

**PROPOSED RESIDENTIAL RE-DEVELOPMENT  
AT  
PENARTH HEIGHTS,  
PENARTH  
BY CREST NICHOLSON (SOUTH WEST) LTD  
TRANSPORTATION ASSESSMENT  
THIRD ISSUE  
AUGUST 2005  
VOLUME I - TEXT**

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COLE EASDON CONSULTANTS (CEC)

**DOCUMENT ISSUE RECORD**

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**Checked and Approved:** J. A. Easdon BSc CEng MICE MIHT

**Signed:** ..... **Date:** .....

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## 1.0 INTRODUCTION

### **Background**

- 1.1 Cole Easdon Consultants have been instructed by Crest Nicholson (South West) Limited to prepare a Transportation Assessment with respect to the proposed residential re-development at Penarth Heights, Penarth. The development proposal presently comprises of approximately 450 residential units, a proportion of which will be affordable housing. Refer to Plan 1 (Site Location Plan) and Architect's Plan L101 A, Appendix 8. The layout is subject to change following consultation with Council Officers and stakeholders. However, the maximum number of proposed residential units will remain unaffected.
- 1.2 The study considers the traffic and transportation issues associated with the proposal together with the potential traffic impact on the surrounding local highway network. It also proposes a number of priorities in order to stimulate further discussion. It has been prepared following detailed discussions and meetings with officers from Vale of Glamorgan Council, which is both the planning and highway authority for the area.
- 1.3 The re-development site is located on the northern side of Penarth town centre, and is served by the adjacent existing highway network. The proposed re-development would replace the existing 'unoccupied' development of some 329 residential units known as 'Billybanks': therefore the site can be defined as brownfield. It is understood at the time of writing that there are presently only some 12 remaining tenants living at 'Billybanks'. All other tenants have been re-housed. The unoccupied units are derelict and have been boarded up for some time. The site area is some 6.7 hectares (16.6 acres). In addition, the developer would also be responsible for improvement to areas known as Plassey Square, The Bowl, Paget Road play area and Arcot Street Triangle.

- 1.4 Immediately north of the proposed re-development site is a rock escarpment, below which is the highway known as Terra Nova Way and further new residential development which extends around the Portway Marina and along the southern edge of the River Ely estuary. This latter estuary and the River Taff combine to form the 'Penarth Flats'. The Cardiff Bay Barrage forms a man-made barrier between the Penarth Flats and the mouth of the River Severn and this element of infrastructure has enhanced this area to encourage new waterfront development. The Barrage also generates pedestrian and cycle use for recreational purposes. Access via the Barrage through Cardiff docks and beyond to the city centre is presently not permitted, although it is understood that this is an aspiration of the local councils for the future.
- 1.5 To the south and east of the proposed re-development site lie Paget Road, Harbour View Road, Plassey Square, and Plassey Street. It should be noted that existing terraced housing fronting Plassey Square, High Street, Arcot Street etc will remain and do not form part of the re-development scheme. Refer to Plan 1 and Architect's Plan L101 A, Appendix 8 for precise site boundary.
- 1.6 The re-development site is approximately 700m (0.4 miles) northwest of Penarth town centre (from centre of site to Town Centre Roundabout). Shops, schools, leisure and employment facilities are all conveniently located within Penarth and closely relate to the re-development site. Other nearby centres are Cardiff to the north, and Dinas Powys and Barry to the southwest. Cardiff ('Cardiff Central' Train Station) is located only some 3.5km to the north of the proposed re-development site.
- 1.7 Existing vehicular access to the site is permitted from the adjacent highway network. Future vehicular access to the development will be provided off a number of adjacent highways, and these will include:

1.7 Contd..

- § a new access arrangement at the junction of Royal Close with Paget Road/Arcot Street / High Street to the east;
- § a new/improved access off Harbour View Road to the south;
- § both of these to be worked up as part of the planning application (refer to Architects Plan SK151, Appendix 8).

**Need for Study**

1.8 This Transportation Assessment is required in support of a detailed Planning Application by the Client, Crest Nicholson (South West) Limited. The Study is based upon the recommendations outlined in the Institution of Highways & Transportation document titled '*Guidelines for Traffic Impact Assessment*'. The Guidelines recommend that a Transportation Appraisal should normally be produced where one or other of the following thresholds are exceeded:

- § Traffic to and from the development exceeds 10% of the existing two-way traffic flow on the *adjoining highway*;
- § Traffic to and from the development exceeds 5% of the existing two-way traffic flow on the *adjoining highway*, where traffic congestion exists or will exist within the assessment period or in sensitive locations.

1.9 *Planning Policy Guidance (PPG13)* relating to transport issues, states that for small schemes, the Transportation Appraisal should simply outline transport aspects of the application. For major proposals such as this, the assessment '*should illustrate the accessibility to the site by all modes and the likely modal split of journeys to and from the site. It should also give details of proposed measures to improve access by public transport, walking and cycling, to reduce the need for parking associated with the proposal and to mitigate transport impacts.*'

- 1.10 This Assessment therefore addresses relevant transportation issues relating to the proposed residential re-development in line with both present planning policies and central government guidance.
- 1.11 It is important to recognise that the detailed work undertaken as part of this Transportation Assessment will continue to evolve as the development scheme is progressed, and may in due course lead to a review and refinement, to ensure that the objectives for the development will be achieved.

### **Consultations**

- 1.12 To prepare this assessment we have met and discussed the re-development proposal with officers representing the local highway authority; The Vale of Glamorgan Council. The latter support the allocation of the site for residential re-development and have requested that the following matters are discussed within the study:
- § *Outline of the development proposal and corresponding assumptions made with regard to the likely associated trip generation (TRICS), assignment, & distribution;*
  - § *Background growth scenarios relating to five years after completion of construction (Year 2017);*
  - § *Potential impact of likely generated traffic on adjacent highway network including the following highway junctions:*
    - § *Tesco Roundabout (Windsor Road); and*
    - § *Plassey Street Roundabout.*
  - § *Accessibility of the re-development site to employment opportunities, Penarth Town centre, schools, adjacent Tesco supermarket, and public transport.*
  - § *Possible improvements to existing footway/cycleway network and public transport facilities; and,*

1.12 Contd..

§ *Assessment of Road Personal Injury Accident Data.*

1.13 Crest Nicholson have already undertaken public consultation exercises on the proposals at Penarth Heights. This has included a public exhibition held on Friday 3<sup>rd</sup> and Saturday 4<sup>th</sup> June 2005 at the Paget Rooms in Penarth together with the formation of a 'Penarth Heights Community Consultative Group'. This group includes representatives from the local community and Crest Nicholson, together with Officers from VOGC and Penarth Town Council. It is intended that the group will meet on a regular basis in order to discuss arising matters regarding the proposed development as it progresses through its various stages. The Public Exhibition Report is contained in Appendix 6, and its traffic-related comments are addressed within this Assessment.

