EIS Attachment 1A
General EWC Listing

No.	Description	Code	Origin
1	Waste Plastic	02 01 04	Industrial Waste (Agriculture Waste)
2	Waste Metal	02 01 10	Industrial Waste (Agriculture Waste)
3	Waste bark and cork	03 01 01	Industrial Waste
4	Sawdust, shavings, cuttings, wood, particle board and veneer other than those mentioned in 03 01 04	03 01 05	Industrial Waste
5	Cardboard	15 01 01	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
6	Plastic	15 01 02	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
7	Wooden Packaging	15 01 03	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
8	Metallic packaging	15 01 04	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
9	Composite packaging	15 01 05	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
10	Mixed Packaging	15 01 06	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
11	Glass packaging	15 01 07	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
12	Textile packaging	15 01 09	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
13	End-of-life tyres	16 01 03	C & I Waste (Commercial & Industrial Waste), Civic Amenity Waste
14	Ferrous metal	16 01 17	C & I Waste (Commercial & Industrial Waste)
15	Non-ferrous metal	16 01 18	C & I Waste (Commercial & Industrial Waste)
16	Plastic	16 01 19	C & I Waste (Commercial & Industrial Waste)
17	Glass	16 01 20	C & I Waste (Commercial & Industrial Waste)
18	Concrete	17 01 01	C & D (Construction & Demolition Wastes)
19	Bricks	17 01 02	C & D (Construction & Demolition Wastes)
20	Tiles and ceramics	17 01 03	C & D (Construction & Demolition Wastes)
21	Mixture of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06	17 01 07	C & D (Construction & Demolition Wastes)
22	Wood	17 02 01	C & D (Construction & Demolition Wastes)
23	Glass	17 02 02	C & D (Construction & Demolition Wastes)
24	Plastic	17 02 03	C & D (Construction & Demolition Wastes)
25	Bituminous mixtures containing other than those mentioned in 17 03 01	17 03 02	C & D (Construction & Demolition Wastes)
26	Copper, bronze, brass	17 04 01	C & D (Construction & Demolition Wastes)
27	Aluminium	17 04 02	C & D (Construction & Demolition Wastes)

No.	Description	Code	Origin
28	Lead	17 04 03	C & D (Construction & Demolition Wastes)
29	Zinc	17 04 04	C & D (Construction & Demolition Wastes)
30	Iron and steel	17 04 05	C & D (Construction & Demolition Wastes)
31	Tin	17 04 06	C & D (Construction & Demolition Wastes)
32	Mixed metals	17 04 07	C & D (Construction & Demolition Wastes)
33	Cables other than those mentioned in 17 04 10	17 04 11	C & D (Construction & Demolition Wastes)
34	Soil and stones other than those mentioned in 17 05 03	17 05 04	C & D (Construction & Demolition Wastes)
35	Insulation materials other than those mentioned in 17 06 01 and 17 06 03	17 06 04	C & D (Construction & Demolition Wastes)
36	Gypsum-based construction materials other than those mentioned in 17 08 01	17 08 02	C & D (Construction & Demolition Wastes)
37	Mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03	17 09 04	C & D (Construction & Demolition Wastes)
38	Plastic and rubber	19 12 04	C & I Waste (Commercial & Industrial Waste)
39	Minerals (for example sand, stones)	19 12 09	C & I Waste (Commercial & Industrial Waste)
40	Wood other than that mentioned in 19 12 06	19 12 07	C & I Waste (Commercial & Industrial Waste)
41	Other wastes (including mixtures of materials) from mechanical treatment of wastes other than those mentioned in 19 12 11	19 12 12	C & I Waste (Commercial & Industrial Waste)
42	Paper and cardboard	20 01 01	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste
43	Glass	20 01 02	C & I Waste (Commercial & Industrial Waste)
44	Clothes	20 01 10	Commercial & House Hold Waste
45	Textiles	20 01 11	Commercial & House Hold Waste
46	Timber	20 01 38	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
47	Plastics	20 01 39	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
48	Wood other than that mentioned in 20 01 37	20 01 38	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
49	Scrap Metal	20 01 40	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste
50	Green Waste / Biodegradable waste	20 02 01	House Hold Waste, Civic Amenity Waste
51	Soil and stones	20 02 02	House Hold Waste, Civic Amenity Waste
52	Mixed municipal waste	20 03 01	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste
53	Bulky Mixed Waste	20 03 07	C & I Waste (Commercial & Industrial Waste), Construction & House Hold Waste, Civic Amenity Waste

EIS Attachment 1B
WEE EWC Listing

No.	Description	Code	Origin
1	Discarded equipment containing chlorofluorocarbons, HCFC, HFC	16 02 11*	C & I Waste & House Hold Waste, Civic Amenity Waste - (Fridges and freezers)
2	Discarded equipment containing hazardous components e) other than those mentioned in 160209 to 160212	16 02 13*	C & I Waste & House Hold Waste, Civic Amenity Waste - (TVs and PC monitors)
3	Discarded equipment other than those mentioned in 160209 to 160213	16 02 14	C & I Waste - ICT - Information and communications technology equipment (includes computer equipment)
4	Components removed from discarded equipment other than those mentioned in160215	16 02 16	C & I Waste - (Parts of Electrical Equipment)
5	Fluorescent tubes and other mercury containing waste	20 01 21*	C & I Waste & House Hold Waste, Civic Amenity Waste - Light (Tubes & Bulbs)
6	Discarded equipment containing chlorofluorocarbons	20 01 23*	C & I Waste & House Hold Waste, Civic Amenity Waste - (Fridges and freezers)
7	Discarded electrical and electronic equipment other than those mentioned in 200121 and 200123 containing hazardous components	20 01 35*	C & I Waste & House Hold Waste, Civic Amenity Waste - (TVs and PC monitors)
8	Discarded electrical and electronic equipment other than those mentioned in 200121,200123 and 200135.	20 01 36	C & I Waste & House Hold Waste, Civic Amenity Waste - (Fridges and freezers)

EIS Attachment 2A
Disposal of Storm/Surface Water

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• Consulting Engineers • Project Management • Cost Control • Environmental Consultants

WASTE RECOVERY SERVICES (FERMOY) LIMITED

DISPOSAL OF STORM/SURFACE WATER

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1. **Roof Runoff**

a) **Main Building**

Runoff to gravitate to an underground attenuation/storage tank with controlled overflow discharging to a soakaway.

Building Area = 3750m²

Percolation tests on site showed that the soil infiltration rate at the soakaway site is 0.552 litres/m²/sec.

Provide soakaway 20m x 2m x 1m deep

Surface area (omit floor)	=	44m²
Percolation capacity	=	44 x 0.552
	=	24.3 l/sec

Allow outflow rate from attenuation tank of 24 l/sec
From enclosed calculation, tank volume required = 40m³.
Provide for similar volume of permanent storage to be used for washing and dust suppression within the building.

b) **Offices, Workshop/Garage and Truck Wash**

Runoff to gravitate directly to soakaway

Area = 664m²

Percolation tests on site showed that the soil infiltration rate at the soakaway site is 0.0283 litres/m²/sec (2.83 x 10^{-5} m³/m²/sec)

Due to the presence of rock the soakaway depth is restricted to 0.7m.
From the enclosed calculation the size required is 40m x 1.38m x 0.7m deep
Provide soakaway measuring 40m x 1.5 x 0.7

2. **Yard Runoff**

Surface runoff from the open yard will gravitate to an attenuation tank at the south western corner of the yard. It will discharge via a flow control valve and gravitate to an existing watercourse across the public road to the west. To allow a buffer prior to discharge, a shallow open bunded area will be provided as shown. Discharge rate will be limited to green field runoff rate.

Yard area = 8978m²
Total development area = 13392m²
Green field runoff from this area using coefficient of 0.2 and a rainfall rate of 25mm/hr = 18.6 l/sec

The attached tank calculation shown that a tank of 202m³ capacity is required and 211m³ is provided.

September 10, 2008

EIS Attachment 2B
Storm Water Attenuation Calculations

Yard Runoff

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Project No.: 27247
Client Name: WASTE RECOVERY SERVICES (FERMOY) LTD.
Revision:
Data Prep.: 09.09.08
Prep. By: T.P.M.

Storm Water Attenuation Calculations

YARD RUNOFF

Return Period "Tp"	Storm Duration "t"	Intensity +10% "I"	Inflow "Q"	Q - 18.6	Volume of Tank
[years]	[min]	[mm/hr]	[l/s]	[l/s]	[m³]
30	5	126	314	295.67	89
30	10	83	207	188.74	113
30	20	55	137	118.19	142
30	30	43	107	88.65	160
30	40	36	90	71.65	172
30	50	32	79	60.34	181
30	60	28	71	52.16	188
30	90	22	55	36.88	199
30	120	19	47	28.08	202
30	180	15	37	18.00	194
30	240	12	31	12.20	176
30	300	11	27	8.34	150
30	360	10	24	5.55	120
30	420	9	22	3.42	86
30	480	8	20	1.72	50
				Max Volume	202

Data:		
Return Period	30	years
Impermeable Area	8978	m²
Outflow	18.6	l/s

Proposed Size of Attenuation Tank		
Depth	1.2	m
Width	8	m
Length	22	m
Total Volume	211	m³
volume enough		

Main Roof Runoff

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Project No.: 27247
Client Name: WASTE RECOVERY SERVICES (FERMOY) LTD.
Revision:
Data Prep.: 09.09.08
Prep. By: T.P.M.

