



**Cyfoeth  
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**Natural  
Resources**  
Wales

**Area 8: Anglesey  
LANDMAP Change Detection:  
Visual & Sensory Aspect  
Monitoring Report  
Final: March 2015**  
Bronwen Thomas

Rev No. 3

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## 1.0 Introduction

1.1. In August 2013 Natural Resources Wales (NRW) commissioned Bronwen Thomas Landscape Architect (BTLA) to carry out stages 1, 2a and 2b of the interpretation of the LANDMAP Change Detection Packs (CDP) for the Visual & Sensory aspect covering several parts of Wales including Area 8: Anglesey.

1.2. In September 2013 BTLA was commissioned to prepare and manage the Local Authority questionnaire input into Visual & Sensory Change Detection across all of Wales.

1.3. In July 2014 BTLA was commissioned to carry out field visits, complete the surveys and update the Visual & Sensory data including the on-line surveys and GIS for the parts of Wales covered in the first stages, including Anglesey.

## 2.0 Methodology

2.1. 'LANDMAP Guidance for Wales: Monitoring Landscape Change' (NRW 2014) provides a full explanation of the methodology. The tasks carried out, in brief, have been:

### Stage 1: Baseline of Change

- Creation of monitoring tables for each of the local authorities, listing aspect areas, sources of change detection and recommended amendments;
- Desk study of maps and resources supplied in the Change Detection Pack to identify aspect areas where significant landscape change is anticipated, relating to boundaries, classification, evaluation and descriptions;
- Population of relevant columns to form the Stage 1 tables, relating to the CDP resources, namely:
  1. Aspect area UID and name;
  2. Change indicated by OS data, aerial photographs and roads/buildings maps;
  3. Change indicated by complexity maps (segment density) and NDVI;
  4. Change indicated by Phase 1 and seasonal change maps;
  8. (Draft) recommended LANDMAP amendments.

### Stage 1a: Local Authority questionnaire findings

- Assessment of information derived from local authority questionnaire.
- Population of relevant columns in the monitoring table:
  5. Change indicated by LPA questionnaire
  8. Adjustments to recommended LANDMAP amendments

### Stage 1b: Additional desk-based information

- Assessment of further information requested and supplied by NRW and local authorities;
- Cross-check against Consistency Report to ensure inconsistencies have been rectified;
- Population of relevant columns of the monitoring table:
  6. Changes indicated by other resources;
  8. Adjustments to recommended LANDMAP amendments

- Preparation of summary report to provide information specific to Anglesey and give a summary of key changes and influences, with illustrations, detected at this stage.

### Stage 2: Fieldwork verification and survey completion

- Visits to aspect areas to verify significance of changes and identify additional changes;
- Population of relevant columns in the monitoring table:
  7. Change indicated by fieldwork
  8. Adjustments to recommended LANDMAP amendments
- Adjustments to monitoring table relating to feedback from LPAs and incorporation of further additional sources of information;
- Revision of summary report to take account of changes made at stage 2;
- Preliminary Quality Assurance.

### Stage 3: Updating the Visual & Sensory Baseline

- Updating all aspect area surveys as recommended in the monitoring table;
- Updating aspect area boundaries in the Visual & Sensory GIS layer;
- Revision of monitoring table and summary report to take account of changes made at stage 3;
- Quality Assurance.

## 3.0 Monitoring Table Notes

3.1 The final monitoring table has been prepared in accordance with the Technical Specifications. The following general notes provide clarity and explain any modifications.

3.2 The final table accompanies this report.

3.3. Letters (**a. b.** etc.) refer to the separate changes that have been identified in each aspect area. This allows the recommended LANDMAP amendments to relate to the different changes.

3.4. Potential changes identified at stage 2 but not substantiated by fieldwork or other later methods have been retained in the final monitoring table for the sake of transparency.

