

NEATH PORT TALBOT COUNTY BOROUGH COUNCIL

Streetscene & Engineering Cabinet Board

2 March 2018

Report of the Head of Engineering & Transport D. W. Griffiths

Matter for Information

Wards Affected: ALL

Highway Structures Asset Protection and Maintenance

Purpose of Report

- 1 To update Members of progress on the County Bridge Assessment, Strengthening and Maintenance Programme and the implementation of the Code of Practice for the Management of highway structures, footbridges and other public rights of way.
- 2 The management of landslips and carriageway edge failures.
- 3 The Management of Tips.

Executive Summary

- 3 This report provides an update on the progress in this important area and sets out the challenges to be addressed if the County's Highway Structure Assets are to be maintained in an appropriate condition in accordance with the Code of Practice and the standards set down in the Highways Asset Management Plan.

Background

- 4 Members will recall the County Bridge Strengthening Report and Presentations to the Environment & Highways Scrutiny Committee in December 2015 highlighting 'at-risk' structures and a programme of future management.
- 5 This report provides the current status, highlighting emerging liabilities affecting highway structures.

Progress Report on Bridge Assessment and Strengthening

- 6 In summary, the introduction of the 40 Tonne Truck to the Highway Network in 1999 prompted the assessment of 209 highway structures built before 1973.

Since December 2015;

Six bridges were strengthened in 2015/16

Eight bridges were strengthened in 2016/17

Three bridges were strengthened in 2017/18

- 7 Overall, up to the end of December 2017 of the 195 no. assessments carried out (Appendix A):-

- 35 bridges passed the assessment.
- 133 bridges originally failed their assessment, and have been strengthened, to meet current Highway Loading Standard requirements.
- 20 bridges are designated as sub-standard and are currently unable to sustain the current Highway Loading Standard and require strengthening or replacement.
- Five Structures are programmed to be strengthened as part of the rolling programme 2018/19.
- There are 25 outstanding bridge assessments. These will be completed by April 2020, subject to resources. In general they are smaller bridges on unclassified roads and do not represent a major risk (Appendix B).

Management of Sub-Standard Structures

- 8 A routine inspection process is in place to monitor all substandard bridges. Assessment pro-formas for all sub-standard bridges are updated in accordance with the latest Design Code (BD 79/06 – The Management of Sub-Standard Highway Structures).
- 9 The 25 outstanding bridges that require assessment have been added to the monitoring list.

Other Bridges Issues

10 There are a number of actions to be implemented in accordance with the Code of Practice for the Management of Highway Structures as follows:

- i) Complete the survey of existing retaining walls.
- a) Update the system to record all new walls and structures built by private developers;

Preparation is ongoing. Adoption, maintenance liabilities, commuted sums and approved construction types are issues to be resolved. It is important to ensure that the Authority does not take on additional liabilities from developers without adequate funding to deal with the additional assets.

- b) In accordance with the Code of Practice determine maintenance liabilities for 1,854 retaining walls.
- ii) Currently 485 bridges are subject to a general inspection on a two yearly cycle. Of these 50 require specialist access equipment and 135 require diving/confined space equipment in order to carry out a six yearly Principal Inspections.

Subsequently, when routine inspections are delayed there is a risk that issues will become critical before they are noticed. This leads to budgeting difficulties and/or the risk of having to impose restrictions on routes and/or major works being necessary at short notice.

If the current inspection regime continues then it would be prudent to budget for a sizeable contingency sum in the Capital Programme.

Footbridges and Public Rights of Way (PROW) Structures

11 There are 90 footbridges listed in the highway structures asset inventory. Maintenance of these structures is met from the Bridge Maintenance Budget (£195k) with costs for inspection met from the bridges revenue allocation of £200k. There are estimated to be a further 400 PROW bridges, managed by the Countryside, Leisure and Estates sections. The Bridges Section provides professional

advice when requested to the relevant sections. Responsibility for these structures is outside the scope of the highway bridges' budget and works identified are separately funded out of the respective Revenue Budgets.

