 9.15	(VEH/MIN)	CAPACITY (RFC)		FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I - I
I	09.00-0 ARM A	(VEH/MIN) 9.15 6.02	(VEH/MIN)	CAPACITY (RFC)	_	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I I I
I I	09.00-0 ARM A ARM B	(VEH/MIN)  9.15  6.02 1.25	(VEH/MIN) 19.33 14.70	CAPACITY (RFC) 0.312 0.085	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 7.0 1.4	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.075 0.074	I I I I
I I	09.00-0 ARM A ARM B ARM C ARM D	(VEH/MIN)  9.15  6.02 1.25 10.59	(VEH/MIN) 19.33 14.70 24.60	CAPACITY (RFC) 0.312 0.085 0.431	-	FLOW (PEDS/MIN)	QUEUE (VEHS) 0.6 0.1 1.1	QUEUE (VEHS) 0.5 0.1 0.8	(VEH.MIN/ TIME SEGMENT) 7.0 1.4 11.7	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.075 0.074 0.072	I I I I

## .QUEUE AT ARM A

TIME SEGMENT	NO. OF	
ENDING	VEHICLES	
	IN QUEUE	
08.00	0.4	
08.15	0.6	*
08.30	0.9	*
08.45	0.9	*
09.00	0.6	*
09.15	0.5	

# .QUEUE AT ARM B

TIME	SEGMENT	NO.	. OF
END	ING	VE	HICLES
		IN	QUEUE
08.0	00		0.1
08.1	L5		0.1
08.3	30		0.2
08.4	15		0.2
09.0	0.0		0.1
09.1	L5		0.1

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.7	*
08.15	1.1	*
08.30	1.7	**
08.45	1.7	**
09.00	1.1	*
09.15	0.8	*

# .QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
08.00	0.2
08.15	0.2
08.30	0.3
08.45	0.3
09.00	0.2

## .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I	ARM	I	TOTAL	DEMAND	Ι	* QUEUEING *	I	*	INCLUSIVE	QUEUEING *	I
I		I			Ι	* DELAY *	I		* DE	LAY *	I
I		I-									-I
I		I	(VEH)	(VEH/H)	Ι	(MIN) (MIN/VE	I (F		(MIN)	(MIN/VEH)	I
I	A	I	660.7	I 440.5	Ι	59.0 I 0.09	I		59.0 I	0.09	I

I I	3 :	Ι	137.6	Ι	91.8	Ι	11.7	Ι	0.09	I	11.7	I	0.09	I
I (	2 :	Ι	1161.7	Ι	774.5	Ι	105.6	I	0.09	I	105.6	I	0.09	I
I I	) :	Ι	459.7	Ι	306.5	Ι	23.3	Ι	0.05	I	23.3	Ι	0.05	I
I A	LL :	Ι	2419.8	Ι	1613.2	Ι	199.6	Ι	0.08	I	199.6	I	0.08	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

\_ARCADY 6 \_

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Warren-Bypass\" Warren-Bypass am.vai"

(drive-on-the-left ) at 15:18:13 on Thursday, 11 June 2009

### .FILE PROPERTIES

RUN TITLE: Proposed Warren Lane/Taylor Wimpey site/Western Bypass roundabout weekday am pk

LOCATION: Stanway DATE: 27/05/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS:

DESCRIPTION:

.INPUT DATA

ARM A - Warren Lane (north)

ARM B - Taylor Wimpey site ARM C - Warren Lane (south)

ARM D - Western Bypass

.GEOMETRIC DATA

I ARM I V (M) I E (M) I L (M) I R (M) I D (M) I PHI (DEG) I SLOPE I INTERCEPT PHI (DEG) I SLOPE I INTERCEPT (PCU/MIN) I 3.50 6.75 13.00 I 10.00 40.00 35.0 I 0.582 I 25.018 I ARM B I 3.65 5.00 7.00 I 10.00 I 10.00 40.00 40.00 I 54.0 35.0 I 0.504 I I 0.613 I 20.128 CI 3.50 12.00 I ARM I ARM D I 3.65 7.50 I 15.00 I 26.00 I 40.00 I 19.0 I 0.683 I 30.547 Ι

V = approach half-width

L = effective flare length

D = inscribed circle diameter PHI = entry angle

E = entry width

R = entry radius

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I 100 T B 100 т 100 I ID I 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)
.LENGTH OF TIME PERIOD -( 90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

. D	EMAND	SET	TITLE:	2023	Dev'	t Cas	se wee	kc	lay am	peak									
-																			T15
Ι		I	NUMBI	ER OF	MINU	TES F	ROM S	STA	ART WHE	N	Ι	RATE	OI	FI	) WO	VEF	H/MIN)	Ι	
Ι	ARM	I	FLOW S	TARTS	I TO	P OF	PEAK	Ι	FLOW S	TOPS	Ι	BEFORE	Ι	AT	TOP	Ι	AFTER	Ι	
Ι		I			I			Ι			Ι		Ι			Ι		Ι	
I		I	TO R	ISE	I I	S REA	CHED	I	FALLIN	G	Ι	PEAK	I	OF	PEAK	Ι	PEAK	I	
-																			
Ι	ARM	AI	15	.00	I	45.	00	Ι	75.	00	Ι	6.00	Ι	9	.00	Ι	6.00	Ι	
I	ARM	вІ	15	.00	I	45.	00	I	75.	00	I	1.25	I	1	.88	I	1.25	Ι	
Ι	ARM	CI	15	.00	I	45.	00	Ι	75.	00	Ι	12.05	Ι	18	.08	Ι	12.05	Ι	
I	ARM	DΙ	15	.00	I	45.	0.0	Ι	75.	00	Ι	4.88	Ι	7	.31	Ι	4.88	Ι	

DEMAND SET TITLE:	2023 Dev	't Case weekday am peak	ТЗЗ
т	т	TURNING PROPORTIONS	T 133
T	_	TURNING COUNTS	T
T		(PERCENTAGE OF H.V.S)	T
T			
=		/TO I ARM A I ARM B I ARM C I ARM	DI
T 07.45 - 09.15		I I I I	т
I		A I 0.000 I 0.038 I 0.962 I 0.0	
T		I 0.0 I 18.0 I 462.0 I 0	
I	I	I ( 0.0)I ( 0.0)I ( 17.0)I ( 0	.0)I
I		I I I I	
I	I ARM	BI 0.400 I 0.000 I 0.100 I 0.5	00 I
I	I	I 40.0 I 0.0 I 10.0 I 50	.0 I
I	I	I ( 0.0)I ( 0.0)I ( 0.0)I ( 0	.0)I
I	I	I I I I	I
I	I ARM	C I 0.416 I 0.005 I 0.000 I 0.5	79 I
I	I	I 401.0 I 5.0 I 0.0 I 558	.0 I
I	I	I ( 8.0)I ( 0.0)I ( 0.0)I ( 1	.0)I
I	I	I I I I	I
I	I ARM	DI 0.000 I 0.059 I 0.941 I 0.0	00 I
I	I	I 0.0 I 23.0 I 367.0 I 0	.0 I
I	I	I ( 0.0)I ( 0.0)I ( 2.0)I ( 0	.0)I
I	I	I I I I	I

## QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

07.45-08.00  ARM A 6.02 18.98 0.317 0.0 0.5 6.7 - 0.077  ARM B 1.25 14.37 0.087 0.0 0.1 1.4 - 0.076  ARM C 12.10 24.70 0.490 0.0 0.9 13.7 - 0.079  ARM D 4.89 25.98 0.188 0.0 0.9 13.7 - 0.047  TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DE  (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVI)  (RFC) (PEDS/MIN) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M  08.00-08.15  ARM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088  ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085  ARM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098  ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052  TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DE  TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DE	LAY NG IIN)
ARM A 6.02 18.98 0.317 0.0 0.5 6.7 - 0.077 ARM B 1.25 14.37 0.087 0.0 0.1 1.4 - 0.076 ARM C 12.10 24.70 0.490 0.0 0.9 13.7 - 0.079 ARM D 4.89 25.98 0.188 0.0 0.2 3.4 - 0.047  TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DE (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVI (PEDS/MIN) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. 0.000	CLAY ING IIN)
NRM B 1.25 14.37 0.087 0.0 0.1 1.4 - 0.076 NRM C 12.10 24.70 0.490 0.0 0.9 13.7 - 0.079 NRM D 4.89 25.98 0.188 0.0 0.2 3.4 - 0.047  TIME DEMAND CAPACITY DEMAND/ (VEH/MIN) (VEH/MIN) (VEH/MIN) (VEH/MIN) (RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (MODELLE MARK)  08.00-08.15 NRM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088 NRM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085 NRM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098 NRM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	CLAY ING IIN)
ARM C 12.10 24.70 0.490 0.0 0.9 13.7 - 0.079 ARM D 4.89 25.98 0.188 0.0 0.2 3.4 - 0.047  TIME DEMAND CAPACITY DEMAND/ (VEH/MIN) (VEH/MIN) CAPACITY (FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ VEH.MIN/ PER ARRIVI (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M  08.00-08.15 ARM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088 ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.088 ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085 ARM C 14.44 24.57 0.558 0.9 1.4 20.4 - 0.098 ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	CLAY ING IIN)
TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DE (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ VEH.MIN/ PER ARRIVI (PEDS/MIN) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. 18.00-08.15  ARM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088  ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085  ARM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098  ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	LAY NG IIN)
TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DE (VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ VEH.MIN/ PER ARRIVI (PEDS/MIN) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M. 18.00-08.15  ARM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088  ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085  ARM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098  ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	LAY NG IIN)
(VEH/MIN)         (VEH/MIN)         CAPACITY (RFC)         FLOW (PEDS/MIN)         QUEUE (VEH.MIN/VEH.S)         (VEH.MIN/VEH.MIN/VEH.MIN/VEH.MIN/VEH.MIN/VEH.CLE (M.M.M.)         PER ARRIVI (VEH.S)           08.00-08.15         NRM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088         0.088         0.088         0.088 0.1 0.1 1.9 - 0.088         0.088           NRM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085         0.088         0.088         0.098         0.088         0.098	ING IIN)
(VEH/MIN)         (VEH/MIN)         CAPACITY (RFC)         FLOW (PEDS/MIN)         QUEUE (VEH.MIN/VEH.S)         (VEH.MIN/VEH.MIN/VEH.MIN/VEH.MIN/VEH.MIN/VEH.CLE (M.M.M.)         PER ARRIVI (VEH.S)           08.00-08.15         NRM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088         0.088         0.088         0.088 0.1 0.1 1.9 - 0.088         0.088           NRM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085         0.088         0.088         0.098         0.088         0.098	ING IIN)
(RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M  18.00-08.15  ARM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088  ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085  ARM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098  ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	IIN)
08.00-08.15  NRM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088  NRM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085  NRM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098  NRM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	
ARM A 7.19 18.49 0.389 0.5 0.6 9.2 - 0.088 ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085 ARM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098 ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	
ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085 ARM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098 ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	
ARM B 1.50 13.23 0.113 0.1 0.1 1.9 - 0.085 ARM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098 ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	
NRM C 14.44 24.57 0.588 0.9 1.4 20.4 - 0.098 NRM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	
ARM D 5.84 25.19 0.232 0.2 0.3 4.5 - 0.052	
(VEH/MIN)         (VEH/MIN)         CAPACITY (RFC)         FLOW (PEDS/MIN)         QUEUE (VEHS)         (VEH.MIN/ (VEH.MIN)         (VEH.MIN/ VEH.MIN)         PER ARRIVI           08.15-08.30         NRM A 8.81 17.81 0.495 0.6 1.0 14.0 - 0.111         - 0.111         NRM B 1.84 11.69 0.157 0.1 0.2 2.7 - 0.101         - 0.101           NRM C 17.69 24.39 0.725 1.4 2.6 35.9 - 0.146         - 0.146         NRM D 7.16 24.12 0.297 0.3 0.4 6.2 - 0.059	IIN)
TIME DEMAND CAPACITY DEMAND/ PEDESTRIAN START END DELAY GEOMETRIC DELAY AVERAGE DE	LAY
(VEH/MIN) (VEH/MIN) CAPACITY FLOW QUEUE QUEUE (VEH.MIN/ (VEH.MIN/ PER ARRIVI	
(RFC) (PEDS/MIN) (VEHS) (VEHS) TIME SEGMENT) TIME SEGMENT) VEHICLE (M	
08.30-08. <b>4</b> 5	
ARM A 8.81 17.81 0.495 1.0 1.0 14.5 - 0.111	
ARM B 1.84 11.67 0.157 0.2 0.2 2.8 - 0.102 ARM C 17.69 24.39 0.725 2.6 2.6 38.7 - 0.149	
ARM B 1.84 11.67 0.157 0.2 0.2 2.8 - 0.102 ARM C 17.69 24.39 0.725 2.6 2.6 38.7 - 0.149	
ARM D 7.16 24.10 0.297 0.4 0.4 6.3 - 0.059	

I I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
Т.	08.45-0	9.00										_ T
	ARM A	7.19	18.48	0.389	_		1.0	0.6	9.9	_	0.089	I
I	ARM B	1.50	13.21	0.113	-		0.2	0.1	2.0	-	0.085	I
I	ARM C	14.44	24.56	0.588	-		2.6	1.4	22.7	-	0.100	I
I	ARM D	5.84	25.15	0.232	-		0.4	0.3	4.6	-	0.052	I
I												I
Т	TIME	DEMAND	CAPACITY	DEMAND /		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	Т
I	TIME	DEMAND (VEH/MIN)	CAPACITY	DEMAND/		PEDESTRIAN FLOW	START	END	DELAY (VEH MIN/	GEOMETRIC DELAY	AVERAGE DELAY	_
I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I I -	TIME											I
I I - I	TIME 09.00-0	(VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
		(VEH/MIN)		CAPACITY	_	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I	09.00-0	(VEH/MIN) 9.15	(VEH/MIN)	CAPACITY (RFC)		FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I I - I
I	09.00-0 ARM A	(VEH/MIN) 9.15 6.02	(VEH/MIN)	CAPACITY (RFC)	_	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I I - I
I I	09.00-0 ARM A ARM B	(VEH/MIN)  9.15  6.02 1.25	(VEH/MIN)  18.97 14.34	CAPACITY (RFC) 0.317 0.088	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 7.2 1.5	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.077 0.076	I I I I I
I I	09.00-0 ARM A ARM B ARM C ARM D	(VEH/MIN)  9.15  6.02 1.25 12.10	(VEH/MIN) 18.97 14.34 24.69	CAPACITY (RFC) 0.317 0.088 0.490	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS) 0.5 0.1 1.0	(VEH.MIN/ TIME SEGMENT) 7.2 1.5 15.0	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.077 0.076 0.080	I I I I I

## .QUEUE AT ARM A

TIME	SEGMENT	NO.	OF	
ENDI	NG	VEH	IICLES	
		IN	QUEUE	
08.0	00		0.5	
08.1	.5		0.6	*
08.3	30		1.0	*
08.4	15		1.0	*
09.0	0.0		0.6	*
09.1	.5		0.5	

# .QUEUE AT ARM B

-----

TIME SEGME	INT NO. OF
ENDING	VEHICLES
	IN QUEUE
08.00	0.1
08.15	0.1
08.30	0.2
08.45	0.2
09.00	0.1
09.15	0.1

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.9	*
08.15	1.4	*
08.30	2.6	***
08.45	2.6	***
09.00	1.4	*
09.15	1.0	*

## .QUEUE AT ARM D

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE 08.00 08.15 08.30 08.45 09.00 09.15 0.2 0.3 0.4 0.4 0.3

## .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

													т75
I	ARM	I	TOTAL	DEMAND	Ι	* QUE	UEING *	I	* II	NCLUSIVE	QUEUEING *	I	
I		Ι			Ι	* DE	LAY *	I		* DE	LAY *	I	
I		I-										I	
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/VEH)	I	(1	MIN)	(MIN/VEH)	I	
I	A	I	660.7	1 440.5	I	61.6 I	0.09	I		61.6 I	0.09	I	

Ι	В	Ι	137.6	Ι	91.8	Ι	12.2	Ι	0.09	I	12.2	I	0.09	I
I	C	I	1326.9	I	884.6	I	146.4	I	0.11	I	146.4	I	0.11	I
I	D	I	536.8	Ι	357.9	Ι	28.5	Ι	0.05	I	28.5	I	0.05	I
Ι	ALL		2662.0	I	1774.7	I	248.7	I	0.09	I	248.7	I	0.09	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

\_ ARCADY 6 \_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Warren-Bypass\" Warren-Bypass pm.vai"

(drive-on-the-left ) at 15:23:51 on Thursday, 11 June 2009

### .FILE PROPERTIES

RUN TITLE: Proposed Warren Lane/Taylor Wimpey site/Western Bypass roundabout weekday pm pk

LOCATION: Stanway DATE: 27/05/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960

STATUS: DESCRIPTION:

.INPUT DATA

ARM A - Warren Lane (north) ARM B - Taylor Wimpey site ARM C - Warren Lane (south)

ARM D - Western Bypass

.GEOMETRIC DATA

I ARM I V (M) I E (M) I L (M) I R (M) I D (M) I PHI (DEG) I SLOPE I INTERCEPT (PCU/MIN) I 6.75 13.00 I 10.00 40.00 35.0 I 0.582 I 25.018 I ARM B I 3.65 5.00 7.00 I 10.00 I 10.00 40.00 40.00 I 54.0 35.0 I 0.504 I I 0.613 I 20.128 CI 3.50 12.00 I ARM I ARM D I 3.65 7.50 I 15.00 I 26.00 I 40.00 I 19.0 I 0.683 I 30.547 Ι

V = approach half-width

L = effective flare length

D = inscribed circle diameter PHI = entry angle

E = entry width

R = entry radius

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

### .SCALING FACTORS

IARM I FLOW SCALE(%) I 100 T B 100 т 100 I ID I 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

															- 113
I	I	NU	MBER OF	M	INUTI	ES FROM	ST	ART WHEN	Ι	RATE	OE	F FLOW (	VE	H/MIN)	I
I ARM	I	FLOW	STARTS	Ι	TOP	OF PEAK	I	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER	I
I	I			Ι			Ι		Ι		Ι		Ι		I
I	I	TO	RISE	Ι	IS	REACHED	I	FALLING	I	PEAK	I	OF PEAK	I	PEAK	I
I ARM	ΑI		15.00	Ι		45.00	Ι	75.00	Ι	6.29	Ι	9.43	Ι	6.29	I
I ARM	вІ		15.00	Ι		45.00	I	75.00	I	0.35	I	0.52	I	0.35	I
I ARM	CI		15.00	Ι		45.00	Ι	75.00	Ι	10.70	Ι	16.05	Ι	10.70	I
I ARM	DI		15.00	I		45.00	I	75.00	I	4.54	I	6.81	I	4.54	I

DEMAND SET TITLE:	2023 Base weekday pm peak	ТЗЗ
·	I TURNING PROPORTIONS	I
I	I TURNING COUNTS	I
I	I (PERCENTAGE OF H.V.S)	I
I		
I TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM	DI
I 16.45 - 18.15	I I I I	I
I	I ARM A I 0.000 I 0.082 I 0.918 I 0.0	00 I
I	I I 0.0 I 41.0 I 462.0 I 0	.0 I
I	I I ( 0.0)I ( 0.0)I ( 17.0)I ( 0	.0)I
I	I I I I	I
I	I ARM B I 0.036 I 0.000 I 0.036 I 0.9	29 I
I	I I 1.0 I 0.0 I 1.0 I 26	.0 I
I	I I ( 0.0)I ( 0.0)I ( 0.0)I ( 0	.0)I
I	I I I I	I
I	I ARM C I 0.468 I 0.013 I 0.000 I 0.5	19 I
I	I I 401.0 I 11.0 I 0.0 I 444	
I	I I ( 8.0)I ( 0.0)I ( 0.0)I ( 1	
I	I I I I	_
I	I ARM DI 0.000 I 0.143 I 0.857 I 0.0	
I	I I 0.0 I 52.0 I 311.0 I 0	
I	I I ( 0.0)I ( 0.0)I ( 2.0)I ( 0	,
I	I I I I	I

# QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIM	E DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)			RIAN STA	RT END		GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING	
			(RFC)	(PEDS/	MIN) (VE	S) (VEHS	) TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	
16.4	5-17.00									
ARM	A 6.31	19.24	0.328		- 0	0 0.5	7.1	_	0.077	
ARM	B 0.35	14.73	0.024		- 0	0.0	0.4	_	0.070	
ARM	C 10.74	25.08	0.428		- 0	0 0.7	10.8	_	0.069	
ARM	D 4.55	26.30	0.173		- 0	0 0.2	3.1	_	0.046	
										-
TIM	DEMAND.	CAPACITY	DEMAND /	DEDECT	RIAN STA	RT END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	-
TIM	(VEH/MIN)							(VEH.MIN/	PER ARRIVING	
	(AFU\MITN)	(VED/MIN)			~ -			TIME SEGMENT)		
			(RFC)	( PEDS/	mital (API	OHAV) (CHS	, TIME SEGMENT)	TIME SEGMENT)	ARUTCHE (MIN)	
17.0	0-17.15									
ARM		18.77	0.401		- 0	5 0.7	9.7	-	0.089	
ARM	B 0.42	13.66			- 0		0.5	_	0.076	
ARM		25.04			- 0		15.2	_	0.070	
ARM	D 5.44		0.213		- 0		4.0	_		
										-
	E DEMAND	CAPACITY	DEMAND/	PEDEST	RIAN ST	RT END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLO	W OUI	UE OUEU	E (VEH.MIN/	(VEH.MIN/	PER ARRIVING	
	,	,	(RFC)	(PEDS/	MIN) (VE	S) (VEHS	) TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	
17 1	5-17.30									
ARM		18.13	0 500		- 0	7 1.0	14.8	_	0.112	
ARM					- 0		0.6	_	0.112	
ARM		24.98			- 1		23.9		0.107	
ARM			0.029		- 0		5.5	_		
MMI	0.00	24.30	J.2/1	_	- 0	5 0.4	٠.٠	_	0.030	
TIM		CAPACITY			RIAN ST			GEOMETRIC DELAY		
	(VEH/MIN)	(VEH/MIN)			~ -	~ ~ .			PER ARRIVING	
			(RFC)	(PEDS/	MIN) (VE	S) (VEHS	) TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	
17.3	0-17.45									
ARM	A 9.23	18.13	0.509		- 1	0 1.0	15.4	-	0.112	
ARM	B 0.51	12.20	0.042		- 0	0.0	0.7	-	0.086	
ARM	C 15.71	24.98	0.629		- 1	7 1.7	25.1	-	0.108	
ARM			0.271		- 0	4 0.4	5.6	-	0.056	

I I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
Т.	17.45-1	8.00										_ T
	ARM A	7.54	18.77	0.402	_		1.0	0.7	10.5	_	0.089	I
I	ARM B	0.42	13.64	0.031	-		0.0	0.0	0.5	-	0.076	I
I	ARM C	12.83	25.04	0.512	-		1.7	1.1	16.4	-	0.082	I
I	ARM D	5.44	25.54	0.213	-		0.4	0.3	4.1	-	0.050	I
I												I
	TTME	DEMAND	CADACTEV	DEMAND /		DEDECTRIAN	CULVED	EMID	DELYA	CROMPEDIC DELAY	AMEDACE DELAY	-
I	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I I	TIME											I
I I -		(VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
	18.00-1	(VEH/MIN) 8.15	(VEH/MIN)	CAPACITY (RFC)		FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I I - I
I	18.00-1 ARM A	(VEH/MIN) 8.15 6.31	(VEH/MIN)	CAPACITY (RFC)	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I - I I
I	18.00-1 ARM A ARM B	(VEH/MIN) 8.15 6.31 0.35	(VEH/MIN) 19.23 14.70	CAPACITY (RFC) 0.328 0.024	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 7.5 0.4	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.078 0.070	I - I I
I I	18.00-1 ARM A ARM B ARM C	(VEH/MIN)  8.15  6.31 0.35 10.74	19.23 14.70 25.07	CAPACITY (RFC) 0.328 0.024 0.428	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS) 0.5 0.0 0.8	(VEH.MIN/ TIME SEGMENT) 7.5 0.4 11.6	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.078 0.070 0.070	I I I I I
I I	18.00-1 ARM A ARM B	(VEH/MIN) 8.15 6.31 0.35	(VEH/MIN) 19.23 14.70	CAPACITY (RFC) 0.328 0.024	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 7.5 0.4	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.078 0.070	I - I I
I I	18.00-1 ARM A ARM B ARM C ARM D	(VEH/MIN)  8.15  6.31 0.35 10.74	19.23 14.70 25.07	CAPACITY (RFC) 0.328 0.024 0.428		FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS) 0.5 0.0 0.8	(VEH.MIN/ TIME SEGMENT) 7.5 0.4 11.6	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.078 0.070 0.070	I I I I I

# .QUEUE AT ARM A

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.5	
17.15	0.7	*
17.30	1.0	*
17.45	1.0	*
18.00	0.7	*
18.15	0.5	

# .QUEUE AT ARM B

TIME	SEGMENT	NO.	. OF
ENDI	ING	VE	HICLES
		IN	QUEUE
17.0	0.0		0.0
17.1	L5		0.0
17.3	30		0.0
17.4	15		0.0
18.0	0.0		0.0
18.1	L5		0.0

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.7	*
17.15	1.0	*
17.30	1.7	**
17.45	1.7	**
18.00	1.1	*
18.15	0.8	*

# .QUEUE AT ARM D

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
17.00 17.15 17.30 17.45 18.00 18.15	0.2 0.3 0.4 0.4 0.3

## .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

														T75
I	ARM	I	TOTAL	DEMAND	I	* QU:	EUEING	*	I	* INCLUSI	VE (	QUEUEING *	I	
I		I			Ι	* D	ELAY *		I	*	DEL	AY *	I	
I		I-											I	
I		I	(VEH)	(VEH/H)	I	(MIN)	(MIN/	VEH)	Ι	(MIN)		(MIN/VEH)	I	
I	A	I	692.3	I 461.6	I	65.0	I 0.	09	I	65.0	I	0.09	I	

Ι	В	Ι	38.5	Ι	25.7	Ι	3.0	I	0.08	I	3.0	I	0.08	I
Ι	C	Ι	1178.2	Ι	785.5	Ι	103.0	I	0.09	I	103.1	I	0.09	I
I	D	I	499.6	Ι	333.1	I	25.4	I	0.05	I	25.4	I	0.05	I
I	ALL	Ι	2408.7	Ι	1605.8	Ι	196.5	Ι	0.08	I	196.5	I	0.08	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

\_\_ARCADY 6 \_\_

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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RG40 3GA,UK

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Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Warren-Bypass\" Warren-Bypass pm.vai" (drive-on-the-left ) at 15:24:41 on Thursday, 11 June 2009

# .FILE PROPERTIES

RUN TITLE: Proposed Warren Lane/Taylor Wimpey site/Western Bypass roundabout weekday pm pk

LOCATION: Stanway DATE: 27/05/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS:

DESCRIPTION:

.INPUT DATA

ARM A - Warren Lane (north) ARM B - Taylor Wimpey site ARM C - Warren Lane (south)

ARM D - Western Bypass

.GEOMETRIC DATA

																	<ul><li>T5</li></ul>
I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM	ΑI	3.50	I	6.75	I	13.00	I	10.00	I	40.00	I	35.0	I	0.582	I	25.018	I
I ARM	вІ	3.65	I	5.00	I	10.00	I	10.00	I	40.00	Ι	54.0	I	0.504	I	20.128	I
I ARM	CI	3.50	I	7.00	I	12.00	I	20.00	I	40.00	I	35.0	I	0.613	I	26.352	I
I ARM	DΙ	3.65	I	7.50	I	15.00	I	26.00	I	40.00	I	19.0	I	0.683	I	30.547	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

### .SCALING FACTORS

IARM I FLOW SCALE(%) I I 100 TR 100 Т Ι 100 ID I 100 I

TIME PERIOD BEGINS (16.45) AND ENDS (18.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Dev't Case weekday pm peak

													- 113
I	I	NUMBER OF	MINUT	ES FROM	ST	ART WHEN	Ι	RATE	OI	FLOW (	VE	H/MIN)	I
I ARM	I	FLOW STARTS	I TO	OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER	I
I	I		I		Ι		Ι		Ι		Ι		I
I	I	TO RISE	I IS	REACHED	Ι	FALLING	Ι	PEAK	Ι	OF PEAK	Ι	PEAK	I
I ARM	ΑI	15.00	I	45.00	Ι	75.00	Ι	6.29	Ι	9.43	Ι	6.29	I
I ARM	ΒΙ	15.00	I	45.00	I	75.00	I	0.35	I	0.52	I	0.35	I
I ARM	CI	15.00	I	45.00	I	75.00	I	11.46	I	17.19	I	11.46	I
I ARM	DΙ	15.00	I	45.00	Ι	75.00	Ι	6.07	Ι	9.11	Ι	6.07	I

DEMAND SET TITLE: 2023 Dev't Case weekday pm peak

DEMAND SET TITLE:	2023 Dev't Case weekday pm peak	m2
I I I	I TURNING PROPORTIONS I TURNING COUNTS I (PERCENTAGE OF H.V.S)	I I I
I TIME	I FROM/TO I ARM A I ARM B I ARM C I AF	RM D I
I 16.45 - 18.15	I I I I	I
I	I ARM A I 0.000 I 0.082 I 0.918 I 0.	.000 I
I	I I 0.0 I 41.0 I 462.0 I	0.0 I
I	I ( 0.0)I ( 0.0)I ( 17.0)I (	0.0)I
I	I I I I	
I	I ARM B I 0.036 I 0.000 I 0.036 I 0.	
I	I I 1.0 I 0.0 I 1.0 I 2	
I	I ( 0.0)I ( 0.0)I ( 0.0)I (	
I	I I I I I	
I	I ARM C I 0.437 I 0.012 I 0.000 I 0.	
I	I I 401.0 I 11.0 I 0.0 I 50	
I	I I ( 8.0)I ( 0.0)I ( 0.0)I (	
I	I I I I I I I I I I I I I I I I I I I	
T T	I ARM DI 0.000 I 0.107 I 0.893 I 0.	
T T	I I ( 0.0)I ( 0.0)I ( 2.0)I (	
± T	T T T T T	U.U/I

# QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

I TIME	DEMAND	CAPACITY	DEMAND/			END			AVERAGE DELAY	
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
-										-
I 16.45-	17.00									Ι
I ARM A	6.31	18.45	0.342		0.0	0.5	7.5	-	0.082	Ι
I ARM B	0.35	13.94	0.025		0.0	0.0	0.4	-	0.074	Ι
I ARM C	11.51	25.13	0.458		0.0	0.8	12.2	-	0.073	I
I ARM D	6.10	26.28	0.232		0.0	0.3	4.4	-	0.049	Ι
I										Ι
I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
[			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-										-
I 17.00-										Ι
I ARM A	7.54	17.83	0.423		0.5	0.7	10.6	-	0.097	Ι
I ARM B	0.42	12.72	0.033		0.0	0.0	0.5	-	0.081	Ι
I ARM C	13.74	25.09	0.548		0.8	1.2	17.4	-	0.088	Ι
I ARM D	7.28	25.54	0.285		0.3	0.4	5.9	-	0.055	Ι
[ 										_ I
I TIME		CAPACITY				END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
I	(VEH/MIN)	(VEH/MIN)		FLOW	~ .	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-										-
I 17.15-										Ι
I ARM A	9.23	16.97	0.544		0.7		16.9	-	0.128	Ι
I ARM B		11.06			0.0	0.0	0.7	-	0.095	Ι
I ARM C	16.83	25.04			1.2	2.0	28.6	-	0.120	I
I ARM D	8.92	24.54	0.363		0.4	0.6	8.3	-	0.064	_
I 										I 
	DEMAND		DEMAND /				DEL 3V	GEOMETRIA DELL'		
I TIME				PEDESTRIAN		END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
I I	(VEH/MIN)	(VEH/MIN)		FLOW		QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
_			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	IIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	_
	17.45									Ι
		16.97	0.544		1.2		17.7	-	0.129	Ι
	9.23				0.0	0.0	0.7	-	0.095	Ι
I ARM A	9.23 0.51	11.04	0.047							
I 17.30- I ARM A I ARM B I ARM C	0.51 16.83	25.03			2.0	2.0	30.2	-	0.122	Ι
I ARM A I ARM B	0.51 16.83				2.0 0.6		30.2 8.5	-	0.122 0.064	I

I TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	Ι
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
-											_
I 17.45-	-18.00										Ι
I ARM A	7.54	17.82	0.423	-		1.2	0.7	11.5	-	0.098	Ι
I ARM B	0.42	12.69	0.033	-		0.0	0.0	0.5	-	0.081	Ι
I ARM C	13.74	25.09	0.548	-		2.0	1.2	19.1	_	0.089	Ι
I ARM D	7.28	25.52	0.285	-		0.6	0.4	6.1	_	0.055	Ι
I											Ι
											-
											-
I TIME	DEMAND	CAPACITY			PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/					DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING	
			DEMAND/		PEDESTRIAN	START	END				I
I			DEMAND/ CAPACITY		PEDESTRIAN FLOW	START QUEUE	END QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I	(VEH/MIN)		DEMAND/ CAPACITY		PEDESTRIAN FLOW	START QUEUE	END QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I I	(VEH/MIN)		DEMAND/ CAPACITY		PEDESTRIAN FLOW	START QUEUE	END QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I I - I 18.00-	(VEH/MIN)	(VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I I - I
I I - I 18.00- I ARM A	(VEH/MIN) -18.15 6.31	(VEH/MIN)	DEMAND/ CAPACITY (RFC)	_	PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I - I
I I - I 18.00- I ARM A I ARM B	(VEH/MIN) -18.15 6.31 0.35	(VEH/MIN)  18.44 13.90	DEMAND/ CAPACITY (RFC) 0.342 0.025		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 8.1 0.4	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.083 0.074	I I I I
I I - I 18.00- I ARM A I ARM B I ARM C	(VEH/MIN) -18.15 6.31 0.35 11.51	(VEH/MIN)  18.44 13.90 25.13	DEMAND/ CAPACITY (RFC) 0.342 0.025 0.458		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 8.1 0.4 13.1	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.083 0.074 0.074	I - I I I

# .QUEUE AT ARM A

TIME SEGI	TNEN	NO.	OF	
ENDING		VEH	ICLES	
		IN	QUEUE	
17.00			0.5	*
17.15			0.7	*
17.30			1.2	*
17.45			1.2	*
18.00			0.7	*
18.15			0.5	*

# .QUEUE AT ARM B

TIME	SEGMENT	NO.	. OF
END	ING	VE	HICLES
		IN	QUEUE
17.0	0.0		0.0
17.1	L5		0.0
17.3	30		0.0
17.4	15		0.0
18.0	0.0		0.0
18.1	L5		0.0

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	0.8	*
17.15	1.2	*
17.30	2.0	* *
17.45	2.0	**
18.00	1.2	*
18.15	0.9	*

# .QUEUE AT ARM D

TIME	SEGMENT	NO.	. OF	
ENDI	NG	VEF	HICLES	
		IN	QUEUE	
17.0	0		0.3	
17.1	.5		0.4	
17.3	0		0.6	*
17.4	5		0.6	4
18.0	0		0.4	
18.1	.5		0.3	

## .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

															T75
I	ARM	I	TOTAL	DEMAND	Ι	* QUE	UEING	*	Ι	*	INCLUSI	VE	QUEUEING *	I	
I		I			Ι	* DEI	LAY *		Ι		*	DEI	AY *	I	
I		I-												I	
I		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/	VEH)	Ι		(MIN)		(MIN/VEH)	Ι	
I	A	I	692.3	I 461.6	Ι	72.1 I	0.	10	Ι		72.1	I	0.10	I	

Ι	В	Ι	38.5	Ι	25.7	Ι	3.2	Ι	0.08	I	3.2	I	0.08	Ι
Ι	C	Ι	1262.2	Ι	841.5	Ι	120.6	Ι	0.10	I	120.6	I	0.10	Ι
I	D	Ι	668.9	Ι	446.0	I	37.9	I	0.06	I	37.9	I	0.06	Ι
I	ALL	I	2662.0	Ι	1774.7	Ι	233.9	Ι	0.09	I	233.9	I	0.09	Ι

