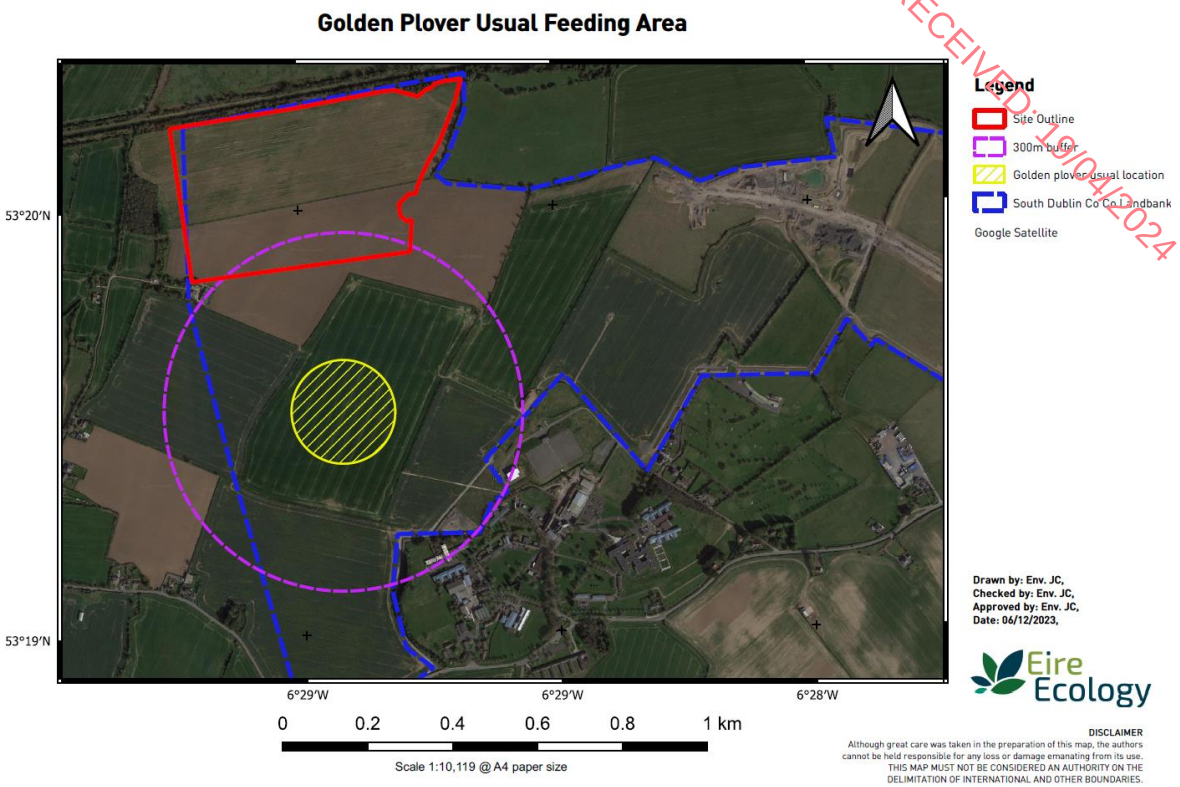

Figure 7-1: Typical feeding ground of Golden Plover

- Vegetation removal could impact on nesting passerines such as blackbird and wren thus ideally this activity should be carried out only outside the bird-nesting season March 1st – August 31st in order to avoid impacts on nesting birds. In the event this work is required earlier an ecological clerk of works should be onsite to ensure no nesting birds are present. Should an occupied nest be found the clearance works will have to waits until after fledging.
- Newer equipment will be utilised where possible, newer equipment is generally quieter than older equipment. When older equipment is used consideration will be given to potential modifications that are available to reduce noise levels.
- All equipment will be well maintained which is known to reduce noise levels.

8 RESIDUAL IMPACTS

Residual impacts are those that occur after the mitigation measures have taken effect. If the mitigation measures listed above are employed during construction, then there will be no residual impact on the local ecology.

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APPENDIX 1 – Tables and Figures

Survey dates and environmental data

Date	Sunset / sunrise	Start	Finish	Cloud	Wind speed (F)	Wind direction	Visibility	Rain
29/11/2022	08:22	06:50	07:22	3	0		2	0
29/11/2022	08:22	07:22	10:22	3	0		5	0
29/11/2022	08:22	11:00	13:40	3	0		5	0
29/11/2022	08:22	13:40	14:10	2	1	SE	5	0
29/11/2022	08:22	14:10	15:00	3	1	SE	5	0
15/12/2022	08:33	09:00	13:30	1	0		5	0
15/12/2022	08:33	14:00	14:41	1	0		5	0
15/12/2022	16:06	14:45	17:45	1	0		5	0
15/12/2022	16:06	17:45	18:30	1	0		2	0
20/01/2023	08:27	08:10	11:10	1	1	SE	5	0
20/01/2023	08:27	11:40	14:40	1	1	SE	5	0
25/01/2023	16:55	10:00	15:00	3	2	SW	3	1
25/01/2023	16:55	15:30	17:30	2	1	SW	5	0
25/01/2023	16:55	17:30	18:40	2	1	SW	5	0
24/02/2023	07:26	08:00	11:00	3	1	W	4	1
24/02/2023	07:26	11:30	14:30	3	2	NW	4	2
28/03/2023	19:30	14:00	17:00	3	3	SW	5	3
28/03/2023	19:30	17:30	20:30	3	3	SW	5	3

Table 9-1: VP results

Date	VP	Survey No.	Obs No.	Species Name	No. of Birds	Habitat Code	In / Out	Activity
29/11/2022	1	1	1	Great Cormorant	1	Tilled	Out	flying W
29/11/2022	1	1	2	Mallard	2	FW	Out	flying W along edge of canal
29/11/2022	1	1	3	Northern Lapwing	8	GA1	In	Circling around rear of site
29/11/2022	1	1	4	Herring Gull	1	GA1	Out	offsite to SE
29/11/2022	1	1	5	Herring Gull	8	GA1	In	Flying to SE near others
29/11/2022	1	1	6	Buzzard	1	WL2	In	Perched on tree to the east
29/11/2022	1	1	7	Redwing	22	GA1	In	To east
15/12/2022	1	2	1	Northern Lapwing	9		In	Didnt see them fly in just saw them land
15/12/2022	1	2	2	Golden Plover	7		In	flew from S possibly flushed by walker also landed on site.
15/12/2022	1	2	3	Northern Lapwing	9		In	Flushed by a walker flew NE
15/12/2022	1	2	4	Northern Lapwing	9		In	Flew in from the W landed inside the site.
15/12/2022	1	2	5	Mute Swan	1		Out	Flying E-W over canal not same Bird as first MS that flew opposite direction
15/12/2022	1	2	6	Northern Lapwing	1		In	Flying over SW-NE
15/12/2022	1	2	7	Mute Swan	1		Out	Flying W-E over canal looked to be Juvinile
20/01/2023	2	3	1	Buzzard		GA1	In	Perched on Bush between fields
20/01/2023	2	3	2	Golden Plover	30		In	Circled sround field to the SE landed again
20/01/2023	2	3	3	Golden Plover	5		In	Flew in from W landed with birds from number 2 record
20/01/2023	2	3	4	Golden Plover	2	Tilled	In	Flew in from NW landed with others
20/01/2023	2	3	5	Golden Plover	44	Tilled	In	Flew in from N/NW landed with others
20/01/2023	2	3	6	Golden Plover	55	Tilled	In	Flew in from the N, landed with others
20/01/2023	2	3	7	Golden Plover	120	Tilled	In	Flushed off field to the S circled and landed again
20/01/2023	2	3	8	Golden Plover	169	Tilled	In	A total of 169 GP are roosting/feeding in field to the S of VP. VP AT 53.323646,-6.487200
20/01/2023	2	3	9	Snipe	2	GA1	In	Flushed by 3 hunters 2 guns 1 dog)
20/01/2023	2	3	10	Snipe	2	GA1	In	same as above
20/01/2023	2	3	11	Buzzard	2	GA1	In	Both flying together possible pair bonding
20/01/2023	2	3		#N/A			In	169 Golden Plover that were in field to the S were not there when second 3 hour VP was started. 3 hunters were present the dog was in field that had GP in it.
20/01/2023	2	3	12	Buzzard	1	GA1	In	Flew from the N landed in long grass on edge of tilled field most lightly hunting perched on fence 12:35.

Date	VP	Survey No.	Obs No.	Species Name	No. of Birds	Habitat Code	In / Out	Activity
20/01/2023	2	3	13	Golden Plover	9	Tilled	In	Flew in from the E landed in field S of the site.
20/01/2023	2	3	14	Golden Plover	1	Tilled	In	Flying S-N through the site turned NE
20/01/2023	2	3	15	Buzzard	1	GA1	In	Flew W along canal on edge of site.
20/01/2023	2	3	16	Buzzard	1	GA1	In	Flew in from SW landed on edge of site.
20/01/2023	2	3	17	Kestrel	1	GA1	In	Flew E-W over overgrown GA1 turned back E.
24/02/2023	2	4	18	Golden Plover	44	Tilled	In	Circling over the site flew S
24/02/2023	2	4	19	Golden Plover	30	Tilled	In	Flew over the site from S-N.
24/02/2023	2	4	20	Buzzard	1	Tilled	In	Flyers N-S along hedge row E of VP
24/02/2023	2	4	21	Golden Plover	215	Tilled	In	Flew in from S circled flew out to the west.
24/02/2023	2	4	22	Golden Plover	40	Tilled	In	Flew back in from W turned S
24/02/2023	2	4	23	Golden Plover	400	Tilled	In	Circled in from SW flock grew from approx 150-400e circled for 18 minutes before landing in field just S of VP vi's poor due to misty showers.
24/02/2023	2	4	24	Great Cormorant	1	Canal	Out	Flying E along canal.
24/02/2023	2	4		Golden Plover		Tilled	In	Heard flying over calling small flock cloud low didn't see them.
28/03/2023	2	5	25	Herring Gull	24	Tilled	In	Flew SW-NE through the site 25-75 m 180 sec
28/03/2023	2	5	26	Great Black-backed Gull	12	Tilled	In	Flying W-E through the site 25-75 90 sec
28/03/2023	2	5	27	Herring Gull	3	Tilled	In	Flying NE to S/SW 10-25 through the site 120sec
28/03/2023	2	5	28	Great Black-backed Gull	25	Tilled	In	Circling to NE of VP 10-25 m flew NE 240sec
28/03/2023	2	5	29	Mew Gull	2	Tilled	In	Flying through the site NE-SW 0-10 m 60sec
28/03/2023	2	5	30	Great Black-backed Gull	5	Tilled	In	Flying E-W 10-25 m on site 70 sec
28/03/2023	2	5	31	Herring Gull	1	Tilled	In	Flew through the site from E-W 10-25 m on site 50 sec
28/03/2023	2	5	32	Grey Heron	1	Canal	Out	Flying W along canal 0-10 m 60 sec
28/03/2023	2	5	33	Kestrel	2	GA1	In	Male and Female circling together 10-25 m flew N 300 sec
28/03/2023	2	5	34	Kestrel	1	GS4	In	On site hunting 2 sticks no kills 0-10 m 360 sec
28/03/2023	2	5	35	Buzzard	1	Tilled	In	Circled before flying SE through the site 10-25m 30 sec 0-10 m. On off site 240 sec

Table 9-2: Non Target VP species

Survey No	Date:	VP No.	Species	Est no. individuals (if recorded)	Notes
1	29/11/2022	1	Rook	6	Over to SE by farmyard
1	29/11/2022	1	Hooded Crow	1	
1	29/11/2022	1	Jackdaw	10	Perched on tree offsite
1	29/11/2022	1	Blackbird	4	By hedge
1	29/11/2022	1	Hooded Crow	4	At periphery
1	29/11/2022	1	Wood Pigeon	2	
3	20/01/2023	2	Hooded Crow	5	Feeding on tilled field to the west
3	20/01/2023	2	Meadow Pipit	1	Flying through the site 3 times during the 6 hours watched
3	20/01/2023	2	Rook	50	At least 50e flew the edge of the site along the canal during the vps.
3	20/01/2023	2	Jackdaw	15	15e
3	20/01/2023	2	Stonechat	2	
3	20/01/2023	2	Blackbird	5	5e
3	20/01/2023	2	Wood Pigeon	20	20e
3	20/01/2023	2	Robin	3	3 seen
3	20/01/2023	2	Jay	2	2
3	20/01/2023	2	Winter Wren	2	2
3	20/01/2023	2	Magpie	3	3
3	20/01/2023	2	Dunnock	1	1 seen
4	24/02/2023	2	Sky Lark	4	4 heard displaying
4	24/02/2023	2	Winter Wren	2	
4	24/02/2023	2	Rook	20	20 +
4	24/02/2023	2	Raven	6	
4	24/02/2023	2	Jackdaw	12	12
4	24/02/2023	2	Song Thrush	1	1
4	24/02/2023	2	Blackbird	1	
4	24/02/2023	2	Magpie	6	6
4	24/02/2023	2	Hooded Crow	5	5
5	28/03/2023	2	Sky Lark	2	
5	28/03/2023	2	Meadow Pipit	6	
5	28/03/2023	2	Wood Pigeon	23	
5	28/03/2023	2	Winter Wren	1	
5	28/03/2023	2	Hooded Crow	3	
5	28/03/2023	2	Rook	2	
5	28/03/2023	2	Magpie	2	
5	28/03/2023	2	Dunnock	1	
5	28/03/2023	2	Pheasant	1	
5	28/03/2023	2	Marsh Tit	2	
5	28/03/2023	2	Fieldfare	15	
5	28/03/2023	2	Blackbird	1	

Table 9-3: Bird transect resuts

Transect	Date	Start time	Finish	Species	No's	Observations	Survey type	Lat	Lon
1	29/11/22	06:50	07:22	Black-headed Gull	2	Roosting by wet section of tilled field	Walked thermal (S field)	53.324077	-6.487581
1	29/11/22	06:50	07:22	Dunnock	1	Hedge	Walked thermal (S field)	53.32357	-6.486658
1	29/11/22	06:50	07:22	Golden Plover	16	Sound of birds confirms ID from field to S	Walked thermal (S field)	53.321894	-6.486632
1	29/11/22	06:50	07:22	Meadow Pipit	2	By rough grassland verge	Walked thermal (S field)	53.325014	-6.489129
1	29/11/22	06:50	07:22	Starling	9	Roosting in tilled field	Walked thermal (S field)	53.324173	-6.482853
1	29/11/22	06:50	07:22	Winter Wren	2	By fence	Walked thermal (S field)	53.325302	-6.4859
2	29/11/22	13:40	14:10	Black-headed Gull	2	Flying over field	Walked survey (N field)	53.32478	-6.484357
2	29/11/22	13:40	14:10	Fieldfare	2		Walked survey (N field)	53.327631	-6.489596
2	29/11/22	13:40	14:10	Hooded Crow	1	Flying over field	Walked survey (N field)	53.32478	-6.484357
2	29/11/22	13:40	14:10	Redwing	2	Mixed flock perched on tree, disturbed and circling subject field than back into tree. Northern field is fallow with grass gone to seed	Walked survey (N field)	53.32764	-6.489596
2	29/11/22	13:40	14:10	Starling	2		Walked survey (N field)	53.32764	-6.489596
2	29/11/22	13:40	14:10	Winter Wren	2	Rank grass	Walked survey (N field)	53.326499	-6.491335
2	29/11/22	13:40	14:10	Winter Wren	2		Walked survey (N field)	53.325495	-6.486002
2	15/12/2022	14:00	14:41	Blackbird	1		Walked survey (N field)	53.325017	-6.489083
2	15/12/2022	14:00	14:41	Blackbird	1		Walked survey (N field)	53.327327	-6.487796
2	15/12/2022	14:00	14:41	Fieldfare	1		Walked survey (N field)	53.325592	-6.491393
2	15/12/2022	14:00	14:41	Golden Plover	1		Walked survey (N field)	53.326509	-6.49547
2	15/12/2022	14:00	14:41	Greenfinch	1		Walked survey (N field)	53.327054	-6.492571
2	15/12/2022	14:00	14:41	Jackdaw	6		Walked survey (N field)	53.324654	-6.491309
2	15/12/2022	14:00	14:41	Jackdaw	1		Walked survey (N field)	53.326844	-6.493433
2	15/12/2022	14:00	14:41	Jay	1		Walked survey (N field)	53.325794	-6.494852
2	15/12/2022	14:00	14:41	Meadow Pipit	2		Walked survey (N field)	53.326452	-6.485665
2	15/12/2022	14:00	14:41	Meadow Pipit	3		Walked survey (N field)	53.326525	-6.488826

Transect	Date	Start time	Finish	Species	No's	Observations	Survey type	Lat	Lon
2	15/12/2022	14:00	14:41	Reed Bunting	1		Walked survey (N field)	53.326556	-6.486468
2	15/12/2022	14:00	14:41	Rook	1		Walked survey (N field)	53.327634	-6.484985
2	15/12/2022	14:00	14:41	Rook	1		Walked survey (N field)	53.326381	-6.487256
2	15/12/2022	14:00	14:41	Rook	1		Walked survey (N field)	53.325275	-6.488072
2	15/12/2022	14:00	14:41	Snipe	1		Walked survey (N field)	53.325355	-6.488774
2	15/12/2022	14:00	14:41	Song Thrush	4		Walked survey (N field)	53.325662	-6.486605
2	15/12/2022	14:00	14:41	Song Thrush	2		Walked survey (N field)	53.326087	-6.484882
2	15/12/2022	14:00	14:41	Winter Wren	2		Walked survey (N field)	53.324923	-6.488088
2	15/12/2022	14:00	14:41	Winter Wren	2		Walked survey (N field)	53.326829	-6.484853
2	15/12/2022	14:00	14:41	Winter Wren	1		Walked survey (N field)	53.326561	-6.485317
2	15/12/2022	14:00	14:41	Winter Wren	3		Walked survey (N field)	53.326725	-6.487082
2	15/12/2022	14:00	14:41	Winter Wren	1		Walked survey (N field)	53.326621	-6.488044
2	15/12/2022	14:00	14:41	Winter Wren	1		Walked survey (N field)	53.326029	-6.489616
2	15/12/2022	14:00	14:41	Winter Wren	3		Walked survey (N field)	53.326458	-6.490143
2	15/12/2022	14:00	14:41	Winter Wren	1		Walked survey (N field)	53.326515	-6.493933
2	15/12/2022	14:00	14:41	Winter Wren	2		Walked survey (N field)	53.326285	-6.4933
2	15/12/2022	14:00	14:41	Wood Pigeon	1		Walked survey (N field)	53.324974	-6.493858
1	15/12/2022	17:45	18:30	Blackbird	1	-	Walked thermal (S field)	53.323699	-6.487244
1	15/12/2022	17:45	18:30	Northern Lapwing	9	Calling in this area; roosting in southern field	Walked thermal (S field)	53.324174	-6.487816
1	15/12/2022	17:45	18:30	Snipe	4	4 SN flushed	Walked thermal (S field)	53.323699	-6.487244
2	25/01/2023	14:45	16:00	Blackbird	-		Walked survey (N field)	53.324989	-6.488574
2	25/01/2023	14:45	16:00	Buzzard	1	Fame bird as earlier	Walked survey (N field)	53.327343	-6.487449
2	25/01/2023	14:45	16:00	Buzzard	1	Flew off ground into Ash tree	Walked survey (N field)	53.326877	-6.492945
2	25/01/2023	14:45	16:00	Golden Plover	37	Circling 50-100m to the south	Walked survey (N field)	53.324989	-6.488574
2	25/01/2023	14:45	16:00	Goldfinch	3	Feeding on ground	Walked survey (N field)	53.32711	-6.484992
2	25/01/2023	14:45	16:00	Meadow Pipit	14	Flushed circled flew W	Walked survey (N field)	53.326789	-6.487739
2	25/01/2023	14:45	16:00	Meadow Pipit	1	Flying SW	Walked survey (N field)	53.326484	-6.493179
2	25/01/2023	14:45	16:00	Rook	2	Flying W	Walked survey (N field)	53.326959	-6.492491
2	25/01/2023	14:45	16:00	Rook	1	Flying west	Walked survey (N field)	53.324718	-6.492315
2	25/01/2023	14:45	16:00	Sky Lark	2	Perched alarm calling	Walked survey (N field)	53.325612	-6.494081

Transect	Date	Start time	Finish	Species	No's	Observations	Survey type	Lat	Lon
2	25/01/2023	14:45	16:00	Snipe	1	Alarm calling didnt get up	Walked survey (N field)	53.326243	-6.491808
2	25/01/2023	14:45	16:00	Stonechat	2	Flew SW landed again	Walked survey (N field)	53.326194	-6.485055
2	25/01/2023	14:45	16:00	Winter Wren	2		Walked survey (N field)	53.327178	-6.486334
2	25/01/2023	14:45	16:00	Winter Wren	1		Walked survey (N field)	53.326663	-6.490574
2	25/01/2023	14:45	16:00	Wood Pigeon	1	Flying W along canal	Walked survey (N field)	53.327462	-6.488533
2	25/01/2023	14:45	16:00	Wood Pigeon	4	Flying south	Walked survey (N field)	53.325654	-6.494226
2	25/01/2023	14:45	16:00	Reed Bunting	4		Walked survey (N field)	53.326266	-6.488068
2	25/01/2023	14:45	16:00	Sky Lark	3	Flew off ground flew N landed again	Walked survey (N field)	53.325996	-6.48653
2	25/01/2023	14:45	16:00	Snipe	1	Flew NW landed again	Walked survey (N field)	53.326003	-6.487793
1	25/01/2023	17:30	18:40	Golden Plover	2	2 GP roosting in transect field I flushed them trying to get close	Walked thermal (S field)	53.323802	-6.490879
1	25/01/2023	17:30	18:40	Golden Plover	30	30e GP in field could see them with scope	Walked thermal (S field)	53.322446	-6.487215
1	25/01/2023	17:30	18:40	Northern Lapwing	1		Walked thermal (S field)	53.323657	-6.48723
1	25/01/2023	17:30	18:40	Snipe	3	Nothing seen but 3 SN 1 L.heard on tilled field should have been able to see them.	Walked thermal (S field)	53.323658	-6.487239
1	25/01/2023	17:30	18:40	No birds seen at this Termal VP			Walked thermal (S field)	53.325084	-6.486213
1	25/01/2023	17:30	18:40	No birds seen at this thermal VP. 1 SN could be heard to the north			Walked thermal (S field)	53.324463	-6.493374

Table 9-4: Hinterland locations

Point	lat	long	Description
1	53.31668	-6.489047818	Field S of site
2	53.320166	-6.481805854	Field SE of site
3	53.31827	-6.51779037	Grand Canal
4	53.330092	-6.439786	Ponds to east of site in industrial estate.
5	53.314307	-6.476251	In field to the south of site
6	53.317897	-6.498493	S of site. Peamount.
7	53.322476	-6.494218	S of site
8	53.32592	-6.472508	Pond on site east of Brownstown
9	53.326361	-6.469077	Reedbeds on site
10			Roaming records
11	53.318288	-6.493221	south of Brownstown west of Peamont

Table 9-5: Hinterland results

Date	Time	Location Number	Species	Numbers	Observations
29/11/2022	12:37:00	1	Black-headed Gull	46	feeding on recently reseeded grasslands
29/11/2022	14:28:00	3	Coot	2	-
29/11/2022	12:48:00	2	Kestrel	-	-
29/11/2022	14:29:00	3	Mallard	4	-
29/11/2022	14:28:00	3	Mute Swan	2	-
29/11/2022	12:49:00	2	Redwing	2	-
15/12/2022	11:55	4	Black-headed Gull	80	feeding and preening on pond (numbers estimated)
15/12/2022	12:46	6	Buzzard	1	Flying across the Rd mobbed by RO
15/12/2022	11:55	4	Coot	35	feeding and preening on pond (numbers estimated)
15/12/2022	12:28	5	Golden Plover	61	Feeding and roosting in field.
15/12/2022	11:55	4	Herring Gull	1	feeding and preening on pond
15/12/2022	11:55	4	Herring Gull	70	feeding and preening on pond (numbers estimated)

Date	Time	Location Number	Species	Numbers	Observations
15/12/2022	11:55	4	Little Grebe	10	feeding and preening on pond (numbers estimated)
15/12/2022	11:55	4	Mallard	43	feeding and preening on pond
15/12/2022	11:55	4	Mew Gull	50	feeding and preening on pond (numbers estimated)
15/12/2022	11:55	4	Mute Swan	12	feeding and preening on pond
15/12/2022	13:20	7	Northern Lapwing	1	Flying SW-NE just S of site.
15/12/2022	13:13	10	Redwing	23	Feeding in field.
15/12/2022	11:55	4	Teal	30	feeding and preening on pond
25/01/2023	13:00	9	Snipe	1	Heard not seen
25/01/2023	10:15	6	#N/A		Nothing of interest recorded.
24/02/2023	15:13	4	Black-headed Gull	47	all on pond east side of industrial estate.
24/02/2023	15:13	4	Coot	17	all on pond east side of industrial estate.
24/02/2023	15:13	4	Great Cormorant	1	all on pond east side of industrial estate.
24/02/2023	15:13	4	Herring Gull	39	all on pond east side of industrial estate.
24/02/2023	15:13	4	Mallard	14	all on pond east side of industrial estate.
24/02/2023	15:13	4	Moorhen	3	all on pond east side of industrial estate.
24/02/2023	15:13	4	Mute Swan	11	all on pond east side of industrial estate.
24/02/2023	15:13	4	Shag	2	all on pond east side of industrial estate.
24/02/2023	15:13	4	Tufted Duck	4	all on pond east side of industrial estate.
25/01/2024	13:49	10	Northern Lapwing	165	circling to the SE of sight
25/01/2025	1545	11	Buzzard	1	flying W along Rd S of Brownstown
25/01/2023.	12:00	4	Black-headed Gull	150	This is an estimated number
25/01/2023.	13:12	9	Buzzard	1	mobbed by RO
25/01/2023.	12:00	4	Coot	23	Feeding andvroosting on ponds
25/01/2023.	15:41	11	Golden Plover	400	estimated circling over fields to S of the site 75-100m
25/01/2023.	12:00	4	Great Cormorant	8	Roosting on and in ponds

Date	Time	Location Number	Species	Numbers	Observations
25/01/2023.	12:00	4	Herring Gull	55	This is an estimate
25/01/2023.	12:00	4	Little Grebe	1	feeding on pond
25/01/2023.	12:00	4	Mallard	34	feeding and roosting
25/01/2023.	12:00	4	Moorhen	3	Feeding and roosting on pond.
25/01/2023.	12:00	4	Mute Swan	7	5 adults 2 Juveniles
25/01/2023.	12:00	4*	Tufted Duck	5	Feeding on ponds

Table 9-6: Static Detector 1

Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Pipistrelle 40 kHz	Brown Long-eared	Total
26th May	86	4	3	0	0	93
27th May	75	6	1	3	0	85
28th May	104	3	0	1	0	108
29th May	103	1	1	1	0	106
30th May	98	4	3	4	0	109
31st May	99	6	1	1	1	108
1st June	78	0	0	0	0	78
2nd June	79	4	0	5	0	88
3rd June	88	3	1	1	1	94
4th June	69	4	2	2	0	77
5th June	61	5	4	1	1	72
6th June	7	3	0	0	0	10
Total	**947**	**43**	**16**	**19**	**3**	**1028**

Table 9-7: Static Detector 2

Date	Leisler's Bat	Common Pipistrelle	Soprano Pipistrelle	Pipistrelle 40 kHz	Unidentified Myotis	Total
26th May	88	2	2	1	1	94
27th May	84	4	0	0	0	88
28th May	43	1	1	1	0	46
29th May	34	4	1	0	0	39
30th May	27	2	0	0	0	29
31st May	22	1	0	0	0	23
1st June	20	1	1	1	0	23
2nd June	24	1	0	1	0	26
3rd June	15	0	0	0	0	15
4th June	15	5	1	0	0	21
5th June	14	2	1	0	0	17
6th June	0	0	0	0	0	0
Total	**386**	**23**	**7**	**4**	**1**	**421**

Table 9-8: Emergence survey results Karolina 06th June 2023 Sheds 3, rear of 2 and 4.

Contact No.	Lat	Lon	Species	Details	Time
-	53.32341	-6.49275	Survey starts. Emergence survey by shed 3, rear of shed 2 and 4. Using Canon.		21:45
-	53.32339	-6.49275	Single bat dropping found on inside wall of shed 2 on a cobweb		21:52
1	53.32341	-6.49282	Common Pip	First call recorded with no sightings.	22:39

Contact No.	Lat	Lon	Species	Details	Time
2	53.32340	-6.49284	Leisler's bat	flying high with no clutter	22:45
3	53.32340	-6.49287	Leisler's bat	Occasional Leisler's calls	22:46
4	53.32339	-6.49290	Leisler's bat	Many Leisler's calls, frequency increasing the longer after sunset.	22:56
-	Emergence survey over. No roosting bats found.				23:20

Table 9-9: Emergence survey results John 06th June 2023. Sheds 2, 3, 4 and 1.

Contact No.	Lat	Lon	Species	Details	Time
-	53.32329	-6.4926	Survey starts. Emergence survey by shed 2, rear of shed 2 and 4. Using Track IR Pro 19. While thermal recording sheds surveyor also checked out shed 1		21:45
1	53.32328	-6.49259	Common Pip	Brief unseen	22:22
2	53.32329	-6.49262	Common Pip	Brief unseen. No activity from sheds	22:46
3	53.32329	-6.49258	Leisler's bat	Brief unseen	22:56
4	53.32329	-6.49258	Common Pip	hunting within large shed (1) for five minutes before flying off. not roosting	22:56
5	53.32328	-6.49265	Leisler's bat	Hutting	22:53
-	Emergence survey over. No roosting bats found.				23:20

Table 9-10: Re-entry survey results Karolina, 07th June 2023 @ building 5

Contact No.	Lat	Lon	Species	Details	Time
-	53.32361	-6.49400	Survey starts. Emergence survey by derelict dwelling 5 using Canon.		02:58
	53.32357	-6.49434	No recordings of any type detected from handheld recorder at start of survey		03:45
1	53.32359	-6.49401	Common pipistrelle	First call of Dawn Survey	03:47
2	53.32352	-6.49400	Common pipistrelle	Flying overhead, call recorded but no video	03:57
3	53.32356	-6.49398	Leisler's Bat	Unable to get visual	04:23
-	Re-entry survey over. No roosting bats found.				04:58

Appendix 16.2

SOUTH DUBLIN COUNTY COUNCIL BIODIVERSITY LETTER

Connecting You to

Comhairle Contae
Átha Cliath Theas
South Dublin County Council

Economic, Enterprise & Tourism
Development Department

22/12/2023

Re: Grange Castle West Lands

Dear Robbie,

In preparing your planning application for the Lens Media site in Grange Castle West, I'm just making you aware of some of the policy context and associated initiatives being put in place by South Dublin County Council to support biodiversity in the County.

South Dublin County has a rich and varied natural heritage that includes a number of unique habitats, areas of natural interest and species that are designated for conservation under national and European legislation. It is acknowledged that wildlife networks and areas located outside of protected sites can also host a diverse and rich variety of rare, protected, and vulnerable habitats and species. It is noted that many species of protected mammals and birds are not restricted to designated sites and can occur in other locations throughout the County.

It is also recognised that wildlife habitats that are not nationally designated may still be important at a County level by acting as Green Infrastructure stepping-stones within the wider ecological network. As such, the South Dublin County Development Plan 2022-2028 and the South Dublin County Biodiversity Action Plan recognise and support the enhancement and protection of habitats throughout the County, with the relevant policies outlined below:

South Dublin County Development Plan	
Policy NCBH2: Biodiversity	*Protect, conserve, and enhance the County's biodiversity and ecological connectivity having regard to national and EU legislation and Strategies.*
NCBH2 Objective 3	*To protect and conserve the natural heritage of the County, and to conserve and manage EU and nationally designated sites and non-designated locally important areas which act as 'stepping stones' for the purposes of green infrastructure and Article 10 of the Habitats Directive.*
Policy NCBH5: Protection of Habitats and Species Outside of Designated Areas	*Protect and promote the conservation of biodiversity outside of designated areas and ensure that species and habitats that are protected under the Wildlife Acts 1976 to 2018, the Birds Directive 1979 and the Habitats Directive 1992, the Flora (Protection) Order 2015, and wildlife corridors are adequately protected.*
South Dublin County Biodiversity Action Plan	
	It is the policy of the Council to protect the ecological, visual, recreational, environmental, and amenity value of the County's proposed Natural Heritage Areas and associated habitats.

	It is the policy of the Council to protect and promote the conservation of biodiversity outside of designated areas and to ensure that species and habitats that are protected under the Wildlife Acts 1976 and 2000, the Birds Directive (1979) and the Habitats Directive (1992) are adequately protected.

The habitats of certain species in particular have an important natural heritage and ecological value for the County and should be protected. This includes protection, where possible, of foraging habitats as well. As such, particular lands within the County play an active roll for winter feeding birds. There is a prevalence of arable land located within the County and it is considered that winter feeding birds benefit from this grassland.

As such, South Dublin County Council has actively identified and are making available an area of land in its ownership within an overall landholding comprising 37 hectares in provision with the policies and objectives set out in the South Dublin County Development Plan 2022-2028 and the South Dublin Biodiversity Action Plan. The grazing lands at this location, which are within a distance of 9.1 km from the Grange Castle West lands contain large scale field systems and short sward management grassland, that can be maintained as a short sward during the winter months, thereby providing optimal conditions to support winter feeding birds. Land management strategies will be agreed with farmers and will form part of the conditions of relevant land management licences issued by the Council to farmers managing the relevant lands.

I trust that this further detail on some of the biodiversity policies and measures being implemented in the County by South Dublin County Council will serve to better inform the preparation of your planning application at the Grange Castle West lands.

Yours sincerely

Jason Frehill

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Jason Frehill
Director of Services

Appendix 7.1

CRITERIA FOR RATING THE MAGNITUDE AND SIGNIFICANCE OF IMPACTS AT EIA STAGE NATIONAL ROADS AUTHORITY

Table 1 Criteria for Rating Site Attributes – Estimation of Importance of Soil and Geology Attributes (NRA)

Importance	Criteria	Typical Example
Very High	Attribute has a high quality, significance or value on a regional or national scale. Degree or extent of soil contamination is significant on a national or regional scale. Volume of peat and/or soft organic soil underlying route is significant on a national or regional scale.	Geological feature rare on a regional or national scale (NHA). Large existing quarry or pit. Proven economically extractable mineral resource
High	Attribute has a high quality, significance or value on a local scale. Degree or extent of soil contamination is significant on a local scale. Volume of peat and/or soft organic soil underlying route is significant on a local scale.	Contaminated soil on site with previous heavy industrial usage. Large recent landfill site for mixed wastes. Geological feature of high value on a local scale (County Geological Site). Well drained and/or high fertility soils. Moderately sized existing quarry or pit. Marginally economic extractable mineral resource.
Medium	Attribute has a medium quality, significance or value on a local scale. Degree or extent of soil contamination is moderate on a local scale. Volume of peat and/or soft organic soil underlying route is moderate on a local scale	Contaminated soil on site with previous light industrial usage. Small recent landfill site for mixed wastes. Moderately drained and/or moderate fertility soils. Small existing quarry or pit. Sub-economic extractable mineral resource.
Low	Attribute has a low quality, significance or value on a local scale. Degree or extent of soil contamination is minor on a local scale. Volume of peat and/or soft organic soil underlying route is small on a local scale.	Large historical and/or recent site for construction and demolition wastes. Small historical and/or recent landfill site for construction and demolition wastes. Poorly drained and/or low fertility soils. Uneconomically extractable mineral resource.

Table 2 Criteria for Rating Site Attributes – Estimation of Importance of Hydrogeological Attributes (NRA)

Importance	Criteria	Typical Examples
Extremely High	Attribute has a high quality or value on an international scale	Groundwater supports river, wetland or surface water body ecosystem protected by EU legislation e.g. SAC or SPA status.
Very High	Attribute has a high quality or value on a regional or national scale	Regionally Important Aquifer with multiple well fields. Groundwater supports river, wetland or surface water body ecosystem protected by national legislation – NHA status. Regionally important potable water source supplying >2500 homes. Inner source protection area for regionally important water source.
High	Attribute has a high quality or value on a local scale	Regionally Important Aquifer. Groundwater provides large proportion of baseflow to local rivers. Locally important potable water source supplying >1000 homes. Outer source protection area for regionally important water source. Inner source protection area for locally important water source.
Medium	Attribute has a medium quality or value on a local scale	Locally Important Aquifer. Potable water source supplying >50 homes. Outer source protection area for locally important water source.
Low	Attribute has a low quality or value on a local scale	Poor Bedrock Aquifer Potable water source supplying <50 homes

Table 3 Criteria for Rating Impact Significance at EIS Stage – Estimation of Magnitude of Impact on Soil/ Geology Attribute (NRA)

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute	Loss of high proportion of future quarry or pit reserves. Irreversible loss of high proportion of local high fertility soils. Removal of entirety of geological heritage feature. Requirement to excavate/remediate entire waste site. Requirement to excavate and replace high proportion of peat, organic soils and/or soft mineral soils beneath alignment.
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Loss of moderate proportion of future quarry or pit reserves. Removal of part of geological heritage feature. Irreversible loss of moderate proportion of local high fertility soils. Requirement to excavate/remediate significant proportion of waste site. Requirement to excavate and replace moderate proportion of peat, organic soils and/or soft mineral soils beneath alignment.
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Loss of small proportion of future quarry or pit reserves. Removal of small part of geological heritage feature. Irreversible loss of small proportion of local high fertility soils and/or high proportion of local low fertility soils. Requirement to excavate/remediate small proportion of waste site. Requirement to excavate and replace small proportion of peat, organic soils and/or soft mineral soils beneath alignment.
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	No measurable changes in attributes
Minor Beneficial	Results in minor improvement of attribute quality	Minor enhancement of geological heritage feature
Moderate Beneficial	Results in moderate improvement of attribute quality	Moderate enhancement of geological heritage feature
Major Beneficial	Results in major improvement of attribute quality	Major enhancement of geological heritage feature

Table 4 Criteria for Rating Impact Significance at EIS Stage – Estimation of Magnitude of Impact on Hydrogeological Attribute (NRA)

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute and /or quality and integrity of attribute	Removal of large proportion of aquifer. Changes to aquifer or unsaturated zone resulting in extensive change to existing water supply springs and wells, river baseflow or ecosystems. Potential high risk of pollution to groundwater from routine run-off. Calculated risk of serious pollution incident >2% annually.
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Removal of moderate proportion of aquifer. Changes to aquifer or unsaturated zone resulting in moderate change to existing water supply springs and wells, river baseflow or ecosystems. Potential medium risk of pollution to groundwater from routine run-off. Calculated risk of serious pollution incident >1% annually.
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Removal of small proportion of aquifer. Changes to aquifer or unsaturated zone resulting in minor change to water supply springs and wells, river baseflow or ecosystems. Potential low risk of pollution to groundwater from routine run-off. Calculated risk of serious pollution incident >0.5% annually.
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	Calculated risk of serious pollution incident <0.5% annually.

Table 5 Rating of Significant Environmental Impacts at EIS Stage (NRA)

Importance of Attribute	Magnitude of Importance			
	Negligible	**Small Adverse**	**Moderate Adverse**	**Large Adverse**
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant/moderate	Profound/Significant	Profound
High	Imperceptible	Moderate/Slight	Significant/moderate	Profound/Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Slight/Moderate

Appendix 8.1

CRITERIA FOR RATING THE MAGNITUDE AND SIGNIFICANCE OF IMPACTS AT THE EIA STAGE

Table 1 Criteria for Rating Site Attributes – Estimation of Importance of Hydrological Attributes (NRA)

Importance	Criteria	Typical Examples
Extremely High	Attribute has a high quality or value on an international scale	River, wetland or surface water body ecosystem protected by EU legislation e.g. 'European sites' designated under the Habitats Regulations or 'Salmonid waters' designated pursuant to the European Communities (Quality of Salmonid Waters) Regulations, 1988.
Very High	Attribute has a high quality or value on a regional or national scale	River, wetland or surface water body ecosystem protected by national legislation – NHA status. Regionally important potable water source supplying >2500 homes. Quality Class A (Biotic Index Q4, Q5). Flood plain protecting more than 50 residential or commercial properties from flooding. Nationally important amenity site for wide range of leisure activities.
High	Attribute has a high quality or value on a local scale	Salmon fishery. Locally important potable water source supplying >1000 homes. Quality Class B (Biotic Index Q3-4). Flood plain protecting between 5 and 50 residential or commercial properties from flooding. Locally important amenity site for wide range of leisure activities.
Medium	Attribute has a medium quality or value on a local scale	Coarse fishery. Local potable water source supplying >50 homes. Quality Class C (Biotic Index Q3, Q2- 3). Flood plain protecting between 1 and 5 residential or commercial properties from flooding.
Low	Attribute has a low quality or value on a local scale	Locally important amenity site for small range of leisure activities. Local potable water source supplying <50 homes Quality Class D (Biotic Index Q2, Q1). Flood plain protecting 1 residential or commercial property from flooding. Amenity site used by small numbers of local people.

Table 2 Criteria for Rating Site Attributes – Estimation of Magnitude of Impact on Hydrological Attribute (NRA)

Magnitude of Impact	Criteria	Typical Examples
Large Adverse	Results in loss of attribute	Loss or extensive change to a waterbody or water dependent habitat. Increase in predicted peak flood level >100mm. Extensive loss of fishery. Calculated risk of serious pollution incident >2% annually. Extensive reduction in amenity value.
Moderate Adverse	Results in impact on integrity of attribute or loss of part of attribute	Increase in predicted peak flood level >50mm. Partial loss of fishery. Calculated risk of serious pollution incident >1% annually. Partial reduction in amenity value.
Small Adverse	Results in minor impact on integrity of attribute or loss of small part of attribute	Increase in predicted peak flood level >10mm. Minor loss of fishery. Calculated risk of serious pollution incident >0.5% annually. Slight reduction in amenity value.
Negligible	Results in an impact on attribute but of insufficient magnitude to affect either use or integrity	Negligible change in predicted peak flood level. Calculated risk of serious pollution incident <0.5% annually.
Minor Beneficial	Results in minor improvement of attribute quality	Reduction in predicted peak flood level >10mm. Calculated reduction in pollution risk of 50% or more where existing risk is <1% annually.
Moderate Beneficial	Results in moderate improvement of attribute quality	Reduction in predicted peak flood level >50mm. Calculated reduction in pollution risk of 50% or more where existing risk is >1% annually.
Major Beneficial	Results in major improvement of attribute quality	Reduction in predicted peak flood level >100mm

Table 3 Rating of Significant Environmental Impacts at EIS Stage (NRA)

Importance of Attribute	Magnitude of Importance			
	Negligible	**Small Adverse**	**Moderate Adverse**	**Large Adverse**
Extremely High	Imperceptible	Significant	Profound	Profound
Very High	Imperceptible	Significant/moderate	Profound/Significant	Profound
High	Imperceptible	Moderate/Slight	Significant/moderate	Profound/Significant
Medium	Imperceptible	Slight	Moderate	Significant
Low	Imperceptible	Imperceptible	Slight	Slight/Moderate

Appendix 11.1

TABULATED NOISE MONITORING RESULTS

APPENDIX 11.1

TABULATED NOISE MONITORING RESULTS

Tabulated Noise Monitoring Results from UN1

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
03/11/2023 10:47:07	50.8	70.9	44.9
03/11/2023 10:52:07	45.5	50.8	44
03/11/2023 10:57:07	44.9	53	43.5
03/11/2023 11:02:07	43.7	54	42.7
03/11/2023 11:07:07	45.8	57.5	42.5
03/11/2023 11:12:07	45.2	51.8	43.9
03/11/2023 11:17:07	46.2	54.3	44.1
03/11/2023 11:22:07	45.3	54.6	44.2
03/11/2023 11:27:07	47.7	62.7	43.8
03/11/2023 11:32:07	45.5	59.4	42.9
03/11/2023 11:37:07	49.2	62.4	43.8
03/11/2023 11:42:07	43.7	52.4	41
03/11/2023 11:47:07	43.9	55.6	40.4
03/11/2023 11:52:07	45.1	65	40
03/11/2023 11:57:07	42.1	58.1	39.7
03/11/2023 12:02:07	42.5	54.9	39.1
03/11/2023 12:07:07	42.2	54	40.1
03/11/2023 12:12:07	48.6	68.6	40.5
03/11/2023 12:17:07	46.1	60.3	40
03/11/2023 12:22:07	42.8	54.4	39.9
03/11/2023 12:27:07	42.1	50.9	39.9
03/11/2023 12:32:07	43.2	54.3	40.3
03/11/2023 12:37:07	43.9	56.5	40.1
03/11/2023 12:42:07	41.4	45	40.3
03/11/2023 12:47:07	42.3	48.4	40.6
03/11/2023 12:52:07	48.4	63	40.7
03/11/2023 12:57:07	47.2	61	41
03/11/2023 13:02:07	43.1	51.7	40.5
03/11/2023 13:07:07	43.7	53	40.6
03/11/2023 13:12:07	43.2	55	40.8
03/11/2023 13:17:07	42.3	51.2	40.5
03/11/2023 13:22:07	44.6	55.4	42.2
03/11/2023 13:27:07	46.4	58.8	40.8
03/11/2023 13:32:07	45.7	60.8	41.3
03/11/2023 13:37:07	44.7	54.8	40.6
03/11/2023 13:42:07	42.6	53.8	40.5
03/11/2023 13:47:07	45.5	59.1	42
03/11/2023 13:52:07	43.1	57	40.4
03/11/2023 13:57:07	43.8	52.6	40.9
03/11/2023 14:02:07	45	56.7	41.2

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
03/11/2023 14:07:07	46.1	57.3	42.7
03/11/2023 14:12:07	43.7	54.1	40.7
03/11/2023 14:17:07	45.4	60.4	41.2
03/11/2023 14:22:07	44.5	53.7	41.5
03/11/2023 14:27:07	47.2	63.1	41
03/11/2023 14:32:07	45.2	56.3	42.2
03/11/2023 14:37:07	42	52	39.1
03/11/2023 14:42:07	44.7	53.3	41
03/11/2023 14:47:07	43.9	61.1	41
03/11/2023 14:52:07	44.2	56.1	39.7
03/11/2023 14:57:07	41.6	51.5	39.8
03/11/2023 15:02:07	42	49.4	39.7
03/11/2023 15:07:07	45.5	56.4	41.4
03/11/2023 15:12:07	44.4	52.9	40.6
03/11/2023 15:17:07	45	61.3	40.3
03/11/2023 15:22:07	44.4	60.7	39
03/11/2023 15:27:07	50.4	68.7	39
03/11/2023 15:32:07	44.7	57.2	39
03/11/2023 15:37:07	40.2	51.3	38.4
03/11/2023 15:42:07	51.1	64.2	38.4
03/11/2023 15:47:07	45.4	59.4	39
03/11/2023 15:52:07	46.2	59.7	39.9
03/11/2023 15:57:07	44.3	59	38.8
03/11/2023 16:02:07	46.7	59.8	39.9
03/11/2023 16:07:07	41.7	53.8	40
03/11/2023 16:12:07	42.5	49.6	40.3
03/11/2023 16:17:07	44.6	57.4	39.9
03/11/2023 16:22:07	41.6	49.3	40.1
03/11/2023 16:27:07	47.9	60.5	41
03/11/2023 16:32:07	42.2	55.2	40.9
03/11/2023 16:37:07	42.4	47.3	41.2
03/11/2023 16:42:07	42.5	47.6	41.1
03/11/2023 16:47:07	45.5	56.4	41.2
03/11/2023 16:52:07	43	50.8	41.6
03/11/2023 16:57:07	43.1	46.3	42.1
03/11/2023 17:02:07	46.2	58.6	42
03/11/2023 17:07:07	48	58	42.5
03/11/2023 17:12:07	45.2	55.6	41.8
03/11/2023 17:17:07	45	56.1	42.3
03/11/2023 17:22:07	46.4	56.3	40.8
03/11/2023 17:27:07	43.2	49.4	41.9
03/11/2023 17:32:07	42.7	49.6	41.1
03/11/2023 17:37:07	43.6	52.8	41.2
03/11/2023 17:42:07	43.5	47.5	42.1
03/11/2023 17:47:07	42	48.5	40.8
03/11/2023 17:52:07	42.6	51.2	40.5

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
03/11/2023 17:57:07	44.8	53.2	41.2
03/11/2023 18:02:07	47	59.4	41.6
03/11/2023 18:07:07	43.1	50.8	41.5
03/11/2023 18:12:07	43.2	53.3	40.7
03/11/2023 18:17:07	51.2	61.6	41.5
03/11/2023 18:22:07	48.5	58.6	41.5
03/11/2023 18:27:07	42.6	46.5	40.9
03/11/2023 18:32:07	44.6	55.2	40.3
03/11/2023 18:37:07	45.7	55.5	40.8
03/11/2023 18:42:07	42.4	48.8	39.9
03/11/2023 18:47:07	42.7	56.1	40.5
03/11/2023 18:52:07	42.4	49.4	40.1
03/11/2023 18:57:07	42	48.9	39.9
03/11/2023 19:02:07	44.8	55	40.9
03/11/2023 19:07:07	41.5	48.3	40
03/11/2023 19:12:07	41.6	46.9	39.6
03/11/2023 19:17:07	40.4	44.5	39
03/11/2023 19:22:07	40.5	44.9	38.9
03/11/2023 19:27:07	41	46.9	39.2
03/11/2023 19:32:07	47.6	65	39.5
03/11/2023 19:37:07	39.5	47.8	38
03/11/2023 19:42:07	38.9	42	37.6
03/11/2023 19:47:07	39.6	52.2	38.2
03/11/2023 19:52:07	39.4	48.5	37.8
03/11/2023 19:57:07	45.5	62.8	37.8
03/11/2023 20:02:07	40.1	47.2	38.9
03/11/2023 20:07:07	39.9	44	38.7
03/11/2023 20:12:07	39.9	44.7	38.8
03/11/2023 20:17:07	40.4	46.6	38.1
03/11/2023 20:22:07	39.3	44.2	37.3
03/11/2023 20:27:07	40.5	52.3	38.3
03/11/2023 20:32:07	41.3	52.9	37.9
03/11/2023 20:37:07	39.1	50.7	37.1
03/11/2023 20:42:07	39.1	44.4	37.5
03/11/2023 20:47:07	42.4	52.9	37.4
03/11/2023 20:52:07	39.1	45.9	36.7
03/11/2023 20:57:07	42.7	55.6	36.1
03/11/2023 21:02:07	37.2	43.7	35.7
03/11/2023 21:07:07	44	54.4	37.4
03/11/2023 21:12:07	39.3	45.9	37.8
03/11/2023 21:17:07	39.3	56.2	37.3
03/11/2023 21:22:07	39.6	55	37.3
03/11/2023 21:27:07	39	47.4	36.4
03/11/2023 21:32:07	45.3	57.3	37.6
03/11/2023 21:37:07	39.5	47.5	36.9
03/11/2023 21:42:07	38	44.9	35.3

