

**Defence Technical College**

**Travel Plan**

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## **Executive Summary**

The development proposals are for a world class Defence Technical College (DTC), to be created on land at and adjacent to the MoD St Athan site (Figure 1). The DTC development is a major opportunity to bring employment to the Vale of Glamorgan in key industrial sectors. The development will not only provide employment opportunities for local people within the Vale of Glamorgan, but also improve the infrastructure and leisure facilities for residents.

The new Technical College will be of international standing and will ensure UK military personnel continue to receive the very best training available. Technical training will be provided in a number of specialist skills including mechanical and aeronautical engineering, and communication/IT disciplines.

Access to the DTC site is proposed to be via a new Northern Access Road (NAR) which will link the B4265 at Llantwit Major to Egwyls Brewis.

The likely impact of the proposed development on the local highways and the sustainable transportation infrastructure has been considered by a Transport Group consisting of representatives from the Welsh Assembly Government (WAG), Metrix, Defence Estates, Pell Frischmann, the Vale of Glamorgan Council (VoG) and Capita Symonds.

Significant public transport proposals, linked to the key Travel Plan, are proposed. These proposals, combined with improved walking and cycling facilities aim to generate sustainable travel to and from the site. This is enhanced by the mixture of employment, residential and leisure uses proposed as part of the development, to reduce travel to and from the site.

This Travel Plan should be read in conjunction with the following reports:

- Aerospace Business Park; Travel Plan; May 2009; Capita Symonds
- Construction Travel Plan; May 2009; Capita Symonds
- Transport Assessment; Defence Technical Collage & Aerospace Business Park – St. Athan; May 2009; Capita Symonds

## **1. Introduction**

- 1.1 Across the UK increased car usage has resulted in high volumes of traffic in peak hours, which gives rise to localised congestion in town and city centres, on radial routes and around employment centres. In turn, this congestion contributes to poor air quality and threats to personal health. The problem is exacerbated because most cars only contain one person, when a car generally has capacity for at least four.
- 1.2 Traffic is the fastest growing source of carbon dioxide, which contributes to global warming and other pollutants that have a detrimental effect on our health. Add to this stress, road rage, greater demand for car parking spaces and the health problems caused by a lack of exercise, the case for developing Travel Plans has never been stronger.
- 1.3 Whilst there is no single solution to combat these problems, a combination of individual measures implemented in the form of a Travel Plan will have a very beneficial effect. In encouraging car free access to DTC St. Athan this Travel Plan will recommend a range of measures. Improvements to public transport information distribution, increased awareness of car share matching services and promotions to raise awareness of the health benefits of walking and cycling are all measures listed on this Travel Plan menu.
- 1.4 This Travel Plan is focussed on the specific transport issues which affect personnel commuting to the development at DTC St. Athan. It will recommend a wide range of measures to counteract dependence on the car. The Plan is designed to encourage individuals to make the most appropriate choice for their journey while allowing retention of freedom of choice.
- 1.5 This Travel Plan is more than a report. It is an evolving document that will develop to reflect changes in the local environment and the needs of staff. Used as a tool to increase awareness of alternative transport options this Travel Plan is not anti car, instead it is designed to solicit a positive shift away from single occupant car use. Regular reviews and appraisals of the Plan will be undertaken to measure success and to determine resource allocation.

## **2. Policy**

- 2.1 This chapter identifies the national, regional and local guidance which has been considered in the production of this Travel Plan.

### **National Guidance**

#### **A New Deal for Transport: Better for Everyone; 1998**

- 2.2 In 1998, the Government produced a White Paper on the future of transport. Entitled 'A New Deal for Transport: Better for Everyone', the White Paper supports an integrated approach towards transport which seeks to reduce reliance on the private car and to promote sustainable modes of travel. This integrated transport strategy was reinforced in the Governments Ten year Plan for Transport (2000 – 2010) and requires the transport system to be seen in its entirety, across all modes. The concept of Travel Plans is central to this strategy.

#### **Planning Policy Wales; Welsh Assembly Government, 2002**

- 2.3 The Welsh Assembly Government aims to extend choice in transport and secure accessibility in a way which supports sustainable development by encouraging the establishment of an integrated transport system which is safe, efficient, clean and fair.

#### **Technical Advice Note 16; Welsh Assembly Government, 2009**

- 2.4 By encouraging healthier lifestyles, the Welsh Assembly Government, hopes to improve the health and well-being of people in Wales. This Travel Plan and the proposed sports facilities at Picketson will enhance the opportunity for the uptake of recreational activity.

#### **Technical Advice Note 18; Welsh Assembly Government; 2007**

- 2.5 Developers may submit a Travel Plan with a planning application, for example to illustrate existing promotion of sustainable transport activity at the site. However, in order to determine the necessity and effectiveness of the Travel Plan, it is preferable that a Transport Assessment is undertaken and the Travel Plan developed as a component of this.

#### **Wales Spatial Plan; Welsh Assembly Government, 2008**

- 2.6 In the context of responding to and mitigating the effects of climate change, the Wales Spatial Plan supports the development of spatially targeted responses. These include reducing the need to travel, by co-locating jobs, housing and services, for instance, and changing travel behaviour towards more resource efficient and healthy modes of travel, such as encouraging car sharing, public transport, walking and cycling.

#### **Wales Transport Strategy; Welsh Assembly Government, 2008**

- 2.7 The Welsh Assembly Government is determined to put transport on a less carbon intensive path. The principles of promoting sustainable transport and healthy forms of transport as a means to reduce the need to travel will all contribute to a less carbon intensive transport system. The WTS aims to

make walking and cycling the first choice for shorter journeys and public transport an attractive choice for longer journeys.

### **Regional Guidance**

#### **Sewta Draft Regional Transport Plan; Sewta, 2008**

- 2.8 The Draft Regional Transport Plan (DRTP) includes proposals to change people's attitude to travel by informing them about the range of choices available to them. This involves targeting businesses and organisations to deliver Travel Plans and to encourage the use of public transport and a reduction in single occupant car travel.

#### **Sewta Walking & Cycling Strategy; Sewta, 2006**

- 2.9 The role of walking and cycling as transport modes has been severely limited in recent decades for a number of reasons. A major factor has been the growth of out-of-town developments that, due to their location and design, are only practically accessible by the motor car. Another key constraint is the way that highway design and traffic management have tended to favour the free flow of motor vehicles, to the detriment of the mobility and safety of non-motorised road users.
- 2.10 The net effect of these factors has been to make people more car dependent and walking and cycling less pleasant and more difficult for people to undertake on an everyday basis. The resulting decline in active travel has served to make lifestyles more sedentary, people less healthy, and meant that emissions from motorised transport have continued to rise.
- 2.11 The goal of this Strategy is to get to grips with these problems, by significantly increasing the share of journeys made by walking and cycling in south east Wales and thereby reducing the impact of travel upon the environment and improving public health.

#### **Sewta Regional Bus Strategy; Sewta, 2006**

- 2.12 The primary objectives of the Strategy are to encourage:
- Modal shift to buses, through providing safe, attractive and reliable alternatives to the car;
  - Economic growth and prosperity through addressing spatial exclusion; and
  - Reductions in social exclusion.
- 2.13 To assist in achieving these, this Regional Bus Strategy aims:
- To provide investment priorities for capital (infrastructure and vehicles) and revenue expenditure; and
  - To provide guidance for the ongoing review, development, implementation and monitoring of bus services, thus providing coordination and consistency across the region.

### **Sewta Rail Strategy; Sewta; 2006**

2.14 The recommended Sewta Rail Strategy for the period 2009 – 2018 is designed to make better use of existing rail services, provide for passengers' needs, and achieve the regional economic and social objectives. The strategy recommends, amongst other things, investment in:

- Station improvements
- Reliability and capacity improvements
- Frequency enhancements

### **Local Guidance**

#### **Unitary Development Plan 1996 – 2011; Vale of Glamorgan County Borough Council;**

2.15 The Council's transportation policy objectives for the Unitary Development Plan are focussed on ensuring that a balance is maintained between the need to facilitate the development of the local economy, environmental concerns, and social considerations, in order to create a safe, efficient and equitable transport network.

#### **Vale of Glamorgan UDP Supplementary Planning Guidance 'Sustainable Development' - 2006**

2.16 The purpose of this guidance is to raise the awareness of how the development of land can contribute towards sustainability. The guidance states that individual developments should provide:

*'easy and safe movement for all modes of transport, especially pedestrians and cyclists, and connect to existing routes beyond the immediate development. Similarly, development proposals must give consideration to public transport provision and access and if appropriate contributions for either the provision of a new service or the upgrading of an existing public transport service may be sought through legal agreements'.*

2.17 The document also stresses the importance of convenient pedestrian and cycle facilities and identifies a transport hierarchy with priority given to pedestrians, then cyclists, then public transport and finally private motor vehicles. The guidance then provides examples on how developers can ensure the needs of all transport users in the hierarchy are incorporated within an overall development.

### **3. How successful are Travel Plans?**

- 3.1 There is a growing body of evidence both nationally and locally that indicates travel planning initiatives, when implemented as part of an integrated transport strategy and in the right circumstances are an effective means of reducing car use.
- 3.2 In 2002, the Department for Transport (DfT) commissioned a report to identify and examine the 20 best performing Travel Plans in the UK. Averaged overall these plans managed to reduce the number of commuter vehicles arriving with a single occupant by 18%<sup>1</sup>.
- 3.3 These findings were further confirmed by the DfT's 2004 'Smarter Choices' report which highlighted the potential impacts of a range of 'smart' measures. Reported benefits of travel planning include helping to reduce congestion, relieving parking pressure, making sites more accessible, improving staff travel choice and aiding retention<sup>2</sup>.
- 3.4 Locally the Vale of Glamorgan Council is successfully promoting Travel Plans. Having completed their own Travel Plan in June 2005 the Council are now leading the way in encouraging new and existing businesses to consider introducing schemes to reduce reliance on the private car as a means of commuting to work. One notable achievement was the 'Better Ways' Personalised Travel Plan Project undertaken at Llandough Hospital, in which the Council played a key role.

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<sup>1</sup> Making Travel Plans Work, Department for Transport; 2002

<sup>2</sup> Smarter Choices' Department for Transport; 2004

#### **4. Proposed Development**

- 4.1 An assessment of alternative sites for the proposed Defence Technical College was undertaken by the Ministry of Defence. The Welsh Assembly Government also reviewed different locations for the Aerospace Business Park. In both instances, the site at St Athan was shown to have significant advantages.

##### **Defence Technical College**

- 4.2 Currently, specialist training in aeronautical, electro mechanical engineering and communication/IT disciplines takes place at nine different sites across the UK. (Drawing SA-C0XXX-MP-900-SB-X-004-P17)
- 4.3 The new Defence Technical College will bring technical training for each of the services, (Royal Navy, Army and Royal Air Force), together in one location for the first time. The benefits of this are considerable and will ensure that UK military personnel continue to receive the very best training available, whilst bringing together each of the services in one location will mean further benefits in terms of efficiency, shared learning and value for money.
- 4.4 The development of the new Technical College will transform the current site which, particularly in the case of East Camp, is currently underutilised with many of the buildings at the end of their economic life or in need of significant investment. It is envisaged that there will be 3,240 people living on site and working/training on site with a further 2,491 living off site, working on site. An additional 810 people are envisaged to visit the site / museum / church / hotel / sports facilities, generating a DTC population total of approximately 6,500.
- 4.5 Within the site, shops, public houses, restaurants, sport facilities and places of worship are proposed. This mixed use development profile will significantly reduce the traffic generation of the site.
- 4.6 The access arrangements, traffic generation and modal split for the DTC site that are stated in this report, have been provided by Metrix and are echoed in the Transport Assessment prepared by Capita Symonds.

##### **Aerospace Business Park**

- 4.7 The Aerospace Business Park will be a centre of excellence and support the Defence Technical College. It will build upon the expertise of existing aerospace businesses in South Wales, such as GE Aircraft Engine Services and General Dynamics, and bring vital new jobs to the area. (Drawing A024845drg21)
- 4.8 The Welsh Assembly Government's plan for the Aerospace Business Park is to offer the facilities and infrastructure needed for manufacturers, suppliers, service providers and trainers to the aviation sector with a particular focus on maintenance, repair and overhaul.
- 4.9 The civilian workforce travelling to ABP from the local area, consisting of approximately 798 employees in 2014, rising to 1,526 employees in 2020 and finally, it is anticipated in 2028 that approximately 2,303 will be employed by ABP.

## **Service Families' Accommodation**

- 4.10 Associated with DTC is the construction of 483 Service Families' Accommodation (SFA) properties by 2014 to provide family accommodation for personnel during their stay. These will be located outside the security perimeter. The split in the housing numbers between the sites is:

Tremains Farm	169 units
North of West Camp	59 units
Picketston South West	83 units
Golf Course	172 units
<b>Total</b>	<b>483 units</b>

## **Additional Developments**

### **Sports Facilities**

- 4.11 In the Picketston area, to the west of the Northern Access Road, the following sports facilities are proposed:

- A 25m eight lane swimming pool
- A sports centre incorporating 12 sport courts plus two squash courts
- A fitness suite with cardiovascular equipment and free weights area
- An eight lane floodlit athletics track

Twelve outdoor sports pitches:

- 1 rugby pitch (grass and floodlit)
- 4 rugby pitches (grass and unlit)
- 1 hockey pitch (synthetic and floodlit)
- 1 football pitch (synthetic and floodlit)
- 1 football pitch (grass and floodlit)
- 4 football pitches (grass and unlit)
  
- Plus one cricket square (grass) with cricket nets (synthetic)

- 4.12 These facilities will be used by the DTC but will also be available for public use outside of the core training hours.

## **The Military Museum**

- 4.13 It is assumed that the military museum will be open on weekdays and the weekend. The museum is expected to be operated by up to 14 members of staff. It will be open to the public and will be fully accessible to a wide range of people including families, schools and military personnel. It will be situated on the perimeter of the DTC site but outside the security wire. The museum will have its own access and parking facilities off Eglwys Brewis Road, to enable access for the local community. The number of visitors per day is expected to be around 400<sup>3</sup>, although special events may attract more visitors.

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<sup>3</sup> Based on TRICS 2008 (b) data

### **Multi Faith Centre**

- 4.14 A new church and world faith centre will be constructed close to the existing St. Brise Church, outside the security wire, for use by the wider community. Also a ghurkha temple will be constructed at this location.
- 4.15 Proposals for the site include the restoration of the listed St. Brise Church on the south side of Eglwys Brewis Road. The proposals will secure the long term preservation and restoration of the building but its final use has not yet been decided.

### **Crèche & Community Centre**

- 4.16 There are also proposals for a crèche, south west of Picketson SFA sites. Should spaces at the crèche be available, once DTC needs have been met, this facility will be open to members of the public.

### **Hotel**

- 4.17 A 150 bedroom hotel is proposed for use by the public adjacent to the sports facility.

## 5. Public Transport

### Rail

#### Existing Train Service

- 5.1 Llantwit Major Railway Station provides modern interchange and park-and-ride facilities. It is situated on the Vale of Glamorgan (VOG) Line which links Cardiff and Bridgend calling at Grangetown, Cogan, Eastbrook, Dinas Powys, Cadoxton, Barry Docks, Barry, Rhoose and Llantwit Major. A free shuttle bus (Service 905) connects Rhoose Railway Station to Cardiff International Airport.
- 5.2 The VOG line was re-opened to passenger traffic (previously freight only) on 10<sup>th</sup> June 2005 and carried over 225,000 passengers during the first year of operation. The service operates on an hourly frequency Monday to Saturday, reducing to 2-hourly on Sundays:

**Table 1: Departure times TO Llantwit Major**

From	Service	Mon to Sat	Sun
Cardiff	First	05:41	08:41
	Last	22:41 (21:41 Sat)	20:41
Bridgend	First	05:42	09:42
	Last	22:42	21:42

**Table 2: Departure times FROM Llantwit Major**

To	Service	Mon to Sat	Sun
Cardiff	First	05:56	09:56
	Last	22:56	21:56
Bridgend	First	06:22	09:22
	Last	23:22 (22:22 Sat)	21:22

- 5.3 Westbound and Eastbound trains arrive at Llantwit Major Railway Station at 22 and 56 minutes past the hour respectively. With trains arriving at a minimum of 26 minutes apart there is sufficient time for a single bus to link the railway station to the site and return for the following train. (see section PT5 Shuttle bus for more information) An example of a typical rail-fare relevant to DTC is: that an "off-peak return" ticket, using a HM Forces rail-card, from Llantwit Major to London (Paddington), leaving Friday afternoon and returning Sunday evening would cost £39.60 whether the journey was via Bridgend (17:22 out, 21:55 back) or directly to Cardiff (16:56 out, 21:21 back) through Barry.
- 5.4 The stations at Llantwit Major and Rhoose permit a maximum of 4 cars per train (4 x 23m). However other stations (Eastbrook) are limited to 4 x 20m stock, enabling a maximum provision of 276 seats per hour per direction with 4 x class 150 stock. Current operations comprise 2-car 150 Sprinter sets providing a capacity of 138 seats per hour per direction. Trains with double sets (4 car Sprinter or Pacer) include the 0742 Bridgend – Cardiff (4 car 150 sprinter unit) and 1741 Cardiff – Bridgend (4 car 143 pacer unit).

- 5.5 Cardiff can also be reached via Bridgend, for very little time penalty, which also offers direct mainline connections to eastward destinations such as London and Manchester as well as westbound destinations such as Swansea.
- 5.6 Each station is unmanned, however 'help points' are located on each platform to provide user assistance if required. Parking facilities are available at each site. Llantwit Major Station has recently had considerable infrastructure investment and is a station with modern parking and public transport interchange facilities. The platforms can serve four carriage trains if required. Due to this recent investment no improvement works are planned at Llantwit Major Train Station itself other than what, if any, may be deemed necessary for security purposes.
- 5.7 Integration with the bus/rail networks is facilitated through bus service X45 which connects St Athan with Llantwit Major Station.
- 5.8 Pedestrian, cycle and bus connections between the station and the development will be created. The bus service will be provided between the Technical College and Llantwit Major Railway Station. Coaches will be provided to transport students to local railway stations and the airport when large numbers of students are arriving or departing the site. There will also be staff transport provided for some facilities management staff in the form of mini buses covering the local area.
- 5.9 It has been assumed that there will be extensive use of rail transport especially for junior trainees. The army controls how their personnel, particularly junior ranks travel. Students at DTC will be entitled to HM Forces Rail Cards and therefore a significant number will travel home or elsewhere by train at weekends.
- 5.10 The possibility of reinstating the train station at St Athan has been reviewed. However, as this would be a similar walking/cycling distance from DTC to the existing Llantwit Major station and would increase the overall train journey time, this has been discounted.
- 5.11 Appendix A forecasts the likely passenger demand on the local rail network and discusses how any shortfall in capacity can be addressed.

### **Buses**

- 5.12 The Vale of Glamorgan Local Bus Strategy (2004) outlines the Vale of Glamorgan Council's proposals to provide enhancements to the bus network to address the historic decline in patronage. Based on this strategy, the bus services in and around the St Athan site will be enhanced and the infrastructure improved.
- 5.13 Bus provision will play a key role in the movement of staff and students and it is important that sustainable travel options are available to employees and trainees – many of whom will not have access to a car (either due to lack of ownership or arrival at the facility by other modes). The majority of Military trainees will be transported to DTC by coach on their first day at St Athan.