- 12 It should be noted that these are new revenue pressures for the Engineering Service.

Routine Maintenance Backlog

- 13 The current backlog is estimated to be circa £3.3M of work. Current levels of expenditure (works only costs) is £195k per financial year. The replacement cost for all the bridges and retaining walls in the county is estimated to be between £380m and £480m. Current maintenance expenditure is 0.05% of the asset value. At this level it is clear that the backlog will continue to grow.

Bridge Strengthening Programme

- 14 Whilst the major issues arising from the Bridge Assessment programme have been dealt with, there are still 27 no. bridges remaining on the list (after this year's work is completed).
- 15 Whilst the majority of these involve relatively minor works to elements of the bridges there are some that require major works. These are detailed below:-

Cymmer Viaduct – estimated cost	£2.75m (alternative access route)
Cymmer Railway Bridges	£1.5m
The Green, Neath	£200k
Bridge Street, Neath	£100k or £1.0M (if lifting bridge required as part of Regeneration Programme)

Landslips/Carriageway Edge Failures

- 16 There are approximately 148 landslip areas within the Neath Port Talbot county boundary. The majority of these landslips are away from areas of habitation so do not present a risk to life or property.

- 17 The Engineering Section is currently dealing with 17 longstanding sites that are impacting on the highway network and which represent potential liabilities if not dealt with in the near future. The current budget for monitoring these sites is £20k

Tip Inspection

- 18 The Engineering section is currently dealing with the inspection 133 Tip sites that are impacting on the well-being of members of public. 20 sites were inspected this financial year. The current budget for monitoring these sites is £30K.

Financial Impact

- 19 The current revenue (backlog programme) of £195k is inadequate to maintain the asset portfolio. Continued under investment will result in emergency works, bridge weight restrictions or closures.
- 20 The budget associated with the outstanding bridge assessment and strengthening programme needs to be at a minimum maintained at the current level and ideally increased to complete the programme.
- 21 Major works identified from the principal inspections are unfunded and will become future capital programme pressures.
- 22 The monitoring or repair of landslip and carriageway edge failure is also a high risk area and an increasing revenue and capital pressure.
- 23 The monitoring of tip sites is also a high risk area and an increasing revenue and capital pressure.

Equality Impact Assessment

- 24 There are no equality impacts associated with this report.

Workforce Impacts

- 25 There are no workforce impacts associated with this report.

Legal Impacts

- 26 The inspection of highway structures and assets are a statutory duty of the Council, as Highway Authority.

Risk Management

- 27 A risk management plan is in place. This function has also been identified as high risk in the Council's Corporate Risk Management Plan. Weight limits and/or road closure may need to be implemented.

Consultation

- 28 There is no requirement for external consultation on this matter.

Appendices

- 29 Appendix A: List of bridges strengthened in the last 10 years
- 30 Appendix B: List of bridges requiring assessment
- 31 Appendix C: List of Landslips/Carriageway Edge Failures
- 32 Appendix D: List of Tips

List of Background Papers

- 33 Highway Asset Management Plan

Officer Contact

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Appendix A

APPENDIX 'A' - List of bridges strengthened in the last 20 years

BRIDGE ASSESSMENT AND STRENGTHENING PROGRAMME

	Complete
	Closed
	Subject to NWR agreement

<u>BRIDGE No.</u>	<u>BRIDGE NAME</u>	<u>STR. REQD</u>	<u>REMARKS</u>	<u>PRIORITY</u>	<u>WT REST</u>	<u>Monitoring Appropriate</u>
15A	Burrows Road	YES	Subject to NWR OK			<u>YES</u>
17A	New Road,Skewen	NO				
17B	Station Road, Skewen	YES	3 Tonne wt Limit			YES
17C	Crymlyn Road	YES	Subject to NWR OK			YES
29a	Old Road Culvert	YES	Parapet			
40	Neath Abbey	19	strengthened 2003			
59	Dinas Rock	NO				
65B	Hill Road	YES	Subject to NWR OK			YES
77	Argoed Culvert	NO				
77A	Afan Argoed Bridge		Replaced 2000			
80	Glynafan Colliery Bridge		Strengthened 2014			
80A	Ty Nant Bridge, Cymmer		infilled 2006			
81	Gelli Mill	NO				
85b	Abergwynfi Culvert		Parapet Stengthened 2016			
89	Cwmgwrach Bridge		Replaced 2001			
90	Cymmer Afan Bridge		strengthened 2010			
91	Cymmer Corrwg		Replaced 1996			
92	Cymmer Viaduct	YES	Full replacement	1	7.5t	YES
92A	Troed y Rhiw		strengthened 2015			

