



Asiant Cefnffyrdd Gogledd a Chanolbarth Cymru
North & Mid Wales Trunk Road Agent

Public Accounts Committee
(PAC Audit)

Inquiry into value for money of
Motorway and Trunk Road
Investment

17 March 2015



Yn gweithio ar ran
Llywodraeth Cymru
Working on behalf of the
Welsh Government

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1. *Figures on staffing levels at the North Wales Trunk Road Agent, including local authority staff involved in delivery and any local authority staff seconded. Information for each year from 2011-12 to the current financial year;*

1.1 The NMWTRA staff currently stands at 102 with 64 staff undertaking the technical and administration functions of the Agency associated with inspecting, operating and maintaining approximately 1200 km of Trunk Road Network and an associated budget of approximately £50m. 38 staff comprise the Operations unit including the Traffic Officer Service (27 staff) and Control Room Functions (10 staff) falling within the responsibility of the Operations Unit Manager (1No. staff).

1.2 The Agency directly employed staff numbers have increased since 2005 when, for the former North Wales Trunk Road Agency (NWTRA), staffing levels stood at 26 and 12 for the former Mid Wales Trunk Road Agency (MWTRA) giving 36 in total. This reflected the model stipulated by Welsh Government at this time with a requirement to 'buy in' the majority of services from Local Authorities. Whilst the number of directly employed staff stood at 36 the number of Full Time Equivalent (FTE) staff involved in Trunk Road management when those staff embedded in Local Authorities was taken into account was estimated at 90FTE's delivering core services.

1.3 Since 2006 staffing levels for directly employed staff within the Agent have increased by agreement with Welsh Government, predominantly through staff transferring from Local Authorities, the private sector, the merger with the MWTRA and from creation of the Traffic Officer (TO) Service and Control Room to form an Operations Unit. It is important to note that excluding the Operations Unit, overall FTE levels have increased by 7, with a residual 33 FTE's currently embedded in Local Authorities giving an overall FTE of approximately 97 compared to 90 in 2005. This modest increase in FTE levels needs to be considered in the context of the additional services that are being delivered at Welsh Government request. Three posts are directly linked to new service areas including:

- Statutory Tunnel Manager;
- Deputy Tunnel Manager;
- Statutory Tunnel Safety Officer & Risk Manager;

The remaining four posts are linked to improved governance requirements (3 posts) associated with the NMWTRA Schedule of Rates system and additional administrative support (1 post).

The current internalisation of the planning function into WG will reduce NMWTRA staffing by 11No. in April 2015. The time line and changes to NMWTRA staffing arrangements are indicated below.

Timeline	Staff requirement	Staff numbers	Cumulative staff	Increase in FTE
Oct 2005	NWTRA conception based on WG requirement for a lean management unit structure and bought in services from Local Authorities. Model and structure agreed with WG based on two years of discussion and negotiation.	26	26	N/A
Feb 2006	NWTRA requested to take on Statutory Tunnel Manager function	+2	28	2
March 2011	Third Party Claims and Rechargeable works internalised from LA's to achieve efficiency savings	+1	29	0
April 2011	TUPE transfer from Flintshire CC of the 100% TR dedicated inspection team (TIU) for NE Wales to enable improved management control, restructuring in the Agency team. Agreed with WG at Agency Board December 2010.	+8	37	0
July 2011	Request from WG to establish a developed Traffic Officer (TO) service for A55.(non-resilient service)	+22	59	22
July 2011	Request from WG to transfer Control Room operational function to NMWTRA to enable integrated operations unit comprising control room and TO service to be created. TUPE staff transfer from private sector (Atkins)	+10	69	10
January 2012	Statutory Tunnel Safety Officer under regulation 10 RTSR.	+1	70	1
January 2012	WG requirement for NMWTRA to move to functional asset / network operation split rather than area based split at senior level. Internalisation of functions from LA's plus additional admin support post	+5	75	1
April 2012	WG request to merge MWTRA and NWTRA to form NMWTRA. TUPE staff transfer from Powys CC to Gwynedd CC and restructure of North Wales Network Operations team	+12	87	0
April 2012	Agreed internalisation of 100% dedicated Geotechnical Asset manager by TUPE transfer from Wrexham CBC. Agreed by WG at Agency Board to improve management control and accountability and cost saving.	+1	88	0
April 2012	Additional post created to address anticipated SOR workload from Mid Wales. (Appointed Dec 2013 to reflect Mid Wales Area SOR implementation programme). Improved governance.	+1	89	1
April 2012	Appointment of 2 additional A55 Assistant Route Managers to replace temporary posts following an evaluation period and to meet operational requirements.	+2	91	0
Nov 2012	Expansion of Traffic Officer staff resources to provide 3 unit resilient service at the request of WG.	+6	97	6
July 2013	Appointment of 2 Rechargeable Recovery Officers based on internalisation of recovery and Development Control functions from LA's at WG request.	+2	99	0
Dec 2013	As part of NMWTRA phase 2 restructuring an additional 2 new post and internalisation of 1 post to provide improved management and control and cost savings. Also to provide an improved level of governance for the bought in inspection service.	+3	102	2
Net Increase in NMWTRA Full Time Equivalent staff since 2005 excluding the Operations Unit				7 FTE's
Net Increase in NMWTRA Full Time Equivalent staff since 2005 including Operations Unit				45 FTE's