3.5. Italics refer to amendments required for consistency rather than significant change. (none on Anglesey).

3.6. Figures taken from mapping and aerial photographs show most boundary changes and illustrate some of the amendments. These are provided with the accompanying monitoring table.

3.7. The following notes relate to each column of the monitoring table:

**Column 1:** Aspect Area UID and name.

**Column 2:** The Mastermap road and built form change mapping, and the 2001 and 2010 aerial photographs provided the most useful data for detecting possible change. It must be

noted that the aerial photographs provided in the CDP do not show the most recent changes.

**Column 3:** The complexity maps and NDVI mapping identified some possible vegetation changes. In Anglesey these have assisted in verifying change.

**Column 4:** Phase 1 habitat mapping has not been supplied. Seasonal change has not provided any further information relating to significant Visual & Sensory change.

**Column 5:** The LPA has not responded to the questionnaire.

**Column 6:** Other resources used for Anglesey:

- Forestry mapping showing conversion from conifer to broadleaf woodland
- Windfarm mapping showing windfarm developments in Anglesey.
- Anglesey Seascapes
- Welsh Coastal Storms report

**Column 7:** It must be noted that the fieldwork was carried out in summer 2014, approximately six months after the stage 1 monitoring table was completed, and several years after the aerial photographs were taken. Care was taken, therefore, to ensure that developments and other potential changes that appeared to be in progress at earlier stages were checked on site. Fieldwork has verified most of the changes identified.

**Column 8:** In summary, the following amendments are recommended:

- Ten aspect areas require boundary changes.
- Thirteen aspect areas require checking and/or amendments to survey data.
- There are no recommended changes to classifications or evaluations.
- There are no new aspect areas recommended.

## 4.0. General Approach to Recommended Amendments Relating to All-Wales Landscape Change

4.1. The following notes provide an overview of the recommended amendments that have been applied to all areas of Wales being monitored by Bronwen Thomas Landscape Architect. Only notes that may be relevant to Anglesey are included.

### Forestry conversion to broadleaf woodland

4.2. Source: All Wales GIS mapping supplied by NRW. This maps areas of former conifer plantation that have been replanted with broadleaves since 2001 in NRW-managed forests.

4.3. Where there are considerable areas of broadleaf conversion shown on the mapping within an aspect area this is noted in column 6. However, all these areas which have been checked during fieldwork are not having any significant visual & sensory impact yet. Therefore the broadleaf conversion is noted as a trend with recommendation to continue conversions to broadleaf, and referred to in the amended summary only, especially in relation to prominent areas such as valley sides overlooking settlements (e.g. Crynant) or

main transport/tourist routes (e.g. north of Rosebush in Preselis), or recreational areas (e.g. Afan Forest Park). This only applies to aspect areas which are significantly wooded, not where woodland/forestry is not a key characteristic.

### **Phytophthora felling**

4.4. Source: Comprehensive coverage of actual felling has not been made available therefore this has not been able to be included as change, except where noted as significant during fieldwork.

### **Windfarms**

4.5. Source: All Wales GIS mapping, August 2013. This maps all consented and operational windfarms, giving name, number and heights of turbines.

4.6. Some windfarms have already been included in the Visual & Sensory data, however these surveys will be checked and may be amended, with cumulative effects being considered. Operational windfarms are included as a landscape change within the aspect area, with amendments relating to detractive views within, change to sense of place, trend, condition, recommendations. Windfarms are also considered to be making significant change to views from other aspect areas within 5km, with detractive views out. If these aspect areas are primarily forestry, or valleys without views, or facing away from the windfarm, views from these have not changed significantly. The impact of all the operational and consented windfarms have been verified by fieldwork. Where windfarms are consented but not built, amendments relate to trend and recommendations. In order to provide consistent descriptions, the landscape types identified in 'Guidance on cumulative impact of wind turbines on landscape & visual amenity: Pembrokeshire and Carmarthenshire' (White Consultants 2012) will be used. These are: wind turbine landscape; windfarm.