## Existing Position

5.14 The site is currently served by 5 bus routes. These are illustrated in Drawing CG/2419/TA02 and summarised in the following table.

**Table 3: Existing Routes Serving the DTC Site**

Svc No	Route	Days of Operation	Frequency	1 <sup>st</sup>	Last	Operator
V2	Cowbridge - St Athan - Llantwit Major – via Boverton Castle, St Athan, Flemingstone, New Barn, St Mary Church & St Hillary	Mon to Sat	2 hourly	08:20	18:25	Cartel Travel (part of EST)
X5	Llantwit Major – Cardiff Via Cardiff Airport, Barry, Llandough Hospital	Sun & Bank Holiday Mon	2 hourly	07:45	22:50	Veolia Transport Cymru
X45	Cardiff City Centre to Llantwit Major via Barry. Connecting service 145 to Bridgend	Mon to Sat	Hourly	06:10	19:36	EST Bus Ltd
X91	LLANTWIT MAJOR - CARDIFF (Limited Stop Via St. Athan, Rhoose, Wenvoe, Ely Link Road, Wellington Street	Mon to Sat	Hourly	07:01	19:06	Cardiff Bus
X91	LLANTWIT MAJOR - CARDIFF (Limited Stop Via St. Athan, Rhoose, Wenvoe, Ely Link Road, Wellington Street	Sun	2 Hourly	08:30	19:15	Cardiff Bus
95	Llantwit Major to Cardiff	Mon to Sat	Hourly	18:58	22:53	Veolia Transport Cymru

Notes:

- Frequency refers to peak daytime service level; this is likely to be lower during evenings
- 1<sup>st</sup> and Last – refers to earliest outward call and last departure at St Athan/Eglwys Brewis.
- Number of journeys refers to those trips serving Eglwys Brewis, with each return trip = 1 journey

5.15 Current service patterns provide access from a range of destinations, with operation between approximately 06:00 and 19:00 hours. This provides access to the facility during the main hours of operation – particularly those staff originating from the main population centres of Barry, Bridgend and Cardiff.

5.16 Existing provision has a relatively low frequency, which results in a low hourly capacity and requires users to plan their journey in advance, often requiring early arrival at a bus stop to ensure they make their connection.

5.17 Appendix B presents a Bus Statement highlighting existing service and capacity levels, as well as highlighting bus and rail integration opportunities and infrastructural considerations.

## 6. Pedestrians/Cyclists

### Pedestrians

- 6.1 Pedestrian linkage within and to the site has been based on the Vale of Glamorgan's UDP Supplementary Planning Guidance on Sustainable Development, which states:

*“(i) Pedestrians*

*Provide convenient routes, which are easy, safe and attractive to use;*

*Provide clear sign posting and lighting where appropriate;*

*Link routes to local facilities, public transport nodes, open spaces and longer distance footpaths such as public rights of way;*

*Provide conveniently located pedestrian crossing points on busy sections of road”*

### Measures

- 6.2 Pedestrian linkage has been provided between the SFA and DTC as well as the nearest existing or proposed bus stops. Links between Llantwit Major Railway Station and the site have also been created. The proposed linkages are shown on Drawing 003622/PA/100. These plans also show existing footpaths and, where required, their rerouting.
- 6.3 A footpath/cycleway is proposed along the entire length of the Northern Access Road (NAR), which will be lit, providing connectivity between Boverton/Llantwit Major and the proposed developments. The existing steps on the B4265 cut slopes are retained providing pedestrian access to the proposed NAR/B4265 signalised junction. Pedestrians are accommodated at the junction with at grade pedestrian crossings. An alternative route to the cut slope steps is proposed on the B4265 northern verge, between the B4265 NAR junction to Llanmaes signals, where pedestrians and cyclists will cross at grade. Pedestrians complete their journey to Llantwit Major Railway Station using existing footpaths provided either side of Llanmaes Road. Cyclists will be required to use the main carriageway for this section of their journey.
- 6.4 Between the B4265 and Froglands Farm the pedestrian and cyclist facilities comprise of a 3.0m shared use footway cycleway on the northern side of the NAR. At Froglands Farm a 2.5 m central island crossing point is provided and the southern verge widens to accommodate a 3.0m shared use footway cycleway. This facility continues for the remaining length of the scheme providing pedestrian/cycle access to the ABP, Gate 1 and Gate 2/3.
- 6.5 The 3.0m footway /cycleway is proposed to extend between Gate 1 and the junction of St Athan Road. This will provide access to the site from the proposed SFA on the Golf Course site and provide improved access for the existing community to the SPAR shop on Eglwys Brewis Road. Detailed drawings of this link are still being discussed between the developer and the Vale of Glamorgan Council.
- 6.6 The section of the route from Llantwit Major Railway Station to B4265 Llanmaes Signals is lit as a pedestrian route. Street lighting is mounted on wooden poles at a height of 8m or provided on 6m steel columns located at

the back of the footway. Whilst not designed specifically for a footway/cycle way they provide sufficient light. The remainder of the proposed footway / cycleway route to the site is either new build or adjacent to the B4265. The intention is to light all the route, subject to agreement with the Vale of Glamorgan Council.

- 6.7 SFA sites bound the NAR. Pedestrian connections are proposed from each site to the combined footway/cycleway on the NAR. Both Tremains Farm and North of West Camp sites have pedestrian connections to Eglwys Brewis Road with either existing footways or proposed footways connecting these sites to existing bus stops. The Picketston South West site also has connectivity to the bus stop on Eglwys Brewis Road through the proposed provision of an uncontrolled crossing point, with dropped kerbs and buff coloured tactile paving.
- 6.8 At grade and grade separated crossing points are proposed on the NAR. The grade separated facility is to be located adjacent to Gate 2/3. The bridge will not be DDA compliant but an at grade facility at the adjacent traffic signals will meet DDA criteria and provide positive control for pedestrians.
- 6.9 The existing Safe Routes to School scheme at Boverton has also been connected to via the proposed bus stop footpath along Eglwys Brewis Road from the North of West Camp SFA site. Pedestrians from the SFA sites will be able to access this route by following the footpath through Eagle Way and crossing the B4265 at Boverton signals, which has an existing at-grade pedestrian crossing.
- 6.10 Improved cycling and pedestrian links between the development and Llantwit Major/St Athan are proposed to encourage the local community to walk or cycle to and from the site.

### **Cyclists**

- 6.11 The proposals detailed here are based on the Vale of Glamorgan's UDP Supplementary Planning Guidance on Sustainable Development, which states:
- *“(ii) Cyclists*
  - *Provide direct, safe and attractive routes;*
  - *Link routes within developments to the wider cycle network*
  - *Provide prominent, secure cycle parking which should be close to building entrances or inside buildings and should avoid the need to carry cycles over steps”*
- 6.12 The 3.0m shared use footway / cycleway on the NAR, will extend from the B4265 Llanmaes Signals to St. Athan Road. At Llanmaes Signals the existing crossing facilities will be improved by the installation of red tactile paving and extension of the existing central island from 1.8m to 4.0m. Drawing 003622/PA/100.
- 6.13 The existing southern section of Eglwys Brewis Road will have a substantial decrease in traffic flow, which will encourage further cycle use.

## 7. Parking

### DTC

- 7.1 The location of the car parks within DTC are shown on Drawing SA-C0XXX-MP-900-SB-X-004-P17. The provisional parking provision within DTC, based on JSP Scale, is summarised in the following table:

**Table 4: DTC Parking Provision**

Location	Population	Spaces	Disabled spaces	Motorcycle spaces*	Bicycle
Trainees/Officers/Junior & Senior Rank/Civilians	5730	2900	52	195	869
Public sport	224	224	15	11	224
Main gate	50	50	3	3	0
Faith / worship	JSP	26	3	2	14
Museum	120	120	6	6	100
Medical / dental	N/A	55	3	3	5
Hotel	150	150	9	8	30
Crèche	23	23	2	1	4
Community centre	217	109	7	5	22
Commercial spaces		7			
<b>Total</b>	<b>6514</b>	<b>3664</b>	<b>100</b>	<b>234</b>	<b>1563</b>

\* Motorcycle parking has been calculated at 5% of the total proposed parking provision

- 7.2 SFA locations will allow for sustainable travel to DTC. Therefore, DTC site car parking passes will be issued on an 'operational needs only' basis. There will also be a cycle network within the site and a pool of cycles.

### SFA Parking Provision

- 7.3 The SFA parking provision is based on the South Wales Parking Guidelines (revised edition 1993) requirements for residential new builds in a non-central area, as summarised in the following table:

**Table 5: SFA Parking provision**

Type pf development		No. of spaces – residential	No. of spaces – visitors
General purpose Houses & Flats	1 bedroom	1 per unit	1 per 3 – 5 units
	2 bedrooms (GFA<75M2)	1.5 per unit	1 per 3 – 5 units
	3 Bedrooms (GFA 75M2 – 120M2)	2 per unit	1 per 3 – 5 units
	3 & 4 Bedroom (GFA <120M2)	2 per unit	1 per 3 – 5 units
	3 & 4 Bedroom (GFA >120M2)	Minimum 3 per unit	1 per 3 – 5 units
Elderly persons houses & flats (not wardened)		0.5 – 1 per unit	1 per 3 – 5 units

## 8. Accident Data

- 8.1 Injury only road traffic accident statistics for the study area have been obtained from The Vale of Glamorgan Council for the 5 year period from July 2003 to May 2008. The area covered stretches from Pentre Meyrick in the north-west to Waycock Cross Roundabout in the south-east. The accident statistics are summarised below in Table 4 with full details attached drawing CG/2419/TA05

**Table 6: Accidents by Year and Severity**

	<b>Jul-Dec 2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>Jan-May 2008</b>	<b>Total</b>
Fatal	3	1	1	3	1		<b>9</b>
Serious	5	5	3	5	5	4	<b>27</b>
Slight	20	44	47	31	21	16	<b>179</b>
<b>Total</b>	<b>28</b>	<b>50</b>	<b>51</b>	<b>39</b>	<b>27</b>	<b>20</b>	<b>215</b>

- 8.2 In total 215 accidents have been reported in the five-year period, with 9 fatal accidents and a further 26 identified as serious. Table 5 below shows the casualties by severity.

**Table 7: Total casualties by severity**

<b>Severity</b>	<b>Casualties</b>
Fatal	9
Serious	28
Slight	287
<b>Total</b>	<b>324</b>

### Accident clusters

- 8.3 In this instance an accident cluster is defined as an area where 3 or more accidents occurred during the 5 year period from July 2003 to May 2008. In total there are 20 accident cluster sites in the study area, these are described in Appendix C and highlighted on a drawing CG/2419/TA/05.

### Fatal injury locations outside cluster areas

- 8.4 There were 6 fatal injuries during this period that have not been considered as part of a cluster.
- 8.5 Four of these accidents occurred at separate locations three along the A4226 and one on the B4270 and resulted in fatal injuries to motorbike riders. Two riders lost control of their vehicle and one rider collided with a vehicle when the driver pulled out of a junction into their path. The fourth rider had just completed an overtaking manoeuvre when they collided head on with a vehicle travelling in the wrong carriageway to avoid a collision in other lane.
- 8.6 The other two fatalities were car drivers who lost control of their vehicles. No other vehicles were involved in either accident. Both were travelling in hours of darkness in fine weather with dry road surfaces.

### **Serious injury locations outside cluster areas**

- 8.7 There were 17 serious injuries during this period that have not been considered as part of a cluster.

### **Slight injury locations outside cluster areas**

- 8.8 The remaining accidents were distributed around the network and no particular accident types occurred with sufficient frequency to be considered as potential problems.

## **9. Travel Plan Management**

9.1 A key lesson from workplace and school travel plans is the importance of establishing a clear structure for the ongoing management of the plan. It is recommended that a Travel Plan Management Board be created to oversee the development of this Travel Plan. Consisting of individuals representing DTC, Aerospace Business Park (ABP), VOG as well as, a representative from West Camp, local transport providers, and the Sewta Regional Travel Plan Co-ordinator this group will have the following responsibilities:

- Provide the management support to take ideas forward and make strategic decisions regarding resources and budgets.
- Steer the Travel Plan in the desired direction and address any issues that arise.
- Set tasks, priorities and work programmes for the Travel Plan Co-ordinator.
- Monitor and review progress and identify realistic targets for taking the Travel Plan forward.

9.2 The Management Board will have overall responsibility and will aim to ensure that the Travel Plan meets its objectives and targets. The Management Board will make and approve strategic recommendations as appropriate. The Management Board will be chaired by station Commanding Officer DTC or an appropriate representative.

9.3 The Travel Plan Management Board will be created at least 12 months prior to the site becoming operational. This will allow the Board time to appoint a Travel Plan Co-ordinator as well as enabling them to set tasks, priorities and work programmes for the Co-ordinators.

9.4 Following inception the Travel Plan Management Board will meet, initially, on a 6 monthly basis. After the first year the Management Board will decide on the frequency on the meetings.

9.5 This Travel Plan covers the first five years of the development. After this time it will need to be reviewed and updated to reflect changes in travelling behaviour as well as changes in the sustainable transport infrastructure surrounding MoD St. Athan.

### **Travel Plan Co-ordinator**

9.6 Most successful Travel Plans have a Travel Plan Co-ordinator who is responsible for implementing the individual measures. The Travel Plan Co-ordinator should act as the key promoter of the components of the Plan and secure implementation, as well as being a key point of contact.

9.7 The appointment of a Travel Plan Co-ordinator is critical to the future success of this emerging Travel Plan. The Making Residential Travel Plans Work report published in 2005 by the DfT states ' it is important the Travel Plan Co-ordinator functions are located on site and carried out by an individual who can make regular convenient contact with users.

9.8 Given the size, scale and complexity of this development it is recommended that DTC appoint their own Travel Plan Co-ordinator. According to the DfT

'substantial staff time will be needed at the outset, and less will be required once the initiatives are up and running, though the Travel Plan measures will still need to be promoted, managed and reviewed on an ongoing basis'<sup>4</sup>.

9.9 Assuming an individual with no travel planning experience is appointed it is recommended that they undertake some dedicated travel plan training. The following methods could be used to deliver the appropriate level of training:

- An intensive Travel Planning Training Course, delivered by an experienced Travel Planner. This should be tailored to meet the needs of the new Co-ordinators and the site in an attempt to ensure the individual has a good understanding of the Travel Planning process.
- The Co-ordinators should be encouraged to attend Conferences and Travel Planning Master Classes arranged by ACT / Travelwise. These provide excellent information and advice for individuals who are new to the trade by facilitating the exchange of good practise with other travel planning practitioners across the UK. For more information visit:

[www.acttravelwise.org](http://www.acttravelwise.org)

- Sustrans and Sewta (South East Wales Transport Alliance) may be available to deliver tailored training to assist in the ongoing implementation and monitoring of the Travel Plan.

9.10 The combination of these measures will provide the fledging Travel Plan Co-ordinator with the skills and knowledge needed to develop the emerging Travel Plan and successfully facilitate its implementation.

9.11 It is recommended that Travel Plan Co-ordinator is appointed at least 6 months before the site becomes operational. This will enable that individual to undertake the necessary training as well as allowing them time to start preparing the foundations upon which to deliver the various measures.

### **Responsibilities of the Travel Plan Co-ordinator**

9.12 The Travel Plan Co-ordinator should possess enthusiasm, negotiating skills and an ability to communicate at all levels. Typical responsibilities will include:

- Develop and oversee the implementation of initiatives outlined in the Plan;
- Monitor progress of the Plan, and report to key organisations, e.g. Council and local transport operators;
- Design and implementation of an effective marketing and awareness raising campaign;
- Manage proposed Demand Responsive Transport service;
- Manage the car share database;
- Negotiate public transport discount fare schemes;
- Manage cycle promotion schemes and events;
- Provide green travel advice and information to residents;
- Co-ordinating data collection to develop the Travel Plan;
- Acting as a point of contact for all residents;

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<sup>4</sup> Making Travel Plans Work, DfT; 2002

- Liaising with local authorities, transport operators and schools;
- Evaluating and monitoring the Plan and setting up a monitoring system.

9.13 To implement the Travel Plan measures listed in Section 12 DTC will provide a Travel Plan Co-ordinator. The role of Travel Plan Co-ordinator will be carried out alongside other tasks. Appendix D forecasts the amount of time allocated to the role of Travel Plan Co-ordinator and the associated costs. DTC will contribute on average equivalent to £17,000 per year in staff time each year for the five year duration of this Travel Plan. This equates to almost a third of that individuals working time in the critical first two years.

## 10. Target setting

10.1 The overall aim of this Travel Plan will be to achieve a 20% reduction in the number of single occupant car trips arriving at the MoD St. Athan by Spring 2018.

10.2 The Making Travel Plans Work report published by DfT in 2002 reported that on average the 20 best performing Travel Plans in the UK achieved on average an 18% reduction in the number of journeys being made as a single driver. The Travel Plans studied by DfT were well established and had been subject to review, updates and improvements over a number of years, which facilitated the high modal split.

10.3 It is recommended that the year 1 and 2 targets for this Travel Plan be set at a more realistic achievable level. As the Plan evolves and travelling patterns become more established, targets and objectives can be reviewed and re-defined.

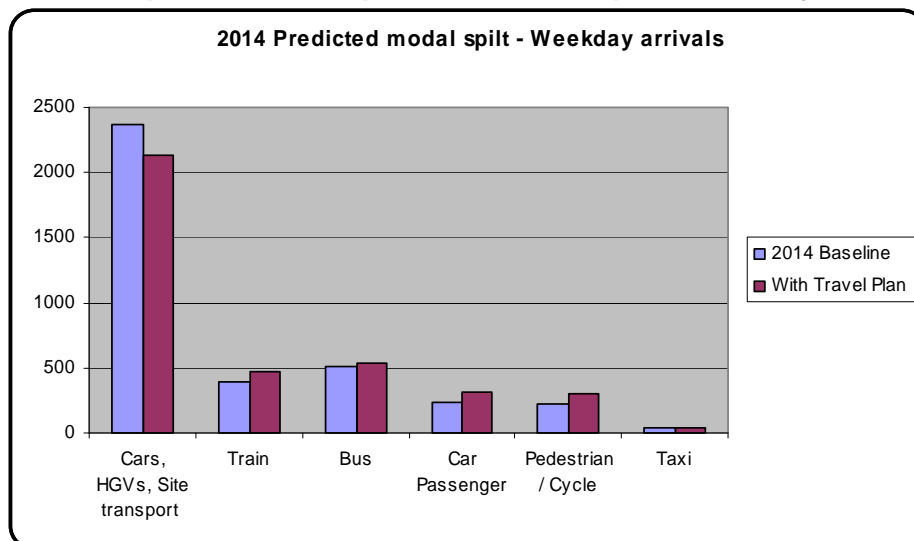
10.4 The following illustrates annual single car occupant reduction rates for the five years of the Travel Plan.