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

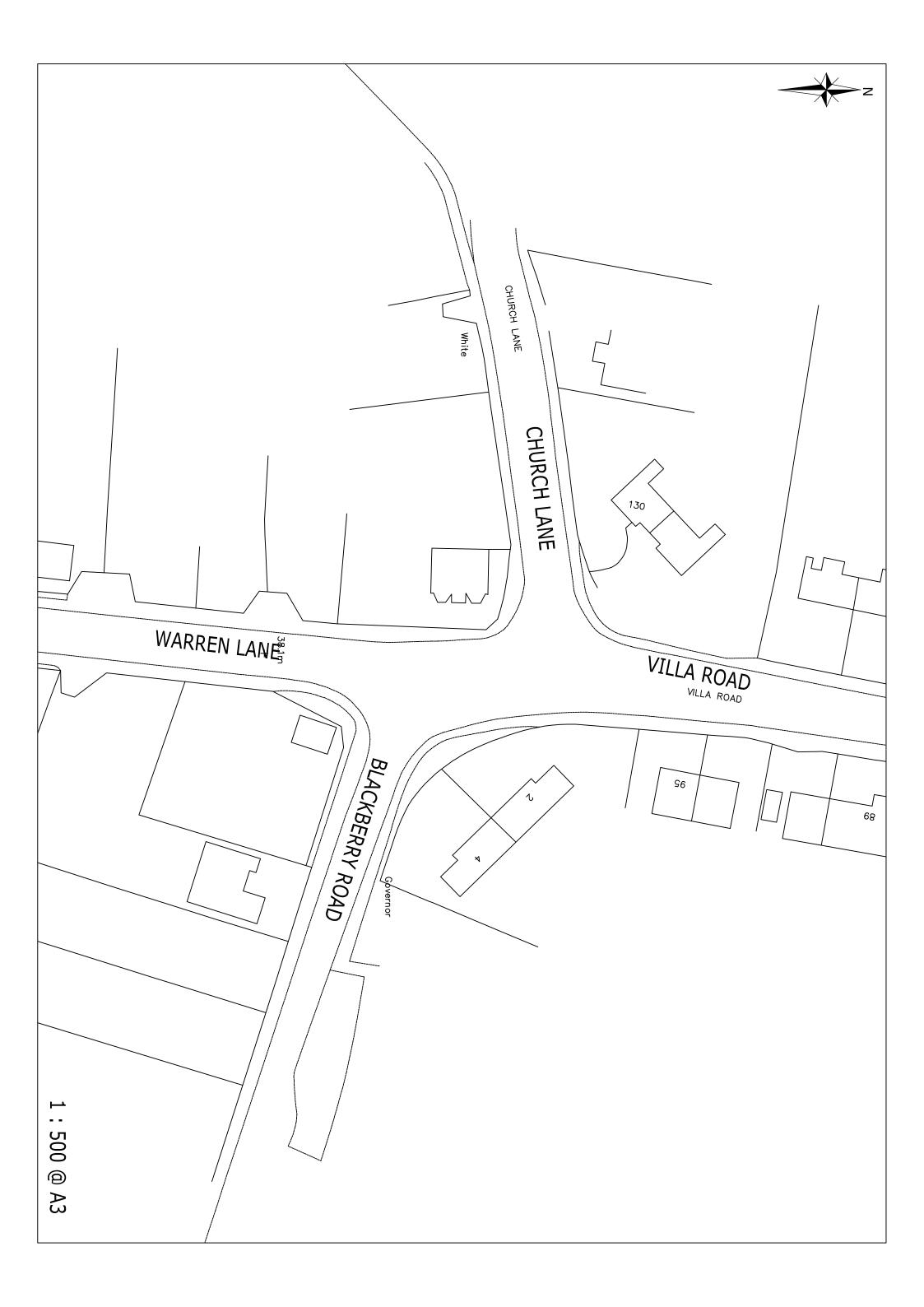
  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

END OF JOB

# Appendix K

Results of ARCADY capacity assessment: Warren Lane/Blackberry Road mini roundabout



\_ ARCADY 6 \_\_

### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS

IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

#### Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\" Double Minis on Warren Lane\Blackberry Road Warren Lane\Blackberry Road Warren Lane am.vai" (drive-on-the-left ) at 11:43:38 on Friday, 12 June 2009

## .FILE PROPERTIES

RUN TITLE: Blackberry Road / Warren Lane mini roundabout weekday am peak

LOCATION: Stanway, Essex DATE: 28/05/09 CLIENT: Hills Residential ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960 STATUS:

DESCRIPTION: .INPUT DATA

ARM A - Warren Lane (north) ARM B - Blackberry Road (east)
ARM C - Warren Lane (south)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL ROAD SURFACE CONDITION: NORMAL

I ARM I I I	V (M)	I	E (M)	I	Lm(M)	I	Vm(M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A I I ARM B I I ARM C I	2.88	I	3.13	I	0.60	I	2.88	I	14.05	I	11.28	I	0.00	I	0.511	I	17.571 9.721 14.034	I

V = approach half-width Lm = effective flare length A = distance between arms K= entry corner kerb line Vm = minimum approach half-width E = entry width G=gradient over 50 m

### .TRAFFIC DEMAND DATA

Only sets included in the current run are shown

### .SCALING FACTORS

IARM I FLOW SCALE(%) I I A I 100 T B 100 I C Ι 100

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) LENGTH OF TIME PERIOD - ( 90) MINUTES
LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Base Case weekday am peak

																					113
Ι			Ι	NUI	MBER OF	M.	INUTI	ES F	ROM S	STA	ART WE	IEN	Ι	RATE	OF	FI	JOW (	VE	H/MIN)	Ι	
Ι	ARM		Ι	FLOW	STARTS	Ι	TOP	OF	PEAK	Ι	FLOW	STOPS	Ι	BEFORE	Ι	AΤ	TOP	Ι	AFTER	Ι	
Ι			I			Ι				I			Ι		Ι			I		Ι	
I			Ι	TO	RISE	I	IS	REA	CHED	I	FALLI	ING	I	PEAK	Ι	OF	PEAK	I	PEAK	I	
I	ARM	Α	I		15.00	I		45.	00	Ι	75	5.00	I	11.02	Ι	16	.54	I	11.02	I	
Ι	ARM	В	Ι	:	15.00	Ι		45.	00	I	75	5.00	Ι	5.63	Ι	8	3.44	Ι	5.63	Ι	
Ι	ARM	C	Ι	:	15.00	Ι		45.	00	I	75	5.00	Ι	5.46	Ι	8	3.19	Ι	5.46	Ι	

DEMAND	PFI	TTT	LE.	2023	Base	case	week	.uay	alli	pear	K.			
												 	- 5	T3
Т				т		TUF	RNTNG	PRO	POF	TTO	VS.	-	Т	

									T'3:
I		I			T	JRNING PRO	OPORTIONS	I	
I		I			Τī	JRNING COU	JNTS	I	
I		I			(PI	ERCENTAGE	OF H.V.S	) I	
Ι									
I	TIME	I	FROM/	то	Ι	ARM A I	ARM B I	ARM C I	
	07.45 - 09.15	I			I	I	I	I	
I		I	ARM	Α	Ι	0.000 I	0.477 I	0.523 I	
I		I			I	0.0 I	421.0 I	461.0 I	
I		I			I	( 0.0)I	( 4.0)I	( 16.0)I	
Ι		I			Ι	I	I	I	
Ι		I	ARM	В	Ι	0.964 I	0.000 I	0.036 I	
Ι		I			Ι	434.0 I	0.0 I	16.0 I	
I		I			I	( 4.0)I	( 0.0)I	( 17.0)I	
I		I			I	I	I	I	
I		I	ARM	C	I	0.970 I	0.030 I	0.000 I	
I		I			I	424.0 I	13.0 I	0.0 I	
I		I			Ι	( 8.0)I	( 0.0)I	( 0.0)I	
I		I			Ι	I	I	I	

# . QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

: [	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
. n'	7.45-0	9 nn										- I
		11.07	15.84	0.699	_		0.0	2.2	30.3	_	0.198	I
	RM B			0.930	_		0.0	6.2	30.3 66.0	-	0.946	I
[ A]	RM C	5.48	9.72	0.564	-		0.0		17.3	-	0.227	Ι
Ε												Ι
	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	I
Ε		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	
		0 15										-
	8.00-0		15 00	0 025			2 2	4 5	FO 0			I
									59.0	-		I
	RM C	6.74 6.55		0.680				27.1	253.2 27.8	_		I
L AI	KPI C	0.35	9.03	0.000	-		1.3	2.0	21.0	-	0.313	T
	TIME	(VEH/MIN)				PEDESTRIAN		END	DELAY (VEH.MIN/		AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)				QUEUE		TIME SEGMENT)		PER ARRIVING VEHICLE (MIN)	
				(RFC)		(PEDS/MIN)	(VERS)	(VEDS)	IIME SEGMENI)		AFUICUE (MIN)	_
0	8.15-0	8.30										I
[ Al	RM A	16.18						19.2	192.9	-	1.007	Ι
[ Al	RM B	8.26	4.80	1.721	-		27.1	79.1	796.3	-		Ι
	RM C	8.02	9.99	0.803	-		2.0	3.6	47.3	-	0.459	Ι
												_ I
	TIME					PEDESTRIAN		END	DELAY		AVERAGE DELAY	Ι
		(VEH/MIN)	(VEH/MIN)			FLOW			(VEH.MIN/		PER ARRIVING	
Ε				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
- 0		0.45										-
	8.30-0		15 70	1 005			10 0	28.8	262.4		1.740	I
	RM B	16.18 8.26		1.758				132.5	362.4 1586.5	_		T
				0 798						_		I
I A	idi C	0.02	10.03	0.750			3.0	3.7	31.0		0.101	I
	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	I
Ε		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	Ι
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	
- 0:	8.45-0	9.00										- I
			15.82	0.835	_		28.8	6.3	218.4	-	1.084	I
: A1	RM B	13.21 6.74	4.94	1.364	_		132.5	159.5	218.4 2189.6	-		I
	RM C		9.89				3.7	2.1	33.8	-	0.319	Ι
												Т

		CAPACITY	DEMAND/ CAPACITY		START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY I PER ARRIVING I VEHICLE (MIN) I
I ARM B I ARM C I	11.07 5.65 5.48	5.95 9.28	0.949 0.591		159.5 2.1	155.5	2362.3 23.9	- - -	0.233 I 26.640 I 0.269 I
.QUEUE AT ARM									
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE								
08.00 08.15 08.30 08.45 09.00 09.15	19.2 28.8	**** ****** *****	*****	****	*				
.QUEUE AT ARM									
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE								
08.00 08.15 08.30 08.45 09.00 09.15	27.1 79.1 132.5 159.5	******	******	* * * * * * * * * * * * * * * * * * *	****** ****	* * * * * * * * * * * * * * * * * * *	******	************* ************* ********	******
.QUEUE AT ARM									
TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE								
08.00 08.15 08.30 08.45 09.00		** *** *** **							

### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I ARM I TOTAL DEMAND I \* QUEUEING \* I \* INCLUSIVE QUEUEING \* I
I I \* DELAY \* I \* DELAY \* I
I I------I I I (VEH) (VEH/H) I (MIN) (MIN/VEH) I (MIN) (MIN/VEH) I

I A I 1214.0 I 809.3 I 904.1 I 0.74 I 904.3 I 0.74 I

I B I 619.4 I 412.9 I 7253.9 I 11.71 I 9286.1 I 14.99 I

C I 601.5 I 401.0 I 204.8 I 0.34 I 205.0 I 0.34 I

I ALL I 2434.9 I 1623.3 I 8362.8 I 3.43 I 10395.3 I 4.27 I

END OF JOB

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_\_\_\_\_ A R C A D Y 6 \_\_\_\_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

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#### Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\
Double Minis on Warren Lane\Blackberry Road Warren Lane\Blackberry Road Warren Lane am.vai"
(drive-on-the-left ) at 11:44:46 on Friday, 12 June 2009

## .FILE PROPERTIES

RUN TITLE: Blackberry Road / Warren Lane mini roundabout weekday am peak

LOCATION: Stanway, Essex
DATE: 28/05/09
CLIENT: Hills Residential
ENUMERATOR: ramey [ARDENT18]

ENUMERATOR: ramey [ARDENT18]
JOB NUMBER: F960
STATUS:

DESCRIPTION:
.INPUT DATA

ARM A - Warren Lane (north) ARM B - Blackberry Road (east) ARM C - Warren Lane (south)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL ROAD SURFACE CONDITION: NORMAL

Lm(M) I I SLOPE I INTERCEPT I I ARM I V (M) I E (M) I  $\label{eq:continuous} \operatorname{Vm}\left(\,\mathsf{M}\,\right) \quad \ \mathsf{I} \qquad \ \mathsf{A} \quad \left(\,\mathsf{M}\,\right) \qquad \mathsf{I} \qquad \quad \mathsf{K} \quad \left(\,\mathsf{M}\,\right) \quad \ \mathsf{I} \qquad \ \mathsf{G} \quad \left(\,\$\,\right)$ I 6.02 I I 3.13 I I 3.01 I I 12.60 I 14.05 I 18.47 5.46 5.46 I 11.28 I 17.63 I 0.511 I 0.681 I ARM B I 2.88 0.60 2.88 0.00 9.721 I ARM C I 3.54 0.00 3.01 0.00 14.034

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

TI IARM I FLOW SCALE(%) I

I A I 100 I
I B I 100 I
I C I 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)
.LENGTH OF TIME PERIOD -( 90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

													- 11	J
I	I	NUMBER OF	MINUT	ES FROM	STA	RT WHEN	Ι	RATE	OI	FLOW (	ÆΕ	H/MIN)	I	
I ARM	ΙI	FLOW STARTS	I TOP	OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER	I	
I	I		I		I		I		Ι		I		I	
I	I	TO RISE	I IS	REACHED	I	FALLING	I	PEAK	Ι	OF PEAK	I	PEAK	I	
													-	
I ARM	ΑI	15.00	I	45.00	Ι	75.00	Ι	11.57	Ι	17.36	Ι	11.57	I	
I ARM	ΒI	15.00	I	45.00	Ι	75.00	Ι	5.65	Ι	8.48	Ι	5.65	I	
I ARM	CI	15.00	I	45.00	Ι	75.00	Ι	5.46	Ι	8.19	Ι	5.46	I	

DEMAND SET TITLE:	2023 Dev't case weekday am peak	22
	I TURNING PROPORTIONS I	33
I	I TURNING COUNTS I	
I	I (PERCENTAGE OF H.V.S) I	
I		
I TIME	I FROM/TO I ARM A I ARM B I ARM C I	
	I I I I	
I	I ARM A I 0.000 I 0.502 I 0.498 I	
I	I I 0.0 I 465.0 I 461.0 I	
I	I I ( 0.0)I ( 3.0)I ( 16.0)I	
I	I I I I	
I	I ARM B I 0.965 I 0.000 I 0.035 I	
I	I I 436.0 I 0.0 I 16.0 I	
I	I I ( 4.0)I ( 0.0)I ( 17.0)I	
I	I I I I	
I	I ARM C I 0.970 I 0.030 I 0.000 I	
I	I I 424.0 I 13.0 I 0.0 I	
I	I ( 8.0)I ( 0.0)I ( 0.0)I	
I	I I I I I	

## . QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

TIME	DEMAND	CAPACITY	DEMAND/	 F	EDESTRIAN	START	END	DELAY		AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING
			(RFC)	(	PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)
07.45-0	08.00									
ARM A	11.62	15.96	0.728		-	0.0	2.5	34.3	-	0.214
ARM B	11.62 5.67	6.07	0.934		-	0.0	2.5 6.4	67.0	-	0.959
ARM C	5.48	9.71	0.565		-	0.0	1.3	17.3	-	0.228
TIME	DEMAND	CAPACITY	DEMAND/	 F	EDESTRIAN	START	END	DELAY		AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING
						(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)
08.00-0	08.15									
ARM A	13.87	15.94	0.871		-	2.5	5.6	71.6	-	0.407
	6.77 6.55						27.4	71.6 256.6	-	3.657
ARM C	6.55	9.62	0.681			1.3	2.0	27.8	-	0.316
TIME		CAPACITY			EDESTRIAN		END	DELAY (VEH.MIN/		AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)								PER ARRIVING VEHICLE (MIN)
			(RFC)	(	PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)
08.15-0										
	16.99							259.3	-	1.290
ARM B ARM C	8.29 8.02		1.687		-	27.4	78.2	792.4 48.5	-	11.147 0.472
ARM C	0.02	9.91	0.609		_	2.0	3.7	40.5	-	0.472
TIME					PEDESTRIAN	START	END	DELAY		AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING
			(RFC)	(	PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)
08.30-0										
										2.479
		15.91				27.3		544.3	-	
ARM B	8.29	4.84	1.713		-	78.2	130.0	1561.3	-	21.782
ARM B ARM C		4.84	1.713		-	78.2	130.0	1561.3	- - -	
ARM B ARM C	8.29	4.84	1.713		-	78.2	130.0	1561.3	- -	21.782
ARM B ARM C	8.29 8.02  DEMAND	4.84 9.95 CAPACITY	1.713 0.806 	  F	e e e e e e e e e e e e e e e e e e e	78.2 3.7 START	130.0 3.9 	1561.3 56.8 		21.782 0.506
ARM B ARM C	8.29 8.02	4.84 9.95 CAPACITY	1.713 0.806 	  F	EDESTRIAN	78.2 3.7 START QUEUE	130.0 3.9  END QUEUE	1561.3 56.8		21.782
ARM B ARM C	8.29 8.02 DEMAND (VEH/MIN)	4.84 9.95 CAPACITY	1.713 0.806 	  F	EDESTRIAN	78.2 3.7 START QUEUE	130.0 3.9  END QUEUE	1561.3 56.8  DELAY (VEH.MIN/		21.782 0.506 
ARM B ARM C TIME	8.29 8.02 DEMAND (VEH/MIN)	4.84 9.95 CAPACITY (VEH/MIN)	1.713 0.806 DEMAND/ CAPACITY (RFC)	  F	PEDESTRIAN FLOW PEDS/MIN)	78.2 3.7 START QUEUE (VEHS)	130.0 3.9  END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)		21.782 0.506 AVERAGE DELAY PER ARRIVING VEHICLE (MIN)
ARM B ARM C TIME	8.29 8.02 DEMAND (VEH/MIN)	4.84 9.95 CAPACITY (VEH/MIN)	1.713 0.806 DEMAND/ CAPACITY (RFC)	  F	PEDESTRIAN FLOW PEDS/MIN)	78.2 3.7 START QUEUE (VEHS)	130.0 3.9 END QUEUE (VEHS)	1561.3 56.8 		21.782 0.506 AVERAGE DELAY PER ARRIVING VEHICLE (MIN) 2.146
ARM B ARM C TIME  08.45-0 ARM A ARM B	8.29 8.02 DEMAND (VEH/MIN)	4.84 9.95 CAPACITY (VEH/MIN)	1.713 0.806 DEMAND/ CAPACITY (RFC) 0.871 1.381	F	PEDESTRIAN FLOW PEDS/MIN)	78.2 3.7 START QUEUE (VEHS) 45.1 130.0	130.0 3.9 END QUEUE (VEHS)	1561.3 56.8 		21.782 0.506 AVERAGE DELAY PER ARRIVING VEHICLE (MIN)

I TIME I I	DEMAND (VEH/MIN) (V	CAPACITY	CAPACITY	PEDESTI FLO	RIAN STAR W QUEU	E QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY : PER ARRIVING : VEHICLE (MIN) :
- I 09.00-0	0.15								
I ARM A		15.95	0 729		- 19.4	2 0	83.8	_	0.404
I ARM B	5.67		0.728		- 158.0		2370.0	_	27.841
I ARM C		9.43			- 2.0			_	0.259
I									:
.QUEUE AT									
	MENT NO. OF								
ENDING	VEHICLES IN QUEUE								
08.00	2.5	***							
08.15		*****							
08.30	27.3	*****	*****	*****	***				
08.45	45.1	*****	*****	*****	*****	****	***		
09.00	19.4	*****	*****	***					
09.15	2.9	***							
.QUEUE AT									
	MENT NO. OF								
ENDING	VEHICLES IN QUEUE								
08.00	6.4	*****							
08.15	27.4	*****	*****	*****	***				
08.30								******	
08.45								******	
09.00	158.0	*****	*****	*****	******	*****	******	******	******
09.15	158.0	*****	******	******	*****	*****	******	******	******
.QUEUE AT									
	MENT NO. OF								
ENDING	VEHICLES IN QUEUE								
08.00	1.3	*							
08.15	2.0	**							
08.30		****							
08.45	3.9	****							
09.00	2.0								
09.15	1.4	*							

### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I ARM I TOTAL DEMAND I \* QUEUEING \* I \* INCLUSIVE QUEUEING \* I
I I \* DELAY \* I \* DELAY \* I
I I------I I I (VEH) (VEH/H) I (MIN) (MIN/VEH) I (MIN) (MIN/VEH) I

I A I 1274.6 I 849.7 I 1476.9 I 1.16 I 1477.1 I 1.16 I

I B I 622.1 I 414.8 I 7207.1 I 11.58 I 9391.1 I 15.09 I

C I 601.5 I 401.0 I 207.0 I 0.34 I 207.1 I 0.34 I I ALL I 2498.2 I 1665.5 I 8891.0 I 3.56 I 11075.4 I 4.43 I

END OF JOB

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

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\_\_\_\_\_ A R C A D Y 6 \_\_\_\_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

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#### Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\
Double Minis on Warren Lane\Blackberry Road Warren Lane\Blackberry Road Warren Lane pm.vai"
(drive-on-the-left ) at 09:42:34 on Friday, 12 June 2009

## .FILE PROPERTIES

RUN TITLE: Blackberry Road / Warren Lane mini roundabout weekday pm peak

LOCATION: Stanway, Essex
DATE: 28/05/09
CLIENT: Hills Residential
ENUMERATOR: ramey [ARDENT18]

ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960

STATUS:

DESCRIPTION:
.INPUT DATA

ARM A - Warren Lane (north) ARM B - Blackberry Road (east) ARM C - Warren Lane (south)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL ROAD SURFACE CONDITION: NORMAI

Lm(M) I I SLOPE I INTERCEPT I I ARM I V (M) I E (M) I Vm(M) I A (M) I K (M) I G (%) I 6.02 I I 3.13 I I 3.01 I I 12.60 I 14.05 I 18.47 I ARM A I 5.46 5.46 I 11.28 I 17.63 I 0.511 I 0.681 I ARM B I 2.88 0.60 2.88 0.00 9.721 I ARM C I 3.54 0.00 3.01 0.00 14.034

### .TRAFFIC DEMAND DATA

Only sets included in the current run are shown

### .SCALING FACTORS

TI A I 100 I I B I 100 I C I 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15). LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Base Case weekday pm peak

I		I	NUI	MBER OF	M.	INUTI	ES FROM	ST	ART WHEN	N I	Ε	RATE	OF	FL	JOW (	VEF	H/MIN)	I	
Ι	ARM	I	FLOW	STARTS	Ι	TOP	OF PEAR	Œ	FLOW ST	TOPS I	I E	BEFORE	Ι	ΑT	TOP	I	AFTER	Ι	
Ι		I			Ι			I		1	Ι		Ι			I		Ι	
Ι		I	TO	RISE	Ι	IS	REACHEI	) I	FALLING	3 I	Ε	PEAK	Ι	OF	PEAK	I	PEAK	Ι	
-																			
Ι	ARM	ΑI	:	15.00	Ι		45.00	I	75.0	00 I	Ι	8.31	Ι	12	.47	I	8.31	Ι	
I	ARM	вІ	:	15.00	I		45.00	I	75.0	00 I	Ι	4.63	Ι	6	.94	I	4.63	I	
I	ARM	CI	:	15.00	I		45.00	I	75.0	00 I	Ι	6.71	Ι	10	.07	I	6.71	I	
_																			

DEM.	AND SET TITLE:	2023							maa
		I					PORTIONS		133
I		I			ΤU	RNING COU	JNTS	I	
I		I		(	PE	RCENTAGE	OF H.V.S	) I	
I									
I	TIME	I	FROM/	TO	Ι	ARM A I	ARM B I	ARM C I	
I	16.45 - 18.15	I			Ι	I	I	I	
I		I	ARM	A	Ι	0.000 I	0.523 I	0.477 I	
I		I			Ι	0.0 I	348.0 I	317.0 I	
I		I			Ι	( 0.0)I	( 2.0)I	( 4.0)I	
I		I			Ι	I	I	I	
I		I	ARM					0.022 I	
I		I			Ι	362.0 I	0.0 I	8.0 I	
I		I			Ι	( 1.0)I	( 0.0)I	( 0.0)I	
I		I			Ι	I	I	I	
Ι		I	ARM				0.028 I		
I		I					15.0 I		

### QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

-											
 I TIME I I		CAPACITY	DEMAND/ CAPACITY	I	PEDESTRIAN FLOW	START QUEUE	END QUEUE			AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I 16.45-	-17 00										I
	8.34	16 95	0 492		_	0.0	1.0	13.7	_	0.114	Ī
	4.64				_			20.2	_	0.323	Ī
T ARM C	6.74	10.67	0.632		_	0.0	1.6	22.4	_		T
I											I
I TIME	DEMAND	CAPACITY	DEMAND/	 E	PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	I
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	Ι
I			(RFC)	(	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
- I 17.00-											I
I ARM A	9.96	16.93	0.589			1.0	1.4	20.1	-	0.143	Ι
I ARM B	5.54	7.14	0.777			1.5	3.0	20.1 39.3 45.4	-	0.558	Ι
I ARM C	8.05	10.08	0.798			1.6	3.5	45.4	-	0.439	Ι
I											Ι
I TIME					PEDESTRIAN		END	DELAY		AVERAGE DELAY	
I	(VEH/MIN)						OUEUE	(VEH.MIN/		PER ARRIVING	I
I			(RFC)	(	(PEDS/MIN)	(VEHS)	(VEHS)	(VEH.MIN/ TIME SEGMENT)		VEHICLE (MIN)	
- I 17.15-	17 20										- I
		16 01	0 722			1 4	2.5	34.5		0.206	T
T MUM D	12.20 6.79	6 59	1 021							1.568	I
I ARM C	9.85	0.50	1.031			3.0	14.5	121.1 147.0			I
I											I
I TIME	DEMAND	CAPACITY	DEMAND/	E	PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	Ι
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	Ι
I			(RFC)	(	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
- I 17.30-	-17 45										- I
	12.20	16.90	0.722		_	2.5	2.5	37.7	_	0.212	Ī
	6.79							224.6	_	2.627	Ī
T ARM C	9.85	9.45	1.043		_	14.6	23.3	285.9	_	2.316	
I										2.320	I
T TIME											
					PEDESTRIAN		END	DELAY		AVERAGE DELAY	
I I	(VEH/MIN)	(VEH/MIN)						(VEH.MIN/ TIME SEGMENT)		PER ARRIVING VEHICLE (MIN)	I
- I 17.45-	-19 00										- I
	9.96	16 91	0 589		_	2.5	1 5	23.2	_	0.147	I
I ARM B	5.50	7 11	0.309				4.5	143.3	_	1.638	I
I ARM C	5.54 8.05	9 43	0.750		. [	23 3	8.5	235 6	_	1.890	I
I	0.03	7.13	3.033			23.3	0.5	233.0		1.000	I

I	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	Ι
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
-												-
I	18.00-18	8.15										I
I	ARM A	8.34	16.94	0.493	-		1.5	1.0	15.3	-	0.117	I
I	ARM B	4.64	7.53	0.617	-		4.5	1.7	29.8	-	0.393	I
I	ARM C	6.74	10.48	0.643	-		8.5	1.9	38.6	-	0.339	I
I												I

# .QUEUE AT ARM A

TIME SEGM	ENT NO. OF
ENDING	VEHICLES
	IN QUEUE
17.00	1.0 *
17.15	1.4 *
17.30	2.5 **
17.45	2.5 **
18.00	1.5 *
18.15	1.0 *

## .QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.5	**
17.15	3.0	***
17.30	11.9	*****
17.45	17.8	*****
18.00	4.5	****
18 15	1 7	**

# .QUEUE AT ARM C

ENDING	VEHICLES IN QUEUE	
17.00	1.6	**
17.15	3.5	***
17.30	14.6	******
17.45	23.3	******
18.00	8.5	******
18.15	1.9	**

### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I I	ARM	I I	TOTAL	DEMAND	I I	* QUE * DE	UEING * LAY *	I	* INCLUSIV	VE QUEUEING *	I I
I		I	(VEH)	(VEH/H)	I	(MIN)			(MIN)	(MIN/VEH)	-
I I I	A B C	I	509.3	I 610.2 I 339.5 I 492.8	I	144.4 I 578.3 I 774.9 I	1.14	I I I	144.5 578.5 775.1	I 1.14	I I I
I	ALL	I	2163.7	I 1442.5	I	1497.6 I	0.69	I	1498.0	I 0.69	I

END OF JOB

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

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\_\_\_\_\_ A R C A D Y 6 \_\_\_\_\_

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RG40 3GA.UK

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"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\
Double Minis on Warren Lane\Blackberry Road Warren Lane\Blackberry Road Warren Lane pm.vai"
(drive-on-the-left ) at 09:42:07 on Friday, 12 June 2009

## .FILE PROPERTIES

RUN TITLE: Blackberry Road / Warren Lane mini roundabout weekday pm peak

LOCATION: Stanway, Essex
DATE: 28/05/09
CLIENT: Hills Residential
ENUMERATOR: ramey [ARDENT18]

ENUMERATOR: ramey [ARDENT18]
JOB NUMBER: F960
STATUS:

DESCRIPTION:
.INPUT DATA

ARM A - Warren Lane (north) ARM B - Blackberry Road (east) ARM C - Warren Lane (south)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL ROAD SURFACE CONDITION: NORMAL

Lm(M) I I SLOPE I INTERCEPT I I ARM I V (M) I E (M) I  $\label{eq:continuous} \operatorname{Vm}\left(\,\mathsf{M}\,\right) \quad \ \mathsf{I} \qquad \ \mathsf{A} \quad \left(\,\mathsf{M}\,\right) \qquad \mathsf{I} \qquad \quad \mathsf{K} \quad \left(\,\mathsf{M}\,\right) \quad \ \mathsf{I} \qquad \ \mathsf{G} \quad \left(\,\$\,\right)$ I 6.02 I I 3.13 I I 3.01 I I 12.60 I 14.05 I 18.47 5.46 5.46 I 11.28 I 17.63 I 0.511 I 0.681 I ARM B I 2.88 0.60 2.88 0.00 9.721 I ARM C I 3.54 0.00 3.01 0.00 14.034

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

TIARM I FLOW SCALE(%) I

TA I 100 I

IB I 100 I

I C I 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15)
.LENGTH OF TIME PERIOD -( 90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

																	11
I	I	NUI	MBER OF	MI	NUTE	S FROM	ST	ART WHE	N	Ι	RATE	OF	FL	OM (	VEE	I/MIN)	I
I ARM	I	FLOW	STARTS	I	TOP	OF PEAK	I	FLOW S	TOPS	Ι	BEFORE	Ι	AΤ	TOP	Ι	AFTER	I
I	I			Ι			Ι			Ι		Ι			I		I
I	I	TO	RISE	I	IS	REACHED	I	FALLIN	G	Ι	PEAK	Ι	OF	PEAK	Ι	PEAK	I
I ARM	ΑI		15.00	Ι		45.00	I	75.	00	Ι	9.52	Ι	14	.29	I	9.52	I
I ARM	вІ		15.00	Ι		45.00	Ι	75.	00	Ι	4.65	Ι	6	.98	Ι	4.65	I
I ARM	CI	:	15.00	Ι		45.00	Ι	75.	00	Ι	6.71	Ι	10	.07	Ι	6.71	I

		I			TIDNITAC DD	OPORTIONS	I	T33
T		T		_	URNING CO			
T		_		_		OF H.V.S	-	
T				(	EKCENTAGE	OF 11.V.5	,	
I	TIME	I	FROM/	TO I	ARM A I	ARM B I	ARM C I	
	16.45 - 18.15	I		I		I	I	
I						0.584 I		
I		I		I	0.0 I	445.0 I	317.0 I	
I		I		I	( 0.0)I	( 2.0)I	( 4.0)I	
I		I		I	I	I	I	
I		I	ARM	вІ	0.978 I	0.000 I	0.022 I	
I		I		I	364.0 I	0.0 I	8.0 I	
I		I		I	( 1.0)I	( 0.0)I	( 0.0)I	
I		I		I	I	I	I	
I		I	ARM	CI	0.972 I	0.028 I	0.000 I	
I		I		I	522.0 I	15.0 I	0.0 I	
I		I		I	( 3.0)I	( 0.0)I	( 0.0)I	
I		I		I	I	I	I	

### QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

 T	TIME		CAPACITY			 PEDESTRIAN		END			AVERAGE DELAY	
I		(VEH/MIN)							(VEH.MIN/		PER ARRIVING	
I		(,,	(,,						TIME SEGMENT)		VEHICLE (MIN)	
				( /		(,	( ,	( /	,		,	_
	16.45-1	7.00										I
	ARM A	9.56	16.97	0.563			0.0	1.3	17.9	_	0.132	I
Ε	ARM B	4.67	7.55	0.618			0.0	1.5	20.5	_	0.325	I
Т	ARM C	6.74	10.65	0.633				1.6	22.4	_	0.243	I
-												I
	TIME		CAPACITY			PEDESTRIAN		END	DELAY		AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
												-
	17.00-1											I
		11.42							28.2	-		I
	ARM B	5.57	7.14	0.781			1.5	3.1	39.9 45.7	-		I
	ARM C	8.05	10.06	0.800			1.6	3.5	45.7	-	0.443	I
												I
	TIME					PEDESTRIAN		END	DELAY		AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I -
	17.15-1											Ι
	ARM A	13.98	16.93	0.826			2.0	4.3	56.4	-	0.308	I
	ARM B	6.83	6.60	1.034			3.1	12.1	123.2	-	1.591	I
	ARM C	9.85	9.57	1.030			3.5	14.7	148.3	-	1.300	I
E 												I 
	TIME					PEDESTRIAN		END	DELAY		AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
	17.30-1	.7.45										I
		13.98								-	0.334	I
	ARM B	6.83	6.57	1.039			12.1	18.5	231.0	-	2.685	I
	ARM C	9.85		1.044				23.6		-	2.335	I
												I
		DEMAND						END			AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	Ι
				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
	10 45 1	0.00										_
	17.45-1										0.400	I
	ARM A	11.42	16.93	0.674	-			2.1		-		Ι
-	ARM B	11.42 5.57 8.05	7.09	0.786	-		18.5	4.8	153.2 242.7	-		Ι
	ARM C	8.05	9.40	0.856	-		23.6	8.9	242.7	-	1.942	Ι
Г												Т

I	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	Ι
I		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
-												-
I	18.00-1	3.15										Ι
I	ARM A	9.56	16.96	0.564	-		2.1	1.3	20.7	-	0.137	Ι
I	ARM B	4.67	7.52	0.621	-		4.8	1.7	30.6	-	0.403	Ι
I	ARM C	6.74	10.45	0.645	-		8.9	1.9	39.7	-	0.348	Ι
I												I

# .QUEUE AT ARM A

TIME	SEGMENT	NO.	. OF	
ENDI	NG	VEF	HICLES	
		IN	QUEUE	
17.0	0		1.3	*
17.1	.5		2.0	* *
17.3	30		4.3	***
17.4	15		4.5	***
18.0	0.0		2.1	* *
18.1	.5		1.3	*

# .QUEUE AT ARM B

Τ.	IME SEGMENT	NO. OF	
	ENDING	VEHICLES	
		IN QUEUE	
	17.00	1.5	**
	17.15	3.1	***
	17.30	12.1	*****
	17.45	18.5	*****
	18.00	4.8	****
	18.15	1.7	**

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	1.6	**
17.15	3.5	***
17.30	14.7	******
17.45	23.6	*******
18.00	8.9	*****
18.15	1.9	**

### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I I	ARM	I I	TOTAL	DEMAND	I I	* QUE * DE	UEING * LAY *	I		QUEUEING * LAY *	I	т75
1		Τ.	(TIDII)	(TIDII (II)					(MIN)	(MIN/VEH)	-	
			(VEH)	(VEH/H)		(MIN)	(MIN/VEH)		(MIN)	(MIN/VEH)		
Ι	A	Ι	1048.8	I 699.2	Ι	224.0 I	0.21	Ι	224.0 I	0.21	I	
Ι	В	Ι	512.0	I 341.4	Ι	598.3 I	1.17	Ι	598.5 I	1.17	I	
Ι	C	I	739.1	I 492.8	Ι	788.0 I	1.07	Ι	788.2 I	1.07	I	
Ι	ALL	Ι	2300.0	I 1533.3	Ι	1610.3 I	0.70	Ι	1610.7 I	0.70	I	