2. Further information on traffic management and resilience arrangements;

2.1 Traffic Management.

- 2.1.1 Traffic management is required to meet the various statutory duties of Welsh Government as the Highway Authority. In the operation and maintenance of highway networks, it is necessary from time to time to put in place temporary traffic management measures to facilitate safe road works, temporary closures or incident management, whilst keeping the traffic flowing as freely as possible. With high traffic flows and speeds on many roads, it is particularly important to plan all works activities and temporary closures to optimise safety, road space and work efficiency, whilst minimising road user congestion, delay and inconvenience. All reasonable steps are taken to ensure that the effects of the works are reduced to a minimum whilst ensuring the safety of both the travelling public and the workforce.
- 2.1.2 For the A55 / A494 corridor, the majority of planned maintenance activities are undertaken at night. Where health and safety requirements require day time working, this is undertaken during off peak periods and the extent of traffic management and particularly peak time traffic management is minimised as far as practicable. For capital delivery projects it is often necessary to maintain 24 hour traffic management arrangements to facilitate the continuity of working operations and efficiently install, operate and remove complex TM installations associated with contraflow. In order to minimise as far as possible the associated disruption, NMWTRA contract specifications require enhanced contractor resources and extended working days / weeks to ensure overall programme for completion is minimised, as far as possible within contract constraints, which may include noise limits when adjacent to residential areas.
- 2.1.3 Welsh Government as Highway Authority can and does significantly influence the timing and scope of road works. For example, summer embargo periods are implemented to minimise works on tourist routes at peak times of the year and by accepting the additional costs associated with night time only or 24hr working to mitigate the levels of disruption.
- 2.1.4 Day to day co-ordination of traffic management is provided by Agents and their partner local authorities as a function under the *New Roads & Street Works Act 1994*. This includes the co-ordination of traffic management and the regulatory management of utilities where appropriate. The close liaison between NMWTRA route managers and the adjacent County Road Highway Authorities is currently promoted by the integrated approach to network co-ordination with trunk road activities.

2.2 Resilience Arrangements

The resilience of the trunk road network is dependent on a number of factors, including:

- 2.2.1 The capacity of a route.** A dual carriageway with a hard shoulder will have greater capacity and thus resilience to cope with incidents such as road traffic collisions, breakdowns and maintenance / construction activities than a single carriageway.
- 2.2.2 The nature of the network.** This can for example be simply expressed in terms of the number of safe alternative strategic and/or tactical diversion routes that provide sufficient capacity to temporarily replace the main trunk road route closed by an incident. The alternative diversion route options available in the NMWTRA area are limited in terms of topography, capacity, design standards and are often lengthy in distance and duration.

- 2.2.3 The design standards.** Much of the network has been developed from historical routes with long sections that have never been designed or engineered to current standards. This reduces the resilience of the network from an operational perspective. Most of the sections of the network that have been developed or upgraded have been by online improvements which means that there are no significant lengths of parallel routes available for use as traffic diversion. This can reduce resilience during major incidents.
- 2.2.4 Achieving appropriate maintenance standards.** This significantly helps to provide resilience by ensuring a safe condition of the network and reliable operation with the minimum of reactive maintenance activities.
- 2.2.5 Asset management planning** provides a context for the level of maintenance required.
- 2.2.6 Emergency Response capability** – see section 3 below.