92B	Abercregan Culvert		Culvert filled 2008			
92C	Abergreggan Ft Br		Replaced 2014			
93	Glyncorrwg River Bridge		Strengthened 2003			
93A	Nant Y Allor		Re-decked 2012			
93B	Old Railway Bridge		New Parapet			
94	Heol-y-Deryn, Glyncorrwg		strengthened 2008			
94A	Glan-yr-Nant	NO				
95	Melyn Street		Strengthened 2009			
96	Cynonville Culvert		Strengthened 2015			
96A	Dyffryn Rhondda Culvert		Just PPT			
96A2	Footbridge Adjacent to Duffryn Street	YES				
97	Culvert N'th of Dyffryn Rh'dda		Strengthened 2011			
100A/100A1	Cymmer Railway bridges	YES	Full Replacement	2		YES
104C	Canal Bridge, Trebanos	NO				
105	Rhyn Dwy, Clydach		Strengthened 2005			
105A	New Road Culvert, Ynysmeudwy		Strengthened 2011			
105B	Old Road Culvert, Ynysmeudwy		strengthened 2011			
109	Pedestrian Underpass, Ystalyfera		Strengthened 2003			
110	Commercial St., Ystalyfera	NO				
111	Afon Twrch, Ystalyfera	NO				
113	Commercial St., Canal Bridge		Strengthened 2008			
117	Crown Bridge		Strengthened 2012			
118	Cwmllwynfell Bridge	NO				
120	Pen Rhiw Fawr Bridge		strengthened 2004			
123	Carmel Road, G-C-G		Strengthened 2005			
124	Heol Hir		Strengthened 2005			
125	Tairgwaith Culvert		strengthened 2010			
126(1&2)	Glyn Clydach, Bryncoch	NO				
128	Bryncoch (Main Rd.)		strengthened 2011			
129	Farmers Road, Bryncoch		strengthened 2011			
*130	Dyffryn Arms, Bryncoch Conc Slab	NO				
131	Tyn y Cwm		Strengthened 2003			
134	Old Bridge, Pontardawe	NO				
135	Alltwen Bridge	NO				

135A	Tramway Road		Strengthened 2006			
136	Herbert St.Canal, Pontardawe		strengthened 2011			
136A	Upper Clydach, Pontardawe	NO				
137	Holly St., Pontardawe		Strengthened 2010			
138	Baran Mountain, Rhyd-y-fro		Arch strengthened 2009			
138B	Penlan Road Culvert	YES				YES
139	Egel Br, Rhyd y Fro,Pontardawe		Strengthened 2014			
140	Pwllfawatkin		Strengthened 2004			
140A	Abernant Colliery Colliery Culvert		Strengthened 2009			
141	Pont y Groes		Strengthened 2014			
142	Llwyncelyn, Tairgwaith		Strengthened 2006			
143	Cilpentan, Tairgwaith		Strengthened 2006			
144	Mary Street Pedestrian Underpass		strengthened 2004			
144A	Stockham's Corner Subways	NO				
144B	Beechwood Avenue, Neath		Strengthened 2006			
145	Millands Road Viaduct		Pier strengthened 1996			
145A	The Green, Neath	YES	Part of Canal Green Dev't	3		YES
146	A474 Neath River Bridge		Bracing system 2002			
147	Court Herbert, Tennant Canal	NO				
147A	Vale of Neath Line	YES				YES
148	Ty Drew		Strengthened 2009			
149	Dderwen Fawr		Infilled 2007			
150	Tan y Rhiw, Cilfrew	NO				
151	Twin Stone Culvert		strengthened 2011			
152	Llwyngruffydd Culvert No. 2		Strengthened 2007			
153	Llwyngruffydd Culvert No. 1		Strengthened 2007			
154	Blaen-Nant Culvert,Abernant	YES				YES
155	Nant Ddu, Crynant		strengthened 2010			
156	Crynant		Strengthened 2003			
157	Maes Mawr, Crynant		strengthened 2009			
158	Ynys y Bont, Treforgan		strengthened 2009			
158B	Culvert near Treforgan		strengthened 2011			
158C	Ynys y Bont Relief Arch	YES				
159	Treforgan		Strengthened 2006			

