

## 5.4. Highway Surface Drainage Lifecycle Management Plan

5.4.1. These assets are designed to ;-

- Prevent the accumulation of surface water on carriageways, footways and cycleways.
- Prevent pollution from highway drainage affecting watercourses.
- Reduce future maintenance liability by minimising water damage to the highway structure.

### 5.4.2. Physical Parameters

5.4.2.1. This asset comprises all highway drainage features including gullies, kerb offlets, grips, backdrains, soakaways, catchpits, associated pipework and outfalls. We only have an inventory of features situated on the surface of the carriageway.

5.4.2.2. Information on the definitions of drainage types used in this section is available in the Highway Inventory User Guide, which is available from the Highways Asset Management Team on request.

#### 5.4.2.3. Grips and Ditches

5.4.2.3.1. These datasets are held in the highway inventory module of the HMS database (Jan 12).

	District	Grips (No.)
1	North Norfolk	29657
2	West Norfolk	52750
3	Breckland	25822
4	Norwich City	5
5	Broadland	18556
6	Gt Yarmouth	3262
7	South Norfolk	36069
	<b>Total</b>	<b>166121</b>

Maintenance Areas	Grips (No.)
North	37335
South	46368
East	21931
West	60482
City	5
<b>Total</b>	<b>166121</b>

	District	Ditches Linear metres
1	North Norfolk	50027
2	West Norfolk	90277
3	Breckland	47270
4	Norwich City	14
5	Broadland	31675
6	Gt Yarmouth	5689
7	South Norfolk	60930
	<b>Total</b>	<b>285882</b>

Maintenance Areas	Ditches Linear metres
North	64829
South	80649
East	36397
West	103993
City	14
<b>Total</b>	<b>285882</b>

- 5.4.2.3.2. The backdrain figures include all those within the database (Jan 12) including those with ownership recorded as Highway Ditch, Back ditch or unknown.

	District	Backdrains
1	North Norfolk	4908
2	West Norfolk	9243
3	Breckland	6954
4	Norwich City	17
5	Broadland	3957
6	Gt Yarmouth	1434
7	South Norfolk	14591
<b>Total</b>		<b>41104</b>

Maintenance Areas	Backdrains
North	6397
South	18427
East	5780
West	10483
City	17
<b>Total</b>	<b>41104</b>

	District	Backdrains Linear mtrs
1	North Norfolk	163782
2	West Norfolk	411473
3	Breckland	277190
4	Norwich City	437
5	Broadland	114368
6	Gt. Yarmouth	44705
7	South Norfolk	527056
<b>Total</b>		<b>1539011</b>

Maintenance Areas	Linear metres
North	231599
South	674091
East	171468
West	461416
City	437
<b>Total</b>	<b>1539011</b>

#### 5.4.2.4. Gullies and Kerb Offlets

- 5.4.2.4.1. These datasets are held in the highway inventory module of the HMS database (Jan 12).

	District	Gullies (No.)
1	North Norfolk	15780
2	West Norfolk	27992
3	Breckland	20982
4	Norwich City	20532
5	Broadland	20791
6	Gt. Yarmouth	13969
7	South Norfolk	21141
<b>Total</b>		<b>141187</b>

Maintenance Areas	Gullies (No.)
North	29792
South	30775
East	24361
West	35665
City	20594
<b>Total</b>	<b>141187</b>

	District	Offlets (No.)
1	North Norfolk	576
2	West Norfolk	2772
3	Breckland	1065
4	Norwich City	28
5	Broadland	876
6	Gt. Yarmouth	509
7	South Norfolk	2252
<b>Total</b>		<b>8078</b>

Maintenance Areas	Offlets (No.)
North	1064
South	2781
East	1124
West	3081
City	28
<b>Total</b>	<b>8078</b>

#### 5.4.2.5. Drainage Kerbs and Linear grids

5.4.2.5.1. This data set is held in the highway inventory module of the HMS database (Jan 12). It includes such features as 'beany blocks', combined kerb/drainage features. The linear surface drainage on both roads and footways includes attributes slit, metal grating and drainage inlet. Measures are in nearest lin.m.

District		Drainage Kerbs (metres)
1	North Norfolk	1442
2	West Norfolk	7027
3	Breckland	3002
4	Norwich City	2598
5	Broadland	676
6	Gt. Yarmouth	1403
7	South Norfolk	9333
<b>Total</b>		<b>25841</b>

Maintenance Areas	Drainage Kerbs (metres)
North	1398
South	9946
East	2123
West	9416
City	2958
<b>Total</b>	<b>25841</b>

District		Channel Blocks (mtrs)
1	North Norfolk	1973
2	West Norfolk	1274
3	Breckland	746
4	Norwich City	719
5	Broadland	1022
6	Gt. Yarmouth	3214
7	South Norfolk	1063
<b>Total</b>		<b>10012</b>

Maintenance Areas	Channel Blocks (metres)
North	1385
South	1585
East	4896
West	1427
City	719
<b>Total</b>	<b>10012</b>

#### 5.4.2.6. Filter Drains

5.4.2.6.1. This data set is held in the highway inventory module of the HMS database (Jan 12). It includes stone filled ditches, French drains and fin drains.

District		Filter Drains No.
1	North Norfolk	47
2	West Norfolk	176
3	Breckland	12
4	Norwich City	10
5	Broadland	88
6	Gt. Yarmouth	50
7	South Norfolk	246
<b>Total</b>		<b>629</b>

Maintenance Areas	Filter Drains No.
North	98
South	250
East	89
West	182
City	10
<b>Total</b>	<b>629</b>

District		Filter Drains lin.m	Maintenance Areas	Filter Drains lin.m
1	North Norfolk	3200	North	5015
2	West Norfolk	16823	South	16783
3	Breckland	633	East	9860
4	Norwich City	213	West	17159
5	Broadland	4222	City	213
6	Gt. Yarmouth	7428	<b>Total</b>	<b>49030</b>
7	South Norfolk	16511		
<b>Total</b>		<b>49030</b>		

#### 5.4.2.7. **Piped systems**

5.4.2.7.1. Surface drainage features such as gullies, kerb offlets and filter drains are recorded in the highway inventory module of the HMS database.

5.4.2.7.2. Underground drainage records of all estates built since 1974 are held centrally and can be requested from highway Development Control.

5.4.2.7.3. Design records on later schemes are held by our highways design section.

5.4.2.7.4. The local area offices hold some 'as built' drawings from County Council schemes and investigation surveys.

#### 5.4.2.8. **Outfalls**

5.4.2.8.1. Few records are kept on these, though some can be identified within 'as built' drawings held at the local area office. They can be to the following types;-

- Anglian Water
  - Surface Water Main Drainage Pipe System
  - Combined System
- Environment Agency - main River under their control
- Inland Drainage Board Non – main river or stream under their control
- District Council 'sewer ditches' (few in number - in Breckland from old rural district council)
- Private Ditch

#### 5.4.2.9. **Culverts**

5.4.2.9.1. These are contained in the Structures lifecycle plan.