**Scope of Study**

1.14 This Assessment is divided into the following sections:

- § Section 2 discusses the re-development proposals in terms of local planning policies and national guidance;
- § Section 3 describes the existing highway conditions;
- § Section 4 considers sustainability and accessibility issues;
- § Section 5 discusses the need for a Travel Plan for the development and how the provision of car parking may effect modal choice;
- § Section 6 identifies the methodology adopted to predict vehicle trip generation;
- § Section 7 discusses the predicted vehicle trip distribution and assignment along the network;
- § Section 8 discusses the predicted traffic impact along the local network;
- § Section 9 analyses existing road traffic accident data;

1.14 Contd..

- § Section 10 summarises with discussion and conclusions. It also provides a summary of '**Priorities For Improvement**', i.e. where, in our opinion, developer contributions would be best spent.

## **2.0 DEVELOPMENT PROPOSALS & TRANSPORTATION POLICY CONSIDERATIONS**

- 2.1 The development proposal is to comprise of a maximum of some 450 residential units, of which 20% will relate to affordable housing. The latter units will be designed to be undistinguishable from the main development.
- 2.2 The residential scheme consists of approximately 65% housing and 35% apartments. It will be contemporary in design, but will reflect the local sense of place (including integration with existing Victorian properties), incorporating stone, neutral bricks and timber-clad elevations. An Eco-Home 'Good' rating is to be provided for all residential units.
- 2.3 The developer will also be responsible for the improvement of adjacent areas known as Plassey Square, The Bowl and Arcot Street Triangle, together with the upgrade of the Paget Road play area. Public Art elements will also be included within Plassey Square, The Bowl, the Paget Road play area, and the 'zigzag' footpath that leads down the cliff face towards Penarth Marina.
- 2.4 Consultation has already taken place between the Project Team and the 'Secured by Design' Architectural Liaison Officer, to ensure that SbD accreditation is achieved for all of the residential units.
- 2.5 It is understood that the Vale of Glamorgan presently own the land parcel upon which these units will be constructed. Whilst the land parcel is not allocated within the *Vale of Glamorgan Unitary Development Plan*, it does lie within the existing settlement boundary of Penarth and would therefore be 'carried forward' by VOGC for residential development subject to satisfactory consideration of specific key issues; including those considered within this Transportation Assessment.

- **Local Planning Policy**

2.6 The Vale of Glamorgan Unitary Development Plan (Deposit Draft 1998) states:

*"The Council is committed to make land available for an additional 5,800 new dwellings during the Plan period. The majority of this dwelling requirement will be accommodated within and adjoining the existing urban areas of the waterfront strip."*

*Paragraph 4.1.3*

And...

*"The Council's strategy of reclamation and redevelopment of existing vacant or derelict land in urban areas is focused upon the proposed comprehensive redevelopment of sites at Barry Waterfront, Penarth Haven and Rhooose Point. These sites will provide for new house building throughout the Plan period."*

*Paragraph 4.1.4*

And...

***POLICY HOUS9 - RESIDENTIAL DEVELOPMENT WITHIN SETTLEMENT BOUNDARIES***

*Within the residential settlement boundaries as defined in Policy HOUS 8 (which includes Penarth), proposals for new housing will be permitted if:*

- (i) the scale and form of the proposed development is in keeping with surrounding uses;*
- (ii) the proposal has no unacceptable effect on the amenity and character of existing or neighbouring environments by virtue of noise, traffic congestion, exacerbation of parking problems or visual intrusion;*
- (iii) the proposal does not have an unacceptable impact on good quality agricultural land (Grades 1,2 and 3A), on areas of attractive landscape or*



2.6 Contd..

*high quality townscape or on areas of historical, archaeological or ecological importance;*

- (iv) *open space is provided in accordance with the council's approved standards;*
- (v) *the provision of car parking and amenity space is in accordance with the council's approved guidelines;*
- (vi) *adequate community and utility services exist, are reasonably accessible or can be readily and economically provided.*

2.7 Clearly, the above extracts from the *UDP* are applicable to the proposed re-development at Penarth Heights. Specifically with reference to Policy *HOUS9* above it can be seen that the proposal is able to achieve the stated requirements.

- **National Planning Policy**

2.8 As Wales is a devolved administration, *Planning Policy Guidance Notes* such as *PPG13* do not have the same weight as in England. However, some weight may be given to the principles contained in these guidance notes especially with respect to accessibility and sustainability. The Welsh Assembly produces its own policies and documents and Welsh planning policy is set out in the document *Planning Policy Wales (March 2002)*, of which Chapter 2 covers *Planning for Sustainability*, Chapter 8 covers *Transport* and Chapter 9 covers *Housing*. It should be noted that *PPG13* is referred to in the relevant policy documents for Wales. Hence our comment that weight has to be given to the advice contained in this guidance note.

2.9 One of the Assembly Government's four goals is:

*"Sustainable Development – meeting the needs of the present without compromising the ability of future generations to meet their own needs".*

- 2.10 Section 4 of this Transportation Assessment identifies the excellent sustainability of the proposed re-development at Penarth Heights. It establishes the accessibility of the site to likely desirable nearby locations, as well as the availability of public transport and walking/cycling routes that will provide real choice to future residents in their mode of travel.

### ***Chapter 2 – Planning for Sustainability***

- 2.11 Chapter 2 states that *"the Assembly will promote sustainable development, that is, development that meets the needs of the present without compromising the ability of future generations to meet their own needs"*. The proposed re-development at Penarth Heights can provide this sustainable development.
- 2.12 Chapter 2 (para 2.7.1) also states that *"previously developed (or brownfield) land should, wherever possible, be used in preference to greenfield sites..."* The proposed re-development at Penarth Heights fulfils this requirement.
- 2.13 Paragraph 2.7.2 goes on to state *"Many previously developed sites in built-up areas may be considered suitable for development because their re-use will promote sustainability objectives. This includes sites:*
- *in and around existing settlements where there is vacant or under-used land, commercial property or housing;*
  - *in suburban areas close to public transport nodes which might support more intensive use for housing or mixed use;*
  - *which secure land for urban extensions; and*
  - *which facilitate the regeneration of existing communities."*

The proposal at Penarth Heights is therefore suitable for development for many of the above reasons.