Year 1:	10% reduction
Year 2:	10% reduction
Year 3:	15% reduction
Year 4:	20% reduction
Year 5:	20% reduction

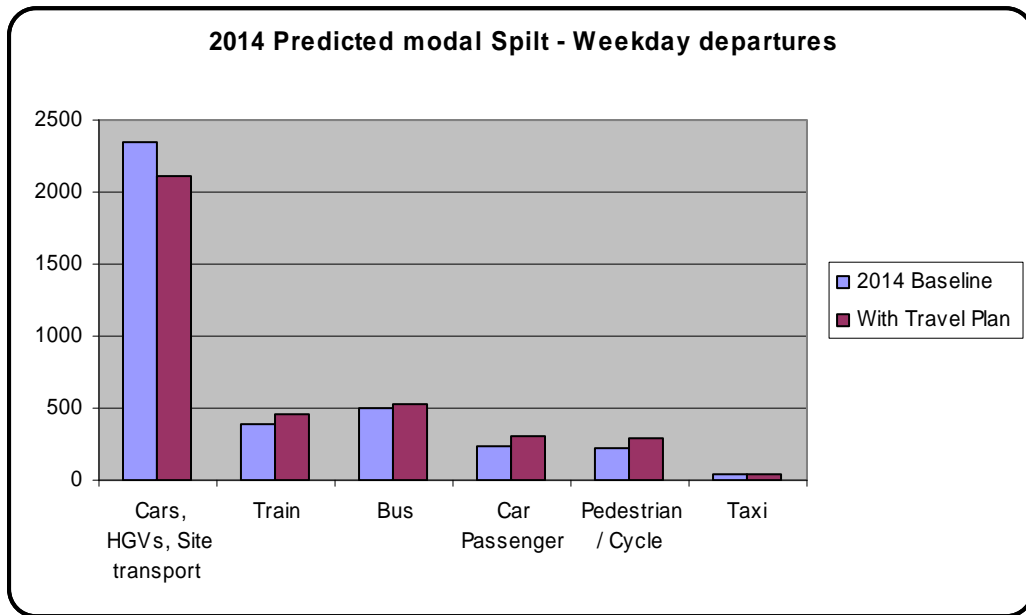
10.5 Best practise dictates that Travel Plan targets and objectives are set following consultation with users. In this instance this is not possible as the end users are not yet known. The targets for this Plan will need to be reviewed and if necessary changed following consultation with the users.

10.6 Graphs 1 and 2 illustrate how average weekday single occupant vehicle arrivals and departures can be reduced by 10%, in 2014, by increasing the modal split of the more sustainable transport modes, based on the 2014 baseline.

**Graph 1: 2014 predicted modal split – Weekday arrivals**

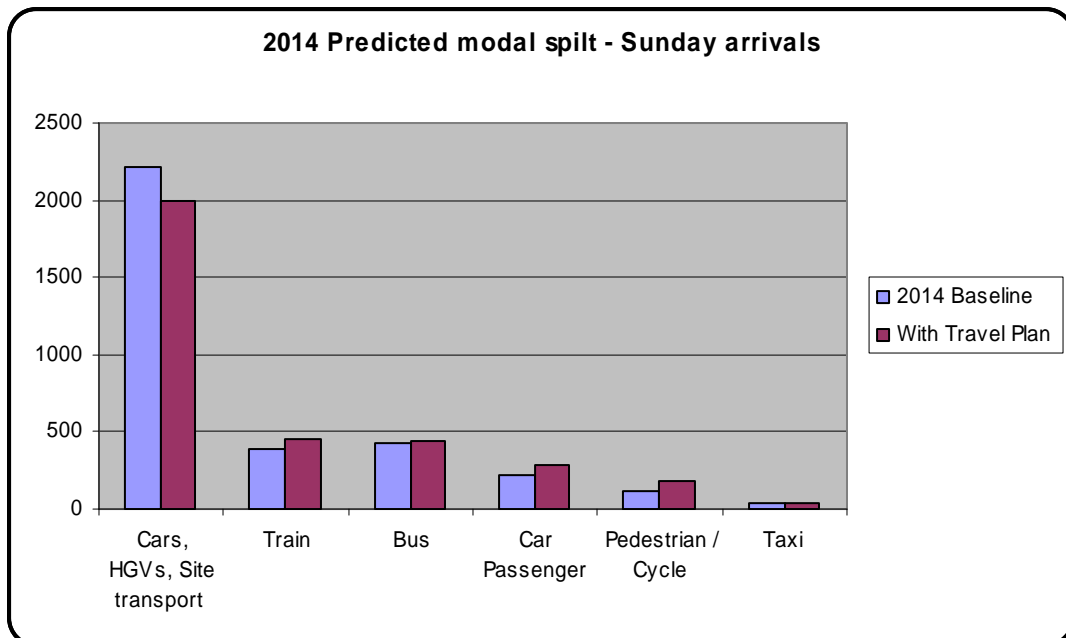


**Graph 2: 2014 predicted modal split – Weekday departures**

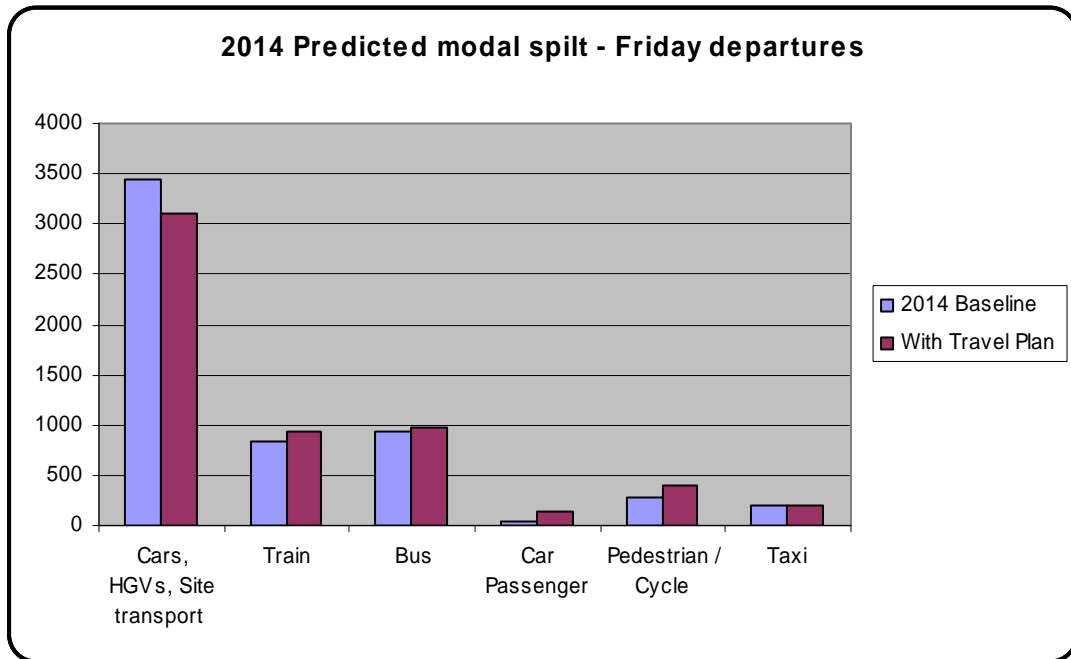


10.7 Arrivals at DTC are expected to peak on Sunday, when the majority of the students arrive, while peak departures are expected to occur on Fridays when the student population will leave DTC for the weekend. Tables x and x illustrate how single occupant vehicle trips can be reduced by 10%, in 2014, by increasing the modal split of other more sustainable transport modes.

**Graph 3: 2014 predicted modal split – Sunday arrivals**



**Graph 4: 2014 predicted modal split – Friday departures**



### **Travel Plan objectives**

10.8 The initial objectives of this Travel Plan are adapted from the Welsh Assembly Government's Smarter Choices report that was published in 2007. It is understood that these objectives need to be refined following discussions with all stakeholders, however, it is felt they provide a good foundation upon which to develop a more site specific set of objectives.

- Give people better and more focussed information about their travel options
- Market and promote sustainable travel more effectively to encourage their use
- Make improvements to the way services are organised to ensure they appeal and cater for particular groups of potential users
- Target transport advice and services to particular groups
- Harness technology and facilities that reduce the need to travel

## **11. User profiles**

11.1 Essentially there will be four distinct user groups commuting to the site. The travelling behaviour of each group will be determined by a different set of characteristics that will be manifested in different travel behaviour and travel needs. The differences in the travelling profile of each group are described below.

### **User Group 1: On site population**

11.2 Of the 2,750 students attending the College, approximately 2,600 will live on site during the week. They are expected to arrive on site Sunday evening. During the week they will remain on site. Some will stay over the weekends at the DTC. Others will take their opportunities to depart on Friday afternoons/evenings to travel home or elsewhere. Members of this group will arrive from all across the UK to attend intense training courses of various lengths. For students arriving from long distances, the military promotes the following hierarchy of travel modes, consequently the military has the ability to significantly control the arrival / departure patterns of the students and MoD groups.

- Rail tickets, pre-booked rail warrants (PT6)
- Bus / Coach travel
- Car sharing
- Flights

11.3 In addition to this approximately 640 Military personnel will live on site during the week.

11.4 During the week it is anticipated that the needs of on site population will be fully catered by provision of the following facilities:

- Supermarket
- Public House
- Cash machine
- Hire car facilities
- Sports facilities
- Dining facilities

11.5 The provision of these facilities will greatly reduce the need for the students to travel off site during the evenings or at weekends.

11.6 The student training day is split into two shifts, as shown in Appendix E. The training day starts at 08:25am and ends at 17:35pm. Training is only scheduled Monday through to Friday.

### **User Group 2: Military personnel living in SFA**

11.7 Approximately 520 personnel (military trainers, senior staff and some students) will live adjacent to the site with their families in 483 purpose built Service Families' Accommodation (SFA) units and currently vacant existing SFA. Given the proximity of their residential quarters to the training College it is expected the majority will favour sustainable transport alternatives over

private vehicles as a means of commuting to the College. On site parking provision for SFA residents will be on an 'operational needs only' basis.

- 11.8 The shift patterns of the military trainers living in SFA will be similar to the student shift patterns highlighted in Appendix E.

**User Group 3: Civilian Teaching & facilities staff living off site**

- 11.9 In total there will be 1,970 DTC workers. This is broken down into 910 facilities management staff and 1,060 workers who live off work on site (excluding SFA).
- 11.10 The shift patterns of the civilian training staff living off site will reflect the students shift pattern highlighted in Appendix E.
- 11.11 The facilities management day is based around the 08:00 – 18:00 hours training day and meal times. Breakfast time for the trainee's runs between 06.45am and 08.45am, lunchtime is 12:00 until 14:00 and dinner is 17:35pm to 19:15pm.
- 11.12 Car ownership levels amongst the facilities management staff (e.g. catering staff and cleaners), are expected to be low. Therefore, walking, cycling, public transport and car sharing become realistic travel options for this users group.

**User Group 4: Other on site facilities**

- 11.13 In addition to the three user groups described above, this Travel Plan will highlight Travel Plan measures for the additional ancillary facilities on the development, these include the following:
- Sports facilities (see section 4 for description)
  - 150 bed hotel (see section 4 for description)
  - Multi faith centre (see section 4 for description)
  - Crèche and community centre (see section 4 for description)
  - Royal Electrical & Mechanical Engineers Museum (see section 4 for description)
- 11.14 It is predicted that these facilities will attract approximately 810 visitors / workers per day.
- 11.15 These facilities will attract a wide range of users, each with different characteristics that will manifest in different travel behaviour and travel needs. It will be very difficult to control and manage the travel behaviour of this group, therefore, the emphasis should be on the promotion of and increasing the awareness of the sustainable transport options that are available.

**Sports Facilities**

- 11.16 The Sports Facilities located at Picketston will be available to the general public outside of the training day core hours (09:00 – 18:00).
- 11.17 Cycle stands will be provided to encourage increased of cycling to the Sports Centre. Information will also be made available throughout the Centre to

demonstrate how walking and cycling to / from the sports centre can be integrated into a fitness regime.

- 11.18 The location of the sports facilities, next to the SFA, means that walking and cycling will be a realistic travel option for those wishing to make use of these facilities.

#### **150 Bed Hotel**

- 11.19 This facility is most likely to be used by visitors to DTC or the adjacent ABP. The close proximity of the hotel to these facilities will ensure use of the private car is minimised as visitors will be able to walk to each of their destinations.

#### **Multi Faith Centre**

- 11.20 The congregation attending the Multi Faith Centre are likely to arrive from within the immediate vicinity of MoD St. Athan. Therefore, walking and cycling will be the most viable form of transport. To further encourage sustainable travel to the Faith Centre, some preferential car sharers parking spaces will be made available.

#### **Crèche & Community Centre**

- 11.21 Individuals attending the crèche and community centre will originate from either on site living quarters or the SFA. Crèche facilities will be made available to the general public if spaces are available once the needs of military personnel have been catered for.
- 11.22 The location of both the crèche and community centre, next to the SFA, make walking and cycling a realistic travel option for those wishing to make use of these facilities.

#### **Royal Electrical & Mechanical Engineers Museum**

- 11.23 The Museum is predicted to attract approximately 400 visitors per day, although special events may attract more. The vast majority of visitors are expected to arrive as part of educational trips or organised coach parties.

## **12. Travel Plan Measures**

- 12.1 This development will attract a range of different users, each with their own travel needs and requirements. For example, students to the military College will, generally arrive through the day on Sunday, remain on site throughout the week before departing on Friday evening, if they indeed choose to leave on a Friday, while the civilian employees and those living in SFA will commute from the local area on a daily basis.
- 12.2 Despite the wide range of travel behaviour it is important that this Travel Plan is designed in such away that it is flexible enough to deliver the appropriate mix of measures to the relevant user group.
- 12.3 Therefore, a Travel Plan menu, containing the full range of measures has been designed. From this menu it will then be possible to pick and mix the measures that most accurately reflect the needs of the different user groups. Each measure listed in this Travel Plan is given a unique reference code. This reference code will be plotted on the Travel Plan Menu, this way it becomes clear what measures are relevant to the different user groups.
- 12.4 Some measures will apply only to one group while others may be implemented across the site. The following measures will be transferred on to the Travel Plan Menu which can be found at Section 13.
- 12.5 A breakdown of the costs associated with each of these measures is presented in Appendix F. This appendix does not reflect the cost of providing internal pool cycles (C5) or the cost associated with providing a shuttle service from Llantwit Major Rail station to the main gate (PT5).

### **Walking**

- 12.6 Walking is free and available to almost everyone, it has noticeable health benefits and for many members of staff the journey to and from work may represent their only opportunity to partake in regular exercise.
- 12.7 According to 2005 Travel to Work Survey walking accounts for 17% of all journeys to work in the Eglwys – Brewis area<sup>5</sup>. It is well understood that walking is not for everyone given the distances involved and the need to carry equipment to work. However, further analysis of the Travel to Work Survey revealed that 43% of journeys to work by residents in the Eglwys - Brewis area were less than two kilometres<sup>6</sup>. This suggests there is significant potential to promote walking as a viable realistic alternative to the car, especially for those living close to the site.
- 12.8 The British Medical Association claims that 30 minutes of moderate exercise four to five days a week can halve the risk of a heart attack<sup>7</sup>. Thus walking to work can serve to reduce the risk of having a heart attack. Regular brisk walking also preserves optimum structure and function of muscles, bones, joints and the cardiovascular system<sup>8</sup>.

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<sup>5</sup> 2005 Travel to Work Survey; Office of National Statistics

<sup>6</sup> 2005 Travel to Work Survey; Office of National Statistics

<sup>7</sup> "Walk in to Work Out", British Medical Association, 2002

<sup>8</sup> "Health Benefits of Physical Activity", Parliamentary Office of Science and Technology, 2001

12.9 In an attempt to increase the number of personnel walking we will promote the following benefits:

- Increased cardio-vascular efficiency.
- Increase the number and size of blood vessels for better circulation
- Increases the amount of oxygen delivered to all tissues and cells
- Increase High-Density Lipids (HDLs) 'good cholesterol' which protects blood vessels from fatty deposits.
- Increase ability to cope with stress

12.10 In an attempt to increase the number of people walking to the site the following measures will be presented on the Travel Plan menu.

#### **W1 Walk to Work Week**

12.11 Annually in May and September there are 'Walk to Work Weeks' during which organisations are encouraged to arrange activities designed to increase the number of staff walking to work. It is recommended that the Travel Plan Co-ordinators register for these events.

12.12 Walk to Work Weeks are organised as part of national campaigns designed to encourage people who would normally travel by car to give walking a try. More information can be found by visiting:

[www.walkingworks.org.uk](http://www.walkingworks.org.uk)

#### **W2 Walking accessories**

12.13 The weather can often be a needless deterrent to walking. In an attempt to reduce the impact of the weather on walking, it is recommended the Travel Plan Co-ordinators negotiate with a local outdoor clothing supplier in an attempt to secure a discount on walking accessories.

#### **W3 Signage**

12.14 For those arriving to the area via public transport it is recommended that signage be erected to direct them towards the different parts of the site. To encourage increased walking amongst the civilian population the signs should include walking journey times. It is also recommended that signs be erected in the SFA areas to direct personnel to the most appropriate part of the site.

12.15 Contained within the Travel Plan Welcome Pack will be guidance on accessing the site via sustainable modes. Within this directions to the development will be provided for those wishing to arrive on foot, on cycle and by bus.

#### **W4 Pedometers**

12.16 By providing staff with a device capable of counting the number of steps they take throughout the day, individuals will be able to record the distances they cover. Such an initiative was employed as part of the Welsh Assembly Government funded Personalised Travel Plan Pilot Project at Llandough Hospital, near Cardiff. Participants of the project reported the provision of pedometers enabled them to record daily and weekly walking distances. This

information provided them with an incentive to exceed these totals, thereby increasing the distances they walked throughout the duration of the project. The Travel Plan Co-ordinator will investigate the possibility of introducing a similar scheme.

- 12.17 Up to 200 pedometer units will be made available in year 1 of this Travel Plan. It is estimated these can be secured for approximately £10 per unit. The number of pedometers needed in subsequent years will be monitored by the Travel Plan Co-ordinators.

#### **W5 Storage & Changing facilities**

- 12.18 Pedestrians will be provided with shower, changing and storage facilities at their destination to allow them to safely and comfortably change into their working attire. Drying facilities will also be provided so that over coats and other equipment will be comfortable and dry for their return journey.

#### **W6 Health benefits**

- 12.19 For many staff the journey to work may provide their only real opportunity for regular exercise. It is recommended that the health benefits of walking be promoted to staff. Posters, leaflets and email campaigns will be used to communicate the message. This will be especially relevant to individuals attending the crèche, the multi faith centre and the sport facilities.

- 12.20 Sustrans can provide free promotional material to increase awareness of the benefits of walking. It is recommended this material is distributed across the development in public areas in an attempt to promote the benefits of increased walking. An example of the promotional material available from Sustrans can be found at:

[www.sustrans.org.uk](http://www.sustrans.org.uk)

- 12.21 Measures W1 (Walk to Work Days) and W6 (Health Benefits) will be promoted in tandem. It is recommended that £1,000 per year for the first two years and £500 per year for the next three years, be invested into the promotion of these measures.

#### **W7 Walking Buddies**

- 12.22 To encourage walking, particularly to the crèche, the multi faith centre and the sports facilities a Walking Buddy system will be established and promoted.