4.7. There are no new windfarms on Anglesey.

### **Single wind turbines**

4.8. Sources: LPA questionnaire. No comprehensive mapping has been available, therefore change detection has relied on LPA observations, personal knowledge and fieldwork observations.

4.9. In many parts of Wales there are many more (and larger) single or pairs of wind turbines now than at the time of the original Visual & Sensory surveys. Where there are a considerable number within an aspect area the cumulative effect may make a change to views within (detractive), trend, recommendations (e.g. parts of Pembrokeshire plateau and around Milford Haven). Where turbines are sparsely scattered and not prominent, no significant change is detected. The landscape types identified in 'Guidance on cumulative impact of wind turbines on landscape & visual amenity: Pembrokeshire and Carmarthenshire' (White Consultants 2012) will be used. These are: area with no turbines; area with occasional turbines; area with turbines.

4.10. Single and small groups of wind turbines are not a key characteristic in Anglesey.

## Solar farms

4.11. Sources: LPA questionnaire. No comprehensive mapping has been available, therefore change detection has relied on LPA observations, personal knowledge and fieldwork observations.

4.12. Solar farms tend to be thinly spread at present and not considered to be making significant visual & sensory change yet (e.g. western part of Vale of Glamorgan, eastern parts of Pembrokeshire plateau). Fieldwork has shown that these are not prominent features from many viewpoints. These are noted and amendments will be made to trend and recommendations.

4.13. Solar farms are not a key characteristic on Anglesey.

## Settlement expansion

4.14. Sources: GIS Mastermap road and building change mapping, aerial photographs (2001 and 2010), plus Google Earth 2013 photography where applicable. The impacts of most of the areas of expansion have been verified by fieldwork.

4.15. As well as boundary changes around settlement aspect areas there is also encroachment on gaps between settlements which is significant in the 'busy' parts of the country (such as M4 corridor and tourist areas such as Pembrokeshire and Ceredigion coast). As well as physical encroachment, there is encroachment on views with some prominent edges of settlements impacting on the adjacent rural aspect areas. Where this is significant in the rural aspect areas amendments are recommended to detractive views and trend/recommendation relating to encroachment.

## Coastal erosion

4.16. Source: The Welsh Coastal Storms, December 2013 & January 2014 – an assessment of environmental change, NRW Evidence Report 33. This report became available in September 2014, after most fieldwork had been completed. LPA feedback has identified some specific areas of change which have all been verified by fieldwork.

4.17. The acceleration of coastal erosion, in terms of Visual & Sensory landscape change, is having a significant effect on some dunes systems (e.g. Newborough on Anglesey) or necessitating new sea defences (e.g. Borth in Ceredigion) but elsewhere is less significant. Amendment recommendations to aspect areas which have had specific erosion relate to trends and recommendations.

## 5.0 Summary of Key Changes and Influences in Anglesey

### Expansion of settlements:

5.1. At Holyhead and Llangefni there have been developments within and at the edges of the settlements.

5.2. Several of the villages across the county have had minor increases in housing developments, giving a general increase in size of villages.

**Holyhead Harbour:**

5.3. There has been an increase in activities at the harbour, with new yacht pontoons and associated buildings, and development at the port.

**Holiday accommodation:**

5.4. There appears to have been an intensification of caravan/chalet development generally in the eastern part of the county.

**Coastal erosion:**

5.5. Winter storms have caused erosion to edges of dune systems which is making significant landscape change.

5.6. Anglesey Seascapes Study identifies some forces for change and recent changes which are relevant to LANDMAP change. These are summarised on the table below. Some of these changes reinforce those identified from CDP information, others are additional to the change detection table.