### ***Chapter 8 - Transport***

- 2.14 The relevant sections of *Chapter 8* (together with *Technical Advice Note (Wales) 18*) are discussed in more detail in section 4 of this Transportation Assessment. However, it is relevant to state here that the proposed re-development at Penarth Heights will comply with many of the objectives listed within *Chapter 8*, with respect to sustainable development.

### ***Chapter 9 - Housing***

- 2.15 This chapter of *Planning Policy Wales* echoes many of the statements made in *Chapter 2* of the same document. It too seeks to ensure that previously developed land is used for new development in preference to greenfield sites.

- **Summary**

- 2.16 **It is clear that the land at Penarth Heights, presently occupied by the 'Billybanks' development, is suitable for re-development according to local and national policy.** It will achieve many of the objectives set in order to provide a sustainable development.
- 2.17 The objectives for this TA (and the development) are therefore to:
- § Identify and promote more sustainable transport choices for people;
  - § Identify and promote accessibility to jobs, shopping, leisure facilities and services by public transport, walking and cycling; and
  - § Reduce the need to travel where possible, especially by car.

- **Summary of Development Proposals assumed for Traffic Impact Analysis**

2.18 For the purposes of this Transportation Assessment, it is necessary to 'fix' the development proposals in such a way that a robust assessment is made of the potential traffic impact. The present Masterplan layout contains 288 houses (2 to 4 bedrooms) and 148 apartments (1 to 3 bedrooms); total 436 units. However, for robustness the following schedule of proposed development has been assumed for this Assessment:

- § 450 residential dwellings of which...
- § 20% are required to be affordable housing;
- § 158no. will be 1 – 4 bed flats;
- § 292no. will be 2 – 4 bed houses.

2.19 The eventual quantum of proposed development may change over time as the scheme evolves. For example, the mix of houses and flats may change marginally. However, the total number of dwellings will be a maximum of 450. Therefore the worst case scenario in terms of traffic impact is being considered as the total number of dwellings will always be equal to or lesser than 450.

- **Development Programme**

2.20 For the purposes of this assessment we assume that construction will begin in July 2006. Crest Nicholson (South West) Limited's provisional programme outlines a construction period of 77 months, inferring that the development will be fully complete in December 2012.

### 3.0 EXISTING TRAFFIC CONDITIONS

3.1 This section describes the existing highway network in the vicinity of the proposed re-development site and its environs. Refer to Location Plan (Plan 1) within Appendix 8.

- **Local Highway Network within Immediate Vicinity of Penarth Heights**

3.2 The site lies to the immediate north of the highways known as Harbour View Road and Paget Road. Included within the site are the highways known as Chichester Road, High View Road, and Royal Close. All of the aforementioned highway links provide access to existing residential properties, including the 'Billybanks' development that the proposal replaces. These highways are characterised by on street parking generally on both sides of the carriageway, together with footpaths and street lighting. They are all subject to a 30mph speed limit. Many of these highways require maintenance due to worn wearing courses and uneven footpaths. Many could undergo improvement or replacement works as part of the proposed scheme.



*Photograph 3.1: Harbour View Road (looking east)*

- 3.3 In the immediate vicinity of the site, the main vehicular access will be from Harbour View Road and Royal Close (refer to Architects Plan L101 A, Appendix 8). However it is anticipated that the majority of the existing highways within the development boundary will be abandoned and replaced with new. We note however that existing highway gradients do not comply with the Highway Authority's present design guidelines.
- 3.4 Approaching from Windsor Road and Plassey Street to the south, Plassey Square, High Street and Arcot Street will provide vehicular access to Penarth Heights. Plassey Square (×2 approaches) is approximately 8.2m wide, with footways on both sides of each carriageway. The Plassey Square highways form the eastern and western boundaries of the recreational area known as 'Plassey Square'. High Street and Arcot Street are approximately 12m wide, with footways on both sides of the carriageway. All of the above mentioned highways have adequate street lighting.



*Photograph 3.2: High Street (looking south towards junction with Plassey Street)*

- 3.5 The footways alongside Harbour View Road, Paget Road and Plassey Square show particular need for localised maintenance due to uneven paving flags and general deterioration of the footway surface. Any resurfacing of these areas would however be required to be in keeping with the existing adjacent Victorian properties.
- 3.6 Approaching from Terra Nova Way to the north, vehicular access will be via Paget Road. Alongside the hilltop, Paget Road is approximately 9.1m wide with footways on both sides. However, as it falls steeply to the Marina this highway is only 6m wide and is subject to traffic calming in the form of thermoplastic speed cushions. On this length of Paget Road it has a single footway on the western side.



*Photograph 3.3: Paget Road*

- **Windsor Road (A4160)**

- 3.7 Windsor Road lies to the south of the proposed re-development site and forms the main highway link in and out of Penarth town centre. It is a distributor road, and as such, it experiences heavy vehicular flows throughout the day and particularly during the AM and PM peak hour periods. In the vicinity of Cogan Rail Station, two way

3.7 Contd..

flows along Windsor Road in the AM and PM peak hour periods (Year 2004) are 1,322vph and 1,913vph respectively (refer to Traffic Survey - Site 1, Appendix 5).

3.8 Windsor Road lies on a northwest to southeast axis. It terminates at its easternmost end at the Town Centre roundabout where connecting roads lead to the Esplanade and southwards along the coast to Cosmeston and beyond. At the Cogan Junction (referred to in this report from herein as the Barons Court junction) Windsor Road becomes known as Penarth Road and this provides an important connection to Cardiff city centre. The Barons Court Junction connects Windsor Road/Penarth Road with the Barry Road/Cogan Spur (A4055). This latter highway provides the main vehicular route towards Dinas Powys and Barry to the southwest. Across the Cogan Spur, it connects to the Grangetown Link/Butetown Link (A4232) which provides vehicular access into Cardiff (to the northeast) and towards Junction 33 of the M4 (to the northwest).



*Photograph 3.4: Windsor Road immediately south of the railway bridge*



- ***Barons Court Junction (Windsor Road)***

- 3.9 The Barons Court junction presently takes the form of a four-arm roundabout at the intersection of the A4160 and A4055 highways. However, a fully signal controlled scheme is to be provided as part of the Cardiff International Sports Village offsite highway improvement works in order to maximise the performance of this junction as far as possible. The scheme will also incorporate controlled pedestrian crossing facilities for all movements. It is understood that Ove Arup are presently working up this scheme (refer to Arup Plan 115945/CH0302, Appendix 8 for General Arrangement drawing). Construction work is scheduled for September 2005 to October 2006.