#### **W8 Information provision**

- 12.23 A variety of techniques will be used to communicate the benefits of walking to all personnel associated with MoD St. Athan; including some of the following:
- The erection of notice boards at a variety of public locations throughout the site. These should be in areas accessible to staff and students, namely, reception areas, restaurant areas, mess areas, accommodation blocks, training areas, the crèche, the community centre, the multi faith centre, the hotel and in the sports facilities.

- The electronic mail system, to which most personnel have access, is one of the best ways of disseminating information. This medium can be used to communicate a range of Travel Plan news and updates.
- Upon registering at the crèche, or when accepting membership at the sports facility, or when attending the multi faith centre sustainable transport information will be given as part of the 'welcome' process. Information relating to how to travel sustainably to these destinations will be distributed.

## Cycling

- 12.24 Cycling is an economical, environmentally friendly and healthy means of transport. It provides a realistic alternative to the car for many short trips, especially those that do not require significant baggage to be carried. It can provide affordable access to shops, jobs, education and healthcare. According to the British Medical Association 'cycling twenty miles a week halves the risk of a heart attack. Regular cyclists are as fit as non-cyclists ten years younger'<sup>9</sup>
- 12.25 Sustrans can provide free promotional material to increase awareness of the benefits of cycling. It is recommended this material is distributed across the development in public areas in an attempt to promote the benefits of increased walking. An example of the promotional material available from Sustrans can be found at:
- 12.26 The health benefits of cycling can be promoted dually alongside those of walking. This will not only minimise cost but also give greater flexibility to those who might not be so keen on one particular mode to be shifted towards the other.
- 12.27 Often people are deterred from cycling because of inappropriate clothing for the activity, such as having to wear a suit/smart clothes to work. The provision of dedicated changing areas will serve to promote cycling.
- 12.28 Cycling gives the valuable opportunity to include exercise as part of a daily routine. It is widely acknowledged that regular exercise in the form of cycling can help counteract obesity and related problems including coronary heart disease, strokes, diabetes and cancer. As well as the physical effects it is also well known that cycling promotes general mental well being.
- 12.29 According to the 2005 Travel to Work Survey cycling accounts for 9% of all commuter journeys made by residents in the Eglwys-Brewis area<sup>10</sup>. Cycling will not always be an option for longer journeys, for travelling in bad weather or at night or when carrying heavy items. The 2005 Travel to Work Survey reveals that almost 50% of all commuter trips in the Eglwys Brewis area is less than 5 kilometres<sup>11</sup>. This suggests there is significant potential to promote cycling as a viable realistic alternative to the car, especially for those living close to the site.

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<sup>9</sup> Walk in to Work Out, British Medical Association; 2002

<sup>10</sup> 2005 Travel to Work Survey; Office of National Statistics

<sup>11</sup> 2005 Travel to Work Survey; Office of National Statistics

- 12.30 The following measures will be presented on the Travel Plan Menu in an attempt to increase the number of cyclists travelling to the site.

#### **C1 Health promotions**

- 12.31 The journey to work may provide many staff with their only opportunity for regular exercise. Complementing the campaign to promote walking, a series of leaflets, posters and emails will be prepared to extol the health benefits of cycling on the journey to work. This will be especially relevant to individuals attending the crèche, the multi faith centre and the sport facilities.

Sustrans are available to provide free promotional material to assist with the promotion of the benefits of cycling, an example of the material they can provide can be found by visiting the following website:

[www.sustrans.org.uk](http://www.sustrans.org.uk)

#### **C2 Bike to Work Week**

- 12.32 National Bike to Work Week is staged annually in June. During this week organisations are encouraged to organise activities designed to increase the number of staff cycling to work. It is recommended that the Travel Plan Co-ordinators register for these events.

[www.bikeweek.org.uk](http://www.bikeweek.org.uk)

- 12.33 Measures C1 (Health promotions) and C2 (Bike to Work Weeks) will be jointly promoted. It is recommended that £1,000 per year for the first two years and £500 per year thereafter, for the next three years, be invested into the promotion of these measures.

#### **C3 Cycling accessories**

- 12.34 The weather can often be a needless deterrent to cycling. In an attempt to reduce the impact of the weather on cycling we will negotiate with a local outdoor clothing supplier in an attempt to secure a discount on cycling accessories. It is recommended that the Travel Plan Co-ordinators negotiate with a local cycle supplier in an attempt to secure a discount on the purchase of bicycles.

#### **C4 Secure cycle parking**

- 12.35 The fear of theft could be a deterrent to cycling. Unless safe secure cycle parking is provided cyclists will always be reluctant to bring, often, expensive cycles and equipment into an unsecured environment. Secure covered parking will be provided in strategic locations for those who commute to work.

#### **C5 Internal Pool Cycles**

- 12.36 It is recommended that a pool of cycles be made available within the site to make it easier to travel around the site in a more sustainable manner. Cycle depots will be created at the entrance gates and other strategic locations within the site. Throughout the site approximately 1,560 cycle parking spaces will be made available. An adequate number of these will be made available for storage of the pool cycles.

- 12.37 Discussions are ongoing with MoD regarding the number of pool bicycles to be made available, and at this time provision is being made for up to 300 cycles. However, should there be strong support for this initiative, demonstrated via the annual Travel to Work survey, then this number will be reviewed.
- 12.38 Secure parking will be provided at strategic locations for the pool cycles.
- 12.39 At this stage, it is not envisaged that pool bicycles will be made available for use outside the wire. Issues relating to insurance, loss and maintenance make the feasibility of hiring cycles for use outside the wire unrealistic. However, should there be strong support for this initiative, demonstrated via the annual Travel to Work survey, this proposal will be reviewed.
- 12.40 Given the characteristics of the personnel on site, cycle training will not be offered as part of this Travel Plan, unless there is strong support for cycle training demonstrated via the annual Travel to Work surveys.

#### **C6 Interest free bicycle loans / Salary sacrifice schemes**

- 12.41 It is recommended that the Travel Plan Co-ordinators investigate the provision of interest free loans / salary sacrifice schemes to staff for the purchase bicycles and cycling accessories. Experimental hire periods allowing users to try before they buy will not be offered due to reasons relating to insurance, loss and maintenance.

#### **C7 Information provision**

- 12.42 A variety of techniques will be used to communicate the benefits of cycling to all personnel associated with MoD St. Athan; including some of the following:
- The erection of notice boards at a variety of public locations throughout the site. These should be in areas accessible to staff and students, namely, reception areas, restaurant areas, mess areas, accommodation blocks, training areas, the crèche, the community centre, the multi faith centre, the hotel and in the sports facilities.
  - The electronic mail system, to which most personnel have access, is one of the best ways of disseminating information. This medium can be used to communicate a range of Travel Plan news and updates.
  - Upon registering at the crèche, or when accepting membership at the sports facility, or when attending the multi faith centre sustainable transport information will be given as part of the 'welcome' process. Information relating to how to travel sustainably to these destinations will be distributed.

#### **Public Transport – Bus & Train**

- 12.43 Public transport can provide a realistic alternative to the car and is often perceived as an unattractive mode of transport. In recent years:
- Improvements to bus fleets have resulted in more comfortable journeys;

- The introduction of more buses has reduced overcrowding,
- The creation of bus lanes has improved journey times
- The price of a ticket may be competitive when compared to the true costs of running a car.

12.44 The bus is an essential mode of public transport. It provides mobility for people without access to a car and offers a relatively cheap and sustainable alternative to the car, particularly in congested areas. Buses help reduce road traffic, improve air quality, accessibility and road safety.

12.45 Analysis of the 2005 Travel to Work Survey reveals only 5% of commuter trips in the Eglwys – Brewis area are undertaken on the bus<sup>12</sup>. The area is reasonably well served by public transport.

12.46 In an attempt to increase the number of people arriving to the site on the bus the following will be presented on the Travel Plan menu.

#### **PT1 Information provision**

12.47 If staff are provided with route and timetable information relating to relevant services an increasing number may be encouraged to commute by bus or train. To improve the quality of the information staff receive implementation of the following is recommended.

- The erection of notice boards at a variety of public locations throughout the site. These should be in areas accessible to staff and students, namely, reception areas, restaurant areas, mess areas, accommodation blocks and in training areas. Information relating to routes, timetables and fares will be posted on the notice boards.
- Traveline Cymru provide information on all routes and public transport timetables throughout the UK. It is recommended that Traveline Cymru be invited to present public transport information workshops. Traveline Cymru representatives will be on hand to answer queries and to provide personalised bus timetables to staff interested in making more use of the local public transport network.
- The electronic mail system, to which most personnel have access, is one of the best ways of disseminating information. This medium can be used to communicate route and timetable information to a large population in a cost effective targeted way.
- It is planned that every bus stop in the Vale of Glamorgan will have scheduled bus service information made available via text message. This facility will also be promoted by the Travel Plan Co-ordinators.

12.48 It is recommended that £1,000 per year for the first two years and £500 per year for the following three years be made available to increase awareness of public transport.

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<sup>12</sup> 2005 Travel to Work Survey; Office of National Statistics

## **PT2 Personalised timetables**

- 12.49 Traveline Cymru provide information on all routes and public transport timetables throughout the UK. Staff living close to a direct bus route to the site will be identified and Traveline Cymru will be invited to answer their queries and to provide personalised bus timetables to these individuals. Containing information designed to specifically meet the needs of the individual, e.g. preferred start and finish times, these timetables will provide details of buses passing the stop nearest their preferred point of origin.

## **PT3 Discounted tickets**

- 12.50 Travelling on public transport can be perceived to be more expensive than the cost of motoring. The Travel Plan Co-ordinators will meet with local transport operators to examine the potential for a discount on tickets so that the prospect of travelling by public transport may be more appealing to staff.

## **PT4 Interest free season ticket loans**

- 12.51 Additionally, it is recommended that the Travel Plan Co-ordinators investigate the provision of interest free loans to staff for the purchase of season tickets.

## **PT5 Shuttle Bus**

- 12.52 Discussions were held with the incumbent bus operators and the Vale of Glamorgan Council to consider the possibility of providing a shuttle bus service between Llantwit Major railway station and the DTC. Due to the extreme peaks in demand and uncertainties regarding the origin and destination of students and staff it was felt that consultation should continue, however, at this point a shuttle bus service connecting the railway station to DTC was not commercially viable, and that provision of this service via a contracted service would be more realistic.
- 12.53 The operating window between train services for a shuttle bus service is 26 minutes. However, allowances for early / late arrival and boarding / alighting of passengers reduce the operating time to 16 minutes.
- 12.54 On 5<sup>th</sup> March 2009 journey times from Llantwit Station to North Gate and current main gate were recorded at 8 minutes and 10 minutes, respectively. Accordingly it would be possible for a single bus to meet all rail arrivals and departures to provide a dedicated point to point, express service, between the railway station and the North Gate. During periods of peak demand this shuttle service will be supported by White Fleet vehicles.
- 12.55 Operating from Mon – Sat 06:00 – 0900 the cost for a 25 seat bus would be in the region of £80,000 - £90,000 per annum. Further discussions with the operators will be held.
- 12.56 More information on this can be found in Appendix B.

## **PT6 Rail warrants**

- 12.57 For students arriving from long distances the train is the MoD's preferred method of travel. Students attending training courses at DTC will be provided with subsidised rail warrants. These warrants entitle the user to discounted

travel on pre selected trains. These warrants will be issued to students for travel at the beginning and end of their course. Some students will be entitled to weekend warrants for personal travel during their course.

- 12.58 An example of a typical rail-fare relevant to DTC is: that an "off-peak return" ticket, using a HM Forces rail-card, from Llantwit Major to London (Paddington), leaving Friday afternoon and returning Sunday evening would cost £39.60 whether the journey was via Bridgend (17:22 out, 21:55 back) or directly to Cardiff (16:56 out, 21:21 back) through Barry.
- 12.59 This is a major Travel Plan incentive in terms of encouraging travel by train and in terms of exercising control over when the students travel, as it will enable the Travel Plan Co-ordinator to manage student arrivals and departures.

### **PT7 White Fleet**

- 12.60 The military operate an extensive white fleet consisting of 30 vehicles (a mixture of minibuses, 45 and 59 seat coaches). These vehicles will be made available to transfer students to / from the railway stations.

### **Car sharing**

- 12.61 Car sharing involves two or more people sharing the same car for the same journey. Car sharing has the potential to quickly reduce the number of single occupant vehicles arriving on site, thereby, significantly reducing pollution, congestion levels and demand for car parking spaces.
- 12.62 Car sharing maintains the directness and flexibility of car travel, while allowing participants to reduce their fuel bill and wear and tear on their own vehicle. Car-sharing with one other individual can half the fuel bill, while sharing with two others can reduce the fuel bill by two thirds if travelling costs are equally shared.
- 12.63 For car sharing to be successful it is necessary to identify staff travelling from the same area at the same time and to encourage them to contact each other to plan journey arrangements.
- 12.64 The following measures will be presented on the Travel Plan menu in an attempt to increase the number of people car sharing to the site.

### **CS1 Car share database**

- 12.65 There are a number of software packages on the market that allow users to match characteristics such as home location, gender and personal habits with other potential car sharers. However, in the first instance, it is recommended to make use of Local Authority sponsored car share site [www.sewtacarshare.com](http://www.sewtacarshare.com)
- 12.66 [www.sewtacarshare.com](http://www.sewtacarshare.com) allows individuals to contact other car sharers to make journey arrangements. The site is free to use and provides a secure platform for like-minded individuals to exchange journey information.
- 12.67 The Travel Plan Co-ordinators will meet with representatives of Sewta to discuss the possibility of creating a private group on

[www.sewtacarshare.com](http://www.sewtacarshare.com). The creation of this group will provide users with enhanced security measures and contact will other individuals travelling to the same destination.

- 12.68 It will cost approximately £3,000 to create a private group on [www.sewtacarshare.com](http://www.sewtacarshare.com) plus an additional annual licence fee of approximately £1,000.
- 12.69 It is recommended that DTC and ABP share the costs, management and running of the Car Share database. Operated as a joint venture, matching opportunities will be improved by using both organisations to increase the potential pool of users.

### **CS2 Guaranteed lift home**

- 12.70 A major barrier to car sharing is the fear of been left stranded in an emergency. In the event of such an occurrence staff will be allowed access to a guaranteed lift home service. Arranged in agreement with a Line Manager, the guaranteed lift home service will provide a valuable safety net to car sharers.
- 12.71 Evidence from other Travel Plans suggests this service is rarely used, however, this Travel Plan will set a side £500 per year to provide a guaranteed lift home in the event of an emergency.

### **CS3 Preferential car parking**

- 12.72 Preferential car sharer parking spaces will be provided in the most desirable locations. The benefit of this will be twofold. Firstly, a parking space in a desirable location will provide an incentive for personnel to car share. And secondly, these spaces will act as a powerful promotional tool for the promotion of car sharing.
- 12.73 Section 7 highlights parking provision. In total there will be 3,664 spaces across the development, initially, 10% of these will be designated as preferential car share spaces. Should strong support for an increase in the number of preferential car share spaces be demonstrated via the annual Travel to Work survey, this number will be reviewed.

### **CS4 Promotional activity**

- 12.74 To increase awareness of car sharing we will run periodic campaigns to promote the benefits. For example, 14<sup>th</sup> June is 'National Car Share Day' and 22<sup>nd</sup> September is 'In Town Without My Car Day'. These are national campaigns to promote sustainable transport. It is recommended that the Travel Plan Co-ordinator registers for these events and arranges activities and promotions to encourage staff involvement. For more information on this events visit:

[www.liftshare.com](http://www.liftshare.com)  
[www.dft.gov.uk/itwmc](http://www.dft.gov.uk/itwmc)

- 12.75 £1,000 per year for the first two years and £500 per year in subsequent three years will be made available to promote the car sharing.

## **Other Travel Plan Measures**

### **O1 Travel Plan Pack**

12.76 In an attempt to prevent students, training staff and employees developing car dependent habits they will be given an information pack containing details of the Travel Plan and the available sustainable transport alternatives before they arrive on site. It is recommended the packs contain information on the following: (web links are provided to give an example of the type of material that can be provided within the Welcome Packs).

- Bus timetables [www.traveline-cymru.info](http://www.traveline-cymru.info)
- Car sharing opportunities [www.sewtacarshare.com](http://www.sewtacarshare.com)
- Walking and cycling routes [www.valeofglamorgan.co.uk](http://www.valeofglamorgan.co.uk)
- Sustainable transport directions [www.sustrans.org.uk](http://www.sustrans.org.uk)
- Promotional material citing the benefits of increased activity on the journey to work [www.sustrans.org.uk](http://www.sustrans.org.uk)

12.77 Prepared by the Travel Plan Co-ordinators in tandem with the Local Authority, Sustrans, the Sewta Regional Travel Plan Co-ordinator and the local transport operators the pack will be distributed prior to arrival on site.

12.78 A similar Pack, targeting students, also would be provided to each trainee in the transient population.

12.79 £1,000 a year will be made available for the preparation and distribution of Travel Plan Welcome Packs.

### **O2 Video conferencing**

12.80 There are strong business reasons for reducing the need to travel. Not only is there the cost of travel (subsistence and fuel), but also most travel involves unproductive time. Information technology improvements, such as video conferencing equipment have the potential to reduce the need to travel. To maximise usage of this facility, we will compile a list of clients capable of communicating via a video conference link.

### **O3 Travel Plan website**

12.81 In an attempt to improve information distribution it is recommended the Travel Plan Co-ordinator creates a Travel Plan website. This website should be a 'one stop shop' for all information on sustainable transport.

12.82 The site should contain easy to navigate links to the following:

- Sustainable transport directions
- Cycling
- Walking
- Public transport – Traveline Wizard
- Car sharing
- Useful links
- Results from the monitoring surveys

12.83 An example of a similar site can be found at:

### **Car Club**

- 12.84 Discussions have taken place with two of the UK's largest Car Club providers to assess the viability of establishing a Car Club at MoD St. Athan. Both operators were cautiously optimistic about the possibility, stating the viability of this venture was 'marginal'. As a way forward it was agreed that a Business Case should be prepared to identify likely car ownership levels across the whole population. In addition to this the Co-operate Business Travel needs of the MoD would need to be established to evaluate the possibility of Car Club cars been utilised for Business Travel.
- 12.85 Consequently, at this stage, it is not recommended that Car Clubs be considered within this Travel Plan due to a lack of information. Once information on car ownership levels can be obtained and the Business Travel needs of the MoD can be established a review of the viability of Car Clubs should be undertaken, by the Travel Plan Co-ordinator.
- 12.86 The viability of the Car Club may be increased if ABP was considered as part of this initiative.

### **13. Travel Plan Menu**

- 13.1 The following table illustrates how the Travel Plan measures listed in Section 12 are transferred on to the Travel Plan Menu. The table clearly demonstrates how the various Travel Plan measures can be adopted to suit the different travelling needs of personnel commuting to DTC and the other on site facilities.
- 13.2 Given that this menu covers the whole site, it should be understood that different elements of the Travel Plan will progress quicker than others in some parts of the development. Allowances, therefore, need to be made to ensure that one is not tied from progress by another.