**Anglesey Seascapes summary**

<b>Locations/Seascapes Character Areas</b>	<b>Main LANDMAP V&amp;S Aspect Areas affected</b>	<b>Summary of relevant forces for change/recent developments</b>
Menai Straits: SCA3 SCA 4 SCA17	YNSMNVS015 YNSMNVS016 YNSMNVS017 YNSMNVS021 YNSMNVS042 YNSMNVS043 YNSMNVS044 YNSMNVS045 YNSMNVS061 YNSMNVS063	Visitor pressure Increased commercial and recreational use of water (e.g. mussel fishing) Transport routes
East and north coasts: SCA5 SCA6 SCA7 SCA8 SCA9 SCA10	YNSMNVS002 YNSMNVS003 YNSMNVS005 YNSMNVS008 YNSMNVS011 YNSMNVS012 YNSMNVS014 YNSMNVS015	Increases in caravan parks, seasonal visitors, traffic. Expansion of settlements Flooding at river mouths and valley floors Proposed offshore wind turbines and onshore infrastructure Proposed Wylfa B nuclear power station



	<p>YNSMNVS034  YNSMNVS035  YNSMNVS037  YNSMNVS038  YNSMNVS039  YNSMNVS040  YNSMNVS060  YNSMNVS068  YNSMNVS073  YNSMNVS074  YNSMNVS086    YNSMNVS095</p>	
<p>Holyhead and Holyhead Mountain:  SCA11  SCA 13</p>	<p>YNSMNVS001  YNSMNVS054  YNSMNVS055  YNSMNVS058  YNSMNVS083  YNSMNVS084  YNSMNVS085</p>	<p>On-going development of port  Seasonal visitor pressure  Proposed developments at Newry and Penrhos  Grazing management on Holyhead Mountain – more scrub/bracken</p>
<p>West coast:  SCA14  SCA15  SCA16  SCA18</p>	<p>YNSMNVS007  YNSMNVS012  YNSMNVS019  YNSMNVS029  YNSMNVS046  YNSMNVS047  YNSMNVS048  YNSMNVS049  YNSMNVS050  YNSMNVS051  YNSMNVS052  YNSMNVS053  YNSMNVS054  YNSMNVS064  YNSMNVS067  YNSMNVS090  YNSMNVS092  YNSMNVS094</p>	<p>Changes of use at RAF Valley  Recent beach-front developments – Rhosneigr  Seasonal conflicts of interest at beaches  Seasonal visitor pressure  Flooding of low-lying areas/marshes  Caernarvon airport development</p>

## 6.0. Monitoring Table and Figures

### Ynys Mon:

1 Aspect Area UID & name	2 Change indicated by: OS data, Aerial photographs & Roads/Buildings	3 Complexity maps (segment density) & NDVI	4 Phase 1 & seasonal change	5 LPA questionnaire	6 Other resources	7 Fieldwork	8 Recommended LANDMAP amendment
YNSMNVS007 Holy Island	<p><b>a.</b> New road layout adjacent to A55, for industrial estate. Some buildings constructed.</p> <p><b>b.</b> Housing on edge of Holyhead at Kingsland – partly built on 2001 aerial.</p> <p><b>c.</b> New chalets(?) at Pentre Gwyddel in south east. Not apparent on aerials</p>					<p><b>a.</b> Plus some building under construction</p> <p><b>b.</b> confirmed. Not very conspicuous.</p> <p><b>c.</b> Not conspicuous/significant</p>	<p>GIS: Boundary changes to incorporate industrial development into 084 (<b>a.</b>) and housing into 058 (<b>b.</b>)</p> <p>Survey: Amend summary to note removal of industrial estate.</p>
YNSMNVS008 North West Drumlins	<p><b>a.</b> Housing expansion on edge of Cemaes</p> <p><b>b.</b> Housing(?) at Rhydwyn</p> <p><b>c.</b> Housing at Bryngwran (SE corner of aa) Not much.</p> <p><b>d.</b> New road to north of Bryngwran – not apparent on aerials</p>					<p><b>a.</b> Confirmed</p> <p><b>b.c.</b> Minor village edge developments- no significant change.</p> <p><b>e.</b> Ground investigations for Wylfa Newydd being carried out in north east corner, between Wylfa and Cemlyn</p>	<p>GIS: Boundary change with 068 (<b>a.</b>)</p> <p>Survey: Amend summary, views, trends recommendations to reflect increase in activity relating to Wylfa. (<b>e.</b>)</p>
YNSMNVS010 Drumlins with	<b>a.</b> Housing expansion to east of Penysarn				<b>b.3</b> Windfarms: Llyn Alaw	<p><b>a.</b> insignificant.</p> <p><b>b.</b> No new</p>	No amendments required – no significant