END OF JOB

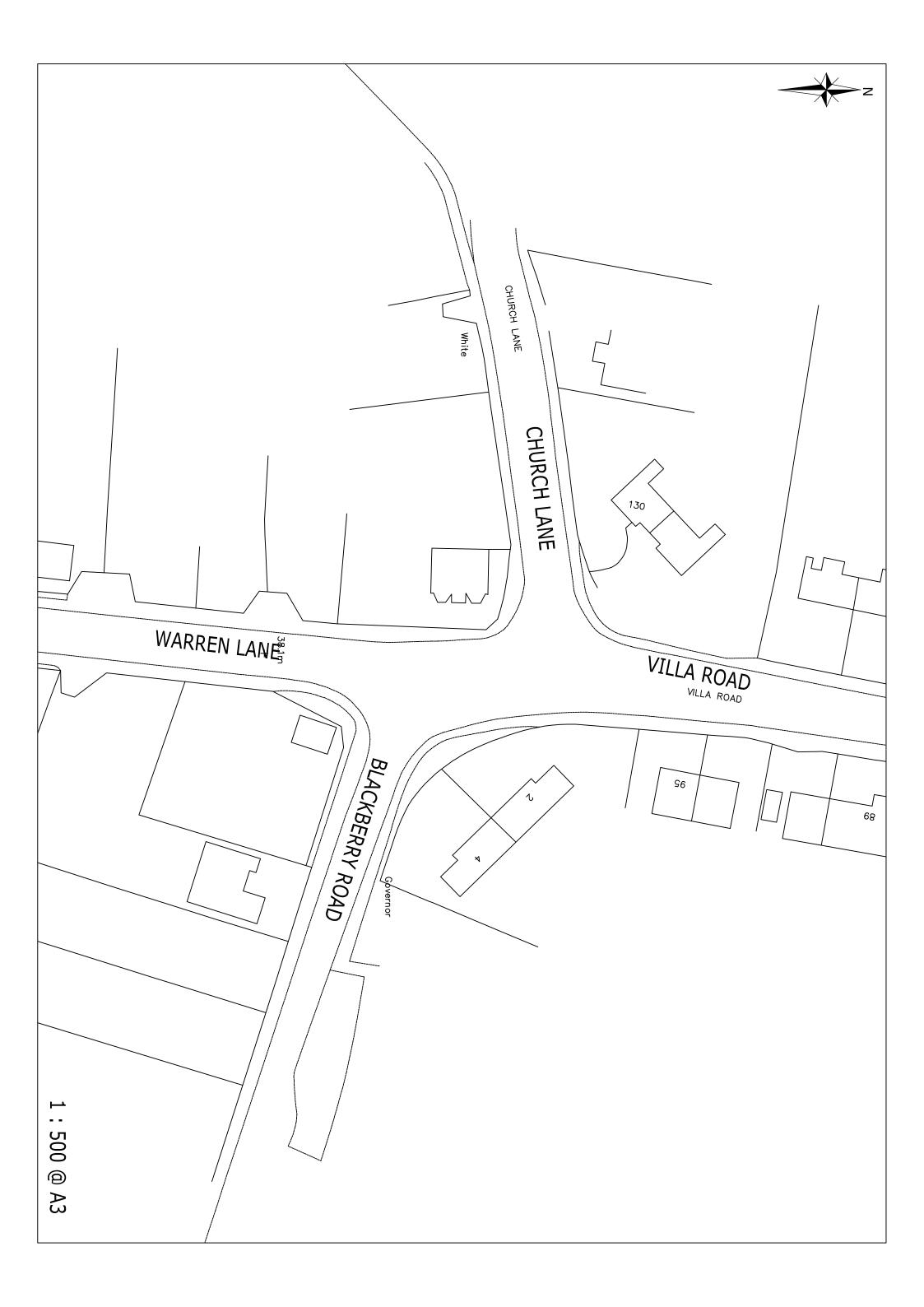
<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

# Appendix L

Results of ARCADY capacity assessment: Villa Road/Church Road mini roundabout



\_\_ARCADY 6 \_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\ Double Minis on Warren Lane\Church Lane Villa Road Mini\Church Lane Villa Road am v2.vai" (drive-on-the-left ) at 11:39:07 on Friday, 12 June 2009

#### .FILE PROPERTIES

RUN TITLE: Church Lane - Villa Road mini roundabout weekday am peak

LOCATION: Stanway, Essex DATE: 28/05/09 CLIENT: Hills Residential ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960 STATUS:

DESCRIPTION:

.INPUT DATA

ARM A - Villa Road (north) ARM B - Warren Lane (south)
ARM C - Church Lane (west)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

I ARM I I I	V (M)	I	E (M)	I	Lm(M)	I	Vm (M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A I I ARM B I I ARM C I	5.40	I	5.87	I	0.50	I	5.40	I	10.64	I	6.34	I	0.00	I	0.630	I	17.234	I

V = approach half-width Lm = effective flare length A = distance between arms K= entry corner kerb line Vm = minimum approach half-width E = entry width G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I I A I 100 T B 100 I C Ι 100

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) LENGTH OF TIME PERIOD - ( 90) MINUTES
LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Base Case weekday am peak

																					113
I			Ι	NUN	MBER OF	M	INUTE	ES F	ROM S	STA	ART WE	IEN	Ι	RATE	OF	FI	) WO	VEF	H/MIN)	Ι	
I	ARM		Ι	FLOW	STARTS	Ι	TOP	OF	PEAK	Ι	FLOW	STOPS	Ι	BEFORE	Ι	ΑT	TOP	Ι	AFTER	Ι	
I			I			Ι				I			Ι		Ι			I		Ι	
I			I	TO	RISE	I	IS	REA	CHED	I	FALLI	NG	I	PEAK	Ι	OF	PEAK	I	PEAK	Ι	
I	ARM	Α	Ι	1	L5.00	Ι		45.	00	Ι	75	00.3	Ι	2.83	Ι	4	.24	I	2.83	Ι	
I	ARM	В	Ι	1	L5.00	Ι		45.	00	Ι	75	00.3	Ι	10.73	Ι	16	.09	I	10.73	Ι	
I	ARM	C	Ι	1	L5.00	Ι		45.	00	Ι	75	5.00	Ι	8.86	Ι	13	.29	Ι	8.86	Ι	

DEMAND SET TITLE: 2023 Base Case weekday am	ı peak	
---	--------	--

DEMAND	SET TITLE:					weekday				
. I		I				RNING PRO				
I		I		- 5	TU.	RNING COU	JNTS			I
I		I		( ]	PΕ	RCENTAGE	OF H.	V.S	)	Ι
I										
I	TIME	I	FROM/	TO :	Ι	ARM A I	ARM I	ВІ	ARM C	Ι
I 07.	.45 - 09.15	I			 I	I		I		I
I		I	ARM	Α :	Ι	0.000 I	0.11	9 I	0.881	Ι
I		I			Ι	0.0 I	27.	0 I	199.0	Ι
I		I			Ι	( 0.0)I	( 5.	D(0	( 4.0	) I
I		I			Ι	I		I		Ι
I		I	ARM	В:	Ι	0.212 I	0.00	0 I	0.788	Ι
I		I			Ι	182.0 I	0.	0 I	676.0	Ι
I		I				( 1.0)I				) I
I		I				I				Ι
I		I	ARM			0.038 I				
I		I				27.0 I				
I		I				( 5.0)I		. ,	( 0.0	) I
I		I			_	I		_		Ι

	DEMAND (VEH/MIN)	CAPACITY	DEMAND/ CAPACITY		PEDESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/		AVERAGE DELAY PER ARRIVING	I
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
-	20.00										-
I 07.45-0	2.84	11 00	0 220			0.0	0.3	4.5		0.110	I
	10.77							34.1			Ť
I ARM C	8.90		1.043				14.0		_		I
I	0.90	0.55	1.043			0.0	11.0	129.0	_	1.103	I
I TIME		CADACITY	DEMAND /		PEDESTRIAN	CTADT	END	DELAY		AVERAGE DELAY	 -
	(VEH/MIN)						QUEUE	(VEH.MIN/		PER ARRIVING	
	(VEII/PILIV)	(VBII/FILM)						TIME SEGMENT)		VEHICLE (MIN)	
08.00-0	08.15										т
T ARM A	3.39	11.62	0.291	_		0.3	0.4	6.0	_	0.121	ī
I ARM B	12.86	14.46	0.889	_					-		Ī
I ARM C	12.86 10.62	8.34	1.274	-		14.0	48.9	77.7 473.1	-		I
I 											I
TIME					PEDESTRIAN			DELAY		AVERAGE DELAY	
	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	OUEUE	(VEH.MIN/		PER ARRIVING	I
			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I -
08.15-0	08.30										I
ARM A	4.15	11.68	0.355	-		0.4	0.5	7.9	-	0.132	I
ARM B	15.74	14.04	1.121	-		6.3	35.0	318.6	-	1.735	I
ARM C	13.01	8.23	1.582	-		48.9	120.7	1271.5	-	10.526	I
TIME					PEDESTRIAN		END	DELAY		AVERAGE DELAY	
	(VEH/MIN)	(VEH/MIN)			FLOW	~ -	~ -	(VEH.MIN/		PER ARRIVING	
			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	-
08.30-0	4.15	11 60	0.255			0 5	0 E	8.2		0.133	I
ARM A		14.04					61.3		_		T
	13.01								_		I
ARM C	13.01	0.21	±.303	_	-		±26.1	2330.1	-	17.210	I
TIME	DEMAND	CAPACITY	DEMAND /		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	
	(VEH/MIN)							(VEH.MIN/		PER ARRIVING	
	( , , , , , , , , , , , , , , , , , , ,	(.211/11214/						TIME SEGMENT)		VEHICLE (MIN)	
08.45-0	09.00										I
		11.71	0.289	_		0.5	0.4	6.3	-	0.120	Ī
ARM B	3.39 12.86	14.45		_			40.9	766.2	-	3.623	Ī
I ARM C	10.62	8.19	1.297	-				3163.9	-	25.795	I
I 											I

I TIME I I	DEMAND (VEH/MIN) (		CAPACITY	FLOW		E QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY I PER ARRIVING I VEHICLE (MIN) I
I 09.00-09	9.15								_ I
I ARM A		11.64	0.244		- 0.4	0.3	5.0	-	0.114 I
I ARM B	10.77	14.75	0.730		- 40.9		244.3	-	1.229 I
I ARM C I	8.90	8.28	1.075		- 229.2	238.5	3507.5	-	28.396 I
.QUEUE AT A	ARM A								
	MENT NO. OF								
ENDING	VEHICLE IN QUEU								
08.00	0.3	3							
08.15	0.4								
08.30	0.5	*							
08.45	0.5	*							
09.00	0.4	ŀ							
09.15	0.3	3							
.QUEUE AT A									
TIME SEGN	MENT NO. OF								
ENDING	VEHICLE IN QUEU								
08.00	2.5	***							
08.15		*****							
08.30					*****				
08.45							******	*	
09.00			*****	******	*****	*****			
09.15	3.1	***							
.QUEUE AT A									
TIME SEGN ENDING	MENT NO. OF VEHICLE								
	IN QUEU	JE							
08.00	14.0	*****	*****						
08.15	48.9			*****	*****	*****	*****		
08.30	120.7	*****					******		
08.45							******		
09.00							******		
09.15	238.5	*****	******	******	******	*****	******	******	******

#### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

I ARM I TOTAL DEMAND I \* QUEUEING \* I \* INCLUSIVE QUEUEING \* I
I I \* DELAY \* I \* DELAY \* I
I I------I I I (VEH) (VEH/H) I (MIN) (MIN/VEH) I (MIN) (MIN/VEH) I

I A I 311.1 I 207.4 I 37.9 I 0.12 I 37.9 I 0.12 I

I B I 1181.0 I 787.3 I 2163.8 I 1.83 I 2164.1 I 1.83 I

C I 975.9 I 650.6 I 10895.8 I 11.17 I 14331.7 I 14.69 I I ALL I 2467.9 I 1645.3 I 13097.5 I 5.31 I 16533.7 I

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_ ARCADY 6 \_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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#### Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\ Double Minis on Warren Lane\Church Lane Villa Road Mini\Church Lane Villa Road am v2.vai" (drive-on-the-left ) at 11:40:00 on Friday, 12 June 2009

### .FILE PROPERTIES

RUN TITLE: Church Lane - Villa Road mini roundabout weekday am peak

LOCATION: Stanway, Essex DATE: 28/05/09 CLIENT: Hills Residential ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960 STATUS:

DESCRIPTION: .INPUT DATA

ARM A - Villa Road (north) ARM B - Warren Lane (south)
ARM C - Church Lane (west)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

I ARM I I I	V (M)	I	E (M)	I	Lm(M)	I	Vm (M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A I I ARM B I I ARM C I	5.40	I	5.87	I	0.50	I	5.40	I	10.64	I	6.34	I	0.00	I	0.630	I	19.127 17.234 12.011	I

V = approach half-width Lm = effective flare length A = distance between arms K= entry corner kerb line Vm = minimum approach half-width E = entry width G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I I A I 100 TR 100 I C 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

													- 113
I	I	NUMBER OF	MINUTE	S FROM S	TAI	RT WHEN	Ι	RATE	OF	FLOW (	/EH	/MIN)	I
I ARM	I	FLOW STARTS	I TOP (	OF PEAK	II	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	I	AFTER	I
I	I		I		I		I		Ι		I		I
I	I	TO RISE	I IS	REACHED	II	FALLING	Ι	PEAK	Ι	OF PEAK	I	PEAK	I
													-
I ARM	ΑI	15.00	Ι .	45.00	I	75.00	I	3.36	Ι	5.04	I	3.36	I
I ARM	вІ	15.00	Ι .	45.00	I	75.00	I	10.76	Ι	16.14	I :	10.76	I
I ARM	CI	15.00	I ·	45.00	I	75.00	Ι	8.89	Ι	13.33	I	8.89	I
													_

I TIME		CAPACITY						DELAY		AVERAGE DELAY	
	(VEH/MIN)							(VEH.MIN/		PER ARRIVING	
[	( V 111/ 11114 )	(VEII/PILIN)						TIME SEGMENT)		VEHICLE (MIN)	
-			(RFC)	,	FEDS/MIN/	(VEIIS)	( VEIIO )	TIME SEGMENT)		VEHICLE (PIIN)	_
07.45-	08.00										I
ARM A	3.38	12.02	0.281		_	0.0	0.4	5.6	-	0.115	Ι
I ARM B	10.80	16.63	0.649		_	0.0	1.8	24.9	-	0.165	Ι
I ARM C	8.92		1.054			0.0	14.9	135.7	-	1.241	Ι
:											I
TIME		CAPACITY					END	DELAY		AVERAGE DELAY	
	(VEH/MIN)	(VEH/MIN)					QUEUE	(VEH.MIN/		PER ARRIVING	
			(RFC)	(	PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
	00 15										-
08.00-		11 70	0 242			0.4	0 5	7.5		0 100	I
ARM A	4.03	11.79	0.342		-	0.4	0.5	7.5	-		Ι
ARM B	12.90 10.65	16.59	0.778		-	1.8	3.3	44.4	-		Ι
	10.65	8.26	1.290		-	14.9	51.3	497.8	-	4.344	Ι
											Ι
TIME		CAPACITY					END	DELAY		AVERAGE DELAY	
								(VEH.MIN/		PER ARRIVING	
	( * 222/ 11224 )	( * 211/11211 )						TIME SEGMENT)		VEHICLE (MIN)	
			(1000)	,	I BDB/ MIN	(VEIID)	(VIIIO)	IIME DEGMENT,		VEHICEE (PIIN)	_
08.15-	08.30										I
ARM A	4.94	11.97	0.413		_	0.5	0.7	10.0	-	0.142	Ι
ARM B	15.80	16.53	0.956		_	3.3	10.8	121.8	-	0.640	Ι
ARM C	13.05	8.01	1.629		_	51.3	127.0	1337.3	-	11.349	Ι
											т
		CAPACITY					END	DELAY		AVERAGE DELAY	  I
	DEMAND (VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I I
			CAPACITY		FLOW	QUEUE	QUEUE				I I
08.30-	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	(	FLOW PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)		PER ARRIVING	I I
08.30-	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)	(	FLOW PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/		PER ARRIVING VEHICLE (MIN)	I I I
[  -   08.30-    ARM A   ARM B	(VEH/MIN) 08.45 4.94 15.80	(VEH/MIN) 11.99 16.53	CAPACITY (RFC) 0.412 0.956		FLOW PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 10.4 182.2		PER ARRIVING VEHICLE (MIN) 0.142	I I I
08.30- ARM A	(VEH/MIN) 08.45 4.94	(VEH/MIN) 11.99 16.53	CAPACITY (RFC) 0.412 0.956		FLOW PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 10.4 182.2		PER ARRIVING VEHICLE (MIN) 0.142 0.892	I I I
08.30- ARM A ARM B	(VEH/MIN) 08.45 4.94 15.80	(VEH/MIN) 11.99 16.53	CAPACITY (RFC) 0.412 0.956		FLOW PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 10.4 182.2		PER ARRIVING VEHICLE (MIN) 0.142 0.892	I I I I I I I I
08.30-	(VEH/MIN) 08.45 4.94 15.80 13.05	11.99 16.53 7.98	CAPACITY (RFC)  0.412 0.956 1.636	  	FLOW PEDS/MIN)	QUEUE (VEHS) 0.7 10.8 127.0	QUEUE (VEHS) 0.7 13.3 203.0	(VEH.MIN/ TIME SEGMENT) 10.4 182.2 2474.9		PER ARRIVING VEHICLE (MIN) 0.142 0.892 20.855	
08.30-1 ARM A ARM B ARM C	(VEH/MIN) 08.45 4.94 15.80 13.05	11.99 16.53 7.98	CAPACITY (RFC)  0.412 0.956 1.636	(    E	FLOW PEDS/MIN)	QUEUE (VEHS) 0.7 10.8 127.0	QUEUE (VEHS) 0.7 13.3 203.0	(VEH.MIN/ TIME SEGMENT) 10.4 182.2 2474.9	- - 	PER ARRIVING VEHICLE (MIN)  0.142 0.892 20.855  AVERAGE DELAY	
08.30-0 ARM A ARM B ARM C	(VEH/MIN) 08.45 4.94 15.80 13.05	11.99 16.53 7.98	CAPACITY (RFC)  0.412 0.956 1.636  DEMAND/ CAPACITY	(    	FLOW PEDS/MIN)	QUEUE (VEHS) 0.7 10.8 127.0 START QUEUE	QUEUE (VEHS) 0.7 13.3 203.0 END QUEUE	(VEH.MIN/ TIME SEGMENT) 10.4 182.2 2474.9	- - 	PER ARRIVING VEHICLE (MIN)  0.142 0.892 20.855  AVERAGE DELAY PER ARRIVING	
08.30-0 ARM A ARM B ARM C	(VEH/MIN) 08.45 4.94 15.80 13.05	11.99 16.53 7.98	CAPACITY (RFC)  0.412 0.956 1.636  DEMAND/ CAPACITY	(    	FLOW PEDS/MIN)	QUEUE (VEHS) 0.7 10.8 127.0 START QUEUE	QUEUE (VEHS) 0.7 13.3 203.0 END QUEUE	(VEH.MIN/ TIME SEGMENT) 10.4 182.2 2474.9	- - 	PER ARRIVING VEHICLE (MIN)  0.142 0.892 20.855  AVERAGE DELAY	
08.30- ARM A ARM B ARM C	(VEH/MIN) 08.45 4.94 15.80 13.05 DEMAND (VEH/MIN)	11.99 16.53 7.98	CAPACITY (RFC)  0.412 0.956 1.636  DEMAND/ CAPACITY	(    	FLOW PEDS/MIN)	QUEUE (VEHS) 0.7 10.8 127.0 START QUEUE	QUEUE (VEHS) 0.7 13.3 203.0 END QUEUE	(VEH.MIN/ TIME SEGMENT) 10.4 182.2 2474.9	- - 	PER ARRIVING VEHICLE (MIN)  0.142 0.892 20.855  AVERAGE DELAY PER ARRIVING	
08.30-0 ARM A ARM B ARM C	(VEH/MIN)  08.45 4.94 15.80 13.05  DEMAND (VEH/MIN)	11.99 16.53 7.98 	CAPACITY (RFC)  0.412 0.956 1.636  DEMAND/ CAPACITY (RFC)	(    E	FLOW PEDS/MIN)	QUEUE (VEHS)  0.7 10.8 127.0  START QUEUE (VEHS)	QUEUE (VEHS) 0.7 13.3 203.0 END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)  10.4 182.2 2474.9  DELAY (VEH.MIN/ TIME SEGMENT)	- - 	PER ARRIVING VEHICLE (MIN)  0.142 0.892 20.855  AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	
08.30-1 ARM A ARM B ARM C TIME	(VEH/MIN) 08.45 4.94 15.80 13.05 DEMAND (VEH/MIN) 09.00 4.03	11.99 16.53 7.98 	CAPACITY (RFC)  0.412 0.956 1.636  DEMAND/ CAPACITY (RFC)  0.341	(   E	FLOW PEDS/MIN)	QUEUE (VEHS)  0.7 10.8 127.0  START QUEUE (VEHS)	QUEUE (VEHS) 0.7 13.3 203.0 END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)  10.4 182.2 2474.9  DELAY (VEH.MIN/ TIME SEGMENT)	- - 	PER ARRIVING VEHICLE (MIN)  0.142 0.892 20.855	
I 08.30-1 I ARM A I ARM B I ARM C I I TIME I I 08.45-1 I ARM B	(VEH/MIN) 08.45 4.94 15.80 13.05 DEMAND (VEH/MIN) 09.00 4.03	11.99 16.53 7.98 	0.412 0.956 1.636 DEMAND/ CAPACITY (RFC)	( ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	FLOW PEDS/MIN)	QUEUE (VEHS)  0.7 10.8 127.0  START QUEUE (VEHS)  0.7 13.3	QUEUE (VEHS)  0.7 13.3 203.0  END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)  10.4 182.2 2474.9  DELAY (VEH.MIN/ TIME SEGMENT)  8.1 77.8	- - 	PER ARRIVING VEHICLE (MIN)  0.142 0.892 20.855  AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.129 0.382	

I TIME	DEMAND	CAPACITY	DEMAND,	/ PEI	ESTRIAN FLOW	START QUEUE	END QUEUE	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELA: PER ARRIVING VEHICLE (MIN
I 09.00-0	9.15									
I ARM A	3.38	11.61	0.291		_	0.5	0.4	6.4	_	0.122
I ARM B	10.80	16.63	0.650		-	3.8	1.9	30.7	-	0.179
I ARM C	8.92	8.44	1.057		-	240.1	247.3	3655.6	-	29.024
I										
ENDING	MENT NO. OF VEHICL IN QUE	EES EUE 4 5 * 7 * 7 *								
OUEUE AT	ARM B									
QUEUE AT										
		7								
TIME SEG										
TIME SEG	 MENT NO. OF	LES								
TIME SEG	MENT NO. OF VEHICI IN QUE	LES								
TIME SEG	MENT NO. OF VEHICI IN QUE	LES								
TIME SEGENDING	MENT NO. OF VEHICI IN QUE	LES EUE .8 **	****							
TIME SEGENDING  08.00 08.15	MENT NO. OF VEHICI IN QUE	SES SUE .8 **								
TIME SEG ENDING 08.00 08.15 08.30	MENT NO. OF VEHICI IN QUE	EES EUE .8 ** .3 *** .8 *****								

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	14.9	******
08.15	51.3	******
08.30	127.0	******************************
08.45	203.0	******************************
09.00	240.1	******************************
09.15	247.3	***************************************

#### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

														T75
Ι	ARM	I	TOTAL	DEMAND	I	* (	UE	UEING *	I	* INCLUS	EVE	QUEUEING *	I	
I		Ι			Ι	*	DEI	LAY *	Ι	*	DEI	LAY *	I	
I		I.											I	
I		I	(VEH)	(VEH/H)	I	(MIN)		(MIN/VEH)	Ι	(MIN)		(MIN/VEH)	I	
Ι	A	I	370.3	I 246.8	Ι	48.0	) I	0.13	Ι	48.0	I	0.13	I	
I	В	Ι	1185.1	I 790.1	Ι	482.0	) I	0.41	Ι	482.1	I	0.41	I	
I	C	I	978.6	I 652.4	I	11424.7	7 I	11.67	Ι	15048.4	I	15.38	I	
I	ALL	Ι	2534.0	I 1689.3	I	11954.6	ī	4.72	I	15578.5	I	6.15	I	

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_\_\_\_\_ A R C A D Y 6 \_\_\_\_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS

IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS  $\,$  OF THE SOLUTION

#### Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\
Double Minis on Warren Lane\Church Lane Villa Road Mini\Church Lane Villa Road pm.vai"
(drive-on-the-left ) at 09:25:14 on Friday, 12 June 2009

#### .FILE PROPERTIES

RUN TITLE: Church Lane - Villa Road mini roundabout weekday pm peak

LOCATION: Stanway, Essex
DATE: 28/05/09
CLIENT: Hills Residential
ENUMERATOR: ramey [ARDENT18]

ENUMERATOR: ramey [ARDENT18 JOB NUMBER: F960 STATUS:

DESCRIPTION:

ARM A - Villa Road (north) ARM B - Warren Lane (south) ARM C - Church Lane (west)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL ROAD SURFACE CONDITION: NORMAL

I ARM I I I	V (M)	I	E (M)	I	Lm(M)	I	Vm (M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A I I ARM B I I ARM C I	5.40	I	5.87	I	0.50	I	5.40	I	10.64	I	6.34	I	0.00	I	0.630	I	17.234	I

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

TIARM I FLOW SCALE(%) I

I A I 100 I
I B I 100 I
I C I 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15). LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Base Case weekday pm peak

Ι		I	NUI	MBER OF	MI	NUTE	S FRO	M ST	ART W	HEN	I	RATE	OF	FLOW	(VE	H/MIN)	Ι	
Ι	ARM	I	FLOW	STARTS	Ι	TOP	OF PE	AK I	FLOW	STOPS	Ι	BEFORE	Ι	AT TO	P I	AFTER	I	
Ι		I			Ι			I			Ι		Ι		I		I	
I		I	TO	RISE	Ι	IS	REACH	ED I	FALL:	ING	Ι	PEAK	Ι	OF PE	AK I	PEAK	I	
-																		
Ι	ARM	ΑI		15.00	Ι		45.00	I	7	5.00	Ι	2.39	Ι	3.5	8 I	2.39	I	
Ι	ARM	вІ		15.00	Ι		45.00	I	7	5.00	Ι	11.05	Ι	16.5	8 I	11.05	I	
I	ARM	CI		15.00	Ι		45.00	I	7	5.00	Ι	6.85	Ι	10.2	7 I	6.85	I	
_																		

DEMAND SET TITLE: 2023 Base Case weekday pm peak

								T33
I		I		Т	JRNING PRO	OPORTIONS	I	
I		Ι		Τī	JRNING CO	UNTS	I	
I		Ι		(PI	ERCENTAGE	OF H.V.S	) I	
I								
I	TIME	Ι	FROM/TO	I	ARM A I	ARM B I	ARM C I	
I	16.45 - 18.15	Ι		Ι	I	I	I	
I		Ι	ARM A	Ι	0.000 I	0.838 I	0.162 I	
I		Ι		Ι	0.0 I	160.0 I	31.0 I	
I		Ι		I	( 0.0)I	( 1.0)I	( 0.0)I	
I		Ι		I	I	I	I	
I		Ι	ARM B	I	0.243 I	0.000 I	0.757 I	
I		Ι		I	215.0 I	0.0 I	669.0 I	
I		Ι		I	( 1.0)I	( 0.0)I	( 3.0)I	
I		Ι		I	I	I	I	
I		Ι	ARM C	I	0.080 I	0.920 I	0.000 I	
I		Ι		I	44.0 I	504.0 I	0.0 I	
I		Ι		Ι	( 0.0)I	( 4.0)I	( 0.0)I	
I		I		I	I	I	I	

I I		DEMAND (VEH/MIN)	CAPACITY	DEMAND/ CAPACITY		PEDESTRIAN FLOW	START QUEUE	END QUEUE			AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
т	16.45-1	17 00										I
	ARM A		14.54	0.165	_		0.0	0.2	2.9	_	0.082	Ī
									27.0	_	0.174	I
I	ARM C	6.88	10.15	0.677	_		0.0	2.0	26.5	_		I
I 												I 
	TIME					PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	 I
I		(VEH/MIN)	(VEH/MIN)					QUEUE	(VEH.MIN/		PER ARRIVING	
Ι				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
-	17 00	17 15										-
	17.00-		12 67	0 200			0 0	0 2	2.0		0.000	I
	ARM A	2.86	13.67	0.209	_		0.2	0.3	3.9	-	0.092 0.284	I
T	ARM C	2 21	0.55	0.801	_		2.0	1 2	3.9 49.9 53.3			I
T		0.21	9.07	0.032			2.0	7.2	33.3	_	0.510	T
	TIME					PEDESTRIAN	START	END	DELAY (VEH.MIN/ TIME SEGMENT)		AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)				QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
_	17.15-1	17 20										I
		3.50	12 02	0 271	_	_	0.3	0.4	5.4		0.106	T
	ADM D	16 22	16 46	0.085	_							I
	ARM C	10.06	9.56	1 052	_		4 2	17 2	149.2 170.3	_		I
I	Aldr C	10.00	5.50	1.032			1.2	17.2	170.5		1.105	Ī
Ī	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
_												_
	17.30-1		10.00	0 074			0.4	0 4	F 6		0 100	I
		3.50								-		I
1	ARM B	16.22 10.06	16.46	0.985	-		13.9	18.6	246.6	-	1.179 2.640	I
I		10.06	9.51	1.058	_		17.2	27.4	336.0	-	2.640	1
_	TIME					PEDESTRIAN		END	DELAY		AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
Ι				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
_ _	17.45-	10 00										- I
		2.86	12 76	0 224	_	_	0.4	0.3	4.5		0.101	I
	ARM A			0.224			18.6	4.5	111.8	-	0.101	I
		8.21							277.9	_	2.111	I
I	111111	0.21	2.73	3.011			27.1	2.0	211.2		2.111	T
-												-

I	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	ΙΙ
I		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	) I
-												-
I	18.00-1	8.15										I
I	ARM A	2.40	14.15	0.169	-		0.3	0.2	3.1	-	0.085	I
I	ARM B	11.09	16.57	0.669	-		4.5	2.1	34.1	-	0.193	I
I	ARM C	6.88	10.12	0.680	-		9.0	2.3	46.3	-	0.407	I
I												I

# .QUEUE AT ARM A

TIME	SEGMENT	NO.	. OF
END	ING	VEF	HICLES
		IN	QUEUE
17.0	0.0		0.2
17.1	L5		0.3
17.3	30		0.4
17.4	15		0.4
18.0	00		0.3
18.1	L5		0.2

# .QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00	2.0	**
17.15	3.7	***
17.30	13.9	*****
17.45	18.6	******
18.00	4.5	****
10 15	2 1	**

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
17.00 17.15 17.30 17.45 18.00 18.15	2.0 4.2 17.2 27.4 9.0	** **** ******** *********************

#### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

												T75
Ι	ARM	Ι	TOTAL	DEMAND	Ι	* QU	EUEING *	Ι	* INCLUSIV	/E QUEUEING *	I	
Ι		Ι			Ι	* D	ELAY *	Ι	* I	DELAY *	I	
I		I-									I	
I		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/VEH)	Ι	(MIN)	(MIN/VEH)	I	
Ι	A	Ι	262.9	I 175.3	Ι	25.3	I 0.10	Ι	25.3	I 0.10	I	
I	В	Ι	1216.8	I 811.2	Ι	618.6	I 0.51	Ι	618.7	I 0.51	I	
I	C	I	754.3	I 502.9	Ι	910.3	I 1.21	Ι	910.5	I 1.21	I	
I	ALL	Ι	2233.9	I 1489.3	Ι	1554.2	I 0.70	Ι	1554.6	I 0.70	I	

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_ ARCADY 6 \_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\ Double Minis on Warren Lane\Church Lane Villa Road Mini\Church Lane Villa Road pm.vai" (drive-on-the-left ) at 09:26:20 on Friday, 12 June 2009

#### .FILE PROPERTIES

RUN TITLE: Church Lane - Villa Road mini roundabout weekday pm peak

LOCATION: Stanway, Essex DATE: 28/05/09 CLIENT: Hills Residential ENUMERATOR: ramey [ARDENT18]

JOB NUMBER: F960 STATUS:

DESCRIPTION: .INPUT DATA

ARM A - Villa Road (north) ARM B - Warren Lane (south)
ARM C - Church Lane (west)

.MINI-ROUNDABOUT GEOMETRIC DATA

LIGHTING CONDITIONS : NORMAL

ROAD SURFACE CONDITION: NORMAL

I ARM I I I	V (M)	I	E (M)	I	Lm(M)	I	Vm (M)	I	A (M)	I	K (M)	I	G (%)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM A I I ARM B I I ARM C I	5.40	I	5.87	I	0.50	I	5.40	I	10.64	I	6.34	I	0.00	I	0.630	I	17.234	I

V = approach half-width Lm = effective flare length A = distance between arms

K= entry corner kerb line Vm = minimum approach half-width E = entry width G=gradient over 50 m

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I I A I 100 TR 100 I C 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15) .LENGTH OF TIME PERIOD - ( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

I	I	NUN	MBER OF	MI	INUTE	ES FROM	STA	ART WHEN	Ι	RATE	OI	FLO	) WC	VEF	I/MIN)	Ι
I ARM	I	FLOW	STARTS	Ι	TOP	OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT :	rop	Ι	AFTER	Ι
I	I			Ι			Ι		Ι		Ι			Ι		Ι
I	I	TO	RISE	Ι	IS	REACHED	Ι	FALLING	Ι	PEAK	Ι	OF I	PEAK	Ι	PEAK	Ι
I ARM	ΑI	1	15.00	Ι		45.00	Ι	75.00	Ι	3.58	Ι	5	.36	Ι	3.58	Ι
I ARM	ВІ	1	15.00	Ι		45.00	Ι	75.00	Ι	11.07	Ι	16	.61	Ι	11.07	Ι
I ARM	CI	1	15.00	I		45.00	Ι	75.00	Ι	6.89	Ι	10	.33	I	6.89	I

DEMAND SET TITLE:	2023 Dev't Case weekday pm peak	2
·	I TURNING PROPORTIONS I	,
I	I TURNING COUNTS I	
I	I (PERCENTAGE OF H.V.S) I	
I		
I TIME	I FROM/TO I ARM A I ARM B I ARM C I	
I 16.45 - 18.15		
I	I ARM A I 0.000 I 0.892 I 0.108 I	
I	I I 0.0 I 255.0 I 31.0 I	
I	I	
I	I I I I I	
I	I ARM B I 0.243 I 0.000 I 0.757 I	
I	I I 215.0 I 0.0 I 671.0 I	
I	I I ( 1.0)I ( 0.0)I ( 3.0)I	
I	I I I I I	
I	I ARM C I 0.080 I 0.920 I 0.000 I	
I	I I 44.0 I 507.0 I 0.0 I	
I	I I ( 0.0)I ( 4.0)I ( 0.0)I	
I	I I I I I	

-										
T TIME				PEDESTRIAN			DELAY		AVERAGE DELAY	
	(VEH/MIN)						(VEH.MIN/		PER ARRIVING	
	(VEII/PILIN)	( VEII/ PILIN )					TIME SEGMENT)		VEHICLE (MIN)	_
			(RFC)	(PEDS/MIN)	(VEDS)	(VEDS)	TIME SEGMENT)		ARUICHE (MIN)	_
16.45-	17.00									I
I ARM A	3.59	14.50	0.247		0.0	0.3	4.7	-	0.091	Ι
I ARM B	11.12	16.57	0.671		0.0	2.0	27.1	-	0.175	I
I ARM C	6.91	10.15	0.681		0.0	2.0	26.8	-	0.286	I
I										I
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	Ι
I.	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I
			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
										-
	17.15									Ι
I ARM A	4.29	13.63	0.314		0.3	0.5	6.6	-		Ι
ARM B	13.27	16.53	0.803		2.0	3.7	50.3 54.5	-	0.287	
	8.26	9.87	0.836		2.0	4.3	54.5	-		Ι
[ 										I 
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	
	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	
			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
- I 17.15-	17.30									I
I ARM A	5.25	12.91	0.407		0.5	0.7	9.8	-	0.130	I
I ARM B	16.26	16.46	0.988		3.7	14.2	151.6	-	0.780	I
I ARM C	10.11	9.56	1.058		4.3	17.8	175.6	-	1.510	Ι
I 										Ι
I TIME				PEDESTRIAN		END	DELAY		AVERAGE DELAY	
	(VEH/MIN)	(VEH/MIN)			~		(VEH.MIN/		PER ARRIVING	
			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	Ι
: 17.30-	17 45									- I
		12 70	0 411		0.7	0.7	10.3			I
		16.46				19.1		-		T
ARM B								-		_
E ARM C	10.11	9.51	1.063		17.8	28.7	350.2	-	2.730	I
- 										 T
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	 I
[				FLOW			(VEH.MIN/		PER ARRIVING	
	( V DII / PIZIN )	( + mii/ Piziv )					TIME SEGMENT)		VEHICLE (MIN)	
			(/	,,		/			(-1411)	_
17.45-	18.00									Ι
I ARM A	4.29	12.78	0.335		0.7	0.5	7.9	-	0.118	I
		16.53				4.6	115.5	-		Ι
I ARM B										
	8.26	9.73	0.849		28.7	11.5	301.2	-	2.258	I