**Table 8: Travel Plan Menu**

Travel Plan Menu					
Travel Plan References & Measures		Group 1 On site population	Group 2 SFA	Group 3 Teaching & Facilities staff off site	Group 5 Other on site facilities
W1	Walk to Work Weeks				
W2	Walking accessories				
W3	Signage				
W4	Pedometers				
W5	Storage & changing facilities				
W6	Health benefits				
W7	Walking Buddy				
W8	Information provision				
C1	Health promotions				
C2	Bike to Work Weeks				
C3	Cycling accessories				
C4	Secure cycle parking				
C5	Internal cycle pool				
C6	Interest free bicycle loans / salary sacrifice schemes				
C7	Information provision				
PT1	Bus Information provision				
PT2	Personalised bus timetables				
PT3	Discounted tickets				
PT4	Interest free bus ticket loans				
PT5	Shuttle buses				
PT6	Rail Warrants				
PT7	White fleet				
CS1	Car share database				
CS2	Guaranteed lift home				
CS3	Preferential car parking				
CS4	Promotional activity				

O1	Travel Plan Pack				
O2	Video Conferencing				
O3	Home Working				
O4	Travel Plan Website				

## **14. Monitoring Strategy**

14.1 Monitoring Travel Plans is central to ensuring that the aims of the Plan are delivered. A robust monitoring strategy is needed to measure the success or otherwise of the various elements of the Travel Plan. An effective monitoring strategy will highlight the best performing areas of the Travel Plan, it will also draw attention to elements that are not performing as well as anticipated.

14.2 The following measures will be undertaken as part of the monitor strategy for this Travel Plan:

### **Annual Travel Survey**

14.3 This will be the main tool for gathering information on travel behaviour. Undertaken on an annual basis this questionnaire will be designed in such a way so as to allow recipients the opportunity to record how they normally travel to work as well as enabling them to identify what initiatives would encourage them to travel by more sustainable means.

14.4 As far as possible the same questions and format will be used across the site to allow for consistency and easy comparison. A sample Travel to Work questionnaire is provided in Appendix G.

14.5 Exactly how the questionnaires will be delivered to respondents is yet to be decided. However, it is envisaged the majority of surveys will be paper based so as not to exclude individuals who do not have access to computers.

### **Car share database registrations**

14.6 With assistance from the Sewta Regional Travel Plan Co-ordinators it will be possible to monitor usage levels on the car share database. Reports providing information on membership levels and the number of successful matches can be obtained and scrutinised to establish how effectively this particular element of the Travel Plan is performing.

### **Preferential car share spaces**

14.7 The number of cars using the preferential car share spaces will be counted and recorded on four different occasions throughout the year. In following years the counts will take place on the same four dates.

### **Cycle parking**

14.8 The number of cycles parked on site will be counted and recorded on four different occasions throughout the year. In following years the cycle counts will be undertaken on the same four dates. The number of parked bicycles will also be counted and recorded on cycle promotional days in an attempt to measure the effectiveness for these special events.

### **Public Transport – Bus**

14.9 The number passengers disembarking from a selection of buses servicing the site will be counted and recorded on four different occasions throughout the year. In following years the counts will take place on the same four dates.

### **Incentives**

14.10 The uptake of the following incentives will be monitored and recorded on an on going basis:

- Interest free bicycle loans / salary sacrifice (C6)
- Interest free season ticket loans (PT4)
- Rail warrants (PT6)

### **Reporting**

14.11 The Travel Plan Co-ordinator will report on a 6 monthly basis to the Travel Plan Management Board who will monitor their progress. In addition to this, Annual Reports detailing Travel Plan achievements will be provided to the Local Authority.

## **15. Conclusions**

- 15.1 This Travel Plan presents a range of measures that have the potential to reduce the number of single of occupant vehicles arriving to the site. The overall aim of this Travel Plan is to reduce the number of single occupant vehicles arriving to the site by 20% by 2017. This target may need to be reviewed or changed following consultation with the end user.
- 15.2 This Travel Plan provides a foundation upon which the targets and measures can be implemented and developed over a period of time. As the development at St. Athan continues to grow and evolve then so to will this Travel Plan. It will develop to reflect the changing circumstances at St. Athan.
- 15.3 As plans for the site infrastructure progress a further site assessment will be undertaken in an attempt to fully understand the strengths, weakness, opportunities and threats to more sustainable forms of transport.
- 15.4 Approximately 6 months prior to the site becoming operational this Travel Plan will need to be updated and revised to ensure it complies with current best practise.
- 15.5 A Travel Plan Management Board, appointed at least 1 year prior to the site becoming operational, consisting of members representing DTC, ABP, VOG, Sewta and the local transport operators, will be responsible for the development and implementation of this Travel Plan.
- 15.6 The Management Board will meet twice in the first year. After this the meeting schedule will be determined by the Management Board according to workload. This Plan will last for 5 years.
- 15.7 A dedicated Travel Plan Co-ordinator, appointed in 2014 will have overall responsibility for the day to day management of the Travel Plan. According to the DfT it is possible to combine this role with other duties.
- 15.8 DTC will contribute on average approximately £17,000, per year for 5 years, of staff time to facilitate the role of Travel Plan Co-ordinator.
- 15.9 The Travel Plan Co-ordinator will be supported by a budget of £10,500 for the first two years for the implementation of soft Travel Plan measures.
- 15.10 An extensive monitoring strategy will be implemented to measure the success of the Travel Plan.

# APPENDIX

## Appendix A: Rail capacity analysis

### DTC & ABP St Athan Development - effects on the local rail network

#### Introduction

The Defence Technical College (DTC) and Aerospace Business Park (ABP) development at St Athan is forecast to significantly increase demand for the local public transport network. This document presents the likely passenger demand on the local rail network and discusses how any shortfall in capacity can be addressed. Meetings have been held with Arriva Trains Wales and Welsh Assembly Government (Transport & Strategic Regeneration) to prepare this report.

#### Existing Train Service

Llantwit Major Railway Station provides modern interchange and park-and-ride facilities. It is situated on the Vale of Glamorgan (VOG) Line which links Cardiff and Bridgend calling at Grangetown, Cogan, Eastbrook, Dinas Powys, Cadoxton, Barry Docks, Barry, Rhoose and Llantwit Major. A free shuttle bus (Service 905) connects Rhoose Railway Station to Cardiff International Airport.

The VOG line was re-opened to passenger traffic (previously freight only) on 10<sup>th</sup> June 2005 and carried over 225,000 passengers during the first year of operation. The service operates on an hourly frequency Monday to Saturday, reducing to 2-hourly on Sundays:

Departure times TO Llantwit Major

From	Service	Mon to Sat	Sun
Cardiff	First	05:41	08:41
	Last	22:41 (21:41 Sat)	20:41
Bridgend	First	05:42	09:42
	Last	22:42	21:42

Departure times FROM Llantwit Major

To	Service	Mon to Sat	Sun
Cardiff	First	05:56	09:56
	Last	22:56	21:56
Bridgend	First	06:22	09:22
	Last	23:22 (22:22 Sat)	21:22

Westbound and Eastbound trains arrive at Llantwit Major Railway Station at 22 and 56 minutes past the hour respectively. With trains arriving at a minimum of 26 minutes apart there is sufficient time for a single bus to link the railway station to the site and return for the following train.

The stations at Llantwit Major and Rhoose permit a maximum of 4 cars per train (4 x 23m). However other stations (Eastbrook) are limited to 4 x 20m stock, enabling a maximum provision of 276 seats per hour per direction with 4 x class 150 stock. Current operations comprise 2-car 150 Sprinter sets providing a capacity of 138 seats per hour per direction. Trains with double sets (4 car Sprinter or Pacer) include the 0742 Bridgend – Cardiff (4 car 150 sprinter unit) and 1741 Cardiff – Bridgend (4 car 143 pacer unit).

Cardiff can also be reached via Bridgend, for very little time penalty, which also offers direct mainline connections to eastward destinations such as London and Manchester as well as westbound destinations such as Swansea.

Initial capacity calculations assume all passengers are seated, however standing is considered acceptable on rail commuter routes over short distances to cope with peak

demand. The ATOC (Association of Train Operating Companies) guidance has been used which defines overcrowding as occurring where train capacity exceeds 0.3 standing passenger per seat. The Passenger Charter commitment is for passengers not to have to stand for more than 20 minutes. The report highlights where standing is predicted to occur in the future.

## Rail Forward Programme

In June 2008 the Welsh Assembly Government confirmed details of a £30m investment to improve the rail network of Cardiff and the Valleys Corridor including a commitment to strengthening the rail network to boost the economy. The planned investment included proposals to improve passenger capacity, which are of relevance to the Vale of Glamorgan Line. These include;

- The creation of an additional platform at Barry Station;
- Works to Cogan Junction to increase capacity, which would enable more than 1 train per hour to operate on the Vale of Glamorgan line in addition to existing service patterns.

These enhancements form part of the Welsh Assembly Government Rail Forward Programme announced in December 2008, which also includes the plan, subject to a business case and affordability, to increase the frequency of services on the Vale of Glamorgan Line to half-hourly. This is also part of the draft Regional Transport Plan of the South East Wales Transport Alliance. The timing of any frequency enhancements have not been confirmed.

The Welsh Assembly Government, working closely with Arriva Trains Wales, regularly reviews and monitors capacity on the rail network and funds train strengthening on a number of peak hour services to reduce overcrowding.

## Passenger Growth Predictions

The Department for Transport (DfT) Wales Rail Planning Assessment (July 2007) refers to a 5% increase in patronage per year, between 1995/96 and 2005/06, from ticket sales data.

The following extract from the DfT Regional transport statistics (2008 edition) notes a compound patronage growth rate of 40% (average 3.42% increase in patronage per year) between 1995 and 2005 in Wales:

### 2.8 Regional rail patronage growth index

1995/96 = 100

Origin	95/96	96/97	97/98	98/99	99/00	00/01	01/02	02/03	03/04	04/05	05/06	06/07 <sup>1</sup>
Wales	100	102	105	105	115	118	127	130	136	138	140	153

<sup>1</sup> A new methodology was applied to the 2006/07 data to improve the accuracy of the dataset. This had the effect of increasing the number of journeys so when making comparisons between 2006/07 and earlier years, exercise caution.

Over a longer period growth of around 2% per annum is evident but in the last 10 years rail patronage has grown at a faster rate.

An annual growth rate of 4.0% may be considered as realistic for forecasting future growth and has been used to calculate a 6-year growth multiplier of 1.224 and a 19-year growth multiplier of 1.894 to correspond with the proposed opening of the DTC facility in 2014 and completion of the ABP in 2028. These have been applied to the existing patronage figures provided by Arriva Trains Wales for the period 18<sup>th</sup> May to 13<sup>th</sup> December 2008.

Finally the DTC figures of additional patronage from the new developments have been added to provide an estimate of the total passengers expected to use this service in the future. It has been assumed that as a result of the DTC and ABP developments there will be an extensive increase in use of rail transport, for passengers boarding/alighting at Llantwit Major,

especially for junior trainees. Therefore, there is confidence in the modal split by rail which has been provided by the DTC.

The data has been presented in order to show the significant DTC flows. Outside of the hours referenced additional patronage from both the development and general growth does not significantly affect the existing capacity provision.

Of the 2,750 students attending the DTC, approximately 95% will live on site during their course. The courses will last various durations and students are permitted to leave site at weekends. Weekend travel therefore comprises both new trainees and existing trainees going away for the weekend. It is forecast that 60% of the resident students will travel at weekends.

Peak student arrivals will therefore be on Sunday evening and departures on Friday evening. Other military personnel, teaching & facilities staff and ABP commuter employees will tend to travel during the traditional Monday to Friday AM and PM peak hours. Therefore the data has been organised into four time periods: Monday to Thursday AM peak arrivals (daily commuters); Monday to Thursday PM peak departures (daily commuters); Friday PM peak departures (which comprises both the daily commuting passengers and trainees returning home for the weekend or at the end of their course); Sunday PM peak arrivals (trainees returning to DTC after weekend leave or starting courses).

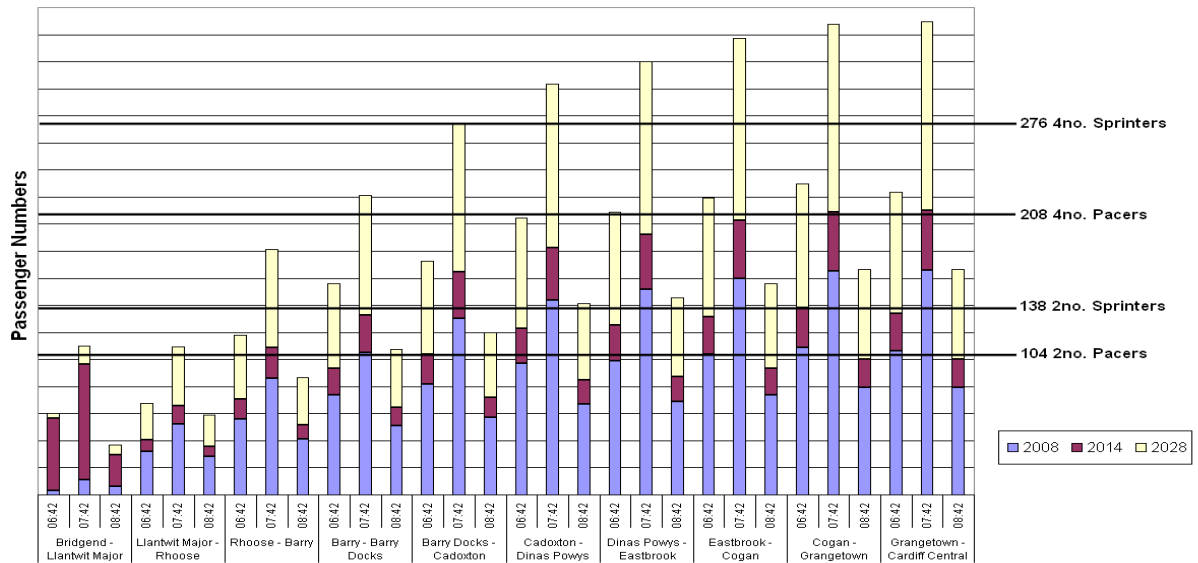
The proposed development commuting personnel traffic has been distributed through the network on the basis of details of the Defence Aviation Repair Authority (DARA) employees. This has been adjusted by removing or reducing values for postcodes to close to use rail travel. The home postcode of 1,684 DARA employees at RAF St. Athan in 2001 has been summarised in the following table:

Area covers...	Postcode	Respondents		Direction of Travel Home
Newport, Tredegar, Ebbw Vale	NP Codes	15	1%	Eastbound (Up)
	LD Codes	2	0%	n/a
Porthcawl, Bridgend, Swansea, Neath	SA Codes plus CF31 to 36	387	23%	Westbound (Down)
Pontyclun, Pontypridd, Treherbert. Aberdare, Ystrad Mynach, Merthyr Tydfil	CF37-48, CF72, CF81-82	275	16%	30% Up 70% Down
Penarth, Central Cardiff and Caerphilly	CF1-4, CF64, CF83	108	6%	Westbound (Down)
St Fagans, Wenvoe	CF5	39	2%	Westbound (Down)
Cowbridge	CF71	26	2%	n/a – Too close
Llantwit Major	CF61	435	26%	n/a – Too close
St Athan, Rhoose, Barry	CF62	347	21%	50% Down
Barry Docks	CF63	50	3%	Westbound (Down)

## Effects on Network

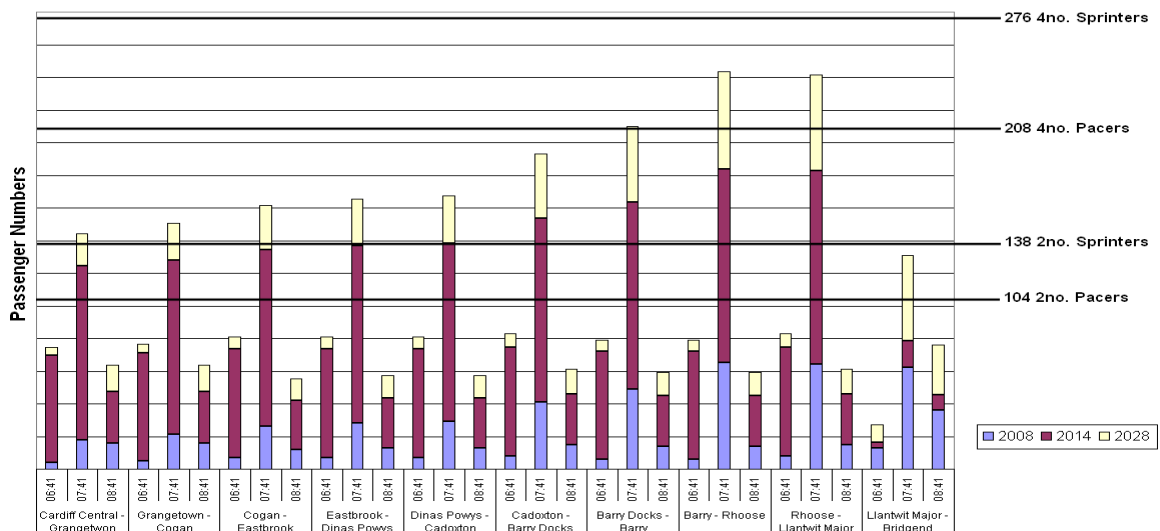
### Monday - Thursday

Monday - Thursday AM Peak Arrivals (Up) - Assuming 4% Growth per annum



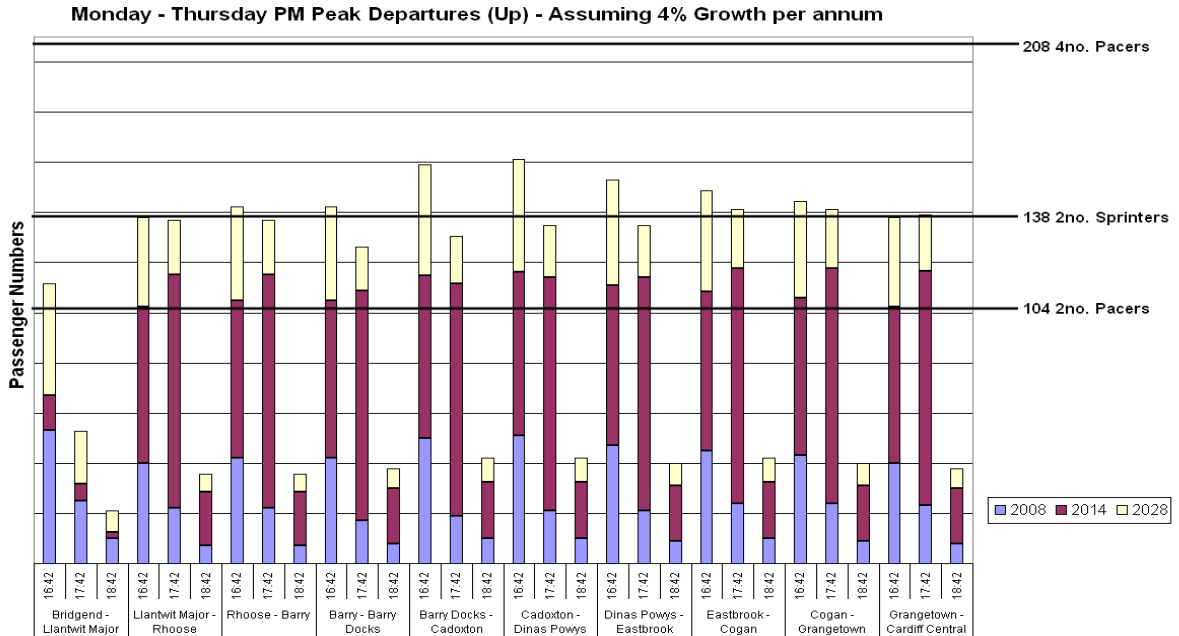
- During the AM Peak on the Up line the development only affects capacity between Bridgend and Llantwit Major. The predicted passenger figures for 2028 indicate a 2-car Sprinter will accommodate passenger demand without standing. The 07:42 service is operated by 4 x 150 sprinter units.
- Overall by 2028 the predicted patronage figures for the AM peak, due to general growth in Cardiff commuting, show that the 07:42 service, which is operated by 4 car x 150 sprinter units, will accommodate all passengers assuming a standing capacity of 0.3 patrons per seat, while the 06:42 service would result in standing of more than 0.3 patrons per seat between Barry Docks and Cardiff.