Storm Water Attenuation Calculations

MAIN ROOF RUNOFF

Return Period "Tp"	Storm Duration "t"	Intensity +10% "I"	Inflow "Q"	Q - 24	Volume of Tank
[years]	[min]	[mm/hr]	[l/s]	[l/s]	[m³]
30	5	126	131	107.26	32
30	10	83	87	62.60	38
30	20	55	57	33.14	40
30	30	43	45	20.80	37
30	40	36	38	13.70	33
30	50	32	33	8.97	27
30	60	28	30	5.56	20
30	90	22	23	-0.83	-4
30	120	19	19	-4.50	-32
30	180	15	15	-8.71	-94
30	240	12	13	-11.14	-160
30	300	11	11	-12.75	-229
30	360	10	10	-13.91	-301
30	420	9	9	-14.80	-373
30	480	8	8	-15.51	-447
			Max Volume		40

Data:		
Return Period	30	years
Impermeable Area	3750	m²
Outflow	24	l/s

Proposed Size of Attenuation Tank		
Depth	1	m
Width	5	m
Length	8	m
Total Volume	40	m³
volume enough		

EIS Attachment 2C
Soakaway Design – Offices/Workshop/Truck Wash

RETURN PERIOD	30	yrs

IMPERMEABLE AREA DRAINED TO THE SOAKAWAY	664	m²

Soil Infiltration rate determined in trial pit at the site of the soakaway	2.83E-05	[m³/m²/sec]

Dillon's Formula

Duration [min]	Duration [hrs]	Duration [days]	Rainfall Intensity [mm/hr]	Inflow [m³]	Width Required ' W ' [m]	Total rainfall [mm]
5	0.083	0.003	126.01	6.97	0.60	10.50
10	0.167	0.007	83.14	9.20	0.78	13.86
15	0.250	0.010	65.18	10.82	0.90	16.30
20	0.333	0.014	54.85	12.14	1.00	18.28
25	0.417	0.017	47.98	13.27	1.08	19.99
30	0.500	0.021	43.01	14.28	1.14	21.50
35	0.583	0.024	39.21	15.19	1.20	22.87
40	0.667	0.028	36.19	16.02	1.26	24.13
45	0.750	0.031	33.72	16.79	1.30	25.29
50	0.833	0.035	31.65	17.51	1.34	26.38
55	0.917	0.038	29.89	18.20	1.38	27.40
60	1.000	0.042	28.37	18.84	1.42	28.37
90	1.500	0.063	22.25	22.16	1.58	33.37
120	2.000	0.083	18.72	24.86	1.69	37.44
150	2.500	0.104	16.37	27.18	1.76	40.93
180	3.000	0.125	14.68	29.24	1.81	44.03
210	3.500	0.146	13.38	31.10	1.84	46.83
240	4.000	0.167	12.35	32.80	1.86	49.40
270	4.500	0.188	11.51	34.38	1.87	51.78
300	5.000	0.208	10.80	35.86	1.87	54.01
330	5.500	0.229	10.20	37.26	1.86	56.11
360	6.000	0.250	9.68	38.58	1.85	58.10
390	6.500	0.271	9.23	39.83	1.83	59.99
420	7.000	0.292	8.83	41.03	1.80	61.79
450	7.500	0.313	8.47	42.18	1.77	63.52
480	8.000	0.333	8.15	43.28	1.74	65.18
510	8.500	0.354	7.86	44.35	1.70	66.78
540	9.000	0.375	7.59	45.37	1.66	68.33
570	9.500	0.396	7.35	46.36	1.62	69.82
600	10.000	0.417	7.13	47.32	1.58	71.27
630	10.500	0.438	6.92	48.26	1.53	72.68
660	11.000	0.458	6.73	49.16	1.48	74.04
690	11.500	0.479	6.55	50.04	1.43	75.37
720	12.000	0.500	6.39	50.90	1.38	76.66
750	12.500	0.521	6.23	51.74	1.33	77.92
780	13.000	0.542	6.09	52.56	1.28	79.16
810	13.500	0.563	5.95	53.36	1.22	80.36
840	14.000	0.583	5.82	54.14	1.16	81.54
870	14.500	0.604	5.70	54.91	1.11	82.69
900	15.000	0.625	5.59	55.66	1.05	83.82
930	15.500	0.646	5.48	56.39	0.99	84.93
960	16.000	0.667	5.38	57.11	0.93	86.01
990	16.500	0.688	5.28	57.82	0.87	87.08
1020	17.000	0.708	5.18	58.51	0.81	88.12
1050	17.500	0.729	5.09	59.20	0.75	89.15
1080	18.000	0.750	5.01	59.87	0.68	90.16
1110	18.500	0.771	4.93	60.53	0.62	91.15
1140	19.000	0.792	4.85	61.18	0.56	92.13
1170	19.500	0.813	4.77	61.81	0.49	93.09
1200	20.000	0.833	4.70	62.44	0.43	94.04
1230	20.500	0.854	4.63	63.06	0.36	94.98
1260	21.000	0.875	4.57	63.67	0.30	95.90
1290	21.500	0.896	4.50	64.28	0.23	96.80
1320	22.000	0.917	4.44	64.87	0.17	97.70
1350	22.500	0.938	4.38	65.46	0.10	98.58
1380	23.000	0.958	4.32	66.03	0.03	99.45
1410	23.500	0.979	4.27	66.60	-0.03	100.31
1440	24.000	1.000	4.21	67.17	-0.10	101.16
2880	48.000	2.000	2.78	88.63	-3.30	133.48
4320	72.000	3.000	2.18	104.23	-6.19	156.98
5760	96.000	4.000	1.83	116.95	-8.69	176.12
7200	120.000	5.000	1.60	127.87	-10.85	192.57
8640	144.000	6.000	1.44	137.54	-12.73	207.14
10080	168.000	7.000	1.31	146.29	-14.36	220.31
11520	192.000	8.000	1.21	154.31	-15.80	232.40
12960	216.000	9.000	1.13	161.76	-17.08	243.61
14400	240.000	10.000	1.06	168.72	-18.22	254.09

W-idth =	1.87	m

L-ength =	40	m
D -epth =	0.7	m

as50 =	29.3092197	m²

Emptying Time of 50% of volume	
[hrs]	[days]
3.51	0.15

Percentage of free space in a Soakaway	40	%

W - idth =	1.87	m

Total VOLUME of Soakaway	52.37	[m³]

Client:

WASTE RECOVERY SERVICES (FERMOY) LTD.

Job No.: **27247**

EIS Attachment 3A
Extracts from Archaeological Inventory of County Cork Vol. IV: North Cork

Note: Two RMPs within the study area are not included in the inventory. These are CO035-48--- (possible ringfort, Ballynahina townland) and CO035-69--- (holy well, Corrin townland).

Inventory No. 10353

Ballynoe. Fulacht fiadh (CO035-081---). In pasture. On W bank of stream. Mound of burnt material (28 m N-S; 30 m E-W; H 1.06 m) probably truncated on N side by drain.

Inventory No. 10571

Coolcarron. Fulacht fiadh (CO035-075---). In pasture. Barely perceptible, roughly circular mound (diam. 12 m) containing dark brown soil and some burnt stones.

Inventory No. 10572

Coolcarron. Fulacht fiadh (CO035-077---). In pasture, on S side of bend in stream. Oval spread of burnt material (8 m N-S; 10.4 m E-W). NE side eroded by stream.

Inventory No. 10590

Coolmucky. Fulacht fiadh (CO035-047-01). In pasture, c. 20 m N of moated site (14198). Overgrown mound of burnt material (17 m NNE-SSW; H. 0.8 m). Recorded in 1849 by Windele (1898, 54-5) as 'a fine follock, a large round mound of considerable circumference which stands within a few paces of the entrance (to moated site), the stream which fills the moat flowing in between'. Windele (*ibid*.) also recorded that a fulacht fiadh in the next field to the NW 'and a third in the field next to that'; these remain unlocated.

Inventory No. 11801

Coolcarron. Cairn (CO035-049-02). In forestry, within hilltop enclosure (11978) on summit of Corrin Hill. Oval cairn (c. 22 m N-S; c. 42 m E-W; H. 2.7 m) disturbed on E side by disused army observation bunker (built 1940s); trigonometrical station on N side. Cist (11943) found in 1832 after 'the removal several hundred tons of stone' from cairn (Borlase 1897, 13). According to Ó Murchu (1978, 10) cairn, in 1886, was '19 feet high …including a pillar of stones on the top'.

Inventory No. 11943

Coolcarron. Short Cist (CO035-049-03). Discovered in 1832 when 'several hundred tons of stone' (Borlase 1897, 13) were removed from cairn (11801) and 'a chamber was found, formed of rude flags' (*ibid*.). In this was found 'the fragment of an urn' (ibid.) which apparently was 'broken by the workmen, to ascertain if it contained money' (Lewis 1837, vol. 1, 307). According to the antiquarian John Windele, 'in an adjoining chamber another urn was found containing a small quantity of ashes, on April 6th, 1837' (Borlase 1897, 13); Windele drew the vessel which he described as follows: 'Height 5½ inches; diameter at top 5¾ inches; breadth

at base 3 inches; thickness 3/16ths of an inch. It was of a pale reddish colour, of unbaked (?) clay and rudely carved with lozenges etc. It had a conical sort of cap' (Borlase 1897, 13). This vessel disappeared c. 1849 (Ó Murchu 1978, 42); Doody (1986, Cork no. 16) identifies it as probably a vase food vessel.