- ***Tesco Roundabout (Windsor Road)***

- 3.10 Approximately 150m south of the Barons Court Junction, on Windsor Road, is the "Tesco Roundabout". This is a three-arm roundabout that connects the recently developed Penarth Marina residential area and the Tesco food superstore with Windsor Road.
- 3.11 Considerable northwest bound vehicle queues are experienced on the Windsor Road corridor in the AM peak period. On occasions, these queues can continue back towards the Plassey Street roundabout. However, this occurrence is exacerbated by the existing capacity problems at the Barons Court junction, which result in vehicles queuing along this corridor. In an attempt to avoid the congestion between the Plassey Street and Terra Nova Way junctions of Windsor Road some motorists approaching from the south cut through the Penarth Marina using Arcot Street, Paget Road, Penarth Portway and Terra Nova Way; therefore gaining access to the eastern arm of the Tesco Roundabout where they are afforded priority over those vehicles queuing on the southern approach of Windsor Road. VOGC may wish to consider ways of deterring this in the future.



*Photograph 3.5: Tesco Roundabout (looking west)*

*Note: Constraints of bridge parapets to potential improvement works*

- 3.12 Congestion in this location is not as pronounced in the PM peak hour period when congestion at the Barons Court junction generally limits the vehicular flow along Windsor Road.
- 3.13 Highways officers have asked that the capacity of the Tesco Roundabout (Windsor Road) is analysed and that possible improvement works are considered. However, it is noted at this stage that the potential for improving the geometry of this existing roundabout is limited. This is due to the existing overbridges on the Cogan Hill (Windsor Road North) and Tesco approaches to the roundabout that permit the main line and Penarth spur railway lines to pass under these highways. Any major changes to the geometry of this roundabout would therefore require the expensive upgrade of these two bridges and would likely result in short-lived benefit in terms of reduced peak hour queuing. **Furthermore, present government policy is not to provide highway improvement works purely for the reduction of peak hour vehicle queuing and delay.** However, other alternatives, such as reducing the speed of the

3.13 Contd..

approaching traffic to this junction, could be considered in order to improve the through-capacity.

- ***Plassey Street Roundabout (Windsor Road)***

3.14 This is a three-arm roundabout approximately 700m southeast of the Tesco Roundabout connecting Windsor Road with Plassey Street.

3.15 As suggested earlier, vehicular traffic can queue back to this junction from the Barons Court junction in the AM peak hour period.



*Photograph 3.6: Plassey Street Roundabout (Windsor Road) looking southeast*

- **Plassey Street**

3.16 Plassey Street is approximately 13.5 metres wide with footways on either side. Plassey Street is subject to a 30mph speed limit and experiences considerable on-street parking on both sides of the carriageway. It acts as a local distributor road.

- 3.17 CEC understand that Vale of Glamorgan Council are presently considering a scheme whereby Plassey Street would be used in combination with the adjacent length of Windsor Road to provide a one-way trafficked system, thereby providing some congestion relief within Penarth town centre. This is presently being considered by VOGC as part of their Penarth Traffic Study. We have not been advised when this study will be completed.



*Photograph 3.7: Plassey Street (looking west towards Arcot Street)*

- 3.18 At its westernmost end Plassey Street connects to Windsor Road at the Plassey Street roundabout.

- **Terra Nova Way**

- 3.19 Terra Nova Way lies to the north of the proposed re-development site and provides vehicular access to the Tesco food superstore and the roundabout junction with Windsor Road. It provides vehicular access to the offices adjacent to the Tesco foodstore, the residential properties within the area and also to the Marina and Cardiff Bay Barrage.

- 3.20 Marconi Avenue/Llwyn Passat runs to the north of Terra Nova Way and parallel to it. It loosely follows the southern bank of the River Ely and has traffic calming along its length. This therefore deters its use as a cut-through in preference to Terra Nova Way.



*Photograph 3.8: Terra Nova Way (looking west)*

- **Cogan Spur/Barry Road (A4055)**

- 3.21 This is a busy highway connecting Cardiff with Barry via Dinas Powys. The Cogan Spur to the east of Barons Court junction provides a dual carriageway link to the A4232. To the west of the Barons Court Junction the A4055 is single carriageway along its length. Shortly after the Barons Court Junction is the Merrie Harrier Junction.
- 3.22 Proposals are presently being considered for a bus priority scheme along the Barry Road between Dinas Powys and Penarth Road.

- ***Merrie Harrier Junction (Barry Road)***

- 3.23 The "Merrie Harrier" takes the form of a staggered traffic signal controlled junction. CEC understand that this junction will also be the subject of future highway improvements. Vale of Glamorgan Council Officers have advised that funding for these improvements is presently unconfirmed, although it is hoped that monies will be made available from the National Assembly via a Transport Grant as part of the wider bus priority scheme introduced above. VOGC Officers have confirmed that no contributions from the Penarth Heights developer will be sought for highway improvement works to this junction.



*Photograph 3.9: Merrie Harrier Junction*

- **Local Highway Network: Conclusions**

- 3.24 The surrounding highway network consists of many unnecessarily wide residential streets that encourage vehicle speed. These wide streets offer the potential for considerable improvement. For example, by providing narrowed entrances and chevron parking along their length the width of these streets could be reduced. The implementation of further traffic calming features (possibly including build outs, pinch points, and road humps/cushions) could be used to create a series of 20mph Zones; these on the approach to the proposed development.



3.25 If such zones were implemented on, say, Plassey Square, Arcot Street, High Street and part of Paget Road, Queen's Road and Plassey Street this would provide a transition zone between the surrounding areas and the proposed traffic-calmed development (refer to Plan 2, Appendix 8 for possible locations). It would reduce traffic speeds and noise, and potentially ease congestion further along the network. It could also facilitate a much-improved pedestrian environment and offer additional parking opportunities. It could offer the opportunity to provide specific crossing locations where the road width is substantially reduced and vehicle speeds are reduced from their present levels. It would promote walking. It is noted that other 20mph Zones have already been implemented in northern Penarth, such as that on Albert Road.

- **Footway/Cycle Linkages**

3.26 One of the main pedestrian desire lines from the proposed re-development site will be towards the town centre. Presently the footway facilities within the adjacent residential areas to the east provide good access to the town centre alongside lightly trafficked residential streets. However, the wide streets presently compromise pedestrian's safety when crossing. The footway/cycleway links provided on site will penetrate the site boundaries and connect to these existing links.