160	Ynys y Fforch		Strengthened 2003			
161	Nant y Cafn		Strengthened 2003			
162	Garden City,Seven Sisters		Strengthened 2002			
163	Heol-y-Felin, Seven Sisters		strengthened 2011			
164	Ty n Newydd 1 bridge		Strengthened 2011			
165	Nant y Melyn		strengthened 2009			
166	Dulais Gardens		Strengthened 2002			
167	Station Road, Onllwyn		Replaced 2007			
167A	Halfway House	YES	Subject to NWR			YES
169	Camnant Road Bridge		Strengthened 2005			
170	Gorsllwyn		Strengthened 2011			
171	Nant y Fedwen Fawr		Strengthened 2006			
172	Ton y Ffildre		Strengthened 2014			
173	Pant-y-Ddrainen Culvert		strengthened 2004			
174	Coed Cae Culvert, Banwen		Strengthened 1999			
175	Nant y Gwyddil,Glynneath		Replaced 1999			
176	Maes-y-Pergwm,Glynneath		Replaced 2015			
178	Maes -y- Ffrynonn		strengthened 2010			
179	Nant Llwyn y Gwin	NO				
216	Burrows Lodge		strengthened 2005			
216B	Jersey Marine Railway		strengthened 2006			
221	Tollgate	YES				YES
221A	Bertha Road		Strengthened 2009			
222	Ffrwdwyllt		Replaced 1996			
224	Chapel of Ease		Replace Parapet & trief Kerbs			
224A	North Street Footbridge		Deck Replaced 2015			
225	Pont Sarn Culvert		Extended 2013			
226	Oak Bridge, Aberbaiden		Strengthened 2014			
226A	Rhyd y Bont Bren		Replaced 2007			
244B	Llanmihangel Footbridge	YES				YES
246	Pont yr Offeiriad	NO				
247	Cwm Wern Deri Road Bridge		strengthened 2011			
252	Velindre		Replaced 1999			
253	Afan Way		strengthen 1999			

255	Seaway Parade	YES				YES
255D	Evans Bevans Subway		Strengthened 2016			
255F	Christchurch Subway		Strengthened 2009			
255G	Afan Way Subway No. 1		Strengthened 2009			
255H	Afan Way Subway No. 2		Strengthened 2009			
255J	Afan Way Subway No. 3		Strengthened 2009			
255K	Afan Way Subway No. 4		Strengthened 2009			
255L	Afan Way Subway No. 5		Strengthened 2009			
255M	Afan Way Subway No. 6		Strengthened 2009			
257B	Zion Chapel Culvert		Strengthened 2013			
258	Afan Valley Road Culvert		Strengthened 2011			
258A	Afan Valley Road Culvert		Strengthened 2011			
259	Blean Baglan Culvert		strengthened 2011			
259A	Baglan Church Culvert	Yes	Parapet is listed with CADW			YES
259B	Crythan Farm Railway Bridge	NO				
259C	Crythan Brook		strengthened 2004			
261	Pont y Cymmer		strengthened 2003			
261A	Heol Y Graig Culvert		Strengthened 2011			
261E	Bridge on By-way 111	YES				
262	Pen Star Bridge		strengthened 2009			
263	Nant Groes Ddu Culvert		Strengthened 2013			
264	Efail Fach Road Bridge		Strengthened 2009			
265	Tyn-y-Cwm Culvert, Tonmawr	NO				
268	Bridge st Bridge	YES	Part of Canal Green Dev't	4		YES
275	Shelone Road	YES	Subject to NWR			YES
277	Giants Grave, Briton Ferry	YES				YES
278	Cryddan Brook, Old road, Neath		Overslabbed 2007			
280	Llantwit Road Culvert	NO				
281	Henfaes Terrace Culvert		strengthened 2006			
282	New Canal Bridge, Tonna	YES	Remedial work 2010			YES
284	Neath canal Bridge		Strengthened 2010			
283	Tonna Road Bridge		Replaced 2002			
285	Vicarage Road Bridge	YES				
286	Pant-y-Coed, Tonna/Clyne					