Inventory No. 11978

Coolcarron/Corrin. Hillfort (CO035-049-01). In commanding position, enclosing Corrin Hill at E end of Nagle Mountain range, overlooking Blackwater and Bride River valleys to N and S respectively. Heavily overgrown. Roughly oval area (c. 240 m N-S; c. 165 m E-W) enclosed by substantial bank of dumped rubble construction (max. H 1.6 m). Cairn (11801) with food vessel burial (11943) and stone cross (erected 1952) in centre. Site crossed WNW-ESE by townland and barony boundaries. Bank quite ruinous in places; topped with modern stone wall (L. c. 50 m) to E; curves inward WNW to N to accommodate earthen outworks of 2 to 3 banks with intervening fosses; may be an entrance feature. Break in bank to WNW where barony boundary and trackway come through; trackway runs parallel to and on S side of barony boundary and breaks through it on E side of cairn to access stone cross to N; barony boundary exists across bank to ESE. Two other breaks in bank to SE and to SSE. Some traces of outer bank to SW and W. Forestry to within c. 20 m of bank. Interior slopes steeply down from cairn on hilltop and is very disturbed and overgrown. Ó Murchu 1978, 46-51) noted that in 1949 'the remains of three great embankments were clearly visible'; it was possible to trace the complete circle of the outer 'embankment' with a wide opening to W, 'one end of which curled in while the other end overlapped it on the outside – giving an appearance of a gate-way or entrance'; he noted a 'middle embankment' only on the NW side for 'several yards'; each separated by fosses; all subsequently disturbed by forestry.

Inventory No. 13351

Coolmucky. Possible Souterrain (CO035-79---). In moated site (14198). 'Some slabs of stone on ground within fort may be souterrain' (UCC). No visible surface trace.

Inventory No. 13352

Coolmucky. Possible Souterrain (CO035-80---). In pasture. According to local information, souterrain found here during ploughing in 1981; large slab disturbed by plough revealed cavity underneath. No visible surface trace.

Inventory No. 13526

Coolroe. Circular Enclosure (CO035-41---). In pasture, atop hillock. Depicted as hachured circular raised area (diam. c. 30 m) on 1935 OS map, within trapezoidal area of rough grazing (c. 50 m E-W; c. 45 m N-S), defined on S side by field boundary and on other three sides by broken line. Levelled; arc formed by low rise (ext. H 0.2 m) survives S to NW. Circular area visible in aerial photograph (GSIAP, W420, taken 1979) defined by low rise or scarp, within square overgrown area.

Inventory No. 13590

Knockananig. Circular Enclosure (CO035-46---) – 'Leacht na nGael'. In dense forest, on W-facing slope. Indicated as roughly circular (diam. c. 25 m) on 1935 OS map, with N side slightly flattened. Inaccessible due to afforestation.

Inventory No. 13875

Ballynoe. Early ecclesiastical site (CO035-100---). In pasture, at base of N side of Corrin Hill. According to Power (1932, 78) 'Cill Corrin: the present Ballynoe…is at NE angle of a field in John Barry's farm, close to the farmstead, and it extends into the adjoining field. There are no remains of the church, but the site is well remembered; indeed it is physically indicated by a slight elevation, two acres in area, on the surface of two fields.' Site located by Ó Murchu (1978, 7) to c. 200 m SW of Barry's farmhouse. No visible surface trace of site noted and no local knowledge of it survives. Pipe Roll of Cloyne (MacCotter & Nicholls 1996, 29) states that abbot of Fermoy held '…Kylconan which lies beside Karryg Tyrne (Carn Tighearna or Corrin Hill) in the Monastery parish…' 'Cill Corrin' mentioned in Crichad an Chaoilli (trans. Power 1932, 51) as one of two chief churches of the 'Tuath O Quain'. Bullaun stone (13913) c. 140 m to NNE.

Inventory No. 13913

Ballynoe. Bullaun Stone (CO035-099---). Stone, with centrally placed hollow (diam. c. 0.17 m; Depth c. 0.06 m), built into internal wall-face of old cow shed c. 0.2 m above floor level. Much of stone obscured by rubbish. Early ecclesiastical site (13875) c. 140 m to SSW.

Inventory No. 14198

Coolmucky. Moated Site (CO035-47-02). On SE-facing slope, within deciduous plantation. Roughly rectangular area (51 m E-W; 37 m N-S) enclosed by inner earthen bank (int. H 0.8 m; ext. H 2.2 m to base of fosse); intervening fosse; outer earth and stone bank (int. H 2.4 m to base of fosse; ext. H 0.9 m) on S and W sides. Entrance to W with break in both banks (Wth. c. 2.4 m); second break at NW corner. Fosse narrow and V-shaped on S side; flat-bottomed and broad on W side; largely silted up on N side; shallow, flat-bottomed and broad on E side. Interior slopes gently down to E, planted with deciduous trees. Leat leads water into fosse at NW corner, exiting in centre of E side and at SE corner. Outer bank shown on all sides on 1935 OS map. Site visited by Windele (1898, 54) on April 18th 1849; he describes a double-ramparted square fort, a deep wet fosse through which runs a small stream and evidence of digging in NE quadrant of interior by 'gold-diggers'. Listed by Barry (1981, 83, no. 25). Possible souterrain (13351) within site and fulacht fiadh (10590) c. 20 m to NW.

EIS Attachment 3B
Plates 1-6

Plate 1. View of proposed site of new building from north.

Plate 2. View of proposed site of new building from southwest.

Plate 3. View of proposed site of new building from north.

Plate 4. View towards waste transfer facility from field to east.

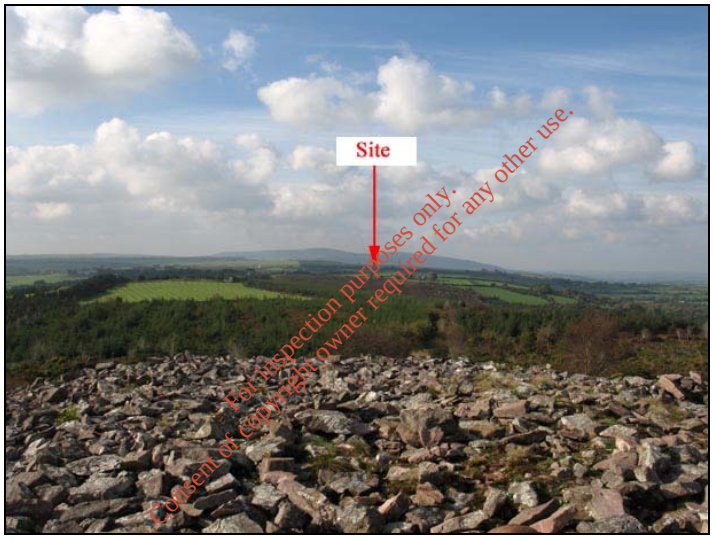

Plate 5. General view towards waste transfer facility from summit of Corrin Hill.

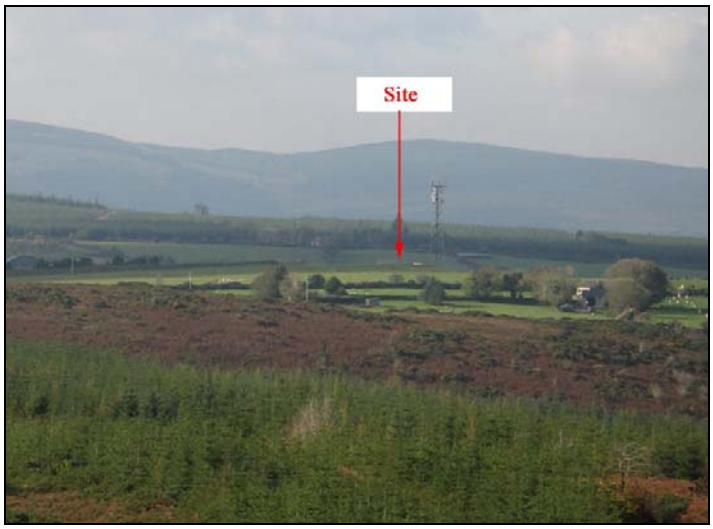

Plate 6. Enlarged view towards waste transfer facility from summit of Corrin Hill.

EIS Attachment 4A
Bat Ecology – General

Introduction

The bat is the only mammal that is capable of true flight. There are over 1,100 species worldwide, representing almost a quarter of all mammal species. There are 47 species in Europe - in Ireland, ten species of bat are currently known to exist, which are classified into two families, the Rhinolophidae (Horseshoe bats) and the Vespertilionidae (Common bats).

Prey

All the European bat species feed exclusively on insects. A Pipistrelle, weighing only 4 to 8 grams, will eat up to 3,000 insects every night, ensuring a build up of fat in the bat's body to allow it to survive the winter deep in hibernation.

Breeding and Longevity

Irish bats can produce one young per year but, more usually, only one young is born every two years (Boyd & Stebbings, 1989). This slow rate of reproduction inhibits repopulation in areas of rapid decline. Although bats have been known to live for twenty or more years, this is rare as most die in their first and the average lifespan, in the wild, is four years.