I	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY		AVERAGE DELAY	Ι
I		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	I
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)		VEHICLE (MIN)	I
-												-
I	18.00-1	8.15										I
I	ARM A	3.59	14.01	0.256	-		0.5	0.3	5.3	-	0.096	I
I	ARM B	11.12	16.57	0.671	-		4.6	2.1	34.4	-	0.195	I
I	ARM C	6.91	10.12	0.683	-		11.5	2.3	54.5	-	0.462	I
I												I
-												

# .QUEUE AT ARM A

NO. OF	
VEHICLES	
IN QUEUE	
0.3	
0.5	
0.7	*
0.7	*
0.5	*
0.3	
	VEHICLES IN QUEUE 0.3 0.5 0.7 0.7

# .QUEUE AT ARM B

TIME SEGMENT	NO. OF	
ENDING	VEHICLES	
	IN QUEUE	
17.00	2.0	**
17.15	3.7	****
17.30	14.2	******
17.45	19.1	******
18.00	4.6	****
1Ω 1Ε	2 1	**

# .QUEUE AT ARM C

TIME SEGMENT	NO. OF	
ENDING	VEHICLES	
	IN QUEUE	
17.00	2.0	**
17.15	4.3	***
17.30	17.8	******
17.45	28.7	********
18.00	11.5	******
18.15	2.3	**

#### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

 I	ARM		TOTAL	DEMAND						QUEUEING *		т75
Ι		I			Ι	* DE	LAY *	I	* DI	ELAY *	I	
I		I.									I	
I		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/VEH)	Ι	(MIN)	(MIN/VEH)	I	
I	A	Ι	393.7	I 262.4	Ι	44.7 I	0.11	Ι	44.7	0.11	I	
I	В	Ι	1219.5	I 813.0	Ι	631.4 I	0.52	Ι	631.5	0.52	I	
I	C	I	758.4	I 505.6	Ι	962.9 I	1.27	Ι	963.2	1.27	I	
Ι	ALL	I	2371.6	I 1581.1	Ι	1638.9 I	0.69	Ι	1639.3	0.69	I	

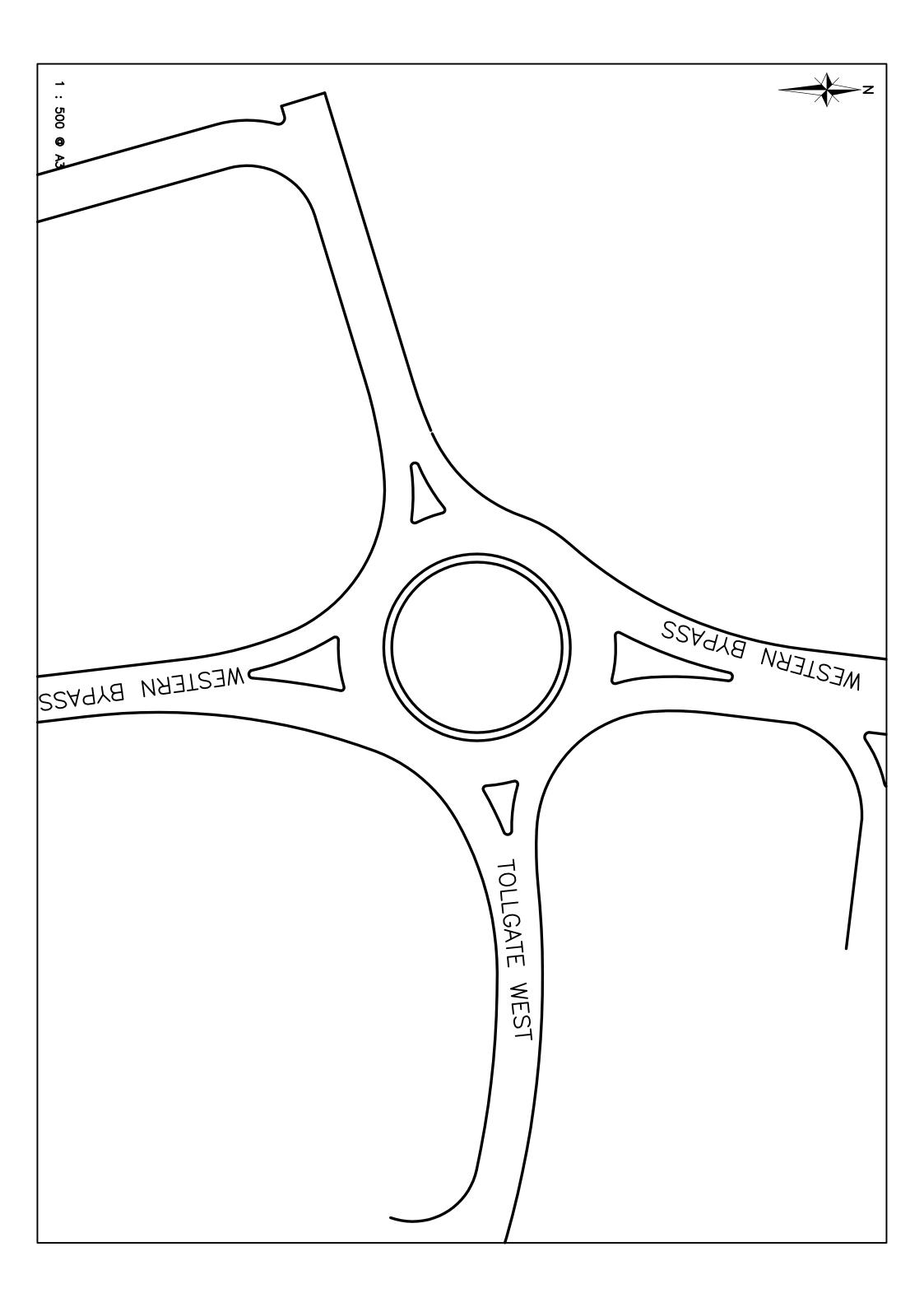
<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

# Appendix M

Results of ARCADY capacity assessment: Stanway Western Bypass/Tollgate West roundabout



\_\_ARCADY 6 \_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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#### Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-Tollgate\ Bypass-Tollgate am.vai" (drive-on-the-left ) at 15:06:22 on Thursday, 11 June 2009

## .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/Tollgate West/Office access roundabout weekday am peak LOCATION: Stanway

DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS: DESCRIPTION:

# .INPUT DATA

ARM A - Western Bypass (north) ARM B - Tollgate West (east) ARM C - Western Bypass (south) ARM D - Office access

.GEOMETRIC DATA

																	- T5
I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M	) I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM	ΑI	5.00	I	6.10	I	23.00	I	20.00	I	44.60	I	47.9	I	0.609	I	28.200	I
I ARM	ВІ	3.65	I	6.30	I	12.30	I	25.00	I	44.60	I	43.2	I	0.584	I	25.404	I
I ARM	CI	3.65	I	4.40	I	6.20	I	25.00	I	44.60	I	49.1	I	0.514	I	19.967	I
I ARM	DΙ	3.65	I	5.63	I	5.90	I	25.00	Ι	44.60	I	43.8	I	0.548	I	22.368	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

# .TRAFFIC DEMAND DATA

Only sets included in the current run are shown

#### .SCALING FACTORS

	I FLOW	SCALE(%)	I	Т13
I A I B I C I D	I I I	100 100 100 100	I I I	

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

I	ARM										RT WHEN FLOW STOPS							. ,		110
Τ			1			Τ				Τ		Τ		Τ			Τ		1	
Ι			Ι	TO	RISE	Ι	IS	REACI	HED	Ι	FALLING	Ι	PEAK	Ι	OF	PEAK	I	PEAK	Ι	
I	ARM	Α	Ι		15.00	Ι		45.0	0	I	75.00	I	8.93	Ι	13	.39	I	8.93	Ι	
I	ARM	В	Ι		15.00	Ι		45.0	0	Ι	75.00	Ι	6.30	Ι	9	.45	I	6.30	Ι	
I	ARM	C	Ι		15.00	Ι		45.0	0	I	75.00	I	8.13	Ι	12	.19	I	8.13	Ι	
I	ARM	D	Ι		15.00	Ι		45.0	0	Ι	75.00	I	0.32	Ι	0	.49	I	0.32	Ι	

DEMAND SET TITLE:	2023 Base Case weekday am peak	-22
т	I TURNING PROPORTIONS I	
± T	I TURNING COUNTS I	
T	I (PERCENTAGE OF H.V.S) I	
T	1 (121/021/11/02 01 11/1/0)	
=	I FROM/TO I ARM A I ARM B I ARM C I ARM D I	
I 07.45 - 09.15	I I I I I	
I	I ARM A I 0.000 I 0.455 I 0.378 I 0.167 I	
I	I I 0.0 I 325.0 I 270.0 I 119.0 I	
I	I I ( 0.0)I ( 6.0)I ( 2.0)I ( 0.0)I	
I	I I I I I	
I	I ARM B I 0.794 I 0.000 I 0.196 I 0.010 I	
I	I I 400.0 I 0.0 I 99.0 I 5.0 I	
I	I I ( 5.0)I ( 0.0)I ( 2.0)I ( 0.0)I	
I	I I I I I	
I	I ARM C I 0.765 I 0.223 I 0.000 I 0.012 I	
I	I I 497.0 I 145.0 I 0.0 I 8.0 I	
I	I ( 1.0)I ( 0.0)I ( 0.0)I ( 0.0)I	
I	I I I I I	
I	I ARM DI 0.846 I 0.077 I 0.077 I 0.000 I	
I	I I 22.0 I 2.0 I 2.0 I 0.0 I	
I	I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I	
I	I I I I I	

TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END		GEOMETRIC DELAY		
	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
										-
07.45-	08.00									Ι
ARM A	8.96				0.0	0.5	7.6	-	0.058	I
ARM B	6.32	21.57	0.293		0.0	0.4	6.0	-	0.065	Ι
ARM C	8.16	16.35	0.499		0.0	1.0	14.0	-	0.120	Ι
ARM D	0.33	15.08	0.022		0.0	0.0	0.3	-	0.068	Ι
										Ι
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	т
	(VEH/MIN)			FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
	, , , , , , , , , , , , , , , , , , , ,	,	(RFC)					TIME SEGMENT)		
			(1010)	(I DDG/ PILIN)	( A TITO )	( * 11110 )	IIII ODOMBNI)	IIND DEGREENI)	, DITTOD (PIIN)	_
08.00-	08.15									I
ARM A	10.70	25.94	0.412		0.5	0.7	10.2	_	0.065	I
ARM B	7.55	21.02			0.4	0.6	8.2	_	0.074	Т
ARM C	9.74	15.66			1.0	1.6	22.7	_	0.167	T
ARM D	0.39				0.0	0.0	0.4	_		Ī
	0.55	15.01	0.023		0.0	0.0	0.1		0.075	T
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	 т
	(VEH/MIN)			FLOW	OUEUE	OUEUE	(VEH.MIN/		PER ARRIVING	
	( 1211 / 11211 /	( * 221) 11211)			~ -	~ -		TIME SEGMENT)		
			(1010)	(I BDD/ NIIN)	( V 1110 )	(VBIID)	TIME DEGMENT,	TIME DEGMENT)	VEHICLE (PILIV)	_
08.15-	08 30									Т
ARM A	13.10	25.66	0.511		0.7	1.0	15.1	_	0.079	T
ARM B	9.25				0.6	0.8	12.1	_	0.090	T
ARM C					1.6	3.8	50.4		0.324	T
ARM D	0.48		0.010			0.0	0.6	_		I
ARM D	0.40	11./3	0.011	_	0.0	0.0	0.0	_	0.009	T
	DEMAND		DEMANTS /			ENT	DEL 34	GEOMETRIA DEL ST		
TIME		CAPACITY		PEDESTRIAN		END		GEOMETRIC DELAY		
	(VEH/MIN)	(VEH/MIN)		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	IIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	_ T
08.30-	08.45									I
ARM A	13.10	25.64	0.511		1.0	1.0	15.5	-	0.080	Ι
LIVIN LI	9.25	20.27	0.456		0.8	0.8	12.5	_	0.091	Ι
ARM B					3.8	4.0	59.2	_	0.351	I
	11.93									
ARM B	11.93 0.48				0.0	0.0	0.6	_	0.089	Т

I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
т	08.45-0	9.00										T
	ARM A	10.70	25.92	0.413	_		1.0	0.7	10.9	-	0.066	I
I	ARM B	7.55	21.01	0.359	-		0.8	0.6	8.7	-	0.074	I
I	ARM C	9.74	15.65	0.622	-		4.0	1.7	27.6	-	0.178	I
I	ARM D	0.39	13.52	0.029	-		0.0	0.0	0.5	-	0.076	I
I												I
-												
T	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	Т
I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/		PEDESTRIAN FLOW	START	END	DELAY (VEH.MIN/	GEOMETRIC DELAY		I
I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY		FLOW	START QUEUE (VEHS)	END QUEUE (VEHS)	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
I I -	TIME						QUEUE	QUEUE		(VEH.MIN/	PER ARRIVING	I
I I - I	TIME 09.00-0	(VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
		(VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I	09.00-0	(VEH/MIN) 9.15	(VEH/MIN)	CAPACITY (RFC)		FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I I - I
I	09.00-0 ARM A	(VEH/MIN) 9.15 8.96	(VEH/MIN) 26.14	CAPACITY (RFC)	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 8.0	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	I I - I
I I I	09.00-0 ARM A ARM B	(VEH/MIN) 9.15 8.96 6.32	(VEH/MIN)  26.14 21.56	CAPACITY (RFC) 0.343 0.293	-	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT) 8.0 6.4	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.058 0.066	I I I I I
I I I	09.00-0 ARM A ARM B ARM C ARM D	(VEH/MIN)  9.15  8.96 6.32 8.16	(VEH/MIN)  26.14 21.56 16.33	CAPACITY (RFC) 0.343 0.293 0.500		FLOW (PEDS/MIN)	QUEUE (VEHS) 0.7 0.6 1.7	QUEUE (VEHS) 0.5 0.4 1.0	(VEH.MIN/ TIME SEGMENT) 8.0 6.4 15.9	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.058 0.066 0.124	I I I I I

### .QUEUE AT ARM A

TIME SEGMENT	NO. OF	
ENDING	VEHICLES	
	IN QUEUE	
08.00	0.5	*
08.15	0.7	*
08.30	1.0	*
08.45	1.0	*
09.00	0.7	*
09.15	0.5	*

### .QUEUE AT ARM B

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.4	
08.15	0.6	*
08.30	0.8	*
08.45	0.8	*
09.00	0.6	*
09.15	0.4	

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.0	*
08.15	1.6	**
08.30	3.8	****
08.45	4.0	****
09.00	1.7	**
09.15	1.0	*

# .QUEUE AT ARM D

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE 08.00 08.15 08.30 08.45 09.00 0.0 0.0 0.0 0.0 0.0

### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

												3	r75
I	ARM	I	TOTAL	DEMAND	Ι	* QUE	UEING *	I	*	INCLUSIVE	QUEUEING *	I	
I		I			Ι	* DE	LAY *	I		* DE	LAY *	I	
I		I-										-I	
I		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/VEH)	I		(MIN)	(MIN/VEH)	I	
I	A	I	982.8	I 655.2	Ι	67.3 I	0.07	I		67.3 I	0.07	I	

I	В	I	693.7	Ι	462.5	Ι	53.9	Ι	0.08	I	53.9	I	0.08	I
I	C	I	894.7	I	596.5	Ι	189.8	Ι	0.21	I	189.9	I	0.21	I
I	D	I	35.8	Ι	23.9	Ι	2.8	Ι	0.08	I	2.8	Ι	0.08	I
I	ALL	I	2607.0	Ι	1738.0	Ι	313.8	Ι	0.12	I	313.9	I	0.12	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_ARCADY 6 \_

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-Tollgate' Bypass-Tollgate am.vai" (drive-on-the-left ) at 15:07:30 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/Tollgate West/Office access roundabout weekday am peak

LOCATION: Stanway DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS:

DESCRIPTION:

.INPUT DATA

ARM A - Western Bypass (north)

ARM B - Tollgate West (east)
ARM C - Western Bypass (south)

ARM D - Office access

.GEOMETRIC DATA

I ARM I V (M) I E (M) I L (M) I R (M) I D (M) I PHI (DEG) I SLOPE I INTERCEPT (PCU/MIN) I 5.00 6.10 23.00 I 20.00 I 44.60 47.9 I 0.609 I 28.200 I ARM B I 3.65 6.30 4.40 I 12.30 6.20 I 25.00 25.00 44.60 I 43.2 I 0.584 I I 0.514 I 25.404 19.967 I ARM C I 3.65 44.60 49.1 I ARM D I 3.65 5.63 I 5.90 I 25.00 I 44.60 I 43.8 I 0.548 I 22.368 Ι

V = approach half-width

L = effective flare length

D = inscribed circle diameter PHI = entry angle

E = entry width

R = entry radius

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I 100 T B 100 т 100 I ID I 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)
.LENGTH OF TIME PERIOD -( 90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Dev't Case weekday am peak

													- 113
I	I	NUMBER OF	MINUT	ES FROM	ST	ART WHEN	Ι	RATE	OI	F FLOW (	VEI	H/MIN)	I
I ARM	I	FLOW STARTS	I TO	OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER	I
I	I		I		Ι		Ι		Ι		Ι		I
I	I	TO RISE	I IS	REACHED	Ι	FALLING	Ι	PEAK	Ι	OF PEAK	Ι	PEAK	I
													-
I ARM	ΑI	15.00	I	45.00	Ι	75.00	Ι	9.55	Ι	14.33	Ι	9.55	I
I ARM	ΒΙ	15.00	I	45.00	I	75.00	I	6.38	I	9.56	I	6.38	I
I ARM	CI	15.00	I	45.00	I	75.00	I	9.63	I	14.44	I	9.63	I
I ARM	DΙ	15.00	I	45.00	I	75.00	I	0.32	I	0.49	I	0.32	I
													-

DEMAND SET TITLE: 2023 Dev't Case weekday am peak

DEMAND SET TITLE:			Т
I I I	I TURNI	NG PROPORTIONS NG COUNTS	I I
I TIME	I FROM/TO I AR	M A I ARM B I	ARM C I ARM D I
I 07.45 - 09.15	I I	I I	I I
I	I ARM A I 0.	000 I 0.425 I	0.419 I 0.156 I
I	I I	0.0 I 325.0 I	320.0 I 119.0 I
I	I I (	0.0)I ( 6.0)I	( 2.0)I ( 0.0)I
I	I I	I I	I I
I	I ARM B I 0.	784 I 0.000 I	0.206 I 0.010 I
I	I I 40	0.0 I 0.0 I	105.0 I 5.0 I
I			( 2.0)I ( 0.0)I
I			I I
I			0.000 I 0.010 I
I			0.0 I 8.0 I
I			( 0.0)I ( 0.0)I
I			I I
I			0.077 I 0.000 I
I			2.0 I 0.0 I
I			( 0.0)I ( 0.0)I
I	I I	I I	I I

I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END			AVERAGE DELAY	
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	1
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	]
-										-
I 07.45-0	08.00									]
I ARM A	9.59	26.09			0.0	0.6	8.4	-	0.060	]
I ARM B	6.40	21.22			0.0	0.4	6.3	-	0.067	1
I ARM C	9.66	16.34	0.591		0.0	1.4	19.9	-	0.146	]
I ARM D	0.33	14.27	0.023		0.0	0.0	0.3	-	0.072	]
I										1
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	1
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	1
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	]
- г 08.00-0	08.15									1
ARM A	11.45	25.86	0.443		0.6	0.8	11.6	_	0.069	1
I ARM B	7.64	20.60			0.4	0.6	8.6	_	0.077	1
I ARM C	11.54	15.66			1.4	2.6	36.5	_	0.233	1
I ARM D		12.67				0.0	0.5	_		1
2	0.33	12.07	0.001		0.0	0.0	0.5		0.001	1
I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	]
Ε			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	]
- r 08.15-0	10 20									1
	14.02	25.59	0.548		0.8	1.2	17.4		0.086	_
I ARM A								-		]
I ARM B	9.36	19.76 14.73			0.6 2.6	0.9 10.6	12.9	-	0.096 0.683	1
I ARM C	14.13						116.9	-		
I ARM D	0.48	10.73	0.044		0.0	0.0	0.7	-	0.097	1
 I TIME		CADACTTV	DEMAND /	PEDESTRIAN	 ייקמיי	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
	(VEH/MIN)			FLOW		OUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
L T	( A TOTA / MATIN )	( A TOTT / MITIN )	(RFC)		~ -	~ -		TIME SEGMENT)		
-			(RFC)	(PEDS/MIN)	( VEDS)	(AFUS)	TIME SEGMENT)	TIME DEGMENT)	ARUTCHE (MIN)	-
08.30-0										1
I ARM A	14.02	25.54	0.549		1.2	1.2	18.1	-	0.087	1
I ARM B	9.36	19.75	0.474		0.9	0.9	13.4	-	0.096	1
I ARM C	14.13	14.72	0.960		10.6	13.3	181.5	-	0.997	1
I ARM D	0.48	10.52	0.045		0.0	0.0	0.7	-	0.099	]
I										1

I I -	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
Ι	08.45-0	9.00										I
I	ARM A	11.45	25.76	0.444	-		1.2	0.8	12.4	-	0.070	I
I	ARM B	7.64	20.59	0.371	-		0.9	0.6	9.2	-	0.077	I
I	ARM C	11.54	15.64	0.738	-		13.3	3.0	65.3	-	0.344	I
I	ARM D	0.39	12.23	0.032	-		0.0	0.0	0.5	-	0.084	I
I												I
I	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
-												-
I	09.00-0											I
I	ARM A	9.59	26.07	0.368	-		0.8	0.6	9.0	-	0.061	I
I	ARM B	6.40	21.20	0.302	-		0.6	0.4	6.7	-	0.068	I
I	ARM C	9.66	16.32	0.592	-		3.0	1.5	23.6	-	0.155	I
I	ARM D	0.33	14.14	0.023	-		0.0	0.0	0.4	-	0.072	I
I												I

### .QUEUE AT ARM A

-----

TIME SEGMENT	NO. OF	
ENDING	VEHICLES	
	IN QUEUE	
08.00	0.6	*
08.15	0.8	*
08.30	1.2	*
08.45	1.2	*
09.00	0.8	*
09.15	0.6	*

# .QUEUE AT ARM B

-----

TIME SEGMENT	'NO. OF	
ENDING	VEHICLES	
	IN QUEUE	
08.00	0.4	
08.15	0.6	*
08.30	0.9	*
08.45	0.9	*
09.00	0.6	*
09 15	0.4	

### .QUEUE AT ARM C

-----

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	1.4	*
08.15	2.6	***
08.30	10.6	******
08.45	13.3	******
09.00	3.0	***
09.15	1.5	*

### .QUEUE AT ARM D

TIME SEGMENT NO. OF VEHICLES IN QUEUE

08.00 0.0
08.15 0.0
08.30 0.0
08.45 0.0
09.00 0.0
09.15 0.0

## .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

													т75
I	ARM	I	TOTAL	DEMAND	Ι	* QUE	UEING	*	T *	INCLUSIV	E QUEUEING *	I	
I		I			Ι	* DE	CLAY *		I.	* DI	ELAY *	I	
I		I-										I	
I		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/	VEH)	I	(MIN)	(MIN/VEH)	I	
I	A	I	1051.6	701.1	Ι	76.8 I	0.	07	Ι	76.8	0.07	I	

I	В	Ι	702.0	Ι	468.0	Ι	57.0	Ι	0.08	I	57.0	Ι	0.08	I
Ι	C	Ι	1059.8	Ι	706.6	Ι	443.8	Ι	0.42	I	443.8	I	0.42	I
I	D	Ι	35.8	Ι	23.9	Ι	3.1	Ι	0.09	I	3.1	I	0.09	I
т	AT.T.	т	2849 2	т	1899 5	т	580 7	т	0 20	т	580.7	т	0 20	т Т

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_\_ARCADY 6 \_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

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#### Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-Tollgate\ Bypass-Tollgate pm.vai" (drive-on-the-left ) at 15:11:56 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/Tollgate West/Office access roundabout weekday pm peak LOCATION: Stanway

DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS: DESCRIPTION:

# .INPUT DATA

ARM A - Western Bypass (north) ARM B - Tollgate West (east) ARM C - Western Bypass (south) ARM D - Office access

### .GEOMETRIC DATA

																	- T5
I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	) I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM	A I	5.00	I	6.10	I	23.00	I	20.00	I	44.60	I	47.9	I	0.609	I	28.200	I
I ARM	вІ	3.65	I	6.30	I	12.30	I	25.00	I	44.60	I	43.2	I	0.584	I	25.404	I
I ARM	CI	3.65	I	4.40	I	6.20	I	25.00	I	44.60	I	49.1	I	0.514	I	19.967	I
I ARM	DI	3.65	I	5.63	I	5.90	I	25.00	I	44.60	I	43.8	I	0.548	I	22.368	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

# .TRAFFIC DEMAND DATA

Only sets included in the current run are shown

#### .SCALING FACTORS

IARM I FLOW SCALE(%) I I 100 ΙB 100 Т Ι 100 ID I 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

														110
I	I	NUMB!	ER OF M	INUTE	S FROM S	STAF	RT WHEN	I	RATE	OF	FLOW (	VEH/	MIN)	I
I ARM	I	FLOW S	TARTS I	TOP	OF PEAK	ΙF	FLOW STOPS	3 I	BEFORE	Ι	AT TOP	I P	AFTER	I
I	I		I			I		I		Ι		I		I
I	I	TO R	ISE I	IS	REACHED	ΙF	FALLING	I	PEAK	Ι	OF PEAK	I	PEAK	I
														-
I ARM	ΑI	15	.00 I		45.00	I	75.00	I	15.45	Ι	23.17	I 1	15.45	I
I ARM	вІ	15	.00 I		45.00	I	75.00	I	7.75	Ι	11.63	I	7.75	I
I ARM	CI	15	.00 I		45.00	I	75.00	I	5.51	Ι	8.27	I	5.51	I
I ARM	DΙ	15	.00 I		45.00	I	75.00	I	1.71	Ι	2.57	I	1.71	I
														-

I I TURNING PROPORTIONS I														
I	I	TURNING PROPORTIONS	I											
I	I	TURNING COUNTS	I											
I	I	(PERCENTAGE OF H.V.S)	I											
I														
I TIME	I FROM/	TO I ARM A I ARM B I ARM C I ARM D	I											
I 16.45 - 18.1	5 I	I I I I	I											
I	I ARM	A I 0.000 I 0.399 I 0.564 I 0.037	I											
I	I	I 0.0 I 493.0 I 697.0 I 46.0	I											
I	I	I ( 0.0)I ( 3.0)I ( 0.0)I ( 0.0)	I											
I	I	I I I I	I											
I	I ARM	B I 0.782 I 0.000 I 0.197 I 0.021	I											
I	I	I 485.0 I 0.0 I 122.0 I 13.0	I											
I	I	I ( 5.0)I ( 0.0)I ( 0.0)I ( 0.0)	I											
I	I	I I I	I											
I	I ARM	C I 0.823 I 0.159 I 0.000 I 0.018												
I	I	I 363.0 I 70.0 I 0.0 I 8.0	I											
I	I	I ( 1.0)I ( 0.0)I ( 0.0)I ( 0.0)	I											
I	I	I I I I	I											
I		D I 0.803 I 0.095 I 0.102 I 0.000												
I	I	I 110.0 I 13.0 I 14.0 I 0.0	-											
I	I	I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)												
I	I	I I I	I											

I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	1
I.	(VEH/MIN)	(VEH/MIN)		FLOW		QUEUE	(VEH.MIN/		PER ARRIVING	
I.			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	]
-										-
16.45-1										]
I ARM A			0.571		0.0		18.9	-	0.085	1
I ARM B	7.78	19.14			0.0	0.7	9.8	-	0.087	1
I ARM C	5.53		0.342		0.0	0.5	7.5	-	0.093	]
I ARM D	1.72	15.91	0.108		0.0	0.1	1.8	-	0.070	]
[ 										]
TIME				PEDESTRIAN		END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	_
	(VEH/MIN)	(VEH/MIN)		FLOW		QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
[			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	]
- 15 00 1	15 15									-
[ 17.00-1 [ ARM A		26.99	0 686		1.3	2.1	30.5	_	0.116	1
I ARM A					0.7	1.0	15.1	-		1
					0.7	0.7		_		1
I ARM C	6.61 2.05				0.5	0.7	10.7	_		1
ARM D	2.05	14.62	0.140		0.1	0.2	2.4	-	0.079	1
[ 										
 I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
	(VEH/MIN)			FLOW	OUEUE	OUEUE	(VEH.MIN/		PER ARRIVING	
- Г	( ,, , ,, ,	(,,			~ .	~ .		TIME SEGMENT)		
-			( /	(,	( /	( /	,			
17.15-1	17.30									1
I ARM A		26.80	0.846		2.1	5.0	66.9	_	0.222	1
I ARM B					1.0	2.1	28.8	_		1
I ARM C	8 09				0.7	1.2	17.6	_		1
I ARM D		12.91			0.2	0.2	3.5	_		1
Ι										1
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	1
	(VEH/MIN)			FLOW	OUEUE	OUEUE	(VEH.MIN/		PER ARRIVING	
- [	( / /	(//			~ -	~ -		TIME SEGMENT)		
			(112 0 )	()	( )	, ,			()	-
17.30-	17.45									1
I ARM A	22.68	26.80	0.846		5.0	5.2	77.4	-	0.239	1
I ARM B	11.38	16.65	0.684		2.1	2.1	31.4	-	0.190	1
I ARM C	8.09	14.49	0.558		1.2	1.2	18.6	-	0.156	1
	2.51	12.86	0.195		0.2	0.2	3.6	_	0.097	1
I ARM D	∠.5⊥									

I I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)			PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)		I I -
I	17.45-1	8.00										I
I	ARM A	18.52	26.99	0.686	-		5.2	2.2	36.1	-	0.124	I
I	ARM B	9.29	18.01	0.516	-		2.1	1.1	17.0	-	0.117	I
I	ARM C	6.61	15.43	0.428	-		1.2	0.8	11.8	-	0.114	I
I	ARM D	2.05	14.56	0.141	-		0.2	0.2	2.5	-	0.080	Ι
I												Ι
-												
 I I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)		I I I
-												-
I	18.00-1	.8.15										I
I	ARM A	15.51	27.13	0.572	-		2.2	1.4	21.0	-	0.087	Ι
I	ARM B	7.78	19.09	0.408	-		1.1	0.7	10.7	-	0.089	I
I	ARM C	5.53	16.16	0.342	-		0.8	0.5	8.1	-	0.094	I
		5.53 1.72	16.16 15.85	0.342 0.108	-		0.8	0.5 0.1	8.1 1.9	- -	0.094 0.071	I
	ARM C ARM D				-					-		

### .QUEUE AT ARM A

-----

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE

17.00 1.3 \*
17.15 2.1 \*\*
17.30 5.0 \*\*\*\*\*
17.45 5.2 \*\*\*\*\*
18.00 2.2 \*\*
18.15 1.4 \*

# .QUEUE AT ARM B

-----

TIME SEGMENT NO. OF VEHICLES IN QUEUE

17.00 0.7 \*
17.15 1.0 \*
17.30 2.1 \*\*
17.45 2.1 \*\*
18.00 1.1 \*
18.15 0.7 \*

# .QUEUE AT ARM C

-----

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE 17.00 0.5 \* 17.15 0.7 \* 17.30 1.2 \* 17.45 1.2 \* 18.00 0.8 \* 18.15 0.5 \*

# .QUEUE AT ARM D

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE 17.00 0.1 17.15 0.2 17.30 0.2 17.45 0.2 18.00 0.2 18.15 0.1

### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

													T75
I	ARM	I	TOTAL	DEMAND	I	* QUE	JEING *	I	*	INCLUSIV	E QUEUEING *	I	
I		I			Ι	* DEI	LAY *	I		* D	ELAY *	I	
I		I-										I	
I		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/VEH)	I		(MIN)	(MIN/VEH)	I	
Ι	A	Ι	1701.3	I 1134.2	Ι	250.9 I	0.15	Ι		251.0	I 0.15	Ι	

I	В	I	853.4	Ι	568.9	Ι	112.8 I	0.13	I	112.8	I	0.13	I
I	C	Ι	607.0	I	404.7	Ι	74.3 I	0.12	I	74.3	I	0.12	I
I	D	I	188.6	Ι	125.7	Ι	15.7 I	0.08	I	15.7	I	0.08	I
I	ALL	I	3350.2	Ι	2233.5	Ι	453.7 I	0.14	I	453.8	I	0.14	I

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_ARCADY 6 \_

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-Tollgate' Bypass-Tollgate pm.vai" (drive-on-the-left ) at 15:12:38 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/Tollgate West/Office access roundabout weekday pm peak

LOCATION: Stanway DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS: DESCRIPTION:

.INPUT DATA

ARM A - Western Bypass (north) ARM B - Tollgate West (east)
ARM C - Western Bypass (south)

ARM D - Office access

.GEOMETRIC DATA

I ARM I V (M) I E (M) I L (M) I R (M) I D (M) I PHI (DEG) I SLOPE I INTERCEPT (PCU/MIN) I 5.00 6.10 23.00 I 20.00 I 44.60 47.9 I 0.609 I 28.200 I ARM B I 3.65 6.30 4.40 I 12.30 6.20 I 25.00 25.00 44.60 I 43.2 I 0.584 I I 0.514 I 25.404 19.967 CI 3.65 44.60 49.1 I ARM I ARM D I 3.65 5.63 I 5.90 I 25.00 I 44.60 I 43.8 I 0.548 I 22.368 Ι

V = approach half-width

L = effective flare length

D = inscribed circle diameter PHI = entry angle

E = entry width

R = entry radius

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I 100 T B 100 т 100 I ID I 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

. DE	MAND	SET	TITLE: 2023	Dev			lay pm peak								T15
I		I	NUMBER OF	MINU	JTES FROM S	STA	ART WHEN	Ι	RATE	OI	F FLOW (	VE	H/MIN)	Ι	
I	ARM	I	FLOW STARTS	I TO	OP OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	I	AFTER	Ι	
I		I		I		Ι		Ι		Ι		I		Ι	
I		I	TO RISE	I :	IS REACHED	I	FALLING	Ι	PEAK	Ι	OF PEAK	I	PEAK	I	
I	ARM	ΑI	15.00	I	45.00	I	75.00	I	16.81	I	25.22	I	16.81	I	
I	ARM	вІ	15.00	I	45.00	Ι	75.00	Ι	7.93	Ι	11.89	I	7.93	Ι	
I	ARM	CI	15.00	I	45.00	I	75.00	Ι	6.28	Ι	9.41	I	6.28	I	
I	ARM	DI	15.00	I	45.00	I	75.00	Ι	1.71	Ι	2.57	I	1.71	I	

I	I I											
I I TURNING PROPORTIONS I I I TURNING COUNTS I I (PERCENTAGE OF H.V.S) I I												
I TIME I FROM/TO I ARM A I ARM B I ARM C I	I											
	46.0 I ( 0.0)I I 0.021 I 13.0 I ( 0.0)I I 0.016 I 8.0 I ( 0.0)I I 0.000 I 0.000 I											

I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END			AVERAGE DELAY	
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	1
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	1
-										-
I 16.45-										1
I ARM A	16.88	27.11			0.0	1.6	23.1	-	0.096	1
I ARM B	7.96	18.39			0.0	0.8	10.9	-	0.095	]
I ARM C	6.30	16.19	0.389		0.0	0.6	9.1	-	0.100	]
I ARM D	1.72	15.49	0.111		0.0	0.1	1.8	-	0.073	1
I										]
I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	1
		,	(RFC)	(PEDS/MIN)					VEHICLE (MIN)	1
			(/	/		,			(-1441)	
17.00-	17.15									1
I ARM A	20.15	26.96	0.748		1.6	2.9	40.2	-	0.144	1
I ARM B	9.50	17.20	0.552		0.8	1.2	17.4	-	0.129	1
I ARM C	7.52	15.48	0.486		0.6	0.9	13.5	-	0.125	1
I ARM D	2.05	14.12	0.145		0.1	0.2	2.5	-	0.083	1
[										1
I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
[	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW		OUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	1
т			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	1
-			, -,	, ,		, ,	,	,		
17.15-	17.30									1
I ARM A	24.68	26.75	0.923		2.9	9.1	110.4	_	0.356	1
I ARM B	11.63	15.68	0.742		1.2	2.7	37.1	_	0.236	1
I ARM C					0.9	1.7	23.6	_	0.184	]
I ARM D					0.2	0.3	3.7	-		1
Ε										1
I TIME	DEMAND	CAPACITY	DEMAND /	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
T TIME	(VEH/MIN)			FLOW	OUEUE	OUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
I T	( V DII / PIII )	( V DII / PILIN )			~ -	~ -			VEHICLE (MIN)	
-			(100)	(I DDS/PIIN)	( 4 1110 )	( 45110 )	IIM DEGMENI)	IIII DEGMENI)	VEHICLE (PIIN)	-
17.30-	17.45									]
I ARM A	24.68	26.74	0.923		9.1	10.2	145.7	-	0.439	1
I ARM B	11.63	15.56	0.748		2.7	2.9	42.1	-	0.253	1
I ARM C	9.21	14.50	0.636		1.7	1.7	25.5	-	0.189	1
I ARM D	2.51	12.25	0.205		0.3	0.3	3.8	-	0.103	1
										1

I TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	Ι
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-											-
I 17.45	-18.00										Ι
I ARM A	20.15	26.95	0.748	-		10.2	3.1	54.4	-	0.169	Ι
I ARM B	9.50	17.00	0.559	-		2.9	1.3	20.5	-	0.137	Ι
I ARM C	7.52	15.41	0.488	-		1.7	1.0	15.2	-	0.128	Ι
I ARM D	2.05	14.03	0.146	-		0.3	0.2	2.6	-	0.084	Ι
I											Ι
											-
											-
I TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	Ι
I	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
I			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-											-
I 18.00	-18.15										Ι
I ARM A	16.88	27.10	0.623	-		3.1	1.7	26.3	-	0.100	Ι
I ARM B	7.96	18.32	0.434	-		1.3	0.8	12.0	-	0.097	Ι
I ARM C	6.30	16.15	0.390	-		1.0	0.6	10.0	-	0.102	Ι
I ARM D	1.72	15.42	0.112	-		0.2	0.1	1.9	-	0.073	Ι
I											Т

### .QUEUE AT ARM A

# .QUEUE AT ARM B

-----

TIME SEGMENT NO. OF VEHICLES IN QUEUE

17.00 0.8 \*
17.15 1.2 \*
17.30 2.7 \*\*\*
17.45 2.9 \*\*\*
18.00 1.3 \*
18.15 0.8 \*

## .QUEUE AT ARM C

-----

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE

17.00 0.6 \*
17.15 0.9 \*
17.30 1.7 \*\*
17.45 1.7 \*\*
18.00 1.0 \*
18.15 0.6 \*

# .QUEUE AT ARM D

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE 17.00 0.1 17.15 0.2 17.30 0.3 17.45 0.3 18.00 0.2 18.15 0.1

### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

														т75
I	ARM	I	TOTAL	DEMAND	I	* QUE	UEING *	I	*	INCLUSIV	Έ	QUEUEING *	I	
I		I			Ι	* DEI	LAY *	I		* D	EL	AY *	I	
I		I											-I	
Ι		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/V	EH) I		(MIN)		(MIN/VEH)	I	
I	A	I :	1851.3	1234.2	Ι	400.0 I	0.2	2 I		400.1	Ι	0.22	I	

I	В	I	872.7	Ι	581.8	Ι	140.0	Ι	0.16	I	140.0	Ι	0.16	I
I	C	I	691.0	I	460.6	Ι	96.8	Ι	0.14	I	96.9	I	0.14	I
I	D	I	188.6	Ι	125.7	Ι	16.4	Ι	0.09	I	16.4	Ι	0.09	I
I	ALL	I	3603.5	I	2402.3	Ι	653.3	Ι	0.18	I	653.4	Ι	0.18	I

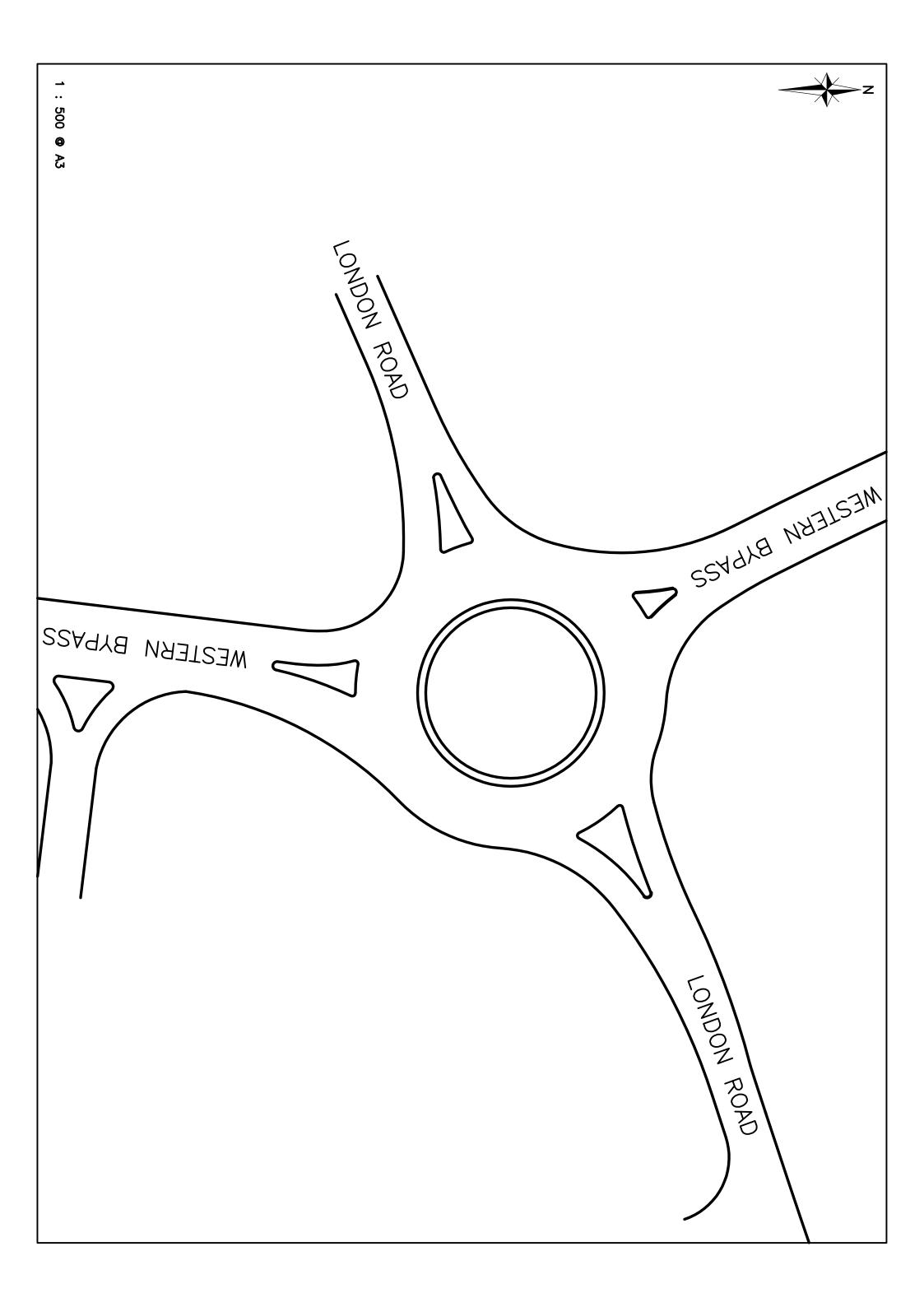
- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

# Appendix N

Results of ARCADY capacity assessment: Stanway Western Bypass/B1408 London Road roundabout



\_\_ARCADY 6 \_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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#### Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-London\ Bypass-London am.vai"

(drive-on-the-left ) at 14:55:43 on Thursday, 11 June 2009

## .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/B1408 London Road roundabout weekday am peak LOCATION: Stanway

DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS: DESCRIPTION:

.INPUT DATA

ARM A - Western Bypass (north)

ARM B - London Road (east) ARM C - Western Bypass (south) ARM D - London Road (west)

### .GEOMETRIC DATA

																	. TF
I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	) I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM	ΑI	5.00	I	7.25	I	6.50	I	20.00	I	50.00	I	54.5	I	0.581	I	28.036	I
I ARM	ΒI	3.65	I	5.00	I	24.00	I	3.00	I	50.00	I	26.0	I	0.414	I	17.837	I
I ARM	CI	5.00	I	8.67	I	6.20	I	20.00	I	50.00	I	45.0	I	0.613	I	30.006	I
I ARM	DΙ	3.65	I	6.40	I	6.60	I	20.00	I	50.00	I	48.9	I	0.527	I	22.785	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

#### .SCALING FACTORS

IARM I FLOW SCALE(%) I I 100 ΙB 100 Т Ι 100 ID I 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

I			Ι	NU.	MBER OF	M.	INUTI	ES FROM	ST	ART WHEN	Ι	RATE	OI	FLO	r) WC	VEF	H/MIN)	I
I	ARM		Ι	FLOW	STARTS	Ι	TOP	OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT :	rop	Ι	AFTER	I
I			Ι			Ι			Ι		Ι		Ι			Ι		I
I			Ι	TO	RISE	Ι	IS	REACHEL	I	FALLING	Ι	PEAK	Ι	OF I	PEAK	Ι	PEAK	I
I	ARM	Α	I		15.00	I		45.00	I	75.00	I	9.44	I	14	.16	Ι	9.44	I
I	ARM	В	I		15.00	I		45.00	I	75.00	I	7.31	I	10	.97	Ι	7.31	I
I	ARM	C	I		15.00	I		45.00	I	75.00	Ι	11.50	I	17.	. 25	I	11.50	I
Ι	ARM	D	Ι		15.00	Ι		45.00	I	75.00	Ι	10.45	Ι	15	.67	Ι	10.45	I

DEN	MAND SET TITLE:	2023					am peak			
·I		I					OPORTIONS			I
I		I			ΤŢ	URNING CO	UNTS			Ι
I		I		(	PI	ERCENTAGE	OF H.V.S	)		Ι
I										
I	TIME									Ι
I	07.45 - 09.15									I
I		I	ARM	Α	Ι	0.000 I	0.201 I	0.558	0.241	Ι
I		I			Ι	0.0 I	152.0 I	421.0	I 182.0	I
I		I			Ι	( 0.0)I	( 0.0)I	( 1.0)	I ( 6.0	)I
I		I			Ι	I	I		I	I
I		I	ARM	В	Ι	0.207 I	0.007 I	0.091	I 0.696	I
I		I			Ι	121.0 I	4.0 I	53.0	I 407.0	Ι
Ι		I			Ι	( 0.0)I	( 0.0)I	( 0.0)	I ( 1.0	) I
I		I			Ι	I	I		I	I
I		I	ARM	C	Ι	0.571 I	0.093 I	0.005	I 0.330	Ι
I		I			Ι	525.0 I	86.0 I	5.0	I 304.0	I
I		I					( 6.0)I			
Ι		I			Ι	I	I		I	I
I		I	ARM	D	Ι	0.202 I	0.498 I	0.292	0.008	I
I		I			Ι	169.0 I	416.0 I	244.0	I 7.0	I
I							( 5.0)I	( 6.0)	I ( 0.0	)I
I		I			Ι	I	I		I	Ι

TIME	DEMAND	CAPACITY	DEMAND/	PEDES	TRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)	CAPACITY	FL	OW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
			(RFC)	(PEDS	/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
07.45-										
ARM A		21.77			-	0.0	0.8	11.1	-	0.081
ARM B	7.34	13.14			-	0.0	1.2	17.3	-	0.168
ARM C	11.54	23.77			-	0.0	0.9	13.5	-	0.081
ARM D	10.49	17.03	0.616		-	0.0	1.6	21.9	-	0.148
TIME		CAPACITY				START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)		FL		QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING
			(RFC)	(PEDS	/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
08.00-	08 15									
ARM A	11.31	20.65	0.548		_	0.8	1.2	17.3	_	0.107
ARM B	8.77	12.24			_	1.2	2.4	32.6	_	0.275
ARM C	13.78	22.69	0.607		_	0.9	1.5	21.9	_	0.111
ARM D	12.53				_	1.6	3.3	44.1	_	0.264
TIME		CAPACITY	,			START	END	DELAY	GEOMETRIC DELAY	
	(VEH/MIN)	(VEH/MIN)		FL		~ -	QUEUE	(VEH.MIN/		PER ARRIVING
			(RFC)	(PEDS	/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
08.15-										0.454
ARM A	13.85		0.700		-	1.2	2.3	32.7	-	0.171
ARM B	10.73	11.14			-	2.4	9.9	107.1	-	0.838
ARM C			0.787			1.5	3.5	47.2	-	0.207
ARM D	15.34	14.89	1.031		-	3.3	19.0	185.0	-	1.017
TTME	DEMAND	CAPACITY	DEMAND /			START	END	DELAY	GEOMETRIC DELAY	AVEDACE DELAY
TIME	(VEH/MIN)			PEDES		OUEUE	OUEUE	(VEH.MIN/		PER ARRIVING
	(AFH/MTN)	(AFH/MTN)				~ -	~ -		(VEH.MIN/ TIME SEGMENT)	
			(RFC)	(PEDS	/ I/I I I/I )	(VEHS)	(VEHD)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
08.30-	08.45									
ARM A	13.85	19.40	0.714		-	2.3	2.4	36.0	-	0.179
ARM B	10.73	11.07	0.970		-	9.9	13.1	174.6	-	1.282
ARM C	16.88	21.29	0.793		-	3.5	3.7	54.0	-	0.225
ARM D	15.34	14.82	1.035		-	19.0	30.1	370.2	-	1.870

T		a	DEM. 100 /			Om. Dm			G_045	
I TIME		CAPACITY (VEH/MIN)							GEOMETRIC DELAY (VEH.MIN/	
I	( V 111 / 1111 /	(VEII/PILIN)	(RFC)	(P	EDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
- - 00 4F 0	0.00									
I 08.45-0	11 31	19.76	0.572		_	2.4	1.4	21.4	_	0.120
I ARM B	8.77	11.96	0.733		-	13.1	3.0	69.2 26.4 180.0	-	0.481
I ARM C	13.78	22.26	0.619		-	3.7	1.7	26.4	-	0.122
I ARM D	12.53	15.95	0.785		-	30.1	4.2	180.0	-	0.875
I										
•										
I TIME	DEMAND	CAPACITY	DEMAND/	PE	DESTRIAN	START	END	DELAY	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY
I	(VEH/MIN)	(VEH/MIN)	(RFC)	(P	FLOW EDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)
-										
I 09.00-0		21 62	0 420			1 4	0 0	10.0		0.003
I ARM A	9.47 7.34	13.07	0.438		_	3.0	1.3	21 2	-	0.083
I ARM C		23.65					1.0		-	0.083
I ARM D	10.49	16.97	0.618		-	4.2			-	0.162
I										:
.QUEUE AT										
	MENT NO. OF VEHICI IN QUE	ES								
08.00		8 *								
08.15 08.30	1.	3 **								
08.45		4 **								
09.00		4 *								
09.15		8 *								
.QUEUE AT										
	MENT NO. OF									
ENDING	VEHICI IN QUE	CUE								
08.00	1.	2 *								
08.15	2.	4 **								
08.30	9.	9 *****	****							
08.45	13.	1 *****	*****							
09.00	3.	1 ****** 0 *** 3 *								
09.15	1.	3 °								
.QUEUE AT	ARM C									
TIME SEG	MENT NO. OF	7								
	VEHICI IN QUE	ES								
00.00	•	0 +								
08.00 08.15		9 * 5 **								
08.15		5 ***								
08.45		7 ****								
09.00		7 **								
09.15	1.	0 *								
.QUEUE AT										
TIME CEC	MENT NO. OF	,								
ENDING	MENI NO. OF VEHICI									
21101110	IN QUE									
08.00		6 **								
08.15 08.30	3.	3 ***	*****	***						
08.45		1 *****			*****	* *				
09.00	4.	2 ****								
09.15	1.	7 **								

# .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

													T75
I	ARM	I	TOTAL	DEMAND	Ι	* QUE	UEING *	I	* INCLUSI	VE (	QUEUEING *	I	
I		I			Ι	* DE	LAY *	I	*	DEL	AY *	I	
I		I-										-I	
I		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/VEH)	I	(MIN)		(MIN/VEH)	I	
I	A	I	1039.2	1 692.8	Ι	130.6 I	0.13	I	130.7	I	0.13	I	

I	В	Ι	805.2	Ι	536.8	Ι	422.1	Ι	0.52	I	422.1	Ι	0.52	I
I	C	Ι	1266.3	Ι	844.2	Ι	177.9	Ι	0.14	I	177.9	Ι	0.14	I
I	D	Ι	1150.7	I	767.1	Ι	828.2	Ι	0.72	I	828.3	Ι	0.72	I
Ι	ALL	Ι	4261.4	Ι	2840.9	Ι	1558.8	Ι	0.37	I	1559.0	I	0.37	I

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_ARCADY 6 \_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS

IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-London'" Bypass-London am.vai"

(drive-on-the-left ) at 14:56:20 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/B1408 London Road roundabout weekday am peak LOCATION: Stanway

DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS:

DESCRIPTION: .INPUT DATA

ARM A - Western Bypass (north) ARM B - London Road (east)
ARM C - Western Bypass (south)

ARM D - London Road (west)

.GEOMETRIC DATA

I ARM I V (M) I E (M) I L (M) I R (M) I D (M) I PHI (DEG) I SLOPE I INTERCEPT (PCU/MIN) I 5.00 7.25 6.50 I 20.00 50.00 54.5 I 0.581 I 28.036 I ARM B I 3.65 5.00 24.00 I 3.00 50.00 I 26.0 I 0.414 I I 0.613 I 17.837 I ARM C I 5.00 6.20 20.00 45.0 30.006 I ARM D I 3.65 6.40 I 6.60 I 20.00 I 50.00 I 48.9 I 0.527 I 22.785 Ι

V = approach half-width

L = effective flare length

D = inscribed circle diameter PHI = entry angle

E = entry width

R = entry radius

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I 100 T B 100 т 100 I ID I 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)
.LENGTH OF TIME PERIOD -( 90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.1	DE!	MAND	SI	ET	TITLE	: 2023	De	ev't	Case													т15
	Ι			I	NUM	BER OF	M	INUTI	S FI	ROM	STA	ART WH	EN	Ι	RATE	OI	FI	LOW (	VEF	H/MIN)	I	110
	Ι	ARM		Ι	FLOW	STARTS	I	TOP	OF I	PEAK	I	FLOW	STOPS	I	BEFORE	Ι	AT	TOP	I	AFTER	I	
	Ι			Ι			Ι				Ι			Ι		Ι			Ι		Ι	
	Ι			Ι	TO	RISE	I	IS	REA	CHED	I	FALLI	NG	Ι	PEAK	Ι	OF	PEAK	Ι	PEAK	I	
	I.	ARM	Α	Ι	1	5.00	Ι		45.0	00	Ι	75	.00	Ι	10.01	Ι	15	5.02	I	10.01	Ι	
	I.	ARM	В	I	1	5.00	I		45.0	00	I	75	.00	I	7.31	I	10	.97	I	7.31	I	
	I.	ARM	C	I	1	5.00	I		45.0	00	I	75	.00	I	12.84	I	19	26	I	12.84	I	
:	I.	ARM	D	Ι	1	5.00	I		45.0	00	I	75	.00	Ι	10.49	Ι	15	5.73	I	10.49	I	

DEMAND SET TITLE:	2023 Dev't Case weekday am peak	т33
	I TURNING PROPORTIONS I I TURNING COUNTS I I (PERCENTAGE OF H.V.S)	
I TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM D I	
1 07.45 - 09.15  I I I I I I I I I I I I I I I I I I	I ARM A I 0.000 I 0.190 I 0.583 I 0.227 I I 0.00 I 152.0 I 467.0 I 182.0 I I I I I I I I I I I I I I I I I I I	

TIME	DEMAND (VEH/MIN)		CAPACITY			QUEUE	QUEUE	DELAY (VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY PER ARRIVING	
			(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	
07.45-0	08.00										
ARM A	10.05	21.78	0.461	-		0.0	0.8	12.3	-	0.084	
ARM B		12.90	0.569	-		0.0	1.3	18.0	-	0.175	
ARM C	12.89	23.81 16.44	0.541	-		0.0	1.2	16.7	-	0.090	
ARM D	12.89 10.53	16.44	0.641	-		0.0	1.7	24.1	-	0.163	
[ 											_
TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	-
	(VEH/MIN)								(VEH.MIN/		
		/							TIME SEGMENT)		
							•	,	*		
08.00-0	08.15										
ARM A	12.00	20.68	0.580	-		0.8	1.4	19.6	-	0.114	
ARM B		11.95	0.733	-		1.3	2.6	34.9	-	0.298	
ARM C	15.39	22.74	0.677	-		1.2	2.0	29.0	-	0.134	
ARM D	15.39 12.57	15.37	0.818	-		1.7	4.0	52.9	-	0.323	
											_
											_
	DEMAND								GEOMETRIC DELAY		
	DEMAND (VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
			CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	
	(VEH/MIN)		CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
: : : 08.15-0	(VEH/MIN)	(VEH/MIN)	CAPACITY (RFC)		FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN)	
I - I 08.15-( I ARM A	(VEH/MIN) 08.30 14.70	(VEH/MIN)	CAPACITY (RFC)	_	FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.187	
[ - [ 08.15-( [ ARM A [ ARM B	(VEH/MIN) 08.30 14.70 10.73	(VEH/MIN)  19.87 10.87	CAPACITY (RFC) 0.740 0.988		FLOW (PEDS/MIN)	QUEUE (VEHS)	QUEUE (VEHS) 2.7 11.6	(VEH.MIN/ TIME SEGMENT) 37.7 121.5	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.187 0.960	
[  -   08.15-(   ARM A   ARM B   ARM C	(VEH/MIN) 08.30 14.70 10.73 18.85	(VEH/MIN)  19.87 10.87 21.55	CAPACITY (RFC) 0.740 0.988 0.874		FLOW (PEDS/MIN)	QUEUE (VEHS) 1.4 2.6 2.0	QUEUE (VEHS) 2.7 11.6 6.0	(VEH.MIN/ TIME SEGMENT) 37.7 121.5 76.0	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.187 0.960 0.311	
08.15-( ARM A ARM B ARM C ARM D	(VEH/MIN) 08.30 14.70 10.73 18.85	(VEH/MIN)  19.87 10.87	CAPACITY (RFC) 0.740 0.988 0.874		FLOW (PEDS/MIN)	QUEUE (VEHS) 1.4 2.6 2.0	QUEUE (VEHS) 2.7 11.6 6.0	(VEH.MIN/ TIME SEGMENT) 37.7 121.5	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.187 0.960	
I I O8.15-( I ARM A I ARM B I ARM C I ARM D	(VEH/MIN) 08.30 14.70 10.73 18.85	(VEH/MIN)  19.87 10.87 21.55	CAPACITY (RFC) 0.740 0.988 0.874		FLOW (PEDS/MIN)	QUEUE (VEHS) 1.4 2.6 2.0	QUEUE (VEHS) 2.7 11.6 6.0	(VEH.MIN/ TIME SEGMENT) 37.7 121.5 76.0	(VEH.MIN/	PER ARRIVING VEHICLE (MIN) 0.187 0.960 0.311	
I I O8.15-(I ARM A I ARM B I ARM C I ARM D I I	(VEH/MIN)  08.30  14.70  10.73  18.85  15.40  DEMAND	19.87 10.87 21.55 14.04	CAPACITY (RFC)  0.740 0.988 0.874 1.096	- - - -	FLOW (PEDS/MIN)	QUEUE (VEHS) 1.4 2.6 2.0 4.0	QUEUE (VEHS) 2.7 11.6 6.0 29.1	(VEH.MIN/ TIME SEGMENT)  37.7 121.5 76.0 261.9  DELAY	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)  0.187 0.960 0.311 1.447	
08.15-( ARM A ARM B ARM C ARM D	(VEH/MIN)  08.30  14.70  10.73  18.85  15.40	19.87 10.87 21.55 14.04	0.740 0.988 0.874 1.096	- - - -	FLOW (PEDS/MIN)	QUEUE (VEHS) 1.4 2.6 2.0 4.0 START QUEUE	QUEUE (VEHS) 2.7 11.6 6.0 29.1 END QUEUE	(VEH.MIN/ TIME SEGMENT)  37.7 121.5 76.0 261.9  DELAY (VEH.MIN/	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)  0.187 0.960 0.311 1.447  AVERAGE DELAY PER ARRIVING	
08.15-( ARM A ARM B ARM C ARM D	(VEH/MIN)  08.30  14.70  10.73  18.85  15.40  DEMAND	19.87 10.87 21.55 14.04	0.740 0.988 0.874 1.096	- - - -	FLOW (PEDS/MIN)	QUEUE (VEHS) 1.4 2.6 2.0 4.0 START QUEUE	QUEUE (VEHS) 2.7 11.6 6.0 29.1 END QUEUE	(VEH.MIN/ TIME SEGMENT)  37.7 121.5 76.0 261.9  DELAY (VEH.MIN/	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)  0.187 0.960 0.311 1.447  AVERAGE DELAY PER ARRIVING	
08.15-( ARM A ARM B ARM C ARM D	08.30 14.70 10.73 18.85 15.40 	19.87 10.87 21.55 14.04	0.740 0.988 0.874 1.096	- - - -	FLOW (PEDS/MIN)	QUEUE (VEHS) 1.4 2.6 2.0 4.0 START QUEUE	QUEUE (VEHS) 2.7 11.6 6.0 29.1 END QUEUE	(VEH.MIN/ TIME SEGMENT)  37.7 121.5 76.0 261.9  DELAY (VEH.MIN/	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)  0.187 0.960 0.311 1.447  AVERAGE DELAY PER ARRIVING	
08.15-( ARM A ARM B ARM C ARM D T TIME	08.30 14.70 10.73 18.85 15.40 	19.87 10.87 21.55 14.04	0.740 0.988 0.874 1.096 DEMAND/ CAPACITY (RFC)	- - - -	FLOW (PEDS/MIN)  PEDESTRIAN FLOW (PEDS/MIN)	QUEUE (VEHS) 1.4 2.6 2.0 4.0 START QUEUE	QUEUE (VEHS)  2.7 11.6 6.0 29.1  END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)  37.7 121.5 76.0 261.9  DELAY (VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)  0.187 0.960 0.311 1.447  AVERAGE DELAY PER ARRIVING	
08.15-( ARM A ARM B ARM C ARM D TIME	(VEH/MIN)  08.30  14.70  10.73  18.85  15.40  DEMAND (VEH/MIN)  08.45  14.70	19.87 10.87 21.55 14.04 	0.740 0.988 0.874 1.096 DEMAND/ CAPACITY (RFC)	- - - - 	FLOW (PEDS/MIN)  PEDESTRIAN FLOW (PEDS/MIN)	QUEUE (VEHS)  1.4 2.6 2.0 4.0  START QUEUE (VEHS)	QUEUE (VEHS)  2.7 11.6 6.0 29.1  END QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)  37.7 121.5 76.0 261.9  DELAY (VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)  0.187 0.960 0.311 1.447  AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	
08.15-( ARM A ARM B ARM C ARM D TIME	08.30 14.70 10.73 18.85 15.40 	19.87 10.87 21.55 14.04 	CAPACITY (RFC)  0.740 0.988 0.874 1.096  DEMAND/ CAPACITY (RFC)  0.743 0.992	- - - - - -	FLOW (PEDS/MIN)	QUEUE (VEHS)  1.4 2.6 2.0 4.0  START QUEUE (VEHS)	QUEUE (VEHS)  2.7 11.6 6.0 29.1  END QUEUE (VEHS)  2.8 16.3	(VEH.MIN/ TIME SEGMENT)  37.7 121.5 76.0 261.9  DELAY (VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)  0.187 0.960 0.311 1.447  AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.196	
O8.15-( ARM A ARM C ARM D TIME  O8.30-( ARM A ARM B ARM B	08.30 14.70 10.73 18.85 15.40 	19.87 10.87 21.55 14.04 	CAPACITY (RFC)  0.740 0.988 0.874 1.096  DEMAND/ CAPACITY (RFC)  0.743 0.992 0.881	-	FLOW (PEDS/MIN)  PEDESTRIAN FLOW (PEDS/MIN)	QUEUE (VEHS)  1.4 2.6 2.0 4.0  START QUEUE (VEHS)  2.7 11.6 6.0	QUEUE (VEHS)  2.7 11.6 6.0 29.1  END QUEUE (VEHS)  2.8 16.3 6.7	(VEH.MIN/ TIME SEGMENT)  37.7 121.5 76.0 261.9  DELAY (VEH.MIN/ TIME SEGMENT)  41.7 211.2	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)  0.187 0.960 0.311 1.447  AVERAGE DELAY PER ARRIVING VEHICLE (MIN)  0.196 1.545	

			CAPACITY		QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING
I 08.45-09							05.0		0.405
T ADM D	12.00 8.77	11 [0	0.756		2.8 16.3	2 5	25.9 92.5	-	0.136
I ARM C	15.39	22.20	0.693		6.7	2.3	39.1	-	0.160
I								-	2.416
 I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIA	N START	END	DELAY	GEOMETRIC DELAY (VEH.MIN/	AVERAGE DELAY
I -	(,,,,,,	,,						TIME SEGMENT)	
09.00-09		01 00	0.454		1.6	0.0	14.1		0.000
L ARM A	7.34	12.71	0.474		3.5	0.9 1.4	14.1 23.0 18.9	_	0.090
ARM C	12.89	23.67	0.544		2.3	1.2	18.9	-	0.094
ARM D			0.644		17.5	1.9	54.4	-	0.255
QUEUE AT A	ARM A								
	MENT NO. OF VEHICLE IN QUEU								
08.00									
08.00									
08.30	2.7	***							
08.45		***							
09.00 09.15									
QUEUE AT A									
	MENT NO. OF VEHICLE IN QUEU								
00.00									
08.00 08.15		***							
08.30	11.6	*****	****						
08.45			*****	+					
09.00 09.15	3.5 1.4								
-									
TIME SEGM		ss							
TIME SEGM	MENT NO. OF								
TIME SEGMENDING	MENT NO. OF VEHICLE IN QUEU	E *							
TIME SEGM ENDING 08.00 08.15	MENT NO. OF VEHICLE IN QUEU 1.2 2.0	* **							
TIME SEGM ENDING 08.00 08.15 08.30	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0	* ** ****	*						
TIME SEGM ENDING 08.00 08.15	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7 2.3	*     **     **     *****     *****	*						
TIME SEGMENDING  08.00 08.15 08.30 08.45	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7	*     **     **     *****     *****	*						
TIME SEGN ENDING 08.00 08.15 08.30 08.45 09.00 09.15	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7 2.3 1.2	*     **     **     *****     *****	*						
08.00 08.15 08.30 08.45 09.00 09.15	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7 2.3 1.2	* * * * * * * * * * * * * * * * * * *	*						
TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15	MENT NO. OF VEHICLE IN QUEU  1.2 2.0 6.0 6.7 2.3 1.2  ARM D  MENT NO. OF VEHICLE	* **     **     ******     **     **     **     **	*						
TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15  QUEUE AT F  TIME SEGN ENDING  08.00 08.15	MENT NO. OF VEHICLE IN QUEU  1.2 2.0 6.0 6.7 2.3 1.2  ARM D VEHICLE IN QUEU  1.7 4.0	* * ** ***** ** ****** ** ** ** ** ** *							
TIME SEGM ENDING  08.00 08.15 08.30 08.45 09.00 09.15  TIME SEGM ENDING  08.00 08.15 08.30	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 0.6.0 6.7 2.3 1.2 MARM D VEHICLE IN QUEU 1.7 4.0 29.1	* * * * * * * * * * * * * * * * * * *	****	*********					
TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15  QUEUE AT F  TIME SEGN ENDING  08.00 08.15	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7 2.3 1.2 MENT NO. OF VEHICLE IN QUEU 1.7 4.0 29.1 51.9	* **     *****     *****     **  **  **	****	******		****	*****		
TIME SEGN ENDING 08.00 08.15 08.30 08.45 09.00 09.15 DUEUE AT F TIME SEGN ENDING 08.00 08.15 08.30 08.45	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7 2.3 1.2 MENT NO. OF VEHICLE IN QUEU 1.7 4.0 29.1 51.9 17.5	* ** ******  ******  **  **  **  **  **	*******	******		****	*****		
TIME SEGNENDING  08.00 08.15 08.30 08.45 09.00 09.15  QUEUE AT F  TIME SEGNENDING  08.00 08.15 08.30 08.45 09.00	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7 2.3 1.2 MENT NO. OF VEHICLE IN QUEU 1.7 4.0 29.1 51.9 17.5	* ** ******  ******  **  **  **  **  **	*******	******		****	*****		
TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15  TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15	MENT NO. OF VEHICLE IN QUEU  1 2 2 0 0 6 0 6 7 2 3 1 . 2  MENT NO. OF VEHICLE IN QUEU  1 7 4 0 0 29 . 1 51 . 9 17 . 5 1 . 9	* **  ******  **  **  **  **  **  **  *	******** ********* ER WHOLE I	********** *** PERIOD	****				
TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15  DUEUE AT F  TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7 2.3 1.2 MRM D VEHICLE IN QUEU 1.7 4.0 29.1 51.9 17.5 1.9	* **     *****     **     **     **     **     **	******** ********* *********	*********** *** PERIOD	*****		т75		
TIME SEGMENDING  08.00 08.15 08.30 08.45 09.00 09.15  TIME SEGMENDING  08.00 08.15 08.30 08.45 09.00 09.15	MENT NO. OF VEHICLE IN QUEU  1 2 2 0 0 6 0 6 0 6 0 0 6 0 0 0 0 0 0 0 0	* **  ******  *****  **  **  **  **  **	******** ********** ER WHOLE I	**********  PERIOD   EING * I  YY * I	********  * INCLU		т75		
TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15  TIME SEGN ENDING  08.00 08.15 08.30 08.45 09.00 09.15	MENT NO. OF VEHICLE IN QUEU 1.2 2.0 6.0 6.7 2.3 1.2 MENT NO. OF VEHICLE IN QUEU 1.7 4.0 29.1. 51.9 17.5 1.9 DELAY INFORMATION DEMANDED TO TALL DEM	* **  ******  **  **  **  **  **  **  *	********* ********** ER WHOLE I * QUEUE	*********** *** PERIOD	********  * INCLU	SIVE QUE	T75 ULEING * I * I		

I	В	Ι	805.2	Ι	536.8	Ι	501.0	Ι	0.62	I	501.0	I	0.62	I
I	C	Ι	1413.6	Ι	942.4	Ι	275.6	Ι	0.19	I	275.7	I	0.20	I
I	D	I	1154.8	I	769.9	Ι	1522.7	Ι	1.32	I	1522.8	I	1.32	I
I	ALL	Ι	4476.1	I	2984.1	Ι	2450.4	Ι	0.55	I	2450.7	I	0.55	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_\_ARCADY 6 \_\_

#### ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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RG40 3GA,UK

THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

#### Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-London\ Bypass-London pm.vai" (drive-on-the-left ) at 15:00:54 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/B1408 London Road roundabout weekday pm peak

LOCATION: Stanway DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960

STATUS: DESCRIPTION:

# .INPUT DATA

ARM A - Western Bypass (north) ARM B - London Road (east) ARM C - Western Bypass (south) ARM D - London Road (west)

.GEOMETRIC DATA

																	- T5
I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	) I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM	7 T	5.00		7.25	т	6.50	т	20.00	т	50.00	т	54.5	т	0.581	· ·	28.036	т т
I ARM		3.65	T	5.00	T	24.00	T	3.00	т т	50.00	T	26.0	_	0.361		17.837	T
I ARM			Ť		Ť	6.20	Ť	20.00	Ť	50.00	Ť	45.0		0.613	T	30.006	T
	DΙ	3.65	I	6.40	I	6.60	I	20.00	I	50.00	I	48.9	I	0.527	I	22.785	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

# .TRAFFIC DEMAND DATA

Only sets included in the current run are shown

#### .SCALING FACTORS

IARM I FLOW SCALE(%) I I 100 ΙB 100 Т Ι 100 ID I 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

Ι		I	NUI	MBER OF	MΙ	NUTI	ES F	ROM :	STA	ART W	HEN	Ι	RATE	OI	FI	MOL	(VE	H/MIN)	Ι	
Ι	ARM	I	FLOW	STARTS	Ι	TOP	OF	PEAK	I	FLOW	STOPS	Ι	BEFORE	Ι	AΤ	TOP	I	AFTER	Ι	
Ι		I			Ι				Ι			Ι		Ι			I		Ι	
Ι		I	TO	RISE	Ι	IS	REA	CHED	Ι	FALL	ING	Ι	PEAK	Ι	OF	PEAR	ΚI	PEAK	Ι	
I	ARM	ΑI		15.00	Ι		45.	00	I	7	5.00	I	16.55	I	24	1.82	I	16.55	Ι	
I	ARM	вІ		15.00	Ι		45.	00	I	7	5.00	I	7.36	I	11	.04	I	7.36	Ι	
I i	ARM	СI		15.00	I		45.	0.0	I	7	5.00	I	11.95	I	17	1.92	I	11.95	I	
I i	ARM	DΙ		15.00	Ι		45.	0.0	I	7	5.00	I	12.73	I	19	.09	I	12.73	I	