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
03/11/2023 21:47:07	36	43.8	33.8
03/11/2023 21:52:07	37.9	51.2	34.4
03/11/2023 21:57:07	37.2	45.5	33.8
03/11/2023 22:02:07	36.7	46.2	34.2
03/11/2023 22:07:07	35.3	46.1	32.5
03/11/2023 22:12:07	40.2	51.1	34.5
03/11/2023 22:17:07	38.6	48	35
03/11/2023 22:22:07	38.3	46.5	34.9
03/11/2023 22:27:07	39.7	46.7	36.4
03/11/2023 22:32:07	40.9	54.1	35
03/11/2023 22:37:07	41.1	53.1	35.1
03/11/2023 22:42:07	40.9	54.5	33.2
03/11/2023 22:47:07	44.9	59.1	37.8
03/11/2023 22:52:07	40.4	54.9	31.1
03/11/2023 22:57:07	32.6	43.6	30.4
03/11/2023 23:02:07	32.7	41.4	30.7
03/11/2023 23:07:07	33.4	44	30.2
03/11/2023 23:12:07	35.6	49.9	30.7
03/11/2023 23:17:07	36.2	48.5	31.9
03/11/2023 23:22:07	39.3	51.4	31.8
03/11/2023 23:27:07	38.9	47.5	34
03/11/2023 23:32:07	37.7	45.3	33.4
03/11/2023 23:37:07	34.4	42.8	30.7
03/11/2023 23:42:07	41.6	53.4	30.4
03/11/2023 23:47:07	45.5	57.2	38.7
03/11/2023 23:52:07	45.4	54.7	38.9
03/11/2023 23:57:07	38.5	54.5	29.9
04/11/2023 00:02:07	29.7	37.5	28.5
04/11/2023 00:07:07	33.9	44.9	31.1
04/11/2023 00:12:07	33.3	43.5	30.9
04/11/2023 00:17:07	34.1	40.5	32.3
04/11/2023 00:22:07	33.3	39.6	31.5
04/11/2023 00:27:07	32.9	41.4	30.6
04/11/2023 00:32:07	33.4	45.6	30.1
04/11/2023 00:37:07	35.3	47.2	30.2
04/11/2023 00:42:07	32.9	43.6	30.1
04/11/2023 00:47:07	33.1	44.9	30.9
04/11/2023 00:52:07	31.9	41.1	30
04/11/2023 00:57:07	30.8	37.3	28.7
04/11/2023 01:02:07	32.9	41.5	29.8
04/11/2023 01:07:07	32.8	40.5	30.2
04/11/2023 01:12:07	37.2	50.9	31.8
04/11/2023 01:17:07	33.8	48.9	31.6
04/11/2023 01:22:07	34.4	39.6	31.6
04/11/2023 01:27:07	32.9	37.9	31.8
04/11/2023 01:32:07	34.8	42	33.3

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 01:37:07	34.3	41.8	33.2
04/11/2023 01:42:07	33.6	38.9	32.7
04/11/2023 01:47:07	34.3	42.2	32.9
04/11/2023 01:52:07	33.9	41.6	33
04/11/2023 01:57:07	34.5	41.5	33.4
04/11/2023 02:02:07	33.7	39.1	32.8
04/11/2023 02:07:07	33.5	36.3	32.5
04/11/2023 02:12:07	33	34.9	32.3
04/11/2023 02:17:07	33.9	37.2	33.1
04/11/2023 02:22:07	37.9	44.7	34
04/11/2023 02:27:07	33.9	38	32.9
04/11/2023 02:32:07	33.7	36.9	32.4
04/11/2023 02:37:07	35.9	48.1	33.1
04/11/2023 02:42:07	35.4	46.2	32.2
04/11/2023 02:47:07	34.4	40	32.1
04/11/2023 02:52:07	36.2	44	34
04/11/2023 02:57:07	35.9	43.6	34.3
04/11/2023 03:02:07	36.2	43.1	34.5
04/11/2023 03:07:07	35.2	38.8	33.9
04/11/2023 03:12:07	36	43.9	34.8
04/11/2023 03:17:07	36	45.2	34.5
04/11/2023 03:22:07	35.3	38.3	34.4
04/11/2023 03:27:07	36.2	38.9	34.9
04/11/2023 03:32:07	36.1	41.6	34.5
04/11/2023 03:37:07	36.2	47.9	34.1
04/11/2023 03:42:07	35.2	38.1	34.3
04/11/2023 03:47:07	34.8	42.4	33.6
04/11/2023 03:52:07	34.5	37.7	33.4
04/11/2023 03:57:07	34.3	39.9	33.2
04/11/2023 04:02:07	36	43.2	34.9
04/11/2023 04:07:07	35.3	43.4	33.9
04/11/2023 04:12:07	34.2	38.6	33.2
04/11/2023 04:17:07	34.5	39.5	33.2
04/11/2023 04:22:07	36.5	44.8	34.5
04/11/2023 04:27:07	39.1	47.1	35.1
04/11/2023 04:32:07	38.9	46.1	36.1
04/11/2023 04:37:07	38.3	45.5	36.2
04/11/2023 04:42:07	40.8	49.3	38.1
04/11/2023 04:47:07	41.1	48.7	38.3
04/11/2023 04:52:07	38.6	41.8	36.7
04/11/2023 04:57:07	38.8	52.2	37.1
04/11/2023 05:02:07	40.5	44.5	38.3
04/11/2023 05:07:07	41.4	46.6	39.4
04/11/2023 05:12:07	39.7	45.3	36.2
04/11/2023 05:17:07	40.2	44.6	36.9
04/11/2023 05:22:07	40.1	44.5	37.1

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 05:27:07	38.9	45	37.1
04/11/2023 05:32:07	38.1	43.2	36.3
04/11/2023 05:37:07	43	55.8	37.6
04/11/2023 05:42:07	39.1	42.6	37.8
04/11/2023 05:47:07	39.2	44.4	37.9
04/11/2023 05:52:07	37.8	40.8	37
04/11/2023 05:57:07	41.6	55.4	37.6
04/11/2023 06:02:07	45.1	57.1	38.3
04/11/2023 06:07:07	41	54.2	37
04/11/2023 06:12:07	37.9	41.9	36.8
04/11/2023 06:17:07	38.8	46.2	36.9
04/11/2023 06:22:07	37.8	40.1	36.9
04/11/2023 06:27:07	38.9	43.8	37.7
04/11/2023 06:32:07	51.8	64.4	39.8
04/11/2023 06:37:07	44.3	60.1	39.2
04/11/2023 06:42:07	47	58.1	44.2
04/11/2023 06:47:07	44.8	48.6	43.9
04/11/2023 06:52:07	48.1	55.1	46
04/11/2023 06:57:07	49.6	56.3	47
04/11/2023 07:02:07	51.5	64.4	46.1
04/11/2023 07:07:07	45.8	57.9	43.9
04/11/2023 07:12:07	45.3	49.5	44.3
04/11/2023 07:17:07	47.5	62.7	42.6
04/11/2023 07:22:07	50.1	62.7	43.6
04/11/2023 07:27:07	44.4	49.5	43.3
04/11/2023 07:32:07	44.4	54.8	42.9
04/11/2023 07:37:07	47.8	61.1	42.3
04/11/2023 07:42:07	43.6	50.3	42.5
04/11/2023 07:47:07	48.1	62.7	42.8
04/11/2023 07:52:07	44.9	54.2	42.7
04/11/2023 07:57:07	44.6	55.8	43.1
04/11/2023 08:02:07	44.1	50.8	42.9
04/11/2023 08:07:07	45.7	60.7	42.6
04/11/2023 08:12:07	44.3	60.5	42.3
04/11/2023 08:17:07	44.3	52.3	42.8
04/11/2023 08:22:07	46.3	54	43.1
04/11/2023 08:27:07	43.6	49	42.2
04/11/2023 08:32:07	43.3	49.8	41.9
04/11/2023 08:37:07	43.5	47.7	42.8
04/11/2023 08:42:07	46.2	59.4	43.1
04/11/2023 08:47:07	46	60.3	42.9
04/11/2023 08:52:07	44.4	56.1	42.8
04/11/2023 08:57:07	44.2	51.9	42.9
04/11/2023 09:02:07	50	65.4	43.9
04/11/2023 09:07:07	45.6	52.5	43.8
04/11/2023 09:12:07	46	59.2	43.3

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 09:17:07	47.2	56.3	43.6
04/11/2023 09:22:07	43.6	48.2	42.5
04/11/2023 09:27:07	44.3	56.1	42.9
04/11/2023 09:32:07	44.6	56.5	43.4
04/11/2023 09:37:07	45.8	61.9	43.4
04/11/2023 09:42:07	47.8	61.2	43.6
04/11/2023 09:47:07	46.4	55.2	44
04/11/2023 09:52:07	45.5	60.1	44
04/11/2023 09:57:07	45.7	60.2	44.4
04/11/2023 10:02:07	45.4	50.1	44.5
04/11/2023 10:07:07	49.4	69	44.2
04/11/2023 10:12:07	45.4	52.5	43.8
04/11/2023 10:17:07	48.4	62.4	43.6
04/11/2023 10:22:07	43.7	50.7	42.6
04/11/2023 10:27:07	44.9	54.8	42.6
04/11/2023 10:32:07	44.1	55.2	42.8
04/11/2023 10:37:07	44.1	50.6	42.9
04/11/2023 10:42:07	43.7	50	42.4
04/11/2023 10:47:07	45.6	56.1	42.7
04/11/2023 10:52:07	51.3	74.9	43.1
04/11/2023 10:57:07	47.1	58.4	43.1
04/11/2023 11:02:07	45.6	54.7	43.5
04/11/2023 11:07:07	46.6	62.3	43.8
04/11/2023 11:12:07	45.8	57.1	43.1
04/11/2023 11:17:07	48.8	63	43.2
04/11/2023 11:22:07	44.1	47.8	43.1
04/11/2023 11:27:07	48.2	60.4	43.2
04/11/2023 11:32:07	47.9	68	43.4
04/11/2023 11:37:07	44.1	47.9	43
04/11/2023 11:42:07	45.3	55.6	43.3
04/11/2023 11:47:07	49.6	61.6	43.7
04/11/2023 11:52:07	45.6	55.4	43.4
04/11/2023 11:57:07	44.6	50.8	43.6
04/11/2023 12:02:07	46.9	57.2	43.6
04/11/2023 12:07:07	47.6	67.6	44
04/11/2023 12:12:07	44.7	52.9	43
04/11/2023 12:17:07	43.7	49.4	42.9
04/11/2023 12:22:07	43.4	51.6	42.1
04/11/2023 12:27:07	50	65.5	42.8
04/11/2023 12:32:07	43.5	50.3	41.5
04/11/2023 12:37:07	46.4	61.8	41.5
04/11/2023 12:42:07	49.5	64.1	41.5
04/11/2023 12:47:07	47.2	62.7	41.1
04/11/2023 12:52:07	43.3	52.7	40.6
04/11/2023 12:57:07	43	51.5	41
04/11/2023 13:02:07	46.2	65.1	40.6

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 13:07:07	45.5	56.1	43
04/11/2023 13:12:07	42.9	48.7	42.1
04/11/2023 13:17:07	43	52.1	41.9
04/11/2023 13:22:07	43.8	52.4	41.9
04/11/2023 13:27:07	42.2	52.1	41.3
04/11/2023 13:32:07	43.1	52.8	41.4
04/11/2023 13:37:07	43.9	51.8	40.2
04/11/2023 13:42:07	46.9	60	41.3
04/11/2023 13:47:07	46.9	54	43.2
04/11/2023 13:52:07	47.1	55.4	42.5
04/11/2023 13:57:07	47.3	54.8	43
04/11/2023 14:02:07	47.9	59.1	42.5
04/11/2023 14:07:07	47.7	54.5	43.3
04/11/2023 14:12:07	51.1	64.9	44.1
04/11/2023 14:17:07	49.6	57.7	44.7
04/11/2023 14:22:07	49.4	63.8	42.9
04/11/2023 14:27:07	47	61.3	41
04/11/2023 14:32:07	46.8	54.3	42.4
04/11/2023 14:37:07	45.1	52.8	41.6
04/11/2023 14:42:07	46.2	54.4	42.1
04/11/2023 14:47:07	46.4	53.4	42
04/11/2023 14:52:07	46.2	61.5	41.8
04/11/2023 14:57:07	44.3	52	40.8
04/11/2023 15:02:07	44.1	51.6	40.1
04/11/2023 15:07:07	43.9	52.4	40.9
04/11/2023 15:12:07	44.7	54.5	41.7
04/11/2023 15:17:07	43.2	53.6	40
04/11/2023 15:22:07	46.3	64.7	40.2
04/11/2023 15:27:07	42.8	50.7	40.2
04/11/2023 15:32:07	43.2	50.2	40.2
04/11/2023 15:37:07	44.6	51.5	40.7
04/11/2023 15:42:07	45.8	50.3	43.1
04/11/2023 15:47:07	44.2	50.4	41.3
04/11/2023 15:52:07	44	53.9	41.2
04/11/2023 15:57:07	42.4	47.5	41.4
04/11/2023 16:02:07	48.3	58.6	42
04/11/2023 16:07:07	48.1	61.4	42.2
04/11/2023 16:12:07	42.4	45.4	41
04/11/2023 16:17:07	45.1	56	41.7
04/11/2023 16:22:07	42.1	54.1	40.7
04/11/2023 16:27:07	41.3	47.4	40.5
04/11/2023 16:32:07	40.9	49	40
04/11/2023 16:37:07	41.2	49.1	39.8
04/11/2023 16:42:07	41.4	45.9	40.7
04/11/2023 16:47:07	43.8	51.8	41.7
04/11/2023 16:52:07	41.9	45	41.3

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 16:57:07	46.4	60.9	41.8
04/11/2023 17:02:07	43.5	53.5	41.8
04/11/2023 17:07:07	45.4	59.5	42.7
04/11/2023 17:12:07	44.6	56.6	42.2
04/11/2023 17:17:07	43.5	51.9	42.5
04/11/2023 17:22:07	42.9	54.8	41.8
04/11/2023 17:27:07	42.9	48	41.8
04/11/2023 17:32:07	45.3	60.5	42.6
04/11/2023 17:37:07	43.8	57.8	41.8
04/11/2023 17:42:07	46.4	57	42
04/11/2023 17:47:07	42.7	49.9	41.7
04/11/2023 17:52:07	43.5	55.9	42.2
04/11/2023 17:57:07	41.7	46.1	41.1
04/11/2023 18:02:07	42.2	46.7	41.5
04/11/2023 18:07:07	45.1	58.8	42.6
04/11/2023 18:12:07	42.3	44.8	41.8
04/11/2023 18:17:07	43	56.8	42.1
04/11/2023 18:22:07	43.6	48.3	42.5
04/11/2023 18:27:07	44.1	60.4	41.6
04/11/2023 18:32:07	42.9	55.5	41.9
04/11/2023 18:37:07	49.2	62.1	43.5
04/11/2023 18:42:07	43.4	55.5	42.5
04/11/2023 18:47:07	42.3	48	41.5
04/11/2023 18:52:07	42.7	62.1	41.4
04/11/2023 18:57:07	44.8	63.2	41.7
04/11/2023 19:02:07	41.8	44.3	41.1
04/11/2023 19:07:07	43.4	59.9	40.8
04/11/2023 19:12:07	42.2	51.7	40.9
04/11/2023 19:17:07	41.6	46.4	40.9
04/11/2023 19:22:07	43	53.9	41
04/11/2023 19:27:07	43	47.7	42.2
04/11/2023 19:32:07	48.8	61.3	41.5
04/11/2023 19:37:07	42.2	47.5	41
04/11/2023 19:42:07	44.5	53.1	41.8
04/11/2023 19:47:07	43.9	54.4	42
04/11/2023 19:52:07	47	60.3	41.4
04/11/2023 19:57:07	41.6	47.3	40.9
04/11/2023 20:02:07	48	61.6	41.3
04/11/2023 20:07:07	42.4	56.5	41.1
04/11/2023 20:12:07	41.9	62.6	40.9
04/11/2023 20:17:07	43.2	50.8	40.9
04/11/2023 20:22:07	41.5	55.9	40.5
04/11/2023 20:27:07	46.3	62.5	42.4
04/11/2023 20:32:07	44	54.8	42.4
04/11/2023 20:37:07	44.3	56.4	41.7
04/11/2023 20:42:07	43	49.6	42.1

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 20:47:07	46.3	62.9	42
04/11/2023 20:52:07	43.5	51.1	42
04/11/2023 20:57:07	44.9	56.5	42
04/11/2023 21:02:07	41.8	46.4	41
04/11/2023 21:07:07	43.1	51.8	40.6
04/11/2023 21:12:07	40.8	44.3	39.8
04/11/2023 21:17:07	42.8	53.6	40
04/11/2023 21:22:07	42.1	60.8	40.6
04/11/2023 21:27:07	40.8	57.2	39.8
04/11/2023 21:32:07	39.9	46	39.2
04/11/2023 21:37:07	40.4	50.3	39.1
04/11/2023 21:42:07	39.4	44.7	38.8
04/11/2023 21:47:07	38.9	41.4	38.2
04/11/2023 21:52:07	39.5	43.6	38.8
04/11/2023 21:57:07	39	42.3	38.3
04/11/2023 22:02:07	42.9	53.8	39.1
04/11/2023 22:07:07	38.9	42.8	38.3
04/11/2023 22:12:07	39.4	43	38.5
04/11/2023 22:17:07	40.5	49.2	38.1
04/11/2023 22:22:07	38.5	44.7	37.7
04/11/2023 22:27:07	40	44.4	38.4
04/11/2023 22:32:07	41.6	50.5	39.7
04/11/2023 22:37:07	40.1	45.4	39.2
04/11/2023 22:42:07	38.8	41.1	37.8
04/11/2023 22:47:07	38.5	48.7	37.7
04/11/2023 22:52:07	42.4	51.9	38.7
04/11/2023 22:57:07	40.7	43.4	39.7
04/11/2023 23:02:07	40	43.6	38.8
04/11/2023 23:07:07	39.3	50.3	37.7
04/11/2023 23:12:07	40.8	45.1	39.4
04/11/2023 23:17:07	39.7	44.5	38.8
04/11/2023 23:22:07	39.4	56.2	37.9
04/11/2023 23:27:07	40.5	43.7	39.1
04/11/2023 23:32:07	39.9	42.3	38.9
04/11/2023 23:37:07	39.1	41.7	38.2
04/11/2023 23:42:07	38.1	40.7	36.7
04/11/2023 23:47:07	37.3	40.8	36.3
04/11/2023 23:52:07	39.1	42.8	37.8
04/11/2023 23:57:07	36.6	41.1	35.9
05/11/2023 00:02:07	37.4	40.2	36.7
05/11/2023 00:07:07	36.5	45	35.4
05/11/2023 00:12:07	36.7	50.1	35.4
05/11/2023 00:17:07	41.1	51.8	36.3
05/11/2023 00:22:07	37.7	48.4	36.6
05/11/2023 00:27:07	37	42.1	35.9
05/11/2023 00:32:07	37.7	40.8	36.9

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 00:37:07	37.1	41.3	36.2
05/11/2023 00:42:07	36.8	41.3	35.5
05/11/2023 00:47:07	37.3	40.1	36.1
05/11/2023 00:52:07	36.9	40.8	35.9
05/11/2023 00:57:07	37.6	51.8	36.1
05/11/2023 01:02:07	35.7	38.9	34.8
05/11/2023 01:07:07	36.5	38.8	35.7
05/11/2023 01:12:07	35.4	40.3	33.5
05/11/2023 01:17:07	33.9	37.8	32.6
05/11/2023 01:22:07	34	37	32.4
05/11/2023 01:27:07	34.8	38.4	33.6
05/11/2023 01:32:07	34.5	39.1	33.3
05/11/2023 01:37:07	35.6	41.6	34.3
05/11/2023 01:42:07	36.9	45.8	34.5
05/11/2023 01:47:07	34.7	39.8	33.6
05/11/2023 01:52:07	33.7	37.1	32.5
05/11/2023 01:57:07	35	38.3	33.8
05/11/2023 02:02:07	38.4	49.5	33.9
05/11/2023 02:07:07	35.9	42.3	34.7
05/11/2023 02:12:07	35.3	42.4	33.9
05/11/2023 02:17:07	35.6	41.4	34.2
05/11/2023 02:22:07	36.3	47.7	34.4
05/11/2023 02:27:07	37.3	56.5	34.4
05/11/2023 02:32:07	33.6	42	32.5
05/11/2023 02:37:07	35.1	42.6	33
05/11/2023 02:42:07	34.8	43	33.4
05/11/2023 02:47:07	34.8	42.2	33.7
05/11/2023 02:52:07	34.5	39.9	33.5
05/11/2023 02:57:07	34.9	41.9	33.6
05/11/2023 03:02:07	34.8	40.4	33
05/11/2023 03:07:07	33.9	40.9	32.3
05/11/2023 03:12:07	33.1	36.3	31.7
05/11/2023 03:17:07	35.4	48.2	31.9
05/11/2023 03:22:07	32	36.5	31
05/11/2023 03:27:07	32.5	36.9	31.4
05/11/2023 03:32:07	33	38.9	31.4
05/11/2023 03:37:07	32.5	38.2	30.6
05/11/2023 03:42:07	33.3	39.9	31.6
05/11/2023 03:47:07	34.1	39.9	32.2
05/11/2023 03:52:07	34.6	38	33.1
05/11/2023 03:57:07	34.4	38.4	33
05/11/2023 04:02:07	34.5	40.9	33.1
05/11/2023 04:07:07	36.9	43.5	34.6
05/11/2023 04:12:07	35.3	40.1	33
05/11/2023 04:17:07	35.1	40.6	33.1
05/11/2023 04:22:07	34.9	40.3	33.2

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 04:27:07	35.6	40.9	32.6
05/11/2023 04:32:07	35.1	44.4	32.1
05/11/2023 04:37:07	34.3	38.9	32.3
05/11/2023 04:42:07	35	43.5	32.8
05/11/2023 04:47:07	42.2	57.5	33.5
05/11/2023 04:52:07	33.4	38.8	31.4
05/11/2023 04:57:07	34.1	38.9	31.3
05/11/2023 05:02:07	35.3	40.8	32.4
05/11/2023 05:07:07	34.3	38.8	32.2
05/11/2023 05:12:07	35.3	42.9	33.4
05/11/2023 05:17:07	35.7	41.1	33.5
05/11/2023 05:22:07	33.5	42.9	31
05/11/2023 05:27:07	33.6	39.2	30.9
05/11/2023 05:32:07	32.4	37.5	31
05/11/2023 05:37:07	33.3	38.5	30.9
05/11/2023 05:42:07	34.3	39.3	32.2
05/11/2023 05:47:07	38.6	54.7	31.3
05/11/2023 05:52:07	33.6	42.1	31.5
05/11/2023 05:57:07	47.4	65.9	33.5
05/11/2023 06:02:07	32.9	42.5	30.6
05/11/2023 06:07:07	48.9	64.8	33
05/11/2023 06:12:07	43.8	60.5	32.7
05/11/2023 06:17:07	39.1	53.3	32.8
05/11/2023 06:22:07	34.4	41.5	32.8
05/11/2023 06:27:07	40.3	55.2	33.5
05/11/2023 06:32:07	37.6	48.6	32.6
05/11/2023 06:37:07	35.2	54.2	32
05/11/2023 06:42:07	36.3	49	32.2
05/11/2023 06:47:07	39.8	53	32.8
05/11/2023 06:52:07	40.2	57.4	31.9
05/11/2023 06:57:07	43.3	60.8	32
05/11/2023 07:02:07	43.6	56.8	32.5
05/11/2023 07:07:07	48.2	60.6	33.8
05/11/2023 07:12:07	40.2	53.5	32.3
05/11/2023 07:17:07	39.4	57.8	32.4
05/11/2023 07:22:07	34.2	42.2	32.1
05/11/2023 07:27:07	39	53.9	30.7
05/11/2023 07:32:07	41.2	54.2	30.6
05/11/2023 07:37:07	37	52.1	33.5
05/11/2023 07:42:07	42.6	57.9	33.9
05/11/2023 07:47:07	37.8	47.8	34.8
05/11/2023 07:52:07	36.9	44.4	34.8
05/11/2023 07:57:07	36.6	46	34.8
05/11/2023 08:02:07	37.3	51.3	34.9
05/11/2023 08:07:07	37.9	48.4	34.7
05/11/2023 08:12:07	43.9	57.5	35.2

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 08:17:07	37.2	47.4	34.8
05/11/2023 08:22:07	37	45.6	34.9
05/11/2023 08:27:07	36.3	44.9	34.1
05/11/2023 08:32:07	37.8	48.8	34.7
05/11/2023 08:37:07	42.5	58.3	34.9
05/11/2023 08:42:07	37	54.3	34
05/11/2023 08:47:07	44.9	60.7	35.5
05/11/2023 08:52:07	38.6	50.9	35.3
05/11/2023 08:57:07	37.9	51.1	33.9
05/11/2023 09:02:07	44.1	60.6	34.9
05/11/2023 09:07:07	37.8	57.2	33.8
05/11/2023 09:12:07	38.1	59	35
05/11/2023 09:17:07	46.7	69.7	35.3
05/11/2023 09:22:07	44.2	62.3	34
05/11/2023 09:27:07	39.7	60	34.3
05/11/2023 09:32:07	39.4	57	33.8
05/11/2023 09:37:07	41.9	54.7	35.1
05/11/2023 09:42:07	39.3	52.4	35.4
05/11/2023 09:47:07	38.6	51.9	36.5
05/11/2023 09:52:07	38.3	46.8	35.6
05/11/2023 09:57:07	37	50.7	35.2
05/11/2023 10:02:07	42.9	56.3	34.9
05/11/2023 10:07:07	49	62.7	37.2
05/11/2023 10:12:07	48.4	60.1	38.4
05/11/2023 10:17:07	38.6	45.2	36.5
05/11/2023 10:22:07	42.3	53.4	37.1
05/11/2023 10:27:07	44.9	59	36.9
05/11/2023 10:32:07	47.7	64.2	37.1
05/11/2023 10:37:07	44.6	57.4	37.2
05/11/2023 10:42:07	43.6	60.8	36.9
05/11/2023 10:47:07	38.4	51.6	36.5
05/11/2023 10:52:07	47.6	64	36.7
05/11/2023 10:57:07	46	59.2	37.5
05/11/2023 11:02:07	42.4	55.8	37.6
05/11/2023 11:07:07	42.5	54.4	37.9
05/11/2023 11:12:07	40.6	58	37
05/11/2023 11:17:07	41.2	52.1	36.5
05/11/2023 11:22:07	39	53.5	35.6
05/11/2023 11:27:07	38.2	52	33.9
05/11/2023 11:32:07	42.1	56.5	35.1
05/11/2023 11:37:07	40	55.2	36.3
05/11/2023 11:42:07	47.2	59.5	37.4
05/11/2023 11:47:07	38.7	48.2	35.8
05/11/2023 11:52:07	38.2	51.4	35.5
05/11/2023 11:57:07	43.2	57.1	35.8
05/11/2023 12:02:07	46.9	61.2	37.7

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 12:07:07	44.2	56.8	38.3
05/11/2023 12:12:07	38.3	52	36.7
05/11/2023 12:17:07	38.6	54.9	35.8
05/11/2023 12:22:07	46.5	60.6	39.3
05/11/2023 12:27:07	39.1	49.2	36.8
05/11/2023 12:32:07	38.4	46.7	35.8
05/11/2023 12:37:07	40.4	51.4	36.7
05/11/2023 12:42:07	40.7	53.7	37
05/11/2023 12:47:07	39.1	49.7	36
05/11/2023 12:52:07	38.2	45.4	35.8
05/11/2023 12:57:07	39.5	49.3	37.1
05/11/2023 13:02:07	41.5	51.3	37.8
05/11/2023 13:07:07	39	51.1	36.9
05/11/2023 13:12:07	42	57.1	35.1
05/11/2023 13:17:07	46.1	59.9	36.6
05/11/2023 13:22:07	37.1	45.1	35.2
05/11/2023 13:27:07	41.3	56.2	35.6
05/11/2023 13:32:07	41.2	57.6	36.9
05/11/2023 13:37:07	40.4	52.7	37.7
05/11/2023 13:42:07	46.2	63.4	38.7
05/11/2023 13:47:07	41.3	56.8	38.4
05/11/2023 13:52:07	43.9	58.5	38.6
05/11/2023 13:57:07	44.8	56.1	40.1
05/11/2023 14:02:07	43.9	57.9	37.9
05/11/2023 14:07:07	42.2	53.8	37.6
05/11/2023 14:12:07	43.6	63	38.2
05/11/2023 14:17:07	47	66.8	37.9
05/11/2023 14:22:07	48.6	66.3	37.4
05/11/2023 14:27:07	42	57.2	37.3
05/11/2023 14:32:07	44.5	60.3	38.8
05/11/2023 14:37:07	43.3	53.8	39.8
05/11/2023 14:42:07	42.2	65.4	37.8
05/11/2023 14:47:07	44.2	57.2	38.8
05/11/2023 14:52:07	46.6	62.3	37.6
05/11/2023 14:57:07	40.6	60.4	36.3
05/11/2023 15:02:07	46.3	61.5	36.5
05/11/2023 15:07:07	49.9	70.2	38.2
05/11/2023 15:12:07	42.7	57.1	38
05/11/2023 15:17:07	43.7	61.9	39.2
05/11/2023 15:22:07	46.3	60.5	37.7
05/11/2023 15:27:07	41	53.2	36.3
05/11/2023 15:32:07	42.5	54.8	37.5
05/11/2023 15:37:07	40.6	50.9	37.6
05/11/2023 15:42:07	43.9	53.2	38.6
05/11/2023 15:47:07	47.5	60.5	39.1
05/11/2023 15:52:07	41	49.2	38.6

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 15:57:07	48.4	64.6	38.3
05/11/2023 16:02:07	42.1	54.7	38
05/11/2023 16:07:07	50.7	65.2	38.4
05/11/2023 16:12:07	45.3	56.6	39.1
05/11/2023 16:17:07	42.7	56.9	37
05/11/2023 16:22:07	44.6	58.1	37.9
05/11/2023 16:27:07	41.9	50.7	38.2
05/11/2023 16:32:07	39.8	49.6	37.4
05/11/2023 16:37:07	41	56.2	38.6
05/11/2023 16:42:07	40.8	47.9	38.3
05/11/2023 16:47:07	40.7	53	38.6
05/11/2023 16:52:07	41.6	51.9	38
05/11/2023 16:57:07	49.6	78.3	40.8
05/11/2023 17:02:07	41.8	64.4	38.3
05/11/2023 17:07:07	41.6	52.5	38.9
05/11/2023 17:12:07	41.2	52.5	37.5
05/11/2023 17:17:07	41.1	54.9	38.3
05/11/2023 17:22:07	47.8	59.1	40.5
05/11/2023 17:27:07	41	54.3	38.6
05/11/2023 17:32:07	44.5	57.7	39.7
05/11/2023 17:37:07	43.3	54.7	39.8
05/11/2023 17:42:07	43.1	51.6	39.7
05/11/2023 17:47:07	40.9	46.1	39.4
05/11/2023 17:52:07	41.1	47.2	38.8
05/11/2023 17:57:07	45	59.7	38.7
05/11/2023 18:02:07	47.8	64.1	39.3
05/11/2023 18:07:07	51.2	63.7	39.7
05/11/2023 18:12:07	41.8	70.3	38.3
05/11/2023 18:17:07	40.8	50.1	38.5
05/11/2023 18:22:07	41.6	53.8	38.7
05/11/2023 18:27:07	40.7	44.6	39.2
05/11/2023 18:32:07	40.9	54.1	39.6
05/11/2023 18:37:07	46.1	62.4	38.7
05/11/2023 18:42:07	50.5	65.9	40.5
05/11/2023 18:47:07	45.1	59	41.2
05/11/2023 18:52:07	46.3	62.6	40.1
05/11/2023 18:57:07	46.2	60.7	40.5
05/11/2023 19:02:07	41.3	58.6	40.1
05/11/2023 19:07:07	42.4	49.2	40.4
05/11/2023 19:12:07	45.4	56	41
05/11/2023 19:17:07	44.2	56.5	40.1
05/11/2023 19:22:07	51.7	66.5	40.3
05/11/2023 19:27:07	41.6	51.3	40.2
05/11/2023 19:32:07	42.6	50.5	40.9
05/11/2023 19:37:07	42.6	48.1	41.1
05/11/2023 19:42:07	40.9	44.7	39.8

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 19:47:07	42	46.3	40.7
05/11/2023 19:52:07	41.6	46.7	40.3
05/11/2023 19:57:07	44.6	54.9	41.2
05/11/2023 20:02:07	46.5	59.5	40.4
05/11/2023 20:07:07	42.3	51.3	40.4
05/11/2023 20:12:07	42.9	51.4	40.9
05/11/2023 20:17:07	41.1	53.7	39.5
05/11/2023 20:22:07	42.3	51.7	40
05/11/2023 20:27:07	42.4	54.5	39.8
05/11/2023 20:32:07	44.7	56.2	40.1
05/11/2023 20:37:07	49.7	60	40.4
05/11/2023 20:42:07	40.9	46.5	39.2
05/11/2023 20:47:07	41.8	55.4	39
05/11/2023 20:52:07	46.8	57.5	39.9
05/11/2023 20:57:07	40.9	45.9	39.1
05/11/2023 21:02:07	41.4	49.5	39.4
05/11/2023 21:07:07	40.4	47.3	38.9
05/11/2023 21:12:07	38.6	42.2	37.6
05/11/2023 21:17:07	40.7	51.5	37.6
05/11/2023 21:22:07	39.5	44.4	38
05/11/2023 21:27:07	39.1	44.3	38
05/11/2023 21:32:07	47.3	59	39.2
05/11/2023 21:37:07	40.7	49.1	38
05/11/2023 21:42:07	42.6	54.9	39.9
05/11/2023 21:47:07	40.8	46.7	38.4
05/11/2023 21:52:07	47.6	60.6	38.9
05/11/2023 21:57:07	39.5	45.8	38.1
05/11/2023 22:02:07	39.1	43.1	37.5
05/11/2023 22:07:07	39.5	47.2	38.2
05/11/2023 22:12:07	39.1	43.2	37.6
05/11/2023 22:17:07	42	54.2	38.3
05/11/2023 22:22:07	39.8	44.3	38.7
05/11/2023 22:27:07	42.5	56.1	38
05/11/2023 22:32:07	41.7	48	39.2
05/11/2023 22:37:07	39.1	47.4	36.9
05/11/2023 22:42:07	40.5	46.4	38.5
05/11/2023 22:47:07	40.5	50.8	37.7
05/11/2023 22:52:07	39.3	44.5	37.5
05/11/2023 22:57:07	39.3	49.3	36.9
05/11/2023 23:02:07	38.9	47.3	37.3
05/11/2023 23:07:07	39.1	44.8	37.3
05/11/2023 23:12:07	40.1	49.4	38.1
05/11/2023 23:17:07	40.8	48.9	38.3
05/11/2023 23:22:07	42	53.3	39
05/11/2023 23:27:07	42.4	56	38.9
05/11/2023 23:32:07	42.4	49.4	39.5

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 23:37:07	40.7	53.2	38.8
05/11/2023 23:42:07	43.1	55.6	38.7
05/11/2023 23:47:07	42.4	54.3	38.3
05/11/2023 23:52:07	42.9	51.4	39.7
05/11/2023 23:57:07	41.2	50.5	38.1
06/11/2023 00:02:07	40.6	49.2	37.4
06/11/2023 00:07:07	40.5	51.7	36.7
06/11/2023 00:12:07	41.1	52.6	37.9
06/11/2023 00:17:07	42.9	52.9	38.7
06/11/2023 00:22:07	41.6	50.6	37.3
06/11/2023 00:27:07	41.1	50.6	37.5
06/11/2023 00:32:07	42.3	52.2	39
06/11/2023 00:37:07	42.5	52.7	38.7
06/11/2023 00:42:07	42.3	52.9	38.3
06/11/2023 00:47:07	42.3	50.9	38.6
06/11/2023 00:52:07	39.6	47.1	37.3
06/11/2023 00:57:07	42.8	52.4	39
06/11/2023 01:02:07	43.9	54.9	39.7
06/11/2023 01:07:07	42.5	52.8	39.3
06/11/2023 01:12:07	42.1	52.7	38.3
06/11/2023 01:17:07	42.5	53.6	38.1
06/11/2023 01:22:07	43.1	52.9	39.2
06/11/2023 01:27:07	42.8	53.4	38.2
06/11/2023 01:32:07	41	49.1	38.1
06/11/2023 01:37:07	41	48	38.2
06/11/2023 01:42:07	41.1	49.2	38.6
06/11/2023 01:47:07	41.4	54.9	37.1
06/11/2023 01:52:07	41.5	53	36.9
06/11/2023 01:57:07	42.4	55.4	38
06/11/2023 02:02:07	42.1	53.2	38.3
06/11/2023 02:07:07	44.9	59.1	39.3
06/11/2023 02:12:07	43.9	55.3	39.4
06/11/2023 02:17:07	42.7	53	39.7
06/11/2023 02:22:07	41	49.5	38.4
06/11/2023 02:27:07	42.3	54.3	39.1
06/11/2023 02:32:07	40.9	51.2	37.6
06/11/2023 02:37:07	41.2	51.2	38.2
06/11/2023 02:42:07	39.7	51.5	36.8
06/11/2023 02:47:07	41.1	50.7	37.8
06/11/2023 02:52:07	41.1	52.7	37.9
06/11/2023 02:57:07	41.3	50.5	37.8
06/11/2023 03:02:07	42	54.7	37.3
06/11/2023 03:07:07	42.9	55.9	39.9
06/11/2023 03:12:07	41.5	50.9	38.6
06/11/2023 03:17:07	42.3	53	38.9
06/11/2023 03:22:07	42.7	54.6	39.2

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 03:27:07	42.8	54.6	39.6
06/11/2023 03:32:07	43.1	54.6	38.9
06/11/2023 03:37:07	42.8	51.9	39.1
06/11/2023 03:42:07	43.9	55.2	39.1
06/11/2023 03:47:07	42.2	50.5	38.9
06/11/2023 03:52:07	41.4	50.9	38.5
06/11/2023 03:57:07	43	54.5	38.9
06/11/2023 04:02:07	45.1	56.7	41.1
06/11/2023 04:07:07	42.6	52.5	39.5
06/11/2023 04:12:07	42.5	53.5	39.1
06/11/2023 04:17:07	44.2	53.6	40.3
06/11/2023 04:22:07	43.9	55.4	40.3
06/11/2023 04:27:07	44.8	57.6	41
06/11/2023 04:32:07	43.9	55.1	40.7
06/11/2023 04:37:07	43.4	53.6	40.7
06/11/2023 04:42:07	45.2	55.9	41.1
06/11/2023 04:47:07	44.2	57.5	40.8
06/11/2023 04:52:07	46.9	62	41.1
06/11/2023 04:57:07	43.2	52.8	40.1
06/11/2023 05:02:07	41.3	50.6	39.4
06/11/2023 05:07:07	41.4	50.6	39.5
06/11/2023 05:12:07	43.9	54.8	41.2
06/11/2023 05:17:07	43.4	56.1	40.6
06/11/2023 05:22:07	42.2	50	40.5
06/11/2023 05:27:07	44.5	56.8	41.2
06/11/2023 05:32:07	45.1	53.8	42
06/11/2023 05:37:07	43.5	51.1	41.5
06/11/2023 05:42:07	45.7	52.7	42.8
06/11/2023 05:47:07	43.7	50.3	42.1
06/11/2023 05:52:07	43.4	52.3	42.1
06/11/2023 05:57:07	42.4	47.7	40.8
06/11/2023 06:02:07	43.4	53.1	41.8
06/11/2023 06:07:07	45.1	55.4	42.3
06/11/2023 06:12:07	43.3	48.7	42.3
06/11/2023 06:17:07	52.4	65.3	42.6
06/11/2023 06:22:07	44.5	48.2	43.1
06/11/2023 06:27:07	44.5	49.2	43.2
06/11/2023 06:32:07	51.2	63.1	44.1
06/11/2023 06:37:07	46.1	52.5	44.6
06/11/2023 06:42:07	44.9	49.5	43.4
06/11/2023 06:47:07	46.4	55.4	44
06/11/2023 06:52:07	48.6	60.7	45.1
06/11/2023 06:57:07	49.4	59.3	45.2
06/11/2023 07:02:07	45	50.9	43.7
06/11/2023 07:07:07	46.6	55.7	44.1
06/11/2023 07:12:07	47.9	59.9	45

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 07:17:07	47.4	56.8	45.2
06/11/2023 07:22:07	47.9	58.3	45
06/11/2023 07:27:07	49.9	63.4	44.8
06/11/2023 07:32:07	47	54.3	45
06/11/2023 07:37:07	49.8	61.7	44.9
06/11/2023 07:42:07	47.2	57.1	45.6
06/11/2023 07:47:07	48	54.2	46.1
06/11/2023 07:52:07	51.6	66.9	46.1
06/11/2023 07:57:07	47.5	56	45.6
06/11/2023 08:02:07	48.3	57.9	45.4
06/11/2023 08:07:07	50	69.6	44.8
06/11/2023 08:12:07	46.4	54.8	45.2
06/11/2023 08:17:07	46.7	50.7	45.4
06/11/2023 08:22:07	46.1	49	45.1
06/11/2023 08:27:07	47.4	58.2	45.5
06/11/2023 08:32:07	48.7	60.5	46.1
06/11/2023 08:37:07	46.3	57.5	44.7
06/11/2023 08:42:07	48	60.4	44.9
06/11/2023 08:47:07	46	50.7	44.8
06/11/2023 08:52:07	49.3	64.6	45.3
06/11/2023 08:57:07	48.8	67.8	43.9
06/11/2023 09:02:07	45.8	52.7	44.6
06/11/2023 09:07:07	46.7	56.8	44.6
06/11/2023 09:12:07	46.1	55.4	44.6
06/11/2023 09:17:07	46.8	62.9	43.7
06/11/2023 09:22:07	49.4	63.5	43.9
06/11/2023 09:27:07	46.5	58.8	44
06/11/2023 09:32:07	46.1	54.9	43.8
06/11/2023 09:37:07	44.8	52.8	43.4
06/11/2023 09:42:07	45.5	53.6	43.3
06/11/2023 09:47:07	45.9	55.6	43.1
06/11/2023 09:52:07	43.2	53.2	41.6
06/11/2023 09:57:07	46	55.9	42.3
06/11/2023 10:02:07	43.9	51.7	42
06/11/2023 10:07:07	43.6	52.8	42.2
06/11/2023 10:12:07	43.4	50.6	41.6
06/11/2023 10:17:07	42.4	52.4	41.1
06/11/2023 10:22:07	41.6	49.1	40.1
06/11/2023 10:27:07	42.5	49.9	40.9
06/11/2023 10:32:07	51	64.4	41.3
06/11/2023 10:37:07	43.1	52.7	41.5
06/11/2023 10:42:07	41.9	49.3	40.6
06/11/2023 10:47:07	42.9	53.8	41
06/11/2023 10:52:07	44.7	58.7	40.5
06/11/2023 10:57:07	42.7	51.7	39.9
06/11/2023 11:02:07	48.3	64.1	40.3

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 11:07:07	49.5	62.8	44
06/11/2023 11:12:07	46.4	60	41.4
06/11/2023 11:17:07	45.3	54.8	42.2
06/11/2023 11:22:07	46	57.4	42.1
06/11/2023 11:27:07	45.5	53.6	43.1
06/11/2023 11:32:07	46.7	57.2	42.2
06/11/2023 11:37:07	43.9	51.1	41.1
06/11/2023 11:42:07	44	60.1	40.2
06/11/2023 11:47:07	44.1	54.1	41.2
06/11/2023 11:52:07	42.9	56.5	40.7
06/11/2023 11:57:07	41.2	52.3	38.6
06/11/2023 12:02:07	46.3	57.8	41.3
06/11/2023 12:07:07	44	56.5	41.6
06/11/2023 12:12:07	47.3	63.5	38.8
06/11/2023 12:17:07	46.5	62.7	41.1
06/11/2023 12:22:07	45.9	56.4	40.7
06/11/2023 12:27:07	44.3	61	39.4
06/11/2023 12:32:07	44.5	57.2	40.7
06/11/2023 12:37:07	45.1	57.5	39.9
06/11/2023 12:42:07	43.3	62.9	39.3
06/11/2023 12:47:07	44.9	54.6	41.2
06/11/2023 12:52:07	43.9	55.5	40.8
06/11/2023 12:57:07	47.5	64.9	40.3
06/11/2023 13:02:07	44.2	61.8	39.3
06/11/2023 13:07:07	46.3	66.7	39.7
06/11/2023 13:12:07	44.4	56.2	41.4
06/11/2023 13:17:07	48.2	64.1	39.1
06/11/2023 13:22:07	44.2	62.4	39.5
06/11/2023 13:27:07	46.8	63.1	40.9
06/11/2023 13:32:07	46.1	59.6	39.8
06/11/2023 13:37:07	43.8	62.5	38
06/11/2023 13:42:07	40.8	47.2	38.9
06/11/2023 13:47:07	42.8	55	39
06/11/2023 13:52:07	41.3	53.6	38.4
06/11/2023 13:57:07	46	62.8	39
06/11/2023 14:02:07	48.7	63	40.2
06/11/2023 14:07:07	58.8	74.5	43.6
06/11/2023 14:12:07	51.9	69.3	42.6
06/11/2023 14:17:07	47.1	60.8	43
06/11/2023 14:22:07	42.7	53.5	40.7
06/11/2023 14:27:07	45.3	60.3	38.7
06/11/2023 14:32:07	40.9	51.7	39.4
06/11/2023 14:37:07	45.8	59.6	39.9
06/11/2023 14:42:07	46	60.5	41.2
06/11/2023 14:47:07	48.6	60.6	42.8
06/11/2023 14:52:07	44.2	53.8	42.1

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 14:57:07	47.2	65.7	39.7
06/11/2023 15:02:07	43	59.2	40.9
06/11/2023 15:07:07	41.8	54.1	40
06/11/2023 15:12:07	41.9	53.8	39.2
06/11/2023 15:17:07	48.7	67	39.8
06/11/2023 15:22:07	56.7	75.5	39.5
06/11/2023 15:27:07	40.9	51.7	38.8
06/11/2023 15:32:07	41.3	51.8	39
06/11/2023 15:37:07	41	53.4	39.3
06/11/2023 15:42:07	49	63.9	41
06/11/2023 15:47:07	47.1	59	41.3
06/11/2023 15:52:07	43	51.2	41.1
06/11/2023 15:57:07	44.2	54.9	40.3
06/11/2023 16:02:07	41.1	48.3	39.6
06/11/2023 16:07:07	42.4	49.9	40.4
06/11/2023 16:12:07	45.6	59.6	40.8
06/11/2023 16:17:07	43.2	60.1	40.6
06/11/2023 16:22:07	48.7	61.3	41.7
06/11/2023 16:27:07	48.1	62.8	42.2
06/11/2023 16:32:07	43.8	48.4	42.4
06/11/2023 16:37:07	48.8	62.2	42.5
06/11/2023 16:42:07	43.1	48.1	41.5
06/11/2023 16:47:07	46.1	57.7	42.3
06/11/2023 16:52:07	44.8	58.6	42.3
06/11/2023 16:57:07	44.2	50.9	42.6
06/11/2023 17:02:07	44.4	51	43.2
06/11/2023 17:07:07	45	56.7	43.6
06/11/2023 17:12:07	42.7	46.9	41.3
06/11/2023 17:17:07	47.6	59.8	42.7
06/11/2023 17:22:07	45.4	59.7	42.2
06/11/2023 17:27:07	43.4	47.4	41.8
06/11/2023 17:32:07	43.8	54.6	41.8
06/11/2023 17:37:07	44	49.9	42.2
06/11/2023 17:42:07	43.7	48.2	42.6
06/11/2023 17:47:07	43	48.3	41.4
06/11/2023 17:52:07	47.7	61.2	43
06/11/2023 17:57:07	43.7	50	41.8
06/11/2023 18:02:07	47.4	59.2	42.5
06/11/2023 18:07:07	43.7	49.2	42.6
06/11/2023 18:12:07	43.8	49.2	42.2
06/11/2023 18:17:07	43.8	48.7	42.7
06/11/2023 18:22:07	44	49.8	42.6
06/11/2023 18:27:07	47	58.8	42.7
06/11/2023 18:32:07	44.2	56.4	41.9
06/11/2023 18:37:07	44.4	52.2	42.2
06/11/2023 18:42:07	42.8	48.6	41.5