Threats

All bat species are in decline as they face many threats to their highly developed and specialised lifestyles. Many bats succumb to poisons used as woodworm treatments within their roosting sites (Racey, P.A. & Swift, S. 1986). Agricultural intensification, with the loss of hedgerows, treelines, woodlands and species-rich grasslands have impacted bat species also. Habitual roosting or hibernation sites in caves, mines, trees and disused buildings are also often lost to development. Summer roosts are prone to disturbance from vandals. Agricultural pesticides accumulate in their prey, reaching lethal doses (Jefferies, D.J. 1972). Chemical treatments in cattle production sterilise dung thus ensuring that no insects can breed within it to be fed upon by bats. Likewise, river pollution, from agricultural runoff, reduces the abundance of aquatic insects. Road building, with the resultant loss of foraging and roosting sites, is a significant cause in the reduction of bat populations across Europe.

Extinction

As recently as 1992, the greater mouse-eared bat (*Myotis myotis*) became the first mammal to become extinct in Britain since the wolf in the eighteenth century.

EIS Attachment 4B
Description of Bat Species Known or Expected on Site

Common Pipistrelle (*Pipistrellus pipistrellus*)

This species was only recently separated from its sibling, the soprano or brown pipistrelle (*Pipistrellus pygmaeus*), which is detailed below (Barratt, E.M., Deauville, R. Burland, T. M., Bruford, M.W., Jones, G., Racey, P.A. & Wayne, R.K., 1997). The common pipistrelle's echolocation calls peak at 45 kHz. The species forages along linear landscape features such as hedgerows and treelines as well as within woodland.

Soprano Pipistrelle (*Pipistrellus pygmaeus*)

The soprano pipistrelle's echolocation calls peak at 55 kHz, which distinguishes it readily from the common pipistrelle. The pipistrelles are the smallest and most often seen of our bats, flying at head height and taking small prey such as midges and small moths. Summer roost sites are usually in buildings but tree holes and heavy ivy are also used. Roost numbers can exceed 1,500 animals in mid-summer.

Leisler's Bat (*Nyctalus leisleri*)

This species is Ireland's largest bat, with a wingspan of up to 320 mm; it is also the third most common bat, preferring to roost in buildings, although it is sometimes found in trees and bat boxes. It is the earliest bat to emerge in the evening, flying fast and high with occasional steep dives to ground level feeding on moths, caddis-flies and beetles. The echolocation calls are sometimes audible to the human ear being around 15 kHz at their lowest. The audible chatter from their roost on hot summer days is sometimes an aid to location. This species is uncommon in Europe and Ireland holds the largest national population.

The species is considered as Internationally Important.

Brown Long-eared Bat (*Plecotus auritus*)

This species of bat is a 'gleaner', hunting amongst the foliage of trees and shrubs, and hovering briefly to pick a moth or spider off a leaf, which it then takes to a sheltered perch to consume. They often land on the ground to capture their prey. Using its nose to emit its echolocation, the long-eared bat 'whispers' its calls so that the insects, upon which it preys, cannot hear its approach (and hence, it needs oversize ears to hear the returning echoes). As this is a whispering species, it is extremely difficult to monitor in the field as it is seldom heard on a bat detector. Furthermore, keeping within the foliage, as it does, it is easily overlooked.

EIS Attachment 4C
List of Vertebrates and Adjudged Status

Common Name	Scientific Name	Status in Study Area
Mammals		
Chiroptera		
Common Pipistrelle[2]	*Pipistrellus pipistrellus*	Certain[1]
Soprano Pipistrelle[2]	*Pipistrellus pygmaeus*	Present[1]
Nathusius' Pipistrelle	*Pipistrellus nathusii*	Absent
Brown Long-eared	*Plecotus auritus*	Present
Leisler's	*Nyctalus leisleri*	Present
Lesser Horseshoe	*Rhinolophus hipposideros*	Absent
Whiskered/Brandt's[3]	*Myotis mystacinus/M. brandtii*	Absent
Natterer's	*Myotis nattereri*	Absent
Daubenton's	*Myotis daubentonii*	Absent
Insectivora		
Hedgehog	*Erinaceous europaeus*	Occasional
Pygmy Shrew	*Sorex minutus*	Certain
Lagomorpha		
Rabbit	*Oryctolagus cuniculus*	Occasional
Irish Hare	*Lepus timidus hibernicus*	Occasional
Rodentia		
Red Squirrel	*Sciurus vulgaris*	Absent
Grey Squirrel	*Sciurus carolinensis*	Absent
Bank Vole	*Clethrionomys glareolus*	Certain
Wood Mouse/Long-tailed Field Mouse	*Apodemus sylvaticus*	Certain
House Mouse	*Mus musculus domesticus*	Potential
Brown Rat	*Rattus norvegicus*	Present
Black Rat	*Rattus rattus*	Absent
Carnivora		
Fox	*Vulpes vulpes*	Present
Badger	*Meles meles*	Absent
Pine Marten	*Martes martes*	Absent
Irish Stoat	*Mustela erminea hibernica*	Occasional
Otter	*Lutra lutra*	Absent
American Mink	*Mustela vison*	Absent
Artiodactyla		
Red Deer	*Cervus elaphus*	Absent
Sika Deer	*Cervus nippon*	Occasional
Red/Sika Hybrids	*Cervus elaphus/nippon*	Absent
Fallow Deer	*Dama dama*	Absent, potential
Feral Goat	*Capra*	Absent
Amphibians		
Smooth Newt	*Triturus vulgaris*	Absent
Frog	*Rana temporaria*	Absent
Natterjack Toad	*Bufo calamita*	Absent
Reptiles		
Common Lizard	*Lacerta vivipara*	Likely

1. Bat distribution records from Richardson (2000).
2. Two species of pipistrelle bat are present in Ireland, recent taxonomic revision. The species are identified by the frequency they use for echolocation (45 Hz [Common] and 55 Hz [Soprano]) and both are common and occur in similar habitats. Roosts occur in buildings and trees.
3. This species is the latest addition to the Irish bat fauna - only discovered in 2003 - and cannot be separated from whiskered bat by detector.

EIS Attachment 4D
Photographic Record

Plate 1. Weighbridge and offices.

Plate 2. Main site buildings.

Plate 3. Recovery vehicle and waste pile.

Plate 4. Large pile of hard plastic waste awaiting processing.

Plate 5. Piles of timber awaiting shredding at dusk.

Plate 6. Derelict cottage.

Plate 7. View within attic of derelict cottage.

Plate 8. Brown long-eared bat droppings and insect prey remains within derelict cottage.

Plate 9. Brown long-eared bat droppings within derelict cottage.

Plate 10. Large coniferous trees screening site.

Plate 11. Screening vegetation and surrounding agricultural field.

Plate 12. Derelict cottage with adjoining mature treeline.

Plate 13. Rank grassland adjacent to main waste recovery area.

EIS Attachment 4E
Ecology Section from EIS (Parkman, 1999)

Introduction

The site is located near the summit of a hill with a northwesterly aspect which overlooks a valley, part of which has been relatively recently afforested. The site is within an area dominated by grazing pastures - especially for sheep. Many of the hedgerow plants are introduced conifer species - especially *Macrocarpa*. Other tree species include Birch and Lime. Hawthorn and gorse are also abundant. Plant species include nettle, bindweed and bramble. Some of the hedgerows show evidence of stunting, presumably because of exposure to wind.

Vegetation

Much of the site boundary has been modified, developed or disturbed to some degree. The northern, eastern and western boundaries are embankments, and are of low conservation value. These areas hold tall ruderal and various perennial vegetation species (Table 4.1). The flora species recorded are generally common to very common, with many being typical of disturbed ground. Weeds are common and there are a number of grass species on the margins. None of the species recorded is protected.

There is a strip of ground outside and bordering the eastern boundary which is fenced off and where relatively good vegetation growth has developed. This location offers a small habitat to vertebrates, especially birds.

The southern boundary has a moderate diversity relative to the rest of the site with good growth of nettle, bramble and deciduous tree cover.

Mammals

Most of the site is unsuitable for mammals, particularly larger species. Notwithstanding, the southern boundary provides partial habitat requirements and small protected mammal species such as Hedgehog (*Erinaceus europaeus*), Pygmy Shrew (*Sorex minutus*) and Woodmouse (*Apodemus sylvaticus*) may be visitors to the site.

The semi-exposed galvanised roof of the old cottage building on site is not a suitable location for a bat roost.

Rats

There are significant potential habitats on site for brown rats (*Rattus norvegicus*); particularly small stick piles, the large wooden stockpile and the old cottage building.

However, no rats were observed during the site investigations. Management of the site involves regular rodent control by the pest control company Rent-a-Kill. Cats, however, are common on the site.

TABLE 4.1. List of tree and plant species which occur on site.