3.27 The suggested improvements that could be made through the provision of 20mph Zones could help to further promote walking for local trips and promote a safer pedestrian environment. Specific pedestrian crossing points should also be investigated for provision / improvement. Within the town centre, pedestrian crossings along Windsor Road permit safe access to the shopping facilities on both sides of the carriageway.

3.28 The existing provision of footway/cycle links together with proposed improvements are discussed further in Section 4 of this Transportation Assessment.

- **Existing Traffic Information**

3.29 In order to produce this report the following traffic survey information has been obtained:

§ Vale of Glamorgan Council:

§ Site 1 – Penarth Haven / Windsor Road (17/11/04); and

§ Site 2 – Merrie Harrier Junction (24/09/04).

§ Atkins Transport Assessment Report (Year 2003)

§ All other junctions.

3.30 For full details of the surveys refer to the raw data contained within Appendix 5.

- **Base Flows – Year 2005**

3.31 For the purposes of this assessment the AM peak hour period has been taken to be between 8:00am and 9:00am. The PM peak hour period has been taken to be between 5:00pm and 6:00pm. This methodology has been agreed with officers of Vale of Glamorgan Council.

3.32 The survey data is from years 2003 and 2004. To estimate the effects of traffic growth over time the *DfT TEMPRO* computer software has been used in order to produce the Base Flows for Year 2005 (present day). National Road Traffic Forecasts (NRTF) by Road Type (central estimate) have been adjusted by local car driver trip end growth for Penarth ('Wales\A53(SGlam)\Vale of Glamorgan\Penarth') as advised in *TEMPRO* guidance in order to derive adjusted local peak period growth factors. These local growth factors are summarised below:



3.32 Contd..

**§ Adjusted Local AM Peak Hour Period Growth Factor\***

Growth Period	(A) NRTF97 Urban "Trunk & Principal Dual" Road**	(B) TEMPRO AM Peak Car Driver Trip End Growth for Penarth (average of productions & attractions)	(C) TEMPRO Average Day Car Driver Trip End Growth for GB	(D) Adjusted Local AM Peak Period Growth Factor
2003-2005	1.0181937	1.0075	1.022	1.0037
2004-2005	1.0090559	1.004	1.011	1.0021

**§ Adjusted Local PM Peak Hour Period Growth Factor\***

Growth Period	(A) NRTF97 Urban "Trunk & Principal Dual" Road**	(B) TEMPRO PM Peak Car Driver Trip End Growth for Penarth (average of productions & attractions)	(C) TEMPRO Average Day Car Driver Trip End Growth for GB	(D) Adjusted Local PM Peak Period Growth Factor
2003-2005	1.018193745	1.007	1.022	1.0032
2004-2005	1.009055868	1.0035	1.011	1.0016

\* Formula:  $(A) \times (B) / (C) = (D)$

\*\* Table 3 NRTF 1997 NTF by Road Type (Central Estimates) – "Dual & Single Carriageway 'A' Roads".

3.33 These adjusted base flows for year 2005 are shown respectively in Figures 3.1 and 3.2, Appendix 2.

**• Existing Carriageway Capacity (Table 3.1, Appendix 1)**

3.34 The 'peak hour' two-way flows along the various highway links within the local network are listed in Table 3.1, Appendix 1. All existing flows are within the recommended working capacity flows as listed within Table 2 of the document titled "TA79/99 – Traffic Capacity of Urban Roads".

3.35 Table 3.1 (Appendix 1) provides an indication that significant reserve capacity presently exists along the adjacent highway network. Indeed an average ratio of flow to capacity along the network is some 0.39, suggesting a reserve capacity of some 61%.

#### 4.0 SUSTAINABILITY AND ACCESSIBILITY

4.1 This section of the Assessment considers the sustainability of the site in terms of accessibility and associated transport infrastructure. It addresses many of the transportation objectives as set out in the *Vale of Glamorgan Council Local Transport Plan 2001/2 – 2005-6 (August 2000)* and *The Vale of Glamorgan Unitary Development Plan 1996 - 2011*. It also addresses those objectives stated within *Planning Policy Wales (Chapters 2, 8 & 9)*, and *Planning Guidance (Wales) - Technical Advice Note (Wales) 18 – existing and Consultation Draft (March 2001) versions*.

4.2 This section considers in turn the following issues:

- i) the available choice in sustainable modes of travel such as **walking** and **cycling**;
- ii) **public transport** use and its availability;
- iii) the **accessibility** of the proposed site to **employment, leisure facilities, shopping** and **services**, and **education**; and
- iv) whether the proposal would be a **sustainable development opportunity**.

4.3 The proposed re-development is well situated in terms of sustainable transport. It is within 700m (0.4 miles) of Penarth Town Centre. Indeed, many of the shopping facilities are even closer. Whilst it is accepted that other centres such as Cardiff and Barry will be desirable workplace destinations, Penarth has a host of facilities and workplace destinations that will also be desirable to new residents. Nearby new retail development such as the IKEA, Asda, and Aldi stores together with the adjacent Cardiff International Sports Village will also create additional work opportunities nearby.

- **WALKING**

- ***Walking: Reference to Policy Documentation***

4.4 *PPG13* suggests that walking is the most important mode of travel at the local level and '*offers the greatest potential to replace short car trips, particularly under 2 kilometres*'. It further states '*more direct, safe and secure walking routes, particularly in and around town centres and local neighbourhoods, and to schools and stations, to reduce the actual walking distance between land uses, and to public transport*' should be created. Notwithstanding what particular weight is to be attached to *PPG13* in Wales, this document is referenced within many documents listed above including *Technical Advice Note 18 (Transport)*. This latter document further suggests that '*most journeys by car, especially for shopping and school travel are relatively short. Better conditions for pedestrians and cyclists, ..., could lead to a change in travel choices*'. The objectives contained in *Technical Advice Note 18* are similar to that contained in *PPG13*.

4.5 The *Consultation Draft* version of *Technical Advice Note 18 (Transport)* – March 2001 identifies that when determining planning applications planning authorities should:

- *ensure that new development encourages walking as the prime means of access by giving careful consideration to location, access arrangements and design;*
- *encourage high density (and mixed use) development which is highly permeable to walking in town centres and near major transport interchanges;*
- *encourage the adoption of engineering measures such as wide pavements, improved lighting, pedestrian friendly road crossings, and traffic calming which encourages walking.*

***Technical Advice Note 18 (Transport)* therefore encourages walking, cycling and public transport over the use of the private car.**

4.6 The following discussion regarding the proposed re-development at Penarth Heights highlights how the comprehensive proposals being put forward by Crest Nicholson (South West) Limited support and contribute towards all of these recommendations.