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 18:47:07	43.3	56.2	41.5
06/11/2023 18:52:07	43.2	49.5	41.6
06/11/2023 18:57:07	43.5	49.1	41.2
06/11/2023 19:02:07	43.4	47.5	42.6
06/11/2023 19:07:07	48.5	60.8	42.3
06/11/2023 19:12:07	44.6	53.7	42.3
06/11/2023 19:17:07	43.9	52.7	42.1
06/11/2023 19:22:07	43.3	56.1	41
06/11/2023 19:27:07	52.6	72.3	41.6
06/11/2023 19:32:07	43.3	48.4	41.4
06/11/2023 19:37:07	43.6	51.4	41.2
06/11/2023 19:42:07	42.9	47.5	41.4
06/11/2023 19:47:07	42.6	50	40.2
06/11/2023 19:52:07	45.3	56	41.8
06/11/2023 19:57:07	41.8	48.3	40.1
06/11/2023 20:02:07	46.4	60.7	41.9
06/11/2023 20:07:07	43.4	52.5	41.8
06/11/2023 20:12:07	42.9	50.7	41.2
06/11/2023 20:17:07	42.3	46.7	40.8
06/11/2023 20:22:07	42.5	52.1	40.9
06/11/2023 20:27:07	42.9	51.5	41.3
06/11/2023 20:32:07	44.1	52.7	42
06/11/2023 20:37:07	44.7	57.6	42.4
06/11/2023 20:42:07	44	52.1	41
06/11/2023 20:47:07	43.2	48.5	41.2
06/11/2023 20:52:07	41.8	48.8	40.6
06/11/2023 20:57:07	42.6	53.5	40
06/11/2023 21:02:07	42.8	50.4	40.2
06/11/2023 21:07:07	42.4	47.6	41
06/11/2023 21:12:07	44.9	54.4	40.8
06/11/2023 21:17:07	42.2	48.4	40.5
06/11/2023 21:22:07	43	48.2	41
06/11/2023 21:27:07	44.1	53.9	41.2
06/11/2023 21:32:07	42	47	40.3
06/11/2023 21:37:07	44.1	53.6	39.4
06/11/2023 21:42:07	41.4	46.6	39.5
06/11/2023 21:47:07	42	47.6	39.8
06/11/2023 21:52:07	46.4	59.4	40.4
06/11/2023 21:57:07	43.1	53	39.3
06/11/2023 22:02:07	39.7	46.4	38.1
06/11/2023 22:07:07	41	48.6	39
06/11/2023 22:12:07	40	46.1	38.5
06/11/2023 22:17:07	39.8	44.4	38.2
06/11/2023 22:22:07	40	45.3	38
06/11/2023 22:27:07	41	47.5	38.9
06/11/2023 22:32:07	42.5	49.2	39.9

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 22:37:07	41.7	48.2	39.4
06/11/2023 22:42:07	40.7	48.4	38.5
06/11/2023 22:47:07	40.4	51.7	37.3
06/11/2023 22:52:07	40.3	47.9	37.9
06/11/2023 22:57:07	41.5	50.7	38.4
06/11/2023 23:02:07	42.9	52.9	39.6
06/11/2023 23:07:07	43	50.6	39.5
06/11/2023 23:12:07	40.6	51.6	37.7
06/11/2023 23:17:07	40.8	51.5	37.7
06/11/2023 23:22:07	41.8	51.3	39.2
06/11/2023 23:27:07	39.4	45.1	37.8
06/11/2023 23:32:07	40.2	50.9	38.1
06/11/2023 23:37:07	40.9	49.2	39.1
06/11/2023 23:42:07	41.6	54.8	39
06/11/2023 23:47:07	40.3	47.2	38
06/11/2023 23:52:07	39.6	47.9	37.4
06/11/2023 23:57:07	39.7	48.3	37.8
07/11/2023 00:02:07	39	45.5	37.5
07/11/2023 00:07:07	40	46	37.9
07/11/2023 00:12:07	41.6	49.8	38.1
07/11/2023 00:17:07	40.4	49	38.2
07/11/2023 00:22:07	39.9	46.1	37.6
07/11/2023 00:27:07	38.4	50	36.3
07/11/2023 00:32:07	40.5	52.7	36.6
07/11/2023 00:37:07	38	45.8	35.9
07/11/2023 00:42:07	37.4	44.6	35.7
07/11/2023 00:47:07	38.5	46.5	36.5
07/11/2023 00:52:07	36.9	47	34.7
07/11/2023 00:57:07	36.3	45.3	34.8
07/11/2023 01:02:07	35	39.3	33.4
07/11/2023 01:07:07	35.1	44.9	33.9
07/11/2023 01:12:07	35.7	40.9	34.3
07/11/2023 01:17:07	35.2	48	33.6
07/11/2023 01:22:07	35.6	43.4	33.8
07/11/2023 01:27:07	34.5	42.6	32.4
07/11/2023 01:32:07	35.7	42.2	34.1
07/11/2023 01:37:07	33.8	37.7	32.6
07/11/2023 01:42:07	34.2	42.2	32.1
07/11/2023 01:47:07	35.6	47.5	33.2
07/11/2023 01:52:07	37.1	46.8	34.9
07/11/2023 01:57:07	35.6	42.8	33.9
07/11/2023 02:02:07	35.1	42.8	32.4
07/11/2023 02:07:07	34.9	42.9	33.2
07/11/2023 02:12:07	36.4	45.8	34.8
07/11/2023 02:17:07	36.1	43.6	34.5
07/11/2023 02:22:07	35.5	42.1	34

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 02:27:07	35.7	43.2	33.2
07/11/2023 02:32:07	35.6	41.4	34.4
07/11/2023 02:37:07	34.9	40.1	32.9
07/11/2023 02:42:07	34.8	40.7	33.3
07/11/2023 02:47:07	34.9	43	33.5
07/11/2023 02:52:07	35.4	39.5	33.5
07/11/2023 02:57:07	33.1	39.9	31
07/11/2023 03:02:07	33.6	39.2	32.5
07/11/2023 03:07:07	33.3	37.5	31.7
07/11/2023 03:12:07	34.9	40.8	33.3
07/11/2023 03:17:07	36.2	39.5	34.8
07/11/2023 03:22:07	36.4	39.4	35.4
07/11/2023 03:27:07	34.5	38.2	33.1
07/11/2023 03:32:07	35.7	41.3	34.2
07/11/2023 03:37:07	39.3	47.5	35.4
07/11/2023 03:42:07	36	41.6	34.1
07/11/2023 03:47:07	35	38.4	33.5
07/11/2023 03:52:07	35.5	43.4	34
07/11/2023 03:57:07	35.9	41.6	35
07/11/2023 04:02:07	38.5	46.4	34.8
07/11/2023 04:07:07	37.1	42.4	34.4
07/11/2023 04:12:07	35.2	40	33.8
07/11/2023 04:17:07	38.5	48.1	34.4
07/11/2023 04:22:07	37.9	46.1	33.8
07/11/2023 04:27:07	34.3	38.3	33.1
07/11/2023 04:32:07	36.8	43.2	33.4
07/11/2023 04:37:07	36.9	56.4	34.2
07/11/2023 04:42:07	36.3	44.1	33.9
07/11/2023 04:47:07	38.2	45.2	35.1
07/11/2023 04:52:07	34.1	42.5	32.3
07/11/2023 04:57:07	36.1	44.3	33.8
07/11/2023 05:02:07	36	40.8	34.3
07/11/2023 05:07:07	36.2	40	34.9
07/11/2023 05:12:07	36.7	40.8	35.5
07/11/2023 05:17:07	37.9	45.9	36.3
07/11/2023 05:22:07	38.2	42.5	36.6
07/11/2023 05:27:07	39.1	45.2	37.3
07/11/2023 05:32:07	37.9	43.3	36.7
07/11/2023 05:37:07	39.1	44.1	37.2
07/11/2023 05:42:07	40.1	44.7	38.1
07/11/2023 05:47:07	43.2	53.5	40.7
07/11/2023 05:52:07	49.2	62	41
07/11/2023 05:57:07	45.9	58	40.8
07/11/2023 06:02:07	43	50.9	40.4
07/11/2023 06:07:07	44.7	55.1	41.9
07/11/2023 06:12:07	42	44.8	41.1

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 06:17:07	42.5	47.9	41.4
07/11/2023 06:22:07	51.9	67.8	42.9
07/11/2023 06:27:07	44	50.6	42.3
07/11/2023 06:32:07	45.9	54.7	43.9
07/11/2023 06:37:07	47.7	60.3	43.2
07/11/2023 06:42:07	45.2	57.6	43.3
07/11/2023 06:47:07	44.7	56.2	42.6
07/11/2023 06:52:07	47	59.8	42.3
07/11/2023 06:57:07	45.7	60.7	42.1
07/11/2023 07:02:07	43.9	49.9	42.5
07/11/2023 07:07:07	42.9	51.6	41.6
07/11/2023 07:12:07	46	56.1	43.3
07/11/2023 07:17:07	44.5	55.4	43.2
07/11/2023 07:22:07	46.9	58.5	44
07/11/2023 07:27:07	46.3	59.5	43.5
07/11/2023 07:32:07	46.7	57.9	43.7
07/11/2023 07:37:07	47	57.7	44.3
07/11/2023 07:42:07	46.7	57.6	44.7
07/11/2023 07:47:07	46	57.2	43.7
07/11/2023 07:52:07	46.8	57.7	44.1
07/11/2023 07:57:07	45.1	48.2	44.3
07/11/2023 08:02:07	45	53	43.6
07/11/2023 08:07:07	46.5	55.9	44.2
07/11/2023 08:12:07	45.8	53.7	43.9
07/11/2023 08:17:07	45.1	49.4	44.1
07/11/2023 08:22:07	44.7	49.8	43.1
07/11/2023 08:27:07	44.9	50.6	43.4
07/11/2023 08:32:07	46.6	55.4	44.2
07/11/2023 08:37:07	46	61.4	43.9
07/11/2023 08:42:07	45.4	55	44.1
07/11/2023 08:47:07	46.6	65.7	44.4
07/11/2023 08:52:07	44.8	54.2	43.6
07/11/2023 08:57:07	45.4	57.3	44.1
07/11/2023 09:02:07	46	50.7	45.2
07/11/2023 09:07:07	45.7	52	44.4
07/11/2023 09:12:07	46.6	52.1	45.3
07/11/2023 09:17:07	46.7	52.5	45.8
07/11/2023 09:22:07	46.1	53.8	44.9
07/11/2023 09:27:07	46	51.8	45.3
07/11/2023 09:32:07	45.6	55.2	44.7
07/11/2023 09:37:07	45.7	49.6	44.7
07/11/2023 09:42:07	46.6	55.1	44.7
07/11/2023 09:47:07	45.8	55.1	43.8
07/11/2023 09:52:07	45	50.1	43.7
07/11/2023 09:57:07	48.8	66.4	42.9
07/11/2023 10:02:07	45.8	60.9	42.7

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 10:07:07	45.3	54	43.7
07/11/2023 10:12:07	44.3	54.9	42.8
07/11/2023 10:17:07	43.2	52.4	41.8
07/11/2023 10:22:07	45.3	58.3	41.1
07/11/2023 10:27:07	45	56.6	41.3
07/11/2023 10:32:07	47.5	60.2	41.3
07/11/2023 10:37:07	43.7	56.5	41.8
07/11/2023 10:42:07	42.9	54.2	40.9
07/11/2023 10:47:07	47	62.7	40.7
07/11/2023 10:52:07	44.3	58.1	41
07/11/2023 10:57:07	42.2	54.1	39.3
07/11/2023 11:02:07	49.8	69.1	38.9
07/11/2023 11:07:07	44.4	63.6	39.7
07/11/2023 11:12:07	41.3	52.1	38.7
07/11/2023 11:17:07	42.9	54.7	39.8
07/11/2023 11:22:07	43.5	54.3	37.8
07/11/2023 11:27:07	44.3	56	39.8
07/11/2023 11:32:07	41.1	48.4	38.6
07/11/2023 11:37:07	46	59.4	40.9
07/11/2023 11:42:07	42.8	54.3	39.4
07/11/2023 11:47:07	42.4	49.3	38.9
07/11/2023 11:52:07	41.3	57.3	39.5
07/11/2023 11:57:07	41.7	51.9	39.2
07/11/2023 12:02:07	42	53	39.5
07/11/2023 12:07:07	41	49.3	38.6
07/11/2023 12:12:07	40.6	48.7	38.5
07/11/2023 12:17:07	44.6	57.3	39.6
07/11/2023 12:22:07	41.9	52.1	38.9
07/11/2023 12:27:07	40.3	48	38.9
07/11/2023 12:32:07	41.9	61	39.1
07/11/2023 12:37:07	45.2	57.5	39.7
07/11/2023 12:42:07	42.1	54.4	39.5
07/11/2023 12:47:07	41	55	39.2
07/11/2023 12:52:07	39	50	36.6
07/11/2023 12:57:07	44	57.3	37.5
07/11/2023 13:02:07	40.2	54.4	37.4
07/11/2023 13:07:07	41	52.9	38.1
07/11/2023 13:12:07	39.3	46	37.4
07/11/2023 13:17:07	40	54.6	37.6
07/11/2023 13:22:07	39.1	46.2	36.8
07/11/2023 13:27:07	43.3	55.2	38.9
07/11/2023 13:32:07	39.6	51.3	37
07/11/2023 13:37:07	40.6	50.8	38
07/11/2023 13:42:07	40.1	55.1	37.2
07/11/2023 13:47:07	40	53.3	37.2
07/11/2023 13:52:07	42.7	57.9	38.6

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 13:57:07	42.1	55.3	37.7
07/11/2023 14:02:07	44.5	66.4	37.9
07/11/2023 14:07:07	44.5	60.2	37.8
07/11/2023 14:12:07	42.8	64.2	37.8
07/11/2023 14:17:07	43.9	66.4	38.4
07/11/2023 14:22:07	48.6	72.9	39.8
07/11/2023 14:27:07	44.3	67.3	38.2
07/11/2023 14:32:07	47.7	62.6	38.2
07/11/2023 14:37:07	47.5	66.9	38.7
07/11/2023 14:42:07	40.9	59.4	38.2
07/11/2023 14:47:07	41.3	56.7	38.3
07/11/2023 14:52:07	45.1	56.6	41.2
07/11/2023 14:57:07	45.1	61.1	38.9
07/11/2023 15:02:07	46	60.4	39.2
07/11/2023 15:07:07	42.8	51.9	40.2
07/11/2023 15:12:07	46.2	64.5	39.7
07/11/2023 15:17:07	40.5	52.9	38.1
07/11/2023 15:22:07	47.2	61.9	38.2
07/11/2023 15:27:07	41.6	61.2	38.6
07/11/2023 15:32:07	47.6	63.4	38.6
07/11/2023 15:37:07	41.8	50.6	39.2
07/11/2023 15:42:07	49.2	65.7	40.9
07/11/2023 15:47:07	43.9	58	40
07/11/2023 15:52:07	50.9	67.7	39.2
07/11/2023 15:57:07	44.1	60.6	39.7
07/11/2023 16:02:07	50.1	68.4	40.1
07/11/2023 16:07:07	42.8	53.8	41.3
07/11/2023 16:12:07	43	50	41.6
07/11/2023 16:17:07	42.6	52.6	40.5
07/11/2023 16:22:07	42.3	50.9	40.9
07/11/2023 16:27:07	43.5	50.5	42
07/11/2023 16:32:07	43	47.4	41.5
07/11/2023 16:37:07	43.2	54.2	41.5
07/11/2023 16:42:07	43.4	47.1	41.9
07/11/2023 16:47:07	44.8	56.5	42.7
07/11/2023 16:52:07	43.5	49.8	41.9
07/11/2023 16:57:07	44.1	52.1	42.3
07/11/2023 17:02:07	44.8	52.9	43.2
07/11/2023 17:07:07	45.2	51.1	43.3
07/11/2023 17:12:07	44.4	56.3	43
07/11/2023 17:17:07	44.7	56.5	42.6
07/11/2023 17:22:07	44.9	51.3	42.8
07/11/2023 17:27:07	44.1	52.6	42.4
07/11/2023 17:32:07	44.8	52.4	42.3
07/11/2023 17:37:07	44.1	56.1	42.3
07/11/2023 17:42:07	44.9	51.2	43.1

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 17:47:07	46	55.4	42.8
07/11/2023 17:52:07	43.3	48.1	41.5
07/11/2023 17:57:07	42.5	49.2	40.6
07/11/2023 18:02:07	43	47.4	41
07/11/2023 18:07:07	42.7	49.1	41.1
07/11/2023 18:12:07	43.9	51.1	41.6
07/11/2023 18:17:07	43	49.3	41.3
07/11/2023 18:22:07	43.8	50.4	41.7
07/11/2023 18:27:07	43.4	49.9	41.2
07/11/2023 18:32:07	44.1	49.5	41.8
07/11/2023 18:37:07	42	46.1	40.7
07/11/2023 18:42:07	42.1	46.9	40.7
07/11/2023 18:47:07	41.4	47.6	39.5
07/11/2023 18:52:07	41.8	53.2	40.1
07/11/2023 18:57:07	42.3	50.3	40.4
07/11/2023 19:02:07	41.5	47.1	39.2
07/11/2023 19:07:07	41.7	46.7	39.8
07/11/2023 19:12:07	41.4	47.8	39.3
07/11/2023 19:17:07	42	50.6	40
07/11/2023 19:22:07	43	51.7	41
07/11/2023 19:27:07	40.7	46.3	39
07/11/2023 19:32:07	41.3	49.8	39.4
07/11/2023 19:37:07	42.3	57.6	40
07/11/2023 19:42:07	40.6	51.1	38.5
07/11/2023 19:47:07	40	46.2	37.6
07/11/2023 19:52:07	40.7	52.2	38.8
07/11/2023 19:57:07	40.2	46.8	38
07/11/2023 20:02:07	40.8	51.2	38.3
07/11/2023 20:07:07	40.9	47.5	39.1
07/11/2023 20:12:07	41.2	56	38.8
07/11/2023 20:17:07	39.7	44.4	37.6
07/11/2023 20:22:07	41.1	46.2	39.3
07/11/2023 20:27:07	40.9	49.7	38.4
07/11/2023 20:32:07	41.4	46.8	38.9
07/11/2023 20:37:07	39.4	47	37.4
07/11/2023 20:42:07	40.7	47.6	38.1
07/11/2023 20:47:07	40.1	45.5	37.8
07/11/2023 20:52:07	39.5	48.8	37
07/11/2023 20:57:07	40.5	49.3	38.1
07/11/2023 21:02:07	38.5	51.3	36.2
07/11/2023 21:07:07	37.1	41.3	35.5
07/11/2023 21:12:07	40.5	50.3	38.1
07/11/2023 21:17:07	38.8	47.1	36.6
07/11/2023 21:22:07	40.1	46.8	37.3
07/11/2023 21:27:07	39.2	50.4	36.8
07/11/2023 21:32:07	37.5	44.2	35

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 21:37:07	38.7	47.7	35.3
07/11/2023 21:42:07	38.4	47.1	36.3
07/11/2023 21:47:07	40.2	47.8	37.9
07/11/2023 21:52:07	40	49.8	38.2
07/11/2023 21:57:07	38.8	49.9	36.2
07/11/2023 22:02:07	38.8	47.4	36.2
07/11/2023 22:07:07	38.5	47.5	36.4
07/11/2023 22:12:07	40.1	48.5	37.8
07/11/2023 22:17:07	40	49.9	37.3
07/11/2023 22:22:07	38.2	48	36
07/11/2023 22:27:07	39.8	46.2	37.6
07/11/2023 22:32:07	37.6	44.7	36.1
07/11/2023 22:37:07	37.4	49	35.5
07/11/2023 22:42:07	39.4	49.1	35.6
07/11/2023 22:47:07	37.5	44.3	34.7
07/11/2023 22:52:07	40.4	51.5	37.2
07/11/2023 22:57:07	40.1	49.3	37.6
07/11/2023 23:02:07	39.7	47.4	36.8
07/11/2023 23:07:07	42.2	58.8	37.8
07/11/2023 23:12:07	42.6	52.1	38.6
07/11/2023 23:17:07	41	48.7	38.4
07/11/2023 23:22:07	42.8	52	38.7
07/11/2023 23:27:07	40.9	48.6	38.4
07/11/2023 23:32:07	43.2	54.8	38.5
07/11/2023 23:37:07	40.9	50.6	37.9
07/11/2023 23:42:07	42.9	53.4	36.8
07/11/2023 23:47:07	41	49.5	36.6
07/11/2023 23:52:07	42.2	50.1	37.8
07/11/2023 23:57:07	41.1	47.8	38.6
08/11/2023 00:02:07	41.2	49.9	38.6
08/11/2023 00:07:07	39.4	47.6	37.1
08/11/2023 00:12:07	38.6	48.2	35.9
08/11/2023 00:17:07	39.8	46.7	36.5
08/11/2023 00:22:07	41.4	50	37.1
08/11/2023 00:27:07	41.6	52.8	36.8
08/11/2023 00:32:07	40.3	52.1	36.9
08/11/2023 00:37:07	46.9	52.5	44.2
08/11/2023 00:42:07	46.8	57.1	39
08/11/2023 00:47:07	45.8	60.4	37.4
08/11/2023 00:52:07	43.8	54	38.2
08/11/2023 00:57:07	43.6	53	39.7
08/11/2023 01:02:07	43.3	55.4	40.7
08/11/2023 01:07:07	43.3	54	39.8
08/11/2023 01:12:07	45.5	55.3	42.3
08/11/2023 01:17:07	49.9	59.4	43.6
08/11/2023 01:22:07	46.5	56.2	43.1

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
08/11/2023 01:27:07	46	57.5	39.5
08/11/2023 01:32:07	43.8	52.5	40.2
08/11/2023 01:37:07	39.2	45.8	35.9
08/11/2023 01:42:07	49.1	64.7	38
08/11/2023 01:47:07	46.6	57.2	43.2
08/11/2023 01:52:07	44.2	52.9	38.8
08/11/2023 01:57:07	40.4	54.4	36.9
08/11/2023 02:02:07	47.9	58.9	40.1
08/11/2023 02:07:07	46.9	63	39.2
08/11/2023 02:12:07	47.2	58.3	41.6
08/11/2023 02:17:07	49.7	63.9	41.3
08/11/2023 02:22:07	47.5	60.2	40.2
08/11/2023 02:27:07	44.7	54.9	38.8
08/11/2023 02:32:07	50	62.8	39.4
08/11/2023 02:37:07	43.2	56.8	38.9
08/11/2023 02:42:07	50.4	64.4	41.8
08/11/2023 02:47:07	49.8	63	42.2
08/11/2023 02:52:07	52.7	64.4	44.7
08/11/2023 02:57:07	54.9	65	49.5
08/11/2023 03:02:07	55	67.3	48.6
08/11/2023 03:07:07	56.1	74	47.6
08/11/2023 03:12:07	58.3	70.1	50.5
08/11/2023 03:17:07	54.9	67.8	45.9
08/11/2023 03:22:07	53.8	65.3	47.1
08/11/2023 03:27:07	58.7	67.1	50.3
08/11/2023 03:32:07	55.1	67.3	46.2
08/11/2023 03:37:07	55.9	65.1	48
08/11/2023 03:42:07	53.7	63.5	47.6
08/11/2023 03:47:07	51.8	61.4	44.2
08/11/2023 03:52:07	50.4	59.9	45
08/11/2023 03:57:07	54.5	68	46.9
08/11/2023 04:02:07	53.2	63.5	46.7
08/11/2023 04:07:07	50.6	61.6	45.3
08/11/2023 04:12:07	51.9	64	44.7
08/11/2023 04:17:07	49.8	61.7	43.4
08/11/2023 04:22:07	54.4	64.7	46.1
08/11/2023 04:27:07	53.9	65.9	46.2
08/11/2023 04:32:07	51.3	63.2	44.5
08/11/2023 04:37:07	51.7	62.9	45.1
08/11/2023 04:42:07	57.4	71.1	45.5
08/11/2023 04:47:07	55.2	65.3	51
08/11/2023 04:52:07	51.9	63.2	49.1
08/11/2023 04:57:07	47.7	59.2	43.7
08/11/2023 05:02:07	41.3	47.1	38.5
08/11/2023 05:07:07	43.1	55	39.4
08/11/2023 05:12:07	45.2	58.7	40.6

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
08/11/2023 05:17:07	47.1	58.6	44.4
08/11/2023 05:22:07	44.2	52.7	41.6
08/11/2023 05:27:07	46.2	57.3	42.7
08/11/2023 05:32:07	45.3	61.3	41.5
08/11/2023 05:37:07	45.7	53.3	43.2
08/11/2023 05:42:07	46.2	55.1	43.1
08/11/2023 05:47:07	47.5	64	44.4
08/11/2023 05:52:07	47	53.4	44.1
08/11/2023 05:57:07	49	60.5	44.8
08/11/2023 06:02:07	48.8	61.2	43.8
08/11/2023 06:07:07	45.4	53.3	42.5
08/11/2023 06:12:07	46.8	56.1	42.7
08/11/2023 06:17:07	49.1	56	45.1
08/11/2023 06:22:07	50.1	57.3	45.8
08/11/2023 06:27:07	45.8	51.5	43.2
08/11/2023 06:32:07	48.3	63.7	42.6
08/11/2023 06:37:07	43.8	52.3	41.8
08/11/2023 06:42:07	43.3	48	41.4
08/11/2023 06:47:07	45.2	52	42.7
08/11/2023 06:52:07	45.7	53.4	41.7
08/11/2023 06:57:07	48.4	66	40.1
08/11/2023 07:02:07	45	55.6	42.2
08/11/2023 07:07:07	43.7	57.1	41.4
08/11/2023 07:12:07	43.2	51	41.1
08/11/2023 07:17:07	43.5	51.4	41.2
08/11/2023 07:22:07	48.7	65	42
08/11/2023 07:27:07	43.7	49.5	42.1
08/11/2023 07:32:07	43.1	47.1	41.9
08/11/2023 07:37:07	46.6	57.9	43.7
08/11/2023 07:42:07	46.1	55.2	43.2
08/11/2023 07:47:07	45	50.4	43.4
08/11/2023 07:52:07	44.7	49.1	43.3
08/11/2023 07:57:07	46.4	56.3	43.6
08/11/2023 08:02:07	45.7	53.9	43.3
08/11/2023 08:07:07	44.3	50.8	42.8
08/11/2023 08:12:07	45.2	50	43.6
08/11/2023 08:17:07	44.7	50.3	43.4
08/11/2023 08:22:07	45.5	50.4	44.4
08/11/2023 08:27:07	46	50.5	44.5
08/11/2023 08:32:07	45.2	50.1	44
08/11/2023 08:37:07	46.7	63.4	44.5
08/11/2023 08:42:07	46.4	49.9	45.3
08/11/2023 08:47:07	46.3	49.9	45
08/11/2023 08:52:07	46.5	53.1	45.2
08/11/2023 08:57:07	57.5	78.3	44.6
08/11/2023 09:02:07	45.3	50.7	44.5

Start Date and Time	L_{Aeq}	L_{Amax}	L_{A90}
08/11/2023 09:07:07	46.4	64.8	44.4
08/11/2023 09:12:07	45.4	55.2	43.8
08/11/2023 09:17:07	44.8	50.4	43.8
08/11/2023 09:22:07	45	48.1	43.9
08/11/2023 09:27:07	49.6	64.3	43
08/11/2023 09:32:07	43.9	47.7	43.1
08/11/2023 09:37:07	44.1	54.2	42.8
08/11/2023 09:42:07	44.4	49.5	43.3
08/11/2023 09:47:07	44	53.6	42.6
08/11/2023 09:52:07	48.4	59.3	42.5
08/11/2023 09:57:07	44.1	56.7	42.8
08/11/2023 10:02:07	43.3	52.1	42.5
08/11/2023 10:07:07	44.2	51.4	42.8
08/11/2023 10:12:07	45.7	56.9	43.3
08/11/2023 10:17:07	44.5	53	43.2
08/11/2023 10:22:07	45	53.8	43.4
08/11/2023 10:27:07	44.3	51.9	43.1
08/11/2023 10:32:07	44.6	59.2	43.4
08/11/2023 10:37:07	44.4	50.3	43.1
08/11/2023 10:42:07	45	52	43.7
08/11/2023 10:47:07	45.8	60.7	43.8
08/11/2023 10:52:07	46.2	62.9	43.6
08/11/2023 10:57:07	46.4	59.9	43.7
08/11/2023 11:02:07	46.6	61.8	43.7
08/11/2023 11:07:07	47.4	59.8	43.9
08/11/2023 11:12:07	47.1	59.8	43.7
08/11/2023 11:17:07	48	60.9	44.4
08/11/2023 11:22:07	71.3	94.9	46.5

Tabulated Noise Monitoring Results from UN2

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
03/11/2023 10:23:24	51.2	65.9	47.1
03/11/2023 10:28:24	47.9	61.1	45.7
03/11/2023 10:33:24	49	71.1	45.1
03/11/2023 10:38:24	47	59.8	44.9
03/11/2023 10:43:24	46.4	51.8	45.1
03/11/2023 10:48:24	47.9	54.6	45.6
03/11/2023 10:53:24	46.3	54.4	44.5
03/11/2023 10:58:24	49	64.6	44.2
03/11/2023 11:03:24	45.6	53.2	44
03/11/2023 11:08:24	49.8	64.7	44.4
03/11/2023 11:13:24	46.2	53.8	44.1
03/11/2023 11:18:24	47.2	53.1	45.3
03/11/2023 11:23:24	47	56.7	45.2
03/11/2023 11:28:24	48.2	64.1	44.8
03/11/2023 11:33:24	46.7	56.4	44.4
03/11/2023 11:38:24	49.5	66	42.8
03/11/2023 11:43:24	44.4	52.4	42.5
03/11/2023 11:48:24	45.7	59.1	42.2
03/11/2023 11:53:24	45.1	53.3	42.8
03/11/2023 11:58:24	46.8	55.8	43.3
03/11/2023 12:03:24	45.8	53.9	43.1
03/11/2023 12:08:24	47.1	72.9	42.4
03/11/2023 12:13:24	48.9	59.3	43.3
03/11/2023 12:18:24	45.1	53	42.6
03/11/2023 12:23:24	45.8	69.6	42.7
03/11/2023 12:28:24	44.3	50.2	42
03/11/2023 12:33:24	44.9	55.4	41.9
03/11/2023 12:38:24	44.9	55.6	43.1
03/11/2023 12:43:24	44.6	52.9	42.5
03/11/2023 12:48:24	48.3	72.3	42.7
03/11/2023 12:53:24	51.1	64.8	43.5
03/11/2023 12:58:24	46.3	57.8	42.6
03/11/2023 13:03:24	45.4	56.4	42.3
03/11/2023 13:08:24	45.6	52.4	43.1
03/11/2023 13:13:24	45	53.1	41.8
03/11/2023 13:18:24	46.4	58.4	43.1
03/11/2023 13:23:24	47.8	58.1	42.8
03/11/2023 13:28:24	45.6	55.6	42.8
03/11/2023 13:33:24	48.6	59	44.2
03/11/2023 13:38:24	46.5	57.2	42.4
03/11/2023 13:43:24	45.6	53.6	42.1
03/11/2023 13:48:24	48	60.4	43
03/11/2023 13:53:24	49.5	63.4	44.7

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
03/11/2023 13:58:24	49	61.2	45.2
03/11/2023 14:03:24	50	68.4	45.9
03/11/2023 14:08:24	45.8	57.8	42.2
03/11/2023 14:13:24	47.9	66.6	41.5
03/11/2023 14:18:24	48.2	62.3	44
03/11/2023 14:23:24	51.2	60.7	48.5
03/11/2023 14:28:24	53.3	64.2	45.3
03/11/2023 14:33:24	47.2	54.5	44.6
03/11/2023 14:38:24	53.8	67	45
03/11/2023 14:43:24	48.6	56.5	45.3
03/11/2023 14:48:24	48.9	57.8	45.7
03/11/2023 14:53:24	50.5	56.4	47.1
03/11/2023 14:58:24	51.7	56.2	49.7
03/11/2023 15:03:24	52.4	58.8	50.2
03/11/2023 15:08:24	50	58.3	47.1
03/11/2023 15:13:24	47	56.2	45.3
03/11/2023 15:18:24	48.9	65.5	45.5
03/11/2023 15:23:24	51.4	60.7	42.7
03/11/2023 15:28:24	56.5	70.1	54.2
03/11/2023 15:33:24	58.6	64.3	39.8
03/11/2023 15:38:24	61.7	65.5	59.3
03/11/2023 15:43:24	59.7	65.2	54.2
03/11/2023 15:48:24	60	64.9	57.9
03/11/2023 15:53:24	59.7	62.8	57.6
03/11/2023 15:58:24	60.1	63.9	58.1
03/11/2023 16:03:24	60.3	62.8	58.8
03/11/2023 16:08:24	57.6	62.6	43.8
03/11/2023 16:13:24	53.3	62.4	41.8
03/11/2023 16:18:24	60.2	62.9	58.6
03/11/2023 16:23:24	60.8	63.6	58.9
03/11/2023 16:28:24	60.8	63.9	60.1
03/11/2023 16:33:24	60.5	64.6	59.9
03/11/2023 16:38:24	61.6	67.3	57.5
03/11/2023 16:43:24	64.1	66.7	62.4
03/11/2023 16:48:24	64.2	66.4	62
03/11/2023 16:53:24	63.8	66.8	59.4
03/11/2023 16:58:24	63.6	66.5	59.6
03/11/2023 17:03:24	63.8	70.1	60.5
03/11/2023 17:08:24	58.8	67.8	44
03/11/2023 17:13:24	50.7	72.5	43.2
03/11/2023 17:18:24	47.2	67.8	43.2
03/11/2023 17:23:24	47	57.6	41.1
03/11/2023 17:28:24	44.6	50.9	42.5
03/11/2023 17:33:24	45.3	63.4	42
03/11/2023 17:38:24	44.8	51.7	41.9
03/11/2023 17:43:24	44.5	51.2	42.7

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
03/11/2023 17:48:24	44.8	52.2	41.7
03/11/2023 17:53:24	44.8	53.3	42.1
03/11/2023 17:58:24	45.9	52.6	42.6
03/11/2023 18:03:24	47.5	57.1	43.4
03/11/2023 18:08:24	45.5	61.2	42.8
03/11/2023 18:13:24	43.3	48.5	41.2
03/11/2023 18:18:24	51.8	63.2	42.5
03/11/2023 18:23:24	48.8	59.2	42.4
03/11/2023 18:28:24	53.5	79.1	41.5
03/11/2023 18:33:24	45.1	60.7	40.4
03/11/2023 18:38:24	43.6	51.6	41.1
03/11/2023 18:43:24	42.5	50.3	40.1
03/11/2023 18:48:24	42.5	48.8	40.1
03/11/2023 18:53:24	43.1	48.7	40.4
03/11/2023 18:58:24	42.7	48.5	40.2
03/11/2023 19:03:24	44.6	54.9	41.4
03/11/2023 19:08:24	42.5	48	40.6
03/11/2023 19:13:24	42.7	49.4	40.5
03/11/2023 19:18:24	41.5	47.2	39.8
03/11/2023 19:23:24	41.3	47.5	38.9
03/11/2023 19:28:24	46.2	62.1	40.1
03/11/2023 19:33:24	46.3	61.8	38.8
03/11/2023 19:38:24	40.3	51.1	38.3
03/11/2023 19:43:24	40.5	46.3	39
03/11/2023 19:48:24	40.6	48.7	38.5
03/11/2023 19:53:24	41.6	49	39.5
03/11/2023 19:58:24	45.9	63.5	39.1
03/11/2023 20:03:24	44.5	66.5	39.4
03/11/2023 20:08:24	41.2	45.3	39.6
03/11/2023 20:13:24	40.5	46.3	38.8
03/11/2023 20:18:24	41.1	48.9	38.9
03/11/2023 20:23:24	40.5	46.5	38.2
03/11/2023 20:28:24	40.9	51.3	38.9
03/11/2023 20:33:24	41.6	51.4	38
03/11/2023 20:38:24	39.7	47.9	38
03/11/2023 20:43:24	40.5	48.7	37.6
03/11/2023 20:48:24	41.7	54.1	37.4
03/11/2023 20:53:24	38.8	45.4	36.6
03/11/2023 20:58:24	43.2	59.6	36.3
03/11/2023 21:03:24	41.5	58.6	36.5
03/11/2023 21:08:24	45.2	57.9	38.9
03/11/2023 21:13:24	40.8	49.9	38
03/11/2023 21:18:24	42.6	60.3	37.8
03/11/2023 21:23:24	40.3	57.3	37.4
03/11/2023 21:28:24	40.6	48.4	37.8
03/11/2023 21:33:24	45.9	58	38.1

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
03/11/2023 21:38:24	40	50.8	37.4
03/11/2023 21:43:24	38.4	46.4	35.4
03/11/2023 21:48:24	38.3	53.3	34.9
03/11/2023 21:53:24	40	48.8	35.4
03/11/2023 21:58:24	37.7	49.9	33.9
03/11/2023 22:03:24	36.6	44.4	34.2
03/11/2023 22:08:24	36.6	46.4	34.2
03/11/2023 22:13:24	40.6	51.1	34.7
03/11/2023 22:18:24	39.2	48.5	36.2
03/11/2023 22:23:24	38.4	50.6	34.6
03/11/2023 22:28:24	37.7	45.3	34.3
03/11/2023 22:33:24	37.3	46.3	32.9
03/11/2023 22:38:24	36.5	44.8	32.3
03/11/2023 22:43:24	34.5	43.3	31.4
03/11/2023 22:48:24	33.4	47.2	30.4
03/11/2023 22:53:24	33.7	42	30.9
03/11/2023 22:58:24	51.6	73.9	30.6
03/11/2023 23:03:24	45.9	68.8	30.1
03/11/2023 23:08:24	32	44.6	29.6
03/11/2023 23:13:24	35.1	48.8	30.7
03/11/2023 23:18:24	33.5	42.1	30.1
03/11/2023 23:23:24	38.7	54	32
03/11/2023 23:28:24	35.4	44.2	31.2
03/11/2023 23:33:24	33.6	40.3	31.2
03/11/2023 23:38:24	33	41.3	30.1
03/11/2023 23:43:24	31.1	38.3	29.9
03/11/2023 23:48:24	33.4	43.5	31.1
03/11/2023 23:53:24	32.1	42.1	29.9
03/11/2023 23:58:24	30.5	39.1	28.7
04/11/2023 00:03:24	32	43.2	27.8
04/11/2023 00:08:24	34.9	45.8	31.6
04/11/2023 00:13:24	33.3	44.9	30.4
04/11/2023 00:18:24	35.5	49.7	32.6
04/11/2023 00:23:24	33.4	43.9	31.4
04/11/2023 00:28:24	36.5	65.5	30.8
04/11/2023 00:33:24	36.3	49.8	30.3
04/11/2023 00:38:24	38.6	54	31.6
04/11/2023 00:43:24	33	42.9	30.5
04/11/2023 00:48:24	35.3	46.5	31.5
04/11/2023 00:53:24	31.7	40.8	30.2
04/11/2023 00:58:24	31.4	39.8	30.1
04/11/2023 01:03:24	33.9	43.1	30.2
04/11/2023 01:08:24	46.9	69.6	31.8
04/11/2023 01:13:24	57.1	75.8	31.7
04/11/2023 01:18:24	33.8	49.1	31.3
04/11/2023 01:23:24	34.1	44.9	31.8

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 01:28:24	34.6	45.1	32.1
04/11/2023 01:33:24	34.8	44	33
04/11/2023 01:38:24	33.2	40.5	32.4
04/11/2023 01:43:24	34	42.2	32.5
04/11/2023 01:48:24	34.4	43	32.6
04/11/2023 01:53:24	34.8	37.4	33.7
04/11/2023 01:58:24	35.4	43.3	33.9
04/11/2023 02:03:24	34.6	37.5	33.7
04/11/2023 02:08:24	34.2	37.3	33.2
04/11/2023 02:13:24	34.4	41.2	33.3
04/11/2023 02:18:24	36.1	44.3	34
04/11/2023 02:23:24	37.7	43.5	35.1
04/11/2023 02:28:24	35.9	43.1	34.3
04/11/2023 02:33:24	34.5	41.4	33.2
04/11/2023 02:38:24	36.6	42.9	33.8
04/11/2023 02:43:24	34	39.7	32.4
04/11/2023 02:48:24	35.4	46.9	33
04/11/2023 02:53:24	33.8	38.9	32.9
04/11/2023 02:58:24	35.5	43.8	33.9
04/11/2023 03:03:24	34.8	41.4	33.9
04/11/2023 03:08:24	35.1	41.1	34.1
04/11/2023 03:13:24	36.6	50.7	33.9
04/11/2023 03:18:24	36.4	49.6	34.3
04/11/2023 03:23:24	34.9	37.8	33.8
04/11/2023 03:28:24	36	43.8	34.7
04/11/2023 03:33:24	37.7	43.5	34.8
04/11/2023 03:38:24	35.6	41.3	34.1
04/11/2023 03:43:24	34.8	38.8	33.6
04/11/2023 03:48:24	35.7	44.3	34.2
04/11/2023 03:53:24	34.8	39.4	33.6
04/11/2023 03:58:24	34.7	43.3	33.2
04/11/2023 04:03:24	35.5	41.4	34
04/11/2023 04:08:24	35.9	42.8	34.4
04/11/2023 04:13:24	34.7	40.2	32.9
04/11/2023 04:18:24	35.4	40.7	33.4
04/11/2023 04:23:24	35.8	43.2	33.9
04/11/2023 04:28:24	36.2	42.4	34.7
04/11/2023 04:33:24	37.1	44.9	35.7
04/11/2023 04:38:24	38.8	46.3	36.4
04/11/2023 04:43:24	40.2	45.2	38.3
04/11/2023 04:48:24	38.2	41.4	37.3
04/11/2023 04:53:24	37.7	40.3	36.5
04/11/2023 04:58:24	39.8	43.7	37.9
04/11/2023 05:03:24	40.9	47	40.1
04/11/2023 05:08:24	42.7	47.2	39.3
04/11/2023 05:13:24	37.9	48.3	36.1

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 05:18:24	41.4	47.9	39.1
04/11/2023 05:23:24	38.1	44.8	36.6
04/11/2023 05:28:24	37.8	45.4	36.7
04/11/2023 05:33:24	39.9	56.4	36.2
04/11/2023 05:38:24	42.3	55.5	36.8
04/11/2023 05:43:24	38.1	44.4	36.8
04/11/2023 05:48:24	38.6	46.6	36.2
04/11/2023 05:53:24	37	42	35.8
04/11/2023 05:58:24	43.5	55.4	37.1
04/11/2023 06:03:24	43.2	58.6	36.9
04/11/2023 06:08:24	41.1	54.5	36
04/11/2023 06:13:24	37.1	43.5	36
04/11/2023 06:18:24	39.1	46.9	36.7
04/11/2023 06:23:24	38.6	43.3	37.3
04/11/2023 06:28:24	40.8	51.8	37.8
04/11/2023 06:33:24	51.3	64.8	39.3
04/11/2023 06:38:24	47.5	61.3	40.4
04/11/2023 06:43:24	45.8	50.3	43.7
04/11/2023 06:48:24	45.9	49.5	44.3
04/11/2023 06:53:24	49.3	56.9	46.9
04/11/2023 06:58:24	48.1	55.5	46.1
04/11/2023 07:03:24	51.1	65.2	44.9
04/11/2023 07:08:24	44.9	59	43.5
04/11/2023 07:13:24	48.2	61.8	43.7
04/11/2023 07:18:24	48.2	64.6	41.5
04/11/2023 07:23:24	48.2	62.6	43.1
04/11/2023 07:28:24	43.5	48.2	42.3
04/11/2023 07:33:24	47.2	63.9	42.5
04/11/2023 07:38:24	47	61	41.9
04/11/2023 07:43:24	42.6	50.6	41.3
04/11/2023 07:48:24	48.9	66.1	41.7
04/11/2023 07:53:24	43.6	53.4	41.2
04/11/2023 07:58:24	46	60	41.4
04/11/2023 08:03:24	44.2	59.4	41.8
04/11/2023 08:08:24	43.7	57.5	41.2
04/11/2023 08:13:24	44.8	62.7	41.7
04/11/2023 08:18:24	44	50.6	42.4
04/11/2023 08:23:24	43.8	48.8	42.2
04/11/2023 08:28:24	43.3	54	41.7
04/11/2023 08:33:24	43.1	54.1	41.7
04/11/2023 08:38:24	44.2	58.4	42
04/11/2023 08:43:24	46.2	59.4	42.1
04/11/2023 08:48:24	45.9	60.9	41.9
04/11/2023 08:53:24	43.5	56.7	41.9
04/11/2023 08:58:24	50.3	66.6	41.7
04/11/2023 09:03:24	46.7	63.2	43.3

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 09:08:24	45.2	59.6	42.5
04/11/2023 09:13:24	46.1	53.1	42.2
04/11/2023 09:18:24	44.2	50.8	42.7
04/11/2023 09:23:24	42.9	49.9	41.6
04/11/2023 09:28:24	43.6	51.5	41.6
04/11/2023 09:33:24	42.9	48.6	41.6
04/11/2023 09:38:24	45.3	58.1	41.7
04/11/2023 09:43:24	45.6	59.7	41.9
04/11/2023 09:48:24	46.3	58.4	42.4
04/11/2023 09:53:24	46.2	62.3	42.5
04/11/2023 09:58:24	44.2	51.7	42.9
04/11/2023 10:03:24	44.2	53	42.9
04/11/2023 10:08:24	48.4	61.8	42.6
04/11/2023 10:13:24	44.6	53.7	42.7
04/11/2023 10:18:24	48.2	62.3	42.2
04/11/2023 10:23:24	42.8	50.6	41
04/11/2023 10:28:24	44.9	57.6	41.5
04/11/2023 10:33:24	44.1	55.4	41.6
04/11/2023 10:38:24	43.7	53.6	41.8
04/11/2023 10:43:24	43.9	51.9	41.8
04/11/2023 10:48:24	45.8	57.5	42.6
04/11/2023 10:53:24	44.2	52.9	42.4
04/11/2023 10:58:24	45.8	55.4	42.7
04/11/2023 11:03:24	45.5	55.4	43.3
04/11/2023 11:08:24	44.8	56.4	42.9
04/11/2023 11:13:24	44.6	53.7	41.9
04/11/2023 11:18:24	48.9	62.8	41.9
04/11/2023 11:23:24	48.2	61	42.2
04/11/2023 11:28:24	45.4	57.1	41.7
04/11/2023 11:33:24	45.5	60.4	42.3
04/11/2023 11:38:24	44.3	52.8	41.8
04/11/2023 11:43:24	44.3	52.1	42.1
04/11/2023 11:48:24	48.4	61.9	43
04/11/2023 11:53:24	45	55.3	42.8
04/11/2023 11:58:24	43.6	52.3	42.5
04/11/2023 12:03:24	47.7	59.6	43.3
04/11/2023 12:08:24	55.5	65.4	43.2
04/11/2023 12:13:24	62	66.1	59.2
04/11/2023 12:18:24	61.5	65.9	59
04/11/2023 12:23:24	61.2	65.3	58.6
04/11/2023 12:28:24	60	66.5	53.7
04/11/2023 12:33:24	61.1	64.9	60.4
04/11/2023 12:38:24	62.1	64.1	61.5
04/11/2023 12:43:24	62	67.3	61.2
04/11/2023 12:48:24	61.4	65.1	60.8
04/11/2023 12:53:24	61.4	64.2	60.3

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 12:58:24	61.2	64.5	55.7
04/11/2023 13:03:24	60	62.9	58.7
04/11/2023 13:08:24	60.4	63.1	58.9
04/11/2023 13:13:24	60.7	64.6	58.8
04/11/2023 13:18:24	61.8	68.2	58.2
04/11/2023 13:23:24	51.3	64.9	42.2
04/11/2023 13:28:24	43.1	54.8	41.6
04/11/2023 13:33:24	43.1	56.3	41.3
04/11/2023 13:38:24	42.7	51.4	40.9
04/11/2023 13:43:24	45.5	60.2	40.8
04/11/2023 13:48:24	45.1	53.8	41.9
04/11/2023 13:53:24	47.3	59.3	43.2
04/11/2023 13:58:24	43.4	50.5	41.9
04/11/2023 14:03:24	47	59.7	42.5
04/11/2023 14:08:24	44.9	54.1	42
04/11/2023 14:13:24	49.4	63.6	42.3
04/11/2023 14:18:24	44.9	55.1	42.4
04/11/2023 14:23:24	48.1	63.2	42.3
04/11/2023 14:28:24	43.7	50.6	41.6
04/11/2023 14:33:24	44.2	55.1	41.6
04/11/2023 14:38:24	48.6	67.3	40.7
04/11/2023 14:43:24	42.5	50.5	40.2
04/11/2023 14:48:24	41.7	49.4	39.9
04/11/2023 14:53:24	44.1	58.6	41
04/11/2023 14:58:24	42	46.7	40.7
04/11/2023 15:03:24	43	52.1	41
04/11/2023 15:08:24	42.9	54.1	40.9
04/11/2023 15:13:24	42.8	52	41.1
04/11/2023 15:18:24	43.5	54	41
04/11/2023 15:23:24	45.3	59	40.3
04/11/2023 15:28:24	44.6	59.3	40.5
04/11/2023 15:33:24	43.1	54.7	40.4
04/11/2023 15:38:24	45.3	51	42
04/11/2023 15:43:24	45.3	51.5	42.7
04/11/2023 15:48:24	44.4	63.9	41.9
04/11/2023 15:53:24	44.9	64.2	41.7
04/11/2023 15:58:24	43.7	58.6	41.9
04/11/2023 16:03:24	46.7	55.4	42.8
04/11/2023 16:08:24	47.5	64.2	42.7
04/11/2023 16:13:24	43.8	57.3	42
04/11/2023 16:18:24	45.9	58.8	41.5
04/11/2023 16:23:24	43.8	60.3	41.3
04/11/2023 16:28:24	45.4	64	41.3
04/11/2023 16:33:24	42.4	52.9	40.5
04/11/2023 16:38:24	43.3	55.6	40.1
04/11/2023 16:43:24	43.9	56.2	40.5