Monday - Thursday AM Peak Arrivals (Down) - Assuming 4% Growth per annum

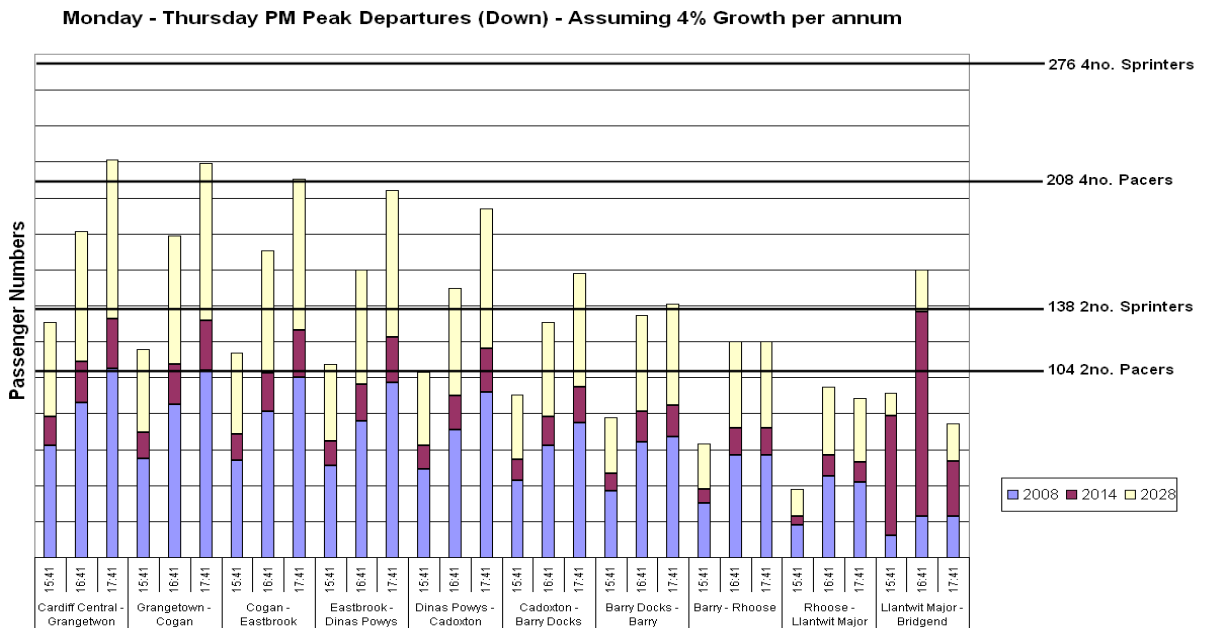


- The development is predicted to result in a significant increase in demand in the Down direction for the AM peak which is in the opposite direction of typical commuter traffic which travels towards Cardiff in the AM peak. This is forecast to result in standing of just over 0.3 passengers per seat by 2014 on the 07:41 service between Barry and Llantwit Major.

- Overall, by 2028, the additional growth is forecast to result in standing of more than 0.3 passengers per seat on the 07:41 service west of Cadoxton, reaching 0.6 passengers per seat between Barry and Llantwit Major. Train strengthening to a 4-car Pacer would accommodate all the passengers with standing of 0.2 patrons per seat or a 4-car Sprinter set (all seated).

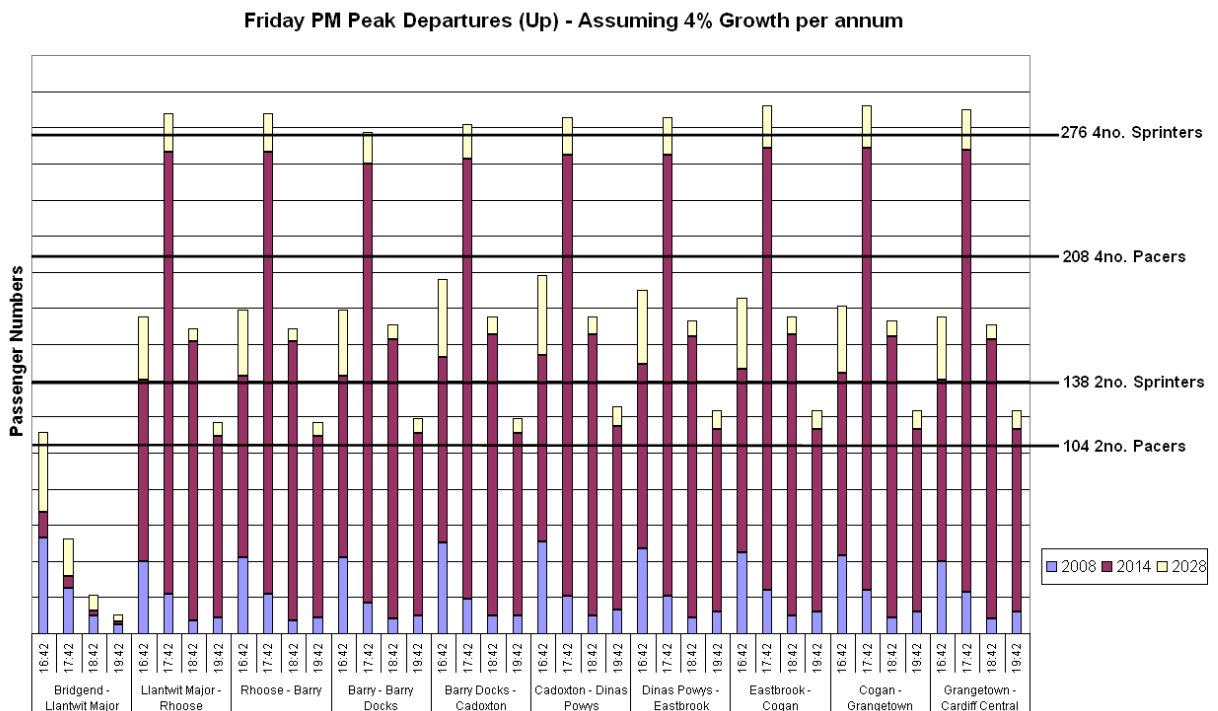


- The development has results in significant increase in demand in the Up direction for the PM peak. However this is within the capacity of a 2-car Sprinter set. Again this additional flow is in the opposite direction of typical commuter traffic which travels away from Cardiff in the PM peak.
- Overall, by 2028, a 2-car Sprinter set would still accommodate all services on the Up line during the Monday to Thursday PM peaks from Llantwit Major to Cardiff Central with maximum standing of 0.16 passenger per seat between Barry Docks and Cadoxton on the 16:42 service.



- During the PM Peak on the Down line the development only affects capacity between Llantwit Major and Bridgend. The predicted passenger figures for 2014 indicate that demand on the busiest service (16:41 between Llantwit Major and Bridgend) is just within seated capacity for a 2 car sprinter. The 17:41 Service is operated by a 4 car Pacer unit.
- Overall, by 2028, demand on the busiest service between Llantwit Major and Bridgend (16:41) can be accommodated on a 2 car sprinter with standing of 0.16 passenger per seat. The highest demand on this service is departing Cardiff where standing is predicted to be at 0.3 passengers per seat. The 17:41 service is operated by a 4 car pacer unit, and therefore is forecast to have sufficient capacity to meet demand, with a small amount of standing between Cardiff and Cogan.

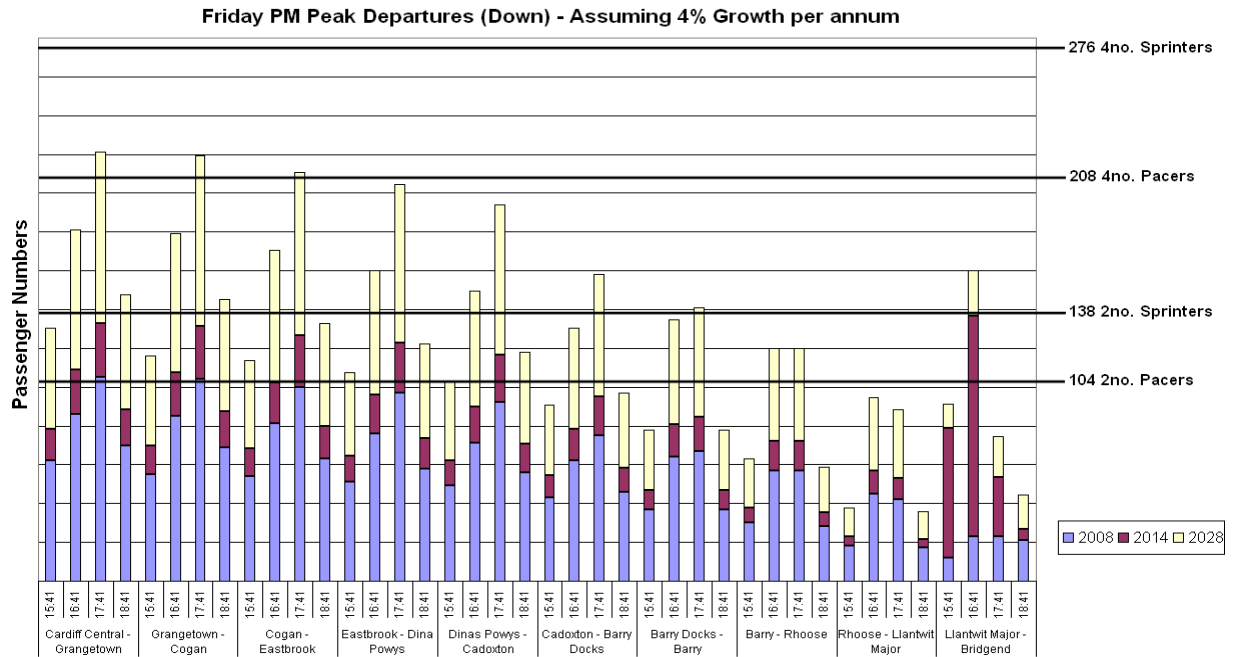
### Friday



The Friday PM peak figures for passengers from the development have been calculated by assuming that 100% of the departing trainees will be travelling towards Cardiff. However the usual daily Monday to Thursday passengers will still be distributed as per the DARA distribution – 45% Eastbound (Up) and 55% Westbound (Down).

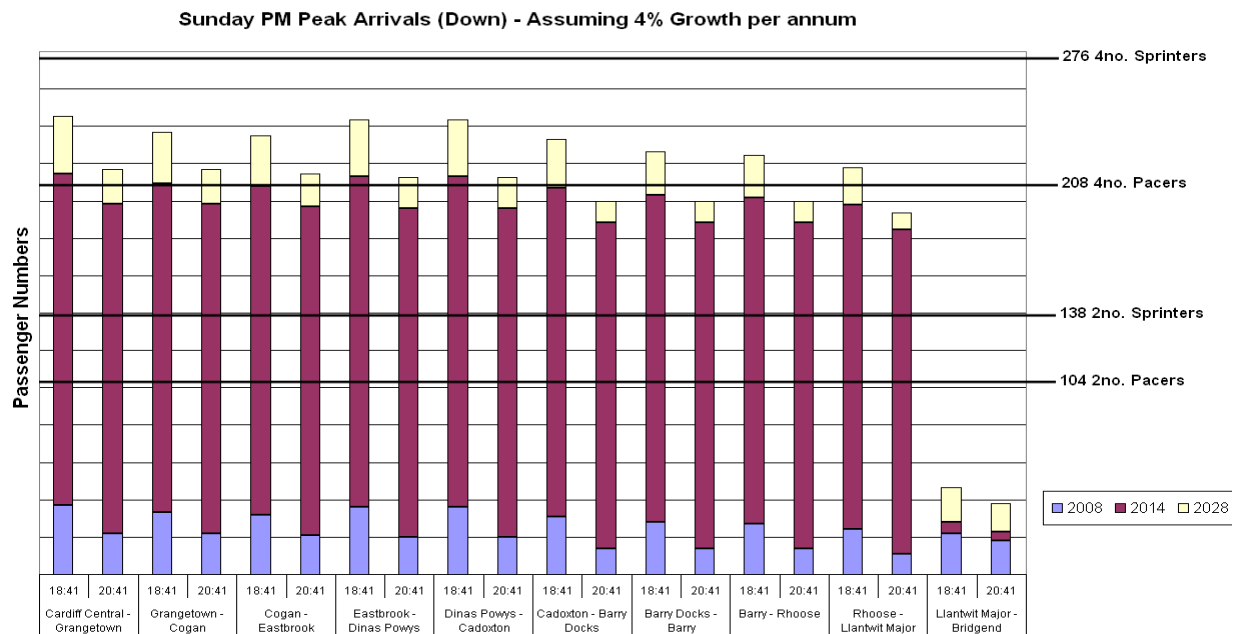
- Although the Friday PM peak tidal flow generated by the development will be counter existing peak flow (towards Cardiff whilst most existing demand is in the opposite direction), the additional passenger requirements could have a significant effect on these services. At present demand in the PM peak to Cardiff is an average of 22 people, providing spare capacity for 116. From 2014 the figures show that the 17:42 train between Llantwit Major and Cardiff would result in standing of around 0.95 passengers per seat unless strengthened to a 4-car (150) set. The 16:42 and 18:42 services would both have standing of approximately 0.15 persons per seat.
- The figures illustrate that overall by 2028 the PM peak demand toward Cardiff could be as high as 321 passengers for the 17:42 due to the combined effects of the development and general growth in patronage. Assuming a standing capacity of only 0.1 patrons per seat this demand can be accommodated by a 4-car Sprinter set. Demand for the 16:42 and 18:42 services would also increase with the 16:42 forecast to having a standing ratio of up

to 0.55 and the 18:42 up to 0.3. Strengthening of the 16:42 to a 4 car Pacer or Sprinter would therefore also be required.



- As it has been assumed that 100% of trainees travel via Cardiff, in the Down direction, the impact of the development in the Friday PM peak is no different to that on Monday – Thursday.

**Sunday**



- On Sundays the main impact of the development is trainees arriving to commence their course or returning from weekend leave in the PM period. The 2 hourly Sunday services are operated by 2 car sprinter sets. Demand is predicted to result in up to 0.5 standing passengers per seat on the 18:41 and 20:41 departures from Cardiff by

2014. Train Strengthening would therefore be required to accommodate this demand by rail with a 4 car Pacer or Sprinter unit.

## Solutions

### Monday – Thursday

#### Monday – Thursday AM Arrivals (Up) – Assuming 4% Growth per annum

From Bridgend (from Barry)		Services can be accommodated using:				Comments
		2 no. Pacer	2 no. Sprinter	4 no. Pacer	4 no. Sprinter	
06:42 (07:15)	2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			✓ Development demand <input checked="" type="checkbox"/> Total commuter demand
	2014	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	2028	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
07:42 (08:15)	2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			By 2028 demand for the 08:15 train from Barry may reach 350 passengers - a result of commuter growth and not attributable to the DTC and ABP developments. This is currently operated by a 4 car 150 sprinter unit.
	2014	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
	2028		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
08:42 (09:15)	2008	<input checked="" type="checkbox"/>				
	2014	<input checked="" type="checkbox"/>				
	2028	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

#### Monday – Thursday AM Arrivals (Down) – Assuming 4% Growth per annum

From Cardiff (from Barry)		Services can be accommodated using:				Comments
		2 no. Pacer	2 no. Sprinter	4 no. Pacer	4 no. Sprinter	
06:41 (07:05)	2008	<input checked="" type="checkbox"/>				✓ Development demand <input checked="" type="checkbox"/> Total commuter demand
	2014	<input checked="" type="checkbox"/>				
	2028	<input checked="" type="checkbox"/>				
07:41 (08:05)	2008	<input checked="" type="checkbox"/>				Standing will reach 0.3 persons per seat for a 2 car 150 sprinter unit by 2014 and 0.2 persons per seat if strengthened to a 4 car 143 pacer unit by 2028.
	2014		<input checked="" type="checkbox"/>			
	2028			<input checked="" type="checkbox"/>		
08:41 (09:05)	2008	<input checked="" type="checkbox"/>				
	2014	<input checked="" type="checkbox"/>				
	2028	<input checked="" type="checkbox"/>				

#### Monday – Thursday PM Departures (Up) – Assuming 4% Growth per annum

From Bridgend (from Barry)		Services can be accommodated using:				Comments
		2 no. Pacer	2 no. Sprinter	4 no. Pacer	4 no. Sprinter	
16:42 (17:15)	2008	<input checked="" type="checkbox"/>				Standing is forecast to reach 0.16 of seated capacity by 2028 between Barry Docks and Cadoxton.
	2014		<input checked="" type="checkbox"/>			
	2028		<input checked="" type="checkbox"/>			
17:42 (18:15)	2008	<input checked="" type="checkbox"/>				
	2014		<input checked="" type="checkbox"/>			
	2028		<input checked="" type="checkbox"/>			
18:42 (19:15)	2008	<input checked="" type="checkbox"/>				
	2014	<input checked="" type="checkbox"/>				
	2028	<input checked="" type="checkbox"/>				

#### Monday – Thursday PM Departures (Down) – Assuming 4% Growth per annum

From Cardiff (from Barry)		Services can be accommodated using:				Comments
		2 no. Pacer	2 no. Sprinter	4 no. Pacer	4 no. Sprinter	
15:41 (16:05)	2008	<input checked="" type="checkbox"/>				✓ Development demand <input checked="" type="checkbox"/> Total commuter demand
	2014	<input checked="" type="checkbox"/>				
	2028	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
16:41 (17:05)	2008	<input checked="" type="checkbox"/>				By 2028 Standing is forecast to reach 0.16 passenger per seat between Llantwit Major and Bridgend and 0.3 passengers per seat departing Cardiff.
	2014		<input checked="" type="checkbox"/>			
	2028		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
17:41 (18:05)	2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			This service is currently operated by a 4 car 143 Pacer unit.
	2014	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	2028	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