•											T33
I		_					OPORTIONS			Ι	
I							JNTS			Ι	
I		I		(	PE	ERCENTAGE	OF H.V.S	)		Ι	
I											
I	TIME	Ι								Ι	
т Т	16.45 - 18.15	т					т			т	
Ť	10.15 10.15						0.331 I			_	
T		Т					438.0 I				
Ť		T					( 0.0)I				
T		Т.					, ,,,,			т.	
Ī		I					0.019 I			I	
I		I			I	156.0 I	11.0 I	113.0 I	309.0	Ι	
I		I			Ι	( 0.0)I	( 0.0)I	( 0.0)I	( 0.0	) I	
I		I			I	I	I	I		I	
I		I	ARM	C	I	0.615 I	0.067 I	0.008 I	0.310	Ι	
I		I			I	588.0 I	64.0 I	8.0 I	296.0	I	
I		I			Ι	( 1.0)I	( 9.0)I	( 83.0)I	( 3.0	) I	
I		I			I	I	I	I		Ι	
I		I	ARM	D	Ι	0.220 I	0.426 I	0.353 I	0.001	Ι	
I		I			I	224.0 I	434.0 I	359.0 I	1.0	Ι	
I		I			I	( 2.0)I	( 2.0)I	( 2.0)I	( 0.0	Ι(	
T		T			Т	-	T	T		Т	

I T	IME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END		GEOMETRIC DELAY		
		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
Ε				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-											-
I 16	.45-1										Ι
I AR						0.0	3.2	43.3	-	0.189	Ι
I AR	M B	7.39				0.0	1.8	24.3	-		Ι
I AR		12.00				0.0	0.9	13.5	-	0.078	Ι
I AR	M D	12.77	16.90	0.756		0.0	2.9	38.9	-	0.223	Ι
Ι											Ι
. Т	IME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
E		(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
I				(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
-				/	/	,		,	/	- ,,	_
17	.00-1	7.15									Ι
I AR	M A	19.84	20.38	0.974		3.2	13.6	147.4	-	0.612	Ι
I AR	мв	8.82	10.23	0.863		1.8	4.9	61.1	_	0.559	Ι
I AR		14.32	23.87				1.5	21.3	_	0.104	I
I AR	M D	15.25	15.84	0.963		2.9	11.2	123.9	_	0.673	I
											Ι
 I T	IME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	 I
т -		(VEH/MIN)				OUEUE	OUEUE	(VEH.MIN/		PER ARRIVING	
T		(,,	(,,			~ -	~ -		TIME SEGMENT)		
-				(111 0)	(1220/11211)	( 1210 )	(VIIIO)	TITLE DEGLESTITY	TITLE ODGEDITY	VDIII (11111)	_
т 17	.15-1	7.30									т
	M A	24.30	20.31	1.196		13.6	74.6	665.2	_	2.346	T
I AR		10.81				4.9	21.9	210.7	_	1.692	Ī
I AR			23.29				2.9	40.6	_	0.168	Ī
I AR		18.68	14.53				74.3	644.1	_		Ī
I III	_										I
	TME	пемамп	CAPACITY	DEMAND /	PEDESTRIAN	 TTAPT	END	DELAY	GEOMETRIC DELAY	AVERAGE DELVA	
		(VEH/MIN)			FLOW	OUEUE	OUEUE	(VEH.MIN/		PER ARRIVING	
L T		(APU/MITIN)	( v E II / MITIN )			~ -	~ -		TIME SEGMENT)		
-				(RFC)	(PEDS/MIN)	( AFUS)	( VEDS)	TIME SEGMENT)	TIME SEGMENT)	ARUTCHE (MIN)	_
17	.30-1	7.45									I
	M A	24.30	20.31	1.196		74.6	134.6	1569.2	-	5.283	Ι
I AR		10.81	9.93	1.088		21.9	36.3	438.2	_	3.203	Ι
						2.9	3.0	44.7	_	0.176	T
IAR IAR IAR	M C	17.54	23.21								
I AR I AR	M C	17.54 18.68	23.21 14.47					1588.2	_	7.277	I

I TIME I	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING
- I 17.45-1	8 00									
	19.84		0.993				134.6		-	6.815
ARM B	8.82		0.890			36.3		452.5	-	3.178
ARM C	14.32 15.25	23.33	0.614		-	3.0	1.6	25.5	-	0.113
									-	8.572
TIME	DEMAND	CAPACITY	DEMAND/	PEI	ESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)	(RFC)	(PE	FLOW DS/MIN)	(VEHS)	QUEUE (VEHS)	(VEH.MIN/ TIME SEGMENT)	(VEH.MIN/ TIME SEGMENT)	PER ARRIVING VEHICLE (MIN)
18.00-1 ARM A		19.65	0.845		_	134.6	91.2	1693.8	-	5.804
ARM B			0.748				3.5		-	1.248
ARM C	12.00	23.78	0.504				1.0		-	0.085
ARM D			0.767				77.0		-	6.389
UEUE AT	ARM A									
	MENT NO. OF VEHICL IN QUE	ES								
17.00		2 ***								
17.15	13.	6 *****								
17.30									******	
17.45	134.	6 *****	********	*****	*****	******	********	******	* * * * * * * * * * * * * * * * * * *	*******
18.00 18.15									*****	
JEUE AT										
FIME SEG	MENT NO. OF	,								
		ES								
17.00		8 **								
17.15		9 *****								
17.30 17.45		9 *****				*****	k			
18.00		0 *****								
18.15		5 ****								
JEUE AT	ARM C									
	MENT NO. OF VEHICL IN QUE	ES								
	MENT NO. OF VEHICL IN QUE	ES								
17.00 17.15	MENT NO. OF VEHICL IN QUE 0. 1.	ES UE 9 * 5 *								
17.00 17.15 17.30	MENT NO. OF VEHICL IN QUE 0. 1. 2.	ES UE 9 * 5 * 9 ***								
17.00 17.15 17.30 17.45	MENT NO. OF VEHICL IN QUE 0. 1. 2.	ES UE 9 * 5 * 9 *** 0 ***								
17.00 17.15 17.30	MENT NO. OF VEHICL IN QUE 0. 1. 2. 3.	ES UE 9 * 5 * 9 ***								
17.00 17.15 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.	DES 9 * 5 * 9 *** 0 *** 6 **								
17.00 17.15 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.	9 * 5 * 9 * * * 0 * * * * 6 * * 0 * * * * * 5 * 5 * 5 * 5 * 5 * 5 *								
17.00 17.15 17.30 17.45 18.00 18.15 UEUE AT 2	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE	ES UE 9 * * * 9 9 * * * * 0 * * * * 6 * * * 0 0 * * * * *								
17.00 17.15 17.30 17.45 18.00 18.15 UEUE AT 2 TIME SEGIENDING	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE  2. 11.	9 * 5 * 9 *** 0 *** 6 * * 0 * * * * * * * * * * *								
17.00 17.15 17.30 17.45 18.00 18.15 FIME SEGIENDING 17.00 17.15 17.30	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.  ARM D  WEHICL IN QUE  2. 11. 74.	9 * * * * * * * * * * * * * * * * * * *	*****						*****	
17.00 17.15 17.30 17.45 18.00 18.15 19.00 17.16 17.00 17.15 17.30 17.45	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE  2. 11. 74. 137.	9 * * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * *	*****	*****	*****	*****	*****	********	*****
17.00 17.15 17.30 17.45 18.00 18.15 19EUE AT 2	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1. 1.    ARM D VEHICL IN QUE  MENT NO. OF VEHICL IN QUE  2. 11. 74. 137. 133.	9 * 5 * 9 *** 0 *** 6 ** 0 * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * * *	*****	*****	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * *	******	******	******
17.00 17.15 17.30 17.45 18.00 18.15  IEUE AT 2  ITIME SEGIENDING 17.00 17.15 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE  O. 1. 2. 3. 1. 1. 1. ARM D VEHICL IN QUE  2. 11. 74. 137. 133. 77.	9 * * * * * * * * * * * * * * * * * * *	******** ******* ******* *****	***** ***** *****	******	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * *	******	* * * * * * * * * * * * * * * * * * *	******
17.00 17.15 17.30 17.45 18.00 18.15  TIME SEGIENDING 17.15 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE  O. 1. 2. 3. 1. 1. 1.    ARM D VEHICL IN QUE  MENT NO. OF VEHICL IN QUE  2. 11. 74. 137. 133. 77.    DELAY INFOR	9 * 5 * 9 *** 0 *** 6 ** 0 * * * * * * * * * * *	******** ******* ******** ER WHOLE	****** ****** ******	******	* * * * * * * * * * * * * * * * * * *	******* ********	*******	* * * * * * * * * * * * * * * * * * *	******
17.00 17.15 17.30 17.45 18.00 18.15 17.46 18.05 17.16 17.17 17.18 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE 2. 11. 74. 137. 133. 77.  DELAY INFOR	9 * 5 * 9 *** 0 *** 6 ** 0 * * * * * * * * * * *	******** ******** ********* ER WHOLE  * QUEU	******  *****  PERIOI   EING *	****** ******	********* ******** ********	******* ******* ******	**************************************	* * * * * * * * * * * * * * * * * * *	******
17.00 17.15 17.30 17.45 18.00 18.15  FIME SEGENDING 17.15 17.30 17.45 18.00 18.15  ARM I	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE 2. 11. 74. 137. 133. 77.  DELAY INFOR	9 * 5 5 * 9 *** 0 *** 6 ** 0 * * * * * * * * * * *	********  ******  ******  ER WHOLE	******  ******  PERIOI   EING *  AY *	****** *******	*******  ******  ******  ******  * INCLUS	******* ******* ******* SIVE QUE * DELAY	**************************************	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *
17.00 17.15 17.30 17.45 18.00 18.15 EUE AT 2 EIME SEGIENDING 17.00 17.15 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE  0. 1. 2. 3. 1. 1.  ARM D  MENT NO. OF VEHICL IN QUE  2. 11. 74. 137. 133. 77.  DELAY INFOR	9 * * * 9 * * * 0 * * * * 6 * * 0 * * * * * * * *	********  *******  ER WHOLE   * QUEU  * DEL  (MIN)	******  PERIOI EING * AY * (MIN/V	******* ******* *******	********  ******  * * * * * * * * * * *	******* ******* ******** SIVE QUE * DELAY	**************************************	* * * * * * * * * * * * * * * * * * *	* * * * * * * * * * * * * * * * * * *

Ι	В	I	810.7	Ι	540.5	Ι	1341.5	Ι	1.65	I	1342.1	I	1.66	I
Ι	C	I	1315.9	Ι	877.2	Ι	161.6	Ι	0.12	I	161.7	I	0.12	I
Ι	D	I	1401.2	I	934.1	Ι	6003.5	Ι	4.28	I	6181.8	I	4.41	I
Ι	ALL	Ι	5350.2	Ι	3566.8	Ι	13644.6	Ι	2.55	I	14035.3	I	2.62	Ι

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_\_ARCADY 6 \_\_

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-London\ Bypass-London pm.vai" (drive-on-the-left ) at 15:01:39 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/B1408 London Road roundabout weekday pm peak

LOCATION: Stanway DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS:

DESCRIPTION:

.INPUT DATA

ARM A - Western Bypass (north)

ARM B - London Road (east) ARM C - Western Bypass (south) ARM D - London Road (west)

.GEOMETRIC DATA

I ARM I	V (M)	I	E (M)	I	L (M)	I									INTERCEPT (PCU/MIN)	
I ARM A I	5.00	I	7.25	I	6.50	I	20.00	I	50.00	I	54.5	I	0.581	I	28.036	I
I ARM B I	3.65	I	5.00	I	24.00	I	3.00	I	50.00	I	26.0	I	0.414	I	17.837	I
I ARM C I	5.00	I	8.67	I	6.20	I	20.00	I	50.00	I	45.0	I	0.613	I	30.006	I
I ARM D I	3.65	I	6.40	I	6.60	I	20.00	I	50.00	I	48.9	I	0.527	Ι	22.785	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I I 100 TR 100 Т Ι 100 ID I 100 I

TIME PERIOD BEGINS (16.45) AND ENDS (18.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

. D	EMAND	SET	TITLE: 2023	Dev't			lay pm peak								т15
I		I	NUMBER OF	MINUT			ART WHEN								113
I	ARM	I	FLOW STARTS	I TOP	OF PEAK	Ι	FLOW STOPS	I	BEFORE	Ι	AT TOP	I	AFTER	Ι	
I		I		I		Ι		I		Ι		I		Ι	
I		I	TO RISE	I IS	REACHED	Ι	FALLING	Ι	PEAK	I	OF PEAK	Ι	PEAK	Ι	
-															
I	ARM	ΑI	15.00	I	45.00	Ι	75.00	I	17.85	Ι	26.78	I	17.85	Ι	
I	ARM	вІ	15.00	I	45.00	I	75.00	Ι	7.36	Ι	11.04	I	7.36	Ι	
I	ARM	CI	15.00	I	45.00	Ι	75.00	I	12.64	Ι	18.96	I	12.64	Ι	
I	ARM	DI	15.00	I	45.00	Ι	75.00	Ι	12.80	I	19.20	Ι	12.80	Ι	
_															

DEMAND SET TITLE:	2023 Dev't Case weekday pm peak	mo o
I I I	I TURNING PROPORTIONS I TURNING COUNTS I (PERCENTAGE OF H.V.S)	:
I TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM D :	
I 16.45 - 18.15 I I I I I I I I I I I I I I I I I I I	I ARM A I 0.000 I 0.307 I 0.602 I 0.092 I I I 0.00 I 438.0 I 859.0 I 131.0 I I I I I I I I I I I I I I I I I I I	

I TIME		CAPACITY							GEOMETRIC DELAY		
	(VEH/MIN)				FLOW				(VEH.MIN/		
I	( * 2217, 11214 )	( * 211/ 11211 )							TIME SEGMENT)		
-											-
I 16.45-1											Ι
		21.46					4.6	59.1	-	0.244	Ι
		10.79						27.5	-	0.273	Ι
I ARM C	12.69	24.72					1.0	15.0	-	0.082	Ι
	12.85	16.57	0.776		-	0.0	3.2	42.4	-	0.243	Ι
I											Ι
I TIME		CAPACITY						DELAY	GEOMETRIC DELAY		
	(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
I			(RFC)	( ]	PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-											-
I 17.00-1											Ι
	21.40							257.1	-	1.001	Ι
I ARM B	8.82		0.899				6.1		-	0.681	Ι
	15.15							24.2	-	0.112	Ι
	15.34	15.45	0.993		-	3.2	14.3	149.8	-	0.818	Ι
I.											Ι
I TIME		CAPACITY						DELAY	GEOMETRIC DELAY		
	(VEH/MIN)								(VEH.MIN/		
T	(,,	(,,							TIME SEGMENT)		
-			(111 0)	( -	220,1111,	( 1210 )	(VDIID)	TITLE ODOLLETT,	11112 0201121117	V2111022 (11211)	_
I 17.15-1	7.30										Ι
I ARM A								1053.2	-	3.562	I
I ARM B	10.81	9.72	1.112		-	6.1	25.5	244.0	-	1.964	I
I ARM C	18.55	23.47	0.791		-	1.7	3.6	48.7	_	0.194	Ι
I ARM D	18.79	14.07	1.336		-	14.3	85.7	752.0	-	3.754	I
I											Ι
I TIME	DEMAND	CAPACITY	DEMAND/	P.	EDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
	(VEH/MIN)		CAPACITY		FLOW	OUEUE	OUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I	, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,							TIME SEGMENT)		
-			(/	( -	,,	/	/		/	()	-
17.30-1											Ι
I ARM A		20.52						2336.4	-	7.736	Ι
I ARM B	10.81	9.71	1.113				42.7		-	3.784	Ι
	18.55	23.40	0.793					54.7	-	0.205	Ι
	18.79		1.342		-	85.7	157.6	1824.4	-	8.553	I

TIME			CAPACITY		QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING
17.45-1									
ARM A ARM B	21.40 8.82		1.064 0.913			217.9 33.4	3122.4 571.2	-	10.486 4.059
			0.644			1.8	29.3	_	0.123
•	15.15 15.34							-	10.266
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
•								TIME SEGMENT)	
18.00-18 ARM A		19.82	0.904		217.9	190.7	3064.4	_	10.361
ARM B	7.39	9.65	0.766		33.4	4.8	278.8	-	2.168
ARM C ARM D			0.537 0.792			1.2		-	0.092 8.378
UEUE AT A									
	MENT NO. OF VEHICL IN QUE								
17.00	4.	6 ****							
17.15	27.	2 *****		*****					
17.30 17.45								******	
18.00	217.	9 *****	******	*****	*****	*****	******	******	*****
18.15	190.	7 *****	*****	******	*****	*****	******	******	******
UEUE AT A									
	MENT NO. OF VEHICL IN QUE								
17.00		1 **							
17.15 17.30		1 ******	*****						
17.45				*****	*****	*****			
18.00 18.15		4 ***** 8 ****	*****	******	****				
UEUE AT A									
	MENT NO. OF VEHICL IN QUE								
17.00	1.	0 *							
17.15		7 **							
17.30 17.45	3. 3.	6 **** 7 ****							
18.00		8 **							
	1.	2 *							
18.15									
UEUE AT A	ARM D								
UEUE AT A	ARM D								
UEUE AT A	ARM D MENT NO. OF VEHICL IN QUE	UE 2 ***	****						
UEUE AT A	ARM D MENT NO. OF VEHICL IN QUE 3. 14. 85.	UE 2 *** 3 ****** 7 *****	*****					*******	
UEUE AT A FIME SEGIENDING  17.00 17.15 17.30 17.45	ARM D MENT NO. OF VEHICL IN QUE  3. 14. 85. 157.	UE 2 *** 3 ****** 7 ***** 6 *****	* * * * * * * * * * * * * * * * * * *	*****	*****	*****	******	******	*****
UEUE AT A FIME SEGIENDING  17.00 17.15 17.30 17.45 18.00	MENT NO. OF VEHICL IN QUE:  3. 14. 85. 157. 159.	UE  2 ***  3 ******  7 ******  6 *****  4 ******	* * * * * * * * * * * * * * * * * * *	******	******	* * * * * * * * * * * * * * * *	******	******	* * * * * * * * * * * * * * * * * * *
UEUE AT A FIME SEGIENDING  17.00 17.15 17.30 17.45	MENT NO. OF VEHICL IN QUE:  3. 14. 85. 157. 159.	UE  2 ***  3 ******  7 ******  6 ******  4 ******	* * * * * * * * * * * * * * * * * * *	******	******	* * * * * * * * * * * * * * * *	******	******	****************
TIME SEGIE ENDING  17.00 17.15 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE:  3. 14. 85. 157. 159.	UE 2 *** 3 ****** 7 ***** 6 ***** 4 ***** 2 *****	********* ********* ********* ER WHOLE P	*********** ********** ******	******	* * * * * * * * * * * * * * * *	******	******	********************
TIME SEGIE ENDING  17.00 17.15 17.30 17.45 18.00 18.15	ARM D MENT NO. OF VEHICL IN QUE 3. 14. 85. 157. 159. 110.  DELAY INFOR: TOTAL DE:	2 *** 3 ****** 7 ***** 4 ***** 2 *****  MATION OVI	*********  *******  ********  ER WHOLE P	*********** *************************	**************************************	******* ******* ******	**************************************	******	********************
TIME SEGIENDING  17.00 17.15 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE 3. 14. 85. 157. 159. 110.  DELAY INFOR.	UE  2 *** 3 ****** 7 ***** 4 **** 2 *****  MATION OVI	*********  *********  ER WHOLE P   * QUEUE  * DELA	************  ***********  ERIOD   ING * I  Y * I	********  *******  * INCLUS	******* ******* ******* SIVE QUE * DELAY	**************************************	******	****************
17.00 17.15 17.30 17.45 18.00 18.15	MENT NO. OF VEHICL IN QUE  3. 14. 85. 157. 159. 110.  DELAY INFOR	UE 2 *** 3 ****** 6 ***** 4 ***** 4 *****  MATION OVI	*********  ********  ER WHOLE P  * QUEUE  * DELA	*********** *************************	******** ******* * INCLUS	******* ****** ******* SIVE QUE * DELAY	**************************************	******	*****************

Ι	В	Ι	810.7	I	540.5	Ι	1706.6	Ι	2.11	Ι	1707.8	I	2.11	I
Ι	C	Ι	1391.6	I	927.7	Ι	190.2	Ι	0.14	Ι	190.2	I	0.14	I
I	D	I	1409.5	I	939.6	Ι	7167.1	Ι	5.08	Ι	7541.3	I	5.35	I
I	ALL	Ι	5577.3	I	3718.2	Ι	18956.5	Ι	3.40	Ι	20249.5	I	3.63	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

# Appendix O

Results of ARCADY capacity assessment: Stanway Western Bypass/Stane Park/Danny Watts site roundabout

\_\_ARCADY 6 \_\_ ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY Analysis Program: Release 5.0 (JANUARY 2009) (c) Copyright TRL Limited, 2004

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#### Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-DW-Stane\ Bypass-DW-Stane Pk am.vai" (drive-on-the-left ) at 14:35:49 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/Sainsbury's/Stane Park roundabout weekday am peak LOCATION: Stanway

DATE: 01/06/09 CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS: DESCRIPTION:

# .INPUT DATA

ARM A - Western Bypass (north) ARM B - Sainsbury's site (east)
ARM C - Western Bypass (south) ARM D - Stane Park site (west)

.GEOMETRIC DATA

																	— T5
I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM	ΑI	5.00	I	8.00	I	17.30	I	13.80	I	50.00	I	45.8	I	0.632	I	32.306	I
I ARM	вІ	4.00	I	5.00	I	3.50	I	20.00	I	50.00	I	39.0	I	0.529	I	22.125	I
I ARM	CI	5.00	I	7.00	I	14.90	I	16.10	I	50.00	I	46.7	I	0.608	I	30.060	I
I ARM	DΙ	3.65	I	5.00	I	13.50	I	20.00	I	50.00	I	29.6	I	0.556	I	23.630	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

# .TRAFFIC DEMAND DATA

Only sets included in the current run are shown

#### .SCALING FACTORS

IARM I FLOW SCALE(%) I I 100 ΙB 100 Т Ι 100 ID I 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

																	- 113
I			Ι	NU.	MBER OF	M	INUTI	ES FROM	ST	ART WHEN	Ι	RATE	OI	F FLOW (	VE	H/MIN)	I
I	ARM		Ι	FLOW	STARTS	Ι	TOP	OF PEAK	Ι	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	Ι	AFTER	I
I			Ι			Ι			Ι		Ι		Ι		Ι		I
I			Ι	TO	RISE	Ι	IS	REACHEL	I	FALLING	Ι	PEAK	Ι	OF PEAK	Ι	PEAK	I
I	ARM	Α	Ι		15.00	Ι		45.00	Ι	75.00	Ι	15.00	Ι	22.50	Ι	15.00	I
I	ARM	В	Ι		15.00	Ι		45.00	Ι	75.00	Ι	4.84	Ι	7.26	Ι	4.84	I
I	ARM	C	I		15.00	I		45.00	I	75.00	I	10.25	I	15.38	I	10.25	I
I	ARM	D	I		15.00	I		45.00	I	75.00	I	0.93	I	1.39	I	0.93	I

DEMAND SET TITLE		Case weekday am peak	таа
т	Т	TURNING PROPORTIONS	T 133
I	Ī	TURNING COUNTS	I
I		(PERCENTAGE OF H.V.S)	I
I			
I TIME	I FROM/T	O I ARM A I ARM B I ARM C I ARM I	) I
I 07.45 - 09.1	5 I	I I I I	I
I	I ARM	A I 0.000 I 0.288 I 0.398 I 0.314	4 I
I	I	I 0.0 I 346.0 I 477.0 I 377.0	) I
I	I	I ( 0.0)I ( 0.0)I ( 3.0)I ( 0.0	J)I
I	I	I I I I	I
I	I ARM	B I 0.323 I 0.000 I 0.677 I 0.000	) I
I	I	I 125.0 I 0.0 I 262.0 I 0.0	) I
I	I	I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0	))I
I	I	I I I	I
I	I ARM	C I 0.556 I 0.363 I 0.000 I 0.080	) I
I	I	I 456.0 I 298.0 I 0.0 I 66.0	) I
I	I	I ( 2.0)I ( 0.0)I ( 0.0)I ( 0.0	))I
I	I	I I I	_
I	I ARM	D I 0.784 I 0.000 I 0.216 I 0.000	
I	I	I 58.0 I 0.0 I 16.0 I 0.0	
I	I	I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0	))I
I	I	I I I	I

TIME		CAPACITY				START	END		GEOMETRIC DELAY		
	(VEH/MIN)	(VEH/MIN)		FL(			QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
			(RFC)	(PEDS	/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	-
07.45-								45.0			
ARM A			0.511		-	0.0		15.0	-	0.069	
ARM B	4.86	16.28			-	0.0	0.4	6.1	-	0.087	
ARM C	10.29	25.96			-	0.0	0.7	9.5 0.8	-	0.063	
ARM D	0.93	17.47	0.053		-	0.0	0.1	0.8	-	0.060	
TTME		CAPACITY	DEMAND/	PEDES'	TPTAN		END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	_
	(VEH/MIN)						OUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
	( A TITL ( LITTIN )	( + DII / PILIN /				~ -	~ -		TIME SEGMENT)		
			(101.0)	(11100	, . 1 /	( * 11110 )	( 4 1110 )	IIM ODOMENI)	IIND DEGREENI)	*ZIIICHH (MIN)	
08.00-	08.15										
ARM A	17.98	28.99	0.620		-	1.0	1.6	23.3	-	0.090	
ARM B	5.80	15.13	0.383		_	0.4	0.6	9.0	_	0.107	
ARM C	12.29	25.22	0.487		_	0.7	0.9	13.8	_	0.077	
ARM D	1.11	16.25	0.068		_	0.1	0.1	1.1	_	0.066	
											_
TIME		CAPACITY					END	DELAY		AVERAGE DELAY	
	(VEH/MIN)	(VEH/MIN)		FL		QUEUE	QUEUE	(VEH.MIN/		PER ARRIVING	
			(RFC)	(PEDS	/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	
08.15-								46.0		0.450	
ARM A		28.34			-	1.6	3.3	46.3	-		
ARM B	7.10				-	0.6	1.1	15.4	-		
ARM C	15.05		0.621		-	0.9	1.6	23.2	-	0.108	
ARM D	1.36	14.61	0.093		-	0.1	0.1	1.5	-	0.075	
											_
	DEMAND	CADACITY.	DEMAND /					DEL AV	GEOMETRIA DELL'	AVEDAGE DET 311	-
TIME		CAPACITY					END		GEOMETRIC DELAY		
	(VEH/MIN)	(VEH/MIN)				~ -	QUEUE	(VEH.MIN/		PER ARRIVING	
			(RFC)	(PEDS	/ MTN )	(VEHS)	(VEHS)	IIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	
08.30-											
ARM A	22.02	28.33	0.777		-	3.3	3.4	50.7	-	0.158	
ARM B	7.10	13.54	0.524		-	1.1	1.1	16.3	-	0.155	
ARM C	15.05	24.19	0.622		-	1.6	1.6	24.3	-	0.109	
ARM D	1.36	14.58	0.093		-	0.1	0.1	1.5	-	0.076	

I I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
т	08.45-09	9 00										_ T
	ARM A	17.98	28.98	0.620	_		3.4	1.7	26.1	-	0.093	Ī
Ι	ARM B	5.80	15.07	0.385	-		1.1	0.6	9.8	-	0.109	I
I	ARM C	12.29	25.18	0.488	-		1.6	1.0	14.9	-	0.078	I
I	ARM D	1.11	16.21	0.068	-		0.1	0.1	1.1	-	0.066	I
Ι												I
	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
	TIME					FLOW						
		(VEH/MIN)	(VEH/MIN)	CAPACITY			QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
Τ				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Τ
-												-
I	09.00-09	9.15										I
I	ARM A	15.06	29.46	0.511	-		1.7	1.1	16.3	-	0.070	I
I	ARM B	4.86	16.24	0.299	-		0.6	0.4	6.6	-	0.088	I
I	ARM C	10.29	25.93	0.397	-		1.0	0.7	10.2	_	0.064	I
I	ARM D	0.93	17.43	0.053	-		0.1	0.1	0.9	-	0.061	I
т												_
												I

#### .QUEUE AT ARM A

TIME SEGMENT	NO. OF	
ENDING	VEHICLES	
	IN QUEUE	
08.00	1.0	*
08.15	1.6	**
08.30	3.3	***
08.45	3.4	***
09.00	1.7	**
09.15	1.1	*

#### .QUEUE AT ARM B

-----

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.4	
08.15	0.6	*
08.30	1.1	*
08.45	1.1	*
09.00	0.6	*
09.15	0.4	

# .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.7	*
08.15	0.9	*
08.30	1.6	**
08.45	1.6	**
09.00	1.0	*
09.15	0.7	*

# .QUEUE AT ARM D

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE 08.00 08.15 08.30 08.45 09.00 0.1 0.1 0.1 0.1 0.1

#### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

													T75
I	ARM	I	TOTAL	DEMAND	I	* QUE	UEING *	I	*	INCLUSIVE	QUEUEING *	Ι	
I		I			Ι	* DE	LAY *	I		* DE	LAY *	I	
I		I-										-I	
I		Ι	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/VE	H) I		(MIN)	(MIN/VEH)	I	
I	A	I	1651.7	1101.1	I	177.6 I	0.11	I		177.7 I	0.11	I	

I	В	Ι	532.7	Ι	355.1	Ι	63.1	Ι	0.12	I	63.2	I	0.12	I
I	C	I	1128.7	I	752.4	Ι	95.8	Ι	0.08	I	95.8	I	0.08	I
I	D	Ι	101.9	Ι	67.9	Ι	6.9	Ι	0.07	I	6.9	I	0.07	I
I	ALL	Ι	3414.9	Ι	2276.6	Ι	343.5	Ι	0.10	I	343.6	I	0.10	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_ARCADY 6 \_ ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-DW-Stane' Bypass-DW-Stane Pk am.vai" (drive-on-the-left ) at 14:38:04 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/Sainsbury's/Stane Park roundabout weekday am peak

LOCATION: Stanway DATE: 01/06/09

CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS: DESCRIPTION:

.INPUT DATA

ARM A - Western Bypass (north) ARM B - Sainsbury's site (east)
ARM C - Western Bypass (south) ARM D - Stane Park site (west)

.GEOMETRIC DATA

I ARM I V (M) I E (M) I L (M) I R (M) I D (M) I PHI (DEG) I SLOPE I INTERCEPT (PCU/MIN) I 8.00 I 17.30 I 13.80 50.00 45.8 I 0.632 I 32.306 I ARM B I 4.00 5.00 7.00 I 3.50 I 20.00 50.00 I 39.0 46.7 I 0.529 I I 0.608 I 22.125 I ARM C I 5.00 14.90 16.10 30.060 20.00 I 50.00 I I ARM D I 3.65 5.00 I 13.50 I 29.6 I 0.556 I 23.630 Ι

V = approach half-width

L = effective flare length

D = inscribed circle diameter PHI = entry angle

E = entry width

R = entry radius

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I 100 T B 100 т 100 I ID I 100 I

TIME PERIOD BEGINS(07.45)AND ENDS(09.15)
.LENGTH OF TIME PERIOD -( 90) MINUTES
.LENGTH OF TIME SEGMENT - (15) MINUTES

DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Dev't Case weekday am peak

I I A	ARM		NUMBER OF													113
I		Ι		Ι			Ι		Ι		Ι		Ι		Ι	
I		Ι	TO RISE	Ι	IS I	REACHED	Ι	FALLING	Ι	PEAK	Ι	OF PEAK	Ι	PEAK	Ι	
I AR	A MS	I	15.00	I		45.00	Ι	75.00	Ι	15.59	Ι	23.38	Ι	15.59	I	
I AR	RM B	I	15.00	I		45.00	Ι	75.00	Ι	4.84	Ι	7.26	Ι	4.84	I	
I AR	RM C	Ι	15.00	Ι	4	45.00	I	75.00	Ι	11.51	Ι	17.27	Ι	11.51	Ι	
I AR	RM D	Ι	15.00	Ι	4	45.00	Ι	75.00	Ι	0.93	Ι	1.39	Ι	0.93	Ι	

DEMAND SET TITLE: 2023 Dev't Case weekday am peak

DEMAND SET TITLE:	2023 Dev't Case weekday am peak	122
I I I	I TURNING PROPORTIONS I I TURNING COUNTS I I (PERCENTAGE OF H.V.S) I	. 3 3
I TIME	I FROM/TO I ARM A I ARM B I ARM C I ARM D I	
	I I I I I I	
I	I ARM A I 0.000 I 0.277 I 0.420 I 0.302 I	
1	I I 0.0 I 346.0 I 524.0 I 377.0 I	
1	I I ( 0.0)I ( 0.0)I ( 3.0)I ( 0.0)I	
±	I I I I I I I I I I I I I I I I I I I	
±	I ARM B I 0.323 I 0.000 I 0.67/ I 0.000 I I I 125.0 I 0.0 I 262.0 I 0.0 I	
± =	I I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)I	
T T		
± +	I ARM C I 0.605 I 0.324 I 0.000 I 0.072 I	
T T	I I 557.0 I 298.0 I 0.0 I 66.0 I	
т	I I ( 1.0)I ( 0.0)I ( 0.0)I ( 0.0)I	
T		
T	I ARM D I 0.784 I 0.000 I 0.216 I 0.000 I	
T T	I I 58.0 I 0.0 I 16.0 I 0.0 I	
T	I (0.0) I (0.0) I (0.0) I (0.0) I	
I	I I I I I I I	

Ι	TIME	DEMAND	CAPACITY	DEMAND/	P	EDESTRIAN	START	END			AVERAGE DELAY	
		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
Ι				(RFC)	(	PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-												-
Ι	07.45-0	18.00										Ι
I.	ARM A	15.65		0.531		-	0.0	1.1	16.2	-	0.072	I
I.	ARM B	4.86	15.96	0.304		-	0.0	0.4	6.3	-	0.090	Ι
I.	ARM C	11.56	26.09	0.443		-	0.0	0.8	11.5	-	0.068	Ι
I.	ARM D	0.93	16.79	0.055		-	0.0	0.1	0.9	-	0.063	I
Ι												I
 I	TIME	DEMAND	CAPACITY	DEMAND/	ъ	EDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
_		(VEH/MIN)				FLOW	OUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
E .		, , , , , , , , , , , , , , , , , , , ,	,	(RFC)						TIME SEGMENT)		
_				(100)	( -	1 220, 11114)	( + 2110 )	( + 2110 )	III.E SEGNENI)	IIII DEGMENT	VEHICLE (PILIV)	_
Ι	08.00-0	8.15										I
	ARM A		28.97	0.645		_	1.1	1.8	25.7	_	0.096	Ī
	ARM B	5.80					0.4	0.6	9.3	_	0.111	T
	ARM C	13.80	25.34				0.8	1.2	17.2	_	0.086	T
	ARM D	1.11						0.1	1.1	_		Ī
-	mui D	1.11	13.11	0.072			0.1	0.1			0.070	T
 T	TIME	DEMAND	CAPACITY	DEMAND/		FDESTRIAN	TGATS	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
T		(VEH/MIN)				FLOW	OUEUE	OUEUE	(VEH.MIN/		PER ARRIVING	
T		(VEII/PILIN)	(VEII/PILIN)				~ -	~ -		TIME SEGMENT)		
L				(RFC)	( -	PEDS/MIN)	( VEDS)	(VEDS)	TIME SEGMENT)	TIME SEGMENT)	ARUTCHE (MIN)	_
-	08.15-0	10 20										T
	08.15-0 ARM A	22.88	28.32	0.808			1.8	4.0	54.2		0.175	T
		7.10					0.6	1.2	16.4	-		T
	ARM B	7.10								-		_
	ARM C		24.34				1.2	2.2	31.3	-		I
I.	ARM D	1.36	13.63	0.100		-	0.1	0.1	1.6	-	0.082	I
-												
_	TIME		CAPACITY			EDESTRIAN		END		GEOMETRIC DELAY		
Ι		(VEH/MIN)	(VEH/MIN)			FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
				(RFC)	(	PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	
-	08.30-0	18 45										- T
		22.88	28.31	0.808		_	4.0	4.1	60.6	_	0.183	T
	ARM B	7.10					1.2	1.2	17.5	_	0.167	T
			24.31				2.2	2.2	33.5	_	0.135	T
	MICH C	1.36					0.1	0.1	1.7	_	0.133	T
	ARM D											