Common Name	Scientific Name
Annual Wall Rocket	*Diplotaxis muralis*
Bell Heather	*Erica cinera*
Birch	*Betula pubescens*
Bramble	*Rubus fruticosus* agg.
Broad-Leaved Dock	*Rumex obtusifolius*
Clover	*Trifolium* species
Common Catsear	*Hypocharis radicata*
Common Dandelion	*Taraxacum officinale*
Common Nettle	*Urtica dioica*
Common Ragwort	*Senecio jacobaea*
Conifer	*Macrocarpa*
Cow Parsley	*Anthriscus sylvestris*
Creeping Bent	*Agrostis stolonifera*
Creeping Buttercup	*Ranunculus repens*
Elder	*Sambucus nigra*
False Oat Grass	*Arrenatherum elatius*
Field Bindweed	*Convolvulus arvensis*
Gorse	*Ulex europaeus*
Hawthorn	*Crataegus monogyna*
Herb Robert	*Geranium robertianum*
Ivy	*Hedera helix*
Lime	*tilia vulgaris*
Oxeye Daisy	*Leucanthemum vulgare*
Perennial Rye-Grass	*Lolium perenne*
Thistle	*Compositae* species

Birds

A total of 10 bird species was recorded. Although there are a small number of mature hedges, no bird species of conservation interest was detected. Overall the bird species diversity is low, possibly because the conditions were not optimal for surveying.

Bird species which are habitual occupants of waste handling facilities are almost completely absent. Where putrescible waste is being stored it would be expected that gulls, crows and starlings would gather in numbers. Gulls in particular are major exploiters of exposed edible wastes. It is significant, however, that no gulls whatsoever were found on site. The reason for this is obvious. By storing the small quantities of putrescible waste indoors for short transfer periods, safe access for gulls - and other bird species which are likely to be found at waste handling sites - is completely denied.

TABLE 4.2. The species and number of birds recorded.

Species	Number and Probable Status
Greenfinch	1 (Breeding)
Linnet	2 (Breeding)
Swallow	3 (Probably breeding)
Pied Wagtail	1 (Breeding)
Song Thrush	1 (Breeding)
Starling	1
Meadow Pipit	6 (Breeding)
Jackdaw	1
Rook	1 (Flying over)
Magpie	1

Some land to the east of the site has been reinstated and is now a meadow. At least two pairs of Meadow Pipits are now breeding in this area. This would suggest that sufficient insect life and indeed other invertebrates are present to sustain these breeding pairs. The

relatively large number of these birds detected during this survey is suggestive of an earlier successful brood.

The crow species, i.e. Magpie, Rook and Jackdaw, did not appear to be using the waste transfer facility but instead were feeding in the fields adjoining the site which were being grazed by sheep. Likewise the Starlings were seen in the nearby fields.

Insects

Perhaps in part due to ambient conditions no flying insects were noted. There was no evidence of large numbers of blowflies but these insects, which may be associated with waste disposal facilities, do not normally fly in windy conditions.

Conclusion

There is little evidence that the waste transfer facility is having a substantial effect on the ecology of the area. This is unusual as waste can be a major attractant of gulls, crows, rodents and insects (particularly blowflies). It would appear that by storing, and transferring, the waste material (largely inert) in a more or less sealed building, access to birds and animals is effectively prevented.

EIS Attachment 5A
Traffic Survey Results

10 October 2007 – 07:00 to 08:00 hrs

North to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
07:00-07:10	-	-	-	-	-	-	-	0
07:10-07:20	1	-	-	1	-	-	-	2
07:20-07:30	2	-	-	1	-	-	-	3
07:30-07:40	2	-	-	-	-	-	-	2
07:40-07:50	1	-	-	1	-	-	-	2
07:50-08:00	3	-	-	2	-	-	-	5
Total	**9**	**0**	**0**	**5**	**0**	**0**	**0**	**14**

South to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
07:00-07:10	1	-	-	-	-	-	-	1
07:10-07:20	-	-	-	1	-	-	-	1
07:20-07:30	2	-	-	-	-	-	-	2
07:30-07:40	4	-	-	2	-	-	-	6
07:40-07:50	-	-	-	1	-	-	-	1
07:50-08:00	1	-	-	1	-	-	-	2
Total	**8**	**0**	**0**	**5**	**0**	**0**	**0**	**13**

North to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
07:00-07:10	-	-	-	-	-	-	-	0
07:10-07:20	-	-	-	-	-	-	-	0
07:20-07:30	-	-	-	-	-	-	-	0
07:30-07:40	-	-	-	1 (open gate)	-	-	-	1
07:40-07:50	-	-	-	-	-	-	-	0
07:50-08:00	2	-	-	-	-	-	-	2
Total	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**3**

10 October 2007 – 08:00 to 09:00 hrs

North to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
08:00-08:10	4	-	-	3	-	-	-	7
08:10-08:20	1	-	-	-	1 (mini)	-	-	2
08:20-08:30	3	-	-	-	1 (mini)	-	-	4
08:30-08:40	3	2	-	1	1 (mini)	-	-	7
08:40-08:50	2	2	-	-	-	-	-	4
08:50-09:00	1	3	-	-	-	-	-	4
Total	**14**	**7**	**0**	**4**	**3**	**0**	**0**	**28**

South to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
08:00-08:10	2	-	-	2	-	-	-	4
08:10-08:20	2	-	-	-	-	-	-	2
08:20-08:30	6	1	-	-	-	-	-	7
08:30-08:40	6	1	-	1	-	-	-	8
08:40-08:50	5	2	-	1	-	-	-	8
08:50-09:00	3	-	-	-	-	-	-	3
Total	**24**	**4**	**0**	**4**	**0**	**0**	**0**	**32**

North to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
08:00-08:10	-	-	-	-	-	-	-	0
08:10-08:20	-	-	-	-	-	-	-	0
08:20-08:30	-	-	-	-	-	-	-	0
08:30-08:40	-	-	-	-	-	-	-	0
08:40-08:50	1	-	-	-	-	-	-	1
08:50-09:00	-	-	-	-	-	-	-	0
Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**

10 October 2007 – 09:00 to 10:00 hrs

Site to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
09:00-09:10	-	-	-	-	-	-	-	0
09:10-09:20	-	-	-	-	-	-	-	0
09:20-09:30	-	-	-	-	-	-	-	0
09:30-09:40	-	-	-	-	-	-	-	0
09:40-09:50	-	-	-	-	-	-	-	0
09:50-10:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Site to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
09:00-09:10	-	-	-	-	-	-	-	0
09:10-09:20	-	-	-	-	-	-	-	0
09:20-09:30	-	-	-	-	-	-	-	0
09:30-09:40	-	-	-	1 (skip truck)	-	-	-	1
09:40-09:50	-	-	-	-	-	-	-	0
09:50-10:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**

South to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
09:00-09:10	-	-	-	-	-	-	-	0
09:10-09:20	-	-	-	-	-	-	-	0
09:20-09:30	-	-	-	-	-	-	-	0
09:30-09:40	-	-	-	-	-	-	-	0
09:40-09:50	-	-	-	-	-	-	-	0
09:50-10:00	-	-	-	1 (skip truck)	-	-	-	1
Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**

10 October 2007 – 07:00 to 08:00 hrs

Site to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
07:00-07:10	-	-	-	-	-	-	-	0
07:10-07:20	-	-	-	-	-	-	-	0
07:20-07:30	-	-	-	-	-	-	-	0
07:30-07:40	-	-	-	-	-	-	-	0
07:40-07:50	-	-	-	-	-	-	-	0
07:50-08:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Site to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
07:00-07:10	-	-	-	-	-	-	-	0
07:10-07:20	-	-	-	-	-	-	-	0
07:20-07:30	-	-	-	-	-	-	-	0
07:30-07:40	-	-	-	-	-	-	-	0
07:40-07:50	-	-	-	-	-	-	-	0
07:50-08:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

South to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
07:00-07:10	-	-	-	-	-	-	-	0
07:10-07:20	-	-	-	-	-	-	-	0
07:20-07:30	-	-	-	-	-	-	-	0
07:30-07:40	-	-	-	-	-	-	-	0
07:40-07:50	-	-	-	-	-	-	-	0
07:50-08:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

10 October 2007 – 08:00 to 09:00 hrs

Site to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
08:00-08:10	-	-	-	-	-	-	-	0
08:10-08:20	-	-	-	-	-	-	-	0
08:20-08:30	-	-	-	-	-	-	-	0
08:30-08:40	-	-	-	-	-	-	-	0
08:40-08:50	-	-	-	-	-	-	-	0
08:50-09:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Site to Cork

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
08:00-08:10	-	-	-	-	-	-	-	0
08:10-08:20	-	-	-	-	-	-	-	0
08:20-08:30	-	-	-	-	-	-	-	0
08:30-08:40	-	-	-	-	-	-	-	0
08:40-08:50	-	-	-	-	-	-	-	0
08:50-09:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Cork to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
08:00-08:10	-	-	-	-	-	-	-	0
08:10-08:20	-	-	-	-	-	-	-	0
08:20-08:30	-	-	-	-	-	-	-	0
08:30-08:40	-	-	-	-	-	-	-	0
08:40-08:50	-	-	-	-	-	-	-	0
08:50-09:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

10 October 2007 – 09:00 to 10:00 hrs

North to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
09:00-09:10	4	-	-	1	-	-	-	5
09:10-09:20	2	-	-	1	-	-	-	3
09:20-09:30	2	-	-	-	-	-	-	2
09:30-09:40	3	1	-	-	-	-	-	4
09:40-09:50	2	1	-	1	-	-	-	4
09:50-10:00	5	2	-	-	-	-	-	7
Total	**18**	**4**	**0**	**3**	**0**	**0**	**0**	**25**

South to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
09:00-09:10	3	2	-	-	-	-	-	5
09:10-09:20	2	-	-	-	-	-	-	2
09:20-09:30	5	2	-	1	-	-	-	8
09:30-09:40	2	-	-	-	-	-	-	2
09:40-09:50	1	-	-	1	-	-	-	2
09:50-10:00	3	-	-	1	-	-	-	4
Total	**16**	**4**	**0**	**3**	**0**	**0**	**0**	**23**