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 16:48:24	43.3	56.4	40.8
04/11/2023 16:53:24	52.6	71.3	41
04/11/2023 16:58:24	42.4	52.6	41.4
04/11/2023 17:03:24	44	52.7	42.1
04/11/2023 17:08:24	47.9	66	41.7
04/11/2023 17:13:24	51	67.3	42.4
04/11/2023 17:18:24	49.4	64.9	42.2
04/11/2023 17:23:24	52.1	68.3	41.3
04/11/2023 17:28:24	46.9	64.1	41.3
04/11/2023 17:33:24	47.3	62.1	41.7
04/11/2023 17:38:24	47.7	63.4	41.5
04/11/2023 17:43:24	50.9	66.1	41.7
04/11/2023 17:48:24	45.5	68.5	41.3
04/11/2023 17:53:24	44.3	54.4	41.4
04/11/2023 17:58:24	42.1	53.7	41
04/11/2023 18:03:24	42.1	47.1	41.1
04/11/2023 18:08:24	48.7	71.4	42.6
04/11/2023 18:13:24	42.8	59.2	42
04/11/2023 18:18:24	43.5	58.4	42.2
04/11/2023 18:23:24	44.9	69.9	42.5
04/11/2023 18:28:24	44.1	57.8	41.8
04/11/2023 18:33:24	47	61.9	41.7
04/11/2023 18:38:24	48	61.6	44.1
04/11/2023 18:43:24	43.7	49.2	42.5
04/11/2023 18:48:24	42.6	46.9	41.8
04/11/2023 18:53:24	42.3	57.2	40.9
04/11/2023 18:58:24	43.9	50.8	41.7
04/11/2023 19:03:24	41.6	43.4	41.2
04/11/2023 19:08:24	43.6	63.9	40.7
04/11/2023 19:13:24	41.3	46.2	40.5
04/11/2023 19:18:24	41.6	45.7	40.7
04/11/2023 19:23:24	42.9	51	41.5
04/11/2023 19:28:24	47.4	61.5	41.8
04/11/2023 19:33:24	45.6	59.7	41.2
04/11/2023 19:38:24	43.5	52	41.4
04/11/2023 19:43:24	44.3	54.8	41.4
04/11/2023 19:48:24	47.9	61.1	42
04/11/2023 19:53:24	42.9	62.4	40.6
04/11/2023 19:58:24	47.8	63.5	40.9
04/11/2023 20:03:24	45.4	58.8	40.7
04/11/2023 20:08:24	42	54.3	40.4
04/11/2023 20:13:24	40.8	53.5	39.8
04/11/2023 20:18:24	42.7	53	39.8
04/11/2023 20:23:24	41	54.3	39.8
04/11/2023 20:28:24	45.7	62	41.5
04/11/2023 20:33:24	42.6	54.7	41.1

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
04/11/2023 20:38:24	43.5	55.3	41
04/11/2023 20:43:24	43.2	62	41.7
04/11/2023 20:48:24	46	60.5	41.9
04/11/2023 20:53:24	42.1	47.8	41.1
04/11/2023 20:58:24	43.5	52.7	40.5
04/11/2023 21:03:24	40.8	48.5	39.9
04/11/2023 21:08:24	42	51.9	39.2
04/11/2023 21:13:24	39.8	42.7	39.1
04/11/2023 21:18:24	42.3	61.9	39.3
04/11/2023 21:23:24	41	52.8	39.6
04/11/2023 21:28:24	39.9	54.9	39
04/11/2023 21:33:24	39.7	50.2	38.7
04/11/2023 21:38:24	39.8	48.9	38.5
04/11/2023 21:43:24	38.9	43	38
04/11/2023 21:48:24	38.5	41.1	37.8
04/11/2023 21:53:24	39.2	42.9	38.4
04/11/2023 21:58:24	39.9	51.3	37.6
04/11/2023 22:03:24	41.2	52.4	37.7
04/11/2023 22:08:24	41.3	55.4	37.8
04/11/2023 22:13:24	40.7	55.2	38.2
04/11/2023 22:18:24	39.1	45.7	37.2
04/11/2023 22:23:24	39.3	47.8	37.3
04/11/2023 22:28:24	39.3	44.8	37.8
04/11/2023 22:33:24	40.6	50.3	38.6
04/11/2023 22:38:24	38.5	44.3	37.7
04/11/2023 22:43:24	38.1	48.3	37.2
04/11/2023 22:48:24	39	48.7	37.1
04/11/2023 22:53:24	41.7	50.9	38.1
04/11/2023 22:58:24	40.1	44.7	39.1
04/11/2023 23:03:24	39.4	44.3	37.8
04/11/2023 23:08:24	39.1	43.9	37.9
04/11/2023 23:13:24	40.4	44.5	39.3
04/11/2023 23:18:24	39.2	48.2	38.2
04/11/2023 23:23:24	38.4	50.5	37.1
04/11/2023 23:28:24	39.7	47.8	38.3
04/11/2023 23:33:24	39.1	41.4	38.3
04/11/2023 23:38:24	38.2	40	37.5
04/11/2023 23:43:24	37.1	40.2	35.9
04/11/2023 23:48:24	37.1	41.6	35.8
04/11/2023 23:53:24	38.3	42.3	36.7
04/11/2023 23:58:24	36.7	42.3	35.6
05/11/2023 00:03:24	37.3	44.8	36.2
05/11/2023 00:08:24	36.7	48.7	35.2
05/11/2023 00:13:24	40.3	52.4	35.2
05/11/2023 00:18:24	39.2	51	35.8
05/11/2023 00:23:24	37.5	44.2	35.7

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 00:28:24	36.9	42.5	35.6
05/11/2023 00:33:24	38.6	65.2	35.8
05/11/2023 00:38:24	36.5	48.3	35.2
05/11/2023 00:43:24	37.1	46	35.3
05/11/2023 00:48:24	37.1	43.4	36
05/11/2023 00:53:24	37.2	42.7	35.8
05/11/2023 00:58:24	37.3	50.4	35.2
05/11/2023 01:03:24	36.3	42.4	35.4
05/11/2023 01:08:24	36.8	42.9	35.5
05/11/2023 01:13:24	34.8	43.4	33.4
05/11/2023 01:18:24	34.3	42.9	32.8
05/11/2023 01:23:24	35.2	40.5	32.8
05/11/2023 01:28:24	35.3	41.4	33.9
05/11/2023 01:33:24	35.3	39.1	34.3
05/11/2023 01:38:24	35.7	40.4	34.4
05/11/2023 01:43:24	36.8	47.8	34.7
05/11/2023 01:48:24	34.6	41.3	33.6
05/11/2023 01:53:24	33.4	39.3	32.6
05/11/2023 01:58:24	34.6	45.5	33.2
05/11/2023 02:03:24	38.7	50.2	34
05/11/2023 02:08:24	36	45.2	34.4
05/11/2023 02:13:24	35.6	41	34.3
05/11/2023 02:18:24	35.6	43.8	33.5
05/11/2023 02:23:24	36.7	45.2	34.9
05/11/2023 02:28:24	35.7	45.1	32.8
05/11/2023 02:33:24	34.1	41.6	32.4
05/11/2023 02:38:24	35.3	45.1	33.3
05/11/2023 02:43:24	34.4	41.7	33.2
05/11/2023 02:48:24	34.5	39.1	33.6
05/11/2023 02:53:24	35.1	41.2	33.6
05/11/2023 02:58:24	34.5	40.9	33.1
05/11/2023 03:03:24	35.6	45	33.4
05/11/2023 03:08:24	35.1	45.4	32
05/11/2023 03:13:24	33.4	40.1	32
05/11/2023 03:18:24	35.5	46.9	31.8
05/11/2023 03:23:24	32.4	38.3	31.5
05/11/2023 03:28:24	33.7	45.3	32.1
05/11/2023 03:33:24	34.4	45.4	32.3
05/11/2023 03:38:24	33.7	46.4	31.1
05/11/2023 03:43:24	34.9	44.5	32.4
05/11/2023 03:48:24	35.2	45.4	33
05/11/2023 03:53:24	35	41.9	33.7
05/11/2023 03:58:24	34.9	44.5	33.7
05/11/2023 04:03:24	35.4	41.6	33.7
05/11/2023 04:08:24	37.1	41.5	35.9
05/11/2023 04:13:24	36.4	44.8	34.5

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 04:18:24	59.2	76	33.8
05/11/2023 04:23:24	35.3	50.9	33.8
05/11/2023 04:28:24	35.1	40.7	33.2
05/11/2023 04:33:24	36	49.5	33.3
05/11/2023 04:38:24	35.2	45	33.3
05/11/2023 04:43:24	37.1	48.8	33.8
05/11/2023 04:48:24	40.8	55.3	33.9
05/11/2023 04:53:24	34.1	39.5	32.6
05/11/2023 04:58:24	34.5	41.7	32.4
05/11/2023 05:03:24	35.6	43.1	33
05/11/2023 05:08:24	34.9	41	32.5
05/11/2023 05:13:24	35.6	51.1	33.5
05/11/2023 05:18:24	36.1	40.9	34.3
05/11/2023 05:23:24	33	38.7	31.4
05/11/2023 05:28:24	34.5	46.9	31.3
05/11/2023 05:33:24	33.4	40.3	31.5
05/11/2023 05:38:24	33.6	41.2	31.9
05/11/2023 05:43:24	33.8	40	32.2
05/11/2023 05:48:24	39.7	53.8	32.6
05/11/2023 05:53:24	35.6	47.1	31.9
05/11/2023 05:58:24	48.1	65	31.8
05/11/2023 06:03:24	34.6	48	30.8
05/11/2023 06:08:24	49	64	33.3
05/11/2023 06:13:24	42.9	56.9	33.3
05/11/2023 06:18:24	39.1	56.3	32.4
05/11/2023 06:23:24	35.6	40.1	34.1
05/11/2023 06:28:24	42.1	57.7	33.8
05/11/2023 06:33:24	35.4	43.6	33
05/11/2023 06:38:24	36.5	45.9	32.8
05/11/2023 06:43:24	35.1	45.5	33.3
05/11/2023 06:48:24	39.5	52.8	32.6
05/11/2023 06:53:24	45.6	63.2	32.6
05/11/2023 06:58:24	38.8	55.9	33.1
05/11/2023 07:03:24	46	61.3	33.1
05/11/2023 07:08:24	47.7	61.7	35.6
05/11/2023 07:13:24	40.3	52.3	33.8
05/11/2023 07:18:24	41.2	59.9	35.2
05/11/2023 07:23:24	45.3	68	34.7
05/11/2023 07:28:24	40.6	53.9	33
05/11/2023 07:33:24	42.7	57.3	34.5
05/11/2023 07:38:24	39.7	57.5	35.5
05/11/2023 07:43:24	43.5	61.5	34.8
05/11/2023 07:48:24	38.2	48.2	35.3
05/11/2023 07:53:24	38.1	53.2	34.5
05/11/2023 07:58:24	39.4	55.7	35.4
05/11/2023 08:03:24	38.8	49.6	36.1

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 08:08:24	45.1	62.3	34.9
05/11/2023 08:13:24	40	55.3	35.8
05/11/2023 08:18:24	38.6	54.4	35.7
05/11/2023 08:23:24	38.6	53.5	35.6
05/11/2023 08:28:24	44	57.8	35.2
05/11/2023 08:33:24	44.8	57.5	35.7
05/11/2023 08:38:24	44.6	60.3	36.2
05/11/2023 08:43:24	38.1	45.4	35
05/11/2023 08:48:24	45.1	61.1	35.1
05/11/2023 08:53:24	42.4	59.8	35.8
05/11/2023 08:58:24	43.2	58	35.7
05/11/2023 09:03:24	45.6	63.4	35.8
05/11/2023 09:08:24	43	54.4	35
05/11/2023 09:13:24	40.4	52.9	35.6
05/11/2023 09:18:24	40.1	53.9	34.9
05/11/2023 09:23:24	43.3	55.5	36.4
05/11/2023 09:28:24	42.4	55.8	34.6
05/11/2023 09:33:24	38	47.1	34.9
05/11/2023 09:38:24	39.6	50.6	35.6
05/11/2023 09:43:24	42.5	61.2	35.9
05/11/2023 09:48:24	43.3	60.9	36.9
05/11/2023 09:53:24	38.6	51.2	36.1
05/11/2023 09:58:24	44.1	64.4	34.6
05/11/2023 10:03:24	44.8	60	37.3
05/11/2023 10:08:24	51.3	65.6	43
05/11/2023 10:13:24	44.7	56.9	37.9
05/11/2023 10:18:24	40	49.7	37.4
05/11/2023 10:23:24	46.9	62	38.6
05/11/2023 10:28:24	47.7	62.4	37.8
05/11/2023 10:33:24	49.8	64.8	38.8
05/11/2023 10:38:24	42.9	57.7	37
05/11/2023 10:43:24	44.3	59.7	36.1
05/11/2023 10:48:24	49.2	65	37.4
05/11/2023 10:53:24	48	61.8	39
05/11/2023 10:58:24	47.9	60.5	39.1
05/11/2023 11:03:24	43.5	55.7	38.4
05/11/2023 11:08:24	42.6	58.9	38.2
05/11/2023 11:13:24	45.2	57.7	37.8
05/11/2023 11:18:24	42.4	56.3	37
05/11/2023 11:23:24	39.1	54.3	35
05/11/2023 11:28:24	40.2	52.8	36
05/11/2023 11:33:24	42.5	52.7	37.1
05/11/2023 11:38:24	40.8	50.6	37.7
05/11/2023 11:43:24	46.4	58.8	37
05/11/2023 11:48:24	40.7	49.2	37.8
05/11/2023 11:53:24	42.1	53.9	38

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 11:58:24	44.1	58.3	37.4
05/11/2023 12:03:24	47.8	65.9	38.9
05/11/2023 12:08:24	46.1	59.7	39.6
05/11/2023 12:13:24	42	55	38.1
05/11/2023 12:18:24	44	55.1	38.8
05/11/2023 12:23:24	45.4	59.1	38.7
05/11/2023 12:28:24	41.1	49.9	37
05/11/2023 12:33:24	41.6	53.2	38.6
05/11/2023 12:38:24	41.1	49.8	38.1
05/11/2023 12:43:24	42.8	54.7	37.5
05/11/2023 12:48:24	40.7	51.8	37
05/11/2023 12:53:24	42.5	54.9	38.5
05/11/2023 12:58:24	43.1	54.3	38.7
05/11/2023 13:03:24	40.7	48.4	38.2
05/11/2023 13:08:24	41.3	57	37.4
05/11/2023 13:13:24	46.1	61.2	38.3
05/11/2023 13:18:24	43.3	57.9	36.2
05/11/2023 13:23:24	39.7	50.3	37
05/11/2023 13:28:24	43	58.5	37.6
05/11/2023 13:33:24	42.4	49.7	38.4
05/11/2023 13:38:24	48	64.9	38.7
05/11/2023 13:43:24	43.8	55.8	40.5
05/11/2023 13:48:24	40.8	57.4	36.6
05/11/2023 13:53:24	44.9	55.5	39.6
05/11/2023 13:58:24	47.5	64.1	40.4
05/11/2023 14:03:24	45.4	63.5	40
05/11/2023 14:08:24	42.7	66	38
05/11/2023 14:13:24	43.2	65.3	39.1
05/11/2023 14:18:24	41.1	50.8	38.4
05/11/2023 14:23:24	44	61.6	38.9
05/11/2023 14:28:24	40.6	50.1	37.6
05/11/2023 14:33:24	46.5	66.8	42.8
05/11/2023 14:38:24	44	54.8	38.5
05/11/2023 14:43:24	40.8	48.8	37.7
05/11/2023 14:48:24	44.6	56.9	39.3
05/11/2023 14:53:24	46.9	64.6	38.3
05/11/2023 14:58:24	41.6	50.4	37.9
05/11/2023 15:03:24	45.8	56.1	40.1
05/11/2023 15:08:24	46.2	63.8	41
05/11/2023 15:13:24	49.3	64.1	39.7
05/11/2023 15:18:24	48.7	64.3	40.4
05/11/2023 15:23:24	41.1	52.3	37.8
05/11/2023 15:28:24	42.4	57.3	39
05/11/2023 15:33:24	43.6	67.6	39.7
05/11/2023 15:38:24	43.8	58.1	37.7
05/11/2023 15:43:24	47.6	61.8	40.7

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 15:48:24	48.6	69.5	40.7
05/11/2023 15:53:24	41.7	55.7	39
05/11/2023 15:58:24	56.1	72.2	40.8
05/11/2023 16:03:24	44.2	56	39.5
05/11/2023 16:08:24	53.3	70.7	38.3
05/11/2023 16:13:24	57.2	71.8	39.8
05/11/2023 16:18:24	53.3	70.2	38.7
05/11/2023 16:23:24	57.1	71.2	41.3
05/11/2023 16:28:24	54.5	74.5	40
05/11/2023 16:33:24	59.8	77	41.1
05/11/2023 16:38:24	53.6	75.8	41.5
05/11/2023 16:43:24	53.2	68.1	39.7
05/11/2023 16:48:24	54.5	70.5	40.5
05/11/2023 16:53:24	52.3	69.9	40.3
05/11/2023 16:58:24	47.4	65.8	39.9
05/11/2023 17:03:24	45.5	68.5	39.8
05/11/2023 17:08:24	51.3	70.1	40.1
05/11/2023 17:13:24	56.4	76.2	38.6
05/11/2023 17:18:24	58.6	73.8	42
05/11/2023 17:23:24	58.8	76.7	40.8
05/11/2023 17:28:24	59.8	75.9	41
05/11/2023 17:33:24	58.6	76.1	42.1
05/11/2023 17:38:24	54.9	70.2	42
05/11/2023 17:43:24	58.8	78	42.3
05/11/2023 17:48:24	45.4	62	40.5
05/11/2023 17:53:24	45.7	62.7	40.3
05/11/2023 17:58:24	48.9	62.5	40.8
05/11/2023 18:03:24	51.3	64.4	41.3
05/11/2023 18:08:24	49.9	63.7	40.6
05/11/2023 18:13:24	46.2	61.9	39.7
05/11/2023 18:18:24	42	52	38.9
05/11/2023 18:23:24	42.3	54.2	39.7
05/11/2023 18:28:24	45.6	59.3	39.8
05/11/2023 18:33:24	46.5	61.6	39.9
05/11/2023 18:38:24	48.2	64.1	39.5
05/11/2023 18:43:24	50.8	66.4	41.5
05/11/2023 18:48:24	46.3	60	42.3
05/11/2023 18:53:24	47.2	61.2	41.2
05/11/2023 18:58:24	46	60.6	41.3
05/11/2023 19:03:24	43.8	57	40.9
05/11/2023 19:08:24	42.8	48.9	41.2
05/11/2023 19:13:24	47.3	62.3	40.4
05/11/2023 19:18:24	45.2	53.7	40.6
05/11/2023 19:23:24	50.9	66.1	41
05/11/2023 19:28:24	43	49.7	40.5
05/11/2023 19:33:24	43.7	53.4	41.8

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 19:38:24	42.2	48.9	40.9
05/11/2023 19:43:24	41.8	46.1	40.7
05/11/2023 19:48:24	43.1	53.4	41.4
05/11/2023 19:53:24	42.4	48.1	41.1
05/11/2023 19:58:24	44.4	55	41.3
05/11/2023 20:03:24	46.4	61.4	40.9
05/11/2023 20:08:24	43	50.9	40.8
05/11/2023 20:13:24	43	48.7	41
05/11/2023 20:18:24	42.6	57.7	41
05/11/2023 20:23:24	43.6	51.1	41
05/11/2023 20:28:24	43.9	54.1	41
05/11/2023 20:33:24	42.6	51.2	40.6
05/11/2023 20:38:24	50.3	61.4	41.3
05/11/2023 20:43:24	41	48.4	39.4
05/11/2023 20:48:24	43.6	50.3	40
05/11/2023 20:53:24	45.9	60	40
05/11/2023 20:58:24	41.9	49.1	39.5
05/11/2023 21:03:24	41	47.5	39.7
05/11/2023 21:08:24	40.5	46.3	38.7
05/11/2023 21:13:24	39.8	46.7	37.8
05/11/2023 21:18:24	41.4	49.5	38.3
05/11/2023 21:23:24	40	45.6	38.6
05/11/2023 21:28:24	39.9	47.8	38.4
05/11/2023 21:33:24	48.6	62.5	40.1
05/11/2023 21:38:24	41.7	57.9	39.1
05/11/2023 21:43:24	42.5	48	40.2
05/11/2023 21:48:24	46.1	59.7	39.4
05/11/2023 21:53:24	43.9	68.2	39.4
05/11/2023 21:58:24	39.1	43.2	37.7
05/11/2023 22:03:24	40	47.9	38.1
05/11/2023 22:08:24	39.9	44.2	38.5
05/11/2023 22:13:24	39.7	51	38
05/11/2023 22:18:24	41.3	49.3	38.3
05/11/2023 22:23:24	40.1	44.3	38.5
05/11/2023 22:28:24	42.2	54.1	38
05/11/2023 22:33:24	41.3	47.5	37.7
05/11/2023 22:38:24	39.8	48.6	37.8
05/11/2023 22:43:24	39.7	46.7	37.7
05/11/2023 22:48:24	40.4	50.7	37.9
05/11/2023 22:53:24	40.2	48	38.4
05/11/2023 22:58:24	41.3	51	39.2
05/11/2023 23:03:24	41.7	52.8	38.9
05/11/2023 23:08:24	41.8	52.2	38.8
05/11/2023 23:13:24	41.1	47.3	39
05/11/2023 23:18:24	42.7	51.5	39.6
05/11/2023 23:23:24	42	50.6	39.5

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
05/11/2023 23:28:24	43	52.9	40.3
05/11/2023 23:33:24	41.4	48.1	39.1
05/11/2023 23:38:24	42.2	52.9	39
05/11/2023 23:43:24	40.8	49.6	38.3
05/11/2023 23:48:24	42.4	55.5	39.1
05/11/2023 23:53:24	39.4	49.9	36.6
05/11/2023 23:58:24	37.4	44.6	35.4
06/11/2023 00:03:24	38.7	46	36.6
06/11/2023 00:08:24	39.5	45.7	37.8
06/11/2023 00:13:24	41.6	49	38.9
06/11/2023 00:18:24	42.4	52	39.5
06/11/2023 00:23:24	40.4	51.6	37.6
06/11/2023 00:28:24	42.5	51	38.6
06/11/2023 00:33:24	40.1	50.1	37.7
06/11/2023 00:38:24	41.3	52.8	37.7
06/11/2023 00:43:24	41.3	52.7	37.4
06/11/2023 00:48:24	42	50.8	38.3
06/11/2023 00:53:24	41.2	51.4	38.1
06/11/2023 00:58:24	41.3	52	38.5
06/11/2023 01:03:24	43.3	54.7	40
06/11/2023 01:08:24	42	53.6	39.6
06/11/2023 01:13:24	40.4	52.1	37.7
06/11/2023 01:18:24	41.6	52.5	37.8
06/11/2023 01:23:24	41.6	51.8	38.7
06/11/2023 01:28:24	40.3	51	37.3
06/11/2023 01:33:24	40.1	48.6	38.3
06/11/2023 01:38:24	40.4	48.8	37.8
06/11/2023 01:43:24	41.7	50.8	38.5
06/11/2023 01:48:24	38.8	48.7	36.2
06/11/2023 01:53:24	39.8	50.5	36.7
06/11/2023 01:58:24	41	50.1	37.2
06/11/2023 02:03:24	40.6	50	38.3
06/11/2023 02:08:24	40.7	49.6	37.5
06/11/2023 02:13:24	41.3	52.6	39
06/11/2023 02:18:24	41.4	53	38.3
06/11/2023 02:23:24	41.4	49.6	38.3
06/11/2023 02:28:24	42.3	57.4	38.9
06/11/2023 02:33:24	40.3	50.4	37.1
06/11/2023 02:38:24	42.7	52.1	39.4
06/11/2023 02:43:24	41.2	51.1	38.1
06/11/2023 02:48:24	41.9	52.8	39
06/11/2023 02:53:24	40.7	49.4	38.1
06/11/2023 02:58:24	40.7	51.1	37.4
06/11/2023 03:03:24	40.4	51.6	37.6
06/11/2023 03:08:24	41.2	49.1	39.2
06/11/2023 03:13:24	41.2	50.4	37.7

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 03:18:24	40.8	50	38.5
06/11/2023 03:23:24	41.5	54.2	38.6
06/11/2023 03:28:24	41.8	51.8	39.3
06/11/2023 03:33:24	42.1	51.6	39
06/11/2023 03:38:24	41.4	50.4	38.5
06/11/2023 03:43:24	40.9	51.7	38.6
06/11/2023 03:48:24	41.5	52.1	38.9
06/11/2023 03:53:24	41.7	52.5	38.8
06/11/2023 03:58:24	42.2	52.5	38.5
06/11/2023 04:03:24	43.1	65.4	39.8
06/11/2023 04:08:24	41.2	51.1	39.3
06/11/2023 04:13:24	42	50.7	39.8
06/11/2023 04:18:24	42.4	52.2	39.7
06/11/2023 04:23:24	43.1	51.7	40.7
06/11/2023 04:28:24	42	50.2	39.7
06/11/2023 04:33:24	43.5	53.4	40.4
06/11/2023 04:38:24	43.4	51.6	40.7
06/11/2023 04:43:24	42.9	53.7	40.3
06/11/2023 04:48:24	43.4	52.6	39.9
06/11/2023 04:53:24	46.4	62.4	40.7
06/11/2023 04:58:24	42.2	52.6	39.5
06/11/2023 05:03:24	41.8	53.3	39.7
06/11/2023 05:08:24	43.1	51.8	40.3
06/11/2023 05:13:24	43.3	52.4	40.6
06/11/2023 05:18:24	43.4	52.7	41.1
06/11/2023 05:23:24	42.8	52.9	40.5
06/11/2023 05:28:24	44.2	50.5	41.6
06/11/2023 05:33:24	43.9	51.5	41.7
06/11/2023 05:38:24	44.6	54.8	41.8
06/11/2023 05:43:24	45.5	54.6	42.4
06/11/2023 05:48:24	44.9	63.8	42.9
06/11/2023 05:53:24	44.2	52.9	42.3
06/11/2023 05:58:24	43.3	49.2	41.6
06/11/2023 06:03:24	43.7	48.7	42.5
06/11/2023 06:08:24	45.5	54	42.3
06/11/2023 06:13:24	44.3	51.3	42.5
06/11/2023 06:18:24	52.7	64.3	44.4
06/11/2023 06:23:24	45.4	52.1	43.6
06/11/2023 06:28:24	45.7	54.7	44.1
06/11/2023 06:33:24	51.9	64.6	44.8
06/11/2023 06:38:24	46.1	54.4	44.4
06/11/2023 06:43:24	45.8	51.7	44.2
06/11/2023 06:48:24	48.8	61.8	44.9
06/11/2023 06:53:24	47.9	57.2	45.1
06/11/2023 06:58:24	47.8	57.6	45
06/11/2023 07:03:24	46.1	58.5	44.2

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 07:08:24	48.2	57.6	45
06/11/2023 07:13:24	46.5	60.2	44.8
06/11/2023 07:18:24	47.2	57.7	44.9
06/11/2023 07:23:24	50.1	61.6	46.1
06/11/2023 07:28:24	49.8	59.4	45.8
06/11/2023 07:33:24	48.6	59	46.1
06/11/2023 07:38:24	50.4	60.8	46.4
06/11/2023 07:43:24	47.7	53.5	46.2
06/11/2023 07:48:24	48.9	59.2	46.7
06/11/2023 07:53:24	51.9	67.1	46.5
06/11/2023 07:58:24	48	55.7	46.3
06/11/2023 08:03:24	48.7	60.6	46.2
06/11/2023 08:08:24	48.4	55.8	46.5
06/11/2023 08:13:24	47.3	54.9	45.5
06/11/2023 08:18:24	47.4	54.6	46
06/11/2023 08:23:24	47	56.2	45.6
06/11/2023 08:28:24	48.5	57.9	46.3
06/11/2023 08:33:24	49.6	60.1	46.7
06/11/2023 08:38:24	47.4	55.1	45.6
06/11/2023 08:43:24	48.7	61.8	46
06/11/2023 08:48:24	47.3	55.2	45.6
06/11/2023 08:53:24	51.2	64.2	46.6
06/11/2023 08:58:24	46.6	56	44.8
06/11/2023 09:03:24	47.8	65.9	45.2
06/11/2023 09:08:24	47.2	53.4	44.8
06/11/2023 09:13:24	48.1	61.8	45
06/11/2023 09:18:24	49.6	68.3	44.5
06/11/2023 09:23:24	48.7	62.4	44.7
06/11/2023 09:28:24	47.6	67.4	44.7
06/11/2023 09:33:24	48.1	58.3	44.6
06/11/2023 09:38:24	46.5	56.2	44.4
06/11/2023 09:43:24	47.1	57.5	43.7
06/11/2023 09:48:24	46.7	54.6	43.7
06/11/2023 09:53:24	46.4	57.9	43.6
06/11/2023 09:58:24	47.2	55.3	43.7
06/11/2023 10:03:24	44.9	54.5	43
06/11/2023 10:08:24	47	57.8	42.9
06/11/2023 10:13:24	49.2	69.4	45.6
06/11/2023 10:18:24	48.4	58.3	44.1
06/11/2023 10:23:24	50.4	72.8	41.8
06/11/2023 10:28:24	52.3	73.5	43.9
06/11/2023 10:33:24	57.3	76.6	44.2
06/11/2023 10:38:24	53.7	74.3	43.8
06/11/2023 10:43:24	46.6	56.5	43.1
06/11/2023 10:48:24	45.9	56.7	42
06/11/2023 10:53:24	58.9	75.2	44.7

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 10:58:24	58.2	78.3	43.8
06/11/2023 11:03:24	47.8	58.2	43.5
06/11/2023 11:08:24	52.7	72.8	45.6
06/11/2023 11:13:24	55.7	75.8	44.4
06/11/2023 11:18:24	48.4	64.5	44.8
06/11/2023 11:23:24	48.4	60.9	43.8
06/11/2023 11:28:24	47.6	58.7	44.4
06/11/2023 11:33:24	48.9	59.6	44.6
06/11/2023 11:38:24	50.3	69.1	44.6
06/11/2023 11:43:24	48.8	71.7	43.5
06/11/2023 11:48:24	46.1	55.5	43.3
06/11/2023 11:53:24	47.2	61.1	43.1
06/11/2023 11:58:24	49.6	73.9	43
06/11/2023 12:03:24	50.8	74	44.5
06/11/2023 12:08:24	50.2	64.7	43.6
06/11/2023 12:13:24	54.2	72.4	44
06/11/2023 12:18:24	49.2	58.8	44.6
06/11/2023 12:23:24	47.4	60.8	43.3
06/11/2023 12:28:24	47.1	57.7	42.6
06/11/2023 12:33:24	49	71.6	43.1
06/11/2023 12:38:24	45.9	56.9	41.1
06/11/2023 12:43:24	46.1	53.3	43.3
06/11/2023 12:48:24	45.7	53.5	42.5
06/11/2023 12:53:24	49	70.7	40.6
06/11/2023 12:58:24	45.8	54.7	43.2
06/11/2023 13:03:24	47.9	66.5	41.4
06/11/2023 13:08:24	44.2	51.8	41.8
06/11/2023 13:13:24	43.9	51.3	41.2
06/11/2023 13:18:24	52.3	69.5	39.7
06/11/2023 13:23:24	45.1	53.7	42
06/11/2023 13:28:24	48.3	72.2	42.9
06/11/2023 13:33:24	45.2	67.9	41.1
06/11/2023 13:38:24	44.4	58.6	39.4
06/11/2023 13:43:24	42.4	49	40.4
06/11/2023 13:48:24	45.2	65.7	41
06/11/2023 13:53:24	50.4	69.5	41
06/11/2023 13:58:24	46.3	54.4	43
06/11/2023 14:03:24	48.7	70.2	41.1
06/11/2023 14:08:24	47.1	72.7	42.8
06/11/2023 14:13:24	46.4	58.8	42.2
06/11/2023 14:18:24	47.4	54.6	44.8
06/11/2023 14:23:24	47.8	62.2	43
06/11/2023 14:28:24	43.1	51.7	40.4
06/11/2023 14:33:24	45.3	57.7	42.3
06/11/2023 14:38:24	47.4	61.4	43.5
06/11/2023 14:43:24	48.7	62.4	40.8

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 14:48:24	47.1	55.9	43.2
06/11/2023 14:53:24	47.4	60.2	42.7
06/11/2023 14:58:24	48	61.4	43
06/11/2023 15:03:24	48	63.9	44.2
06/11/2023 15:08:24	48.2	70.1	42.7
06/11/2023 15:13:24	45.6	62.8	41.5
06/11/2023 15:18:24	65.5	83.5	41.8
06/11/2023 15:23:24	43.7	62.6	40.9
06/11/2023 15:28:24	47.6	61.1	42
06/11/2023 15:33:24	44.1	56.2	41.6
06/11/2023 15:38:24	45.1	62.1	41.4
06/11/2023 15:43:24	50.8	62.6	43.5
06/11/2023 15:48:24	50.2	62.2	42.8
06/11/2023 15:53:24	48.4	61.7	43.8
06/11/2023 15:58:24	45.7	51.3	43.4
06/11/2023 16:03:24	45.9	60.2	42.9
06/11/2023 16:08:24	53.1	68.4	45
06/11/2023 16:13:24	50.5	65.5	43.6
06/11/2023 16:18:24	54.9	74.9	43.1
06/11/2023 16:23:24	52.1	67.7	43.2
06/11/2023 16:28:24	49.8	70.4	44.3
06/11/2023 16:33:24	46	57.8	43.3
06/11/2023 16:38:24	50.1	61.3	44.1
06/11/2023 16:43:24	47.4	57.2	45.3
06/11/2023 16:48:24	48.8	59.4	45.5
06/11/2023 16:53:24	51.1	76.1	44.6
06/11/2023 16:58:24	49.9	63.8	44.5
06/11/2023 17:03:24	58.1	79.2	43.6
06/11/2023 17:08:24	51.1	64.8	44.4
06/11/2023 17:13:24	50.5	76.3	42.9
06/11/2023 17:18:24	56.8	80.1	44.1
06/11/2023 17:23:24	47.9	62.6	42.9
06/11/2023 17:28:24	48.7	63.8	43.6
06/11/2023 17:33:24	48.8	62.8	43.4
06/11/2023 17:38:24	45.3	50.3	43.4
06/11/2023 17:43:24	48.1	60.9	43.7
06/11/2023 17:48:24	45.6	59.1	43.2
06/11/2023 17:53:24	49.1	62.6	42.5
06/11/2023 17:58:24	47.5	61.3	43.1
06/11/2023 18:03:24	48.7	59.9	43.9
06/11/2023 18:08:24	46	58.2	42.6
06/11/2023 18:13:24	45.5	60	42.2
06/11/2023 18:18:24	44.4	53.4	42.4
06/11/2023 18:23:24	46.8	60.2	43.1
06/11/2023 18:28:24	45.4	57.2	42.8
06/11/2023 18:33:24	44.6	52.6	42.2

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 18:38:24	45.6	54.3	42.8
06/11/2023 18:43:24	44.9	55.8	41.7
06/11/2023 18:48:24	45.3	59.3	42.3
06/11/2023 18:53:24	43.8	51.9	42
06/11/2023 18:58:24	44.8	53.1	42.7
06/11/2023 19:03:24	47.4	61.8	43
06/11/2023 19:08:24	47.4	56.8	43.2
06/11/2023 19:13:24	46.7	58.8	43.9
06/11/2023 19:18:24	44.7	53	42.8
06/11/2023 19:23:24	48.5	63.1	42.3
06/11/2023 19:28:24	45.9	62.5	42.4
06/11/2023 19:33:24	45.3	59.5	42.2
06/11/2023 19:38:24	46.7	58.6	41.9
06/11/2023 19:43:24	44.5	56.1	42.1
06/11/2023 19:48:24	43.1	58.8	41.3
06/11/2023 19:53:24	52.7	64.2	42
06/11/2023 19:58:24	45.6	59.9	41.3
06/11/2023 20:03:24	55.9	77.6	41.9
06/11/2023 20:08:24	45.4	56.5	42.5
06/11/2023 20:13:24	45.5	60.5	41.8
06/11/2023 20:18:24	45	56.3	41.9
06/11/2023 20:23:24	47.6	69.9	41.4
06/11/2023 20:28:24	44.1	53.3	41.8
06/11/2023 20:33:24	45.1	52.4	43.3
06/11/2023 20:38:24	44.9	54.9	42.7
06/11/2023 20:43:24	44.5	56.7	41.4
06/11/2023 20:48:24	46.3	62.2	41.7
06/11/2023 20:53:24	48.8	60.9	42.4
06/11/2023 20:58:24	45	55.9	39.7
06/11/2023 21:03:24	44.4	55.3	41.1
06/11/2023 21:08:24	44	57	41.2
06/11/2023 21:13:24	45.7	56.1	40.7
06/11/2023 21:18:24	42.8	50.2	40.8
06/11/2023 21:23:24	43.2	51.8	41.2
06/11/2023 21:28:24	42.8	51	40.3
06/11/2023 21:33:24	41.3	50.9	39.3
06/11/2023 21:38:24	44.9	55.4	39.2
06/11/2023 21:43:24	41.1	48.7	39.3
06/11/2023 21:48:24	42.3	48.5	40.4
06/11/2023 21:53:24	46.3	57.6	39.8
06/11/2023 21:58:24	40.9	52.8	38.3
06/11/2023 22:03:24	40	47	37.8
06/11/2023 22:08:24	40.4	48.1	38.3
06/11/2023 22:13:24	40.1	46.1	38.8
06/11/2023 22:18:24	39.5	47.8	37.6
06/11/2023 22:23:24	40.2	53.9	37.3

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
06/11/2023 22:28:24	42.5	55.5	38.1
06/11/2023 22:33:24	41.2	51.4	39.2
06/11/2023 22:38:24	40.5	54.4	38.4
06/11/2023 22:43:24	40.9	51.4	38.9
06/11/2023 22:48:24	39.5	58.2	37.3
06/11/2023 22:53:24	41.9	50.8	38.3
06/11/2023 22:58:24	40.8	52.2	38.7
06/11/2023 23:03:24	41.8	52.2	39.4
06/11/2023 23:08:24	41.3	51.8	38.8
06/11/2023 23:13:24	41.5	50.7	38.9
06/11/2023 23:18:24	40.4	49.4	38.1
06/11/2023 23:23:24	40.6	48.6	38.8
06/11/2023 23:28:24	41	51.6	38.9
06/11/2023 23:33:24	41	50.1	38.8
06/11/2023 23:38:24	41.4	50.4	39
06/11/2023 23:43:24	39.8	52	38.1
06/11/2023 23:48:24	40.6	51.1	38.1
06/11/2023 23:53:24	41.9	51.4	38.5
06/11/2023 23:58:24	40.9	50	38.2
07/11/2023 00:03:24	40	51.6	36.9
07/11/2023 00:08:24	41.1	51.7	38.1
07/11/2023 00:13:24	41.5	50.2	38.5
07/11/2023 00:18:24	42.2	50.2	38.9
07/11/2023 00:23:24	39.8	49.7	37.7
07/11/2023 00:28:24	38.3	47.8	36.1
07/11/2023 00:33:24	39.1	49.7	37.1
07/11/2023 00:38:24	38.8	49.9	36.1
07/11/2023 00:43:24	38.8	48	37.1
07/11/2023 00:48:24	39.9	49.9	37.5
07/11/2023 00:53:24	37.5	46.6	35
07/11/2023 00:58:24	37.3	49.6	35.3
07/11/2023 01:03:24	35.7	44.1	34
07/11/2023 01:08:24	37.2	45	35.1
07/11/2023 01:13:24	36.6	44.7	34.6
07/11/2023 01:18:24	36.7	49.7	33.7
07/11/2023 01:23:24	37.4	49.5	34.3
07/11/2023 01:28:24	37.1	48.2	33.7
07/11/2023 01:33:24	36.1	42.4	33.7
07/11/2023 01:38:24	34.2	42.9	32.4
07/11/2023 01:43:24	37.4	47.2	34.5
07/11/2023 01:48:24	36.5	46.2	34
07/11/2023 01:53:24	38.9	48.5	36.1
07/11/2023 01:58:24	36	49.1	33.5
07/11/2023 02:03:24	36.1	47.4	33.3
07/11/2023 02:08:24	36.9	45.9	34.1
07/11/2023 02:13:24	36.8	43.4	35.2

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 02:18:24	38.1	47.3	35.9
07/11/2023 02:23:24	36.2	49.5	33.9
07/11/2023 02:28:24	35.9	43.9	33.4
07/11/2023 02:33:24	37.2	49.1	33.3
07/11/2023 02:38:24	37.8	52.7	34.5
07/11/2023 02:43:24	36	44.6	33.9
07/11/2023 02:48:24	36.1	43.8	34.4
07/11/2023 02:53:24	35.6	43.3	33.8
07/11/2023 02:58:24	36	46.9	32.7
07/11/2023 03:03:24	35.3	44.9	31.9
07/11/2023 03:08:24	36.6	45.3	33.2
07/11/2023 03:13:24	39	51	35.4
07/11/2023 03:18:24	40	50.7	36.5
07/11/2023 03:23:24	38.9	48.1	36.1
07/11/2023 03:28:24	40	50.3	35.1
07/11/2023 03:33:24	40.5	52.1	35.3
07/11/2023 03:38:24	41.9	52.3	36.9
07/11/2023 03:43:24	39	49.2	35.4
07/11/2023 03:48:24	42.1	57.4	35.7
07/11/2023 03:53:24	41.3	51.2	35.2
07/11/2023 03:58:24	39.4	48.9	35.3
07/11/2023 04:03:24	41.4	56	36.7
07/11/2023 04:08:24	42.2	55.1	35.8
07/11/2023 04:13:24	38.9	49	34.7
07/11/2023 04:18:24	45.4	59.6	38
07/11/2023 04:23:24	42.2	51.9	36.9
07/11/2023 04:28:24	41.2	54	35.9
07/11/2023 04:33:24	40.5	52.4	35.4
07/11/2023 04:38:24	40.9	51.5	35.5
07/11/2023 04:43:24	41	54.6	35.8
07/11/2023 04:48:24	43.1	56.5	38
07/11/2023 04:53:24	37.6	50	34.2
07/11/2023 04:58:24	39.3	49.6	34.5
07/11/2023 05:03:24	38.4	47.7	35.9
07/11/2023 05:08:24	37.1	43.8	35.4
07/11/2023 05:13:24	39.1	50.7	36.4
07/11/2023 05:18:24	39.9	52.3	36.9
07/11/2023 05:23:24	40	47.3	37.7
07/11/2023 05:28:24	38.6	49.7	37.2
07/11/2023 05:33:24	39.5	48.8	37.3
07/11/2023 05:38:24	40.1	46.5	38.4
07/11/2023 05:43:24	41.9	52.4	38.5
07/11/2023 05:48:24	44.1	57.2	41.3
07/11/2023 05:53:24	49.3	62	42.2
07/11/2023 05:58:24	45.9	60.4	41.3
07/11/2023 06:03:24	45.1	54.7	41.5

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 06:08:24	43.2	49.5	42
07/11/2023 06:13:24	42.6	46.9	41.5
07/11/2023 06:18:24	43.4	54.7	42.1
07/11/2023 06:23:24	51.8	64.9	43
07/11/2023 06:28:24	45.5	53.5	42.7
07/11/2023 06:33:24	47.8	59.4	44.1
07/11/2023 06:38:24	45.4	65	43.6
07/11/2023 06:43:24	46.2	59.8	43.5
07/11/2023 06:48:24	47.9	60.8	43.8
07/11/2023 06:53:24	46.7	67.7	43.9
07/11/2023 06:58:24	46.7	61.7	43.5
07/11/2023 07:03:24	45.3	56.7	43.4
07/11/2023 07:08:24	45.7	64	43
07/11/2023 07:13:24	47.8	69.3	44.4
07/11/2023 07:18:24	48.8	71.1	44.6
07/11/2023 07:23:24	46.6	52.9	45.3
07/11/2023 07:28:24	61.9	80.2	45.4
07/11/2023 07:33:24	57	79.5	44.9
07/11/2023 07:38:24	48.5	65.6	45.3
07/11/2023 07:43:24	48.1	59	45.5
07/11/2023 07:48:24	46.6	54.9	44.9
07/11/2023 07:53:24	47.2	55.9	44.5
07/11/2023 07:58:24	46.8	56	45.4
07/11/2023 08:03:24	46.2	52	44.6
07/11/2023 08:08:24	60.9	80.4	45.6
07/11/2023 08:13:24	64.1	82.1	45
07/11/2023 08:18:24	59.4	77.9	45.1
07/11/2023 08:23:24	58	79.1	44.7
07/11/2023 08:28:24	55.2	77.9	44.8
07/11/2023 08:33:24	57.4	75.3	45.8
07/11/2023 08:38:24	57	80.7	45.3
07/11/2023 08:43:24	47	50.8	45.8
07/11/2023 08:48:24	46.6	55.9	45.3
07/11/2023 08:53:24	46.7	55.1	44.9
07/11/2023 08:58:24	46.4	54.4	45.3
07/11/2023 09:03:24	47.5	53.8	45.7
07/11/2023 09:08:24	46.7	51.9	45.4
07/11/2023 09:13:24	47.5	53.5	46.3
07/11/2023 09:18:24	47.1	51.6	46
07/11/2023 09:23:24	46.5	52.1	45.3
07/11/2023 09:28:24	46.6	51.4	45.4
07/11/2023 09:33:24	46.7	51.8	45.5
07/11/2023 09:38:24	46.1	52.7	45
07/11/2023 09:43:24	47.4	54.8	45.5
07/11/2023 09:48:24	46.6	54.7	44.5
07/11/2023 09:53:24	46	55.1	43.6

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 09:58:24	44.6	51.9	43.4
07/11/2023 10:03:24	46.3	53.7	44.8
07/11/2023 10:08:24	49.1	60.5	45.5
07/11/2023 10:13:24	45.6	50.8	44.3
07/11/2023 10:18:24	45.8	51	43.8
07/11/2023 10:23:24	48.3	61.7	43.3
07/11/2023 10:28:24	57.8	77.4	43.4
07/11/2023 10:33:24	47.4	69.3	42
07/11/2023 10:38:24	44.1	53.2	42.6
07/11/2023 10:43:24	44.4	55.6	41.4
07/11/2023 10:48:24	47.5	63.3	42.1
07/11/2023 10:53:24	43.9	53.3	40.9
07/11/2023 10:58:24	45.3	57.5	40.1
07/11/2023 11:03:24	50.2	66.1	40
07/11/2023 11:08:24	42.5	52	39.8
07/11/2023 11:13:24	42	52.4	39
07/11/2023 11:18:24	44.4	57.5	39.8
07/11/2023 11:23:24	43	57.4	39.3
07/11/2023 11:28:24	43.7	55.2	40.7
07/11/2023 11:33:24	45.7	55.7	41.5
07/11/2023 11:38:24	48.1	57.2	43.7
07/11/2023 11:43:24	43.9	52	41.4
07/11/2023 11:48:24	45.3	55.7	42.3
07/11/2023 11:53:24	43.9	55.2	40.6
07/11/2023 11:58:24	43.1	55.5	41.1
07/11/2023 12:03:24	43.1	54.5	40.2
07/11/2023 12:08:24	44.4	59.7	41.1
07/11/2023 12:13:24	42	51.6	39.7
07/11/2023 12:18:24	47.1	58.8	41.2
07/11/2023 12:23:24	44.9	56.7	41.4
07/11/2023 12:28:24	44.3	57.9	42
07/11/2023 12:33:24	44.4	54.2	41.2
07/11/2023 12:38:24	46.9	57.4	42.9
07/11/2023 12:43:24	44.2	51.8	41.6
07/11/2023 12:48:24	42	47.5	39.5
07/11/2023 12:53:24	42.5	57	39.8
07/11/2023 12:58:24	45.7	57.3	39.3
07/11/2023 13:03:24	41.9	48.3	39.6
07/11/2023 13:08:24	42.7	53.6	39.1
07/11/2023 13:13:24	41.9	58.3	39.1
07/11/2023 13:18:24	42.9	57.1	40.1
07/11/2023 13:23:24	43.1	54.1	38.6
07/11/2023 13:28:24	46.4	63.4	40.1
07/11/2023 13:33:24	43	54.7	40
07/11/2023 13:38:24	42.9	52.1	39.5
07/11/2023 13:43:24	41.2	54	38.5