I I I	TIME	DEMAND (VEH/MIN)	CAPACITY (VEH/MIN)	DEMAND/ CAPACITY (RFC)		PEDESTRIAN FLOW (PEDS/MIN)	START QUEUE (VEHS)	END QUEUE (VEHS)	DELAY (VEH.MIN/ TIME SEGMENT)	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	AVERAGE DELAY PER ARRIVING VEHICLE (MIN)	I
т	08.45-09	9 00										_ T
	ARM A	18.68	28.96	0.645	_		4.1	1.9	29.3	_	0.100	Ť
I	ARM B	5.80	14.67	0.395	_		1.2	0.7	10.3	-	0.114	I
I	ARM C	13.80	25.30	0.545	-		2.2	1.2	18.9	-	0.088	I
I	ARM D	1.11	15.39	0.072	-		0.1	0.1	1.2	-	0.070	I
I												I
I	TIME	DEMAND	CAPACITY	DEMAND/		PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I		(VEH/MIN)	(VEH/MIN)	CAPACITY		FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
I				(RFC)		(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	I
-												-
I	09.00-09	9.15										I
I	ARM A	15.65	29.44	0.531	-		1.9	1.1	17.7	-	0.073	I
I	ARM B	4.86	15.91	0.305	-		0.7	0.4	6.8	-	0.091	I
I	ARM C	11.56	26.06	0.443	-		1.2	0.8	12.4	-	0.069	I
I	ARM D	0.93	16.74	0.055	-		0.1	0.1	0.9	-	0.063	I
I												I

# .QUEUE AT ARM A

TIME SEGMENT	NO. OF	
ENDING	VEHICLES	
	IN QUEUE	
08.00	1.1	*
08.15	1.8	**
08.30	4.0	****
08.45	4.1	****
09.00	1.9	**
09.15	1.1	*

#### .QUEUE AT ARM B

-----

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.4	
08.15	0.6	*
08.30	1.2	*
08.45	1.2	*
09.00	0.7	*
09 15	0.4	

#### .QUEUE AT ARM C

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
08.00	0.8	*
08.15	1.2	*
08.30	2.2	**
08.45	2.2	**
09.00	1.2	*
09.15	0.8	*

# .QUEUE AT ARM D

TIME SEGMENT NO. OF ENDING VEHICLES IN QUEUE 08.00 08.15 08.30 08.45 09.00 0.1 0.1 0.1 0.1 0.1 0.1

#### .QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

														т75
I	ARM	I	TOTAL	DEMAND	Ι	* QUE	JEING *	I	*	INCLUSI	VE	QUEUEING *	I	
I		I			Ι	* DEI	LAY *	I		*	DEI	AY *	I	
I		I											-I	
I		I	(VEH)	(VEH/H)	Ι	(MIN)	(MIN/VEH	) I		(MIN)		(MIN/VEH)	I	
I	A	I	1716.4	1144.3	Ι	203.9 I	0.12	I		203.9	Ι	0.12	I	

Ι	В	Ι	532.7	Ι	355.1	Ι	66.6	Ι	0.13	I	66.6	Ι	0.13	I
Ι	C	Ι	1267.7	Ι	845.1	Ι	124.7	Ι	0.10	I	124.7	Ι	0.10	I
Ι	D	Ι	101.9	I	67.9	Ι	7.4	Ι	0.07	I	7.4	I	0.07	I
Ι	ALL	Ι	3618.6	I	2412.4	I	402.6	Ι	0.11	I	402.6	I	0.11	I

<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

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Run with file:-

y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-DW-Stane' Bypass-DW-Stane Pk pm.vai" (drive-on-the-left ) at 14:43:45 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/Sainsbury's/Stane Park roundabout weekday pm peak LOCATION: Stanway

DATE: 01/06/09 CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS:

DESCRIPTION: .INPUT DATA

ARM A - Western Bypass (north) ARM B - Sainsbury's site (east)
ARM C - Western Bypass (south) ARM D - Stane Park site (west)

.GEOMETRIC DATA

I ARM I V (M) I E (M) I L (M) I R (M) I D (M) I PHI (DEG) I SLOPE I INTERCEPT (PCU/MIN) I 8.00 I 17.30 I 13.80 50.00 45.8 I 0.632 I 32.306 I ARM B I 4.00 5.00 7.00 I 3.50 I 20.00 50.00 I 39.0 46.7 I 0.529 I I 0.608 I 22.125 I ARM C I 5.00 14.90 16.10 30.060 20.00 I 50.00 I I ARM D I 3.65 5.00 I 13.50 I 29.6 I 0.556 I 23.630 Ι

V = approach half-width

L = effective flare length

D = inscribed circle diameter PHI = entry angle

R = entry radius E = entry width

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

.SCALING FACTORS

IARM I FLOW SCALE(%) I 100 T B 100 т 100 I ID I 100 I

TIME PERIOD BEGINS(16.45)AND ENDS(18.15) .LENGTH OF TIME PERIOD - ( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

I	I	NUMBER OF	MINUT	ES FROM	STA	ART WHEN	Ι	RATE	OE	FLOW (	VEH,	/MIN)	I	
I ARM	I	FLOW STARTS	I TOP	OF PEAK	I	FLOW STOPS	Ι	BEFORE	Ι	AT TOP	I Z	AFTER	I	
I	I		I		Ι		Ι		Ι		I		Ι	
T	Т	TO RISE	T TS	REACHED	Т	FALLING	т	PEAK	Т	OF PEAK	т	PEAK	Т	
I ARM	ΑI	15.00	I	45.00	I	75.00	Ι	14.43	Ι	21.64	I 1	L4.43	I	
I ARM	вІ	15.00	I	45.00	I	75.00	I	13.39	I	20.08	I 1	13.39	I	
T ARM	СТ	15.00	Т	45.00	Т	75.00	т	12 10	_	18.15	T .	12 10	-	
T WEIM	CI	13.00	1	45.00	_	/5.00	_	12.10	_	10.13	1 -	LZ.IU	Τ.	
I ARM	DI	15.00	I	45.00	Ι	75.00	Ι	3.92	Ι	5.89	I	3.92	I	
													-	

DEMAND SET TITLE:		ase weekday pm peak	- T33
I	I	TURNING PROPORTIONS	I
I	I	TURNING COUNTS	I
I	I	(PERCENTAGE OF H.V.S)	I
I			-
I TIME	I FROM/TO	I ARM A I ARM B I ARM C I ARM D	Ι
I 16.45 - 18.15	I	I I I I	- I
I	I ARM A	I 0.000 I 0.493 I 0.458 I 0.049	Ι
I	I	I 0.0 I 569.0 I 529.0 I 56.0	I
I	I	I ( 0.0)I ( 0.0)I ( 1.0)I ( 0.0)	I
I	I	I I I I	I
I	I ARM E	I 0.320 I 0.000 I 0.680 I 0.000	Ι
I	I	I 343.0 I 0.0 I 728.0 I 0.0	I
I	I	I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)	I
I	I	I I I	I
I	I ARM C	! I 0.499 I 0.491 I 0.000 I 0.010	I
I	I	I 483.0 I 475.0 I 0.0 I 10.0	I
I	I	I ( 2.0)I ( 0.0)I ( 0.0)I ( 0.0)	Ι
I	I	± ± ± ±	I
I		) I 0.783 I 0.000 I 0.217 I 0.000	
I	I	I 246.0 I 0.0 I 68.0 I 0.0	
I	I	I ( 0.0)I ( 0.0)I ( 0.0)I ( 0.0)	
I	I	I I I	I
			-

TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END		GEOMETRIC DELAY		
	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-										-
16.45										Ι
ARM A		27.90			0.0	1.1	15.5	-	0.074	Ι
ARM B					0.0	2.9	39.2	-	0.212	Ι
ARM C	12.15				0.0	0.8	12.0	-	0.068	Ι
ARM D	3.94	14.56	0.271		0.0	0.4	5.3	-	0.094	Ι
										Ι
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
:	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	Ι
:			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
										-
17.00										Ι
ARM A	17.29		0.639			1.7	25.0	-	0.102	Ι
ARM B	16.05	16.92	0.948		2.9	10.2	115.7	-	0.591	Ι
ARM C	14.50	26.26	0.552		0.8	1.2	17.7	-	0.085	Ι
ARM D	4.70	12.82	0.367		0.4	0.6	8.3	_	0.123	I
										Ι
TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	 I
	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	OUEUE	OUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
-			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Т
			( /	(,	( ,	( /	,			_
17.15	-17.30									I
ARM A	21.18	25.92	0.817		1.7	4.2	56.3	_	0.197	I
ARM B	19.65				10.2	69.3	600.1	_	2.723	I
ARM C						2.1	29.6	_	0.118	I
ARM D			0.524		0.6	1.1	15.2	-	0.189	Ι
										Ι
TIME		CAPACITY	DEMAND /	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DETAV	 т
	(VEH/MIN)			FLOW	OUEUE	OUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
	( 4 1111 / 11111 /	( * 1111 / 1-1111 /			~ -	~ -		TIME SEGMENT)		
-			(100)	(1225/1111)	( + 2110 )	( 12110 )	IIII SEGNENI)	IIII ODGRBNI)	VEHICLE (MIN)	_
17.30	-17.45									Ι
ARM A	21.18	25.89	0.818		4.2	4.3	64.0	-	0.211	Ι
ARM B	19.65	15.74	1.249		69.3	128.2	1481.3	-	6.287	Ι
ARM C	17.76	26.11	0.680		2.1	2.1	31.4	-	0.120	Ι
		10.97	0.525		1.1	1.1	16.3	_	0.192	Т
ARM D	5.76	10.57	0.525		1.1	1.1	10.5			

			CAPACITY		FLOW		QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING
17.45-1	8.00									
	17.29		0.640			4.3		28.9	-	0.106
ARM B ARM C		26.03	0.952 0.557				118.0		-	7.278 0.088
ARM D	4.70	12.57	0.374		-	1.1	0.6	9.5	-	0.128
TIME	DEMAND	CAPACITY	DEMAND/	PEI	ESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)							(VEH.MIN/ TIME SEGMENT)	
18.00-1 ARM A		27.86	0.520		_	1.8	1.1	16.9	-	0.075
	14.48 13.44	17.74	0.758		-	118.0	55.7	16.9 1302.3 13.7	-	4.978
ARM C ARM D		25.95 13.74	0.468 0.287		_		0.9		-	0.073 0.102
JEUE AT .										
	MENT NO. OF VEHICL	ES								
	IN QUE									
17.00 17.15		1 * 7 **								
17.15	4.	2 ****								
17.45 18.00		3 **** 8 **								
18.15		1 *								
JEUE AT .	ARM B									
TIME SEG	MENT NO. OF									
	VEHICL IN QUE									
ENDING 17.00	VEHICL IN QUE 2.	UE 9 ***	***							
17.00 17.15	VEHICL IN QUE 2. 10. 69.	UE 9 *** 2 ***** 3 ******	*****					*****		
17.00 17.15 17.30 17.45	VEHICL IN QUE 2. 10. 69. 128.	9 *** 2 ***** 3 ***** 2 *****	********* *****	*****	*****	******	*****	*****	*****	*****
17.00 17.15 17.30 17.45 18.00	VEHICL IN QUE 2. 10. 69. 128. 118.	9 *** 2 ***** 3 ***** 2 *****	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	*****		**********
17.00 17.15 17.30	VEHICL IN QUE 2. 10. 69. 128. 118. 55.	9 *** 2 ***** 3 ***** 2 *****	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	*************
17.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C	9 *** 2 ****** 3 ***** 2 ****** 7 *****	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	***********
17.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  2. 10. 699. 128. 118. 55.	9 *** 2 ****** 3 ****** 0 ***** 7 *****	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	******
17.00 17.15 17.30 17.45 18.00 18.15 JEUE AT	VEHICL IN QUE  2. 10. 69, 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE	9 *** 2 ****** 3 ****** 0 ****** 7 ****** UES	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	*******
17.00 17.15 17.30 17.45 18.00 18.15 JEUE AT	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2.	9 *** 2 ****** 2 ****** 3 ****** 7 ****** UE 8 * 1 **	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	*******
17.00 17.15 17.30 17.45 18.00 18.15 EUE AT ETIME SEG ENDING 17.00 17.15 17.30 17.45	VEHICL IN QUE  2. 10. 69, 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE 1. 2. 2.	9 *** 2 ****** 3 ****** 0 ****** 7 *****  EES UE 8 * 2 1 ** 1 **	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	******
17.00 17.15 17.30 17.45 18.00 18.15 EUE AT	VEHICL IN QUE  2. 10. 69, 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  1. 2. 2. 1.	9 *** 2 ****** 2 ****** 3 ****** 7 ****** UE 8 * 1 **	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	***********
17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 0.	9 *** 2 ****** 3 ****** 0 ***** 7 *****  LES UE  8 * 2 * 1 ** 1 ** 3 *	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	***********
17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT  TIME SEG ENDING  17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT  JEUE AT	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 0.	9 *** 2 ****** 3 ****** 0 ****** 1 *** 1 ** 1 ** 1 ** 3 * 9 *	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	******
17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE 0. 1. 2. 2. 1. 0.	9 *** 2 ****** 3 ****** 0 ****** 7 *****  EES UE 8 * 2 * 1 ** 3 * 9 *	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	***********
17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT 17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT 17.00 18.15  JEUE AT 17.00 18.15	VEHICL IN QUE  2. 10. 69, 128. 118. 55.  ARM C  MENT NO. OF VEHICL IN QUE  2. 2. 1. 0.  ARM D  MENT NO. OF VEHICL IN QUE  IN QUE  O. 1. 2. 1. 0.	9 *** 2 ****** 3 ****** 7 *****  ESSUE  8 * 1 ** 1 ** 3 * 9 *	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	************
ENDING  17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  2. 2. 1. 0.  ARM D MENT NO. OF VEHICL IN QUE  0. 1. 2. 1. 0.  ARM D MENT NO. OF VEHICL IN QUE  0. 1. 1. 2. 1. 1. 1. 2. 1. 1. 1. 2. 1. 1. 1. 2. 1. 1. 1. 2. 1. 1. 2. 1. 1. 1. 2. 1. 1. 2. 1. 1. 2. 1. 1. 1. 2. 1. 1. 2. 1. 1. 2. 1. 1. 2. 1. 1. 2. 1. 1. 2. 1. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 1. 2. 3. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4. 4.	9 *** 2 ****** 3 ****** 0 ****** 7 *****  EES UE 8 * 2 1 ** 1 ** 3 * 9 *	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	************
17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  1. 2. 2. 1. 0.  ARM D MENT NO. OF VEHICL IN QUE  IN QUE  0. 1. 2. 1. 1. 1. 1. 1. 2. 1. 1. 1. 2. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	9 *** 2 ****** 3 ****** 0 ****** 7 *****  ESUUE 8 * 2 * 1 ** 3 * 9 *	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	*************
ENDING  17.00 17.15 17.30 17.45 18.00 18.15  IEUE AT FIME SEG ENDING  17.00 17.15 18.00 18.15  JEUE AT FIME SEG ENDING  17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT FIME SEG ENDING  17.00 17.15 17.00 17.15 17.30 17.45	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  2. 2. 1. 0.  ARM D MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 0.	9 *** 2 ****** 3 ****** 0 ****** 7 *****  EES UE  8 * 2 * 1 ** 3 * 9 *	******** ********* ****	****** *****	******	* * * * * * * * * * * * * * * * * * *	******	******	*****	***********
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ENDING  17.00 17.15 17.30 17.45 18.00 18.15  IEUE AT	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 0.  ARM D MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 0.  DELIAY INFOR	9 *** 2 ****** 3 ****** 0 ****** 7 *****  EES UE 8 * 2 1 ** 1 ** 3 * 9 *  MATION OV.	ER WHOLE	******* ********	******** ****************************	*******	******	******	*****	***********
ENDING  17.00 17.15 17.30 17.45 18.00 18.15  IEUE AT	VEHICL IN QUE  2. 10. 69. 128. 118. 55.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 0.  ARM D MENT NO. OF VEHICL IN QUE  0. 1. 0. 0. 0. 1. 1. 0. 0. DELAY INFOR TOTAL DE	9 *** 2 ****** 3 ****** 0 ****** 7 *****  EES UE 8 * 2 1 ** 1 ** 3 * 9 *  MATION OV MAND I I	ER WHOLE * QUEU * DEL	PERIOI	**************************************	**************************************	******** ********* *********	**************************************	*****	***************************************
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Ι	В	I	1474.2	Ι	982.8	Ι	5384.7	Ι	3.65	I	5472.0	I	3.71	I
Ι	C	I	1332.4	Ι	888.3	Ι	124.2	Ι	0.09	I	124.2	I	0.09	I
Ι	D	I	432.2	Ι	288.1	Ι	60.9	Ι	0.14	I	60.9	I	0.14	I
Ι	ALL	Ι	4827.1	Ι	3218.1	Ι	5776.3	Ι	1.20	I	5863.7	I	1.21	I

- \* DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

  \* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

  \* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

\_\_ARCADY 6 \_\_

ASSESSMENT OF ROUNDABOUT CAPACITY AND DELAY

Analysis Program: Release 5.0 (JANUARY 2009)

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THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS

IN NO WAY RELIEVED OF THEIR RESPONSIBILITY FOR THE CORRECTNESS OF THE SOLUTION

Run with file:-

"y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\ARCADY\Bypass-DW-Stane\ Bypass-DW-Stane Pk pm.vai" (drive-on-the-left ) at 14:44:28 on Thursday, 11 June 2009

#### .FILE PROPERTIES

RUN TITLE: Stanway Western Bypass/Sainsbury's/Stane Park roundabout weekday pm peak LOCATION: Stanway

DATE: 01/06/09 CLIENT: Hills Residential ENUMERATOR: mlast [ARDENT23]

JOB NUMBER: F960 STATUS:

DESCRIPTION: .INPUT DATA

ARM A - Western Bypass (north) ARM B - Sainsbury's site (east)
ARM C - Western Bypass (south) ARM D - Stane Park site (west)

.GEOMETRIC DATA

																	— T5
I ARM	I	V (M)	I	E (M)	I	L (M)	I	R (M)	I	D (M)	I	PHI (DEG)	I	SLOPE	I	INTERCEPT (PCU/MIN)	I
I ARM	ΑI	5.00	I	8.00	I	17.30	I	13.80	I	50.00	I	45.8	I	0.632	I	32.306	I
I ARM	вІ	4.00	I	5.00	I	3.50	I	20.00	I	50.00	I	39.0	I	0.529	I	22.125	I
I ARM	CI	5.00	I	7.00	I	14.90	I	16.10	I	50.00	I	46.7	I	0.608	I	30.060	I
I ARM	DΙ	3.65	I	5.00	I	13.50	I	20.00	I	50.00	I	29.6	I	0.556	I	23.630	I

V = approach half-width

L = effective flare length R = entry radius

D = inscribed circle diameter PHI = entry angle

E = entry width

.TRAFFIC DEMAND DATA

Only sets included in the current run are shown

#### .SCALING FACTORS

IARM I FLOW SCALE(%) I I 100 TR 100 Т Ι 100 ID I 100 I

TIME PERIOD BEGINS (16.45) AND ENDS (18.15) .LENGTH OF TIME PERIOD -( 90) MINUTES .LENGTH OF TIME SEGMENT - (15) MINUTES

.DEMAND FLOW PROFILES ARE SYNTHESISED FROM THE TURNING COUNT DATA

.DEMAND SET TITLE: 2023 Dev't Case weekday pm peak

																				T.T.2
I		I	NUI	MBER OF	M	INUTI	ES F	ROM :	STA	ART WI	IEN	Ι	RATE	OF	FL	OW (	VEF	H/MIN)	Ι	
I	ARM	I	FLOW	STARTS	I	TOP	OF	PEAK	I	${\tt FLOW}$	STOPS	I	BEFORE	Ι	AΤ	TOP	Ι	AFTER	Ι	
I		I			Ι				I			Ι		Ι			Ι		Ι	
I		I	TO	RISE	Ι	IS	REA	CHED	I	FALL:	ING	Ι	PEAK	Ι	OF	PEAK	Ι	PEAK	Ι	
I	ARM	AI		15.00	I		45.	00	I	75	5.00	Ι	15.71	I	23	.57	I	15.71	I	
I	ARM	вІ		15.00	Ι		45.	00	Ι	75	5.00	Ι	13.39	Ι	20	.08	Ι	13.39	Ι	
I	ARM	CI		15.00	Ι		45.	00	Ι	75	5.00	Ι	12.75	Ι	19	.13	Ι	12.75	Ι	
I	ARM	DΙ		15.00	I		45.	00	I	75	5.00	I	3.92	Ι	5	.89	Ι	3.92	Ι	

DEMAND SET TITLE:	2023 Dev't	Case weekday pm peak	ТЗЗ
 I I	I I	TURNING PROPORTIONS TURNING COUNTS (PERCENTAGE OF H.V.S)	I I
I TIME	I FROM/TO	O I ARM A I ARM B I	ARM C I ARM D I
I 16.45 - 18.15 I	_		632.0 I 56.0 I
I I	I I ARM I I	I I I I I B I 0.320 I 0.000 I I 343.0 I 0.0 I	728.0 I 0.0 I
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I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END			AVERAGE DELAY	
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	I
I			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)	TIME SEGMENT)	TIME SEGMENT)	VEHICLE (MIN)	Ι
-										-
I 16.45-1	L7.00									Ι
I ARM A	15.77	27.88	0.566		0.0	1.3	18.5	-	0.082	Ι
I ARM B	13.44	17.09	0.786		0.0	3.4	44.8	-	0.245	]
I ARM C	12.80	26.78	0.478		0.0	0.9	13.2	-	0.071	Ι
I ARM D	3.94	14.20	0.277		0.0	0.4	5.5	-	0.097	I
I										Ι
I TIME	DEMAND	CAPACITY	DEMAND/	PEDESTRIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	I
I	(VEH/MIN)	(VEH/MIN)	CAPACITY	FLOW	QUEUE	QUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	1
[			(RFC)	(PEDS/MIN)	(VEHS)	(VEHS)		TIME SEGMENT)	VEHICLE (MIN)	]
- 10 00 1										-
[ 17.00-1 [ ARM A	18.83	27.04	0 696		1.3	2.2	31.8	_	0.120	1
								-		
I ARM B		16.10			3.4		157.0	-	0.822	]
I ARM C	15.28	26.30			0.9	1.4	19.8	-	0.090	]
I ARM D	4.70	12.44	0.378		0.4	0.6	8.7	-	0.129	]
I 										
 I TIME	DEMAND	CADACTTV	DEMAND/	PEDESTRIAN	TART?	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	 T
	(VEH/MIN)			FLOW		OUEUE	(VEH.MIN/	(VEH.MIN/	PER ARRIVING	
T.	(VEII/MIN)	(VEII/PILIN)	(RFC)		~ .	~		TIME SEGMENT)		
_			(RFC)	(PEDS/MIN)	(VEDS)	(VEDS)	IIME SEGMENI)	IIME SEGMENI)	ARUICHE (MIN)	-
- I 17.15-1	17 30									1
I ARM A		25.91	0.890		2.2	6.9	87.0	_	0.292	1
I ARM B	19.65	14.82				88.1	775.7			1
I ARM C	18.72	26.29				2.4	34.0	_	0.130	1
I ARM D		10.63	0.712			1.2	16.3	_		1
I AKM D	5.70	10.03	0.542	_	0.0	1.2	10.5	_	0.202	1
- 										
 I TIME	OEWVAL	CADACTTV	DEMAND /	PEDESTRIAN	CTADT	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY	
	(VEH/MIN)			FLOW		OUEUE	(VEH.MIN/		PER ARRIVING	
I T	( VEH/MIN)	(AFU/MIN)	(RFC)		~ -	~ -			VEHICLE (MIN)	
_			(RFC)	(PEDS/MIN)	(VEHS)	(VEH5)	TIME SEGMENT)	IIME SEGMENT)	APHICTF (MIN)	-
17.30-1	17.45									]
ARM A	23.07	25.88	0.891		6.9	7.4	108.2	-	0.340	1
I ARM B	19.65	14.74	1.334		88.1	161.9	1875.0	-	8.370	1
I ARM C	18.72	26.29	0.712		2.4	2.4	36.3	-	0.132	1
I ARM D	5.76	10.60	0.543		1.2	1.2	17.4	-	0.206	1
T										т

		(VEH/MIN)	CAPACITY		W	QUEUE	QUEUE	(VEH.MIN/	GEOMETRIC DELAY (VEH.MIN/ TIME SEGMENT)	PER ARRIVING
17.45-1	8.00									
ARM A	18.83	27.01				7.4		39.7	-	0.133
ARM B ARM C			1.004 0.584				163.5	2440.1 22.2	_	10.051 0.093
ARM D			0.384				0.6		-	0.134
TIME	DEMAND	CAPACITY	DEMAND/	PEDEST	RIAN	START	END	DELAY	GEOMETRIC DELAY	AVERAGE DELAY
	(VEH/MIN)	(VEH/MIN)							(VEH.MIN/ TIME SEGMENT)	
18.00-1 ARM A		27.85	0.566		_	2.4	1.3	20.6	_	0.084
	15.77 13.44	17.04	0.789					2058.1	-	8.125
ARM C ARM D	12.80 3.94	26.06	0.491 0.292			1.4	1.0 0.4	15.0 6.4	-	0.076 0.105
									- 	
UEUE AT .										
	MENT NO. OF									
ENDING	VEHICI IN QUE									
17.00		3 *								
17.15 17.30		2 ** 9 *****	*							
17.45	7.	4 *****	*							
18.00 18.15		4 ** 3 *								
JEUE AT .	ARM B									
TMP CPC	MENTE NO OF									
	MENT NO. OF VEHICL IN QUE	ES								
ENDING 17.00	VEHICI IN QUE 3.	ES CUE 4 ***								
17.00 17.15	VEHICI IN QUE 3. 15.	ES UE 4 *** 1 *****		****	****	****	****	*****	*****	****
17.00 17.15 17.30 17.45	VEHICL IN QUE 3. 15. 88. 161.	ES UE 4 *** 1 ***** 1 ***** 9 *****	********* *****	*****	****	*****	*****	*****	·************	******
17.00 17.15 17.30 17.45 18.00	VEHICI IN QUE 3. 15. 88. 161. 163.	4 *** 1 ***** 1 ***** 2 ***** 5 *****	********* *********	******** ****	*****	****** ****	*****	******		********************
17.00 17.15 17.30 17.45 18.00 18.15	VEHICI IN QUE 3. 15. 88. 161. 163. 111.	4 *** 1 ***** 1 ***** 2 ***** 5 *****	********* *********	******** ****	*****	****** ****	*****	******	******	*******************
17.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  3, 15. 88. 161. 163. 111.  ARM C MENT NO. OF	### ### ### ### #### #################	********* *********	******** ****	*****	****** ****	*****	******	******	********************
17.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE	### ### ### ### #### #################	********* *********	******** ****	*****	****** ****	*****	******	******	*******************
17.00 17.15 17.30 17.45 18.00 18.15 JEUE AT	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE 0.	### ### ### ### ### ### ### ### ### ##	********* *********	******** ****	*****	****** ****	*****	******	******	********************
17.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2.	### ### ### ### ### ### ### ### ### ##	********* *********	******** ****	*****	****** ****	*****	******	******	********************
17.00 17.15 17.30 17.45 18.00 18.15  EUEUE AT  FIME SEG ENDING 17.15 17.30 17.45	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE 0. 1. 2.	### ### ### ### ### ### ### ### ### ##	********* *********	******** ****	*****	****** ****	*****	******	******	********************
17.00 17.15 17.30 17.45 18.00 18.15 JEUE AT	VEHICI IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICI IN QUE 1. 2. 2.	### ### ### ### ### ### ### ### ### ##	********* *********	******** ****	*****	****** ****	*****	******	******	******************
ENDING  17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE 0. 1. 2. 2. 1. 1.  ARM D	### ### ### ### ### ### ### ### ### ##	********* *********	******** ****	*****	****** ****	*****	******	******	******************
17.00 17.15 17.30 17.45 18.00 18.15 JEUE AT	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE 0. 1. 2. 2. 1. 1.  ARM D	## ## ## ## ## ## ## ## ## ## ## ## ##	********* *********	******** ****	*****	****** ****	*****	******	******	********************
17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT	VEHICL IN QUE  3, 15. 88. 161. 163. 1111.  ARM C MENT NO. OF VEHICL IN QUE 0. 1. 2. 2. 1. 1.	## ## ## ## ## ## ## ## ## ## ## ## ##	********* *********	******** ****	*****	****** ****	*****	******	******	********************
17.00 17.15 17.30 17.45 18.00 18.15  IEUE AT FIME SEG ENDING 17.30 17.45 18.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE  2. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE  0. 1. 2. 1. 1.  ARM D ON OF VEHICL IN QUE  0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	## ## ## ## ## ## ## ## ## ## ## ## ##	********* *********	******** ****	*****	****** ****	*****	******	******	****************
17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE  2. 2. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 1.	### ### ### ### ### ### ### ### ### ##	********* *********	******** ****	*****	****** ****	*****	******	******	********************
17.00 17.15 17.30 17.45 18.00 18.15  UEUE AT TIME SEG ENDING 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C  WEHICL IN QUE  0. 1. 2. 2. 1. 1.  ARM D   MENT NO. OF VEHICL IN QUE  IN QUE  O. 0. 1. 1.  ARM D	### ### ### ### ### ### ### ### ### ##	********* *********	******** ****	*****	****** ****	*****	******	******	*******************
ENDING  17.00  17.15  17.30  17.45  18.00  18.15  JEUE AT	VEHICL IN QUE  3, 15, 88, 161, 163, 111.  ARM C MENT NO. OF VEHICL IN QUE  1, 2, 2, 1, 1.  ARM D MENT NO. OF VEHICL IN QUE 0, 1, 1, 0, 0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	## ## ## ## ## ## ## ## ## ## ## ## ##	********* *********	******** ****	*****	****** ****	*****	******	******	******************
ENDING  17.00 17.15 17.30 17.45 18.00 18.15  FIME SEG ENDING  17.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  3, 15, 88, 161, 163, 111.  ARM C MENT NO. OF VEHICL IN QUE  1, 2, 2, 1, 1.  ARM D MENT NO. OF VEHICL IN QUE 0, 1, 1, 0, 0, 1, 1, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 1, 1, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	### ### ### ### ### ### ### ### ### ##	********	********	*****	****** ****	*****	******	******	********************
ENDING  17.00 17.15 17.30 17.45 18.00 18.15  IEUE AT	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE  0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	## ## ## ## ## ## ## ## ## ## ## ## ##	ER WHOLE I	**************************************	*****	*****	******	**********************	******	********************
T7.00 17.15 17.30 17.45 18.00 18.15  IFIME SEG ENDING  17.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 17.15 17.30 17.15 17.30 17.15 17.30 17.15 17.30 17.15 17.30 17.15	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE  0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	### ### ### ### ### ### ### ### ### ##	ER WHOLE I	PERIOD		******	*******  ********  *********	**************************************	******	********************
17.00 17.15 17.30 17.45 18.00 18.15  JEUE AT  TIME SEG ENDING  17.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 18.15  JEUE AT  TIME SEG ENDING  ATMA SEG ENDING  17.00 17.15 17.30 17.45 18.00 17.15 17.30 17.45 18.00 18.15	VEHICL IN QUE  3. 15. 88. 161. 163. 111.  ARM C MENT NO. OF VEHICL IN QUE  0. 1. 2. 2. 1. 1.  ARM D MENT NO. OF VEHICL IN QUE  0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0. 0.	## ## ## ## ## ## ## ## ## ## ## ## ##	ER WHOLE I	PERIOD EING * 4Y *	***** ***** I *	******** ********  INCLUS	********  ********  *********  ********	T75 UEING * I	******	****************

I	В	Ι	1474.2	Ι	982.8	Ι	7350.6	Ι	4.99	I	7711.8	Ι	5.23	I
I	C	Ι	1404.0	Ι	936.0	Ι	140.7	Ι	0.10	I	140.7	Ι	0.10	I
Ι	D	Ι	432.2	Ι	288.1	Ι	64.2	Ι	0.15	I	64.3	Ι	0.15	I
I	ALL	Ι	5040.5	Ι	3360.3	I	7861.3	Ι	1.56	I	8222.6	I	1.63	I

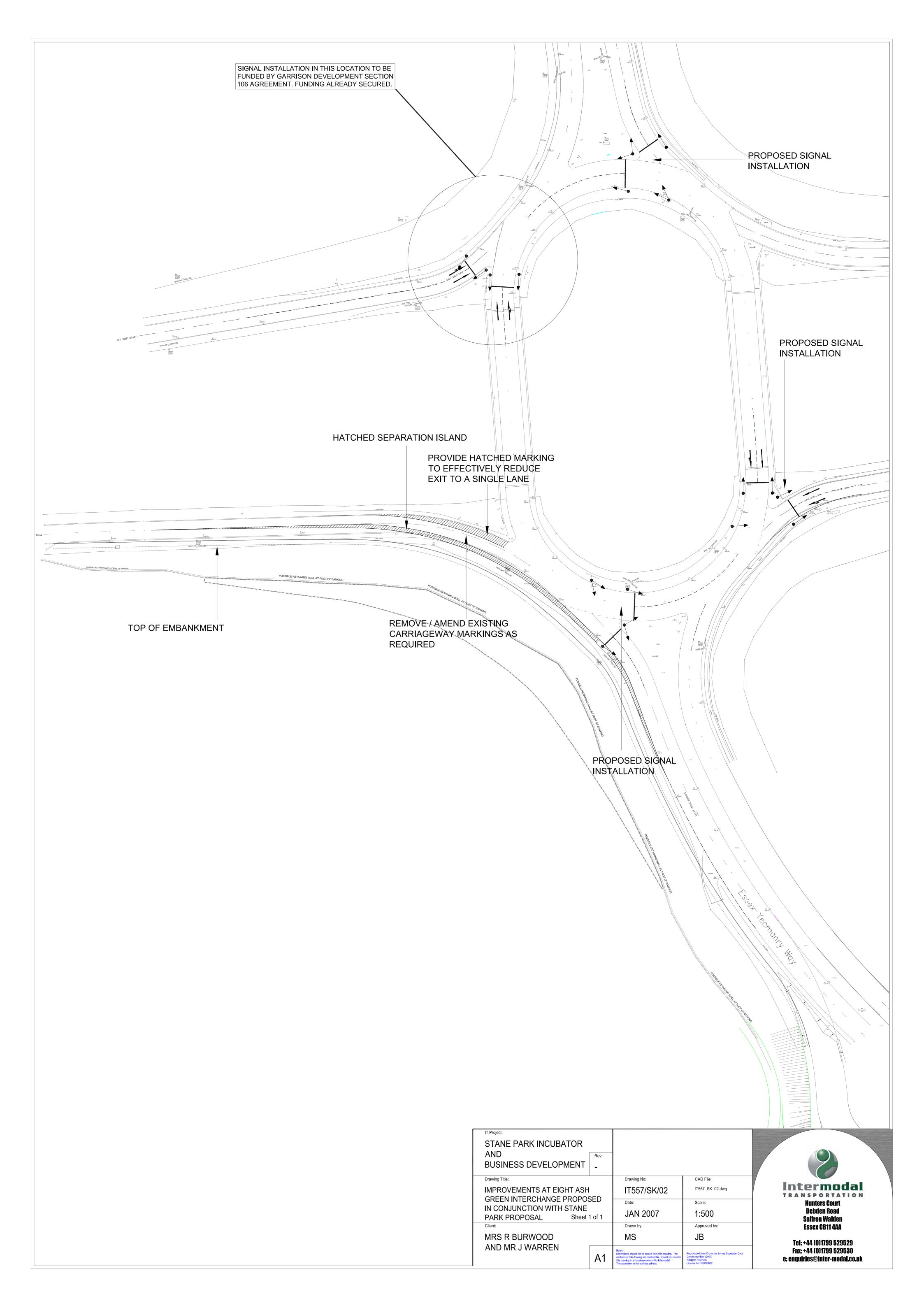
<sup>\*</sup> DELAY IS THAT OCCURRING ONLY WITHIN THE TIME PERIOD.

\* INCLUSIVE DELAY INCLUDES DELAY SUFFERED BY VEHICLES WHICH ARE STILL QUEUEING AFTER THE END OF THE TIME PERIOD.

\* THESE WILL ONLY BE SIGNIFICANTLY DIFFERENT IF THERE IS A LARGE QUEUE REMAINING AT THE END OF THE TIME PERIOD.