3. Details of how accidents and major incidents on the trunk road and motorway network are managed; and

3.1 Responding to an incident - Welsh Government requirements

Incidents requiring an Emergency Response (ER) by the Agent include a wide range and severity of events including for example road traffic collisions, errant vehicles, vehicle breakdowns, vehicle fires, flooding, rock falls and landslips, debris, dead animals, fallen trees on the highway, security issues, potential suicide events and pollution incidents. Similarly, highway infrastructure condition defects (Category 1 defects) are those which *'require prompt attention because they represent an immediate or imminent hazard or because there is a risk of short term structural deterioration'*. The requirements for ER are defined by the Welsh Government (WG) Trunk Road Maintenance Manual (WGTRMM).

3.2 WGTRMM response requirements are detailed in the table below and require the following attendance responses from a reactive maintenance / inspection / emergency response perspective. Traffic Officer response requirements are defined in the WG Traffic Officer Manual. NWTMC Control Room implements the WG Control Room Emergency Procedures.

Location	Day Time	Response Time	Night Time	Response Time
A55 and A494 Deeside Corridor	07:00 to 19:00	1hr	19:00 to 07:00	1.5hrs
Other Routes		1.5hr		2hrs

3.3 NMWTRA emergency response capability and resource levels have been established to ensure the above performance requirements are met consistently. The NMWTRA Area Performance Indicator for incident response is consistently in the order of 99%. Traffic Officer response times similarly achieve greater than 99% of target time. The main resources available to NMWTRA for incident response comprise:

- Traffic Officer Service (daytime hours 06:00hrs to 20:00 hrs and A55/A494 dual only, 3 double manned units);
- North Wales Traffic Management Centre Control Room (24/7/365);
- Partner Authority Emergency Response Units(24/7/365) ;
- Partner Authority Mutual Aid arrangements (24/7/365);
- Contractor Framework plant and labour resources.

3.4 Initiating & Managing an Emergency Response (ER)

ER will be initiated in a number of ways for example:

- Calls from the public e.g. via local authority call centres;
- Emergency Services reports e.g. via 999;
- CCTV Cameras at North Wales Traffic Management Centre (NWTMC) in Conwy;
- The Agent may call the appropriate Emergency Services control centres;
- WG Emergency phones located on the network;
- Agent Safety Patrols (daily) on the A55/A494 dual carriageways identifies immediate hazards e.g. debris;
- Agent Safety Inspections (every 14 days on the A55 and 28 days elsewhere) identifies Category 1 defects;
- A55 Traffic Officer Service;
- North Wales Police;

- Adverse weather events e.g. high winds requiring a closure at A55 Britannia Bridge, or floods.
- 3.4.1 Following on from initiating an emergency response, typically the timeline of an incident will include:
- Emergency Services or Traffic Officers attending the scene and implementing Emergency Traffic Management (ETM) to protect the site;
 - For larger scale incidents a secondary response by Emergency Response Unit (ERU) support services may be required to establish Temporary Traffic Management (TTM) to support the Emergency Services and enable necessary repairs to be undertaken and the network returned to normal operation.
- 3.4.2 Traffic Officers will implement WG agreed procedures for vehicle breakdown recovery via a North Wales Police recovery contract, vehicle dragging to lay by, hard verge or other safe place, implement diversions, ETM and when appropriate the new Emergency Crossing Points. The Traffic Officer Service has demonstrably improved network resilience and the ability for NMWTRA to respond to incidents. In 2014 (calendar year) Traffic Officers responded to:
- 9,262 events (an average of 25.3 events per day),
 - Comprising:
 - 5,493 Breakdowns;
 - 2,512 Obstructions;
 - 485 Road Traffic Collisions.
 - 7 minutes average response time (KPI of 20 minutes);
 - 22 minutes average total attendance time’;
 - There were a total of 10,341 events recorded (TO & Control Room) for the same period.
- 3.4.3 At the A55 Tunnels some responses are immediate, in so far as is practicable, by the Control Room staff at NWTMC. For example, setting lane closures signs and Variable Message Signs following a vehicle breakdown. This will be implemented under the WG Control Room Emergency Procedures.
- 3.4.4 NMWTRA will often attend an incident in support, or under the direction of, the Emergency Services and will operate as a Category 2 responder under the Civil Contingencies Act 2004. There is a NMWTRA Contingency Plan which covers Critical Incidents and Major Incidents. There are also specific tactical contingency plans at some locations e.g. A55 Tunnels. NMWTRA is also an active participant in the Local Resilience Forums working closely with the Emergency Services and local authority emergency planning staff. During an incident NMWTRA will provide Bronze (Operational), Silver (Tactical), Gold (Strategic) command representation as required through on-call rotas. Traffic Officers provide the daytime Bronze function on the A55 and Assistant Route Manager’s rota, out of hours.
- 3.4.5 Strategic Diversion (trunk-to-trunk road) and a Tactical Diversion Routes (trunk road-county road-trunk road) have been identified and agreed with the local authorities in Wales. In some locations these have supporting temporary signs or cone bins in place to enable Traffic Officers and the Police to react rapidly.
- 3.4.6 To meet WGTRMM requirements, NMWTRA has implemented Emergency Response Unit (ERU) support through its local authority partners. This provides a proportionate out-of-hour’s response by a Duty Officer and maintenance operatives to provide appropriate ER