## Friday

### Friday PM Departures (Up) – Assuming 4% Growth per annum

From Bridgend (from Barry)		Services can be accommodated using:				Comments <input type="checkbox"/> Development demand <input checked="" type="checkbox"/> Total commuter demand
		2 no. Pacer	2 no. Sprinter	4 no. Pacer	4 no. Sprinter	
16:42 (17:15)	2008	<input checked="" type="checkbox"/>				By 2014 it is predicted there will be 0.15 standing passengers per seat for a 2 car 150 sprinter. By 2028 standing would reach 0.55 Passenger per seat unless train strengthening occurs or alternative measures put in place.
	2014		<input checked="" type="checkbox"/>			
	2028			<input checked="" type="checkbox"/>		
17:42 (18:15)	2008	<input checked="" type="checkbox"/>				By 2028 the demand for the 17:42 train from Bridgend may reach 292 passengers. Most of this increase is as a direct result of the developments.
	2014				<input checked="" type="checkbox"/>	
	2028				<input checked="" type="checkbox"/>	
18:42 (19:15)	2008	<input checked="" type="checkbox"/>				By 2014 it is predicted there will be 0.15 standing passengers per seat. By 2028 it is predicted there will be 0.3 standing passengers per seat for a 2 car 150 sprinter.
	2014		<input checked="" type="checkbox"/>			
	2028			<input checked="" type="checkbox"/>		
19:42 (20:15)	2008	<input checked="" type="checkbox"/>				
	2014		<input checked="" type="checkbox"/>			
	2028		<input checked="" type="checkbox"/>			

### Friday PM Departures (Down) – Assuming 4% Growth per annum

From Cardiff (from Barry)		Services can be accommodated using:				Comments <input type="checkbox"/> Development demand <input checked="" type="checkbox"/> Total commuter demand
		2 no. Pacer	2 no. Sprinter	4 no. Pacer	4 no. Sprinter	
15:41 (16:05)	2008	<input checked="" type="checkbox"/>				
	2014	<input checked="" type="checkbox"/>				
	2028	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
16:41 (17:05)	2008	<input checked="" type="checkbox"/>				By 2028 Standing is forecast to reach 0.16 passenger per seat between Llantwit Major and Bridgend and 0.3 passengers per seat departing Cardiff.
	2014		<input checked="" type="checkbox"/>			
	2028		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
17:41 (18:05)	2008	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			This service is currently operated by a 4 car 143 Pacer unit.
	2014	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
	2028	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
18:41 (19:05)	2008	<input checked="" type="checkbox"/>				
	2014	<input checked="" type="checkbox"/>				
	2028	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			

The following solutions could be implemented to accommodate the predicted demand for the 16:42 and 17:42 from Bridgend to Cardiff on a Friday evening:

- Use the DTC's "White Fleet" (DTC coaches that have a primary use to transport trainees to/from field training exercises) to transfer trainees directly to Bridgend, Barry or Cardiff;
- Demand management - control departure time of trainees spreading the impact across services;
- Redirect passengers to travel via Bridgend to Cardiff
- Incentives - encourage passengers to choose earlier/later trains by offering significant fares savings for less congested train times;
- Strengthen the 16:42 and 17:42 services from Bridgend to 4 car sprinter sets;
- Increase service frequency to half hourly.

The DTC could use their 'White Fleet' to transfer trainees direct to either Barry, Bridgend or Cardiff Central railway stations where the demand for onward travel will be spread across multiple services and so create less of an impact.

Over a four hour period use of 2-car Sprinter sets and one 4 car sprinter set would provide capacity for 690 seated passengers (897 with standing) of which up to 95 seats are already taken. Therefore on a Friday there is capacity for an additional 807 passengers (595 seated passengers, plus 207 standing), on the services from Llantwit Major to Cardiff Central between 16:56 and 19:56. During this time the DTC estimates that only 631 employees will

require travel from the site towards Cardiff. This demand could therefore be met by the departure of trainees being staggered.

Passengers could be redirected to travel from Llantwit Major to Cardiff Central via Bridgend. This route will add only a few minutes to journey times. However this solution may be difficult to enforce and requires a train change which may deter some passengers. Whilst an assumption has been made, that Cardiff is the main interchange point, both Arriva Trains Wales and First Great Western have direct services, connecting at Bridgend to other parts of the UK (e.g. London, Manchester).

By offering fare reductions on the 18:42 and 19:42 services from Bridgend on Friday evenings the train operators may be able to spread the demand for passengers who can be encouraged to take later services for financial incentive. However this is unsuitable for more distant journeys.

It is usually cheaper and more effective to increase capacity by providing longer trains rather than increasing frequency. Strengthening the 16:42 and 17:42 service from Bridgend to 4 car sprinter operation would be sufficient to meet demand. However, as this would require more rolling stock it is unlikely to be cost effective to be used for one train per week.

Increasing frequency to a half hourly service will require an existing service from Barry Island to be re-directed or works at Cogan Junction and Cardiff to address capacity constraints.

### Sunday

All of the Sunday peak demands on the VOG Line can be met by increasing train capacity to 4-car Pacer or Sprinter sets.

**Sunday PM Arrivals (Down) – Assuming 4% Growth per annum**

From Cardiff (from Barry)		Services can be accommodated using:				Comments ✓ Development demand    ☑ Total commuter demand
		2 no. Pacer	2 no. Sprinter	4 no. Pacer	4 no. Sprinter	
18:41 (19:05)	2008	✓☑				
	2014			✓☑		
	2028			✓☑		
20:41 (21:05)	2008	✓☑				
	2014			✓☑		
	2028			✓☑		

Strengthening services to 4 car operation on Sunday to accommodate arrivals to the site would not be an issue due to the availability of spare rolling stock on the weekend. Alternatively the following solutions could be implemented to accommodate the predicted demand for the two services from Cardiff to Bridgend on a Sunday evening:

- Use the White Fleet to transfer trainees directly from Bridgend, Barry or Cardiff;
- Redirect passengers to travel via Bridgend to Cardiff – this route will add only a few minutes to journey times;
- Increase frequency to an hourly service.

### **Conclusion**

The majority of the impact on services on the VoG line during the AM and PM peaks is due to general patronage growth and not attributable to this development. This is in part due to the tidal flow of the development creating counter commuting to the existing demand. There is minimal impact on typical commuting flows and demand generated by the development will help fill existing spare capacity. Outside of these peak hours existing 2-car sprinter sets will be sufficient to meet the predicted demand.

### **Monday to Thursday (including Friday commuting demand)**

To meet the predicted rail passenger demands generated by the development by 2028, (with allowance of 0.3 standing passengers per seat), the existing 2-car Sprinter units (except where currently operated by 4 car trains) will be adequate to accommodate the Monday to Thursday arrivals from Bridgend on the Up line and Monday to Friday departures from Cardiff on the Down line with the exception of the 07:41 AM peak down service from Cardiff to Bridgend, which due to development flows is predicted to reach 0.3 persons per seat in 2014. To avoid overcrowding this train may need to be strengthened to a 4 car Pacer or Sprinter unit before 2028 unless frequency enhancements occur in the meantime.

To meet the predicted rail passenger demands due to overall growth by 2028 (with allowance of 0.3 standing passengers per seat) the existing 2-car Sprinter units, except where currently operated by 4 car trains, will be adequate to accommodate the Monday to Thursday arrivals from Bridgend on the Up line and Monday to Friday departures from Cardiff on the Down line with the exception of the 06:42 Bridgend – Cardiff service and the 16:41 Cardiff – Bridgend service, which will require strengthening to a 4 car Pacer or Sprinter unit due to general growth in commuting demand plus the 07:41 down service identified above.

The Welsh Assembly is in principle committed to matching rail capacity to meet demand, subject to affordability and therefore the need for strengthen the 07:41 service due to development traffic and the other peak services due to general growth in commuting will be kept under review in light of demand and the timing of other proposals in the Rail Forward Programme to increase capacity on the line.

### **Friday & Sundays (Weekend Travel by Trainees)**

To meet the predicted rail passenger demands generated by the development;

- On Friday, PM departures on the Up line to Cardiff would require the additional capacity provided by 4-car Pacer and Sprinter sets for the 16:42 and 17:42 departures unless alternative provision is made.
- On Sunday, by 2014 PM trains from Cardiff on the down line would need to be strengthened to a minimum of 4 car Pacer units for the 18:41 and 20:41 departures unless alternative provision is made.

To meet the predicted rail passenger demands due to overall growth, strengthening would be required on all services identified above resulting from increased demand due to the development.

However, whilst strengthening the trains to 4-car sets for the peak hours five days a week, or at weekends, if there is spare stock may be reasonably cost effective, the associated rolling stock requirements to meet a single peak hour demand on a Friday are unlikely to be viable. It is therefore considered more practicable that the 'White Fleet' is used on a Friday to transport trainees direct to Cardiff, Barry or Bridgend railway stations and so spread the demand and reduce the impact on existing services.

Whilst the predicted Sunday PM peak demand on the Down line can be accommodated by train strengthening the main source of this demand is trainees making their journeys to the base. It is therefore recommended that the trainees which will be dropped off on a Friday evening are also collected from Cardiff, Barry or Bridgend stations using the White Fleet on a Sunday evening which would simplify organisational and operational arrangements.

## Appendix B: Bus statement

### Introduction

Whilst the facility will create additional employment opportunities and develop the skills base of the armed services, it will create additional travel demand. It is therefore important that more sustainable options are available to employees and students – many of whom will not have access to a car (either due to lack of ownership or arrival at the facility by other modes).

The nearest rail interchange is located over 3km from the main entrance; therefore bus links will play an important role in the movement of staff and students.

### Existing Position

The site is currently served by 5 bus routes. These are summarised in table 1 below.

**Table 1 – Existing Routes Serving the DTC Site**

Svc No	Route	Days of Operation	Frequency	1 <sup>st</sup>	Last	Operator
V2	Cowbridge - St Athan - Llantwit Major – via Boverton Castle, St Athan, Flemingstone, New Barn, St Mary Church & St Hillary	Mon to Sat	2 hourly	08:20	18:25	Cartel Travel (part of EST)
X5	Llantwit Major – Cardiff Via Cardiff Airport, Barry, Llandough Hospital	Sun & Bank Holiday Mon	2 hourly	07:45	22:50	Veolia Transport Cymru
X45	Cardiff City Centre to Llantwit Major via Barry. Connecting service 145 to Bridgend	Mon to Sat	Hourly	06:10	19:36	EST Bus Ltd
X91	LLANTWIT MAJOR - CARDIFF (Limited Stop Via St. Athan, Rhoose, Wenvoe, Ely Link Road, Wellington Street	Mon to Sat	Hourly	07:01	19:06	Cardiff Bus
X91	LLANTWIT MAJOR - CARDIFF (Limited Stop Via St. Athan, Rhoose, Wenvoe, Ely Link Road, Wellington Street	Sun	2 Hourly	08:30	19:15	Cardiff Bus
95	Llantwit Major to Cardiff	Mon to Sat	Hourly	18:58	22:53	Veolia Transport Cymru

Current service patterns provide access from a range of destinations, with operation between approximately 06:00 and 19:00. This provides access to the facility during the main hours of operation – particularly those staff originating from the main population centres of Barry, Bridgend and Cardiff.

Existing provision has a relatively low frequency, which results in a low hourly capacity and requires users to plan their journey in advance – often requiring early arrival at the stop to ensure they make their connection.

## Existing Patronage

Boarding and alighting surveys were undertaken on the 2<sup>nd</sup> and 4<sup>th</sup> March 2009 to determine the current use patterns of the X91 and X45 services. The results are summarised in table 2.

**Table 2 – Boarding and Alighting Survey Results**

Service number	start location	End location	Departure time	Mon	Wed	Ave	Max
X45	Llantwit interchange Major	Cardiff Bus Station	06:10	12	19	16	12
X45	Llantwit interchange Major	Cardiff Bus Station	07:00	6	9	8	6
X45	Llantwit interchange Major	Cardiff Bus Station	07:55	38	38	38	29
X45	Llantwit interchange Major	Cardiff Bus Station	09:55	34	30	32	13
X45	Llantwit interchange Major	Cardiff Bus Station	10:55	47	48	48	31
X45	Llantwit interchange Major	Cardiff Bus Station	11:55	28	37	33	15

Service number	start location	End location	Departure time	Mon	Wed	Ave	Max
X91	Llantwit interchange Major	Cardiff Bus Station	06:45	21	23	22	22
X91	Llantwit interchange Major	Cardiff Bus Station	07:20	32	25	29	28
X91	Llantwit interchange Major	Cardiff Bus Station	09:04	32	32	32	29
X91	Llantwit interchange Major	Cardiff Bus Station	09:59	16	24	20	23
X91	Llantwit interchange Major	Cardiff Bus Station	11:04	N/a*	28	28	22
X91	Llantwit interchange Major	Cardiff Bus Station	12:04	N/a	30	30	19

Service number	start location	End location	Departure time	Mon	Wed	Ave	Max
X45	Cardiff Bus Station	Llantwit interchange Major	07:25	38	44	41	21
X45	Cardiff Bus Station	Llantwit interchange Major	08:25	17	23	20	13
X45	Cardiff Bus Station	Llantwit interchange Major	09:25	25	38	32	13
X45	Cardiff Bus Station	Llantwit interchange Major	11:25	19	34	27	12

X45	Cardiff Bus Station	Llantwit interchange	Major	12:25	46	36	41	26
X45	Cardiff Bus Station	Llantwit interchange	Major	13:25	20	36	28	20

Service number	start location	End location		Departure time	Mon	Wed	Ave	Max
X91	Cardiff Bus Station	Llantwit interchange	Major	08:00	48	38	43	36
X91	Cardiff Bus Station	Llantwit interchange	Major	08:57	11	8	10	11
X91	Cardiff Bus Station	Llantwit interchange	Major	11:02	35	21	28	29
X91	Cardiff Bus Station	Llantwit interchange	Major	12:02	14	7	11	10
X91	Cardiff Bus Station	Llantwit interchange	Major	13:02	N/a	15	15	13
X91	Cardiff Bus Station	Llantwit interchange	Major	14:02	N/a	27	27	23

\*Survey not completed

All services were operated by single deck vehicles, which have a seating capacity of between 39 and 44 seats, with 12 to 18 standees. As such, existing services operate within current demand levels. It was evident there was a significant variation in the maximum occupancy, ranging from 6 to 36 passengers. The age profile of users was also surveyed and indicated a significant number of off peak users held a concessionary pass, which provided them with free travel.

The main shortcoming of the current provision is the ability to meet the peak demand on a Friday evening, when there is likely to be a high demand by personnel returning to home for the weekend.

### Consultation with Incumbent Operators

An initial meeting was held with incumbent bus operators and the Vale of Glamorgan Council to consider the implications of the development on the local bus network and opportunities to enhance the public services. The possibility of utilising the 'white fleet' to supplement existing public services was also discussed.

Whilst the operators appreciated there would be a significant increase in the potential demand for bus travel, their main concerns were:

- Extreme peak demand on a Friday evening which could not be accommodated within the capacity of the existing fleet
- Uncertainty regarding the origins and destinations of students and staff – in particular the changing patterns as students complete training.

In order to accommodate the additional demand, bus operators would be required to purchase additional vehicles; however they felt it would not be possible to recoup their investment on a commercial basis, given the limited operating window of the

peak demand and relatively low existing levels of off peak demand which are currently met within their existing fleet capacity.

Operators would also require greater certainty regarding the origins of staff and students; however it is not possible to provide this information at this stage of the development. There is likely to be a high variability in origins given the variations in course lengths. Bus companies are required to provide 56 days notice of a change in route; therefore they are not able to easily accommodate such variations in demand.

It was agreed that links to the rail station are likely to be of primary importance; therefore primary consideration should be given to enhancing rail links.

At this stage it was agreed that consultation would continue with operators as the project develops; however their involvement is likely to be through the supply of contracted services, as they do not perceive a commercial opportunity from predicted travel patterns.

### Existing Rail Integration Opportunities

Many students are likely to originate a considerable distance from the facility; whilst many support staff are likely to originate from rail served areas; therefore rail links are likely to be extensively utilised. The nearest rail station is Llantwit Major Rail Station, which is located over 3km from the proposed facility. It is therefore necessary to provide reliable bus links between the facility and the rail network.

Existing routes provide good physical links to Llantwit Major Rail Station; however service timings are not fully integrated. This is illustrated in table 3, which summarises the interchange time between connecting bus and rail services.

**Table 3 – Interchange Time Penalty Between Arrival Modes at Llantwit Major Rail Station.**

Journey	Mins past the hour		Interchange wait
	Bus Arrives	Train Departs	
From St Athan to Cardiff	50	56	06
From St Athan to Bridgend	04	22	18
	Train Arrives	Bus Departs	
From Cardiff to St Athan	22	55	33
From Bridgend to St Athan	56	04*	08

\*daytime arrival time – varies during peak

Whilst the timings offer some integration opportunities, passengers travelling from Cardiff to St Athan would face a wait time of 33 minutes, which would not be attractive. In addition, existing bus services must comply with the reliability requirements of the Traffic Commissioner, which require services to arrive ‘no more than one minute early or five minutes later’ than the published time. As a result buses would be unable to wait in order to meet a late running train.

Currently there are no opportunities to purchase integrated bus and rail tickets, with Llantwit Major Rail Station not included in the national ‘Plus Bus Scheme’. Whilst this scheme provides a bus add on for passengers whose journey originates on the rail network, it does not provide this facility for those originating from St Athan.

It would therefore be necessary to enhance bus and rail integration. Whilst it would be possible to enhance existing services, there are a number of concerns. There are summarised in table 4

**Table 4 – Comparison of Bus/Rail Integration Options**

	<b>Advantages</b>	<b>Disadvantage</b>
<b>Rail/Existing Bus</b>	<ul style="list-style-type: none"> <li>• Uses existing services - less risk of abstraction from local network</li> <li>• Possibility of Integrated tickets (subject to operator negotiation)</li> <li>• Most are commercial services; therefore low/ no subsidy requirement.</li> </ul>	<ul style="list-style-type: none"> <li>• Extended interchange time penalty</li> <li>• May be required to buy two tickets (subject to operator negotiation)</li> <li>• Limited control over service (if commercial service changes, may eliminate bus link)</li> <li>• Cannot guarantee connection with rail (particularly if delays to rail service)</li> <li>• Some existing bus services do not operate on a 'clockface' basis with variability in arrival time.</li> </ul>
<b>Dedicated Rail feeder</b>	<ul style="list-style-type: none"> <li>• Guaranteed connection with rail service/ability to compensate for let running of rail service.</li> <li>• Integrated tickets available</li> <li>• Can be integrated within the National Rail timetable.</li> <li>• Can only be used by rail passengers to minimise abstraction from local network</li> <li>• Contracted service – greater element of control over service availability.</li> <li>• Option to utilise special livery on buses to advertise links with rail service.</li> <li>• Services call directly to Station</li> <li>• Provide a physical presence at the station.</li> </ul>	<ul style="list-style-type: none"> <li>• Possible abstraction from comparable bus services (X45, X91), which may reduce their commercial viability</li> <li>• High level of subsidy required (most are run on tendered basis)</li> <li>• All Wales pass not generally valid, as feeder bus is essentially an extension of rail service.</li> </ul>

	<ul style="list-style-type: none"> <li>• Open to the public provided they are using the rail network</li> </ul>	
--	-----------------------------------------------------------------------------------------------------------------	--

It was evident that the provision of a dedicated feeder offered a number of service advantages over use of existing services. An initial assessment was undertaken to determine the requirements for a dedicated rail feeder bus.