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
07/11/2023 13:48:24	43.3	53.4	39.7
07/11/2023 13:53:24	42.3	53.2	38.7
07/11/2023 13:58:24	44.9	55	40.4
07/11/2023 14:03:24	48.3	74	40.2
07/11/2023 14:08:24	49	71.3	39.3
07/11/2023 14:13:24	43.8	64.4	39.1
07/11/2023 14:18:24	47.6	73.1	39.7
07/11/2023 14:23:24	52.3	73.3	41.8
07/11/2023 14:28:24	47.6	63.4	40.1
07/11/2023 14:33:24	51.9	74.6	40
07/11/2023 14:38:24	52.9	72.2	39.5
07/11/2023 14:43:24	45.7	71.4	39.8
07/11/2023 14:48:24	52.4	73.7	40.1
07/11/2023 14:53:24	46.5	58.3	42.4
07/11/2023 14:58:24	49.4	73	40.2
07/11/2023 15:03:24	46.7	59.8	40.5
07/11/2023 15:08:24	43.2	56.3	39.9
07/11/2023 15:13:24	45.9	60.4	39.1
07/11/2023 15:18:24	47.2	63.2	39.9
07/11/2023 15:23:24	60.8	73.7	40.4
07/11/2023 15:28:24	60.4	75.4	40.9
07/11/2023 15:33:24	56.4	75.2	40.8
07/11/2023 15:38:24	58.9	77.6	42.1
07/11/2023 15:43:24	49.4	68	41.9
07/11/2023 15:48:24	56.8	75.2	40.3
07/11/2023 15:53:24	55.7	74.6	42
07/11/2023 15:58:24	55.9	69.3	42.8
07/11/2023 16:03:24	55.3	69.6	42.8
07/11/2023 16:08:24	52.4	69.2	44.5
07/11/2023 16:13:24	56.4	74	45
07/11/2023 16:18:24	59.9	78.6	45
07/11/2023 16:23:24	60.5	74.4	44.5
07/11/2023 16:28:24	60.6	77.6	44.8
07/11/2023 16:33:24	61	74.9	44.8
07/11/2023 16:38:24	57.1	73.5	44
07/11/2023 16:43:24	54.9	71.2	43.9
07/11/2023 16:48:24	56.4	74	43.6
07/11/2023 16:53:24	56.8	73.6	43.4
07/11/2023 16:58:24	56.5	70.6	44.3
07/11/2023 17:03:24	62.3	76.7	44.8
07/11/2023 17:08:24	60.4	76.1	44.3
07/11/2023 17:13:24	62.8	79.2	44.1
07/11/2023 17:18:24	63.6	79.6	44
07/11/2023 17:23:24	58.3	76.3	43.8
07/11/2023 17:28:24	61	77.3	43.8
07/11/2023 17:33:24	60.7	78.2	43.7

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
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07/11/2023 17:43:24	59.3	77.8	44.6
07/11/2023 17:48:24	62.5	80.8	43.5
07/11/2023 17:53:24	60.5	79.9	44
07/11/2023 17:58:24	46.9	61.6	42.2
07/11/2023 18:03:24	49.9	66	41.5
07/11/2023 18:08:24	47.6	61.2	42.4
07/11/2023 18:13:24	45.7	61.7	42.1
07/11/2023 18:18:24	45.2	59.2	42.8
07/11/2023 18:23:24	45.1	54.5	42.5
07/11/2023 18:28:24	47.9	61.7	42.2
07/11/2023 18:33:24	46.1	62.5	42.1
07/11/2023 18:38:24	46.9	61.7	41.9
07/11/2023 18:43:24	44.5	59.8	41.6
07/11/2023 18:48:24	43.2	61.2	40.4
07/11/2023 18:53:24	45.9	61.1	40.4
07/11/2023 18:58:24	45.6	61.2	41
07/11/2023 19:03:24	42.6	52.3	39.9
07/11/2023 19:08:24	44.9	54.4	41.1
07/11/2023 19:13:24	45	52.6	41
07/11/2023 19:18:24	45.6	54.8	41.3
07/11/2023 19:23:24	43.6	50.6	41
07/11/2023 19:28:24	41.7	50.5	39.6
07/11/2023 19:33:24	42.3	58.9	39.8
07/11/2023 19:38:24	47.3	72.3	39.6
07/11/2023 19:43:24	41.1	58.2	38.4
07/11/2023 19:48:24	41.9	55.6	38.4
07/11/2023 19:53:24	41.7	48.3	39.5
07/11/2023 19:58:24	40.8	48.2	38.5
07/11/2023 20:03:24	42	48.6	39.4
07/11/2023 20:08:24	42.4	49.3	39.4
07/11/2023 20:13:24	41.7	57.2	38.5
07/11/2023 20:18:24	45.6	60	38.2
07/11/2023 20:23:24	42.7	57.6	39.9
07/11/2023 20:28:24	41.3	47.8	39.1
07/11/2023 20:33:24	41	48.4	38.7
07/11/2023 20:38:24	40.1	50.4	36.9
07/11/2023 20:43:24	40.7	49.2	38.1
07/11/2023 20:48:24	41.4	50.1	38.8
07/11/2023 20:53:24	40.9	48.9	38.3
07/11/2023 20:58:24	40.1	50.7	37.5
07/11/2023 21:03:24	38.9	47.9	36.4
07/11/2023 21:08:24	38.9	46.3	35.8
07/11/2023 21:13:24	40.4	50.8	37.9
07/11/2023 21:18:24	39.4	47.5	37
07/11/2023 21:23:24	41.2	50	38.7

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07/11/2023 21:38:24	38.4	46.9	35.3
07/11/2023 21:43:24	39.9	48.1	36.9
07/11/2023 21:48:24	40.9	48.6	38.1
07/11/2023 21:53:24	40.4	49.7	37
07/11/2023 21:58:24	40.2	52.1	36.2
07/11/2023 22:03:24	39.8	53.1	36.5
07/11/2023 22:08:24	43.2	54.8	37.7
07/11/2023 22:13:24	47.1	56.9	38.7
07/11/2023 22:18:24	44.9	55.4	37.9
07/11/2023 22:23:24	43.4	53.6	36.7
07/11/2023 22:28:24	39.5	48	37.4
07/11/2023 22:33:24	38.3	45.9	36.2
07/11/2023 22:38:24	37.6	45.2	35.7
07/11/2023 22:43:24	37.9	48.2	34.6
07/11/2023 22:48:24	38.5	47.8	35.6
07/11/2023 22:53:24	40.7	47.2	37.9
07/11/2023 22:58:24	40.3	48.3	38.2
07/11/2023 23:03:24	39.6	44.9	37.6
07/11/2023 23:08:24	39.9	49.6	38.4
07/11/2023 23:13:24	40.4	50.9	37.9
07/11/2023 23:18:24	41.7	51.8	37.8
07/11/2023 23:23:24	41.4	52.9	39.1
07/11/2023 23:28:24	40	47.3	37.6
07/11/2023 23:33:24	40.1	46.6	37.5
07/11/2023 23:38:24	39.6	47.4	37.9
07/11/2023 23:43:24	39.2	46.1	36.7
07/11/2023 23:48:24	39.3	49.4	36.7
07/11/2023 23:53:24	39.9	44.8	38.2
07/11/2023 23:58:24	39.6	47.4	37.1
08/11/2023 00:03:24	38.6	47.9	36.4
08/11/2023 00:08:24	37.7	41.5	36
08/11/2023 00:13:24	39.8	49	35.5
08/11/2023 00:18:24	39.6	44.1	38.3
08/11/2023 00:23:24	39.5	46.8	37.5
08/11/2023 00:28:24	37.8	41.3	36.3
08/11/2023 00:33:24	42	48.4	38
08/11/2023 00:38:24	46.8	52.7	45.4
08/11/2023 00:43:24	41.4	46.5	38.6
08/11/2023 00:48:24	40.4	44.7	38.9
08/11/2023 00:53:24	40.5	47.6	38.5
08/11/2023 00:58:24	41.2	44.7	40.2
08/11/2023 01:03:24	42.5	53.4	41
08/11/2023 01:08:24	42.7	46.5	40.8
08/11/2023 01:13:24	43.5	47.7	42.4

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
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08/11/2023 01:38:24	40.4	52.9	37.1
08/11/2023 01:43:24	41.3	51.2	37.7
08/11/2023 01:48:24	44.4	51.2	41.3
08/11/2023 01:53:24	39.5	42.7	37.8
08/11/2023 01:58:24	40.3	48.3	38.5
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08/11/2023 02:13:24	43.4	49.8	41.4
08/11/2023 02:18:24	43.8	50.9	41
08/11/2023 02:23:24	43.6	51.5	41.9
08/11/2023 02:28:24	42.1	51.5	39.9
08/11/2023 02:33:24	40.3	44.8	38
08/11/2023 02:38:24	40.3	50.8	37
08/11/2023 02:43:24	48.2	57.1	44.2
08/11/2023 02:48:24	46.7	59.1	42.8
08/11/2023 02:53:24	48.1	57.8	45.5
08/11/2023 02:58:24	49.6	62.4	46
08/11/2023 03:03:24	50.9	62.2	47.6
08/11/2023 03:08:24	49.8	57.1	46.9
08/11/2023 03:13:24	50.2	58.9	46.4
08/11/2023 03:18:24	50.4	60	46.8
08/11/2023 03:23:24	50	55.2	47.9
08/11/2023 03:28:24	52.5	58.9	47.5
08/11/2023 03:33:24	52.4	64.8	48.8
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08/11/2023 03:43:24	43.8	49.1	41.4
08/11/2023 03:48:24	47	61.3	41.8
08/11/2023 03:53:24	50.2	61.6	46.7
08/11/2023 03:58:24	48.8	58	47.1
08/11/2023 04:03:24	48.1	55.4	45.5
08/11/2023 04:08:24	46.3	59.2	44
08/11/2023 04:13:24	48.6	60.1	43.5
08/11/2023 04:18:24	50.1	64.1	46.5
08/11/2023 04:23:24	50	61.4	45
08/11/2023 04:28:24	48.5	64.5	43.9
08/11/2023 04:33:24	46.4	57.8	41.7
08/11/2023 04:38:24	47.7	59.5	42.5
08/11/2023 04:43:24	55.2	66.1	51
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08/11/2023 04:53:24	51.7	62.8	46.1
08/11/2023 04:58:24	47	59.8	39.7
08/11/2023 05:03:24	45.2	57.2	40.4

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
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08/11/2023 05:13:24	47.4	60.1	41.7
08/11/2023 05:18:24	47.3	62.9	41.6
08/11/2023 05:23:24	46.6	61.4	41.5
08/11/2023 05:28:24	46.2	58.5	41.8
08/11/2023 05:33:24	46.7	60.6	42.5
08/11/2023 05:38:24	46.1	57.4	42.4
08/11/2023 05:43:24	49	61.3	43
08/11/2023 05:48:24	51.4	63.1	45.4
08/11/2023 05:53:24	51.3	60.9	46.7
08/11/2023 05:58:24	50.9	63.1	44.9
08/11/2023 06:03:24	48.6	59	44
08/11/2023 06:08:24	46.7	57.6	43.2
08/11/2023 06:13:24	49.8	61.7	44.1
08/11/2023 06:18:24	49.9	60.1	46.7
08/11/2023 06:23:24	50.8	65.6	44.8
08/11/2023 06:28:24	47.4	56.8	44.5
08/11/2023 06:33:24	50.2	65.1	44.2
08/11/2023 06:38:24	47.5	57.6	42.6
08/11/2023 06:43:24	48.9	62	43.4
08/11/2023 06:48:24	48.1	58.9	44
08/11/2023 06:53:24	46.4	58.6	42.8
08/11/2023 06:58:24	50.5	62.5	44.5
08/11/2023 07:03:24	46.5	56.6	42.6
08/11/2023 07:08:24	47.4	62	43.6
08/11/2023 07:13:24	45.6	54.6	43.2
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08/11/2023 07:23:24	48.4	62.6	43.3
08/11/2023 07:28:24	45.2	54.2	43.5
08/11/2023 07:33:24	45.2	53.9	43.2
08/11/2023 07:38:24	48.2	61.4	44.5
08/11/2023 07:43:24	45.6	55.9	44
08/11/2023 07:48:24	46.2	55.2	44.5
08/11/2023 07:53:24	47.1	56.2	44.6
08/11/2023 07:58:24	47.6	62.9	45
08/11/2023 08:03:24	45.9	51.9	44.1
08/11/2023 08:08:24	46.3	62.3	44.1
08/11/2023 08:13:24	45.8	53.4	44.2
08/11/2023 08:18:24	46.5	58.7	44.9
08/11/2023 08:23:24	49.4	60.9	45.9
08/11/2023 08:28:24	48.6	59.6	45.9
08/11/2023 08:33:24	47	62.8	44.8
08/11/2023 08:38:24	47.8	54.7	45.9
08/11/2023 08:43:24	50.4	67.2	46.9
08/11/2023 08:48:24	48.9	62.6	46.4
08/11/2023 08:53:24	48.2	63.2	46.2

Start Time	L_{Aeq}	L_{Amax}	L_{A90}
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08/11/2023 09:18:24	46.8	61.5	44.9
08/11/2023 09:23:24	46.4	56	44.9
08/11/2023 09:28:24	52.1	65.9	44.8
08/11/2023 09:33:24	48.5	60.5	44.1
08/11/2023 09:38:24	44.9	53.4	43.6
08/11/2023 09:43:24	45.2	55.1	43.9
08/11/2023 09:48:24	46.3	59.5	43.5
08/11/2023 09:53:24	48.8	62.2	43.1
08/11/2023 09:58:24	44.7	51.5	43
08/11/2023 10:03:24	46.6	54.7	42.8
08/11/2023 10:08:24	47.3	55.3	45
08/11/2023 10:13:24	50.8	70.5	44.2
08/11/2023 10:18:24	44.9	53.6	43.4
08/11/2023 10:23:24	53	70.7	45.2
08/11/2023 10:28:24	46.3	58.6	44.4
08/11/2023 10:33:24	45.6	54.4	44
08/11/2023 10:38:24	47.6	65.3	44.9
08/11/2023 10:43:24	52.2	68.5	46.1
08/11/2023 10:48:24	50.8	70.8	44.7
08/11/2023 10:53:24	50.9	74	44.1
08/11/2023 10:58:24	63.9	85.5	44.8
08/11/2023 11:03:24	63.2	89.4	44.6

Appendix 12.1

RESOURCE AND WASTE MANAGEMENT PLAN

RESOURCE AND WASTE MANAGEMENT PLAN FOR A PROPOSED MEDIA PARK AT TOWNLANDS OF COOLSCUDDEN, BROWNSTOWN AND MILLTOWN, WEST OF GRANGE CASTLE BUSINESS PARK, NEWCASTLE, COUNTY DUBLIN

APPENDIX 12.1

Report Prepared For

Lens Media Limited.

Report Prepared By

Chonaill Bradley, Principal Environmental Consultant

Our Reference

CB/237501.0555WMR01

Date of Issue

26 February 2024

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Signature		
Name	Chonaill Bradley	Fergal Callaghan
Title	Principal Environmental Consultant	Director
Date	26 February 2024	26 February 2024

CONTENTS

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1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Resource & Waste Management Plan (RWMP) on behalf of Lens Media Limited. Lens Media Limited are seeking planning permission for the development of a Media Park at a site in the townlands of Coolscudden, Brownstown and Milltown, west of Grange Castle Business Park, Newcastle, County Dublin.

This plan provides information necessary to ensure that the management of Construction & Demolition (C&D) waste at the site is undertaken in accordance with all current legal and industry standards including the *Waste Management Act 1996* as amended and associated Regulations [1], *Environmental Protection Agency Act 1992* as amended [2], *Litter Pollution Act 1997* as amended [3], the *Eastern-Midlands Region Waste Management Plan 2015 – 2021* [4], and the Draft National Waste Management Plan for a Circular Economy (NWMPCE) (2023) [5]. In particular, this plan aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. It also provides appropriate measures in relation to the collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

This RWMP includes information on the legal and policy framework for C&D waste management in Ireland, estimates of the type and quantity of waste to be generated by the proposed development and prescribes measures for the management of different waste streams. The RWMP should be viewed as a live document and should be regularly revisited throughout the project's lifecycle so that opportunities to maximise waste reduction / efficiencies are exploited throughout, and that data is collected on an ongoing basis so that it is as accurate as possible.

2.0 C&D WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Irish Government issued a policy statement in September 1998*, Changing Our Ways* [6], which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. The target for C&D waste in this report was to recycle at least 50% of C&D waste within a five year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. 2018).

In response to the *Changing Our Ways* report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report entitled '*Recycling of Construction and Demolition Waste'* [7] concerning the proposed development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

In September 2020, the Irish Government published a policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan, *'A Waste Action Plan for a Circular Economy'* [8] (WAPCE), replaces the previous national waste management plan, *"A Resource Opportunity"* (2012), and was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to an altered economical model, where climate and environmental challenges are turned into opportunities.

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the proposed development of the Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021) [9] to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Circular Economy and Miscellaneous Provisions Act 2022 [10] was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will work to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

The Environmental Protection Agency (EPA) of Ireland issued '*Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects'* in November 2021 [11]. These guidelines replace the previous 2006 guidelines issued by The National Construction and Demolition Waste Council (NCDWC) and the Department of the Environment, Heritage and Local Government (DoEHLG) [12]. The guidelines provide a practical approach which is informed by best practice in the prevention and management of C&D wastes and resources from design to construction of a project, including consideration of the deconstruction of a project. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes;
- Design teams roles and approach;
- Relevant EU, national and local waste policy, legislation and guidelines;
- Waste disposal/recycling of C&D wastes at the site;
- Provision of training for Resource Manager (RM) and site crew;
- Details of proposed record keeping system;
- Details of waste audit procedures and plan; and
- Details of consultation with relevant bodies i.e. waste recycling companies, Local Authority, etc.

Section 3 of the Guidelines identifies thresholds above which there is a requirement for the preparation of a RWMP for developments. The new guidance classifies developments on a two-tiered system. Developments which do not exceed any of the following thresholds may be classed as Tier 1 development:

- New residential development of less than 10 dwellings.
- Retrofit of 20 dwellings or less.
- New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m^2.
- Retrofit of commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 2,000m^2; and
- Demolition projects generating in total less than 100m^3 in volume of C&D waste.

A development which exceeds one or more of these thresholds is classed as Tier-2 projects.

This development requires a RWMP as a Tier 2 development as it is above following criterion:

- New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250m^2.

Other guidelines followed in the preparation of this report include *'Construction and Demolition Waste Management – a handbook for Contractors and Site Managers'* [13], published by FÁS and the Construction Industry Federation in 2002 and the previous guildines, *'Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects' (2006).*

These guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

2.2 Regional Level

The proposed development is located in the Local Authority area of South Dublin County Council (SDCC). The *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021* is the regional waste management plan to the administrative area, published in May 2015. Currently the EMR and other regional waste management plans are under review and the Regional Waste Management Planning Offices have issued the new draft NWMPCE in June 2023.

The Regional Plan sets out the strategic targets for waste management in the region and sets a specific target for C&D waste of *"70% preparing for reuse, recycling and other recovery of construction and demolition waste"* (excluding natural soils and stones and hazardous wastes) to be achieved by 2020.

The Draft NWMPCE does not dissolve the three regional waste areas. The NWMPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

The draft NWMPCE sets out the following strategic target for waste management in the region that is relevant to the proposed development:

1b. (Construction Materials) 2% Reduction / year – Construction & Demolition Waste Generated

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140 - €160 per tonne of waste, which includes a €85 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2015 as amended.*

The *South Dublin County Council Development Plan 2022– 2028* [14] sets out a number of objectives and actions for the South Dublin area in line with the objectives of the waste management plan.

Policy and Objectives

Policy IE7: Waste Management

Implement European Union, National and Regional waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.

- **IE7 Objective 1**
  To encourage a just transition from a waste management economy to a green circular economy to enhance employment and increase the value, recovery and recirculation of resources through compliance with the provisions of the Waste Action Plan for a Circular Economy 2020 – 2025 and to promote the use of, but not limited to, reverse vending machines and deposit return schemes or similar to ensure a wider and varying ways of recycling.
- **IE7 Objective 2**
  To support the implementation of the Eastern Midlands Region Waste Management Plan 2015-2021 or as amended by adhering to overarching performance targets, policies and policy actions.
- **IE7 Objective 4**
  To provide for and maintain the network of bring infrastructure (e.g. civic amenity facilities, bring banks) in the County to facilitate the recycling and recovery of hazardous and non-hazardous municipal wastes.
- **IE7 Objective 7**
  To require the appropriate provision for the sustainable management of waste within all developments, ensuring it is suitably designed into the development, including the provision of facilities for the storage, separation and collection of such waste.
- **IE7 Objective 8**
  To adhere to the recommendations of the National Hazardous Waste Management Plan 2014-2020 and any subsequent plan, and to co-operate with other agencies including the EPA in the planning, organisation and supervision of the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.
- **IE7 Objective 9**

To support the development of indigenous capacity for the treatment of non-hazardous and hazardous wastes where technically, economically and environmentally practicable subject to the relevant environmental protection criteria for the planning and development of such activities being applied.

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the proposed development are:

- Waste Management Act 1996 as amended.
- Environmental Protection Agency Act 1992 as amended.
- Litter Pollution Act 1997 as amended.
- Circular Economy and Miscellaneous Provisions Act 2022.
- Planning and Development Act 2000 as amended [15].

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996* as amended and subsequent Irish legislation, is the principle of *"Duty of Care"*. This implies that the waste producer is responsible for waste from the time it is generated through until its legal recycling, recovery or disposal (including its method of disposal). As it is not practical in most cases for the waste producer to physically transfer all waste from where it is produced to the final destination, waste contractors will be employed to physically transport waste to the final destination. Following on from this is the concept of *"Polluter Pays"* whereby the waste producer is liable to be prosecuted for pollution incidents, which may arise from the incorrect management of waste produced, including the actions of any contractors engaged (e.g. for transportation and disposal/recovery/recycling of waste).

It is therefore imperative that the Developer ensures that the waste contractors engaged by construction contractors are legally compliant with respect to waste transportation, recycling, recovery and disposal. This includes the requirement that a contractor handle, transport and recycle/recover/dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the *Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments* or a Waste Licence granted by the EPA. The COR / permit / licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and/or disposed of at the specified site.

3.0 Design Approach

The client and the design team have integrated the *'Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects'* guidelines into the design workshops, to help review processes, identify and evaluate resource reduction measures and investigate the impact on cost, time, quality,

buildability, second life and management post construction. Further details on these design principles can be found within the aforementioned guidance document.

The design team have undertaken the design process in line with the international best practice principles to firstly prevent wastes, reuse where possible and thereafter sustainably reduce and recover materials. The below sections have been the focal point of the design process and material selections and will continued to be analysed and investigated throughout the design process and when selecting material.

As noted in the EPA guidelines, the approaches presented are based on international principles of optimising resources and reducing waste on construction projects through:

- Prevention;
- Reuse;
- Recycling;
- Green Procurement Principles;
- Off-Site Construction;
- Materials Optimisation; and
- Flexibility and Deconstruction.

3.1 Designing For Prevention, Reuse and Recycling

Undertaken at the outset and during project feasibility and evaluation the Client and Design Team considered:

- Establishing the potential for any reusable site assets (buildings, structures, equipment, materials, soils, etc.);
- Assessing any existing buildings on the site that can be refurbished either in part or wholly to meet the Client requirements; and
- Enabling the optimum recovery of assets on site.

3.2 Designing for Green Procurement

Waste prevention and minimisation pre-procurement have been discussed and will be further discussed in this section. The Design Team will discuss proposed design solutions, encourage innovation in tenders and incentivise competitions to recognise sustainable approaches. They should also discuss options for packaging reduction with the main Contractor and subcontractors/suppliers using measures such as ‘Just-in-Time’ delivery and use ordering procedures that avoid excessive waste. The Green procurement extends from the planning stage into the detailed design and tender stage and will be an ongoing part of the long-term design and selection process for this development.

3.3 Designing for Off-Site Construction

Use of off-site manufacturing has been shown to reduce residual wastes by up to 90% (volumetric building versus traditional). The decision to use offsite construction is typically cost led but there are significant benefits for resource management. Some further considerations for procurement which are being investigated as part of the planning stage design process are listed as follows:

- Modular buildings as these can displace the use of concrete and the resource losses associated with concrete blocks such as broken blocks, mortars, etc.;

    - Modular buildings are typically pre-fitted with fixed plasterboard and installed insulation, eliminating these residual streams from site.
- Use of pre-cast structural concrete panels which can reduce the residual volumes of concrete blocks, mortars, plasters, etc.;
- The use of prefabricated composite panels for walls and roofing to reduce residual volumes of insulation and plasterboards;
- Using pre-cast hollow-core flooring instead of in-situ ready mix flooring or timber flooring to reduce the residual volumes of concrete/formwork and wood/packaging, respectively; and
- Designing for the preferential use of offsite modular units.

3.4 Designing for Materials Optimisation During Construction

To ensure manufacturers and construction companies adopt lean production models, including maximising the reuse of materials onsite as outlined in Section 2.1. This helps to reduce the environmental impacts associated with transportation of materials and from waste management activities. This includes investigating the use of standardised sizes for certain materials to help reduce the amount of offcuts produced on site, focusing on promotion and development of off-site manufacture.

3.5 Designing for Flexibility and Deconstruction

Design flexibility has and will be investigated throughout the design process to ensure that where possible products (including buildings) only contain materials that can be recycled and are designed to be easily disassembled. Material efficiency is being considered for the duration and end of life of a building project to produce; flexible, adaptable spaces that enable a resource-efficient, low-waste future change of use; durability of materials and how they can be recovered effectively when maintenance and refurbishment are undertaken and during disassembly/deconstruction.

4.0 DESCRIPTION OF THE PROPOSED DEVELOPMENT

4.1 Location, Size and Scale of the Proposed Development

Lens Media Limited are seeking planning permission for the development of a Media Park at a site in the townlands of Coolscudden, Brownstown and Milltown, west of Grange Castle Business Park, Newcastle, County Dublin.

The proposed development will comprise the construction of studio/sound stages with ancillary support offices, workshop buildings a TV studio building outdoor stage areas, a TV studio and reception building, outdoor stages, a dining hall building, a standalone café, hardstanding areas including a backlot area and shooting lanes, production suite buildings, 3-storey car parking deck with ancillary offices, an electrical substation, gate houses, surface car parking and HGV parking area, a waste collection area, rooftop PV panels, green roofs and associated development works and landscaping

Figure 4.1 Proposed Site Location Plan

Figure 4.2 Proposed Site Layout Plan

4.2 Details of the Non-Hazardous Wastes to be Produced

There will be soil and stones excavated to facilitate construction of the development. The development engineers (BMCE) have estimated that c.49,513m^3 of bulk excavation. It is currently envisaged that c.25,000m^3 excavated material will be able to be reused onsite, where suitable. When excavated materials is not deemed suitable or not required it will need to be removed for appropriate offsite reuse, recovery, recycling, and / or disposal.

During the construction phase there may be a surplus of building materials, such as timber off-cuts, broken concrete blocks, cladding, plastics, metals and tiles generated. There may also be excess concrete during construction which will need to be disposed of. Plastic and cardboard waste from packaging and supply of materials will also be generated. The contractor will be required to ensure that oversupply of materials is kept to a minimum and opportunities for reuse of suitable materials is maximised.

Waste will also be generated from construction workers e.g. organic / food waste, dry mixed recyclables (waste paper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and potentially sewage sludge from temporary welfare facilities provided on site during the construction phase. Waste printer / toner cartridges, waste electrical and electronic equipment (WEEE) and waste batteries may also be generated infrequently from site offices.

4.3 Potential Hazardous Wastes Arising

4.3.1 Contaminated Soil

Ground investigations and environmental soil testing were undertaken by Ground Investigations Ireland (GII) between September and November 2023. Due to the nature of the site being a greenfield location with previous agricultural uses it is not envisaged that contamination will be encountered. A site investigation and waste classification report were prepared by GII and are included as part of the application.

In order to assess materials, which may be excavated and removed from site, in terms of waste classification, a selection of samples collected were analysed for a suite of parameters which allows for the assessment of the soils in terms of total pollutant content for classification of materials as hazardous or non-hazardous (RILTA Suite). The suite also allows for the assessment of the soils in terms of suitability for placement at various categories of landfill. The parameter list for the RILTA suite includes analysis of the solid samples for arsenic, barium, cadmium, chromium, copper, cyanide, lead, nickel, mercury, zinc, speciated aliphatic and aromatic petroleum hydrocarbons, pH, sulphate, sulphide, moisture content, soil organic matter and an asbestos screen.

The RILTA suite also includes those parameters specified in the EU Council Decision establishing criteria for the acceptance of waste at Landfills (Council Decision 2003/33/EC), which for the solid samples are pH, total organic carbon (TOC), speciated aliphatic and aromatic petroleum hydrocarbons, BTEX, phenol, polychlorinated biphenyls (PCB) and PAH.

In line with the requirement of Council Decision 2003/33/EC a leachate was generated from the solid samples which was in turn analysed for antimony, arsenic, barium, cadmium, chromium, copper, lead, mercury, molybdenum, nickel, selenium, zinc, chloride, fluoride, soluble sulphate, sulphide, phenols, dissolved organic carbon (DOC) and total dissolved solids (TDS).

In total, ten (10 No.) samples were assessed using the HazWasteOnLine™ Tool. All samples were classified as being non-hazardous.

If any potentially contaminated material is encountered or any material is to be removed from site, it will be segregated from clean / inert material, tested and classified as either non-hazardous or hazardous in accordance with the EPA publication entitled *'Waste Classification: List of Waste & Determining if Waste is Hazardous or Non-Hazardous'* [16] using the *HazWasteOnline™* tool (or similar approved classification method). The material will then be classified as clean, inert, non-hazardous or hazardous in accordance with the *EC Council Decision 2003/33/EC* [17], which establishes the criteria for the acceptance of waste at landfills.

Asbestos fibres were not detected in the samples. The laboratory did not identify asbestos containing materials (ACMs) in the samples.

In the event that Asbestos Containing Materials (ACMs) are found within the excavated material, the removal will only be carried out by a suitably permitted waste contractor, in accordance with *the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.* All asbestos will be taken to a suitably licensed or permitted facility.

In the event that hazardous soil, or historically deposited waste is encountered during the construction phase, the contractor will notify SDCC and provide a Hazardous / Contaminated Soil Management Plan, to include estimated tonnages, description of location, any relevant mitigation, destination for disposal / treatment, in addition to information on the authorised waste collector(s).

4.3.2 Fuel/Oils

Fuels and oils are classed as hazardous materials; any on-site storage of fuel / oil, and all storage tanks and all draw-off points will be bunded and located in a dedicated, secure area of the site. Provided that these requirements are adhered to and the site crew are trained in the appropriate refuelling techniques, it is not expected that there will be any fuel / oil waste generated at the site.

4.3.3 Asbestos

The site is currently a greenfield agricultural site, and it is not envisaged that asbestos or Asbestos Containing Materials (ACM) will be encountered,

However, if asbestos or ACM are located onsite removal will be carried out by a suitably qualified contractor and ACM's will only be removed from site by a suitably permitted/licenced waste contractor. in accordance with *S.I. No. 386 of 2006 Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.* All material will be taken to a suitably licensed or permitted facility.

4.3.4 Other Known Hazardous Substances

Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, WEEE (containing hazardous components), printer toner / cartridges, batteries (Lead, Ni-Cd or Mercury) and / or fluorescent tubes and other mercury containing waste may be generated from during C&D activities or temporary site offices. These wastes, if generated, will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

5.0 ROLES AND RESPONSIBILITIES

The *Best Practice Guidelines on the Preparation of Resource Waste Management Plans for Construction and Demolition Projects* promotes that a RM should be appointed. The RM may be performed by number of different individuals over the life-cycle of the Project, however it is intended to be a reliable person chosen from within the Planning/Design/Contracting Team, who is technically competent and appropriately trained, who takes the responsibility to ensure that the objectives and measures within the Project RWMP are complied with. The RM is assigned the requisite authority to meet the objective and obligations of the RWMP. The role will include the important activities of conducting waste checks/audits and adopting construction methodology that is designed to facilitate maximum reuse and/or recycling of waste.

5.1 Role of the Client

The Client are the body establishing the aims and the performance targets for the project.

- The Client has commissioned the preparation and submission of this RWMP as part of the design and planning submission;
- The Client is to commission the preparation and submission of an updated RWMP as part of the construction tendering process;
- The Client will ensure that the RWMP is agreed on and submitted to the local authority and their agreement obtained prior to commencement of works on site;
- The Client will request the end-of-project RWMP from the Contractor.

5.2 Role of the Client Advisory Team

The Client Advisory Team or Design Team is formed of architects, consultants, quantity surveyors and engineers and is responsible for:

- Drafting and maintaining the RWMP through the design, planning and procurement phases of the project;
- Appointing a RM to track and document the design process, inform the Design Team and prepare the RWMP.
- Including details and estimated quantities of all projected waste streams with the support of environmental consultants/scientists. This will also include data on waste types (e.g. waste characterisation data, contaminated land assessments, site investigation information) and prevention mechanisms (such as by-products) to illustrate the positive circular economy principles applied by the Design Team;
- Handing over of the RWMP to the selected Contractor upon commencement of construction of the proposed development, in a similar fashion to how the safety file is handed over to the Contractor;
- Working with the Contractor as required to meet the performance targets for the project.

5.3 Future Role of the Contractor

The future construction contractors have not yet been decided upon for this RWMP. However, once selected they will have major roles to fulfil. They will be responsible for:

- Preparing, implementing and reviewing the construction phase (including the management of all suppliers and sub-contractors) as per the requirements of the EPA guidelines;
- Identifying a designated and suitably qualified RM who will be responsible for implementing the RWMP;
- Identifying all hauliers to be engaged to transport each of the resources / wastes off-site;
- Implementing waste management policies whereby waste materials generated on site are to be segregated as far as practicable;
- Identifying all destinations for resources taken off-site. As above, any resource that is legally classified as a ‘waste’ must only be transported to an authorised waste facility;

- End-of-waste and by-product notifications addressed with the EPA where required;
- Clarification of any other statutory waste management obligations, which could include on-site processing;
- Full records of all resources (both wastes and other resources) will be maintained for the duration of the project; and
- Preparing a RWMP Implementation Review Report at project handover.

6.0 KEY MATERIALS & QUANTITIES

6.1 Project Resource Targets

Project specific resource and waste management targets for the site have not yet been set and this information will be updated for these targets once these targets have been confirmed by the client. However, it is expected for projects of this nature that a minimum of 70% of waste is fully re-used, recycled or recovered. Target setting will inform the setting of project-specific benchmarks to track target progress. Typical Key Performance Indicators (KPIs) that will be used to set targets include (as per guidelines):

- Weight (tonnes) or Volume (m^3) of waste generated per construction value;
- Weight (tonnes) or Volume (m^3) of waste generated per construction floor area (m^2);
- Fraction of resource reused on site;
- Fraction of resource notified as by-product;
- Fraction of waste segregated at source before being sent off-site for recycling/recovery; and
- Fraction of waste recovered, fraction of waste recycled, or fraction of waste disposed.

6.2 Main Construction and Demolition Waste Categories

The main non-hazardous and hazardous waste streams that could be generated by the construction activities at a typical site are shown in Table 6.1. The List of Waste (LoW) code (2018) for each waste stream is also shown.

Table 6.1 *Typical waste types generated and LoW codes (individual waste types may contain hazardous substances)*

Waste Material	LoW Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07
Wood, glass and plastic	17 02 01-03
Treated wood, glass, plastic, containing hazardous substances	17-02-04*
Bituminous mixtures, coal tar and tarred products	17 03 01*, 02 & 03*
Metals (including their alloys) and cable	17 04 01-11
Soil and stones	17 05 03* & 04
Gypsum-based construction material	17 08 01* & 02
Paper and cardboard	20 01 01
Mixed C&D waste	17 09 04

Waste Material	LoW Code
Green waste	20 02 01
Electrical and electronic components	20 01 35 & 36
Batteries and accumulators	20 01 33 & 34
Liquid fuels	13 07 01-10
Chemicals (solvents, pesticides, paints, adhesives, detergents etc.)	20 01 13, 19, 27-30
Insulation materials	17 06 04
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01

** Individual waste type may contain hazardous substances*

6.3 Demolition Waste Generation

The site is currently designated as agricultural land; thus, no demolition works will be required. However, topsoil and vegetation will be removed as a part of the site clearance prior to commencement.

6.4 Construction Waste Generation

Table 6.1 shows the breakdown of C&D waste types produced on a typical site based on data from the EPA *National Waste Reports* [18] *and the joint EPA & GMIT study* [19].

Table 6.1 *Waste materials generated on a typical Irish construction site*

Waste Types	%
Mixed C&D	33
Timber	28
Plasterboard	10
Metals	8
Concrete	6
Other	15
Total	**100**

Table 6.2, below, shows the estimated construction waste generation for the project based on the gross floor area of construction and other information available to date, along with indicative targets for management of the waste streams. The estimated amounts for the main waste types (with the exception of soils and stones) are based on an average large-scale development waste generation rate per m^2, using the waste breakdown rates shown in Table 6.1. These have been calculated from the schedule of development areas provided by the architect.

Table 6.2 *Predicted on and off-site reuse, recycle and disposal rates for construction waste.*

Waste Type	Tonnes	Reuse		Recycle/Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	821.8	10	82.2	80	657.5	10	82.2
Timber	697.3	40	278.9	55	383.5	5	34.9
Plasterboard	249.0	30	74.7	60	149.4	10	24.9
Metals	199.2	5	10.0	90	179.3	5	10.0
Concrete	149.4	30	44.8	65	97.1	5	7.5
Other	373.6	20	74.7	60	224.1	20	74.7
Total	**2490.4**		**565.3**		**1691.0**		**234.1**

In addition to the waste streams in Table 6.2, there will be c. 49,513 m^3 of soil and stone, will be excavated to facilitate the construction of new foundations and underground services. It is currently envisaged that c. 25,000m^3 of the excavated material can be reused onsite (if suitable). When excavated materials are not deemed suitable, they will be removed for appropriate offsite reuse, recovery, recycling, and / or disposal.

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

6.5 Proposed Resource and Waste Management Options

Waste materials generated will be segregated on-site, where it is practical. Where the on-site segregation of certain waste types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source, where feasible. All waste receptacles leaving the site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. There are numerous waste contractors in the SDCC region that provide this service.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

National End-of-Waste Decision EoW-N001/2023 (Regulation 28) establishes criteria determining when recycled aggregate resulting from a recovery operation ceases to be waste. Material from this proposed development will be investigated to see if it can cease to be a waste under the requirements of the National End of Waste Criteria for Aggregates.

During construction, some of the sub-contractors on site will generate waste in relatively low quantities. The transportation of non-hazardous waste by persons who are not directly involved with the waste business, at weights less than or equal to 2 tonnes, and in vehicles not designed for the carriage of waste, are exempt from the requirement to have a waste collection permit (per Article 30 (1) (b) of the Waste Collection Permit Regulations 2007, as amended). Any sub-contractors engaged that do not generate more than 2 tonnes of waste at any one time can transport this waste off-site in their work vehicles (which are

not designed for the carriage of waste). However, they are required to ensure that the receiving facility has the appropriate COR / permit / licence.

Written records will be maintained by the contractor(s), detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contactors who collect waste from the site and COR / permit / licence for the receiving waste facility for all waste removed off-site for appropriate reuse, recycling, recovery and / or disposal.

Dedicated bunded storage containers will be provided for hazardous wastes which may arise, such as batteries, paints, oils, chemicals, if required.

The anticipated management of the main waste streams is outlined as follows:

Soil and Stone

The waste hierarchy states that the preferred option for waste management is prevention and minimisation of waste, followed by preparing for reuse and recycling / recovery, energy recovery (i.e. incineration) and, least favoured of all, disposal. The excavations are required to facilitate construction works so the preferred option (prevention and minimisation) cannot be accommodated for the excavation phase.

It is expected that all excavated material will be reused on-site. However, if material is removed off-site it could be reused as a by-product (and not as a waste). If this is done, it will be done in accordance with Regulation 27 of the European Communities (Waste Directive) Regulations 2011, as amended, which requires that certain conditions are met and that by-product notifications are made to the EPA via their online notification form. Excavated material should not be removed from site until approval from the EPA has been received. The potential to reuse material as a by-product will be confirmed during the course of the excavation works, with the objective of eliminating any unnecessary disposal of material.

The next option (beneficial reuse) may be appropriate for the excavated material, pending environmental testing to classify the material as hazardous or non-hazardous in accordance with the EPA *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* publication. Clean inert material may be used as fill material in other construction projects or engineering fill for waste licensed sites. Beneficial reuse of surplus excavation material as engineering fill may be subject to further testing to determine if materials meet the specific engineering standards for their proposed end use.

Any nearby sites requiring clean fill/capping material will be contacted to investigate reuse opportunities for clean and inert material. If any of the material is to be reused on another site as a by-product (and not as a waste), this will be done in accordance with Regulation 27. Similarly, if any soils/stones are imported onto the site from another construction site as a by-product, this will also be done in accordance with Regulation 27. Regulation 27 will be investigated to see if the material can be imported onto this site for beneficial reuse instead of using virgin materials.

If the material is deemed to be a waste, then removal and reuse / recovery / disposal of the material will be carried out in accordance with the *Waste Management Act 1996* as amended, the *Waste Management (Collection Permit) Regulations 2007* as amended and the *Waste Management (Facility Permit & Registration) Regulations 2007* as amended.

Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste permitted and licensed sites will be considered.

In the event contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately to any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS).

Bedrock

It is expected that bedrock will be encountered as part of the earthworks in this development. It is hoped to reuse this material on site. In the event that it needs to be removed off-site, it will be removed for appropriate reuse, recovery and / or disposal. If bedrock is to be crushed on-site, the appropriate mobile waste facility permit will be obtained from SDCC.

Silt & Sludge

During the construction phase, silt and petrochemical interception will be carried out on run-off and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed off-site.

Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and should be recycled, where possible. If concrete is to be crushed on-site, the appropriate mobile waste facility permit will be obtained from SDCC.

Hard Plastic

As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. All recyclable plastic will be segregated and recycled, where possible.

Timber

Timber that is uncontaminated, i.e. free from paints, preservatives, glues, etc., will be disposed of in a separate skip and recycled off-site.

Metal

Metals will be segregated, where practical, and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from the construction phases will be stored in a separate skip, pending collection for recycling. The site Manager will ensure that oversupply of new plasterboard is carefully monitored to minimise waste.

Glass

Glass materials will be segregated for recycling, where possible.

Waste Electrical & Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages / receptacles / pallets pending collection for recycling.

Other Recyclables

Where any other recyclable wastes, such as cardboard and soft plastic, are generated, these will be segregated at source into dedicated skips and removed off-site.

Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the non-recyclable waste skip / receptacle will be examined by a member of the waste team (see Section 8.0) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

Asbestos Containing Materials

In the unlikely event any asbestos or ACMs are found on-site they will be removed by a suitably competent contractor and disposed of as asbestos waste before works begin. All asbestos removal work or encapsulation work must be carried out in accordance with the *Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006-2010.*

Other Hazardous Wastes

On-site storage of any hazardous wastes produced (i.e. contaminated soil if encountered and / or waste fuels) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. Hazardous wastes will be recovered, wherever possible, and failing this, disposed of appropriately.

On-Site Crushing

It is currently envisaged that the crushing of waste materials (bedrock) will occur on-site. When the crushing of material (bedrock) is to be undertaken, a waste facility permit will first be obtained from SDCC and the destination of the accepting waste facility or if an application under regulation 28 will be made using National End-of-Waste Decision EoW-N001/2023, will be supplied to the SDCC waste unit.

It should be noted that until a construction contractor is appointed it is not possible to provide information on the specific destinations of each construction waste stream. Prior to commencement of construction and removal of any waste offsite, details of the proposed destination of each waste stream will be provided to SDCC by the project team.

6.6 Tracking and Documentation Procedures for Off-Site Waste

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by a weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project RM (see Section 8.0).

All movement of waste and the use of waste contractors will be undertaken in accordance with the *Waste Management Act 1996* as amended, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project RM (see Section 8.0) will maintain a copy of all waste collection permits on-site.

If the waste is being transported to another site, a copy of the Local Authority waste COR / permit or EPA Waste / Industrial Emissions Licence for that site will be provided to the nominated project RM (see Section 8.0). If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) notification document will be obtained from DCC (as the relevant authority on behalf of all Local Authorities in Ireland) and kept on-site along with details of the final destination (COR, permits, licences, etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered in a waste management recording system to be maintained on-site.

7.0 ESTIMATED COST OF WASTE MANAGEMENT

An outline of the costs associated with different aspects of waste management is outlined below. The total cost of C&D waste management will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.

7.1 Reuse

By reusing materials on site, there will be a reduction in the transport and recycle / recovery / disposal costs associated with the requirement for a waste contractor to take the material off-site. Clean and inert soils, gravel, stones, etc., which cannot be reused on-site may be used as access roads or capping material for landfill sites, etc. This material is often taken free of charge or at a reduced fee for such purposes, reducing final waste disposal costs.

7.2 Recycling

Salvageable metals will earn a rebate, which can be offset against the costs of collection and transportation of the skips.

Clean, uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste.

Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes, such as timber, from a site than mixed waste.

7.3 Disposal

Landfill charges are currently at around €140 - €160 per tonne which includes a €85 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015*. In addition to disposal costs, waste contractors will also charge a collection fee for skips.

Collection of segregated C&D waste usually costs less than municipal waste. Specific C&D waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill. Clean soil, rubble, etc., is also used as fill / capping material, wherever possible.

8.0 TRAINING PROVISIONS

A member of the construction teams will be appointed as the RM to ensure commitment, operational efficiency and accountability in relation to waste management during the C&D phases of the development.

8.1 Resource Manager Training and Responsibilities

The nominated RM will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site.

The RM will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the RM to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The RM will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The RM will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this RWMP.

8.2 Site Crew Training

Training of site crew in relation to waste is the responsibility of the RM and, as such, a waste training program should be organised. A basic awareness course will be held for all site crew to outline the RWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained.

9.0 TRACKING AND TRACING / RECORD KEEPING

Records should be kept for all waste material which leaves the site, either for reuse on another site, recycling or disposal. A recording system will be put in place to record the waste arisings on Site.

A waste tracking log should be used to track each waste movement from the site. On exit from the site, the waste collection vehicle driver should stop at the site office and sign out as a visitor and provide the security personnel or RM with a waste docket (or Waste Transfer Form (WTF) for hazardous waste) for the waste load collected. At this time, the security personnel should complete and sign the Waste Tracking Register with the following information:

- Date
- Time
- Waste Contractor
- Company waste contractor appointed by, e.g. Contractor or subcontractor name
- Collection Permit No.
- Vehicle Reg.
- Driver Name
- Docket No.
- Waste Type
- Waste Quantity
- EWC / LoW

The waste vehicle will be checked by security personal or the RM to ensure it has the waste collection permit no. displayed and a copy of the waste collection permit in the vehicle before they are allowed to remove the waste from the site.

The waste transfer dockets will be transferred to the RM on a weekly basis and can be placed in the Waste Tracking Log file. This information will be forwarded onto the SDCC Waste Regulation Unit when requested.

Each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking log with the waste dockets / WTF maintained on file and available for inspection on site by the main contractor as required. These subcontractor logs will be merged with the main waste log.

Waste receipts from the receiving waste facility will also be obtained by the site contractor(s) and retained. A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times and will be periodically checked by the RM. Subcontractors who have engaged their own waste contractors, should provide the main contractor with a copy of the waste collection permits and COR / permit / licence for the receiving waste facilities and maintain a copy on file, available for inspection on site as required.

10.0 OUTLINE WASTE AUDIT PROCEDURE

10.1 Responsibility for Waste Audit

The appointed RM will be responsible for conducting a waste audit at the site during the C&D phase of the project. Contact details for the nominated RM will be provided to the SDCC Waste Regulation Unit after the main contractor is appointed and prior to any material being removed from site.

10.2 Review of Records and Identification of Corrective Actions

A review of all waste management costs and the records for the waste generated and transported off-site should be undertaken mid-way through the construction phase of the project.

If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery / reuse / recycling targets for the site. Each material type will be examined, in order to see where the largest percentage waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Upon completion of the C&D phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling / reuse / recovery figures for the development.

11.0 CONSULTATION WITH RELEVANT BODIES

11.1 Local Authority

Once construction contractors have been appointed and have appointed waste contractors, and prior to removal of any C&D waste materials off-site, details of the proposed destination of each waste stream will be provided to the SDCC Waste Regulation Unit.

SDCC will also be consulted, as required, throughout the excavation and construction phases in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

11.2 Recycling / Salvage Companies

The appointed waste contractor for the main waste streams managed by the construction contractors will be audited in order to ensure that relevant and up-to-date waste collection permits and facility registrations / permits / licences are held. In addition, information will be obtained regarding the feasibility of recycling each material, the costs of recycling / reclamation, the means by which the wastes will be collected and transported off-site, and the recycling / reclamation process each material will undergo off-site.

12.0 CONCLUSION

Adherence to this plan will also ensure that waste management during the construction phase, at the development is carried out in accordance the requirements in the EPA's Best Practice Guidelines for the Preparation of Resource & Waste Management Plans for Construction & Demolition Projects, and the SDCC Waste Bye-Laws.

13.0 REFERENCES

1. Waste Management Act 1996 as amended.
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Appendix 12.2

OPERATIONAL WASTE MANAGEMENT PLAN

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OPERATIONAL WASTE MANAGEMENT PLAN FOR A PROPOSED MEDIA PARK AT TOWNLANDS OF COOLSCUDDEN, BROWNSTOWN AND MILLTOWN, WEST OF GRANGE CASTLE BUSINESS PARK, NEWCASTLE, COUNTY DUBLIN

APPENDIX 12.2

Report Prepared For

Lens Media Limited.

Report Prepared By

Chonaill Bradley, Principal Environmental Consultant

Our Reference

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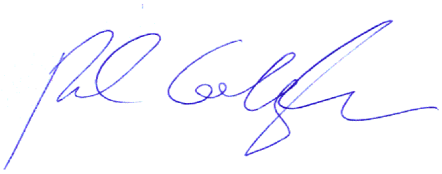
Signature		
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Date	26 February 2024	26 February 2024

CONTENTS

1.0 INTRODUCTION

AWN Consulting Ltd. (AWN) has prepared this Operational Waste Management Plan (OWMP) on behalf of Lens Media Limited. Lens Media Limited are seeking planning permission for the development of a Media Park at a site in the townlands of Coolscudden, Brownstown and Milltown, west of Grange Castle Business Park, Newcastle, County Dublin.

This OWMP has been prepared to ensure that the management of waste during the operational phase of the development is undertaken in accordance with the ABP GOP, current legal and industry standards including, the *Waste Management Act 1996* as amended and associated Regulations [1], *Environmental Protection Agency Act 1992* as amended [2], *Litter Pollution Act 1997* as amended [3], the '*Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021*' [4], *the* Draft National Waste Management Plan for a Circular Economy (NWMPCE) (2023) [5] and South Dublin County Council (SDCC) *County of South Dublin (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2018)* [6]. In particular, this OWMP aims to provide a robust strategy for the storage, handling, collection and transport of the wastes generated at site.