windfarms	<b>b.</b> All windfarms built pre-2001				operational 34no. 52ht Rhyd y groes operational 24no. 46ht Trysglwyn operational 14no. 43ht	turbines	change.
YNSMNVS011 North coast hinterland	Some expansion of Bull Bay settlement					Bull Bay development not conspicuous. Other minor developments west of Amlwch but not significant change	No amendments required – no significant change
YNSMNVS012 Central smooth belt	<b>a.</b> New access roads at Parciau – caravans And near Traeth Llygwy (north east). <b>b.</b> Quarries adjacent to B5110 expanding/busier from aerials <b>c.</b> college at Llangefni expanded into area					<b>a.</b> Appears to be general trend of more/upgraded caravan parks and chalet developments – more conspicuous <b>c.</b> confirmed school)	GIS: Boundary change with 059 ( <b>c.</b> ) Survey: Amend/check summary, descriptions, trend, recommendations to reflect increase in holiday accommodation
YNSMNVS015 Penmon plateau	Large new building in Dinmore Quarry – both buildings not on 2001 aerials (built when visited 2010)						Survey: Amend/check summary, descriptions to reflect increase in industrial activity at Dinmore. Checked - no amendment required
YNSMNVS017 Eastern smooth belt	<b>a.</b> Road to series of (fishing) lakes at Pant Howell. <b>b.</b> Roads at Plas Cadnant	<b>f.</b> Much more productive at Penhesgyn – greened-up/restored landfill				<b>a.b.c.d.</b> No significant change <b>e.</b> Minor additional	GIS Boundary change with 077 ( <b>h.</b> ) Survey: Amend summary, trend, recommendations to

	<p><b>c.</b>Roads at standing stone at cross roads-upgrading industrial/retail estate?  <b>d.</b>Roads and buildings at Durley Den – chalets?  <b>e.</b>Roads and buildings at Four Crosses pub – holiday accommodation?  <b>f.</b>New large buildings at Penhesgyn Gors – former landfill? Land restored/greened-up.  <b>g.</b>Small new housing estate near Felinengan  <b>h.</b> Llandegfan expanded into this aa</p>	(?)				development. <b>f.</b> Recycling site and restored landfill.	reflect gradual increase in scattered developments.
YNSMNV019 Newborough Forest	<b>a.</b> Upgraded access road and visitor centre. Aerials show new building on different site.				<b>b.</b> Welsh Coastal Storms report cites 10m retreat of dunes along much of edge, plus conifer loss	<b>a.</b> Toilet block and recent signage etc – general upgrading of facilities. <b>b.</b> Conspicuous erosion and unsightly dead conifers	Survey: Amend summary, views, trend, recommendations to reflect on-going storm damage. ( <b>b.</b> )
YNSMNV025 Beaumaris wooded slopes					Small blocks of forestry converted to broadleaf	Not noticeable yet	Survey: Amend summary, trend, recommendations to reflect gradual change to broadleaf woodland
YNSMNV035 North coast					Welsh Coastal Storms report cites storm damage to shingle bank at Cemlyn	Confirmed some reduction in bank	Survey: Amend summary, trends, recommendations to reflect increase in storm damage