4.7 *Policy 16 of the Vale of Glamorgan Local Transport Plan 2001/2-2005/6 states "The Council will endeavour to maintain and provide a safe and convenient network of pedestrian routes throughout the Vale of Glamorgan".* The development proposals both on and off-site can help to achieve this policy.

- ***Walking: On-site Development Proposals***

4.8 It is clear therefore that accessibility to local services on foot (and by bicycle) is very important. The internal layout of the residential areas within the Penarth Heights site will be designed with these objectives in mind. The proposal is to create a network of attractive and suitable footway/cycleways that provide direct links to the existing footway network in the adjoining areas. Discussions are presently underway between VOGC Officers and the Design Team regarding the on-site highway layout. The Design Team strongly promotes the concept of 'shared streets' (rather than roads and pavements) where priority is returned to pedestrians and cyclists with vehicle speeds reduced to a minimum by means of careful selection of different surface treatments together with appropriate geometric design. Indeed, in the *Design Bid* (for the site) previously submitted by Crest Nicholson (South West) Limited the internal street network was described as "*a series of well-defined spaces, streets, courtyards and routes with pedestrian focus and priority*". This philosophy will enhance the appeal of walking and cycling to new residents. It will improve the streetscape within which they will commence their journey.

4.9 A main aim of the on-site layout is to provide a path along the northern boundary of the development demarcating the boundary between the built-up area and the

4.9 Contd..

woodland. This path will connect to the 'Bowl' and the 'zigzag' footpath and the design team endeavour to investigate forming a direct connection to the Tesco superstore to the west. Refer to later discussion.

4.10 The layout of the proposed re-development will penetrate all of the site boundaries with a number of new footpaths being provided to connect to the existing network. Dedicated footway links that are surfaced and illuminated will provide direct access to the following areas:

- § to the north along the northern site boundary connecting to the 'Bowl' and the 'zigzag' footpath, providing access to Terra Nova Way, Penarth Marina and the Tesco superstore;
- § to the east to the Paget Road play area and Arcot Triangle, connecting to the town centre and the bus stops on Windsor Road;
- § to the south to Plassey Square, connecting to Cogan and Dingle Road Rail Stations and the bus stops on Windsor Road (linking to the 'Bowl' to the north);
- § to the southwest to Hill Terrace adjacent to the Plassey Street Roundabout connecting to Cogan Rail Station and the leisure centre;
- § to the west down to the Tesco superstore (to be confirmed).

4.11 Other enhancements, proposed as part of the Penarth Heights re-development, will encourage walking as a leisure pursuit. For example, the improvements to Plassey Square, The Arcot Triangle, the 'zigzag' footpath, the 'Bowl' and the Paget Road Play Area will all encourage local recreational walking trips from the new residences.

4.12 The existing surrounding footpath network is discussed below, together with discussion of the possible improvements that could form part of the re-development scheme. These proposed improvements will need to be discussed in greater detail

4.12 Contd..

with officers of the Vale of Glamorgan Council in order to identify priority areas that will benefit the most people.

- ***Walking: Existing Footpath Network - Observations***

4.13 This section describes the observations that were made by CEC during their site visits. The following section describes the actions and recommendations that come both from these observations and the requirements already outlined by others (including Vale of Glamorgan Council).

4.14 The existing footpath network generally consists of footways adjacent to the public highway. These footways provide links towards the town centre to the southeast, and other desirable destinations such as schools, the rail stations and bus stops on Windsor Road.

4.15 The condition of the adjacent highway network is reflected in the condition of the adjacent footways that are in an adequate but generally poor condition. Footway surfaces are often uneven and street lighting can be poor. However, the network of adjacent streets does provide relatively direct and efficient pedestrian links to the aforementioned desirable destinations.

4.16 Central pedestrian refuges are provided on Plassey Street at its junctions with High Street and Arcot Street. Elsewhere, dropped kerb facilities provide alternative crossing points across Plassey Street.

4.17 As indicated in Section 3 of this Assessment, Windsor Road is a relatively busy highway corridor, and as such provides a barrier to safe and efficient pedestrian movement (outside of formal crossing locations) in a north-south direction. There is a pelican crossing on Windsor Road to the north of its junction with Pill Street. All

4.17 Contd..

other existing pedestrian crossing facilities are uncontrolled. The only formalised facilities are zebra crossings; one to the east of the Windsor Road/Arcot Street junction and the remainder on all approaches (excluding Albert Road) to the 'Town Centre' roundabout. Other than these aforementioned facilities, the remaining crossing facilities are provided in the form of dropped kerbs with tactile paving, and central refuges where the road width permits.

4.18 Footways are provided along both sides of Windsor Road, except for where it passes under the railway overbridge, where there is no footway on the eastern side for some distance. However, from the proposed re-development site it is possible to cross Windsor Road in two stages at the Plassey Street roundabout where splitter islands/pedestrian refuges are provided. In terms of desirable destinations, it is anticipated that most pedestrians walking along Windsor Road in this locality would be heading to/from Cogan Station or Penarth Leisure Centre. It is therefore reasonable to assume that most pedestrians approaching from the northeast would need to cross Windsor Road in any event; the lack of footway provision on the eastern side is therefore not necessarily an issue. Furthermore, if pedestrians wish to return to the footway on the eastern side, they could do so using the pelican crossing adjacent to Pill Street. The likely walking routes to nearby schools are discussed later in this section under the heading of **'Schools & Education'**.

4.19 The lack of safe crossing facilities on Windsor Road in the vicinity of Dingle Road Station and the various bus stops along this route may deter some future (and existing) residents from using these services. Furthermore, pedestrian access to Dingle Road station is via an unlit alleyway that lies between two houses (refer to photograph below) and leads to a footbridge providing access to the platform on the opposite side of the railway line. Although this bridge is not therefore DDA compliant, the ramp up to it on either side means that there are only seven steps on either side of the bridge.

4.19 Contd..

Therefore cyclists can potentially lift their bicycles over this short distance. These issues are however addressed in the proposals outlined within the '**Rail**' section below.



*Photograph 4.1: Access to Dingle Road Station*

4.20 Pedestrian access to Cogan Station from the north is via a ramp adjacent to the Tesco roundabout. This ramp provides access through the station car park to the platform. From the south it is from the all-purpose access road adjacent to Andrew Road.