This OWMP aims to ensure maximum recycling, reuse and recovery of waste with diversion from landfill, wherever possible. The OWMP also seeks to provide guidance on the appropriate collection and transport of waste to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil or water resources). The plan estimates the type and quantity of waste to be generated from the development during the operational phase and provides a strategy for managing the different waste streams.

At present, there are no specific national guidelines in Ireland for the preparation of OWMPs. Therefore, in preparing this document, consideration has been given to the requirements of national and regional waste policy, legislation and other guidelines.

2.0 OVERVIEW OF WASTE MANAGEMENT IN IRELAND

2.1 National Level

The Irish Government issued a policy statement in September 1998 entitled *'Changing Our Ways'* [7], which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. A heavy emphasis was placed on reducing reliance on landfill and finding alternative methods for managing waste. Amongst other things, *Changing Our Ways* stated a target of at least 35% recycling of municipal (i.e. household, commercial and non-process industrial) waste.

A further policy document, *'Preventing and Recycling Waste – Delivering Change'* was published in 2002 [8]. This document proposed a number of programmes to increase recycling of waste and allow diversion from landfill. The need for waste minimisation at source was considered a priority.

This view was also supported by a review of sustainable development policy in Ireland and achievements to date, which was conducted in 2002, entitled *'Making Irelands Development Sustainable – Review, Assessment and Future Action'* [9]. This document also stressed the need to decouple economic growth and waste generation, again through waste minimisation and reuse of discarded material.

In order to establish the progress of the Government policy document *Changing Our Ways*, a review document was published in April 2004 entitled *'Taking Stock and Moving Forward'* [10]. Covering the period 1998 – 2003, the aim of this document was to assess progress to date with regard to waste management in Ireland, to consider

developments since the policy framework and the local authority waste management plans were put in place, and to identify measures that could be undertaken to further support progress towards the objectives outlined in *Changing Our Ways*.

In particular, *Taking Stock and Moving Forward* noted a significant increase in the amount of waste being brought to local authority landfills. The report noted that one of the significant challenges in the coming years was the extension of the dry recyclable collection services.

In September 2020, the Irish Government published a new policy document outlining a new action plan for Ireland to cover the period of 2020-2025. This plan *'A Waste Action Plan for a Circular Economy'* [11] (WAPCE), was prepared in response to the 'European Green Deal' which sets a roadmap for a transition to a new economy, where climate and environmental challenges are turned into opportunities, replacing the previous national waste management plan *"A Resource Opportunity"* (2012).

The WAPCE sets the direction for waste planning and management in Ireland up to 2025. This reorientates policy from a focus on managing waste to a much greater focus on creating circular patterns of production and consumption. Other policy statements of a number of public bodies already acknowledge the circular economy as a national policy priority.

The policy document contains over 200 measures across various waste areas including circular economy, municipal waste, consumer protection and citizen engagement, plastics and packaging, construction and demolition, textiles, green public procurement and waste enforcement.

One of the first actions to be taken was the development of the Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less' (2021) [12] to set a course for Ireland to transition across all sectors and at all levels of Government toward circularity and was issued in December 2021. It is anticipated that the Strategy will be updated in full every 18 months to 2 years.

The Circular Economy and Miscellaneous Provisions Act 2022 [13] was signed into law in July 2022. The Act underpins Ireland's shift from a "take-make-waste" linear model to a more sustainable pattern of production and consumption, that retains the value of resources in our economy for as long as possible and that will to significantly reduce our greenhouse gas emissions. The Act defines Circular Economy for the first time in Irish law, incentivises the use of recycled and reusable alternatives to wasteful, single-use disposable packaging, introduces a mandatory segregation and incentivised charging regime for commercial waste, streamlines the national processes for End-of-Waste and By-Products decisions, tackling the delays which can be encountered by industry, and supporting the availability of recycled secondary raw materials in the Irish market, and tackles illegal fly-tipping and littering.

Since 1998, the Environmental Protection Agency (EPA) has produced periodic *'National Waste (Database) Reports'* which as of 2023 have been renamed *Circular Economy and Waste Statistics Highlight Reports* [15] detailing, among other things, estimates for household and commercial (municipal) waste generation in Ireland and the level of recycling, recovery and disposal of these materials. The 2021 National Circular Economy and Waste Statistics web resource, which is the most recent study published, along with the national waste statistics web resource (November 2023) reported the following key statistics for 2020:

- **Generated** – Ireland produced 3,170,000 t of municipal waste in 2021. This is a 1% decrease since 2020. This means that the average person living in Ireland generated 630 kg of municipal waste in 2021.

- **Managed** – Waste collected and treated by the waste industry. In 2020, a total of 3,137,000 t of municipal waste was managed and treated.
- **Unmanaged** – An estimated 33,000 tonnes of this was unmanaged waste i.e., not disposed of in the correct manner in 2021.
- **Recovered** – The amount of waste recycled, used as a fuel in incinerators, or used to cover landfilled waste. In Ireland 42% of Municipal waste was treated by energy recovery through incineration in 2021.
- **Recycled** – Just over 1.3 million tonnes of municipal waste generated in Ireland was recycled in 2021, resulting in a recycling rate of 41 per cent. The recycling rate remains unchanged from 2020 and indicates that we face significant challenges to meet the upcoming EU recycling targets of 55% by 2025 and 65% by 2035.
- **Disposed** – The proportion of municipal waste sent to landfill also remains unchanged at 16% the same as 2020.
- **Reuse** – 54,800 tonnes of second-hand products we estimated by the EPA to have been reused in Ireland in 2021. The average annual Reuse rate per person in Ireland is 10.6 kg per person.

2.2 Regional Level

The proposed Development is located in the Local Authority administrative area of South Dublin City Council (SDCC).

The EMR Waste Management Plan 2015 – 2021 is the regional waste management plan for the SDCC area which was published in May 2015. Currently the EMR and other regional waste management plans are under review and the Regional Waste Management Planning Offices have issued a Draft NWMPCE in June 2023.

The regional plan sets out the following strategic targets for waste management in the region that are relevant to the proposed development:

- A 1% reduction per annum in the quantity of household waste generated per capita over the period of the plan;
- Achieve a recycling rate of 50% of managed municipal waste by 2020; and
- Reduce to 0% the direct disposal of unprocessed residual municipal waste to landfill (from 2016 onwards) in favour of higher value pre-treatment processes and indigenous recovery practices.

The Draft NWMPCE does not dissolve the three regional waste areas. The NWCPCE sets the ambition of the plan to have a 0% total waste growth per person over the life of the Plan with an emphasis on non-household wastes including waste from commercial activities and the construction and demolition sector.

The draft NWMPCE sets out the following strategic targets for waste management in the region that are relevant to the proposed development:

1a. (Residual Municipal Waste) 1% Reduction / person /year – Waste decline for landfill or recovery by thermal treatment.

2. (Contamination of Materials) 90% of Material in Compliance – Contamination of recycling and food waste with other materials

3a. (Reuse of Materials) 10kg Per person / year – Reuse of materials like cloths or furniture to prevent waste.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €140-160 per tonne of waste, which

includes a €85 per tonne landfill levy introduced under the Waste Management (Landfill Levy) Regulations 2015 (as amended).

The *South Dublin County Council Development Plan 2022– 2028* [16] sets out a number of objectives and actions for the South Dublin area in line with the objectives of the waste management plan.

Policy and Objectives

Policy IE6: Waste Management

Implement European Union, National and Regional waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.

- **IE7 Objective 1**
  To encourage a just transition from a waste management economy to a green circular economy to enhance employment and increase the value, recovery and recirculation of resources through compliance with the provisions of the Waste Action Plan for a Circular Economy 2020 – 2025 and to promote the use of, but not limited to, reverse vending machines and deposit return schemes or similar to ensure a wider and varying ways of recycling.
- **IE7 Objective 2**
  To support the implementation of the Eastern Midlands Region Waste Management Plan 2015-2021 or as amended by adhering to overarching performance targets, policies and policy actions.
- **IE7 Objective 4**
  To provide for and maintain the network of bring infrastructure (e.g. civic amenity facilities, bring banks) in the County to facilitate the recycling and recovery of hazardous and non-hazardous municipal wastes.
- **IE7 Objective 7**
  To require the appropriate provision for the sustainable management of waste within all developments, ensuring it is suitably designed into the development, including the provision of facilities for the storage, separation and collection of such waste.
- **IE7 Objective 8**
  To adhere to the recommendations of the National Hazardous Waste Management Plan 2014-2020 and any subsequent plan, and to co-operate with other agencies including the EPA in the planning, organisation and supervision of the disposal of hazardous waste streams, including hazardous waste identified during construction and demolition projects.

2.3 Legislative Requirements

The primary legislative instruments that govern waste management in Ireland and applicable to the development are:

- Waste Management Act 1996 as amended;
- Environmental Protection Agency Act 1992 as amended;
- Litter Pollution Act 1997 as amended;
- Planning and Development Act 2000 as amended [17]; and
- Circular Economy and Miscellaneous Provisions Act 2022.

One of the guiding principles of European waste legislation, which has in turn been incorporated into the *Waste Management Act 1996* as amended and subsequent Irish legislation, is the principle of “Duty of Care”. This implies that the waste producer is responsible for waste from the time it is generated through until its legal disposal (including its method of disposal). As it is not practical in most cases for the waste

producer to physically transfer all waste from where it is produced to the final disposal area, waste contractors will be employed to physically transport waste to the final waste disposal site.

It is, therefore, imperative that the proposed facilities management company undertake on-site management of waste in accordance with all legal requirements and that the facilities management company employ suitably permitted / licenced contractors to undertake off-site management of their waste in accordance with all legal requirements. This includes the requirement that a waste contactor handle, transport and reuse / recover / recycle / dispose of waste in a manner that ensures that no adverse environmental impacts occur as a result of any of these activities.

A collection permit to transport waste must be held by each waste contractor which is issued by the National Waste Collection Permit Office (NWCPO). Waste receiving facilities must also be appropriately permitted or licensed. Operators of such facilities cannot receive any waste, unless in possession of a Certificate of Registration (COR) or waste permit granted by the relevant Local Authority under the Waste Management (Facility Permit & Registration) Regulations 2007, as amended, or a Waste or Industrial Emissions (IE) Licence granted by the EPA. The COR / permit / licence held will specify the type and quantity of waste able to be received, stored, sorted, recycled, recovered and / or disposed of at the specified site.

2.3.1 South Dublin County Council Waste Management Bye-Laws

The SDCC *"County of South Dublin (Storage, Presentation and Segregation of Household and Commercial Waste) Bye-Laws (2018)"* came into effect in December 2018. These Bye-laws repeal the previous SDCC bye-laws*; South Dublin County Council Household Waste Bye-Laws 2012* and *South Dublin County Council (Storage, Separation at Source, Presentation and Collection of Commercial Waste) Bye-Laws 2007*. The Bye-Laws set a number of enforceable requirements on waste holders and collectors with regard to storage, separation, presentation and collection of waste within the SDCC functional area. Key requirements under these Bye-laws are:

- Kerbside waste presented for collection shall not be presented for collection earlier than 8.00pm on the day immediately preceding the designated waste collection day;
- All containers used for the presentation of kerbside waste and any uncollected waste shall be removed from any roadway, footway, footpath or any other public place no later than 8:00am on the day following the designated waste collection day;
- Neither recyclable household kerbside waste nor food waste arising from households shall be contaminated with any other type of waste before or after it has been segregated; and
- A management company, or another person if there is no such company, who exercises control and supervision of residential and/or commercial activities in multi-unit developments, mixed-use developments, flats or apartment blocks, combined living/working spaces or other similar complexes shall ensure that:
    - separate receptacles of adequate size and number are provided for the proper segregation, storage and collection of recyclable household kerbside waste and residual household kerbside waste;
    - additional receptacles are provided for the segregation, storage and collection of food waste where this practice is a requirement of the national legislation on food waste;
    - the receptacles referred to in paragraphs (a) and (b) are located both within any individual apartment and at the place where waste is stored prior to its collection;

- any place where waste is to be stored prior to collection is secure, accessible at all times by tenants and other occupiers and is not accessible by any other person other than an authorised waste collector,
- written information is provided to each tenant or other occupier about the arrangements for waste separation, segregation, storage and presentation prior to collection; and
- an authorised waste collector is engaged to service the receptacles referred to in this section of these bye-laws, with documentary evidence, such as receipts, statements or other proof of payment, demonstrating the existence of this engagement being retained for a period of no less than two years. Such evidence shall be presented to an authorised person within a time specified in a written request from either that person or from another authorised person employed by South Dublin County Council.

The full text of the Waste Bye-Laws is available from the SDCC website

2.4 Regional Waste Management Service Providers and Facilities

Various contractors offer waste collection services for the commercial sector in the SDCC region. Details of waste collection permits (granted, pending and withdrawn) for the region are available from the NWCPO.

As outlined in the regional waste management plan, there is a decreasing number of landfills available in the region. Only three municipal solid waste landfills remain operational and all are operated by the private sector. There are a number of other licensed and permitted facilities in operation in the region including waste transfer stations, hazardous waste facilities and integrated waste management facilities. There are two existing thermal treatment facilities, one in Duleek, Co. Meath and a second in Poolbeg in Dublin.

A copy of all CORs and waste permits issued by the Local Authorities are available from the NWCPO website and all Waste / Industrial Emissions Licenses issued are available from the EPA.

3.0 DESCRIPTION OF THE DEVELOPMENT

3.1 Location, Size and Scale of the Development

Lens Media Limited are seeking planning permission for the development of a Media Park at a site in the townlands of Coolscudden, Brownstown and Milltown, west of Grange Castle Business Park, Newcastle, County Dublin.

The proposed development will comprise the construction of studio/sound stages with ancillary support offices, workshop buildings a TV studio building outdoor stage areas, a TV studio and reception building, outdoor stages, a dining hall building, a standalone café, hardstanding areas including a backlot area and shooting lanes, production suite buildings, 3-storey car parking deck with ancillary offices, an electrical substation, gate houses, surface car parking and HGV parking area, a waste collection area, rooftop PV panels, green roofs and associated development works and landscaping.

The primary proposed vehicular, cyclist and pedestrian entrance will be located at the eastern boundary with a secondary vehicular access at the south eastern corner of the site.

3.2 Typical Waste Categories

The typical non-hazardous and hazardous wastes that will be generated at the development will include the following:

- Dry Mixed Recyclables (DMR) - includes waste paper (including newspapers, magazines, brochures, catalogues, leaflets), cardboard and plastic packaging, metal cans, plastic bottles, aluminium cans, tins and Tetra Pak cartons;
- Organic waste – food waste and green waste generated from internal plants / flowers;
- Glass; and
- Mixed Non-Recyclable (MNR)/General Waste.

In addition to the typical waste materials that will be generated at the development on a daily basis, there will be some additional waste types generated less frequently / in smaller quantities which will need to be managed separately including:

- Green / garden waste may be generated from internal plants / flowers;
- Batteries (both hazardous and non-hazardous);
- Waste electrical and electronic equipment (WEEE) (both hazardous and non-hazardous);
- Printer cartridges / toners;
- Chemicals (paints, adhesives, resins, detergents, etc.);
- Light bulbs;
- Textiles;
- Timber;
- Metal:
- Styrofoam;
- Waste cooking oil (if any generated by the kitchen);
- Furniture (and, from time to time, other bulky wastes); and
- Abandoned bicycles.

Wastes should be segregated into the above waste types to ensure compliance with waste legislation and guidance while maximising the re-use, recycling and recovery of waste with diversion from landfill wherever possible.

3.3 European Waste Codes

In 1994, the *European Waste Catalogue* [17] and *Hazardous Waste List* [18] were published by the European Commission. In 2002, the EPA published a document titled the *European Waste Catalogue and Hazardous Waste List* [19], which was a condensed version of the original two documents and their subsequent amendments. This document has recently been replaced by the EPA '*Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous'* [20] (2018). This waste classification system applies across the EU and is the basis for all national and international waste reporting, such as those associated with waste collection permits, CORs, permits and licences and the EPA National Waste Database.

Under the classification system, different types of wastes are fully defined by a code. The List of Waste (LoW) code for typical waste materials expected to be generated during the operation of the development are provided in Table 3.1, below.

Table 3.1 Typical Waste Types Generated and LoW Codes

Waste Material	LoW
Paper and Cardboard	20 01 01
Plastics	20 01 39

Metals	20 01 40
Mixed Non-Recyclable Waste	20 03 01
Glass	20 01 02
Biodegradable Kitchen Waste	20 01 08
Oils and Fats	20 01 25
Textiles	20 01 11
Batteries and Accumulators*	20 01 33* - 34
Printer Toner/Cartridges*	20 01 27* - 28
Green Waste	20 02 01
WEEE*	20 01 35*-36
Chemicals (solvents, pesticides, paints & adhesives, detergents, etc.) *	20 01 13*/19*/27*/28/29*30
Fluorescent tubes and other mercury containing waste*	20 01 21*
Bulky Wastes	20 03 07

** Individual waste type may contain hazardous materials*

4.0 ESTIMATED WASTE ARISINGS

A waste generation model (WGM) developed by AWN has been used to predict waste types, weights and volumes expected to arise from operations within the development. The WGM incorporates building area and use and combines these with other data, including Irish and US EPA waste generation rates.

The estimated quantum / volume of waste that will be generated from the development has been determined based on the floor area and their designated uses per m^2 and the proposed number of staff onsite..

The estimated waste generation for the development for the main waste types are presented in Table 4.1.

Table 4.1 *Estimated Waste Generation for the development*

Waste Type	m^3 per week
	Combined
Organic Waste	2.36
Paper (Confidential)	1.97
DMR	32.74
Glass	0.25
MNR	13.00
Total	**50.33**

BS5906:2005 Waste Management in Buildings – Code of Practice [21] has been considered in the calculations of waste estimates. AWN's modelling methodology is based on recently published data and data from numerous other similar developments in Ireland and is based on AWN's experience, it provides a more representative estimate of the likely waste arisings from the development.

5.0 WASTE STORAGE AND COLLECTION

This section provides information on how waste generated within the site will be stored and collected. This has been prepared with due consideration of the site layout as well as best practice standards, local and national waste management requirements,

including those of SDCC. In particular, consideration has been given to the following documents:

- *BS 5906:2005 Waste Management in Buildings – Code of Practice,*
- *EMR Waste Management Plan 2015 – 2021;*
- *The Draft NWMPCE*
- *South Dublin County Council Development Plan 2022 – 2028;*
- SDCC *County of South Dublin (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws (2018); and*

Waste Storage Areas

Satellite waste storage areas (WSA) have been allocated for each building for the temporary storage of waste. A main waste storage yard has been allocated adjacent on the southwest side of the site for the storage and segregation of waste from across the development. Waste will be collected by facilities management from the smaller satellite and taken to main storage yard on an as required basis.

On collection days, the waste contractor will access the main waste storage yard and collect bins and skips directly from the main waste storage yard. Skips will also be collected directly from stages as required.

Locations of all WSAs can be viewed on the drawings submitted with the planning application.

Facilities management will supply all tenants and staff with a document that shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply within the development for units sharing waste storage areas.

Using the estimated waste generation volumes in Tables 4.1, above, the waste receptacle requirements for MNR, DMR, organic waste and glass have been established. It is envisaged that MNR, DMR, organic and glass waste will be collected weekly basis.

Waste Storage Requirements

Estimated waste storage requirements for the operational phase of the development are detailed in Table 5.1, below.

Table 5.1 *Waste storage requirements for the development*

Area/Use	Bins Required				
	MNR[1]	DMR[2]	Organic	Glass	Additional
Waste Yard	13 x 1100L	33 x 1100L	10 x 240L	2 x 240L	Wood – Skip Metal – Skip Electronic - Cage
Individual WSA (Per Building)	1 x 1100L	1 x 1100L	1 x 120L	1 x 120L	Skip (as required)

Note: 1 = Mixed Non-Recyclables
2 = Dry Mixed Recyclables

The waste receptacle requirements have been established from distribution of the total weekly generation estimate into the holding capacity of each receptacle type. Waste storage receptacles as per Table 5.1, above, (or similar appropriate approved containers) will be provided by the facilities management company.

The types of bins used will vary in size, design and colour dependent on the appointed waste contractor. However, examples of typical receptacles to be provided in the WSAs are shown in Figure 5.1. All waste receptacles used will comply with SIST EN 840-1:2020 and SIST EN 840-2:2020 standards for performance requirements of mobile waste containers, where appropriate.

Figure 5.1 *Typical waste receptacles of varying size (120L, 240L & 1100L)*

Receptacles for organic, mixed dry recyclable, glass and mixed non-recyclable waste will be provided in the WSA's prior to first occupation of the development i.e. prior to the development becoming operational.

This Plan will be provided to each tenant from first occupation of the development i.e. once the unit is occupied. This Plan will be supplemented, as required, by the property management company with any new information on waste segregation, storage, reuse and recycling initiatives that are subsequently introduced

5.1 Waste Storage

The tenant(s) will segregate waste into the following main waste streams:

- DMR;
- MNR;
- Organic waste;
- Glass; and
- Confidential Paper

The unit(s) may be occupied by a single tenant or multiple tenants. It is recommended that the tenants implement the 'binless office' concept where employees do not have bins located under desks and instead bring their waste to Area Waste Stations (AWSs) located strategically on the building floors, at print stations/rooms and at any canteens, micro kitchens or tea stations which may be provided within the tenant's space. Experience has shown that the maximum travel distance should be no more than 15m from the employee's desk to the AWS. This 'best in class' concept achieves maximum segregation of waste in an office setting.

Typically, an AWS would include a bin for DMR and a bin for MNR. It is recommended that a confidential paper bin with a locked lid/door should also be provided for at each AWS and/or adjacent to photocopy/printing stations, as required. In addition, it is recommended that organic and glass bins should be provided at any canteens or micro kitchens, food service or tea stations, where appropriate.

A printer cartridge/toner bin should be provided at the print/copy stations, where appropriate.

It is recommended that all bins/containers should be clearly labelled and colour coded to avoid cross contamination of the different waste streams. Signage should be posted on or above the bins to show which wastes can be put in each bin.

The binless office concept, in addition to assisting in maximising recycling rates and minimising associated landfill disposal costs, also has the advantage of substantially reducing cleaning costs, as cleaners visit only the AWSs on each floor or area, as opposed to each desk.

Canteen/restaurant/café are provided within the development, these will generate additional waste volumes on a daily basis, primarily organic waste from food preparation/leftovers and possible waste cooking oil and waste sludge. The kitchen is also likely to generate extra packaging waste material such as cardboard and plastic from decanting of goods received. The estimated waste volumes in Table 4.1 include for waste from a full canteen/restaurant.

Kitchens are allocated in the proposed development. These areas will contribute a significant portion of the volume of waste generated on a daily basis, and as such it is important that adequate provision is made for the storage and transfer of waste from these areas to the WSA.

It is anticipated that waste will be generated in kitchens throughout the day, primarily at the following locations:

- Food Storage Areas (i.e. cold stores, dry store, freezer stores and stores for decanting of deliveries);
- Meat Preparation Area;
- Vegetable Preparation Area;
- Cooking Area; and
- Dish-wash and Glass-wash Area.

Small bins will be placed adjacent to each of these areas for temporary storage of waste generated during the day. Waste will then be transferred from each of these areas to the appropriate waste store within the kitchen / food outlet areas.

Suppliers for the tenants should be requested by the tenants to make deliveries in reusable containers, minimize packaging and/or to remove any packaging after delivery where possible, to reduce waste generated by the development.

Personnel nominated by the tenants will empty the bins in the AWSs, as required, and bring the segregated waste using trolleys/carts/bins via lifts or internal corridors to the satellite WSAs located at each building.

It is proposed that confidential paper waste will be managed separately to non-confidential paper waste. Tenants will be required to engage with an appropriately permitted/licenced confidential waste management contractor for collection and shredding of confidential paper. It is anticipated that tenants will place locked confidential waste paper bins as required throughout their office areas. The confidential waste company will typically collect bins directly from the office areas, under agreement with the tenant, and bring the locked bin or bags of confidential waste via the lifts to their collection truck. It is envisaged that confidential paper waste will be shredded on-site in the dedicated collection truck or bought to an authorised facility for offsite shredding.

It is currently proposed the main waste types organic, glass, DMR and MNR be collected on a weekly basis.

Other waste materials such as WEEE, batteries, wood, metal and lightbulbs will be generated less frequently. Space has been allowed for in the WSAs for containers and skips for storage of these waste types as required. Other waste types will be collected on an as required basis.

5.2 Waste Collection

There are numerous private contractors that provide waste collection services in the South Dublin area. All waste contractors servicing the development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered / permitted / licensed facilities only.

Waste will be taken by facilities management from satellite bins stores to the main waste storage yard as required. The waste contractor will be responsible for collecting the waste receptacles directly from the main waste storage yard. Skips will also be taken directly to stages at the time of stage changes to assist with the breaking down and segregation of waste. All waste receptacles will be returned promptly to their appropriate WSAs after emptying.

The staging/collection areas are such that it will not obstruct traffic or pedestrians (allowing a footway path of at least 1.8m, the space needed for two wheelchairs to pass each other) as is recommended in the Design Manual for Urban Roads and Streets (2019) [21].

Suitable access and egress has been provided to enable the bins to be moved easily from the WSAs to the waste collection vehicles on the appropriate days. Waste will be collected at agreed days and times by the nominated waste contractors.

A trolley / tug or suitable vehicle may be required to convey the bins to and from the collection areas. The facilities management or waste contractor will ensure that empty bins are promptly returned to the WSAs after collection / emptying in line with the SDCC waste bye-laws.

All waste receptacles should be clearly identified as required by waste legislation and the requirements of the SDCC *Waste Bye-Laws*. Waste will be presented for collection in a manner that will not endanger health, create a risk to traffic, harm the environment or create a nuisance through odours or litter.

It is recommended that bin collection times are staggered to reduce the number of bins required to be emptied at once and the time the waste vehicle is on-site. This will be determined during the process of appointment of a waste contractor.

5.3 Additional Waste Materials

In addition to the typical waste materials that are generated on a daily basis, there will be some additional waste types generated from time to time that will need to be managed separately. A non-exhaustive list is presented below.

<u>Green/garden waste</u>
Green/garden waste may be generated from external landscaping and internal plants/flowers. Green/garden waste generated from landscaping of external areas will be removed by the external landscape contractor. Green waste generated from internal plants/flowers can be placed in the organic waste bins in the WSAs.

<u>Batteries</u>
Waste batteries must be separately stored and returned to retailer or collected for recycling and recovery of resources and the tenant(s) are responsible for arranging

this. Waste batteries generated from the offices may be returned to any retail outlet where similar batteries are sold, regardless of whether they were originally purchased in that outlet. Office tenants will be required to store batteries within the WSA, retail tenants will have to allocate space within their own unit. Facilities management will arrange for return to retailers or collection by an authorised waste contractor, as required.

Waste Electrical and Electronic Equipment (WEEE)

WEEE must be separately stored and returned to manufacturer/retailer or collected for recycling and recovery of resources and the tenant(s) are responsible for arranging this. The *WEEE Directive 2002/96/EC* and associated *European Union (WEEE) Regulations 2014* have been enacted to ensure a high level of recycling of electronic and electrical equipment. It is the manufacturers' responsibility to take back the WEEE, regardless of whether a replacement product is purchased or not and retailers are required to take back WEEE where a similar product is purchased. Office tenants will be required to store WEEE within the WSA, retail tenants will have to allocate space within their own unit, facilities management will arrange for return to retailers or collection by an authorised waste contractor, as required.

Printer Cartridge/Toners

It is recommended that a printer cartridge/toner bin is provided at the print/copy stations in the offices. Tenants will be required to store this waste within the WSA, facilities management will arrange for return to retailers or collection by an authorised waste contractor, as required.

Chemicals (solvents, paints, adhesives, resins, detergents etc)

Chemicals (such as solvents, paints etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery/recycling/disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products generated in the commercial units that is classed as hazardous (if they arise) will be appropriately stored within the tenants own space. Facilties management may arrange collection depending on the agreement.

Light Bulbs

Waste light bulbs will be generated by on studios, production sets, internal and external electrical/maintenance contractors servicing the buildings and public areas of the development. Where waste light bulbs are generated, they will be taken to main waste service yard for storage and collection.

Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. Recycling centres provide for collection of waste clothes and other textiles.

Furniture (and other bulky wastes)

Furniture and other bulky waste items (such as carpet etc.) may occasionally be generated by the tenants. The collection of bulky waste will be arranged as required by facilities management; these items can be stored within the main waste storage yard.

Timber

Timber from set construction that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be disposed of in a separate skip and recycled off-site when possible.

Metal

Metal from set construction will be segregated and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

Styrofoam

Styrofoam from set construction that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be disposed of in a separate skips or bins where possible and recycled offsite when possible.

Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Plasterboard from set construction will be stored in a separate skip, pending collection for recycling.

5.4 Waste Storage Area Design

The shared WSAs should be designed and fitted-out to meet the requirements of relevant design Standards, including:

- Be fitted with a non-slip floor surface;
- Provide ventilation to reduce the potential for generation of odours;
- Provide suitable lighting – a minimum Lux rating of 400 is recommended;
- Appropriate sensor controlled lighting;
- Be easily accessible for people with limited mobility;
- Be restricted to access by nominated personnel only;
- Be supplied with hot or cold water for disinfection and washing of bins;
- Be fitted with suitable power supply for power washers;
- Have a sloped floor to a central foul drain for bins washing run-off;
- Have appropriate graphical and written signage placed above and on bins indicating correct use;
- Have access for potential control of vermin, if required;
- Robust design of doors to bin area incorporating steel sheet covering where appropriate; and
- Be fitted with CCTV for monitoring.

The facility management company will be required to maintain bins and storage areas in good condition as required by the DLRCC *Waste Bye*-Laws.

5.5 Facility Management Responsibilities

It shall be the responsibility of the Facilities Management Company to ensure that all commercial waste generated by the development is managed to ensure correct storage prior to collection by an appropriately permitted waste management company.

- Provision of a Waste Management Plan document, prepared by the Facilities Management Company to all staff and tenants, which shall clearly state the methods of source waste segregation, storage, reuse and recycling initiatives that shall apply to the management of the development;
- Provision and maintenance of appropriate graphical signage to inform tenants and staff of their obligation to reduce waste, segregate waste and in the correct bin;
- Preparation of an annual waste management report for all tenants;
- Designation of access routes to common waste storage areas to ensure safe access to the WSAs by mobility impaired persons.
- Provision of an appropriately qualified and experienced staff member, who will be responsible for all aspects of waste management at the development;

- Daily inspection of apartment waste storage areas and signing of a daily check list, which shall be displayed within the area; and
- Maintenance of a weekly register, detailing the quantities and breakdown of wastes collected from the apartment blocks and provision of supporting documentation by the waste collector to allow tracking of waste recycling rates.

6.0 CONCLUSIONS

In summary, this OWMP presents a waste strategy that addresses all legal requirements, waste policies and best practice guidelines and demonstrates that the required storage areas have been incorporated into the design of the development.

Implementation of this OWMP will ensure a high level of recycling, reuse and recovery at the development. All recyclable materials will be segregated at source to reduce waste contractor costs and ensure maximum diversion of materials from landfill, thus contributing to the targets set out in the *EMR Waste Management Plan 2015 – 2021 and the draft NWMPCE*.

Adherence to this plan will also ensure that waste management at the development is carried out in accordance with the requirements of the S*DCC Waste Bye-Laws.*

The waste strategy presented in this document will provide sufficient storage capacity for the estimated quantity of segregated waste. The designated areas for waste storage will provide sufficient room for the required receptacles in accordance with the details of this strategy.

7.0 REFERENCES

1. Waste Management Act 1996 as amended.
2. Environmental Protection Agency Act 1992 (Act No. 7 of 1992) as amended.
2. Litter Pollution Act 1997 (Act No. 12 of 1997) as amended.
4. Eastern-Midlands Waste Region, *Eastern-Midlands Region (EMR) Waste Management Plan 2015 – 2021* (2015).
5. South Dublin County Council (SDCC) *County of South Dublin (Segregation, Storage and Presentation of Household and Commercial Waste) Bye-laws* (2018).
6. Regional Waste Management Planning Offices, *Draft The National Waste Management Plan for a Circular Economy (June 2023).*
7. Department of Environment and Local Government (DoELG) *Waste Management – Changing Our Ways, A Policy Statement* (1998).
8. Department of Environment, Heritage and Local Government (DoEHLG) *Preventing and Recycling Waste - Delivering Change* (2002)
9. DoELG, *Making Ireland's Development Sustainable – Review, Assessment and Future Action (World Summit on Sustainable Development)* (2002)
10. DoEHLG, *Taking Stock and Moving Forward* (2004)
11. Department of Communications, Climate Action and Environment (DCCAE), *Waste Action Plan for the Circular Economy - Ireland's National Waste Policy 2020-2025* (2020).
12. DCCAE, *Whole of Government Circular Economy Strategy 2022-2023 'Living More, Using Less*' (2021).
13. The Circular Economy and Miscellaneous Provisions Act 2022
14. Environmental Protection Agency (EPA), National Waste Database Reports 1998 – 2020 and the Circular Economy and National Waste Database Report 2021 -
15. SDCC, *South Dublin County Council Development Plan 2022– 2028 (2022).*
16. Planning and Development Act 2000 (S.I. No. 30 of 2000) as amended.
17. European Waste Catalogue - Council Decision 94/3/EC (as per Council Directive 75/442/EC).
18. Hazardous Waste List - Council Decision 94/904/EC (as per Council Directive 91/689/EEC).
19. EPA, *European Waste Catalogue and Hazardous Waste List* (2002)
20. EPA, *Waste Classification – List of Waste & Determining if Waste is Hazardous or Non-Hazardous* (2018)
21. BS 5906:2005 Waste Management in Buildings – Code of Practice.
22. Department of Transport, Tourism and Sport and Department of Housing, Planning and Local Government, *Design Manual for Urban Roads and Streets* (2019)

Appendix 14.1

UISCE ÉIREANN CONFIRMATION OF FEASIBILITY

CONFIRMATION OF FEASIBILITY

Uisce Éireann
Bosca OP 448
Oifig Sheachadta na
Cathrach Theas
Láthair Chorcaí

Uisce Éireann
PO Box 448
South City
Delivery Office
Cork City

www.water.ie

Christina Fox

Barrett Mahony C. Engs.
Sandwith House
52-54 Sandwith Street
Dublin
D02WR26

17 January 2024

Our Ref: CDS23008374 Pre-Connection Enquiry
Site at, Grange Castle Business Park West, Clondalkin, Dublin

Dear Applicant/Agent,

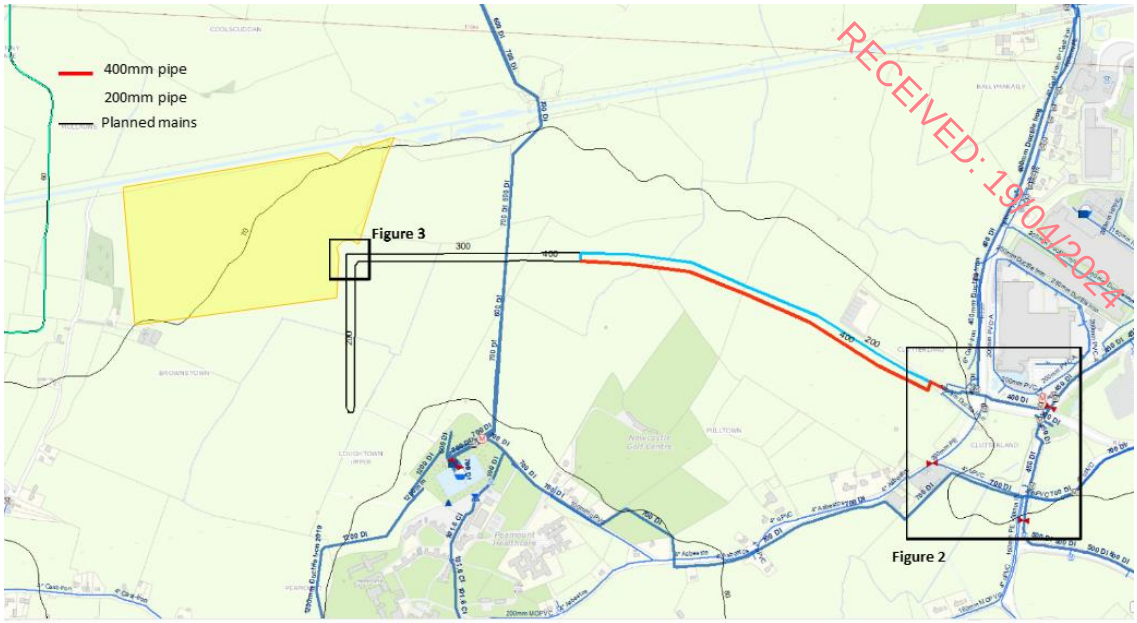
We have completed the review of the Pre-Connection Enquiry.

Uisce Éireann has reviewed the pre-connection enquiry in relation to a Water & Wastewater connection for a Business Connection of 18 unit(s) at Site at, Grange Castle Business Park West, Clondalkin, Dublin, (the **Development)**.

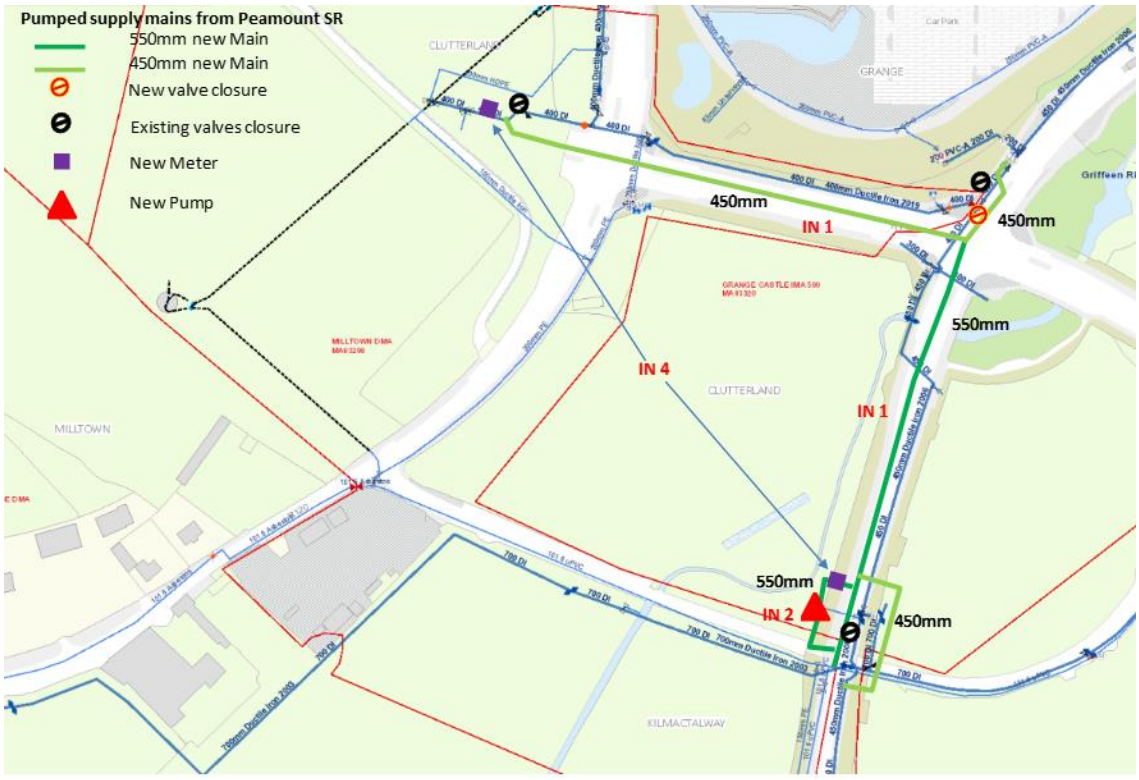
Based upon the details provided we can advise the following regarding connecting to the networks;

- **Water Connection** - Feasible Subject to upgrades

- Private 400mm and 200mm mains, laid by SDCC for the Phase 1 developments within Grange Castle West Business Zone, have to be connected to 400mm DI Uisce Éireann main and in operation, prior the connection.
- The connection to this development shall be off 300mm planned main in front of the site. Applicant has to liaise with SDCC regarding the permission to connect to the private main.

- 

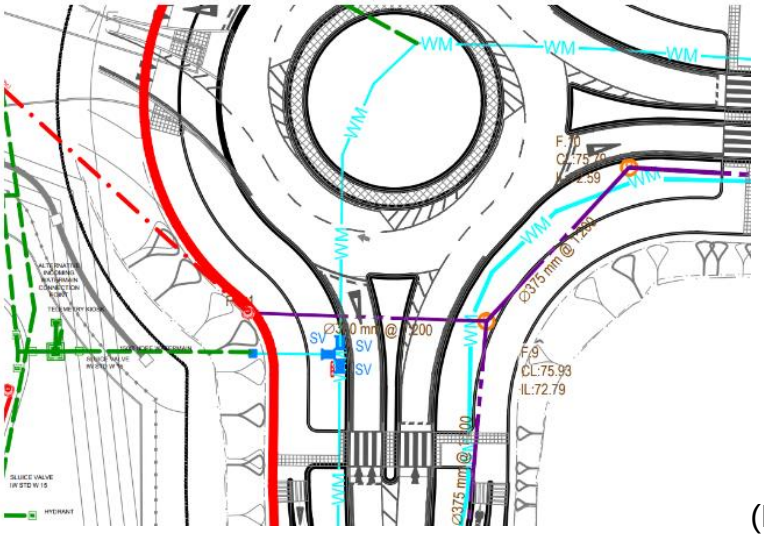
- Approximately 410m of new 450mm ID pipe, approximately 340m of new 550mm ID pipe and two DMA maters are required to be installed as per Figure 2 below.
- A new booster pump is required, to lift the demand, at location shown on Figure 2 below. Size and capacity of the pump will be assessed at a connection application stage. The civils of the pumping station should include additional space to accommodate additional pumps to serve future developments.

- 

(Figure 2)

- The connection main is to be 150mm ID pipe with a bulk meter and associated telemetry system installed on the site development side.
  On site storage must have a re-fill time of minimum 12 hours.

-



(Figure 3)

- The Developer will be required to fund the upgrade works. Fees (relevant to Uisce Éireann network upgrade) will be calculated at a connection application stage.

- **Wastewater Connection** - Feasible without infrastructure upgrade by Uisce Éireann subject to following:

- A new connection to the existing network is feasible without Uisce Éireann network upgrade on the condition that the existing (privately owned) Grange Castle Pumping Station does not increase maximum output flow rate of Phase 2 PS set up (55l/s). Wastewater storage tanks within Grange Castle Business Zone will be required to limit the proposed discharge flow from the site. That should be agreed with SDCC as an owner of the wastewater network within the Zone.
  However, should your Development trigger the Phase 3 Pumping Station set up (270 l/s), it will be necessary to carry out further detailed study and investigations to confirm the available capacity and to determine the full extent of any upgrades which may be required to be completed to Irish Water Infrastructure, prior to agreeing to the proposed connection.

This letter does not constitute an offer, in whole or in part, to provide a connection to any Uisce Éireann infrastructure. Before the Development can be connected to our network(s) you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.

As the network capacity changes constantly, this review is only valid at the time of its completion. As soon as planning permission has been granted for the

Development, a completed connection application should be submitted. The connection application is available at www.water.ie/connections/get-connected/

Where can you find more information?

- **Section A -** What is important to know?
- **Section B -** Details of Uisce Éireann's Network(s)

This letter is issued to provide information about the current feasibility of the proposed connection(s) to Uisce Éireann's network(s). This is not a connection offer and capacity in Uisce Éireann's network(s) may only be secured by entering into a connection agreement with Uisce Éireann.

For any further information, visit **www.water.ie/connections**, **email newconnections@water.ie** or contact 1800 278 278**.**

Yours sincerely,

Dermot Phelan
Connections Delivery Manager

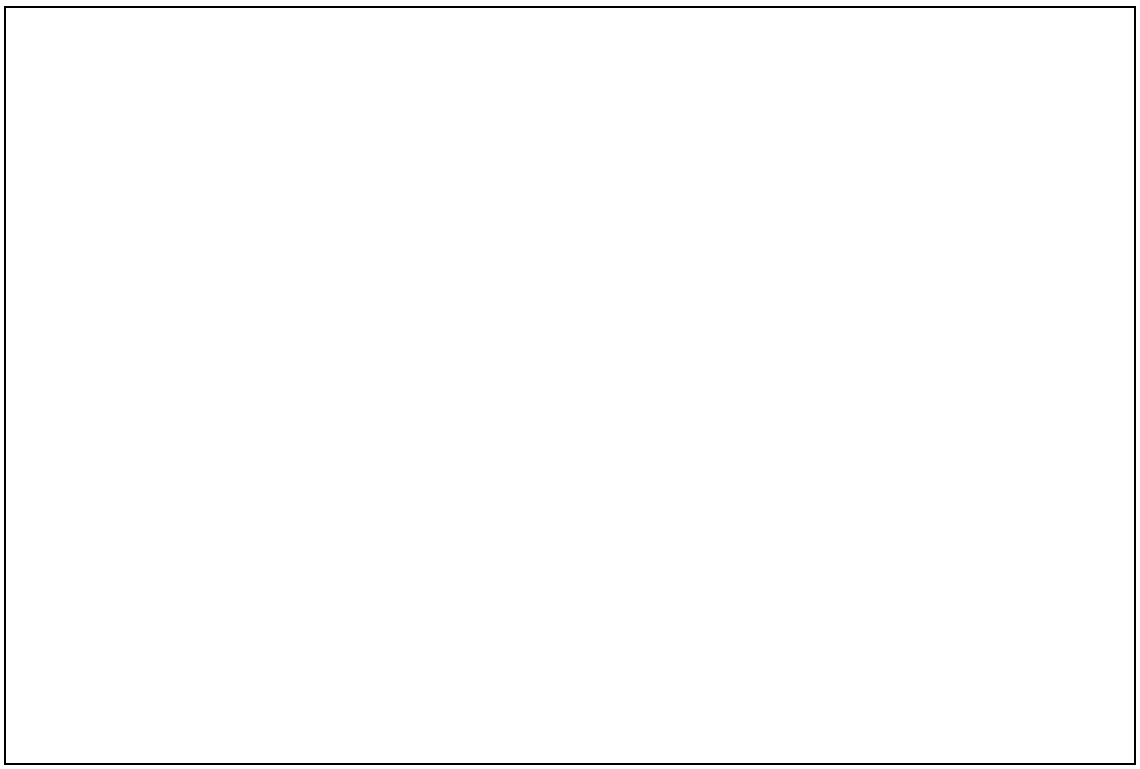
Section A - What is important to know?

What is important to know?	Why is this important?
Do you need a contract to connect?	• Yes, a contract is required to connect. This letter does not constitute a contract or an offer in whole or in part to provide a connection to Uisce Éireann's network(s). • Before the Development can connect to Uisce Éireann's network(s), you must submit a connection application and be granted and sign a connection agreement with Uisce Éireann.
When should I submit a Connection Application?	• A connection application should only be submitted after planning permission has been granted.
Where can I find information on connection charges?	• Uisce Éireann connection charges can be found at: https://www.water.ie/connections/information/charges/
Who will carry out the connection work?	• All works to Uisce Éireann's network(s), including works in the public space, must be carried out by Uisce Éireann*. *Where a Developer has been granted specific permission and has been issued a connection offer for Self-Lay in the Public Road/Area, they may complete the relevant connection works
Fire flow Requirements	• The Confirmation of Feasibility does not extend to fire flow requirements for the Development. Fire flow requirements are a matter for the Developer to determine. • **What to do?** - Contact the relevant Local Fire Authority
Plan for disposal of storm water	• The Confirmation of Feasibility does not extend to the management or disposal of storm water or ground waters. • **What to do?** - Contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges.
Where do I find details of Uisce Éireann's network(s)?	• Requests for maps showing Uisce Éireann's network(s) can be submitted to: datarequests@water.ie

What are the design requirements for the connection(s)?	• The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this Development shall comply with ***the Uisce Éireann Connections and Developer Services Standard Details and Codes of Practice,*** available at www.water.ie/connections
Trade Effluent Licensing	• Any person discharging trade effluent** to a sewer, must have a Trade Effluent Licence issued pursuant to section 16 of the Local Government (Water Pollution) Act, 1977 (as amended). • More information and an application form for a Trade Effluent License can be found at the following link: https://www.water.ie/business/trade-effluent/about/ **trade effluent is defined in the Local Government (Water Pollution) Act, 1977 (as amended)

Section B – Details of Uisce Éireann's Network(s)

The map included below outlines the current Uisce Éireann infrastructure adjacent the Development: To access Uisce Éireann Maps email datarequests@water.ie



Note: The information provided on the included maps as to the position of Uisce Éireann's underground network(s) is provided as a general guide only. The information is based on the best available information provided by each Local Authority in Ireland to Uisce Éireann.

Whilst every care has been taken in respect of the information on Uisce Éireann's network(s), Uisce Éireann assumes no responsibility for and gives no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided, nor does it accept any liability whatsoever arising from or out of any errors or omissions. This information should not be solely relied upon in the event of excavations or any other works being carried out in the vicinity of Uisce Éireann's underground network(s). The onus is on the parties carrying out excavations or any other works to ensure the exact location of Uisce Éireann's underground network(s) is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

Appendix 15.1

ARCHAEOLOGICAL ASSESSMENT REPORT

IAC Archaeology

ARCHAEOLOGICAL ASSESSMENT AT GRANGE CASTLE MEDIA PARK, COUNTY DUBLIN

LICENCE: 20E0486

I.T.M.: 700636, 731794

LICENCEE: DAVID BAYLEY
AUTHOR: DAVID BAYLEY

REPORT STATUS: PRELIMINARY
JUNE 2021

IAC PROJECT REF.: J3679

IRISH ARCHAEOLOGICAL CONSULTANCY LTD
ARCHAEOLOGY & CONSERVATION CONSULTANTS

T: (01) 201 8380 E: archaeology@iac.ie
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RECEIVED: 19/04/2024

ABSTRACT

IAC Archaeology has prepared this report following a programme of archaeological test trenching at a proposed development area, which is located in the townlands of Brownstown and Coolscuddan, County Dublin (ITM 700636, 731794). The work was carried out by David Bayley under Licence 20E0486. It follows a previous geophysical survey by Target Geophysics in 2018 (Licence 18R0222) and an earlier programme of archaeological testing along the distribution roads, which was carried out by IAC Archaeology in 2019 under Licence 19E0370.