289	Cyd Terrace Culvert		strengthened 2003			
290	Clyne Railway Bridge	YES	Subject to NWR OK			YES
291	Cwm Coed Culvert		Strengthened 2015			
292	Ynys Dyfnant, Melin Court		Strengthened 2010			
293	Melyn Court, Resolven		Strengthened 2003			
294	Waterfall Bridge		Strengthened 2005			
295	Glyn Castle, Resolven		Strengthened 2006			
296	Resolven Housing Estate Bridge		strengthened 2005			
297	Resolven Railway Bridge	YES	Subject to NWR			YES
298	Resolven River Bridge		strengthened 2005			
314A	Glais to Alltwen Road Railway Bridge	NO				
324	Penlannau		Replaced 2008			
342	Swansea to London Railway Bridge	NO				
343	Water Street River Bridge	NO				
344	Subway next to bus station	NO				
344A	St Joseph to St Mary Church Subway	NO				
346A	Pentyla Subway	NO				
346B	Llewellyn Street subway No. 1	NO				
346C	Llewellyn Street subway No. 2	NO				
346D	Cwmafan Road Subway	NO				
345	St. Mary's Viaduct	NO				
347	Prior St. River Bridge	NO				
701	Ynysbwlllog Culvert					
705	Crugau Culvert	NO				
706	Rheola Brook Culvert					
707	Pentreclwydau Road Bridge					
708	Yscwrfa Bridge					
709	Yscwrfa Culvert	NO				
712	Lamb & Flag Canal Bridge		Strengthened 2003			
10/134	Pyle Road Bridge	NO				
10/136	Coal Brook Culvert	YES				YES
706	Rheola Brook Culvert					
1006	Pontwalby		Interim Strengthening-02			
1007/1039	Plas y Felin, Glynneath		Strengthened 2009			

1008/G227	New Bridge Pontneddfechan		Strengthened 2009			
1009/1199	Old Bridge, Pontneddfechan	NO				
1015/G169	Brynamman Boundary Bridge	YES				YES
1016/1033	Pwll y Wrach		Strengthened 2006			
1017/G84	Garnant Boundary Bridge		Strengthened 2014			
1002 /1162	Wetral Bridge (Bridgend C.C.)		Replaced 2004			
Total No. of Bridges Assessed = 196						

Appendix B

APPENDIX 'B' - Outstanding Bridge Assessments

Bridge No.	Bridge name	
85a	Nantgwyn Culvert	1
93C	Norton Terrace Bridge	2
100c	St Michaels Arch	3
138B	Penlan Road Culvert	4
141A	Cwm Garnant Railway Bridge	5
147b	Business Park Canal Bridge	6
158A	Ynys y Bont Farm	7
221f	Knight's Rd. Culvert	8
245a	Pyle Rd. Culvert, at entrance to Water Street	9
255b	Seaway Parade Culvert No.1	10
257D	Jersey Inn Culvert	11
299	Old Canal Bridge, Resolven	12
335	RHYDDING CULVERT	13
300	Georges Row Canal Bridge	14
256	Tyr Owen Row Culvert	15
256A	Tyr Owen Row Culvert 2	16
158C	Ynys Y Bont Cattle Underpass	17
138B	Penlan Road Culvert	18
251	Measteg Raod culvert	19
180	Morfa Glas Piped Culvert	20
762	Pelenna Bridge	21
764	Bryn Catwg Culvert	22
772	Margam Park Access Culvert	23
773	Old Graig Coch Access Road Culvert	24
779	Nant Tyn y Cwm Road Culvert	25