such as basic temporary traffic management and initiate any necessary repairs or larger debris removal. The ERU resource levels are matched to meet the specified response times defined in WGTRMM. To further support the ERU during Major Incidents there are formal Mutual Aid arrangements between the local authority partners which provides additional resource resilience. There are also Urgent Works arrangements in place under our private sector contractor framework e.g. for managing a collapsed culvert at short notice.

3.4.7 NMWTRA will provide details of incidents and roadworks to relevant WG databases and provides information to the WG Traffic Wales information service provided by the Welsh Transport Technology Consultant (WTTC) on behalf of WG. Details are also conveyed to and from the INRIX service in the South Wales Traffic Management Centre in Coryton. NWTMC Control Room operators are able to upload information to the WG Traffic Wales website and provide 'Clickatell' text messages to a defined WG list of recipients. Traffic alerts will also be tweeted automatically on the Traffic Wales twitter page. Website scrolling banners are provided by WTTC. For operational events:

- **Incident events** – a traffic alert is created once an incident has been identified;
- **Incident road closures** – on the single carriageway network the information will come from the INRIX or the Police;
- **For incident related congestion** – a traffic alert will be created.

3.5 Recovering from an incident

3.5.1 The recovery phase of an incident will include for example 'making safe', clean-up operations, temporary repair or permanent repairs, for example damaged safety barrier in a central reserve of a dual carriageway may require an interim make safe repair to re-open the road pending a permanent repair. The ERU will normally enable the road to be re-opened fully or at least partially in a limited way depending on the size and severity of the incident. In some cases the recovery phase becomes a works project in its own right and requires appropriate levels of resource and technical expertise / design / technical approval to resolve. This will normally require Temporary Traffic Management for the safety of the workforce or to protect the public whilst damaged barriers are unable to provide adequate containment until repairs are completed. The emphasis and focus from the Agent and the Emergency Services is always on rapid recovery to re-open a road safely and as soon as possible.

3.5.2 The Agent is responsible for the safe re-opening of the road once the Emergency Services have completed their work and it is safe to do so.

3.6 Emergency Response exercises

NMWTRA routinely arranges and participates in exercises in collaboration with the Emergency Services and Highways Agency in England. These are a statutory requirement at the A55 Tunnels. This ensures the effectiveness of multi-agency responses to incidents.

3.7 Summary comments

- Emergency Response requirements are specified in WGTRMM, WG Traffic Officer Manual and WG Control Room Emergency Procedures;
- NMWTRA resource levels are matched to meet WG response requirements;
- Performance levels are consistently achieved within Agency Agreement Performance Indicators.

4. Statistics on the volume of road works and number of accidents and associated downtime on the network, as well as compensation claims from road users resulting from the condition of the network.

4.0 Volume of road works

4.1 Please note that within the timescales associated with this information request and in order to provide detailed information for the most critical route in the NMWTRA Area statistics are restricted to the A55/A494 Dual Carriageway corridor and the financial year 2013/14. NMWTRA's approach to managing traffic management and disruption is shown in section 3 above.

4.2 Traffic Management (TM) implemented between 1st April 2013 and 31st March 2014 on the A55 / A494 corridor (excluding the DBFO section) was required for the following planned and reactive works and projects in accordance with Welsh Government requirements:

- Routine cyclic maintenance work programme;
- Routine planned maintenance work;
- Routine planned tunnel & headland maintenance work;
- Reactive Category 1 defect repair work;
- Welsh Government survey work;
- Capital Schemes;
- Other Third Parties' works.