Archaeological testing was carried out over the course of nine days from 22nd April 2021 using a 20-tonne mechanical excavator fitted with a flat grading bucket. The trenches targeted geophysical anomalies and open greenfield space within the proposed development area to fully investigate the archaeological potential of the site.

The programme of archaeological test trenching identified five separate areas of archaeological potential (AA1-AA5). The largest concentration of archaeological features was an area of activity related to multiple burnt mound spreads with associated troughs and pits in trenches 10, 11 and 13 (AA1). AA1 is located centrally in the northern half of the site. The second area (AA2) consisted of a pit, filled with material similar to that found in burnt spreads and was located in the northwest of the site. The third and fourth areas of potential (AA3 and AA4) were located towards the southeast of the site and both areas consisted of isolated hearths or kilns. The fifth area (AA5) was located in the southwest of the test area and consisted of a ditch from which medieval pottery sherds were recovered.

CONTENTS

LIST OF FIGURES

LIST OF PLATES

1 INTRODUCTION

1.1 GENERAL

The following report details the results of a programme of archaeological testing undertaken at Grangecastle Media Park. This assessment has been carried out to ascertain the potential impact of the proposed development on the archaeological resource that may exist within the proposed development area. The assessment was undertaken by David Bayley of IAC Archaeology (IAC), under Licence 20E0486, as issued by the National Monuments Service of the Department of Housing, Local Government and Heritage (DoHLGH).

Test trenching commenced at the site on 22nd April 2021 and continued for 9 days. This was carried out using a 20 tonne 360 degree tracked excavator, with a flat, toothless bucket, under strict archaeological supervision. A total of 36 trenches were mechanically investigated across the test area which measured 4,608 linear metres in total. Five separate areas of archaeological potential (AA1-AA5) were identified. The largest concentration of archaeological features was an area of activity related to burnt spreads (AA1) in trenches 10, 11 and 13. The second area (AA2) consisted of a pit, filled with material similar to that found in burnt spreads and was located in the northwest of the test area. The third and fourth areas of potential (AA3 and AA4) were located towards the southeast of the test area and both areas consisted of isolated hearths. The fifth area (AA5) was located in the southwest of the test area and consisted of a ditch from which medieval pottery sherds were recovered.

This report follows on from a previous geophysical survey by Target Geophysics (Nicholls and Murphy, 2018) and an earlier programme of archaeological testing along the distribution roads, which was carried out by IAC Archaeology in 2019 under Licence 19E0370 (Piera and Coughlan 2019). This programme of testing is being undertaken in order to inform an EIAR for the development, which will be compiled over the coming weeks.

2 ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

2.1 BACKGROUND

The proposed development area is located in the townlands of Brownstown and Coolscuddan, County (Figure 1). Both townlands are part of the parish of Kilmactalway and form part of the barony of Newcastle. The proposed site is bounded to the north by the course of the Grand Canal.

There are two recorded monuments within 500m of the proposed development area, both enclosures (DU017-089 and DU017-095) (Figure 3). Many enclosures are early medieval in date and similar to ringforts, but which do not meet the size and form requirements for ringfort classification or are too denuded to be categorised as such. Alternatively, some enclosures can date from the prehistoric period.

Prehistoric Period

Mesolithic Period (c. 7000–4000BC)

Although recent evidence suggests there may have been a human presence in the southwest of Ireland as early as the Upper Palaeolithic (Dowd and Carden 2016), the earliest evidence for widespread settlement in Ireland dates to the Mesolithic period (6000–4000 BC). These communities subsisted on hunting, fishing and foraging with seasonal natural resources being of key importance. The most common evidence found to show the presence of Mesolithic communities at a site is scatters of worked flint, a by-product from the production of flint implements. The coastal areas of County Dublin have produced flint tools dating to the Mesolithic; and seasonal habitation sites have been interpreted through the discovery of shell middens along this coastline. There is no evidence for Mesolithic activity in the vicinity of the proposed development area to date.

Neolithic Period (c. 4000–2500BC)

During the Neolithic period (4000–2500 BC) communities became less mobile and their economy became based on agriculture. This transition was accompanied by major social change. Agriculture demanded an altering of the physical landscape, which meant forests were rapidly cleared and field boundaries constructed. There was a greater concern for territory, which contributed to the construction of large communal ritual monuments called megalithic tombs, which are characteristic of the period. A Neolithic house was discovered in the townland of Kishoge approximately 3km to the east of this proposed development site (Licence 01E0061), indicating that the wider landscape was occupied during the Neolithic period.

Bronze Age Period (c. 2500–800BC)

The Bronze Age (2500–800 BC) was marked by the widespread use and production of metal for the first time in Ireland. As with the transition from Mesolithic to Neolithic, the transition into the early Bronze Age was accompanied by changes in society. The megalithic tomb tradition declined and ended in favour of individual, subterranean cist or pit burials that occur either in isolation or in small cemeteries. These burials

contained inhumed or cremated remains and were often accompanied by a pottery vessel.

Fulachtaí fia or burnt mound sites typically date to the Bronze Age and are amongst the most commonly found sites within the prehistoric landscape, with thousands recorded across the country. Such sites are often characterised by a horseshoe-shaped mound of heat-affected stone and charcoal, often associated with a trough and pits, and are located in close proximity to a water source or in areas where the water table is particularly high. They are often affected by agricultural activities such as ploughing and often survive only as irregular spreads of heat-affected stones and charcoal-rich material. *Fulachtaí fia* have traditionally been interpreted as cooking sites, however, alternative interpretations have been presented including brewing, tanning, dyeing and bathing. There are a number of *fulachtaí fia* recorded in the surrounding landscape. In the townland of Nangor situated c. 3.46km to the east archaeological monitoring uncovered a burnt mound with an associated pit/trough (DU017-084).

The Iron Age (c. 800BC – AD400)

The Iron Age (800 BC–AD 500) was traditionally seen as a period for which there was little evidence in comparison to the preceding Bronze Age and the succeeding early medieval period. However, development-led excavation in recent decades and projects such as the Late Iron Age and Roman Ireland Project have added significantly to our knowledge of the Irish Iron Age. In Europe, there are two stages to the Iron Age, the earlier Hallstatt and the later La Tène. While in Ireland, evidence of a Hallstatt phase is rare, and the La Tène phase is reflected strongly in the style of metalwork of this period. It is clear there was significant contact and interaction between the Continental Europe, Britain and Ireland at this time. There are no recorded sites of Iron Age date in the vicinity of the proposed development area.

Early Medieval Period (AD400–1100)

The early medieval period is portrayed in the surviving literary sources as entirely rural, characterised by the basic territorial unit known as a túath. Byrne estimates that there were likely to have been at least 150 kings in Ireland at any given time during this period, each ruling over his own túath (1973). It has been estimated that each túath comprised between 1,700 and 3,300 subjects, according to the most recent estimates placing the population of Ireland in the early medieval period between a quarter and a half a million people (Stout 2017).

During this turbulent period, defensive enclosures known as ringforts were constructed to protect farmsteads. The dating evidence suggests they were primarily built between the 7th and 9th centuries AD (Stout 1997, 22-31). Often sites recorded as enclosures represent denuded ringforts or similar sites. Enclosures (DU017-089 and DU017-095) identified in the surrounds may represent a ringfort.

Medieval Period (AD1100–1600)

The first of the Anglo-Norman landings in Ireland took place in County Wexford in 1169, at the invitation of the former king of Leinster, Dermot MacMurrough Kavanagh. The Anglo-Normans, joined by 500 Uí Chennselaig men, took the Viking town of Wexford. Through a policy of military force and integration, the Anglo-Normans colonised much of the country.

A tower house located in the townland of Grange DU017-034 also situated to the east (c. 2.8km) is from this period and is shown as a castle on the Down Survey (1655-6) map. In 1997 monitoring and excavation were undertaken in the vicinity of the castle, identified a curving ditch with artefacts including a decorated bone comb, stick-pin and knife dating to 12th to the 13th century AD. A stone causeway, 0.5-0.6m wide and 0.06-0.1m deep, crossed the ditch (www.archaeology.ie)

Post-medieval Period (AD1600-1900)

During the 18th and 19th centuries this area was typified by large manors with associated demesne landscapes and villages interspersed with medium-sized houses and farmsteads. The 18th century, a relatively peaceful period, saw the large-scale development of demesnes and country houses in Ireland. The large country house was often only a small part of the overall estate of a large landowner and provided a base to manage often large areas of land that could be located nationwide.

Lands associated with the large houses were generally turned over to formal gardens, which were much the style of continental Europe. Gradually this style of formal avenues and geometric gardens designs was replaced during the mid-18th century by the adoption of parkland landscapes – to be able to view a large house within a natural setting. Considerable constructional effort went into their creation - earth was moved, field boundaries disappeared, streams were diverted to form lakes and quite often roads were completely diverted to avoid travelling anywhere near the main house or across the estate. Larger estates such as Castle Bagot (constructed between 1790-1810) represents a large country house which forms a prominent feature within this low-lying landscape. Several small demesnes are depicted on the first edition OS map of 1836, including Peamount and Milltown Houses to the south and southeast.

It is from this period that industrial engineering began having a prominent effect on the landscape and how it was modified. The most prominent feature within the landscape adjacent the proposed development is the Grand Canal which commenced construction in this area in 1756. The Grand Canal represents a significant technical feat of late 18th century engineering with its associated structures present along its length. In particular interest are the quarries which would have removed obstacles in the path of the canal and would also have supplied material (sand, soil and stone) for the canal construction. One of these small quarries is located at the northeast corner of the development footprint with a cluster of several more quarries located to the east-northeast along the canal path.

2.2 SUMMARY OF PREVIOUS ARCHAEOLOGICAL FIELDWORK

Archaeological testing, which included the northern and eastern extent of the proposed development area was completed in 2019 and was carried over a number of phases due to access and crop. The combined testing revealed a number of archaeological features under Licence 19E0370. Phase 1 was located within the eastern half of the wayleave of the proposed Grange Castle West Access Road. Phase 1 testing identified three areas of archaeological significance, which were designated as Archaeological Areas 1–3 (Milltown 1). These comprised an enclosure consisting of two concentric enclosing ditches (AA1), a possible kiln (AA2) and a pit filled with charcoal and heat shattered stone, likely associated with burnt mound activity (AA3). Milltown 1 has subsequently been preserved by record under Licence 19E0680 and the preliminary report on the excavations is being finalised. Phase 2 testing identified a further three areas of archaeological significance, which were designated as Archaeological Areas 4–6. These comprise a cluster of ditches and linear features (AA4, Milltown 2) and two linear ditches (AA5 and AA6, Milltown 3). Milltown 2 and Milltown 3 have subsequently been preserved by record under Licence 19E0682 and 19E0681 respectively and the preliminary reports on the excavations are being finalised.

The final phase of testing was completed in October and November 2019. Archaeological Areas 7 (AA7 Brownstown 1) and 8 were identified, representing a possible brick kiln/roadway and a linear ditch and 2 isolated pits.

AA7 Brownstown 1 was located in the northwest corner of the proposed development area within Brownstown townland. It corresponds to a large sub-rectangular anomaly identified in the geophysical survey. Testing confirmed the presence of a large area of broken brick and blackened (possibly burnt) soil. Given the presence of quantities of shattered brick it was interpreted that the features represent the site of a brick kiln.

Excavation of Brownstown 1 was carried out in 2020 by IAC Ltd under Licence 19E0370. It uncovered the remains of three brick kiln features and a spread of material. The features are likely of post-medieval date and may be associated with industrial activity associated with a quarry marked on the on the first edition OS map (surveyed 1836) (Figure 6). The preliminary report on the excavations is currently being finalised.

A review of the historic OS mapping shows that the proposed development area was formerly separated into a number of fields as per Figure 6. Today all boundaries have been removed (Figure 7) and the land is under arable production. Many of the boundaries are visible as linear responses in the geophysical survey.

With the exception of the potential archaeological anomalies shown in the results of the geophysical survey, no other features or areas of archaeological potential have been identified within the baseline resources.

A review of the Excavations Bulletin (1970–2020) has revealed that five other archaeological investigations have occurred in the surrounding vicinity of this proposed development in addition to the archaeological testing of the Grange Castle West Access Road in 2019 and 2020 under Licence 19E0370 mentioned above.

Archaeological Monitoring along the Lucan Palmerstown Pipeline 02E1281 in 2003 uncovered human remains in the neighbouring townland of Gollierstown c. 332m to the east of the proposed development. The pipeline diverted around these skeletal remains and they were preserved *in-situ*.

Four other programmes of archaeological testing in the greater surrounding area to this proposed development site under Licences 05E0413, 07E0671, 08E0197, and 16E0264 all uncovered nothing of archaeological significance.

2.3 SUMMARY OF GEOPHYSICAL RESULTS

Geophysical survey within the boundary of the proposed Grange Castle Business Park West development was carried out by Target Geophysics in 2018 (Nicholls and Murphy, 2018; Licence 18R0222). The survey was successful in defining the location and extent of potential archaeological remains associated with enclosure site DU017-095, which lies to the south of the proposed development area. The geophysical survey has also recorded further potential archaeological remains within the proposed development area (Figure 10).

Multiple responses of probable archaeological significance have also been identified from this geophysical survey. These include a concentration of strongly magnetic responses, small-scale positives and increased response at survey centre in M1 (within the proposed development area); a possible building to the W in M2; a possible ring ditch to the NW in M5; a discrete cluster of positive responses to the N in M6; small-scale positives and increased response to the NE in M8; and possible enclosure remains N of survey centre in M9, to the W in M11, and S in M12. The potential archaeological significance of a complex of linear responses which occupy the south-eastern corner of M11, adjacent to existing farm buildings has also been highlighted.

Remnants of early field systems have been recorded in M4-M6 and M11 and numerous small-scale responses and poorly defined linear anomalies of potential archaeological origin have also been recorded in M1-M9 and M11-M12. An archaeological interpretation for these cannot not be entirely dismissed. However, a natural soil/geological, recent landuse or modern ferrous explanation is expected for the majority. The results from M1-M12 also highlight changing patterns of landuse, including former cultivation regimes, disused field boundaries, buried services, and magnetic disturbance from modern sources of interference. Throughout most survey locations low-level variations in response associated with natural soil/geological variation are also apparent.

2.4 CARTOGRAPHIC ANALYSIS

A review of the historic OS mapping shows that the proposed development area was formerly separated into a number of fields as per Figure 5. Today all boundaries have been removed (Figure 3) and the land is under arable production. Many of the boundaries are visible as linear responses in the geophysical survey.

First Edition Ordnance Survey Map, 1836, scale 1:10560 (Figure 9)

This is the first accurate historic mapping coverage of the area containing the proposed development and depicts the footprint of this development as covering ten smaller fields on the south side of the Grand Canal. A quarry is recorded to the northeastern corner adjacent the Grand Canal. The field boundary pattern is generally depicted as very angular with trees running along the hedgerows to the center.

Ordnance Survey Map, c. 1911, scale 1:2500

This map illustrates a changing landscape at the start of the twentieth century with land management increasing the field sizes substantially by removing the divisions of the smaller fields.

2.5 AERIAL PHOTOGRAPHIC ANALYSIS

Examining the historic Google Imagery, Bing maps and OS Aerial Surveys for the proposed development site, show no indication of any recognisable archaeological features within the development area. The annual ploughing of this arable land is evident and some of the historic boundaries visible on the OS Mapping are visible within the ploughed fields.

2.6 TOPOGRAPHICAL FILES

Information on artefact finds from the study area in Dublin has been recorded by the National Museum of Ireland since the late 18th century. Location information relating to these finds is important in establishing prehistoric and historic activity in the study area. No artefacts are recorded within the footprint of this development or within the immediate vicinity.

3 ARCHAEOLOGICAL TESTING

3.1 GENERAL

Test trenching took place from 22nd to 30th April 2021, using a 20 tonne 360 degree tracked excavator equipped with a flat, toothless bucket under strict archaeological supervision. Any investigated deposits were preserved by record. This was by means of written, drawn and photographic records.

A total of 36 trenches were excavated across the site measuring 4,608 linear metres (Figures 6-9, Plates 1-12, Appendices 1 and 2). The majority of the test trenches were laid out on an east-northeast to west-southwest alignment. The locations of the test trenches were designed to target geophysical anomalies and open greenfield space within the proposed development area.

The test trenches were excavated to determine, as far as reasonably possible, the location, extent, date, character, condition, significance and quality of any surviving archaeological remains threatened by the proposed development.

3.2 TESTING RESULTS

Topsoil across the site generally consisted of mid-brown silty clay. It was generally 0.50m in depth, but was occasionally as shallow as 0.40m and up to 0.60m deep. Natural subsoil varied across the site, but generally consisted of an orangey brown or greyish brown silty clay. In the eastern half of the test area, protrusions of natural bedrock were encountered, most notably in the northeast of the test area, where the base of the trenches were predominantly bedrock.

Archaeological Features

A total of 5 Archaeological Areas (AA1-5) were identified during the course of testing. The details of each area are outlined below:

Archaeological Area 1 (AA1) (Figure 6 & 7; Plates 1-5)

AA1 was focussed on the centre-north are of the site in Trenches 10, 11 and 13. These trenches contained evidence of burnt mound type activity. A burnt mound spread is the result of ''hot stone technology'', where stones were heated in a fire, and then placed in a pit or trough full of water in order to heat the water. The purpose of this hot water is subject to debate, but some theories include cooking food, brewing beer or in some cases, used as a sauna. After repeated heating, the stones decay or break and were discarded, forming a spread or mound of heat affected stone. Over time these mounds become levelled and are identified as a spread of shattered stone in a charcoal rich soil. The use of burnt spreads and mounds covers a wide time period, but they most commonly date to the Bronze Age.

The main burnt mound spread within Trench 10 (C3) extended beyond the extent of the trench, but had exposed dimensions of 6m in length, 2.40m in exposed width and was 0.30m deep. It was comprised of loosely compacted charcoal rich silty clay with frequent inclusions of heat affected stones (Plate 1). A similar burnt spread was

recorded in trench 11 (C4). It was quite irregular in shape/plan and extended beyond the extents of the trench, but had recorded measurements *c.* 11.3m in length, 9.40m in width and was 0.55m deep.

Immediately to the north of the burnt spread C3, was a probable trough (C5) (Plate 2). This was sub-rectangular in plan, and measured 1.66m in length, 0.92m in width and was 0.25m deep. It was filled by black, charcoal rich silty clay with inclusions of heat affected stone (C6). Immediately to the east of burnt spread C3, was another probable trough (C7). It extended beyond the southern limit of the trench, but its exposed dimensions were 1.4m by 1m. It was filled with black, charcoal rich silty clay with heat affected stone inclusions (C8).

A third burnt spread (C9) was located to east-northeast of burnt spread C3 in trench 10. This spread extended beyond the southern extent of the trench, but had exposed dimensions of 4.40m in length, 2.80m in width and was 0.09m deep. It comprised black, charcoal rich silty clay with frequent inclusions of heat affected stone. Immediately west of this was a small stakehole (C10) that measured 0.10m in diameter and was filled by charcoal rich silty clay (C11). Two pits were identified to the northeast and both extended beyond the northern edge of the trench. The first pit (C12) measured 0.90m in width, with an exposed length of 0.75m. The second pit (C14), measured 0.90m in width with an exposed length of 0.50m. Both pits were filled with charcoal rich silty clay with inclusions of heat affected stone (C13 and C15 respectively).

In Trench 11, to the southwest of C4 was another small deposit of burnt spread material (C16). It extended beyond the southeastern edge of the trench but had exposed dimensions of 2.25m in length and 1.55m exposed width. Another burnt spread deposit (C17) (Plate 3) was located to the southwest of C16, measuring 5.20m in length, 2.20m in width and 0.14m deep. To the southeast of C4 was a small pit (C18) that 1.06m by 0.55m wide and contained a black, charcoal rich silty clay fill (C19). A posthole (C20) and a pit (C22) (Plate 4) were located c. 0.90m to the northeast of burnt spread C4. The posthole (0.29m by 0.23m) and the pit (1.70m by 1.60m) were filled with charcoal rich silty clay with inclusions of heat affected stone (C21 and C23) respectively. A further burnt spread deposit (C24) was located immediately north of pit C22 (Plate 4). This spread extended beyond the edge of the trench, but had exposed dimensions of 5m by 1.10m. At the northeast of the trench, there was a pit (C25) and another small burnt spread (C27). The pit C25 was 0.70m long and 0.64m wide and was filled with black, charcoal rich silty clay with inclusions of heat affected stone (C26). The burnt spread C27 extended beyond the limits of the trench, but the exposed area measured 1.90m by 1.70m. It was comprised of black, charcoal rich silty clay with inclusions of heat affected stone. It had been partially truncated by an agricultural furrow.

In trench 13, two further features were identified. A large, circular pit (C28), (3.40m by 3.10m and 0.15m deep) was located close to the southwestern end (Plate 5). It was filled by grey silty clay with frequent inclusions of charcoal and occasional heat affected stone (C29). A second, smaller pit (C30) (1.70m by 0.80m) was located to the

northwest and was filled with grey silty clay with frequent inclusions of charcoal and heat affected stone (C31).

Archaeological Area 2 (AA2) (Figure 6 & 8; Plate 6)

An isolated pit (C32) with burnt spread material was identified c. 250m to the northwest of the activity described above (AA2) (Plate 6). This pit was located c. 45m from the west-southwestern end of trench 15 and measured 2.60m by 1.78m and was 0.25m deep. The fill (C33) comprised pale brownish grey silty clay with yellowish mottling and moderate inclusions of charcoal and heat affected stone. A small area was opened around this pit, but no other features were identified.

Archaeological Area 3 (AA3) (Figure 6 & 9; Plate 7)

An isolated hearth pit or kiln (C34) was identified in Trench 23. It measured 1.10m in diameter and was 0.30m deep (Plate 7). The hearth pit had three distinct fills. The basal fill (C35) comprised pale yellowish grey silty clay with moderate charcoal inclusions. Above this was orangey brown clay-sand with moderate charcoal inclusions (C36). The upper fill (C37) comprised charcoal rich, black silty clay.

Archaeological Area 4 (AA4) (Figure 6 & 9; Plate 8)

A second isolated hearth pit or kiln (C38) was identified in trench 25. It measured 0.70m in length and was 0.55m wide. It comprised a deposit of fire reddened clay with occasional charcoal fleck inclusions (Plate 8).

Archaeological Area 5 (AA5) (Figure 6 & 8; Plate 9)

In the southwestern of the site, a possible linear ditch (C39) was identified at the western end of trench 29 (AA5), and subsequently also in Trenches 28, 35, and 36. It varied in width from 2.30m to 3.30m and was 0.50m deep. It corresponds with short linear anomaly on the geophysical survey. It is located to the southeast of a relict field boundary, also evident on the geophysics survey and in part on the 1st edition Ordnance Survey map. Sherds of medieval pottery were recovered from the fill in trench 35, which consisted of pale grey-brown sandy clay, with inclusions of snail shell and animal bone (C40). A possible kiln (C41) was noted cut into the fill Trench 29 (Plate 9). It was 1.30m long and 0.80m wide. It was filled by fire reddened clay with charcoal inclusions (C42). It is unclear whether the ditch relates in any way to the field system although the presence of medieval ceramics may indicate earlier and possibly unrelated activity.

Non-Archaeological Features

The main non-archaeological features recorded across the test area were a series of former field boundaries that were depicted on the 1st edition Ordnance Survey map from 1836 (Plate 10). According to local residents (pers. comm.), these boundaries were only removed and infilled within the last *c.* 40-50 years when the previous land owner changed from dairy farming to tillage. Investigation of these boundaries appeared to confirm this, as any artefacts recovered were quite modern in date, including lengths of barbed wire and white ware pottery sherd. Ceramic and plastic drainage pipes were also noted at the base of some of the boundaries (Plate 11). One

field boundary identified in trenches 18, 19, 27 and 34 fits into the overall field system and is shown as a trend on the geophysical survey, but is not depicted on the 1st edition OS map. This boundary appears to be broadly contemporary with the relict field system, but seems to have been levelled prior to the production of the 1st edition map in 1836.

In addition to the former field boundaries, numerous agricultural furrows were noted across the test area, as well as a small number of stone drains.

3.3 CONCLUSIONS

The programme of archaeological test trenching identified five separate areas of archaeological potential (AA1-AA5). The largest concentration of archaeological features was an area of activity related to multiple burnt mound spreads with associated troughs and pits in trenches 10, 11 and 13 (AA1). AA1 is located centrally in the northern half of the site. The second area (AA2) consisted of a pit, filled with material similar to that found in burnt spreads and was located in the northwest of the site. The third and fourth areas of potential (AA3 and AA4) were located towards the southeast of the site and both areas consisted of isolated hearths or kilns. The fifth area (AA5) was located in the southwest of the test area and consisted of a ditch from which medieval pottery sherds were recovered.

4 REFERENCES

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CARTOGRAPHIC SOURCES

Ordnance Survey maps of County Dublin 1836 and 1911.

ELECTRONIC SOURCES

www.excavations.ie – Summary of archaeological excavation from 1970–2020.

www.osiemaps.ie – Ordnance Survey aerial photographs dating to 1995, 2000 & 2005; and 6-inch/25-inch maps.

www.heritagemaps.ie – The Heritage Council web-based spatial data viewer which focuses on the built, cultural and natural heritage around Ireland and off shore.

www.googleearth.com – Satellite coverage of the proposed development area.

www.bingmaps.com – Satellite coverage of the proposed development area.

APPENDICES

APPENDIX 1 TRENCH RESULTS

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
1	100	2.40	0.45	Northwest–southeast	No archaeology found. Four agricultural furrows were identified. They varied in width from 0.70m – 1.04m wide and were between 0.10m and 0.25m in depth
2	86	2.40	0.50	Northwest-southeast	No archaeology found. Two agricultural furrows noted. Both were oriented northeast-southwest and were 0.45m and 0.80m wide and 0.12m deep
3	77	2.40	0.50	Northwest-southeast	No archaeology found.
4	50	2.40	0.50 – 0.65	North-northwest-south-southeast	No archaeology found. Two geophysical anomalies described as 'probably natural' were targeted by this trench. At both locations, there was a concentration of decayed stone.
5	125	2.40	0.50	North-northwest-south-southeast	No archaeology found.
6	127	2.40	0.50	North-south	No archaeology found.
7	203	2.40	0.40 – 0.70	East-northeast-west-southwest	No Archaeology found. Three former field boundaries that correspond with field boundaries on the 1st edition OS map were identified. The westernmost measured 2.75m wide and was excavated to 0.55m deep. One piece of red brick was recovered from the fill. The second boundary ditch was 2.20m wide and was 0.60m deep. A plastic drainage pipe was *in situ* at the base. The easternmost boundary ditch measured 3.20m wide and was excavated to 0.60m deep. Red brick, barbed wire and white ware sherds were recovered from the fill. Three agricultural furrows were noted. Two were oriented northeast-southwest and one was oriented northwest-southeast. They varied in width from 0.50m – 1m and were between 0.10m and 0.15m deep.
8	30	2.40	0.60	Northwest-southeast	No archaeology found. A former field boundary that corresponds with a boundary depicted on the 1st edition OS map was identified. It was also noted in trench 7. It measured 3m wide. One agricultural furrow was also noted. It was oriented northeast-southwest and measured 0.80m wide and 0.10m deep. This trench targeted a possible archaeological response identified in the geophysical survey, but nothing was evident in the trench at the location.
9	200	2.40	0.50	East-northeast-west-	No archaeology found. Two former field boundaries that correspond with boundaries

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
				southwest	marked on the 1st edition OS map were identified. The westernmost boundary ditch was 2.40m wide. Modern debris was noted in the fill. This ditch was also noted in trench 7. The eastern boundary ditch was 2.60m wide and was also noted in trenches 10 and 13. Five agricultural furrows were noted. Three were northeast-southwest oriented and two were oriented northwest-southeast. They varied in width from 0.70m to 0.95m and were between 0.08m and 0.16m deep. A possible archaeological feature identified in the geophysical survey was targeted by this trench, but nothing was evident in the trench at the location.
10	213	2.40	0.40 – 0.60	East-northeast-west-southwest	Burnt spread activity. The main burnt spread (**C3**) extended beyond the extent of the trench, but had exposed dimensions of 6m x 2.40m (exposed) x 0.30m deep. It comprised of loosely compacted charcoal rich silty clay with frequent inclusions of heat affected stones. A probable trough (**C5**) was located immediately north of burnt spread **C3**. It was sub-rectangular in plan, and measured 1.66m x 0.92m x 0.25m deep. It was filled by black, charcoal rich silty clay with inclusions of heat affected stone (**C6**). Another probable trough (**C7**) was located to the east of burnt spread **C3**. It extended beyond the southern limit of the trench, but its exposed dimensions were 1.4m x 1m (exposed). It was filled with black, charcoal rich silty clay with heat affected stone inclusions (**C8**). Another burnt spread (**C9**) was located 6.25m east-northeast of burnt spread **C3**. This spread extended beyond the southern extent of the trench, but had exposed dimensions 4.40m x 2.80m x 0.09m deep. It comprised black, charcoal rich silty clay with frequent inclusions of heat affected stone. Immediately west of this burnt spread was a small stakehole (**C10**). It measured 0.10m in diameter and was filled by charcoal rich silty clay (**C11**). Two pits were identified c. 3.75m east-northeast of burnt spread **C9**. Both extended beyond the northern edge of the trench. The first pit (**C12**) measured 0.90m x 0.75m (exposed). The second pit (**C14**), measured 0.90m x 0.50m (exposed). Both pits were filled with charcoal rich silty clay with inclusions of heat affected stone (**C13** and **C15** respectively). This area of activity broadly corresponds with an area of increased response in the geophysical survey. Nothing was evident in the trench at the east-northeast wend of the trench where a possible archaeological response was targeted.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					Two former field boundaries that correspond with boundaries marked on 1st edition OS map were identified. The westernmost boundary measured 2.50m wide. The first edition OS map shows it continuing across trenches 11 and 13, but no trace of it was identified in these trenches. The eastern field boundary measured 2.50m wide and was also noted in trenches 9 and 13.
11	42	2.40	0.65	Northeast-southwest	A large, irregular shaped burnt spread (**C4**) was identified in this trench. It extended beyond the extent of the trench, but its exposed dimensions were 11.3m x 9.40m x 0.55m deep. Another deposit of burnt spread material (**C16**) was located c. 1.30m to the southwest of burnt spread **C4**. This spread measured 2.25m x 1.55m. Another burnt spread deposit (**C17**) was located c. 7.75m to the southwest of burnt spread **C16**. This spread measured 5.20m x 2.20m x 0.14m deep. To the southeast of burnt spread **C4**, was a small pit (**C18**). It measured 1.06m x 0.55m. It contained a black, charcoal rich silty clay fill (**C19**). A posthole (**C20**) and a pit (**C22**) were located c. 0.90m to the northeast of burnt spread **C4**. The posthole measured 0.29m x 0.23m wide. The pit measured 1.70m x 1.60m. Both of these features were filled with similar material, charcoal rich silty clay with inclusions of heat affected stone (**C21** and **C23**) respectively. Immediately to the north of pit **C22** was another deposit of burnt spread material (**C24**). This spread extended beyond the northwestern edge of the trench, but had exposed dimensions of 5m x 1.10m. At the northeast of the trench, c. 1m from burnt spread **C24**, were a pit (**C25**) and another probable burnt spread (**C27**). The pit **C25** measured 0.70m x 0.64m. It was filled with black, charcoal rich silty clay with inclusions of heat affected stone(**C26**). The burnt spread **C27** extended beyond the northeastern and southeastern edges of the trench, but the exposed area measured 1.90m x 1.70m. It comprised black, charcoal rich silty with inclusions of heat affected stone. It had been partially truncated by an agricultural furrow. This area of activity corresponds with an area of increased response in the geophysical survey. No trace of a field boundary marked on the 1st edition OS map was found in this trench.
12	12	2.40	0.5	East-northeast-west-southwest	No archaeology found. This trench targeted a trend on the geophysical survey. Nothing was noted in the trench, indicating that this trend must have been geological in nature.
13	213	2.40	0.40 – 0.50	East-northeast-west-southwest	Two pits (**C28** and **C30**) relating to the burnt spread activity were recorded at the west-southwest end of the trench. Pit **C28** was quite

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					large, measuring 3.40m x 3.10m x 0.15m deep. It was filled by grey silty clay with frequent inclusions of charcoal and occasional heat affected stone (C29). A second, smaller pit (C30) was located c. 1.80m northwest of pit C28. It measured 1.70m x 0.80m. The fill (C31) comprised grey silty clay with frequent inclusions of charcoal and heat affected stone. A former field boundary that corresponds with a field boundary marked on the 1st edition OS map was also noted. It measured 2.50m wide and was also noted in trenches 9 and 10.
14	205	2.40	0.50	East-northeast-west-southwest	No archaeology found. A former field boundary that corresponds with a boundary marked on the 1st edition OS map was noted. It measured 2m wide x 0.37m deep. Two iron nails were noted in the fill. A northeast-southwest oriented stone drain was noted. It measured 0.50m wide.
15	201	2.40	0.30 - 0.45	East-northeast-west-southwest	An isolated pit (C32) measuring 2.60m x 1.78m x 0.25m deep was recorded c. 45m from the west-southwest end of the trench. It was filled by pale brownish grey silty clay and contained moderate amounts of charcoal and heat affected stone inclusions (C33). Two former field boundaries that correspond with boundaries marked on the 1st edition OS map were noted. The westernmost of these boundaries was 2m wide and excavated to 0.30m deep. It was also noted in trench 16. Sherds of white ware and brown ware were recovered. The easternmost field boundary was 1.50m wide. A number of agricultural furrows were also noted. They were generally north-south oriented and varied between 0.50m and 0.90m wide and between 0.10 and 0.12m in depth.
16	201	2.40	0.30 – 0.50	East-northeast-west-southwest	No archaeology found. A meandering former field boundary that corresponds with the 1st edition OS map crossed the trench twice. At the western end of the trench, this boundary was noted in the trench for a length of 46m. It was c. 2.40m wide x 1.20m deep. A ceramic drainage pipe was noted at the base. This boundary was also recorded in trench 17. The second former field boundary that corresponds with the 1st ed OS boundary was 2m wide x 0.90m deep. Ceramic drainage pipes were noted at the base. This boundary was also recorded in trench 15.
17	201	2.40	0.50	East-northeast-west-southwest	No archaeology found. A field boundary that corresponds with a boundary shown on the 1st edition OS map noted. It was 5m wide and contained wire and iron rebar in the fill.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					Four agricultural furrows noted. Three were oriented northeast-southwest and one was northwest-southeast. They varied in width from 0.50m to 2m and were between 0.20m and 0.30m deep. A potential pit was investigated in this trench but proved to be the base of a tree/bush.
18	204	2.40	0.40	East-northeast-west-southwest	No archaeology found. A former field boundary that corresponds with a boundary shown on the 1st edition OS map was noted. It measured 1.96m wide and was also noted in trenches 19 and 27. A former field boundary that corresponds with a ditch shown on the geophysical survey, but is not shown on the 1st edition OS map was noted. It is interpreted as being broadly contemporary with the boundaries shown on the 1st edition OS map, but was infilled prior to survey works for the map. This field boundary was also recorded in trenches 19, 27 and 34. In this trench, it measured 5m wide. A northeast-southwest stone drain, 0.50m wide was noted.
19	204	2.40	0.50	East-northeast-west-southwest	. No archaeology found. A former field boundary that corresponds with a boundary shown on the 1st edition OS map noted. It was 1.60m wide x 0.50m deep and was also noted in trench 18. A former field boundary that corresponds with a ditch shown on the geophysical survey, but is not shown on the 1st edition OS map was noted. It is interpreted as being broadly contemporary with the boundaries shown on the 1st edition OS map, but was infilled prior to survey works for the map. This field boundary was also recorded in trenches 18, 27 and 34. In this trench, it measured 2.50m wide. Seven agricultural furrows were noted, ranging between 0.50m and 1.30m wide and 0.08m and 0.16m deep. Two stone drains noted. Both were 0.50m wide.
20	100	2.40	0.40	North-northwest-south-southeast	No archaeology found. A field boundary depicted on the 1st edition OS map as crossing this trench was not identified in this trench. Three agricultural furrows were noted. They varied in width from 0.68m – 1m and were between 0.10 and 0.12m deep.
21	84	2.40	0.40	North-northwest-south-southeast	No archaeology found. One former field boundary that corresponds with a boundary on the 1st edition OS map noted. It measured 2.50m in width. Two agricultural furrows also noted. They were 0.90m and 1m wide and 0.16m and 0.15m deep respectively.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
22	215	2.40	0.50	East-northeast-west-southwest	No archaeology found. Two former field boundaries that correspond with boundaries shown on the 1st edition OS map noted. The westernmost ditch was 1.90m wide x 0.70m deep. The eastern most ditch was 2m wide x 0.45m deep. Both of these ditches were also noted in trench 23. One northeast-southwest oriented agricultural furrow noted. It measured 0.80m wide x 0.13m deep.
23	209	2.40	0.40 – 0.50	East-northeast-west-southwest	An isolated hearth (C34) was noted. It measured 1.10m in diameter x 0.30m deep. The hearth had three distinct fills. The basal fill (C35) comprised pale yellowish grey silty clay with moderate charcoal inclusions. Above this was orangey brown clayish sand with moderate charcoal inclusions (C36). The upper fill (C37) comprised charcoal rich, black silty clay. Two former field boundaries that correspond with boundaries shown on the 1st edition OS map noted. The westernmost ditch was 1.90m wide, while the easternmost ditch was 1.30m wide x 0.30m deep. Both of these ditches were noted in trench 22. One northwest-southeast oriented agricultural furrow also noted. It measured 0.64m wide x 0.06m deep.
24	128	2.40	0.50	East-northeast-west-southwest	No archaeology found. One former field boundary that corresponds with a boundary on the 1st edition OS map noted. It measured almost 6m wide and was full of modern rubble. It was also recorded in trenches 25 and 26. Two agricultural furrows noted. They were 1.16m and 1.35m wide and 0.21m and 0.17m deep respectively.
25	125	2.40	0.40	East-northeast-west-southwest	An isolated hearth (C38) noted. It measured 0.70m x 0.55m wide and comprised a deposit of fire reddened clay with occasional charcoal fleck inclusions. One former field boundary that corresponds with a boundary on the 1st edition OS map noted. It measured 6.10m wide in this trench and as per trench 24, it was filled with modern rubble. It continued into trench 26. Two agricultural furrows noted. They measured 0.56m and 0.72m wide and were 0.12m and 0.24m deep respectively.
26	125	2.40	0.40	East-northeast-west-southwest	No archaeology found. One former field boundary that corresponds with a boundary on the 1st edition OS map noted. This ditch was also noted in trenches 24 and 25. It was 6m wide and filled with modern rubble. Two agricultural furrows noted. They measured

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					1.24m and 0.94m wide and were 0.15m and 0.13m deep respectively.
27	203	2.40	0.55 – 0.60	East-northeast-west-southwest	No archaeology found. A former field boundary that corresponds with a boundary on the 1st edition OS map noted. It measured 2.20m wide and was also recorded in trenches 18 and 19. A former field boundary that corresponds with a ditch shown on the geophysical survey, but is not shown on the 1st edition OS map was noted. It is interpreted as being broadly contemporary with the boundaries shown on the 1st edition OS map, but was infilled prior to survey works for the map. This field boundary was also recorded in trenches 18, 19 and 34. One north-south agricultural furrow noted. It measured 2m wide and was 0.24m deep.
28	25	2.40	0.40 – 0.60	Northwest-southeast	A probable medieval ditch **C39** was recorded in this trench. It measured 3.25m wide x 0.50m deep. It was also recorded in trenches 29, 35 and 36 A former field boundary that corresponds with a boundary on the 1st edition OS map was noted immediately to the northwest of ditch **C39**. It measured 3.1m wide.
29	218	2.40	0.40	Northeast-southwest	Probable medieval ditch **C39** continued in this trench. The ditch was 3.30m wide in this trench. A kiln (**C41**) was noted in the upper fill of ditch **C39** in this trench. It measured 1.30m x 0.8m and was filled by fire reddened clay with charcoal inclusions (**C42**). A former field boundary that corresponds with a boundary on the 1st edition OS map noted. It was 1.30m wide and was also noted in trench 33. Numerous parallel agricultural furrows were noted c. 20m apart. They were between 0.80m and 0.90m wide x 0.15m deep.
30	142	2.40	0.40	East-northeast-west-southwest	No archaeology found. A former field boundary that corresponds with a boundary on the 1st edition OS map noted. It measured 1.95m wide This boundary was also noted in trenches 22 and 23. One agricultural furrow, 1.10m wide x 0.28m deep noted.
31	125	2.40	0.45 – 0.55	East-northeast-west-southwest	No archaeology found. Three agricultural furrows noted. They ranged between 1.05m and 1.20m wide and were all 0.15m deep. No trace of a field boundary shown on 1st edition OS map was noted.
32	45	2.40	0.40 – 0.60	East-west	No archaeology found. A former field boundary that corresponds with a boundary on the 1st edition OS map noted. It measured 2.10m wide x 0.32m deep.

TRENCH	LENGTH (m)	WIDTH (m)	DEPTH (m)	ORIENTATION	DETAILS
					Three agricultural furrows noted. They varied in width from 0.55m to 1.06m and were between 0.10m and 0.35m deep.
33	126	2.40	0.50 – 0.60	East-northeast-west-southwest	No archaeology found. Three former field boundaries that correspond with field boundaries on the 1st edition OS map noted. The westernmost boundary ditch measured 2.80m wide x 0.60m deep. The middle boundary ditch measured 2.4m wide and was excavated to a depth of 0.45m deep. Red brick was recovered from the fill. The easternmost ditch was 1m wide x0.43m deep. Two agricultural furrows were noted. They measured 0.60m and 0.40m wide and were 0.23 and 0.15m deep respectively.
34	24	2.40	0.45	Northwest-southeast	No archaeology found. A former field boundary that corresponds with a ditch shown on the geophysical survey, but is not shown on the 1st edition OS map was noted. It is interpreted as being broadly contemporary with the boundaries shown on the 1st edition OS map, but was infilled prior to survey works for the map. This field boundary was also recorded in trenches 18, 19 and 27. It measured 1.40m wide x 0.25m deep.
35	6	2.40	0.60	Northeast-southwest	Probable medieval ditch C39 continued in this trench. The ditch extended beyond all sides of the trench. Sherds of medieval pottery were recovered from the ditch in this trench.
36	7+7	2.40	0.60	Northeast-southwest	Probable medieval ditch C39 continued in this trench.

APPENDIX 2 CONTEXTS

CONTEXT NO.	TRENCH NO.	DESCRIPTION
1	All	Topsoil. Mid-brown silty clay.
2	All	Natural subsoil. Varied between orangey brown and greyish brown silty clay
3	10	Burnt spread comprising a mix of charcoal rich silty clay with frequent inclusions of heat affected stones. It measured 6m x 2.40m (exposed) x 0.30m deep.
4	11	Burnt spread comprising a mix of charcoal rich silty clay with frequent inclusions of heat affected stones. It extended beyond the extent of the trench but measured c. 11.3m x 9.40m x 0.55m deep.
5	10	Cut of probable trough. It was sub-rectangular in plan and measured 1.66m x 0.92m x 0.25m deep.
6	10	Fill of C5. Comprised black, charcoal rich silty clay with inclusions of heat affected stone.
7	10	Cut of probable trough. It extended beyond the edge of the trench but had exposed dimensions of 1.4m x 1m (exposed).
8	10	Fill of C7. Comprised black, charcoal rich silty clay with inclusions of heat affected stone.
9	10	Burnt spread comprising a mix of charcoal rich silty clay with frequent inclusions of heat affected stones. It extended beyond the southern extent of the trench but measured 4.40m (exposed) x 2.80m x 0.09m.
10	10	Cut of stakehole. Measured 0.10m in diameter.
11	10	Fill of C10. Comprised charcoal rich silty clay.
12	10	Cut of pit. Extended beyond the northern edge of the trench but measured 0.75m (exposed) x 0.90m.
13	10	Fill of pit C12. Comprised charcoal rich silty clay with inclusions of heat affected stone.
14	10	Cut of pit. Extended beyond the northern edge of the trench but measured 0.50m (exposed) x 0.90m.
15	10	Fill of pit C14. Comprised charcoal rich silty clay with inclusions of heat affected stone.
16	11	Burnt spread. Extended beyond the southeastern edge of the trench but measured 2.25m x 1.55m (exposed).
17	11	Burnt spread. Comprised charcoal rich silty clay with frequent inclusions of heat affected stone. Measured 5.20m x 2.20m x 0.14m deep.
18	11	Cut of small pit. Measured 1.06m x 0.55m.
19	11	Fill of C18. Comprised black, charcoal rich silty clay.
20	11	Cut of posthole. Measured 0.29m x 0.23m.
21	11	Fill of C20. Comprised charcoal rich silty clay with inclusions of heat affected stone.
22	11	Cut of pit. Measured 1.70m x 1.60m.
23	11	Fill of C22. Comprised charcoal rich silty clay with inclusions of heat affected stone.
24	11	Burnt spread. Comprised charcoal rich silty clay with inclusions of

		heat affected stone. Extended beyond northwestern edge of trench and measured 5m x 1.10m (exposed).
25	11	Cut of pit. Measured 0.70m x 0.64m.
26	11	Fill of C25. Comprised charcoal rich silty clay with inclusions of heat affected stone
27	11	Burnt spread. Comprised charcoal rich silty clay with inclusions of heat affected stone. Extended beyond northeastern and southeastern edges of the trench but had exposed measurements of 1.90m x 1.70m (exposed).
28	13	Cut of large circular pit. Measured 3.40m x 3.10m x 0.15m deep.
29	13	Fill of C28. Comprised grey silty clay with frequent inclusions of charcoal.
30	13	Cut of pit. Measured 1.70m x 0.80m.
31	13	Fill of C30. Comprised grey silty clay with frequent inclusions of charcoal and heat affected stone.
32	15	Cut of isolated pit. Measured 2.60m x 1.78m x 0.25m deep.
33	15	Fill of C32. Comprised pale brownish grey silty clay with yellowish mottling and contained moderate inclusions of charcoal and heat affected stone.
34	23	Cut of hearth. Measured 1.10m in diameter x 0.30m deep.
35	23	Basal fill of C34. Comprised yellowish grey silty clay with moderate charcoal inclusions
36	23	Middle fill of C34. Comprised orangey brown clayish sand with moderate charcoal inclusions.
37	23	Upper fill of C34. Comprised charcoal rich, black silty clay.
38	25	Hearth. Comprised deposit of fire reddened clay with occasional charcoal fleck inclusions.
39	28, 29, 35, 36	Cut of linear ditch in western part of site area. Varied in width between 2.30 and 3.30m x 0.50m deep.
40	28, 29, 35, 36	Fill of C39. Comprised pale grey-brown sandy clay with inclusions of snail shell and animal bone. Sherds of medieval pottery were recovered from this fill.
41	29	Cut of possible kiln. Measured 1.30m x 0.80m.
42	29	Fill of C41. Comprised fire reddened clay with charcoal inclusions.

APPENDIX 3 RMP SITES WITHIN THE SURROUNDING AREA

SMR NO.:	DU017-095
RMP STATUS:	Yes
TOWNLAND:	Loughtown Upper
PARISH:	Kilmactalway
BARONY:	Newcastle
I.T.M.:	700900, 731258
CLASSIFICATION:	Enclosure
DIST. TO SITE:	c. 240m
DESCRIPTION:	A sub-circular enclosure visible as a crop mark on an aerial photograph (SMR file; pers. comm. Tom Condit, 11 March 2015). DU017-095----_01.jpg: Aerial view showing the crop mark (from Google Maps, accessed 12 March 2015).
REFERENCE:	www.archaeology.ie/ SMR file

SMR NO.:	DU017-089
RMP STATUS:	Yes
TOWNLAND:	COOLSCUDDAN
PARISH:	Kilmactalway
BARONY:	Newcastle
I.T.M.:	700640, 732116
CLASSIFICATION:	Enclosure
DIST. TO SITE:	c. 290m
DESCRIPTION:	This site was first recorded as a positive cropmark in August 1991. Aerial photograph (GB91. EI.21) shows cropmark of a circular enclosure defined by a fosse (Gillian Barrett).
REFERENCE:	www.archaeology.ie/ SMR file

APPENDIX 4 LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

PROTECTION OF CULTURAL HERITAGE

The cultural heritage in Ireland is safeguarded through national and international policy designed to secure the protection of the cultural heritage resource to the fullest possible extent (Department of Arts, Heritage, Gaeltacht and the Islands 1999, 35). This is undertaken in accordance with the provisions of the *European Convention on the Protection of the Archaeological Heritage* (Valletta Convention), ratified by Ireland in 1997.

THE ARCHAEOLOGICAL RESOURCE

The *National Monuments Act 1930 to 2014* and relevant provisions of the *National Cultural Institutions Act 1997* are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all man-made structures of whatever form or date except buildings habitually used for ecclesiastical purposes. A National Monument is described as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto' (National Monuments Act 1930 Section 2). A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Register of Historic Monuments, the Record of Monuments and Places, and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

The Minister may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

REGISTER OF HISTORIC MONUMENTS

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the register is illegal without the permission of the Minister. Two months' notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site

illegal. Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

RECORD OF MONUMENTS AND PLACES

Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht and the Islands (now the Minister for Housing, Local Government and Heritage) to establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the state. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994. All recorded monuments on the proposed development site are represented on the accompanying maps.