North to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
09:00-09:10	2	-	-	-	-	-	-	2
09:10-09:20	-	-	-	-	-	-	-	0
09:20-09:30	-	-	-	1	-	-	-	1
09:30-09:40	-	-	-	-	-	-	-	0
09:40-09:50	-	-	-	-	-	-	-	0
09:50-10:00	-	-	-	-	-	-	-	0
Total	**2**	**0**	**0**	**1**	**0**	**0**	**0**	**3**

12 February 2008 – 16:00 to 17:00 hrs

North to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
16:00-16:10	12	-	-	1	-	-	-	13
16:10-16:20	3	-	-	-	-	-	-	3
16:20-16:30	2	-	-	-	-	-	-	2
16:30-16:40	1	2	-	-	-	-	-	3
16:40-16:50	3	-	-	-	-	-	-	3
16:50-17:00	3	1	-	2	-	-	-	6
Total	**24**	**3**	**0**	**3**	**0**	**0**	**0**	**30**

South to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
16:00-16:10	3	1	-	-	-	-	-	4
16:10-16:20	3	-	-	-	-	-	-	3
16:20-16:30	5	1	-	-	-	-	-	6
16:30-16:40	4	-	-	1	-	-	-	5
16:40-16:50	3	-	-	-	-	-	-	3
16:50-17:00	3	-	-	-	-	1	-	4
Total	**21**	**2**	**0**	**1**	**0**	**1**	**0**	**25**

North to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
16:00-16:10	1	-	-	2	-	-	-	3
16:10-16:20	-	-	-	1	-	-	-	1
16:20-16:30	-	-	-	-	-	-	-	0
16:30-16:40	-	-	-	-	-	-	-	0
16:40-16:50	-	-	-	-	-	-	-	0
16:50-17:00	1	-	-	-	-	-	-	1
Total	**2**	**0**	**0**	**3**	**0**	**0**	**0**	**5**

12 February 2008 – 17:00 to 18:00 hrs

North to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
17:00-17:10	5	-	-	-	-	-	-	5
17:10-17:20	4	1	-	-	-	-	-	5
17:20-17:30	1	1	-	2	-	-	-	4
17:30-17:40	5	-	-	-	-	-	-	5
17:40-17:50	4	-	-	-	-	-	-	4
17:50-18:00	4	-	-	2	-	-	-	6
Total	**23**	**2**	**0**	**4**	**0**	**0**	**0**	**29**

South to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
17:00-17:10	4	-	-	2	-	-	-	6
17:10-17:20	3	-	-	-	-	-	-	3
17:20-17:30	3	1	-	-	-	-	-	4
17:30-17:40	9	2	-	4	-	-	-	15
17:40-17:50	3	-	-	1	-	-	-	4
17:50-18:00	2	-	-	-	-	-	-	2
Total	**24**	**3**	**0**	**7**	**0**	**0**	**0**	**34**

North to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
17:00-17:10	-	-	-	-	-	-	-	0
17:10-17:20	-	-	-	1	-	-	-	1
17:20-17:30	-	-	-	1	-	-	-	1
17:30-17:40	-	-	-	-	-	-	-	0
17:40-17:50	-	-	-	-	-	-	-	0
17:50-18:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**2**

12 February 2008 – 18:00 to 19:00 hrs

Site to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
18:00-18:10	-	-	-	-	-	-	-	0
18:10-18:20	2	-	-	-	-	-	-	2
18:20-18:30	-	-	-	-	-	-	-	0
18:30-18:40	-	-	-	-	-	-	-	0
18:40-18:50	-	-	-	-	-	-	-	0
18:50-19:00	-	-	-	-	-	-	-	0
Total	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**2**

Site to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
18:00-18:10	-	-	-	-	-	-	-	0
18:10-18:20	-	-	-	-	-	-	-	0
18:20-18:30	-	-	-	-	-	-	-	0
18:30-18:40	-	-	-	-	-	-	-	0
18:40-18:50	1	-	-	-	-	-	-	1
18:50-19:00	-	-	-	-	-	-	-	0
Total	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**

South to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
18:00-18:10	-	-	-	-	-	-	-	0
18:10-18:20	-	-	-	-	-	-	-	0
18:20-18:30	-	-	-	-	-	-	-	0
18:30-18:40	-	-	-	-	-	-	-	0
18:40-18:50	-	-	-	-	-	-	-	0
18:50-19:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

12 February 2008 – 16:00 to 17:00 hrs

Site to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
16:00-16:10	-	-	-	-	-	-	-	0
16:10-16:20	-	-	-	1	-	-	-	1
16:20-16:30	-	-	-	-	-	-	-	0
16:30-16:40	-	-	-	1	-	-	-	1
16:40-16:50	-	-	-	-	-	-	-	0
16:50-17:00	1	-	-	-	-	-	-	1
Total	**1**	**0**	**0**	**2**	**0**	**0**	**0**	**3**

Site to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
16:00-16:10	-	-	-	-	-	-	-	0
16:10-16:20	-	-	-	-	-	-	-	0
16:20-16:30	-	-	-	-	-	-	-	0
16:30-16:40	-	-	-	-	-	-	-	0
16:40-16:50	-	-	-	-	-	-	-	0
16:50-17:00	-	-	-	1	-	-	-	1
Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**

South to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
16:00-16:10	-	-	-	-	-	-	-	0
16:10-16:20	-	-	-	-	-	-	-	0
16:20-16:30	-	-	-	1	-	-	-	1
16:30-16:40	1	-	-	-	-	-	-	1
16:40-16:50	-	-	-	-	-	-	-	0
16:50-17:00	-	-	-	-	-	-	-	0
Total	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**2**

12 February 2008 – 17:00 to 18:00 hrs

Site to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
17:00-17:10	1	-	-	-	-	-	-	1
17:10-17:20	-	-	-	-	-	-	-	0
17:20-17:30	-	-	-	1	-	-	-	1
17:30-17:40	-	-	-	-	-	-	-	0
17:40-17:50	1	-	-	1	-	-	-	2
17:50-18:00	-	-	-	-	-	-	-	0
Total	**2**	**0**	**0**	**2**	**0**	**0**	**0**	**4**

Site to Cork

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
17:00-17:10	-	-	-	-	-	-	-	0
17:10-17:20	-	-	-	-	-	-	-	0
17:20-17:30	-	-	-	-	-	-	-	0
17:30-17:40	-	-	-	-	-	-	-	0
17:40-17:50	-	-	-	-	-	-	-	0
17:50-18:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Cork to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
17:00-17:10	-	-	-	1	-	-	-	1
17:10-17:20	-	-	-	-	-	-	-	0
17:20-17:30	-	-	-	-	-	-	-	0
17:30-17:40	-	-	-	-	-	-	-	0
17:40-17:50	-	-	-	-	-	-	-	0
17:50-18:00	1	-	-	-	-	-	-	1
Total	**1**	**0**	**0**	**1**	**0**	**0**	**0**	**2**

12 February 2008 – 18:00 to 19:00 hrs

North to South

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
18:00-18:10	3	1	-	1	-	-	-	5
18:10-18:20	1	-	-	-	-	-	-	1
18:20-18:30	4	-	-	-	-	-	-	4
18:30-18:40	3	-	-	-	-	-	-	3
18:40-18:50	2	-	-	-	-	-	-	2
18:50-19:00	1	-	-	-	-	-	-	1
Total	**14**	**1**	**0**	**1**	**0**	**0**	**0**	**16**

South to North

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
18:00-18:10	4	1	-	-	-	-	-	5
18:10-18:20	4	-	-	2	-	-	-	6
18:20-18:30	6	-	-	-	-	-	-	6
18:30-18:40	4	-	-	-	-	1	-	5
18:40-18:50	1	-	-	-	-	-	-	1
18:50-19:00	2	1	-	-	-	-	-	3
Total	**21**	**2**	**0**	**2**	**0**	**1**	**0**	**26**

North to Site

Time	Car	SUV	Artic	Van/Rigid	Bus	Motorbike	Bicycle	Total
18:00-18:10	-	-	-	-	-	-	-	0
18:10-18:20	-	-	-	1	-	-	-	1
18:20-18:30	-	-	-	-	-	-	-	0
18:30-18:40	-	-	-	-	-	-	-	0
18:40-18:50	-	-	-	-	-	-	-	0
18:50-19:00	-	-	-	-	-	-	-	0
Total	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**1**

EIS Attachment 5B
Traffic Generation

Annual Tonnage Expected

Broken down into seasonal highs/lows and average daily number of loads. Based on 300 days a year, six days a week.

Option A

- 50,000 tons a year; 996 tons a week; 166 tons a day; 55 incoming loads a day; 6 (articulated trailers) or 12 Jumbos Skips - outgoing loads a day; approximately 55 skip deliveries - outgoing movements approximately (note this would be a high figure as a number of skips can be stacked into each other at one time).
- Busy Day - 75 incoming loads a day. Ten articulated trailer loads a day.
- Seasonal Highs - April and May (Spring Clean) 60 to 65 incoming loads a day. Seven outgoing articulated trailer loads. June and July would be similar due to people being on holidays.
- Seasonal Lows - October and January-February - Depending on Weather. Forty incoming loads a day. Five to six outgoing articulated trailer loads.
- Traffic routes from site - indicate percentage and direction north/south.