YNSMNVS051 South west coast						Storm damage to dunes at Porth Cwyfan	Survey: Amend summary, trends, recommendations to reflect increase in storm damage
YNSMNVS053 Southwest coast - Rhosneigr					Welsh Coastal Storms report cites storm damage to dunes	Confirmed – some erosion of dunes recently	Survey: Amend summary, trends, recommendations to reflect increase in storm damage
YNSMNVS057 Cefni Reservoir	a. New roads at pumping station – upgraded? More tree growth	b. Much more productive at edges – tree growth				a. b. Not conspicuous/sig nificant	No amendments required – no significant change
YNSMNVS058 Holyhead	Housing expansion in south near Kingsland						GIS: Boundary change with 007 Survey: note boundary change
YNSMNVS059 Llangefni	a. Various new buildings, mainly in industrial estate in south, within boundary. b. New inner bypass. c. School/college extension in north east, beyond boundary					c. Confirmed	GIS: Boundary change with 012 (c.) Survey: note boundary change
YNSMNVS060 Amlwch	New roads on headland/chemical works					Not accessible	No amendments required – no significant change
YNSMNVS064 Trearddur	Several roads/buildings, relating to holiday accommodation?					Various scattered new buildings, mainly accommodation	Survey: Amend summary, descriptions, trend, recommendations to reflect general increase in scattered development.
YNSMNVS068 Cemaes	Housing expansion on west side					confirmed	GIS: Boundary change with 008 Survey: note boundary

							change
YNSMNVS076 Llangoed	New chalets(?) beyond common in north west, beyond boundary					Not part of village	No amendment required – no significant change
YNSMNVS077 Llandegfan	Housing expansion in north east beyond boundary						GIS: Boundary change with 017 Survey: note boundary change
YNSMNVS083 Holyhead Harbour	<b>a.</b> New hardstanding and buildings on eastern side of inner harbour. Not apparent on aerials. <b>b.</b> New footbridge across from station to ferry (aerials) <b>c.</b> New pontoons and associated buildings on new 'headland' in main harbour.				Seaward boundary of this aa not shown on mapping therefore no GIS information.	<b>a.b.c.</b> Confirmed plus new harbour developments.	GIS: draw seaward boundary. Survey: Amend summary, views, description, trend, recommendations to reflect upgrading and increased use of harbour.
YNSMNVS084 Aluminium works	New roads & buildings in western part					Major retail/business developments in western part. New roads/layout on other side of A55 appropriate to include in this aa.	GIS: Boundary change (additional separate area) to include emerging developments on south west side of A55. Survey: Amend summary, descriptions, views, trend, recommendations to reflect expansion and changes in developments.
YNSMNVS090 RAF Valley	<b>a.</b> Large new hangar(?) in east, adjacent to railway. <b>b.</b> Some additional buildings in west, near Cymyran.	<b>c.</b> Much more productive alongside runways. Much less around new buildings in west				<b>a.b.</b> Not viewable <b>c.</b> Unlikely to be significant	No amendments required – no significant change.

YNSMNV092 Racing track	Extended track apparent from aerials (under construction when visited 2010)						Survey Check that descriptions, views, noise, recommendations relate to enlarged track.
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## Ynys Mon: Change Detection Figures