Appendix C

List of Landslips/Carriageway Edge Failures

1.	<p><u>Cwmavon Road, Port Talbot</u></p> <p>Landslips affecting the B4286 causing uneven road surface. Some evidence that this is a circular slip affecting 200m of road. No significant evidence of landslip affecting retaining wall between road and disused rail land. Monitoring pins being levelled four times/year. £1K per year + resurfacing in 5 years</p>
2.	<p><u>Pant-du, Cwmafan</u></p> <p>Steep slope opposite entrance to new housing estate on B4286. 300 tonnes of material slipped during December 2017. Work on engineering solution is ongoing. Estimated cost £500K</p>
3.	<p><u>Pwll y Glaw, Cwmafan</u></p> <p>Depression affecting A4107 Afan Valley Road. No obvious cause. £20K</p>
4.	<p><u>Heol y Glyn, Glyncorrwg</u></p> <p>Landslips onto road accompanied by large quantities of water, caused build-up of trapped water in moss and peat high on hillside. Three occurrences in last 10 or so years. Each time the road has been closed and Police refuse to open until hillside has been inspected by engineer. However, once the water has been released, the danger is passed. Inspection on forestry land on hillside did not reveal any immediate solution. £1K per year</p>
5.	<p><u>Pen y Star, Efail Fach</u></p> <p>Road closed unofficially due to total collapse of road side. No prospect of rebuilding bank and restoring support. Remedial works could involve moving road laterally into upside including retaining wall and/or mass earthworks on private land. Alternative route now used for many years without incident. Complaints initially but it would appear that all residents apart from Sardis Chapel accept the situation. Route does not warrant the cost of reconstruction and the</p>

	bends below and under railway bridge pose a significant risk to road users. £500K
6.	<p><u>Ormes Road, Skewen</u></p> <p>This road and New Road are <u>not</u> adopted highways. It was resolved by Committee many years ago that those roads should not be adopted.</p> <p>The area is not recognised as a landslip area, however, there are 12 plots and houses which remain empty. Also, area between Ormes Road and Newell Road was drilled by a potential developer but ground conditions were not suitable. Evidence of long term instability.</p> <p>Complaints and claims regarding drainage and collapsed retaining walls are being dealt with by Drainage Section and Insurance Section. £1k per year</p>
7.	<p><u>Forest Goch, Bryncoch A474</u></p> <p>Road in danger of losing support due to meandering River Clydach. Water main has been diverted. NRW denied responsibility. Works needs to reinstate bank protection and infill to support road. £30K</p>
8.	<p><u>Glan Rhyd, Ynysmeudwy</u></p> <p>River Tawe meandering closer to A4067 Swansea Valley road. Works carried out many years ago, but ideally additional works required. NRW would not object to us extending blockstone and moving shingle. £30K</p>
9.	<p><u>Ynysmeudwy B4603</u></p> <p>Road edge and footway collapsed and fenced off. Road has been drilled and investigated leading us to conclude that movement should not extend out into carriageway. £55K</p>
10.	<p><u>Graig Road, Garnant</u></p> <p>Footway depression occurring over many years and requiring regular reinstatement. Extensive investigation by the Coal Authority has proved that it is not caused by mining activity. Evidence of old leat crossing road at this point, possibly serving steam engine</p>