Option A

50,000 Tons per Year

	Traffic Movements South	Percentage %	Traffic Movements North	Percentage %
Waste In	16,443	67	9,131	65
Waste Out	3,009	12	70	0.50
Skip going out	4,933	20	4,933	35
Total	24,385	100	14,134	100
Current Staff Traffic			30	
Projected Staff Traffic			60	

New Project Details

Nature of wastes - tonnage for each type.

Current Licensed Waste Types:

- Commercial Waste
- Industrial Waste
- Construction & Demolistion Waste

Proposed Waste Types:

- Commercial Waste
- Industrial Waste
- Construction & Demolistion Waste (C & D Waste)
- Household Waste
- Commercail & Industrial Waste (C & I Waste)
- W.E.E.E. Waste

Option A

Waste	Tonnage	Disposal to Landfill (T)	Re-Use (T)
Timber	14,000	140	13,860
Mixed C&D	10,000	3,500	6,500
Dry Mixed Bulky Waste	10,000	3,500	6,500
Municipal Waste	3,500	3,150	350
Waste from other Waste Operators	3,500	2,975	525
Concrete/Bricks	2,500	125	2,375
Metal	2,000	50	1,950
Rubber/Plastic	1,500	150	1,350
Green Waste	1,500	75	1,425
WEEE	1,500	45	1,455