Current rail timetable patterns at Llantwit Major result in call patterns of

From Cardiff	'22 past the hour
From Bridgend	'56 past the hour

As a result there is a maximum operating window of 26 minutes between train arrivals. In practise, however, there would also be a requirement to schedule addition interchange time for the bus service to allow for the following:

- Early/late arrival of the train service
- Sufficient time for users with limited mobility to interchange
- Boarding/alighting of bus passengers.

In view of these factors the feeder bus would be required to be at the station 5 minutes before and after the scheduled train arrival. These requirements effectively reduce the available running time between the station and facility to 16 minutes.

In order to determine the feasibility of a single vehicle providing the service, a trial run was undertaken on 5<sup>th</sup> March 2009. This was undertaken at 5pm to represent the possible peak traffic conditions. The following time requirements were identified.

From	To	Time
Llantwit Station	Northgate	8 mins
Llantwit Station	Current Main gate	10 mins

A further run around the perimeter was also undertaken, with a total time of 9 minutes to complete a full circuit. It should however be noted that the journey time for a dedicated service would be less than currently available due to the following factors:

- Feeder bus would be non-stop service
- Route would utilise the new by pass, which is quicker
- Possibility to incorporate bus priority into signal heads at the junction of the B4265 and Llanmaes Road.

Accordingly it would be possible for a single bus to meet all rail arrivals and departures to provide a dedicated point-to-point service which acts as extension of the rail service - without the infrastructure and service implications of providing a new station or spur.

#### Vehicle Requirements

The vehicle must provide sufficient capacity to serve commuter generated peaks. It is therefore suggested that a 25 seat capacity vehicle is provided. To ensure access for mobility-impaired persons, a low floor DDA compliant vehicle would be required. This

vehicle should also have a bespoke livery to identify the service as being integrated with the railway. The use of a Euro IV compliant vehicle would also reduce environmental impact.

### **Procurement**

The type of service would be consistent with those provided for the opening of the Ebbw Valley Line. Whilst regularly utilised, the patronage levels do not facilitate commercial operation. Given the requirement for a bespoke vehicle, which is fully DDA compliant, the cost of existing tenders is in the range of £80,000 to £90,000 per annum. This provides service coverage Mon to Sat, between 06:00 to 19:00. Given the DTC service may also be required to operate later and on Sundays, a budgetary allowance of £125,000 would be prudent. The lead-time for procurement and implementation of approximately 6-12 months.

### **Infrastructure Considerations**

Bus stops are often a potential users first point of contact with the bus network and as such, provide an indication of the level of service that can be expected. It is therefore imperative that suitable at-stop infrastructure is provided. Particular considerations being:

- Ease of access on and off vehicles – particularly for less mobile users
- Comfort whilst waiting
- Provision of service information

The importance of these attributes is highlighted in the Vale of Glamorgan UDP Supplementary Planning Guidance on Sustainable Development, which states:

*‘(iii) Public Transport*

*Adequate access for bus services and service vehicle should be provided.*

*Passenger facilities, such as bus shelters and timetable information should be provided, in consultation with the council.*

*Convenient access for pedestrians should be provided with bus stops located no more than 400m from residential properties’*

It is proposed that buses continue on the section of Eglwys Brewis Road that remains open and will continue to serve all existing bus stops, including the two bus stops in Eglwys Brewis. Additional bus stops will also be provided near the main entrances the development – in particular a new stop to accommodate the dedicated rail link at the North Gate.

An audit of existing bus stops has been undertaken; whilst the majority of the stops have a good level of provision, some stops do not have the full range of features which meet the aspirations of the Vale of Glamorgan Local Authority Bus Strategy. It is therefore proposed that all bus in the immediate vicinity of the facility brought up to a consistent standard, featuring:

- Raised boarding platform of 180mm height;
- Glazed shelter featuring internal illumination and perch seat;
- Bus Stop flag, displaying stop name, service numbers and travelling telephone and text enquiry numbers; and
- Timetable case containing service information and taxi contact details.

Footpath links between existing and proposed bus stops the facility will be also be provided to facilitate bus use.

### **Summary of Recommendations**

The following recommendations for bus provision are made

- Discussions continue with incumbent operators as the development progresses to identify future options to enhance the network
- Utilise the 'white fleet' for the transport of military personnel
- Provide a dedicated rail feeder bus service to link the facility and Llantwit Major Rail Station
- Enhance all bus stops in the immediate vicinity of the base to a common standard consistent with Regional aspirations

## Appendix C: Accident summary

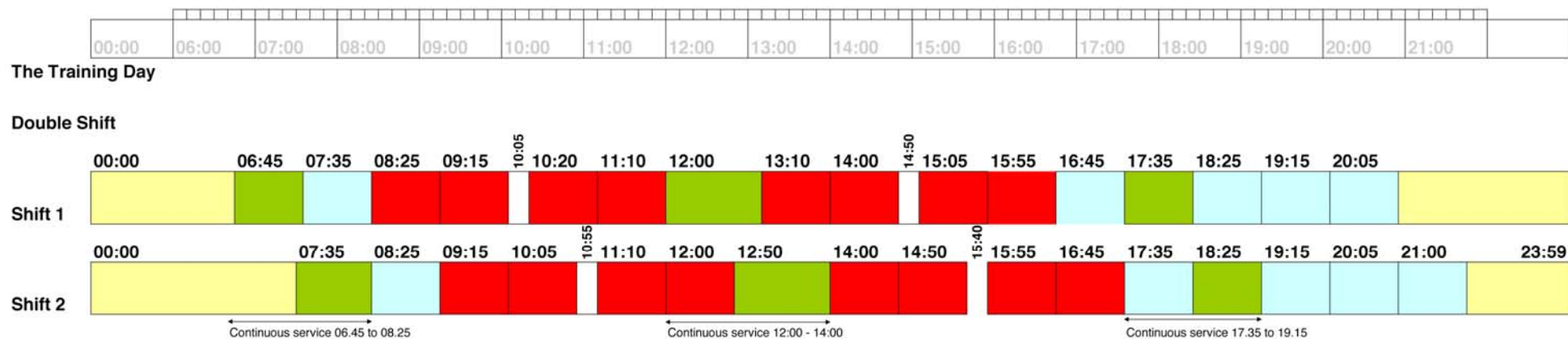
1. Waycock Roundabout (9 accidents) – all accidents were caused by driver error.
2. A4226 outside Cwm Ciddy Tavern (Motel) and Ty-newydd Farm (7 accidents) – all accidents were caused by driver error. Six collisions occurred because of vehicles using motel and farm access points.
3. A4226 Port Road adjacent to lay-by (5 accidents – 2 serious) – all accidents were caused by driver error. Both serious accidents were caused by vehicles travelling in the wrong carriageway, one was overtaking whilst the other was dazzled by the sun. At this point the road appears very wide due a lay-by on the westbound carriageway which may tempt reckless behaviour.
4. A4226 outside farm entrance (5 accidents) – four of the accidents were caused by drivers failing to stop in time and so shunting the vehicle in front, possibly as a result of vehicles turning into farm access.
5. A4226/B4265 roundabout (4 accidents) - all accidents were caused by driver error but with no pattern. One driver exceeding the speed limit took a bend on the wrong side of the road, one driver was dazzled by the sun, one under-age driver had taken a vehicle without consent and one failed to stop at the roundabout.
6. B4265/Fonmon Road junction (4 accidents – 1 fatal) – all accidents were caused by driver error. Three drivers failed to stop their vehicles in time. One fatal collision was due to the driver failing to judge the speed of a motorbike.
7. B4265 T-junction off to East Aberthaw (8 accidents) – all accidents were caused by driver error, six involving right turn manoeuvres and one young driver with two child passengers lost control of the vehicle.
8. T-junction off B4265 to Llancadle (5 accidents – 1 fatal) – three accidents were caused by drivers failing to stop, one driver lost control of the vehicle and one fatal injury was caused by a pedestrian running across the road.
9. B4265/Gileston Road cross-roads (7 accidents) – all accidents were caused by driver error involving right turn manoeuvres. The proximity of this junction to the development will result in the need for it to accommodate an increase in traffic flow.
10. Signalised cross-roads at Boverton (8 accidents) – six accidents were caused by driver error associated with signalised movements and two accidents resulted in pedestrians being struck, one of which was fatal.
11. B4265/Llanmaes Road signalised cross-roads (5 accidents) – all accidents were caused by driver error involving right turn manoeuvres.
12. B4270/minor road T-junction (4 accidents) – all accidents were caused by driver error.

13. B4270/minor road T-junction leading to business park road (4 accidents) – three accidents caused by driver error, one skidding and another losing control. Fourth accident caused by vehicle fault, again driver lost control of the vehicle.
14. B4270/minor road T-junction leading to business park (3 accidents) all accidents caused by driver error.
15. A48/B4268 staggered T-junctions (4 accidents) - all accidents were caused by driver error.
16. A48/A4226 staggered T-junctions (11 accidents) – all accidents were caused by driver error.
17. St. Athan Road (3 accidents) – all accidents were caused by driver error. This narrow single carriage road is unsuitable for heavy traffic flows.
18. A4222 (10 accidents) – seven accidents involved a pedestrian, six of which results in a pedestrian injury, one accident was a cyclist error and one accident was caused by a driver having a blackout/falling asleep. This is a very busy section of the A4222 in Cowbridge centre with several junctions and pedestrian movements.
19. B4270/Church Road cross-roads (3 accidents) – all accidents were partly due to visual obstructions at the junction.
20. Cowbridge Road (4 accidents) – all accidents were caused by driver error but with no particular pattern.

**Appendix D: Forecast cumulative cost for providing a Travel Plan Co-ordinator**

Year	Month	Cumulative Forecast Cost	Days per month	Cost per day	Cost per month
2014	Jan	£965.00	2.5	£386.00	£965.00
	Feb	£1,930.00	2.5	£386.00	£965.00
	Mar	£2,895.00	2.5	£386.00	£965.00
	Apr	£3,860.00	2.5	£386.00	£965.00
	May	£4,825.00	2.5	£386.00	£965.00
	Jun	£5,790.00	2.5	£386.00	£965.00
	Jul	£9,650.00	10	£386.00	£3,860.00
	Aug	£13,510.00	10	£386.00	£3,860.00
	Sep	£17,370.00	10	£386.00	£3,860.00
	Oct	£21,230.00	10	£386.00	£3,860.00
	Nov	£25,090.00	10	£386.00	£3,860.00
	Dec	£28,950.00	10	£386.00	£3,860.00
2015	Jan	£32,910.00	10	£396.00	£3,960.00
	Feb	£36,870.00	10	£396.00	£3,960.00
	Mar	£40,830.00	10	£396.00	£3,960.00
	Apr	£44,790.00	10	£396.00	£3,960.00
	May	£48,750.00	10	£396.00	£3,960.00
	Jun	£49,938.00	3	£396.00	£1,188.00
	Jul	£51,126.00	3	£396.00	£1,188.00
	Aug	£52,314.00	3	£396.00	£1,188.00
	Sep	£53,502.00	3	£396.00	£1,188.00
	Oct	£54,690.00	3	£396.00	£1,188.00
	Nov	£55,878.00	3	£396.00	£1,188.00
	Dec	£57,066.00	3	£396.00	£1,188.00
2016	Jan	£58,081.00	2.5	£406.00	£1,015.00
	Feb	£59,096.00	2.5	£406.00	£1,015.00
	Mar	£60,111.00	2.5	£406.00	£1,015.00
	Apr	£61,126.00	2.5	£406.00	£1,015.00
	May	£62,141.00	2.5	£406.00	£1,015.00
	Jun	£63,156.00	2.5	£406.00	£1,015.00
	Jul	£64,171.00	2.5	£406.00	£1,015.00
	Aug	£65,186.00	2.5	£406.00	£1,015.00
	Sep	£65,795.00	1.5	£406.00	£609.00
	Oct	£66,404.00	1.5	£406.00	£609.00
	Nov	£67,013.00	1.5	£406.00	£609.00
	Dec	£67,622.00	1.5	£406.00	£609.00
2017	Jan	£68,246.00	1.5	£416.00	£624.00
	Feb	£68,870.00	1.5	£416.00	£624.00
	Mar	£69,494.00	1.5	£416.00	£624.00
	Apr	£70,118.00	1.5	£416.00	£624.00
	May	£70,742.00	1.5	£416.00	£624.00
	Jun	£71,366.00	1.5	£416.00	£624.00
	Jul	£71,990.00	1.5	£416.00	£624.00
	Aug	£72,614.00	1.5	£416.00	£624.00
	Sep	£73,238.00	1.5	£416.00	£624.00
	Oct	£73,862.00	1.5	£416.00	£624.00
	Nov	£74,486.00	1.5	£416.00	£624.00
	Dec	£75,110.00	1.5	£416.00	£624.00
2018	Jan	£75,749.00	1.5	£426.00	£639.00
	Feb	£76,388.00	1.5	£426.00	£639.00
	Mar	£77,027.00	1.5	£426.00	£639.00
	Apr	£77,666.00	1.5	£426.00	£639.00
	May	£78,305.00	1.5	£426.00	£639.00
	Jun	£78,944.00	1.5	£426.00	£639.00
	Jul	£80,009.00	2.5	£426.00	£1,065.00
	Aug	£81,074.00	2.5	£426.00	£1,065.00
	Sep	£82,139.00	2.5	£426.00	£1,065.00
	Oct	£83,204.00	2.5	£426.00	£1,065.00
	Nov	£84,269.00	2.5	£426.00	£1,065.00
	Dec	£85,334.00	2.5	£426.00	£1,065.00

## Appendix E: Student shift patterns



## Appendix F: Costs associated with each Travel Plan measure

The table below illustrates what DTC and ABP will each invest in soft Travel Planning measures. This appendix does not reflect the cost of providing internal pool cycles (C5) or the cost associated with providing a shuttle service from Llantwit Major rail station to the main gate (PT5).

Measure	Activity	Years 1 & 2	Years 3, 4 & 5
W1 & W6	Posters, emails, t-shirts, refreshments, exhibitions	£1,000	£500
W2	Staff time – part of TPC's job		
W3	Signage		
W4	Secure, promote and distribute	£2,000, year 1 only – to be reviewed in subsequent years	To be reviewed
W5	Storage / changing facilities		
C1 & C2	Posters, emails, t-shirts, Bikers Breakfasts, exhibitions	£1,000	£500
C3	Staff time – part of TPC's job		
C4	Cycle storage		
C5	See Appendix ?? See note below	Lowest : £35k Highest: £12K	Cycle provision to be reviewed constantly
C6	Staff time – part of TPC's job		
B1	General promotional and awareness raising activity	£1,000	£500
B2	Can be obtained free from Traveline Cymru		
B3	Staff time – part of TPC's job		
B4	Staff time – part of TPC's job		
B5	Shuttle bus		
CS1	Set up private car share group	£3,000 year 1	Annual licence £1,000
CS2	Taxi / public transport fare home in the event of an emergency	£500	£500
CS3	Marking for guaranteed car share spaces		
CS4	Posters, emails, Meet your car share partners coffee mornings	£1,000	£500
O1	Prepare, compile, produce & distribute Welcome Packs	£1,000	£1,000
O2	Video conferencing / tele-conferencing equipment		
O3	No real cost		
O4	Staff time – part of TPC's job		
O5	As necessary		
	<b>Total</b>	<b>£10,500 per year</b>	<b>£4,500 per year</b>

## Appendix G: Sample travel to work survey

### Section 1 Personal Information

1. Name \_\_\_\_\_
2. Your home postcode \_\_\_\_\_
3. What hours to you normally work? \_\_\_\_\_
4. If you got up one day and found that your car couldn't start, how would you get to work? **Please tick one**

I wouldn't go, I'd phone up and book the day off	<input type="checkbox"/>	I'd ask a work colleague to give me a lift	<input type="checkbox"/>
I'd work from home	<input type="checkbox"/>	I'd walk	<input type="checkbox"/>
I'd call a breakdown company and go to work later	<input type="checkbox"/>	I'd use another car	<input type="checkbox"/>
I'd ride my motorcycle/scooter	<input type="checkbox"/>	I'd use public transport	<input type="checkbox"/>
I'd ask a friend/relative to give me a lift	<input type="checkbox"/>	I'd take a taxi	<input type="checkbox"/>
I'd cycle	<input type="checkbox"/>	Other	<input type="checkbox"/>

### Section 2 Current travel patterns

5. How do you normally travel to work? **Please tick one**

By car, as a passenger	<input type="checkbox"/>	By walking	<input type="checkbox"/>
By car, as a driver	<input type="checkbox"/>	By cycling	<input type="checkbox"/>
By train	<input type="checkbox"/>	By public transport	<input type="checkbox"/>

6. On average how long does it take you to travel to work? **Please tick one**

Up to 10 minutes	<input type="checkbox"/>	Between 30 and 45 minutes	<input type="checkbox"/>
Between 10 and 20 minutes	<input type="checkbox"/>	Between 45 minutes and an hour	<input type="checkbox"/>
Between 20 and 30 minutes	<input type="checkbox"/>	Over an hour	<input type="checkbox"/>

7. On average how far do you travel to get to work? **Please tick one**

Up to 1 mile	<input type="checkbox"/>	Between 4 and 10 miles	<input type="checkbox"/>
Between 1 and 2 miles	<input type="checkbox"/>	Between 10 and 20 miles	<input type="checkbox"/>
Between 2 and 4 miles	<input type="checkbox"/>	Over 20 miles	<input type="checkbox"/>

8. In an ideal world would you like to travel in another way? YES NO

9. In an ideal world, how would you prefer to travel to work? **Please tick one**

By car, as a passenger	<input type="checkbox"/>	By walking	<input type="checkbox"/>
By car, as a driver	<input type="checkbox"/>	By cycling	<input type="checkbox"/>
By train	<input type="checkbox"/>	By public transport	<input type="checkbox"/>

**Section 3 Incentives to change travel patterns**

10. Would you be willing to car share? YES NO ALREADY DO

11. What would encourage you to car share, if you already car share what would encourage you to car share on a more regular basis? **Please tick two**

Help finding a suitable car share partner		Preferential parking spaces	
A guaranteed lift home		More information on the savings I can make	
A financial incentive		Nothing	

12. What would encourage you to use public transport, if you already use public transport, what would encourage you to use it more often? **Please tick two**

More frequent bus services		Discounted tickets	
More direct bus services		Interest free loan to buy a season ticket	
Improved public transport information		Nothing	

13. Do you live on a bus route that can take you directly to work? YES NO

14. What would encourage you to cycle to work, if you already cycle, what would encourage you to do so on a more regular basis? **Please tick two**

Safer routes from home to work		More people to cycle with	
Adequate shower and changing facilities		Interest free loans for cycle purchase	
Secure cycle parking		Nothing	
Discounts on cycle equipment			

15. What would encourage you to walk to work, if you already walk, what would encourage you to do so on a more regular basis? **Please tick two**

Safer routes from home to work		Information on the health benefits	
Adequate shower and changing facilities		Safer places to cross the road	
More people to walk with		Nothing	

**THANK YOU**