YNSMNVS058 Holyhead

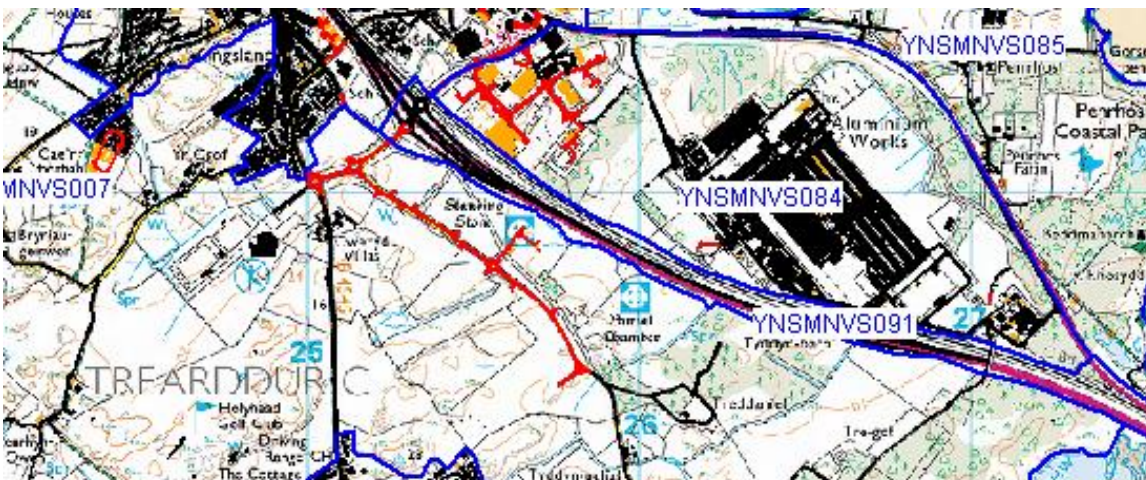


Kingsland housing to be added to Holyhead

YNSMNVS084 Aluminium Works



Boundary for new part of 084 on south side of A55





YNSMNVS083: Holyhead harbour developments



2001



2010

YNSMNVS059 Llangefni



Now reverted to field

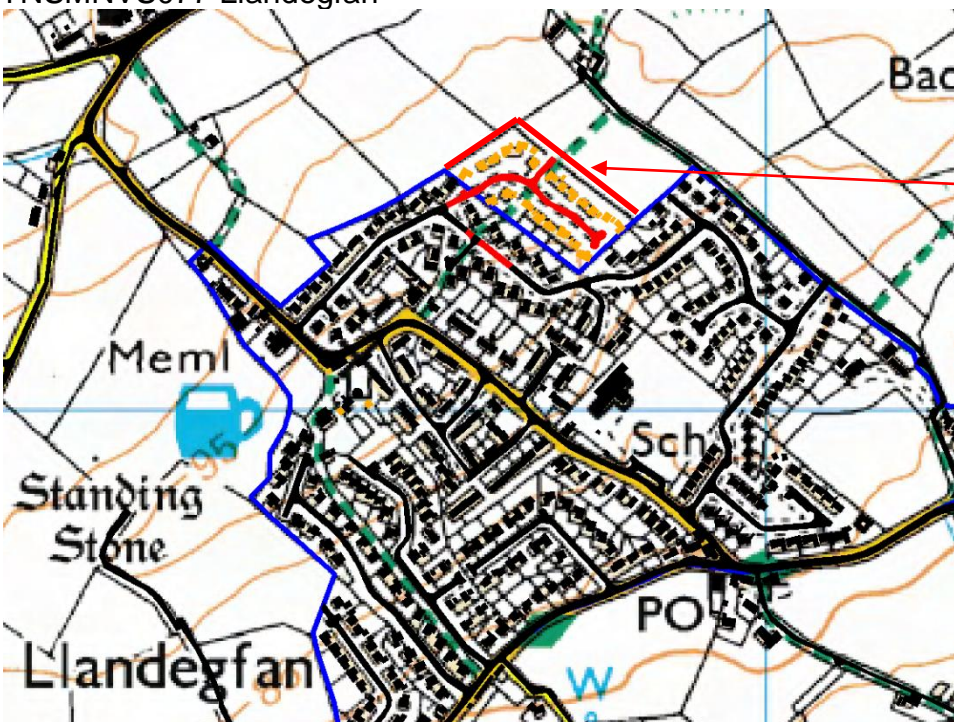
Llangefni boundary extended around new school

YNSMNVS068 Cemaes



Cemaes boundary extended

YNSMNVS077 Llandegfan



Boundary change with 017



YNSMNVS054: expansion at Valley airfield



2001



2010

YNSMNVS092: expansion of race track



2001



2010

YNSMNV022, 095,012: increases in caravan parks



2001



2010



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