EIS Attachment 5C
PICADY Output

```
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   CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

                           PICADY 5.0  ANALYSIS PROGRAM
                              RELEASE 3.0        (JUNE 2006)

                    ADAPTED FROM PICADY/3 WHICH IS CROWN COPYRIGHT
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               ------------------------------------------------------


 THE USER OF THIS COMPUTER PROGRAM FOR THE SOLUTION OF AN ENGINEERING PROBLEM IS
 IN NO WAY  RELIEVED OF HIS RESPONSIBILITY  FOR THE CORRECTNESS  OF THE SOLUTION


 Run with file:-
 "I:\CST\108\101-150\108117\calcs\2020 AM Peak - with Development.vpi"
(drive-on-the-left ) at 12:38:04 on Friday, 22 February 2008


.RUN INFORMATION
 ***************

    RUN TITLE: 2020 AM Peak Hour - Waste Facility Fully Operational
    LOCATION: Fermoy, Co Cork
        DATE: 11/02/08
      CLIENT: Creagh Environmental
  ENUMERATOR: Philip [PHILIPS-LAPTOP]
  JOB NUMBER: 108117
      STATUS: TIA
 DESCRIPTION:

 .MAJOR/MINOR JUNCTION CAPACITY AND DELAY
  ***************************************

  INPUT DATA
  ----------

                    MAJOR ROAD (ARM C) ---------------------- MAJOR ROAD (ARM A)
                                                I
                                                I
                                                I
                                                I
                                                I
                                                I
                                           MINOR ROAD (ARM B)

 ARM A IS County Road to Fermoy
 ARM B IS Waste Facility Access
 ARM C IS county 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

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B) 158.0 M.
- BLOCKS TRAFFIC	YES
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 17.0 M.
- VISIBILITY TO RIGHT	(VB-A) 17.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(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 Stream A-B
634.64	0.25	0.10

Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B
491.50	0.23	0.09	0.14	0.32

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B
665.46	0.26	0.26

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2020 AM Peak Hour - Waste Facility Fully Operational

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	2.91	4.37	2.91
ARM B	15.00	45.00	75.00	3.17	4.76	3.17
ARM C	15.00	45.00	75.00	2.05	3.07	2.05

TURNING PROPORTIONS
TURNING COUNTS (VEH/HR)
(PERCENTAGE OF H.V.S)

TIME	FROM/TO	ARM A	ARM B	ARM C
07.30 - 09.00	ARM A	0.000 0.0 (0.0)	0.824 192.0 (10.0)	0.176 41.0 (10.0)
	ARM B	0.638 162.0 (10.0)	0.000 0.0 (0.0)	0.362 92.0 (10.0)
	ARM C	0.256 42.0 (10.0)	0.744 122.0 (10.0)	0.000 0.0 (0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT
FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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)
07.30-07.45									
B-AC	3.19	7.32	0.435		0.00	0.75	10.4		0.24
C-AB	1.62	9.68	0.167		0.00	0.21	3.1		0.12
C-A	0.44								
A-B	2.41								
A-C	0.51								

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)
07.45-08.00									
B-AC	3.81	7.16	0.531		0.75	1.09	15.4		0.29
C-AB	1.96	9.60	0.204		0.21	0.27	4.0		0.13
C-A	0.50								
A-B	2.88								
A-C	0.61								

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)
08.00-08.15									
B-AC	4.66	6.94	0.671		1.09	1.89	25.8		0.42
C-AB	2.44	9.50	0.256		0.27	0.36	5.5		0.14
C-A	0.57								
A-B	3.52								
A-C	0.75								

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)
08.15-08.30									
B-AC	4.66	6.94	0.671		1.89	1.96	29.0		0.43
C-AB	2.44	9.50	0.257		0.36	0.37	5.5		0.14
C-A	0.57								
A-B	3.52								
A-C	0.75								

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)
08.30-08.45									
B-AC	3.81	7.16	0.532		1.96	1.18	19.0		0.31
C-AB	1.96	9.60	0.204		0.37	0.27	4.1		0.13
C-A	0.50								
A-B	2.88								
A-C	0.61								

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)
08.45-09.00									
B-AC	3.19	7.32	0.436		1.18	0.79	12.5		0.25
C-AB	1.62	9.68	0.167		0.27	0.21	3.2		0.12
C-A	0.44								
A-B	2.41								
A-C	0.51								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	0.7	*
08.00	1.1	*
08.15	1.9	**
08.30	2.0	**
08.45	1.2	*
09.00	0.8	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.2
08.00	0.3
08.15	0.4
08.30	0.4
08.45	0.3
09.00	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	349.6	233.1	112.3	0.32	112.3	0.32
C-AB	180.3	120.2	25.4	0.14	25.4	0.14
C-A	45.4	30.3				
A-B	264.3	176.2				
A-C	56.4	37.6				
ALL	896.1	597.4	137.7	0.15	137.7	0.15

* 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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   CAPACITIES, QUEUES, AND DELAYS AT 3 OR 4-ARM MAJOR/MINOR PRIORITY JUNCTIONS

                          PICADY 5.0  ANALYSIS PROGRAM
                             RELEASE 3.0        (JUNE 2006)

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 Run with file:-
 "I:\CST\108\101-150\108117\calcs\2020 PM Peak - with Development.vpi"
(drive-on-the-left ) at 12:38:58 on Friday, 22 February 2008


.RUN INFORMATION
 ***************

    RUN TITLE: 2020 PM Peak Hour - Waste Facility Fully Operational
    LOCATION: Fermoy, Co Cork
        DATE: 11/02/08
      CLIENT: Creagh Environmental
  ENUMERATOR: Philip [PHILIPS-LAPTOP]
  JOB NUMBER: 108117
      STATUS: TIA
 DESCRIPTION:

 .MAJOR/MINOR JUNCTION CAPACITY AND DELAY
  ***********************************

  INPUT DATA
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                    MAJOR ROAD (ARM C) ---------------------- MAJOR ROAD (ARM A)
                                                I
                                                I
                                                I
                                                I
                                                I
                                                I
                                           MINOR ROAD (ARM B)

 ARM A IS County Road to Fermoy
 ARM B IS Waste Facility Access
 ARM C IS county Road South


 STREAM LABELLING CONVENTION
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        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.
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.GEOMETRIC DATA

DATA ITEM	MINOR ROAD B
TOTAL MAJOR ROAD CARRIAGEWAY WIDTH	(W) 6.00 M.
CENTRAL RESERVE WIDTH	(WCR) 0.00 M.
MAJOR ROAD RIGHT TURN - WIDTH	(WC-B) 2.20 M.
- VISIBILITY	(VC-B) 158.0 M.
- BLOCKS TRAFFIC	YES
MINOR ROAD - VISIBILITY TO LEFT	(VB-C) 17.0 M.
- VISIBILITY TO RIGHT	(VB-A) 17.0 M.
- LANE 1 WIDTH	(WB-C) 3.00 M.
- LANE 2 WIDTH	(WB-A) 0.00 M.

.SLOPES AND INTERCEPT

(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 Stream A-B
634.64	0.25	0.10

Intercept For Stream B-A	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B	Slope For Opposing Stream C-A	Slope For Opposing Stream C-B
491.50	0.23	0.09	0.14	0.32

Intercept For Stream C-B	Slope For Opposing Stream A-C	Slope For Opposing Stream A-B
665.46	0.26	0.26

NB These values do not allow for any site specific corrections

.TRAFFIC DEMAND DATA

ARM	FLOW SCALE(%)
A	100
B	100
C	100

Demand set: 2020 PM Peak Hour - Waste Facility Fully Operational

TIME PERIOD BEGINS 07.30 AND ENDS 09.00

LENGTH OF TIME PERIOD - 90 MINUTES.
LENGTH OF TIME SEGMENT - 15 MINUTES.

DEMAND FLOW PROFILES ARE SYNTHESISED FROM TURNING COUNT DATA

ARM	NUMBER OF MINUTES FROM START WHEN FLOW STARTS TO RISE	NUMBER OF MINUTES FROM START WHEN TOP OF PEAK IS REACHED	NUMBER OF MINUTES FROM START WHEN FLOW STOPS FALLING	RATE OF FLOW (VEH/MIN) BEFORE PEAK	RATE OF FLOW (VEH/MIN) AT TOP OF PEAK	RATE OF FLOW (VEH/MIN) AFTER PEAK
ARM A	15.00	45.00	75.00	2.51	3.77	2.51
ARM B	15.00	45.00	75.00	3.92	5.89	3.92
ARM C	15.00	45.00	75.00	1.75	2.63	1.75

TIME	FROM/TO	ARM A	ARM B	ARM C
07.30 - 09.00	TURNING PROPORTIONS			
	TURNING COUNTS (VEH/HR)			
	(PERCENTAGE OF H.V.S)			
	ARM A	0.000	0.806	0.194
		0.0	162.0	39.0
		(0.0)	(10.0)	(10.0)
	ARM B	0.611	0.000	0.389
		192.0	0.0	122.0
		(10.0)	(0.0)	(10.0)
	ARM C	0.343	0.657	0.000
		48.0	92.0	0.0
		(10.0)	(10.0)	(0.0)

TURNING PROPORTIONS ARE CALCULATED FROM TURNING COUNT DATA

DEFAULT PROPORTIONS OF HEAVY VEHICLES ARE USED

QUEUE AND DELAY INFORMATION FOR EACH 15 MIN TIME SEGMENT

FOR COMBINED DEMAND SETS
AND FOR TIME PERIOD 1

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)
07.30-07.45									
B-AC	3.94	7.51	0.524		0.00	1.06	14.6		0.27
C-AB	1.23	9.83	0.125		0.00	0.15	2.2		0.12
C-A	0.53								
A-B	2.03								
A-C	0.49								

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)
07.45-08.00									
B-AC	4.70	7.38	0.637		1.06	1.66	23.0		0.36
C-AB	1.49	9.78	0.152		0.15	0.19	2.9		0.12
C-A	0.61								
A-B	2.43								
A-C	0.58								

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)
08.00-08.15									
B-AC	5.76	7.20	0.800		1.66	3.37	43.5		0.60
C-AB	1.86	9.72	0.191		0.19	0.25	3.8		0.13
C-A	0.71								
A-B	2.97								
A-C	0.72								

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)
08.15-08.30									
B-AC	5.76	7.20	0.800		3.37	3.63	52.9		0.67
C-AB	1.86	9.72	0.191		0.25	0.25	3.8		0.13
C-A	0.71								
A-B	2.97								
A-C	0.72								

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)
08.30-08.45									
B-AC	4.70	7.38	0.637		3.63	1.87	31.0		0.41
C-AB	1.49	9.78	0.152		0.25	0.19	2.9		0.12
C-A	0.61								
A-B	2.43								
A-C	0.58								

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)
08.45-09.00									
B-AC	3.94	7.51	0.525		1.87	1.14	18.4		0.29
C-AB	1.23	9.83	0.125		0.19	0.15	2.3		0.12
C-A	0.53								
A-B	2.03								
A-C	0.49								

WARNING NO MARGINAL ANALYSIS OF CAPACITIES AS MAJOR ROAD BLOCKING MAY OCCUR

QUEUE FOR STREAM B-AC

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE	
07.45	1.1	*
08.00	1.7	**
08.15	3.4	***
08.30	3.6	****
08.45	1.9	**
09.00	1.1	*

QUEUE FOR STREAM C-AB

TIME SEGMENT ENDING	NO. OF VEHICLES IN QUEUE
07.45	0.2
08.00	0.2
08.15	0.3
08.30	0.3
08.45	0.2
09.00	0.2

QUEUEING DELAY INFORMATION OVER WHOLE PERIOD

STREAM	TOTAL DEMAND		* QUEUEING * DELAY *		* INCLUSIVE QUEUEING * DELAY *	
	(VEH)	(VEH/H)	(MIN)	(MIN/VEH)	(MIN)	(MIN/VEH)
B-AC	432.2	288.1	183.3	0.42	183.4	0.42
C-AB	137.2	91.5	18.0	0.13	18.0	0.13
C-A	55.5	37.0				
A-B	223.0	148.7				
A-C	53.7	35.8				
ALL	901.6	601.0	201.3	0.22	201.4	0.22

* 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

EIS Attachment 6A
Ambient Air Quality Standards

National standards for ambient air pollutants in Ireland have generally ensued from Council Directives enacted in the EU (and previously the EC and EEC) (see Table 9.1 to Table 9.3). The initial interest in ambient air pollution legislation in the EU dates from the early 1980s and was in response to the most serious pollutant problems at that time. In response to the problem of acid rain, sulphur dioxide and later nitrogen dioxide were both the focus of EU legislation. Linked to the acid rain problem was urban smog associated with fuel burning for space heating purposes. Also apparent at this time were the problems caused by leaded petrol and EU legislation was introduced to deal with this problem in the early 1980s.

In recent years the EU has focused on defining a basis strategy across the EU in relation to ambient air quality. In 1996, a Framework Directive, Council Directive 96/62/EC, on ambient air quality assessment and management was enacted. The aims of the Directive are fourfold. Firstly, the Directive's aim is to establish objectives for ambient air quality designed to avoid harmful effects to health. Secondly, the Directive aims to assess ambient air quality on the basis of common methods and criteria throughout the EU. Additionally, it is aimed to make information on air quality available to the public via alert thresholds and fourthly, it aims to maintain air quality where it is good and improve it in other cases.

As part of these measures to improve air quality, the European Commission has adopted proposals for daughter legislation under Directive 96/62/EC. The first of these directives to be enacted, Council Directive 1999/30/EC, has been passed into Irish Law as S.I. No 271 of 2002 (Air Quality Standards Regulations 2002), and has set limit values which came into operation on 17th June 2002. Council Directive 1999/30/EC, as relating to limit values for sulphur dioxide, nitrogen dioxide, lead and particulate matter, is detailed in Table 9.1. The Air Quality Standards Regulations 2002 detail margins of tolerance, which are trigger levels for certain types of action in the period leading to the attainment date. The margin of tolerance varies from 60% for lead, to 30% for 24-hour limit value for PM_{10}, 40% for the hourly and annual limit value for NO_2 and 26% for hourly SO_2 limit values. The margin of tolerance commenced from June 2002, and will start to reduce from 1 January 2003 and every 12 months thereafter by equal annual percentages to reach 0% by the attainment date. A second daughter directive, EU Council Directive 2000/69/EC, has recently published limit values for both carbon monoxide and benzene in ambient air as set out in Table 9.2. This has also been passed into Irish Law under the Air Quality Standards Regulations 2002.

Although the EU Air Quality Limit Values are the basis of legislation, other thresholds outlined by the EU Directives are used which are triggers for particular actions. The Alert Threshold is defined in Council Directive 96/62/EC as "a level beyond which there is a risk to human health from brief exposure and at which immediate steps shall be taken as laid down in Directive 96/62/EC". These steps include undertaking to ensure that the necessary steps are taken to inform the public (e.g. by means of radio, television and the press).

The Margin of Tolerance is defined in Council Directive 96/62/EC as a concentration which is higher than the limit value when legislation comes into force. It decreases to meet the limit value by the attainment date. The Upper Assessment Threshold is defined in Council Directive 96/62/EC as a concentration above which high quality measurement is mandatory. Data from measurement may be supplemented by information from other sources, including air quality modelling.

An annual average limit for both NO_x (NO and NO_2) is applicable for the protection of vegetation in highly rural areas away from major sources of NO_x such as large conurbations, factories and high road vehicle activity such as a dual carriageway or motorway. Annex VI of EU Directive 1999/30/EC identifies that monitoring to demonstrate compliance with the NOx limit for the protection of vegetation should be carried out distances greater than:

- 5 km from the nearest motorway or dual carriageway
- 5 km from the nearest major industrial installation
- 20 km from a major urban conurbation

As a guideline, a monitoring station should be indicative of approximately 1,000 km^2 of surrounding area.

EU Council Directive 96/62/EC on ambient air quality and assessment has been adopted into Irish Legislation (S.I. No. 33 of 1999). The act has designated the Environmental Protection Agency (EPA) as the competent authority responsible for the implementation of the Directive and for assessing ambient air quality in the State. Other commonly referenced ambient air quality standards include the World Health Organisation. The WHO guidelines differ from air quality standards in that they are primarily set to protect public health from the effects of air pollution. Air quality standards, however, are air quality guidelines recommended by governments, for which additional factors, such as socio-economic factors, may be considered.

EIS Attachment 7
EIS Figures 1-25

1. Location Map.
2. Existing/Proposed EPA Licence Area.
3. Existing Site Layout.
4. Proposed Site Layout.
5. Alternative Layouts Considered.
6. Infrastructure Plan.
7. Construction Phasing.
8. Floor Plan.
9. Elevations and Sections.
10. Office Plan.
11. Control Room and Weigh Bridge.
12. Garage Plan.
13. Archaeology.
14. Wells and Septic Tanks.
15. Proposed Site Drainage.
16. Proposed Site Drainage Detail.
17-21. Landscape Photographs 1-9.
22. Landscape Zone of Visual Influence (ZVI).
23. Site Sections.
24. Truck Movements.
25. Monitoring Locations.