Section 12(3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Arts, Heritage, Gaeltacht and the Islands) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage, Gaeltacht and the Islands to carry out work and shall not, except in case of urgent necessity and with the consent of the Minister, commence the work until two months after giving of notice'.

Under the National Monuments (Amendment) Act 2004, anyone who demolishes or in any way interferes with a recorded site is liable to a fine not exceeding €3,000 or imprisonment for up to 6 months. On summary conviction and on conviction of indictment, a fine not exceeding €10,000 or imprisonment for up to 5 years is the penalty. In addition, they are liable for costs for the repair of the damage caused.

In addition to this, under the *European Communities (Environmental Impact Assessment) Regulations 1989,* Environmental Impact Statements (EIS) are required for various classes and sizes of development project to assess the impact the proposed development will have on the existing environment, which includes the cultural, archaeological and built heritage resources. These document's recommendations are typically incorporated into the conditions under which the proposed development must proceed, and thus offer an additional layer of protection for monuments which have not been listed on the RMP.

THE PLANNING AND DEVELOPMENT ACT 2000

Under planning legislation, each local authority is obliged to draw up a Development Plan setting out their aims and policies with regard to the growth of the area over a five-year period. They cover a range of issues including archaeology and built heritage, setting out their policies and objectives with regard to the protection and enhancement of both. These policies can vary from county to county. The Planning and Development Act 2000 recognises that proper planning and sustainable

development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permissions.

South Dublin County Council Development Plan, 2016–2022

It is the policy of the Council to manage development in a manner that protects and conserves the Archaeological Heritage of the County and avoids adverse impacts on sites, monuments, features or objects of significant historical or archaeological interest.

HCL2 Objective 1:

To favour the preservation in-situ of all sites, monuments and features of significant historical or archaeological interest in accordance with the recommendations of the Framework and Principles for the Protection of Archaeological Heritage, DAHGI (1999), or any superseding national policy document.

HCL2 Objective 2:

To ensure that development is designed to avoid impacting on archaeological heritage that is of significant interest including previously unknown sites, features and objects.

HCL2 Objective 3:

To protect and enhance sites listed in the Record of Monuments and Places and ensure that development in the vicinity of a Recorded Monument or Area of Archaeological Potential does not detract from the setting of the site, monument, feature or object and is sited and designed appropriately.

HCL2 Objective 4:

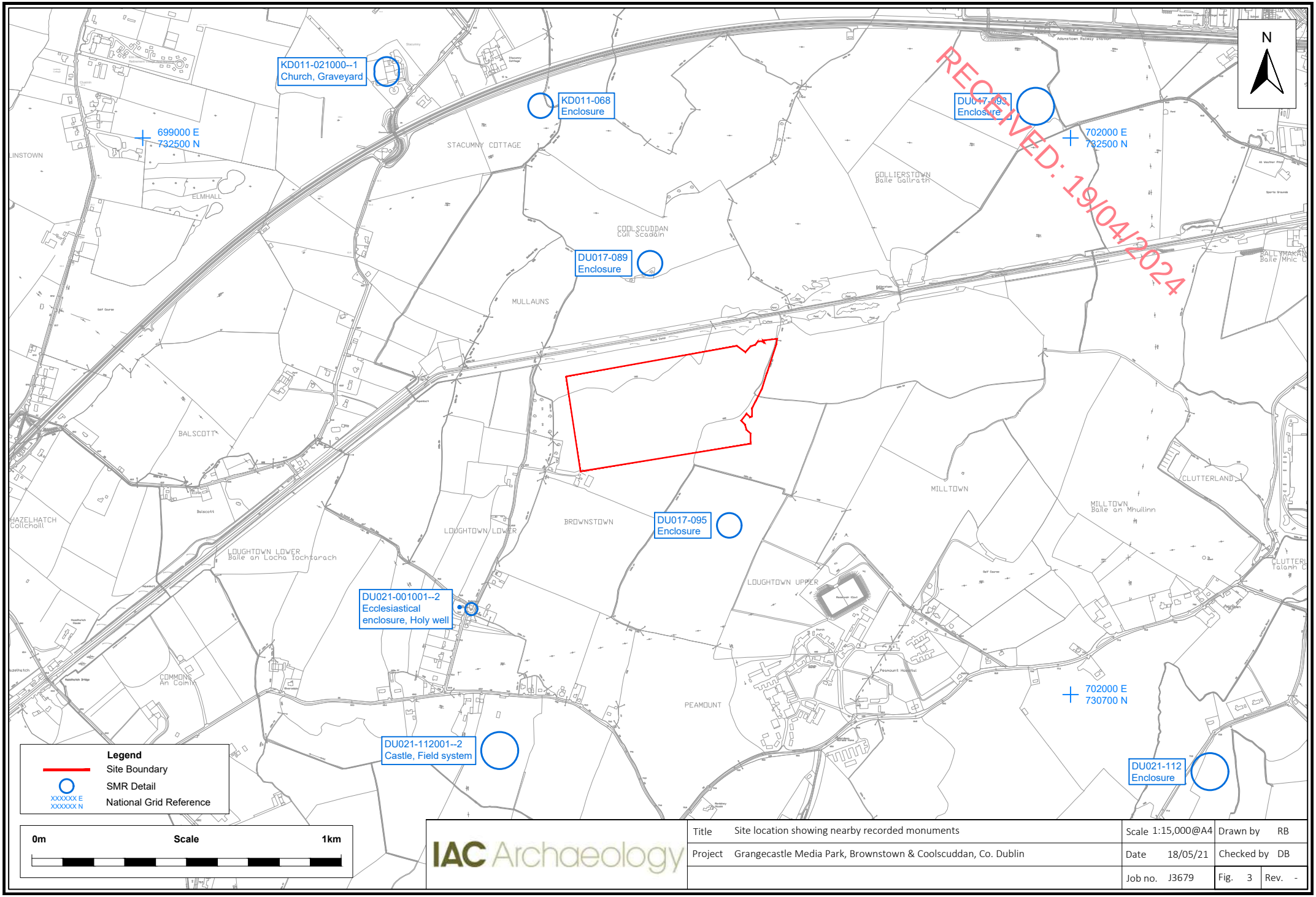
To protect and preserve the archaeological value of underwater archaeological sites including associated features and any discovered battlefield sites of significant archaeological potential within the County.

HCL2 Objective 5:

To protect historical burial grounds within South Dublin County and encourage their maintenance in accordance with conservation principles.

IAC Archaeology

Title	Site location	Scale 1:25,000@A4	Drawn by RB
Project	Grangecastle Media Park, Brownstown & Coolscuddan, Co. Dublin	Date 18/05/21	Checked by DB
		Job no. J3679	Fig. 1 Rev. -



Geophysical Legend

- ? Archaeology
- ?? Archaeology
- Increased response
- Trend
- ? Former boundary
- Former cultivation
- Natural
- Ferrous

Royal Canal

Pond

CC

N

M1

M2

M4

T1 T2 T3 T4 T5 T6 T7 T8 T9 T10 T11 T12 T13 T14 T15 T16 T17 T18 T19 T20 T21 T22 T23 T24 T25 T26 T27 T28 T29 T30 T31 T32 T33 T34 T35 T36

AA1 Cutting 1

AA1 Cutting 2

AA2

AA3

AA4

AA5

UNID

1.83m RH

1.83m FF

CW

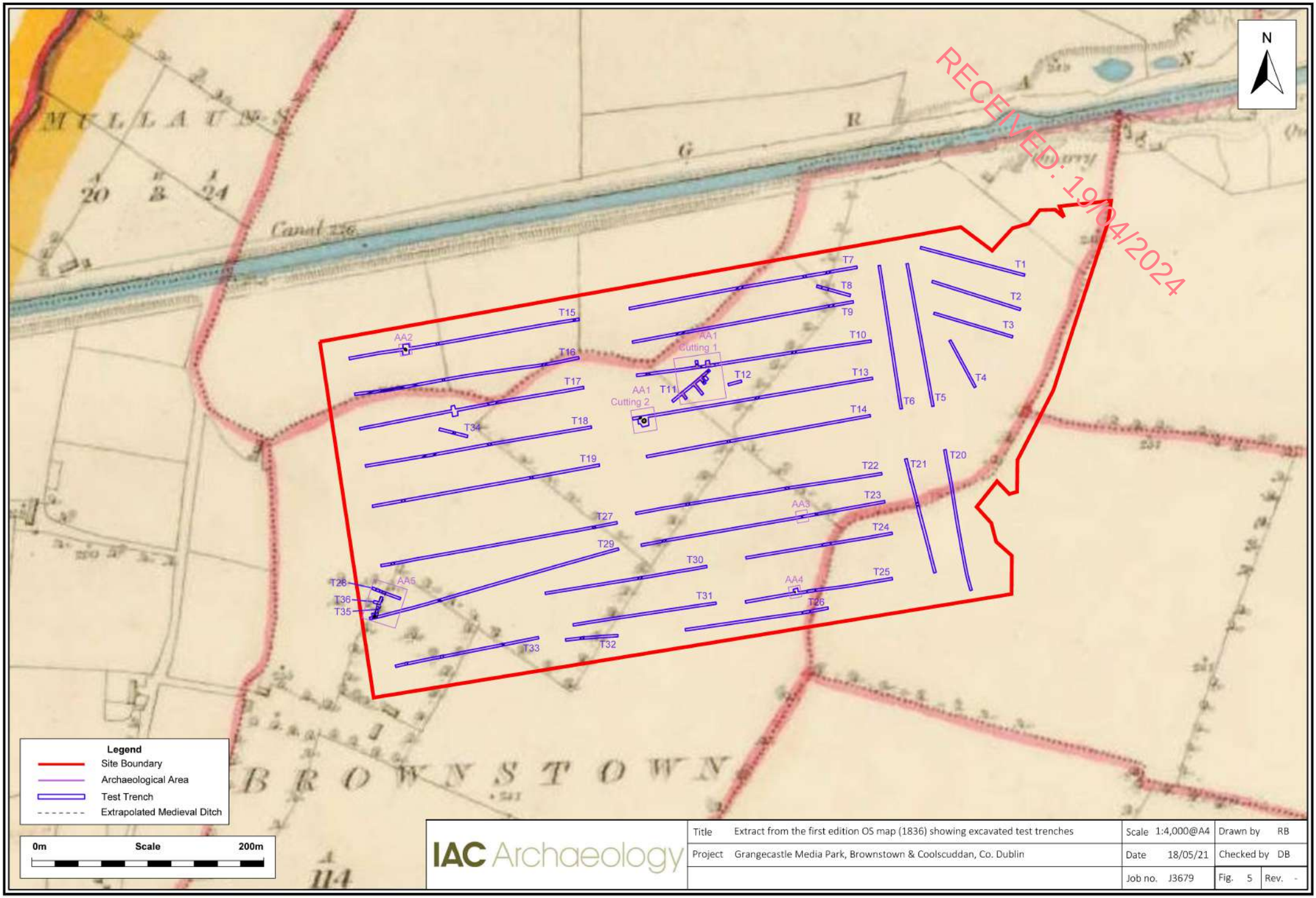
Legend

- Site Boundary
- Archaeological Area
- Test Trench
- Extrapolated Medieval Ditch

0m Scale 100m

IAC Archaeology

Title	Geophysical survey results showing excavated test trenches	Scale 1:2,000@A3	Drawn by RB
Project	Grangecastle Media Park, Brownstown & Coolscuddan, Co. Dublin	Date 18/05/21	Checked by DB
		Job no. J3679	Fig. 4 Rev. -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RECEIVED: 19/04/2024
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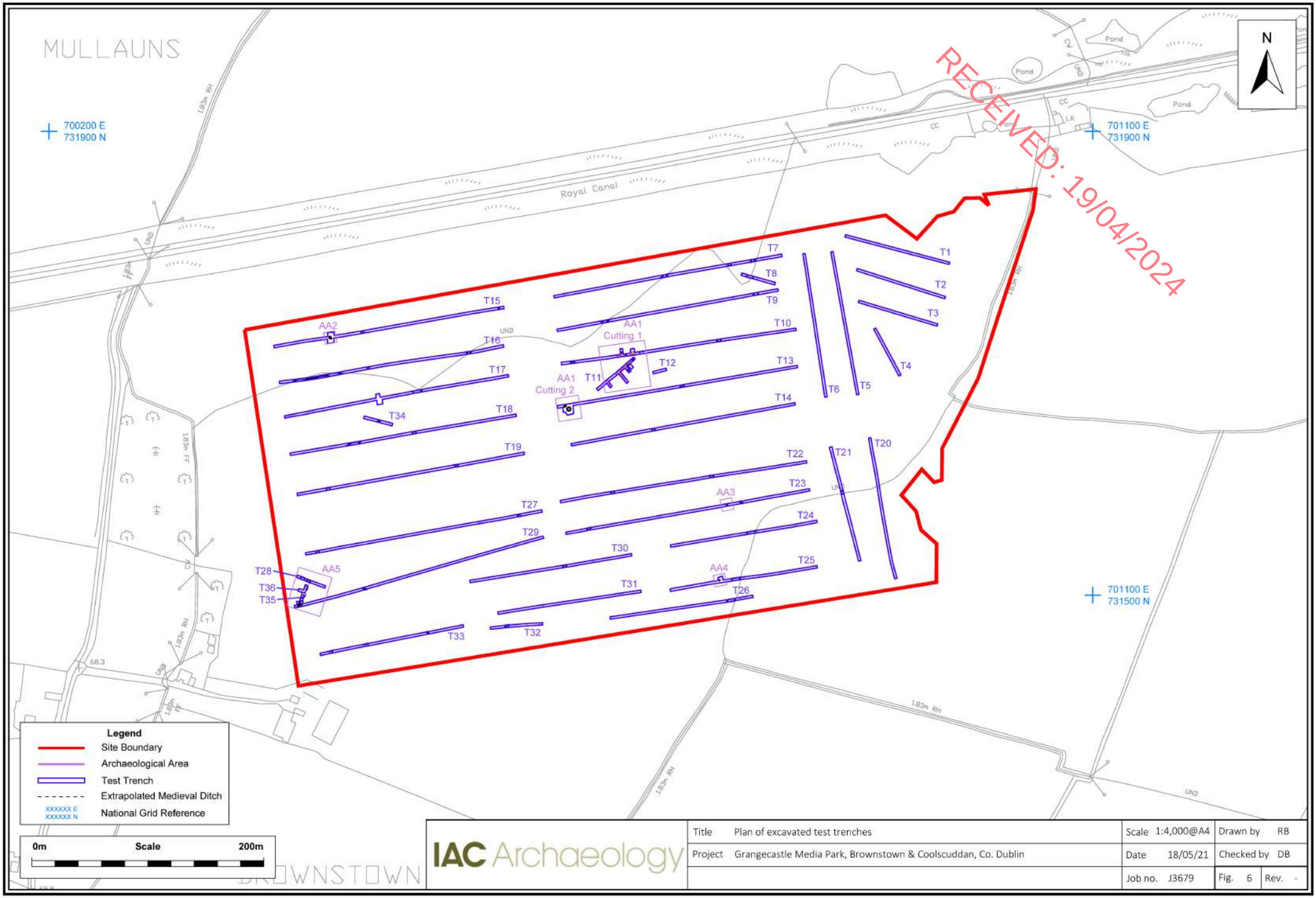
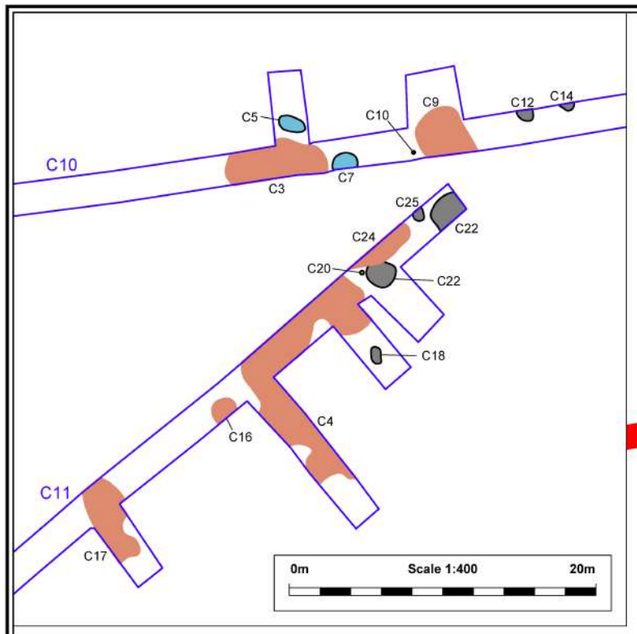
Cutting 1
AA1
Cutting 2
AA2
AA3
AA4
AA5
Legend
Site Boundary
Archaeological Area
Test Trench
Extrapolated Medieval Ditch
0m
Scale
200m
IAC Archaeology
Title Extract from the first edition OS map (1836) showing excavated test trenches
Project Grangecastle Media Park, Brownstown & Coolscuddan, Co. Dublin
Scale 1:4,000@A4
Drawn by RB
Date 18/05/21
Checked by DB
Job no. J3679
Fig. 5
Rev. -



IAC Archaeology

Title	Plan of excavated test trenches	Scale 1:4,000@A4	Drawn by RB
Project	Grangecastle Media Park, Brownstown & Coolscuddan, Co. Dublin	Date 18/05/21	Checked by DB
		Job no. J3679	Fig. 6 Rev. -



IAC Archaeology

Title	Details of test trenches in the north of the site showing AA1	Scale	As shown @A3
Project	Grangecastle Media Park, Brownstown & Coolscuddan, Co. Dublin	Date	18/05/21
		Job no.	J3679

Drawn by	RB
Checked by	DB
Fig.	7
Rev.	-

N

AA2
10x10m
C32

T15

T16

T17

T34

T18

T19

T27

AA5
35x30m
Medieval ditch
C39
T28
T36
T35
Pot 1
Pot 2
C41
T29
C39
Medieval ditch

T33

Legend
- Site Boundary
- Archaeological Area
- Test Trench
- Extrapolated Medieval Ditch
- Kiln/Hearth
- Medieval Ditch
- Pit
- Field Boundary
- Furrow

0m Scale 50m

IAC Archaeology

Title	Details of test trenches in the west of the site showing AA2 and AA5	Scale 1:750@A3	Drawn by RB
Project	Grangecastle Media Park, Brownstown & Coolscuddan, Co. Dublin	Date 18/05/21	Checked by DB
		Job no. J3679	Fig. 8 Rev. -

N

T14

T20

T21

T22

AA3
10x10m
C34

T23

T24

T30

AA4
10x10m
C38

T25

T31

T26

Legend

- Site Boundary
- Archaeological Area
- Test Trench
- Kiln/Hearth
- Field Boundary
- Furrow

0m Scale 50m

IAC Archaeology

Title	Details of test trenches in the south of the site showing AA3 and AA4	Scale 1:750@A3	Drawn by RB
Project	Grangecastle Media Park, Brownstown & Coolscuddan, Co. Dublin	Date 18/05/21	Checked by DB
		Job no. J3679	Fig. 9 Rev. -

Plate 1 Trench 10, burnt spread **C3**, facing southwest

Plate 2 Trench 10, trough **C5**, facing southwest

Plate 3 Trench 11, burnt spread **C17**, facing northwest

Plate 4 Trench 11, pit **C22** and burnt spread **C24**, facing east

Plate 5 Trench 13, pit **C28**, facing northwest

Plate 6 Trench 15, pit **C32**, facing northwest

Plate 7 Trench 23, hearth **C34**, facing east-northeast

Plate 8 Trench 25, hearth **C38**, facing north

Plate 9 Trench 29, showing ditch **C39** and kiln **C41**, facing east-northeast

Plate 10 Trench 16, showing north-south oriented field boundary that is depicted on 1st edition OS map, facing east-northeast

Plate 11 Trench 7, showing drainage pipe at base of field boundary depicted on 1st edition OS map, facing northeast

Plate 12 Trench 22, facing west-southwest

Appendix 15.2

LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

APPENDIX 15.2: LEGISLATION PROTECTING THE ARCHAEOLOGICAL RESOURCE

PROTECTION OF CULTURAL HERITAGE

The cultural heritage in Ireland is safeguarded through national and international policy designed to secure the protection of the cultural heritage resource to the fullest possible extent (Department of Arts, Heritage, Gaeltacht, and the Islands 1999, 35). This is undertaken in accordance with the provisions of the *European Convention on the Protection of the Archaeological Heritage* (Valletta Convention), ratified by Ireland in 1997.

THE ARCHAEOLOGICAL RESOURCE

The *National Monuments Act 1930 to 2014* and relevant provisions of the *National Cultural Institutions Act* 1997 are the primary means of ensuring the satisfactory protection of archaeological remains, which includes all man-made structures of whatever form or date except habitually used for ecclesiastical purposes. A National Monument is described as 'a monument or the remains of a monument the preservation of which is a matter of national importance by reason of the historical, architectural, traditional, artistic or archaeological interest attaching thereto' (National Monuments Act 1930 Section 2). A number of mechanisms under the National Monuments Act are applied to secure the protection of archaeological monuments. These include the Register of Historic Monuments, the Record of Monuments and Places, and the placing of Preservation Orders and Temporary Preservation Orders on endangered sites.

OWNERSHIP AND GUARDIANSHIP OF NATIONAL MONUMENTS

The Minister may acquire national monuments by agreement or by compulsory order. The state or local authority may assume guardianship of any national monument (other than dwellings). The owners of national monuments (other than dwellings) may also appoint the Minister or the local authority as guardian of that monument if the state or local authority agrees. Once the site is in ownership or guardianship of the state, it may not be interfered with without the written consent of the Minister.

REGISTER OF HISTORIC MONUMENTS

Section 5 of the 1987 Act requires the Minister to establish and maintain a Register of Historic Monuments. Historic monuments and archaeological areas present on the register are afforded statutory protection under the 1987 Act. Any interference with sites recorded on the register is illegal without the permission of the Minister. Two months' notice in writing is required prior to any work being undertaken on or in the vicinity of a registered monument. The register also includes sites under Preservation Orders and Temporary Preservation Orders. All registered monuments are included in the Record of Monuments and Places.

PRESERVATION ORDERS AND TEMPORARY PRESERVATION ORDERS

Sites deemed to be in danger of injury or destruction can be allocated Preservation Orders under the 1930 Act. Preservation Orders make any interference with the site illegal.

Temporary Preservation Orders can be attached under the 1954 Act. These perform the same function as a Preservation Order but have a time limit of six months, after which the situation must be reviewed. Work may only be undertaken on or in the vicinity of sites under Preservation Orders with the written consent, and at the discretion, of the Minister.

RECORD OF MONUMENTS AND PLACES

Section 12(1) of the 1994 Act requires the Minister for Arts, Heritage, Gaeltacht, and the Islands (now the Minister for the Department of Housing, Local Government and Heritage) to establish and maintain a record of monuments and places where the Minister believes that such monuments exist. The record comprises a list of monuments and relevant places and a map/s showing each monument and relevant place in respect of each county in the state. All sites recorded on the Record of Monuments and Places receive statutory protection under the National Monuments Act 1994. All recorded monuments on the proposed development site are represented on the accompanying maps.

Section 12(3) of the 1994 Act provides that 'where the owner or occupier (other than the Minister for Arts, Heritage, Gaeltacht and the Islands) of a monument or place included in the Record, or any other person, proposes to carry out, or to cause or permit the carrying out of, any work at or in relation to such a monument or place, he or she shall give notice in writing to the Minister of Arts, Heritage, Gaeltacht and the Islands to carry out work and shall not, except in case of urgent necessity and with the consent of the Minister, commence the work until two months after giving of notice'.

Under the National Monuments (Amendment) Act 2004, anyone who demolishes or in any way interferes with a recorded site is liable to a fine not exceeding €3,000 or imprisonment for up to 6 months. On summary conviction and on conviction of indictment, a fine not exceeding €10,000 or imprisonment for up to 5 years is the penalty. In addition, they are liable for costs for the repair of the damage caused.

In addition to this, under the *European Communities (Environmental Impact Assessment) Regulations 1989*, Environmental Impact Statements (EIS) are required for various classes and sizes of development project to assess the impact the proposed development will have on the existing environment, which includes the cultural, archaeological, and built heritage resources. These document's recommendations are typically incorporated into the conditions under which the proposed development must proceed, and thus offer an additional layer of protection for monuments which have not been listed on the RMP.

THE PLANNING AND DEVELOPMENT ACT 2000

Under planning legislation, each local authority is obliged to draw up a Development Plan setting out their aims and policies with regard to the growth of the area over a five-year period. They cover a range of issues including archaeology and built heritage, setting out their policies and objectives with regard to the protection and enhancement of both. These policies can vary from county to county. The Planning and Development Act 2000 recognises that proper planning and sustainable development includes the protection of the archaeological heritage. Conditions relating to archaeology may be attached to individual planning permissions.

South Dublin County Council Development Plan 2022-2028

South County Dublin contains a large number of buildings, structures, and sites of architectural, historic and/or artistic importance, in addition to numerous archaeological sites. This significant archaeological and architectural heritage is a valuable resource adding to the historical and cultural character of the County. The Development Plan contains policies which are intended to ensure the protection of this heritage. Village Design Statements can be utilised as a tool to guide development in smaller centres. It should be noted that archaeological sites and archaeological zones of interest are identified by a recorded monument reference number on the land use zoning maps. The recorded monument reference numbers are taken from the Record of Monuments and Places for Dublin, published by Department of the Environment, Heritage, and Local Government.

Policy NCBH13: Archaeological Heritage

Manage development in a manner that protects and conserves the Archaeological Heritage of the County and avoids adverse impacts on sites, monuments, features, or objects of significant historical or archaeological interest.

NCBH13 Objective 1:

To favour the preservation in-situ of all sites, monuments, and features of significant historical or archaeological interest in accordance with the recommendations of the Framework and Principles for the Protection of Archaeological Heritage, DAHGI (1999), or any superseding national policy document.

NCB13 Objective 2:

To ensure that development is designed to avoid impacting on archaeological heritage including previously unknown sites, features, and objects.

NCBH13 Objective 3:

To protect and enhance sites listed in the Record of Monuments and Places and ensure that development in the vicinity of a Recorded Monument or Area of Archaeological Potential does not detract from the setting of the site, monument, feature, or object and is sited and designed appropriately.

NCBH13 Objective 4:

To protect and preserve the archaeological value of underwater archaeological sites including associated features and any discovered battlefield sites of significant archaeological potential within the County.

NCBH13 Objective 5:

To protect historical burial grounds within South Dublin County and encourage their maintenance in accordance with conservation principles.

Appendix 15.3

LEGISLATION PROTECTING THE ARCHITECTURAL RESOURCE

APPENDIX 15.3: LEGISLATION PROTECTING THE ARCHITECTURAL RESOURCE

The main laws protecting the built heritage are the *Architectural Heritage (National Inventory)* and National Monuments (Miscellaneous Provisions) Act 1999 and the Local Government (Planning and Development) Acts 1963–1999, which has now been superseded by the Planning and Development Act, 2000. The Architectural Heritage Act requires the Minister to establish a survey to identify, record and assess the architectural heritage of the country. The background to this legislation derives from Article 2 of the 1985 Convention for the Protection of Architectural Heritage (Granada Convention). This states that:

> *For the purpose of precise identification of the monuments, groups of structures and sites to be protected, each member state will undertake to maintain inventories of that architectural heritage.*

The National Inventory of Architectural Heritage (NIAH) was established in 1990 to fulfil Ireland's obligation under the Granada Convention, through the establishment and maintenance of a central record, documenting and evaluating the architecture of Ireland (NIAH Handbook 2005:2). As inclusion in the inventory does not provide statutory protection, the survey information is used in conjunction with the *Architectural Heritage Protection Guidelines for Planning Authorities* to advise local authorities on compilation of a Record of Protected Structures as required by the *Planning and Development Act, 2000.*

PROTECTION UNDER THE RECORD OF PROTECTED STRUCTURES AND COUNTY DEVELOPMENT PLAN

Structures of architectural, cultural, social, scientific, historical, technical, or archaeological interest can be protected under the Planning and Development Act, 2000, where the conditions relating to the protection of the architectural heritage are set out in Part IV of the act. This act superseded the Local Government (Planning and Development) Act, 1999, and came into force on 1st January 2000.

The act provides for the inclusion of Protected Structures into the planning authorities' development plans and sets out statutory regulations regarding works affecting such structures. Under new legislation, no distinction is made between buildings formerly classified under development plans as List 1 and List 2. Such buildings are now all regarded as 'Protected Structures' and enjoy equal statutory protection. Under the act the entire structure is protected, including a structure's interior, exterior, attendant grounds and also any structures within the attendant grounds.

The act defines a Protected Structure as (a) a structure, or (b) a specified part of a structure which is included in a Record of Protected Structures (RPS), and, where that record so indicates, includes any specified feature which is in the attendant grounds of the structure, and which would not otherwise be included in this definition. Protection of the structure, or part thereof, includes conservation, preservation, and improvement compatible with maintaining its character and interest. Part IV of the act deals with architectural heritage, and Section 57 deals specifically with works affecting the character of Protected Structures or proposed Protected Structures and states that no works should materially affect the character of the structure or any element of the structure that contributes to its special architectural, historical, archaeological, artistic, cultural, scientific, social, or technical interest. The act does not provide specific criteria for assigning a special interest to a structure. However, the National Inventory of Architectural Heritage (NIAH) offers guidelines to its field workers as to

how to designate a building with a special interest, which are not mutually exclusive. This offers guidance by example rather than by definition:

Archaeological

It is to be noted that the NIAH is biased towards post-1700 structures. Structures that have archaeological features may be recorded, providing the archaeological features are incorporated within post-1700 elements. Industrial fabric is considered to have technical significance and should only be attributed archaeological significance if the structure has pre-1700 features.

Architectural

A structure may be considered of special architectural interest under the following criteria:

- Good quality or well executed architectural design
- The work of a known and distinguished architect, engineer, designer, craftsman
- A structure that makes a positive contribution to a setting, such as a streetscape or rural setting
- Modest or vernacular structures may be considered to be of architectural interest, as they are part of the history of the built heritage of Ireland.
- Well-designed decorative features, externally and/or internally

Historical

A structure may be considered of special historical interest under the following criteria:

- A significant historical event associated with the structure
- An association with a significant historical figure
- Has a known interesting and/or unusual change of use, e.g. a former workhouse now in use as a hotel
- A memorial to a historical event.

Technical

A structure may be considered of special technical interest under the following criteria:

- Incorporates building materials of particular interest, i.e. the materials or the technology used for construction
- It is the work of a known or distinguished engineer
- Incorporates innovative engineering design, e.g. bridges, canals, or mill weirs
- A structure which has an architectural interest may also merit a technical interest due to the structural techniques used in its construction, e.g. a curvilinear glasshouse, early use of concrete, cast-iron prefabrication.
- Mechanical fixtures relating to a structure may be considered of technical significance.

Cultural

A structure may be considered of special cultural interest under the following criteria:

- An association with a known fictitious character or event, e.g. Sandycove Martello Tower, which featured in Ulysses.
- Other structure that illustrate the development of society, such as early schoolhouses, swimming baths or printworks.

Scientific

A structure may be considered of special scientific interest under the following criteria:

- A structure or place which is considered to be an extraordinary or pioneering scientific or technical achievement in the Irish context, e.g. Mizen Head Bridge, Birr Telescope.

Social

A structure may be considered of special social interest under the following criteria:

- A focal point of spiritual, political, national, or other cultural sentiment to a group of people, e.g. a place of worship, a meeting point, assembly rooms.
- Developed or constructed by a community or organisation, e.g. the construction of the railways or the building of a church through the patronage of the local community
- Illustrates a particular lifestyle, philosophy, or social condition of the past, e.g. the hierarchical accommodation in a country house, philanthropic housing, vernacular structures.

Artistic

A structure may be considered of special artistic interest under the following criteria:

- Work of a skilled craftsman or artist, e.g. plasterwork, wrought-iron work, carved elements or details, stained glass, stations of the cross.
- Well-designed mass-produced structures or elements may also be considered of artistic interest.

From the NIAH Handbook 2003 & 2005 pages 15–20)

The Local Authority has the power to order conservation and restoration works to be undertaken by the owner of the protected structure if it considers the building to need repair. Similarly, an owner or developer must make a written request to the Local Authority to carry out any works on a protected structure and its environs, which will be reviewed within three months of application. Failure to do so may result in prosecution.

South Dublin County Council Development Plan 2022-2028

It is the Policy of Dublin City Council:

Policy NCBH19:

Protected Structures Conserve and protect buildings, structures and sites contained in the Record of Protected Structures and carefully consider any proposals for development that would affect the setting, special character or appearance of a Protected Structure including its historic curtilage, both directly and indirectly.

Objective 1: To ensure the protection of all structures (or parts of structures) and their immediate surroundings including the curtilage and attendant grounds of structures identified in the Record of Protected Structures.

Objective 2: To ensure that all development proposals that affect a Protected Structure and its setting including proposals to extend, alter or refurbish any Protected Structure are sympathetic to its special character and integrity and are appropriate in terms of architectural treatment, character, scale, and form. All such proposals shall be consistent with the Architectural Heritage Protection Guidelines for Planning Authorities, DAHG (2011 or any superseding documents) including the principles of conservation.

Objective 3: To address dereliction and to welcome, encourage and support the rehabilitation, renovation, appropriate use and sensitive re-use of Protected Structures consistent with RPO 9.30 of the RSES.

Objective 4: To support alternative uses for Protected Structures including former institutional sites in order to provide continued security of the heritage value of these buildings, attendant grounds, and associated landscape features. To this end, the relaxation of site zoning restrictions may be considered in order to secure the preservation and conservation of the protected structure where the use proposed is compatible with the existing structure and where the proposed development is consistent with best practice conservation policies and the proper planning and sustainable development of the area.

Objective 5: To prohibit demolition and inappropriate alterations of Protected Structures unless in very exceptional circumstances.

Objective 6: To ensure that any works to upgrade the energy efficiency of Protected Structures and historic buildings are sensitive to traditional construction methods and materials and do not have a detrimental physical or visual impact on the structure. Regard should be had to the DAHG publication 'Energy Efficiency in Traditional Buildings' (2010).

Objective 7: To review the National Inventory of Architectural Heritage (NIAH) and update the Record of Protected Structures in accordance with any direct Ministerial recommendations.

Objective 8: To support the restoration of the Mill Race (RPS Ref. 007), recognising that it is in private ownership, from where it leaves the Liffey at Fonthill to where it enters the Mills area at Palmerstown having regard to the potential for biodiversity enhancements.

Objective 9: To investigate the merit of including the following on the Record of Protected Structures and where such merit is identified to undertake the necessary public consultation process under the Planning and Development Acts:

à Palmyra House, Whitechurch Road, Rathfarnham, Dublin 16. à Friarstown House and outbuildings, Bohernabreena, Co. Dublin D24 F890. à SIAC Bridge, Monastery Road, Clondalkin, Dublin 22. à Old Milestone on north-west side of Templeogue Road Set in front of the modern boundary wall of No. 211 Templeogue Road, Dublin 6W. à Fort (or Callaghan's) Bridge, Kiltipper / Friarstown Upper / Ballinascorney Lower, Dublin 24. à Granite Boundary Stone outside Nos. 50 / 52, Whitehall Road, Dublin 12. à Road sign Bothair An Racadair, Whitehall Road.

Appendix 16.1

VISUAL IMPACT IMAGES

Appendix 16.1: Visual Impact Images.

Viewpoint 1 - Existing View + Outline View
Viewpoint 1 - Montage View

Viewpoint 2 - Existing View + Outline View
Viewpoint 2 - Montage View

Viewpoint 3 - Existing View + Outline View*

Viewpoint 4 - Existing View + Outline View
Viewpoint 4 - Montage View

Viewpoint 5 - Existing View + Outline View
Viewpoint 5 - Montage View

Viewpoint 6 - Existing View + Outline View*

Viewpoint 7 - Existing View + Outline View
Viewpoint 7 - Montage View

Viewpoint 8 - Existing View + Outline View*

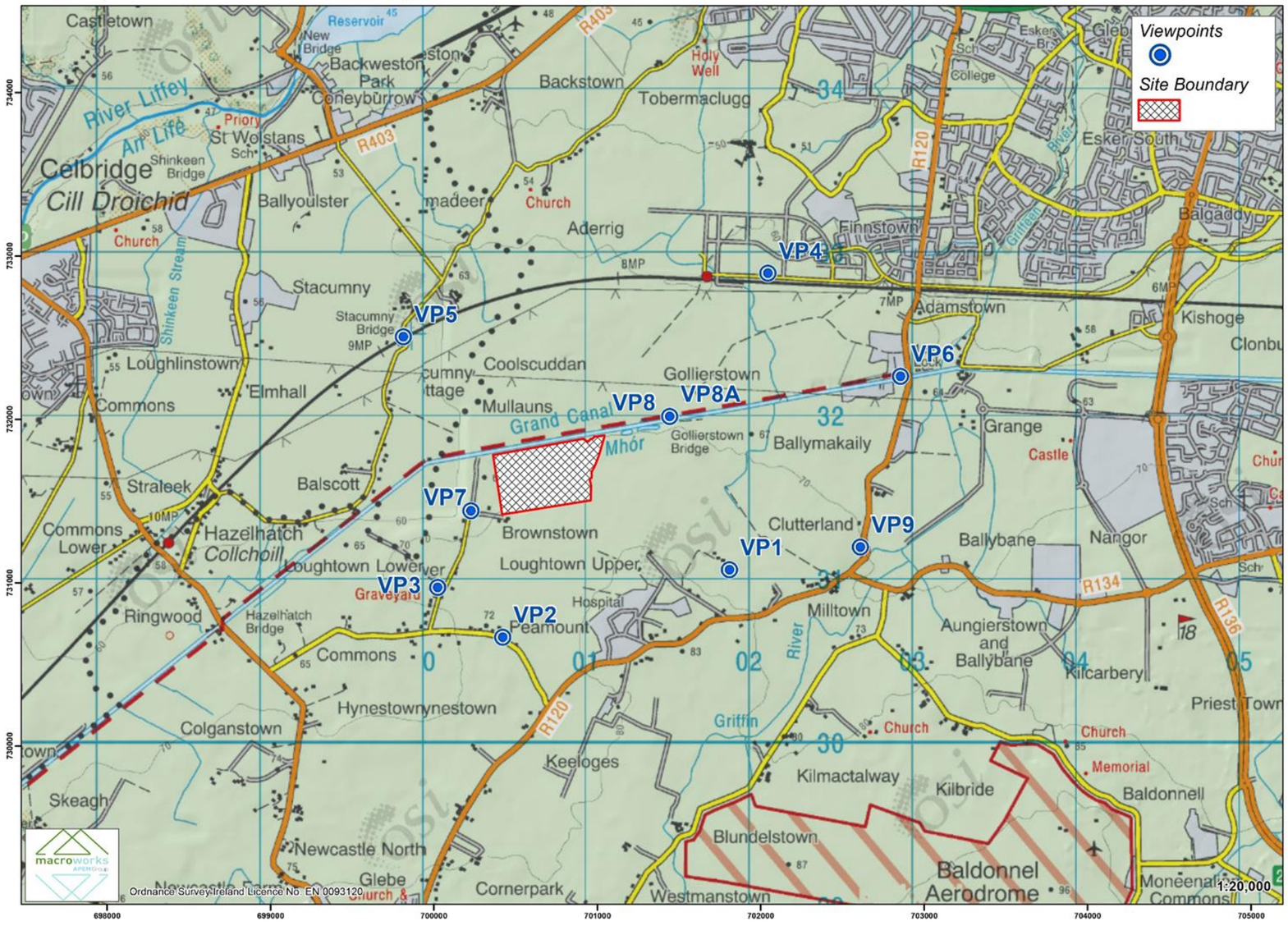
Viewpoint 8A - Existing View + Outline View
Viewpoint 8A - Montage View

Viewpoint 9 - Existing View + Outline View

***NB - There is no Montage View for this viewpoint as the proposed development it completely screened by existing vegetation and/or terrain**

****NB - There is no Montage View for this viewpoint as the proposed development it completely screened by terrain**

LVIA viewpoint locations selected for the Grange Castle Media Park project



Grange Castle Media Park

Imagery depicting the view towards the site (Existing and Outline)

Newcastle Golf Centre VP1

Existing View

Outline View
indicating physical position and scale of the proposed development irrespective of screening

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	701809	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	731080	Camera:	Canon 1-D Mark II digital SLR	Time:	09:51
Direction of View	59° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Grange Castle Media Park

Imagery depicting the view towards the site (Montage)

Newcastle Golf Centre VP1

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

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Northing (ITM):	731080	Camera:	Canon 1-D Mark II digital SLR	Time:	09:51
Direction of View	59° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Grange Castle Media Park

Imagery depicting the view towards the site (Existing and Outline)

Local road south of site at Brownstown VP2

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	700421	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	730668	Camera:	Canon 1-D Mark II digital SLR	Time:	08:24
Direction of View	36° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Grange Castle Media Park

Imagery depicting the view towards the site (Montage)

Local road south of site at Brownstown VP2

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	700421	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	730668	Camera:	Canon 1-D Mark II digital SLR	Time:	08:24
Direction of View	36° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Grange Castle Media Park

Imagery depicting the view towards the site (Existing and Outline)

Brownstown Cemetery VP3

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	700023	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	730972	Camera:	Canon 1-D Mark II digital SLR	Time:	14:53
Direction of View	43° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Grange Castle Media Park

Imagery depicting the view towards the site (Existing and Outline)

Elevated carpark adjacted to Adamstown Train Station VP4

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	702045	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	732895	Camera:	Canon 1-D Mark II digital SLR	Time:	13:54
Direction of View	146° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Grange Castle Media Park

Imagery depicting the view towards the site (Montage)

Elevated carpark adjacted to Adamstown Train Station VP4 Page 2 of 2

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	702045	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	732895	Camera:	Canon 1-D Mark II digital SLR	Time:	13:54
Direction of View	146° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

macroworks APEM Group

Grange Castle Media Park

Imagery depicting the view towards the site (Existing and Outline)

Hillcrest railway bridge VP5

Existing View

Outline View
indicating physical position and scale of the proposed development irrespective of screening

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	699813	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	732506	Camera:	Canon 1-D Mark II digital SLR	Time:	08:53
Direction of View 130°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Grange Castle Media Park

Imagery depicting the view towards the site (Montage)

Hillcrest railway bridge VP5

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	699813	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	732506	Camera:	Canon 1-D Mark II digital SLR	Time:	08:53
Direction of View 130°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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APEM Group

Grange Castle Media Park

Imagery depicting the view towards the site (Montage)

Hillcrest railway bridge VP5

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	699813	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	732506	Camera:	Canon 1-D Mark II digital SLR	Time:	08:53
Direction of View 130°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

macroworks
APEM Group

Grange Castle Media Park

Imagery depicting the view towards the site (Existing and Outline) Grand Canal Way adjecent to 12th Lock bridge VP6

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	702855	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	732264	Camera:	Canon 1-D Mark II digital SLR	Time:	16:08
Direction of View	117° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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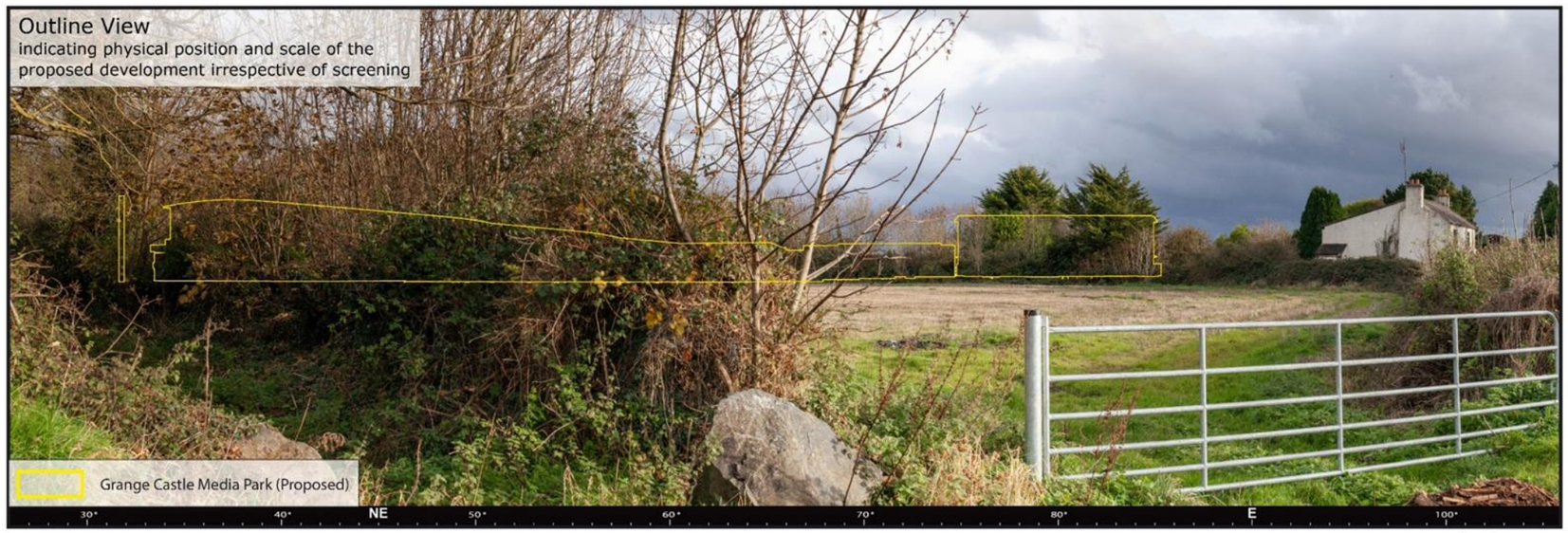
Imagery depicting the view towards the site (Existing and Outline)

View from Brownstown Lane VP7



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Easting (ITM):	700225	Lens:	50mm / Full Frame Sensor	Date:	2023/12/06
Northing (ITM):	731440	Camera:	Canon 1-D Mark II digital SLR	Time:	11:38
Direction of View	66° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Imagery depicting the view towards the site (Montage)

View from Brownstown Lane VP7

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Easting (ITM):	700225	Lens:	50mm / Full Frame Sensor	Date:	2023/12/06
Northing (ITM):	731440	Camera:	Canon 1-D Mark II digital SLR	Time:	11:38
Direction of View	66° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Imagery depicting the view towards the site (Existing and Outline)

View from Golierstown Bridge VP3

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	701444	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	732019	Camera:	Canon 1-D Mark II digital SLR	Time:	11:27
Direction of View	66° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Imagery depicting the view towards the site (Montage)

View from Golierstown Bridge (2) VP8A

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	701443	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	732018	Camera:	Canon 1-D Mark II digital SLR	Time:	11:27
Direction of View	110° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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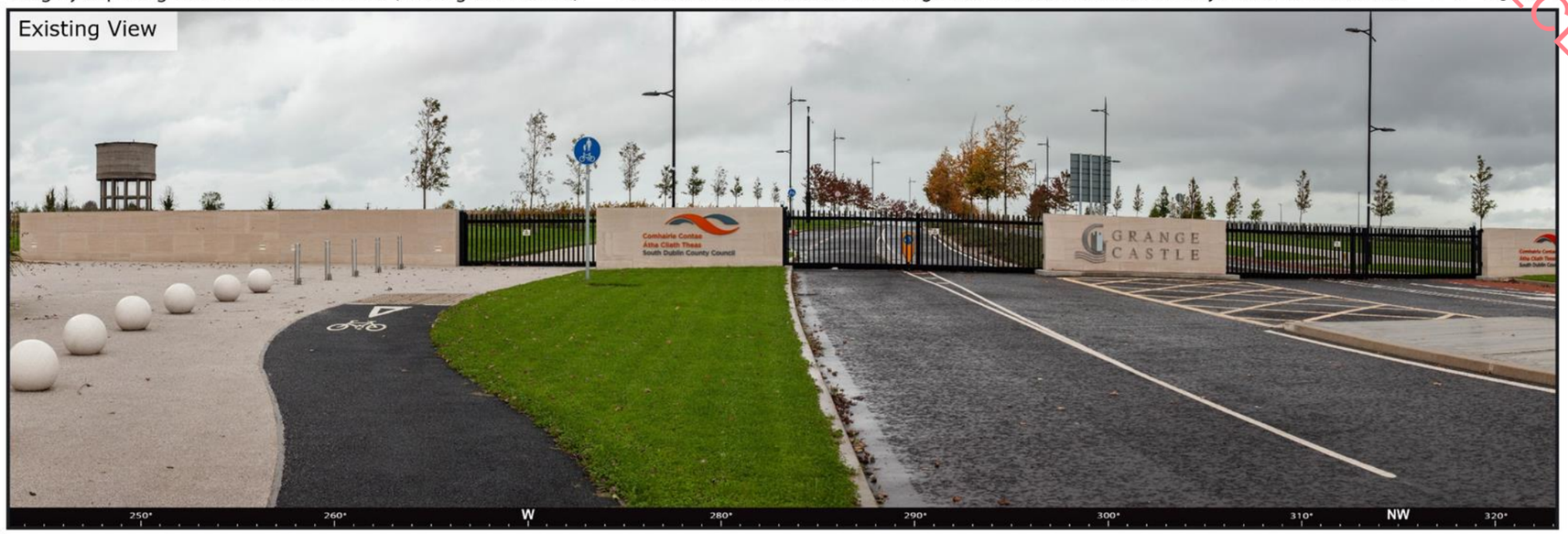
Imagery depicting the view towards the site (Existing and Outline) View from the entrance of the Grange Castle West Access Road at its junction with the R120 VP9 Page 1 of 1



These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (ITM):	702610	Lens:	50mm / Full Frame Sensor	Date:	2023/10/23
Northing (ITM):	731218	Camera:	Canon 1-D Mark II digital SLR	Time:	10:36
Direction of View	77° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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