	<p>sheds in valley below.</p> <p>Reinstatement would possibly entail reconstruction from river bed level below, however, sewer main in embankment and fibre optic Openreach cables in footway. Carry on reinstating footway. £1K per year</p>
12.	<p><u>Graig Road, Godre'r Graig</u></p> <p>Loss of footway and support to carriageway. BT pole and manhole/cables in footway. £20K</p>
13.	<p><u>Panteg, Godre'r Graig Landslip</u></p> <p>Monitoring of pins on roads carried out periodically.</p> <p>Report and re-assessment carried out by Earth Science Partnership.</p> <p>Risk Map has been published.</p> <p>Strengthening work to the retaining work ongoing.</p> <p>Tree felling is ongoing.</p> <p>Movement over winter has continued as expected. Objective is to monitor and if possible warn of imminent movement.</p> <p>£300K over 3 years.</p>

Appendix D – Disused Tips within NPTCBC

Ref No.	Tip Name
A1	Complex at Centre of Cwmafon
A2	Dyffryn Rhondda Colliery Riverside
A3	Aberbaiden Kenfig Hill
A4	West of Mynydd Buchan
A6	Nantewlaeth Cymmer
A7	Cymmer Afan
A8	Old Dyffryn Rhondda Aerial Tips
A9	Glyncymmer Adj. New School, Cymmer
A10	Southpits, (Moel Iorth) Glyncorrwg
A12	Gelli Afan Cymmer
A13	Cwm Wernderi, Goytre, Port Talbot
A14	Newlands, West of Pyle
A15	Adj. Brynbryddan, Cwmafan
A16	Tewgoed Fawr, Port Talbot
A17	Cwm Y Garn, Goytre, Port Talbot
A18	Cribbwr Fawr, Pyle
A19	Penhydd Slant, Bryn, Port Talbot
A20	Pen Maen Tips, Bryn, Port Talbot
A21	Ynys Y Gwas Tips, Cwmafan
A22	West of Goytre, Port Talbot
A23	Bryn Road, Western Logs Maesmelyn Colliery
A24	Graig Y Tewgoed, Wernavon Colliery, Cwmafan to Pontrhydyfen
A25	Torymynydd Rhondda Colliery, Pwll Y Gwlaw, Cwmafan
A26	Cwm, Pontrhydyfen
A27	Bryn (Navigation), Port Talbot

A28	Cwmfarteg, Bryn
A29	Cynonville, Port Talbot
A30	Cwmcregan, Cymmer, Fforch-Las Quarries, Avon Vale Quarries ; Avon Vale Colliery
A31	Pen Y Castell, Cymmer
A32	Cymmer
A33	Old Glenavon Colliery, Cymmer
A34	Glyncorwg Pits, Graig Fach, West of Blaengwynfi
A35	Abergwynfi
A36	Higher level tip, Abergwynfi
A37	Pwll Y Gwlaw, Cwmafan
A38	Mynydd Corrwg Fechan Glyncorwg, (Old Aerial tip), Glyncorwg
A39	Old North Rhonnda Pit, Glyncorwg
A40	Afon Tip
A41	Abergwynfi School, Culvert
A42	Corrwg Rhondda Colliery
L2	Maerdy tips, Gwaun Cae Gurwen, GCG Colliery
L3	Higher patches, Lower Cwmtwrch, Gilwen Colliery
L4	Darren Tips, Trebanos
L5	Gurnos Ind Estate
L6	Rhosaman, Rhydwen
L7	Ystralyfera
L8	Old Tarrini Tips, Roadside
L9	Henre Forgan Colliery, Near Berrington P.H., Cwmllynfell
L11	Old Steer Pits, Gwaun Cae Gurwen
L12	East Pit, Gwaun Cae Gurwen
L13	East Pit, Gwaun Cae Gurwen
L14	Upper Farteg tips, Ystralyfera
L15	Pontardawe Station site
L17	Old Farteg tips, Ystralyfera
L19	Old Tarreni tips, Citybebyll
L21	Glantawe Tinplate works
L24	Cwmllynfell