*Photograph 4.2: Access to Cogan Station*

- 4.21 Pedestrian access to the Tesco foodstore from the proposed re-development is available via one of two means. First, the 'zigzag' footpath to the north of the development provides access down the cliff to Terra Nova Way, where footways on either side of the carriageway provide direct access to the store. This route involves a walking distance of some 750m (0.5 miles) and is therefore readily achievable by most able-bodied persons. However, the average footpath gradient is between 1 in 12 and 1 in 13 (on the straight sections) and there are no flat landing platforms along its length. Indeed, the bends in the footpath are much steeper and are deteriorated due to rill/gully erosion caused by rainfall overrun. These issues presently discourage the use of this facility. An alternate route is possible via a footpath leading from the western boundary of the development site. Although this route is more direct, it is somewhat torturous and the path is unofficial and overgrown. However, the developer intends to investigate the possibility of improving this pedestrian access route. It is suggested that due to the gradient and their orientation these routes would provide only marginal benefit in terms of 'functional' (i.e. commuter and shopping) trips and be used predominantly as a recreational resource. Pedestrian movements are likely to be far greater to the east and south of the proposed development; towards

4.21 Contd..

the town centre, schools and public transport links. Therefore it is suggested that improvements are prioritised in these latter areas.

- ***Walking: Development Proposals (Actions & Recommendations)***

4.22 To the north of the site, a requirement of the development is to provide a footpath through the 'Bowl' towards the 'zigzag' footpath that leads down the cliff face. It has been further suggested that this 'zigzag' footpath should be improved such that it is suitable for shared use between pedestrians and cyclists. CEC would suggest however that this access path is too steep to be used safely by cyclists. To improve the gradient of the existing path would necessitate the loss of a substantial amount of surrounding established woodland and therefore we recommend the following alternative:

- the foliage adjacent to the existing 'zigzag' footpath is cut back and maintained thereafter;
- the existing footpath is resurfaced with proper surface water drainage and landing stages at each 'turn' in the footpath;
- the existing footpath is illuminated to provide safer access in the winter months and generally during the hours of darkness;
- 'Cyclists Dismount' signs are erected at either end of the 'zigzag' footpath;
- an alternative cycleway facility is provided off-street eastwards through the existing park on Paget Road (to be upgraded as part of the re-development) and then on-street along Paget Road as it traverses down the hill towards Cardiff Bay Barrage.

4.23 This new cycle route will be of particular benefit if VOGC is able to negotiate the continuation of the cycle route across the barrage into Cardiff city centre. Presently, this latter cycle route provides a purely recreational feature.

- 4.24 Plassey Square and the Arcot Triangle will form important transitional areas between the development and the existing residential areas. These areas will be the subject of considerable improvement works that are sympathetic to their setting and remaining surroundings.
- 4.25 We recommend that the Council undertake a comprehensive survey with respect to the condition of existing footways in the local area that lie outside of the proposed site boundary (excluding other areas already identified for improvement works such as Plassey Square). The survey should then be used to identify key areas for improvement works to both the footway condition and quality of street lighting in areas that will benefit the most people (including new and existing residents). It is suggested that in the first instance, those routes that lead to the nearby schools (Fairfield, Albert & Stanwell), the nearest bus stops on Windsor Road (refer to later section on Public Bus Transport), the train stations, and the town centre are prioritised. This method of priority will encourage the most walking trips by providing improved facilities along the desire lines to the most beneficial destinations. The creation of a 20mph Zone, as suggested, would support this objective. Refer to Plan 2, Appendix 8, which shows the likely pedestrian desire lines from the proposed development and the possible route of the cycleway alternative to the 'zigzag' footpath. Refer also to Plan 3, Appendix 8 (Accessibility Plan) that shows the proximity of nearby desirable destinations to the proposed development site.
- 4.26 From discussions with the Technical Officers it would seem that there is no longer a requirement for developer contributions towards the Barons Court Junction improvement works. Accordingly the development site could make a financial contribution towards these footway improvements in the immediate locality of the site. Furthermore, any other financial contributions should be targeted at

4.26 Contd..

improvements to sustainable travel modes given the objectives presently outlined in local and national policy documents applicable to this area.

4.27 We also note the recommendations contained within the previously completed *Transport Assessment* by Atkins (for the Council) which included the following:

- *Provision of pedestrian route signage from the Penarth Heights development to bus and rail links;*
- *Public information within Penarth Heights detailing the optimum pedestrian routes to important destinations and public transport interchange (this would be done in any event as part of the actions outlined in the Travel Plan that is required for the development);*
- *Dropped kerbs at key crossing points on existing desire lines, supplemented with the provision of pedestrian refuges where feasible and necessary.*

4.28 CEC concurs with these recommendations. Such requirements (such as the scope for a suitable signage strategy) will need to be discussed with VOGC Officers in due course. However, CEC suggest that a more global approach may be for VOGC to consider a Signage Strategy for Penarth as a whole. New residents (particularly with the help of the Travel Packs to be provided by the developer as part of the Residential Travel Plan) will quickly work out how to access certain locations such as the train station, town centre and nearby schools. Thereby monies potentially spent on signage may be better spent on other infrastructure improvements.

- ***Walking: Distances & Times to Local Amenities***

4.29 The likely desirable locations within Penarth include the employment sites, local schools (primary and secondary) and the town centre. The walking distances and times associated with these locations are discussed in further detail under the relevant

4.29 Contd..

sub-headings in later paragraphs within this section such as '**Employment**', '**Schools & Education**' etc. It is appropriate to state that many desirable destinations are accessible on foot, and these include the town centre, the nearby railway stations, and nearby schools.