4.3 A summary of the volume of road works / traffic management associated with the above operations and contracts can be quantified as follows:

- Total number of overnight (18:00 – 07:00) work sites = 243 sites over 51 nights;
- Total number of daytime (off peak 09:00 – 16:00) work sites = 63 sites over 126 days;
- Number of days with no TM in place at all within 24 hour period = 84 days;
- Total number of days with TM present = 281 days.

For clarity:

- Daytime period is considered to be between 07:00 and 18:00;
- Peak times are considered as 07:00 – 09:00 and 16:00 to 18:00 weekdays;
- Overnight period is considered to be between 18:00 and 07:00.

Therefore for 2013/14 there were a minimum of 210 days with no peak time Traffic Management in place. Peak time traffic management will normally increase when capital works are being undertaken. This will fluctuate from year to year dependant on funding.

4.4 Breakdown of work type and traffic management arrangements is as follows:

4.4.1 Routine cyclic maintenance programme (e.g. gully emptying, grass cutting):

- Total number of cyclic maintenance TM sites = 84 no;
- Cyclic maintenance works undertaken overnight = 80 no. sites;
- Cyclic maintenance works undertaken during daytime off peak time = 2no. sites;
- Cyclic maintenance works undertaken during daytime peak time = 2no. sites.

4.4.2 Routine planned maintenance work (e.g. Carriageway patching, soft estate work)

- Total number of planned maintenance TM sites = 95 no.
- Planned maintenance works undertaken overnight = 47 no. sites;
- Planned maintenance works undertaken during daytime off peak time = 46 no. sites;
- Planned maintenance works undertaken during daytime peak time = 2no. sites.

4.4.3 Routine planned tunnel & headland maintenance work (Conwy, Penyclip, Penmaenbach)

- Total number of planned tunnel & headland maintenance TM sites = 28 no;
- Planned tunnel & headland maintenance works undertaken overnight = 17 no;
- Planned tunnel & headland maintenance works undertaken during daytime off peak time = 4 no. sites;
- Planned tunnel & headland maintenance works undertaken during daytime peak time = 7 no. sites.

4.4.4 Reactive Category 1 defect repairs (e.g. safety fence repair work)

- Total number of reactive Category 1 defect repair TM sites = 71 no;
- Reactive Category 1 defect repair work undertaken overnight = 64 no. sites;
- Reactive Category 1 defect repair work undertaken during daytime off peak time = 5 no. sites;
- Reactive Category 1 defect repair work undertaken during daytime peak time = 2no. sites.

4.5.5 WG Contracted Survey Work (e.g. Deflectograph surveys)

- Total number of Deflectograph Survey TM sites = 5no;
- Deflectograph Survey work undertaken overnight = 5 no. sites;
- Deflectograph Survey work undertaken during daytime off peak time = nil;
- Deflectograph Survey work undertaken during daytime peak time = nil.