L26	Brynmawr / Cae Duke/Abernant Complex
L44	Cilmaengwyn
L45	Tyle Pen Y Lan, Cwmllynfell
L46	Primrose cottages, Rhos
L47	Rhos,
L48	Cwm Nant-Llwyd Colliery, Gellinedd, Rhos, Pontardawe
L49	Uplands Quarries Pontardawe
L50	Glyn Merich Woods, Pontardawe
L51	Ynys-y-Geinon, Ynys Wil-Hernin
L52	Godre'r Graig higher level & Pentwyn no 3
L53	Pant Teg
L54	Gilfach Yr Haidd, Pwllbach Colliery
L55	Part of the Higher Patches tips complex See L3 above
L56	Bryn Morgan Colliery, Upper Cwmtwrch
L57	Cwmllynfell
L58	Ystradowen 1
L59	Ystradowen 2
L60	Cwmllynfell colliery early years see L59
L61	Later Cwmllynfell colliery, see L60
L62	Glen colliery, Cwmllynfell
L63	Ystradowen
L64	Brynamman
L68	Ystradowen
L69	Cwmgors
L70	Clun Gwyn
N1	Glyncastle, Resolven
N2	Rear of School Road, Crynant Maesmawr Colliery Crynant Colliery
N3	Coal yard, cwmgwrrach
N4	Aerial ropeway tips, Banwen
N5	Dillwyn tip, Nant Y Cafn
N6	Old Cefn Coed, Blaenant Colliery Complex, see N44 below
N7	Llwyn-on Colliery, Crynant
N8	Banwen Pyrddin
N9	Ffald Y Dre, Rheola Colliery, Resolven
N10	Above Ffald Y Dre, Resolven
N11	Nr Ysgwrfa bridge, Aberpergwm
N12	Rear of old tinplate works, Clyne

N13	Above Parish Road, Cwmgwrach, Tip for colliery at Blaengwrach; part of the Empire Tips See N17 & 21
N14	Seven Sisters (North of Seven Sisters) , See N42 below
N15	Gored Merthyr Colliery, Glyngwillym farm, Resolven
N17	Empire Tips & Complex Above Parish Road, Cwmgwrach, Tip for colliery at Blaengwrach; part of the Empire Tips See N13
N18	Onllwyn Colliery
N19	North of Crynant
N20	Glyncastle colliery, Resolven, Railway Sidings
N21	Empire Tips & Complex Above Parish Road, Cwmgwrach
N22	Pont Walby, Glynneath
N23	Gelli Cae Bryn, Glynneath, Rock Colliery
N24	Adjacent to Cwmgwrach Rugby Club
N25	Maes y Gwyn, Ryan Minning, Heol Wenallt, Cwmgwrach
N26	North of Gelli Cae Bryn, Glynneath
N27	Glyn Merthyr tip, Meli Court
N28	North of Clyne (above Ynysbwlog mine water treatment)
N29	Ynysarwed, Ynisarwed, Craig Nedd, Abergarwed, Resolven,
N30	Pen Rhiw House, PontWalby
N31	Ynysarwed Minewater Treatment
N32	Cefn Mawr Colliery & Blaen y cwm Colliery
N33	Eaglebush Colliery, Melyn, Neath
N34	Penstar, Aberpergwm
N35	Rock tip, Aberpergwm
N36	Cae Capel tip, Glynneath
N37	Cwm rhy dy Gau, Glynneath
N40	Onllwyn
N41	Khartoum Terrace, Onllwyn
N42	North of Seven Sisters, See N14 Above
N43	Brynteg, Cwmdulais; Nant Hir, Ynys Dawley, Penylan No 3
N44	Blaenant See N6 above
N45	Fforest Goch below Pentre Hearne
N47	Bryncoch Clydach Valley
N48	Darren Colliery, Longford, Skewen

N50	Drummau Road, Skewen
N51	Michaelston higher, Tonmawr, See N52 below
N52	Middle mine, Blaenpelena, Tonmawr, See N51 above
N53	Pentre Ffynon, Lon Las
N54	Werbddu Colliery, Tor Y Graig, Bryncoch
N56	Cerrig Llwydon & Craig y Fedw Colliery, Pontrhydyfen