Appendix P

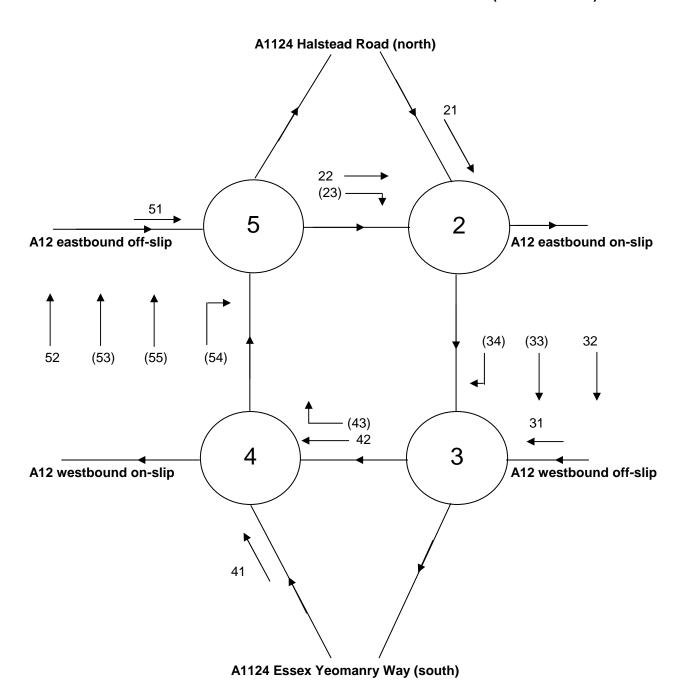
Results of TRANSYT capacity assessment: Eight Ash Green roundabout with full signalisation



## A12(T)/A1124 EIGHT ASH GREEN INTERCHANGE, STANWAY

#### ARDENT TRANSYT MODEL NETWORK DIAGRAM

# BASED ON INTERMODAL TRANSPORTATION DRAWING NO IT557/SK/02 (JANUARY 2007)



TRANS	YT 13
Version: 13.0.4.53 [03 Copyright © 2008, by TRL.	
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Last run: 18/06/2009 12:44:24

Analysis Set used for last run: Analysis Set 2 - 2023 Base Case weekday am peak hour

File: Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\TRANSYT\8 Ash Gn Base am.113

Report generation date: 18/06/2009 12:44:44

# **Analysis Set 2 - 2023 Base Case weekday am peak** hour

# **Summary**

# **Data Errors and Warnings**

Severity	Area	Description		
Info	Link Source Data	Link 21: downstream flow apparent loss = 729 (59.11%).		
Info	Link Source Data	purce Data Link 31: downstream flow apparent loss = 1149 (35.08%).		

#### **File summary**

#### **File Description**

	-
Title	A12/A1124 Eight Ash Green interchange (full signalisation)
Location	Stanway
Driving Side	Left
Date	11/06/2009
Status	(new file)
Client	Hills Residential
Jobnumber	F960
Enumerator	ARDENTCE\cbull

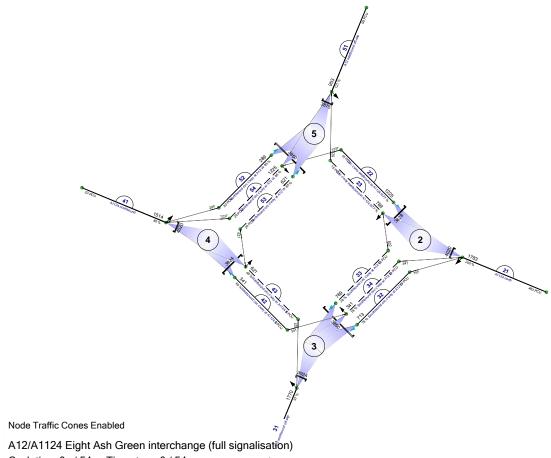
#### **Units**

Speed Units	Distance Units
kph	m

# **Sorting**

Sorting Direction	Sorting Type	Ignore Prefixes When Sorting	Link Grouping	Source Grouping
Ascending	Numerical		Normal	Normal

# **Network Diagram**



Cycletime 0s / 54s , Timesteps 0 / 54

Analysis Set 2 - 2023 Base Case weekday am peak hour, Demand Set 1 - 2023 Base Case weekday am peak hour Diagram produced using TRANSYT 13 Network Construction Editor

# **Signal Timings**

## **Stage Timings (TRANSYT 12 timings)**

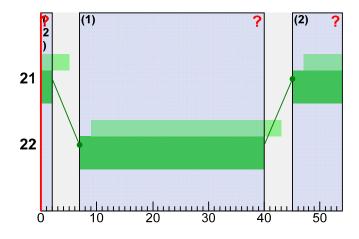
54s cycle time; 54 steps

Node ID	Number of stages	Stage 1	Stage 2
2	2	2	40
3	2	53	28
4	2	6	32
5	2	8	23

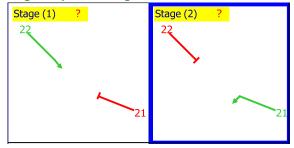
## **Intergreen Matrix for Node 2**

	То		
From		21	22
	21	-	5
	22	5	-

# **Link Timings Diagram for Node 2**



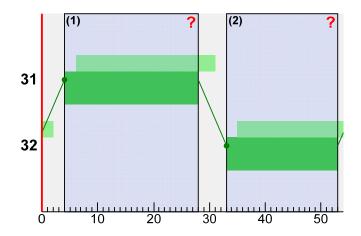
**Stage Sequence Diagram for Node 2** 



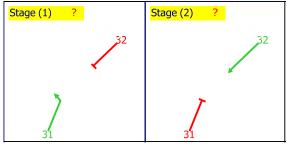
**Intergreen Matrix for Node 3** 

•			
	То		
		31	32
From	31	-	5
	32	5	-

#### **Link Timings Diagram for Node 3**

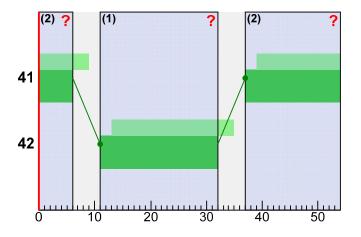


#### **Stage Sequence Diagram for Node 3**

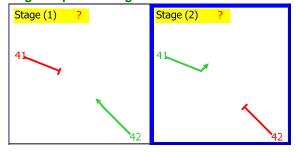


#### **Intergreen Matrix for Node 4**

		То				
		41 4				
From	41	-	5			
	42	5	-			



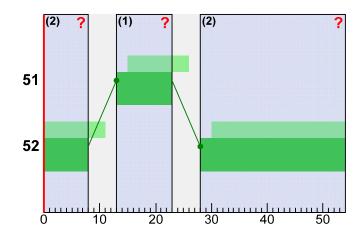
Stage Sequence Diagram for Node 4



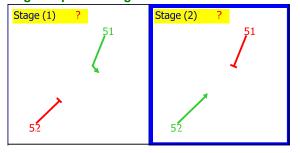
#### **Intergreen Matrix for Node 5**

	То					
		51	52			
From	51	-	5			
	<b>52</b> 5 -					

#### **Link Timings Diagram for Node 5**



#### Stage Sequence Diagram for Node 5



#### Link green times

LinkID	Traffic Node	Signala Nada	Green P	eriod 1	Green P	eriod 2	Green P	eriod 3	Green P	eriod 4
Link ID	Traffic Node	Signals Node	Start	End	Start	End	Start	End	Start	End
21	2	2	45	2						
22	2	2	7	40						
31	3	3	4	28						
32	3	3	33	53						
41	4	4	37	6						
42	4	4	11	32						
51	5	5	13	23						
52	5	5	28	8						

#### **Run Summary**

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Cycle Time Used (s)	Total Network Delay (PCU- hr/hr)	Highest DOS (%)	Link With Highest DOS	Number Of Oversaturated Links	Percentage Of Oversaturated Links (%)	Network Within Capacity
Analysis Set 2 - 2023 Base Case weekday am peak hour	18/06/2009 12:44:24	18/06/2009 12:44:24	08:00:00	54	609.05	200	21	3	21	

#### **Link Results**

					MEAN	TIMES		DELAY		S	TOPS	QU	EUES	P.I.
Link ID	Major Link	Calculated Flow Into Link (PCU/hr)	Calculated Sat Flow (PCU/hr)	Degree Of Saturation (%)	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU- hr/hr)	Random Plus Oversat Delay (PCU- hr/hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Weighted Cost Of Stops (£ per hr)	Mean Max Queue (PCU)	Average Limit Excess Queue (PCU)	P.I. (£ per hr)
21		1783	4020	200 !	17.00	948.86	24.12	445.83	6673.29	250	114.67	483 +	0.00	6787.96
22	(22)	1226	3829	77	6.00	8.11	1.65	1.11	39.24	69	15.21	15	1.70	906.31
23	22	636 <	(3829)	(77)	6.00	3.31	0.01	0.58	8.30	6	0.88	(15)	(0.00)	9.19
31		1770	3924	97 !	17.00	39.38	6.98	12.39	274.96	132	60.02	38	0.00	334.98
32	(32)	357 <	3850	78	11.00	32.98	2.74	0.53	46.48	55	7.07	19	0.00	53.55
33	32	636 <	(3850)	(78)	11.00	13.18	1.38	0.95	33.07	85	11.83	(19)	(0.00)	44.90
34	32	172 <	(3850)	(78)	11.00	32.98	1.32	0.26	22.31	55	3.39	(19)	(0.00)	25.70
41		1514	4020	85	17.00	19.84	5.62	2.72	118.49	94	36.58	23	0.00	155.07
42	(42)	172 <	3924	49	6.00	25.59	1.11	0.11	17.31	52	3.22	6	0.01	34.09
43	42	619	(3924)	(49)	6.00	5.34	0.54	0.38	13.05	25	2.83	(6)	(0.00)	15.88
51		953	3875	121 !	17.00	347.07	7.24	84.64	1304.64	272	66.76	99 +	0.00	1371.40
52	(52)	288	3850	85	12.00	11.77	0.55	0.39	13.36	47	2.47	20	0.00	15.83
53	52	619	(3850)	(85)	12.00	10.97	1.05	0.84	26.82	86	9.58	(20)	(0.00)	36.40
54	52	1226	(3850)	(85)	12.00	11.77	2.34	1.67	56.94	48	10.53	(20)	(0.00)	67.47

- BL = at least one source for this link carries buses
  TL = at least one source for this link carries trams
  PL = this link is a pedestrian link
  < = adjusted flow warning (upstream links are over-saturated)
  ! = DOS threshold exceeded
  f = average saturation flow for flared link
  \* = stops/delay weighting has been set to a value other than 100%
  + = average link excess queue is greater than 0
  P.I. = PERFORMANCE INDEX

#### **Network Totals**

	Distance Travelled (PCU-km/hr)	Time Spent (PCU- hr/hr)	Mean Journey Speed (kph)	Uniform Delay (PCU- hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Excess Queue Penalty (£ per hr)	TOTAL PERFORMANCE INDEX (£ per hr)
TOTAL	1748.75	652.56	2.68	56.65	552.40	8648.26	345.04	865.43	9858.73
BUSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER	1748.75	652.56	2.68	56.65	552.40	8648.26	345.04	865.43	9858.73

#### **Fuel Consumption**

Fuel Consumption Cruise (litres/hr)	Fuel Consumption Delay (litres/hr)	Fuel Consumption Stops (litres/hr)	Fuel Consumption Total (litres/hr)
95.89	700.39	157.52	953.81

# TRANSYT 13 Version: 13.0.4.53 [03/12/08 - 12:00] Copyright © 2008, by TRL. All rights reserved. For sales and distribution information, program advice and maintenance, contact: TRL Limited Crowthorne House Nine Mile Ride Wokingham, Berks. RG40 3GA, UK The users of this computer program for the solution of an engineering problem are in no way relieved of their responsibility for the correctness of the solution

Last run: 18/06/2009 12:47:21

Analysis Set used for last run: Analysis Set 3 - 2023 Dev't Case weekday am peak hour

File: Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\TRANSYT\8 Ash Gn Base am.t13

Report generation date: 18/06/2009 12:47:26

# Analysis Set 3 - 2023 Dev't Case weekday am peak hour

## **Summary**

#### **Data Errors and Warnings**

Severity	Area	Description			
Info	Link Source Data	21: downstream flow apparent loss = 729 (59.23%).			
Info	Link Source Data	Link 31: downstream flow apparent loss = 1161 (34.85%).			

#### **File summary**

#### **File Description**

Title	A12/A1124 Eight Ash Green interchange (full signalisation)			
Location	Stanway			
Driving Side	Left			
Date	11/06/2009			
Status	(new file)			
Client	Hills Residential			
Jobnumber	F960			
Enumerator	ARDENTCE\cbull			

#### **Units**

Speed Units	Distance Units
kph	m

#### Sorting

Sorting Direction	Sorting Type	Ignore Prefixes When Sorting	Link Grouping	Source Grouping
Ascending	Numerical		Normal	Normal

# **Signal Timings**

#### **Stage Timings (TRANSYT 12 timings)**

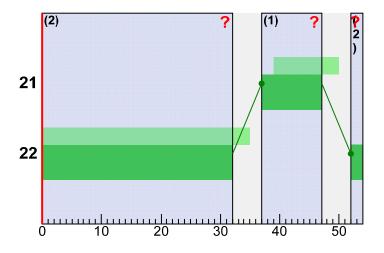
54s cycle time; 54 steps

Node ID	Number of stages	Stage 1	Stage 2
2	2	32	47
3	2	18	42
4	2	50	22
5	2	0	16

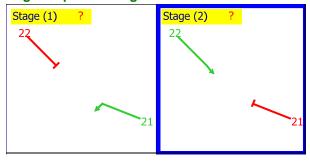
#### **Intergreen Matrix for Node 2**

	То				
		21	22		
From	21	-	5		
	22	5	-		

#### **Link Timings Diagram for Node 2**



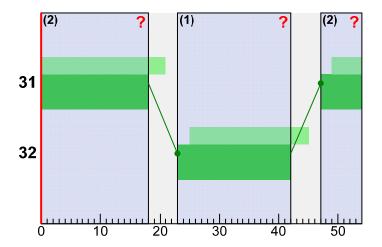
#### **Stage Sequence Diagram for Node 2**



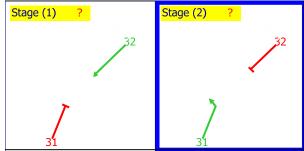
#### **Intergreen Matrix for Node 3**

	То					
		31	32			
From	31	-	5			
	32	5	-			

#### **Link Timings Diagram for Node 3**

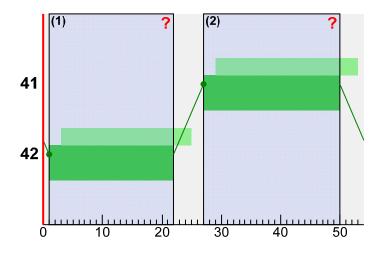


#### **Stage Sequence Diagram for Node 3**

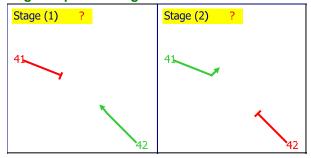


**Intergreen Matrix for Node 4** 

	То				
		41	42		
From	41	-	5		
	42	5	-		



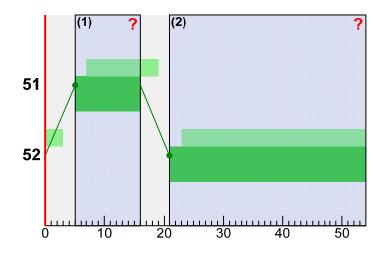
**Stage Sequence Diagram for Node 4** 



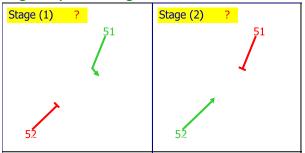
#### **Intergreen Matrix for Node 5**

	То				
		51	52		
From	51	-	5		
	52	5	-		

#### **Link Timings Diagram for Node 5**



#### **Stage Sequence Diagram for Node 5**



#### Link green times

Link ID	Traffic Node	Signala Nada	Green P	eriod 1	Green P	eriod 2	Green P	eriod 3	Green P	eriod 4
LINK ID	Traffic Node	Signals Node	Start	End	Start	End	Start	End	Start	End
21	2	2	37	47						
22	2	2	52	32						
31	3	3	47	18						
32	3	3	23	42						
41	4	4	27	50						
42	4	4	1	22						
51	5	5	5	16						
52	5	5	21	0						

#### **Run Summary**

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Cycle Time Used (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Link With Highest DOS	Number Of Oversaturated Links	Percentage Of Oversaturated Links (%)	Network Within Capacity
Analysis Set 3 - 2023 Dev't Case weekday am peak hour	18/06/2009 12:47:21	18/06/2009 12:47:21	08:00:00	54	626.72	218	21	6	43	

#### **Link Results**

					MEAN	TIMES		DELAY		S	TOPS	QUI	EUES	P.I.
Link ID	Major Link	Calculated Flow Into Link (PCU/hr)	Calculated Sat Flow (PCU/hr)	Degree Of Saturation (%)	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU- hr/hr)	Random Plus Oversat Delay (PCU- hr/hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Weighted Cost Of Stops (£ per hr)	Mean Max Queue (PCU)	Average Limit Excess Queue (PCU)	P.I. (£ per hr)
21		1788	4020	218 !	17.00	1029.66	25.92	485.48	7261.83	246	113.02	527 +	0.00	7374.86
22	(22)	1252	3829	79	6.00	8.45	1.77	1.17	41.75	75	16.96	17	2.36	1240.04
23	22	699 <	(3829)	(79)	6.00	3.44	0.01	0.65	9.49	8	1.11	(17)	(0.00)	10.60
31		1782	3924	94 !	17.00	28.06	6.58	7.31	197.24	113	51.72	33	0.00	248.96
32	(32)	329 <	3850	83	11.00	33.20	2.37	0.67	43.11	52	6.71	20	0.00	49.82
33	32	699 <	(3850)	(83)	11.00	13.05	1.12	1.42	35.99	86	12.44	(20)	(0.00)	48.43
34	32	156 <	(3850)	(83)	11.00	33.20	1.12	0.32	20.38	52	3.17	(20)	(0.00)	23.55
41		1550	4020	87	17.00	20.97	5.84	3.19	128.21	97	38.60	24	0.00	166.81
42	(42)	156 <	3924	49	6.00	25.50	1.01	0.09	15.65	47	2.92	5	0.01	29.18
43	42	620	(3924)	(49)	6.00	4.87	0.46	0.38	11.92	26	2.95	(5)	(0.00)	14.87
51		983	3875	114 !	17.00	263.24	7.14	64.74	1020.69	265	66.98	80 +	0.00	1087.67
52	(52)	298	3850	90 !	12.00	12.64	0.48	0.57	14.83	44	2.35	20	0.00	17.18
53	52	620	(3850)	(90) !	12.00	14.59	1.33	1.18	35.70	98	10.96	(20)	(0.00)	46.66
54	52	1252	(3850)	(90) !	12.00	12.64	2.01	2.39	62.42	44	9.88	(20)	(0.00)	72.30

- BL = at least one source for this link carries buses
   TL = at least one source for this link carries trams

- PL = this link is a pedestrian link
  < = adjusted flow warning (upstream links are over-saturated)
  ! = DOS threshold exceeded
- f = average saturation flow for flared link
- \* = stops/delay weighting has been set to a value other than 100%
   + = average link excess queue is greater than 0
   P.I. = PERFORMANCE INDEX

#### **Network Totals**

	Distance Travelled (PCU-km/hr)	Time Spent (PCU- hr/hr)	Mean Journey Speed (kph)	Uniform Delay (PCU- hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Excess Queue Penalty (£ per hr)	TOTAL PERFORMANCE INDEX (£ per hr)
TOTAL	1775.98	670.92	2.65	57.16	569.56	8899.21	339.77	1191.94	10430.93
BUSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER	1775.98	670.92	2.65	57.16	569.56	8899.21	339.77	1191.94	10430.93

### **Fuel Consumption**

Fuel Consumption Cruise (litres/hr)	Fuel Consumption Delay (litres/hr)	Fuel Consumption Stops (litres/hr)	Fuel Consumption Total (litres/hr)
97.40	720.70	155.11	973.23

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Last run: 19/06/2009 09:07:59

Analysis Set used for last run: Analysis Set 4 - 2023 Base Case weekday pm peak hour

File: Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\TRANSYT\8 Ash Gn Base am.t13

Report generation date: 19/06/2009 09:08:07

# Analysis Set 4 - 2023 Base Case weekday pm peak hour

## **Summary**

#### **Data Errors and Warnings**

Severity	Area	Description
Info	Link Source Data	Link 21: downstream flow apparent loss = 541 (58.13%).
Info	Link Source Data	Link 31: downstream flow apparent loss = 960 (42.38%).
Info	Link Source Data	Link 51: downstream flow apparent loss = 261 (67.94%).

#### File summary

#### **File Description**

Title	A12/A1124 Eight Ash Green interchange (full signalisation)
Location	Stanway
Driving Side	Left
Date	11/06/2009
Status	(new file)
Client	Hills Residential
Jobnumber	F960
Enumerator	ARDENTCE\cbull

#### **Units**

Speed Units	Distance Units
kph	m

#### **Sorting**

Sorting Direction	Sorting Type	Ignore Prefixes When Sorting	Link Grouping	Source Grouping
Ascending	Numerical		Normal	Normal

# **Signal Timings**

#### **Stage Timings (TRANSYT 12 timings)**

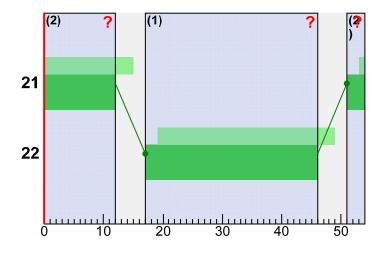
54s cycle time; 54 steps

Node ID	Number of stages	Stage 1	Stage 2
2	2	12	46
3	2	2	24
4	2	0	29
5	2	1	42

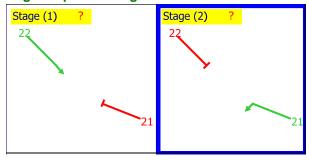
#### **Intergreen Matrix for Node 2**

	То				
		21	22		
From	21	-	5		
	22	5	-		

#### **Link Timings Diagram for Node 2**



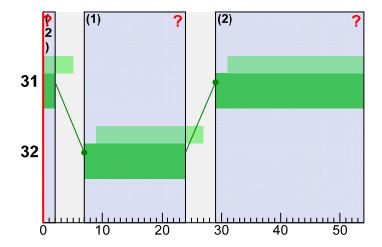
#### Stage Sequence Diagram for Node 2



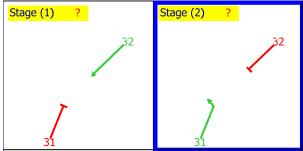
#### **Intergreen Matrix for Node 3**

	То				
From		31	32		
	31	-	5		
	32	5	-		

#### **Link Timings Diagram for Node 3**

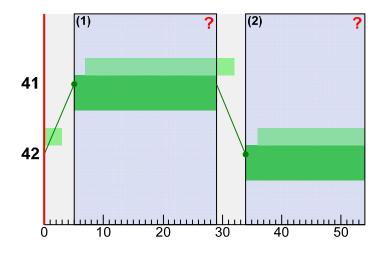


#### Stage Sequence Diagram for Node 3

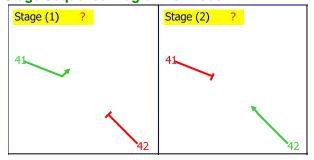


#### **Intergreen Matrix for Node 4**

		То				
		41	42			
From	41	-	5			
	42	5	-			



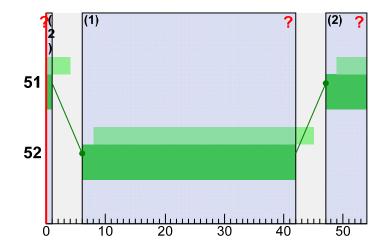
**Stage Sequence Diagram for Node 4** 



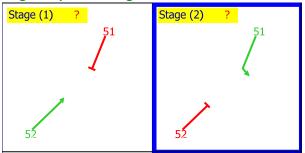
#### **Intergreen Matrix for Node 5**

	То				
		51	52		
From	51	-	5		
	52	5	-		

#### **Link Timings Diagram for Node 5**



#### **Stage Sequence Diagram for Node 5**



#### Link green times

Link ID	Traffic Node	Signala Nada	Green P	eriod 1	Green P	eriod 2	Green P	eriod 3	Green P	Green Period 4	
LINKID	Traffic Node	Signals Node	Start	End	Start	End	Start	End	Start	End	
21	2	2	51	12							
22	2	2	17	46							
31	3	3	29	2							
32	3	3	7	24							
41	4	4	5	29							
42	4	4	34	0							
51	5	5	47	1							
52	5	5	6	42							

#### **Run Summary**

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Cycle Time Used (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)	Link With Highest DOS	Number Of Oversaturated Links	Percentage Of Oversaturated Links (%)	Network Within Capacity
Analysis Set 4 - 2023 Base Case weekday pm peak hour	19/06/2009 09:07:59	19/06/2009 09:07:59	17:00:00	54	207.65	126	51	6	43	

#### **Link Results**

					MEAN	TIMES		DELAY		S	TOPS	QUEUES		P.I.
Link ID	Major Link	Calculated Flow Into Link (PCU/hr)	Calculated Sat Flow (PCU/hr)	Degree Of Saturation (%)	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU- hr/hr)	Random Plus Oversat Delay (PCU- hr/hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Weighted Cost Of Stops (£ per hr)	Mean Max Queue (PCU)	Average Limit Excess Queue (PCU)	P.I. (£ per hr)
21		1292	4020	108 !	17.00	179.28	8.15	56.19	913.66	244	81.07	76	0.00	994.73
22	(22)	1316	3829	83	6.00	7.12	0.86	1.75	36.94	29	6.89	14	2.71	1397.90
23	22	439 <	(3829)	(83)	6.00	21.89	2.09	0.58	37.92	86	8.60	(14)	(0.00)	46.52
31		1666	3924	82	17.00	15.70	5.03	2.23	103.19	85	36.45	23	0.00	139.65
32	(32)	534 <	3850	88	11.00	16.37	0.76	1.66	34.46	74	7.72	19	0.00	42.19
33	32	439 <	(3850)	(88)	11.00	42.46	3.81	1.37	73.56	95	9.48	(19)	(0.00)	83.04
34	32	157 <	(3850)	(88)	11.00	16.37	0.22	0.49	10.15	74	2.28	(19)	(0.00)	12.43
41		1783	4020	96 !	17.00	32.63	6.93	9.23	229.51	121	55.31	35	0.00	284.82
42	(42)	157 <	3924	57	6.00	15.11	0.54	0.12	9.37	95	2.94	7	0.07	82.21
43	42	706	(3924)	(57)	6.00	8.36	1.11	0.53	23.28	32	4.13	(7)	(0.00)	27.42
51		814	3875	126 !	17.00	416.14	7.66	86.44	1336.14	274	57.26	100 +	0.00	1393.40
52	(52)	467	3850	94 !	12.00	11.91	0.12	1.43	21.95	31	2.59	21	0.02	47.15
53	52	706	(3850)	(94) !	12.00	20.33	1.83	2.16	56.63	112	14.31	(21)	(0.00)	70.94
54	52	1316	(3850)	(94) !	12.00	11.91	0.34	4.02	61.84	31	7.31	(21)	(0.00)	69.14

- BL = at least one source for this link carries buses
   TL = at least one source for this link carries trams

- PL = this link is a pedestrian link
  < = adjusted flow warning (upstream links are over-saturated)
  ! = DOS threshold exceeded
- *f* = average saturation flow for flared link
- \* = stops/delay weighting has been set to a value other than 100%
   + = average link excess queue is greater than 0
   P.I. = PERFORMANCE INDEX

#### **Network Totals**

	Distance Travelled (PCU-km/hr)	Time Spent (PCU- hr/hr)	Mean Journey Speed (kph)	Uniform Delay (PCU- hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Excess Queue Penalty (£ per hr)	TOTAL PERFORMANCE INDEX (£ per hr)
TOTAL	1694.80	249.98	6.78	39.45	168.20	2948.60	296.34	1446.58	4691.54
BUSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER	1694.80	249.98	6.78	39.45	168.20	2948.60	296.34	1446.58	4691.54

### **Fuel Consumption**

Fuel Consumption Cruise (litres/hr)	Fuel Consumption Delay (litres/hr)	Fuel Consumption Stops (litres/hr)	Fuel Consumption Total (litres/hr)
93.16	238.81	135.29	467.23

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Last run: 19/06/2009 10:14:26

Analysis Set used for last run: Analysis Set 8 - 2023 Dev't Case weekday pm peak hour

File: Y:\ARDENT PROJECTS\F960 - Fiveways Fruit Farm site, Stanway, Colchester\Transport\TRANSYT\8 Ash Gn Base am.t13

**Report generation date:** 19/06/2009 10:14:32

# Analysis Set 8 - 2023 Dev't Case weekday pm peak hour

## **Summary**

#### **Data Errors and Warnings**

Severity	Area	Description
Info	Link Source Data	Link 21: downstream flow apparent loss = 541 (58.45%).
Info	Link Source Data	Link 31: downstream flow apparent loss = 987 (41.7%).
Info	Link Source Data	Link 51: downstream flow apparent loss = 261 (70.37%).

#### File summary

#### **File Description**

Title	A12/A1124 Eight Ash Green interchange (full signalisation)
Location	Stanway
Driving Side	Left
Date	11/06/2009
Status	(new file)
Client	Hills Residential
Jobnumber	F960
Enumerator	ARDENTCE\cbull

#### **Units**

Speed Units	Distance Units
kph	m

#### **Sorting**

Sorting Direction	Sorting Type	Ignore Prefixes When Sorting	Link Grouping	Source Grouping
Ascending	Numerical		Normal	Normal

# **Signal Timings**

#### **Stage Timings (TRANSYT 12 timings)**

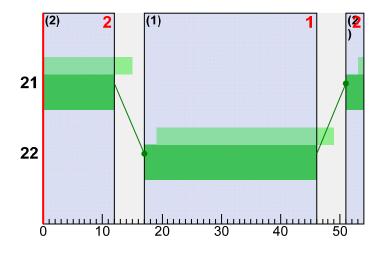
54s cycle time; 54 steps

Node ID	Number of stages	Stage 1	Stage 2
2	2	12	46
3	2	1	24
4	2	0	29
5	2	1	42

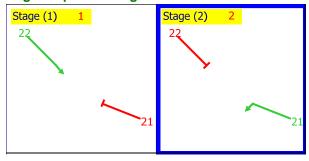
#### **Intergreen Matrix for Node 2**

		То			
		21 22			
From	21	-	5		
	22	5	-		

#### **Link Timings Diagram for Node 2**



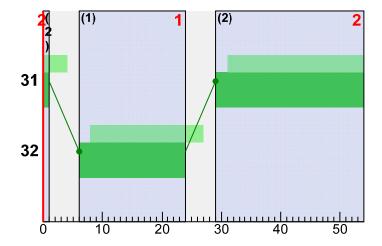
#### **Stage Sequence Diagram for Node 2**



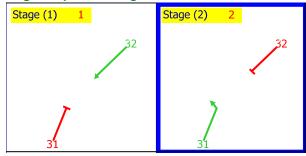
#### **Intergreen Matrix for Node 3**

		То						
From		31	32					
	31	-	5					
	32	5	-					

#### **Link Timings Diagram for Node 3**

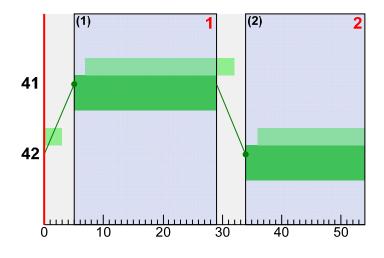


#### Stage Sequence Diagram for Node 3

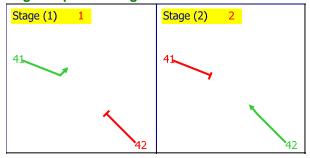


#### **Intergreen Matrix for Node 4**

		То						
		41	42					
From	41	-	5					
	42	5	-					

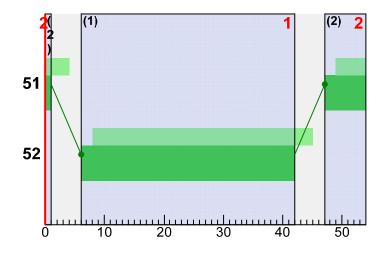


**Stage Sequence Diagram for Node 4** 

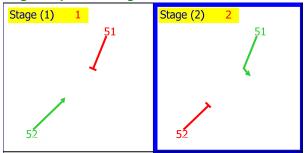


#### **Intergreen Matrix for Node 5**

		То	
		51	52
From	51	-	5
	52	5	-



**Stage Sequence Diagram for Node 5** 



#### Link green times

Link ID	Traffic Node	Signala Nada	Green P	eriod 1	Green Period 2		Green Period 3		Green Period 4	
LINKID	Traffic Node	Signals Node	Start	End	Start	End	Start	End	Start	End
21	2	2	51	12						
22	2	2	17	46						
31	3	3	29	1						
32	3	3	6	24						
41	4	4	5	29						
42	4	4	34	0						
51	5	5	47	1						
52	5	5	6	42						

#### **Run Summary**

Analysis Set Used	Run Start Time	Run Finish Time	Modelling Start Time (HH:mm)	Cycle Time Used (s)	Total Network Delay (PCU-hr/hr)	Highest DOS (%)			Percentage Of Oversaturated Links (%)	Network Within Capacity
Analysis Set 8 - 2023 Dev't Case weekday pm peak hour	19/06/2009 10:14:26	19/06/2009 10:14:26	17:00:00	54	250.65	136	51	6	43	

#### **Link Results**

					MEAN	TIMES		DELAY		s	TOPS	QU	EUES	P.I.
Link ID	Major Link	Calculated Flow Into Link (PCU/hr)	Calculated Sat Flow (PCU/hr)	Degree Of Saturation (%)	Mean Cruise Time Per PCU (s)	Mean Delay Per PCU (s)	Uniform Delay (PCU- hr/hr)	Random Plus Oversat Delay (PCU- hr/hr)	Weighted Cost Of Delay (£ per hr)	Mean Stops Per PCU (%)	Weighted Cost Of Stops (£ per hr)	Mean Max Queue (PCU)	Average Limit Excess Queue (PCU)	P.I. (£ per hr)
21		1302	4020	109 !	17.00	191.15	8.33	60.80	981.69	248	83.11	81 +	0.00	1064.80
22	(22)	1326	3829	84	6.00	7.62	0.92	1.89	39.88	32	7.64	16	3.16	1626.33
23	22	455 <	(3829)	(84)	6.00	22.40	2.18	0.65	40.18	80	8.95	(16)	(0.00)	49.13
31		1693	3924	86	17.00	18.42	5.58	3.08	122.99	92	40.22	25	0.00	163.20
32	(32)	541 <	3850	85	11.00	13.20	0.68	1.30	28.15	61	6.49	17	0.00	34.64
33	32	455 <	(3850)	(85)	11.00	38.87	3.81	1.10	69.71	85	9.46	(17)	(0.00)	79.17
34	32	157 <	(3850)	(85)	11.00	13.20	0.20	0.38	8.18	61	1.89	(17)	(0.00)	10.07
41		1802	4020	97 !	17.00	36.26	7.07	11.08	257.74	127	58.79	37	0.00	316.53
42	(42)	157 <	3924	57	6.00	15.71	0.57	0.12	9.74	95	2.94	6	0.07	78.78
43	42	708	(3924)	(57)	6.00	8.35	1.11	0.53	23.31	32	4.05	(6)	(0.00)	27.36
51		881	3875	136 !	17.00	525.19	9.10	119.43	1825.08	271	61.43	135 +	0.00	1886.51
52	(52)	472	3850	95 !	12.00	13.07	0.13	1.59	24.33	33	2.81	22	0.06	87.03
53	52	708	(3850)	(95) !	12.00	21.35	1.82	2.38	59.60	114	14.53	(22)	(0.00)	74.13
54	52	1326	(3850)	(95) !	12.00	13.07	0.36	4.46	68.35	33	7.89	(22)	(0.00)	76.25

- BL = at least one source for this link carries buses
   TL = at least one source for this link carries trams

- PL = this link is a pedestrian link
  < = adjusted flow warning (upstream links are over-saturated)
  ! = DOS threshold exceeded
- f = average saturation flow for flared link
- \* = stops/delay weighting has been set to a value other than 100%
   + = average link excess queue is greater than 0
   P.I. = PERFORMANCE INDEX

#### **Network Totals**

	Distance Travelled (PCU-km/hr)	Time Spent (PCU- hr/hr)	Mean Journey Speed (kph)	Uniform Delay (PCU- hr/hr)	Random Plus Oversat Delay (PCU-hr/hr)	Weighted Cost Of Delay (£ per hr)	Weighted Cost Of Stops (£ per hr)	Excess Queue Penalty (£ per hr)	TOTAL PERFORMANCE INDEX (£ per hr)
TOTAL	1725.48	293.74	5.87	41.86	208.79	3558.93	310.20	1704.79	5573.93
BUSES	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TRAMS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
OTHER	1725.48	293.74	5.87	41.86	208.79	3558.93	310.20	1704.79	5573.93

### **Fuel Consumption**

Fuel Consumption Cruise (litres/hr)	Fuel Consumption Delay (litres/hr)	Fuel Consumption Stops (litres/hr)	Fuel Consumption Total (litres/hr)
94.81	288.23	141.61	524.66