4.5.6 Capital Schemes (e.g. Major Maintenance, Tunnel Upgrade)

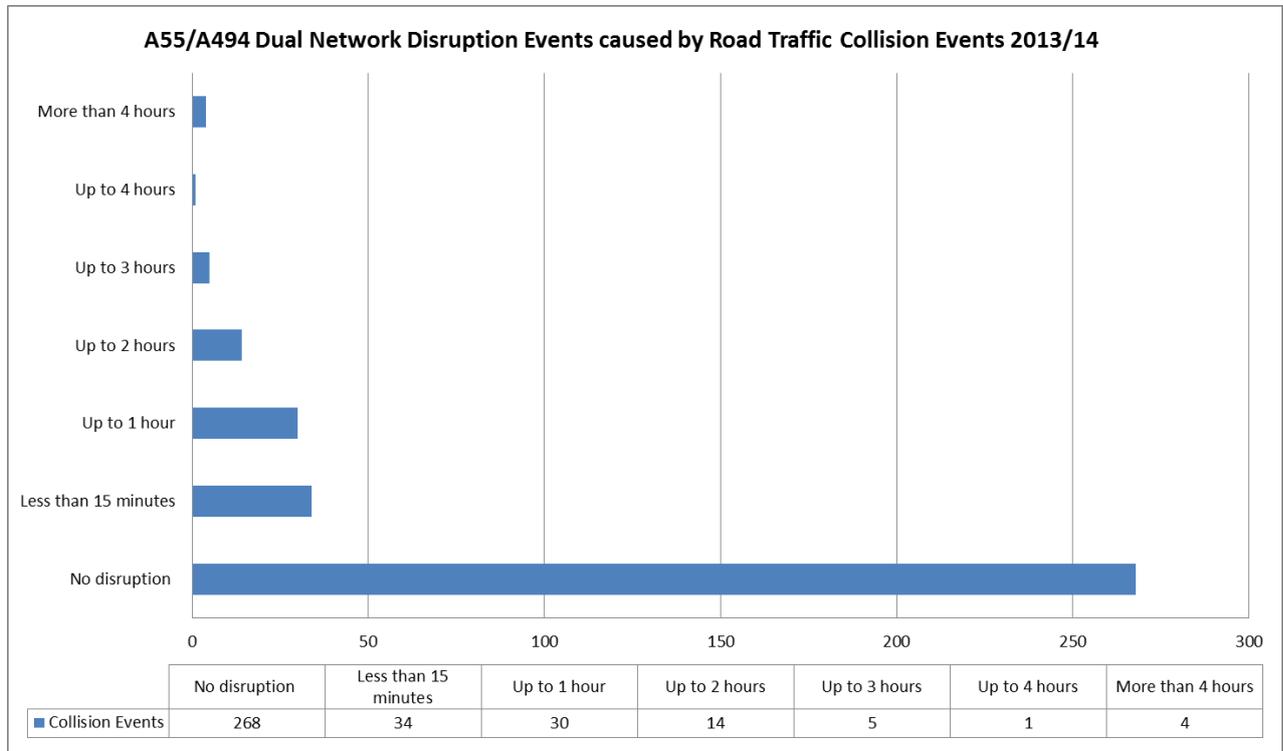
- Total number of Capital Scheme Project sites = 23 no;
- Capital Scheme Project work undertaken overnight = 3 no. sites;
- Capital Scheme Project work undertaken during daytime off peak time = 6 no. sites;
- Capital Scheme Project undertaken during daytime peak time = 14 no. sites.

4.5.7 Other Parties Works (e.g. Welsh Water, British Telecom)

- Total number of other parties work TM sites = 26 no;
- Number of other parties work undertaken overnight = 26 no. sites;
- Number of other parties work undertaken during daytime off peak time = nil.

4.6. Accidents and associated downtime

‘Accidents’ have been interpreted as road traffic collisions in accordance with current Welsh Government reporting requirements. The number of road traffic collisions and associated downtime for the A55/494 Dual Carriageway for 2013/14 is illustrated below:



The following table provides summary detail of the longest duration incidents:

Event Duration	Event Summary
Up to 3 hours	<ol style="list-style-type: none"> 04/05/2013 @ 15:32hrs, A55 J35 – J34 west bound 3 vehicle RTC Incident dealt by Traffic Officers + NWP 15/05/2013 @ 15:44hrs, A55 J32 – J33 west bound 5 vehicle RTC Incident dealt by Traffic Officers + NWP 26/07/2013 @ 10:57hrs, A55 J32 – J33 east bound 5 vehicle RTC Incident dealt by Traffic Officers + NWP 06/11/2013 @ 20:53hrs, A55 J23 / J23A east bound 1 vehicle RTC Incident dealt by NWP 07/02/2014 @ 09:01hrs, A55 J33 – J34 east bound 1 vehicle RTC Incident dealt by Traffic Officers + NWP
Up to 4 hours	<ol style="list-style-type: none"> 19/02/2014 @ 12:39hrs, A55 J12 – J13 eastbound 4 vehicle RTC Incident dealt by Traffic Officers + NWP
More than 4 hours	<ol style="list-style-type: none"> 10/10/2013 @ 21:09hrs, A55 J16 – J15 west bound 1 vehicle RTC Incident dealt by NWP

	<ol style="list-style-type: none">2. 27/11/2013 @ 08:21hrs, A55 J25 roundabout 1 vehicle knocked over a child, Incident dealt by Traffic Officers + NWP3. 10/01/2014 @ 01:55hrs, A55 J11 – J12 eastbound 2 vehicle RTC Incident dealt by NWP4. 04/02/2014 @ 05:56hrs, A55 J8A Overturned LGV on Britannia, Incident dealt by NWP
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4.7 Compensation claims from road users resulting from the condition of the network

Information relating to claims from road users is held by Welsh Government and is therefore not included in this submission.