4.30 National Statistics (Year 2001 census) reflect that presently some 11.6% of all workplace trips are carried out on foot. This value is to be compared to the equivalent values for the Vale of Glamorgan (8.4%) and Wales as a whole (10.4%). The said values demonstrate the existing accessibility of this ward and the abundance of local employment opportunities accessible on foot. The relevant modal split data from the year 2001 census is summarised below:

§ **Modal Split Data – Travel to Work (2001 Census Information)**

	Works at Home	Metro, U/G etc.	Rail	Bus	Motor-cycle	Car Driver	Car Passenger	Taxi	Pedal Cycle	Foot	Other (Not specified)
St. Augustine's (Ward)	9.1%	0.2%	5.7%	5.4%	0.6%	60.2%	5.1%	0.3%	1.1%	11.6%	0.7%
The Vale of Glamorgan (Unitary Authority)	8.5%	0.1%	3.9%	4.4%	1.0%	63.3%	7.6%	0.5%	1.9%	8.4%	0.5%
Wales	9.7%	0.1%	1.2%	5.3%	0.8%	61.2%	9.0%	0.5%	1.4%	10.4%	0.5%
England	9.2%	3.2%	4.2%	7.5%	1.1%	54.9%	6.1%	0.5%	2.8%	10.0%	0.5%

• **WALKING: CONCLUSION**

4.31 Priorities to improve the appeal of walking in the local area should therefore include the following:

- Provision of public information boards and Travel Packs to promote walking trips (for both new and existing adjacent residents);
- Consideration of the provision of 20mph Zones in adjacent streets (refer to Plan 2, Appendix 8) to reduce vehicle speeds and provide the opportunity to

4.31 Contd..

improve the pedestrian environment and create safer crossing points to local desirable destinations;

- Consideration of providing other isolated improvements on desire lines to schools, the town centre and public transport;
- Improvements to the zig-zag footpath to 'civilise' this existing facility;
- Provision of a controlled pedestrian crossing on Windsor Road (refer to later discussion within the 'Bus' section).

4.32 We can conclude that walking will be a real choice for future residents for all types of trip such as that for employment, recreational and school escort purposes. Further discussion later in this section highlights the availability of walking routes for these likely destinations. However, it has already been identified that the provision of 20mph Zones in the adjacent streets and other infrastructure improvements will improve pedestrian access to desirable destinations.

- **CYCLING**

- *Cycling: Available Cycle Routes & Associated Cycle Times to Desirable Destinations*

4.33 Plan 4, Appendix 8 shows an extract map from the Sustrans website. This plan indicates that part of the National Cycle Network Route 8 (Taff Trail) runs to the north of the proposed re-development site through Penarth Marina and across the Barrage towards the Cardiff docks. This route could potentially connect Penarth with the southern outskirts of Cardiff where significant regeneration has taken place within the Cardiff Bay Development Area. However at present, access beyond the northern end of the barrage is not permitted. CEC stress the importance of VOGC negotiating the provision of this connection to Cardiff in order to encourage cycle travel into and out of Cardiff. The Taff Trail follows the River Taff from Cardiff Bay northwards to the Brecon Beacons, with connecting links into Cardiff Bay and the city centre. It

4.33 Contd..

therefore provides an ideal facility for recreational cycling and access to the many opportunities (employment and otherwise) within the city of Cardiff.

4.34 National Cycle Route 88 is proposed to link Penarth with Barry, Llantwit Major and Bridgend to the west. When complete, this facility will provide a safe, convenient and attractive route for utility and leisure trips. A leaflet detailing the scheme is contained with Appendix 6.

4.35 Plan 5, Appendix 8 shows the local cycle routes as identified by Cardiff City Council, together with estimated cycle times produced by CEC. It is recognised that the distance travelled on a bicycle is not accurately represented by "crow fly" distances and is greatly affected by the presence and alignment of both on and offsite routes. Plan 5 therefore indicates more accurately the destinations that can be reached within set time periods by following these routes. For example, it can be seen that Penarth town centre and Cogan and Dingle Road train stations can be reached within 5 minutes, and that the majority of the developed area of Penarth can be reached within 10 to 15 minutes. Moreover, Cardiff city centre can be reached on bicycle within 20 minutes (assuming a cycle distance of some 5.3km).

4.36 Although the aforementioned time periods do not allow for securing a bicycle at the given destination or waiting at signal junctions etc. Plan 5 does give an indication of the many destinations that can be reached within a reasonable cycle time. It shows that Cardiff, Penarth and Dinas Powys are accessible by bicycle. It demonstrates the cycling accessibility of these locations for employment opportunities etc.

- ***Cycling: Existing Local Provision***

4.37 More locally, dedicated cycle facilities are not commonplace within Penarth. This is due to the historic nature of many of the residential roads within Penarth that do not

4.37 Contd..

allow the space for off-road cycle facilities. Furthermore, the proliferation of on-street parking makes on-street cycle facilities more difficult to provide.

- ***Cycling: Development Proposals (Actions & Recommendations)***

4.38 Consideration of possible cycle improvements to the adjacent residential streets could be discussed in further detail with VOGC Officers. These improvements would most likely be targeted at routes towards the town centre, nearby schools and train stations. They could be provided as an integral part of the aforementioned 20mph Zones. The discussions would assist in determining the most practical and beneficial solutions.

4.39 However, the majority of the adjacent residential streets do not experience high levels of vehicular traffic and therefore developer contributions may be better spent on providing quality bicycle storage 'bins' (or covered storage) at desirable destinations such as the town centre, local schools, railway stations and major workplace destinations which could be agreed with VOGC officers. It is noted however that storage facilities at Dingle Road Station will already be provided as part of a programme of improvements funded by a Transport Grant. The proposed re-development will in any event provide dedicated cycle storage facilities at Penarth Heights for both residents and visitors.

4.40 It is proposed as a high priority that a cycle link will be provided by the developer between the Penarth Heights site and Terra Nova Way / Penarth Portway. The route of this link has been discussed in the previous '**Walking**' section where it was suggested that the alignment should be off-street through Paget Road play area and on-street down Paget Road towards the barrage (refer to Plan 2, Appendix 8). It will provide access to the barrage and Cardiff. Cardiff City centre, the Cardiff Bay Retail Park and the Cardiff International Sports Village (CISV) will provide substantial employment opportunities that are accessible by bicycle.



4.41 The aforementioned public information boards that will be provided at Penarth Heights are also anticipated to contain details on recommended cycle routes from the development, together with information on the provision of cycle parking facilities in the surrounding area. This information will also be contained in the Travel Packs to be provided to all new residents (and nearby existing residents) as part of the Residential Travel Plan. The provision of cycling signage will also be considered local to the development site to guide cyclists along desired routes.

- ***Cycling: Local Transport Plan Objectives***

4.42 The Vale of Glamorgan's *Local Transport Plan 2001/2-2005/6* identifies four objectives:

- § *Objective 1: Doubling the number of cycle trips in the Vale by 2002 and quadruple the number again by 2012; development of a network of cycle routes and safeguarding proposed routes in the UDP;*
- § *Objective 2: Increased cycle parking provision;*
- § *Objective 3: Improved provision at rail stations, development of a safe route to school policy, encouragement of cycle friendly employers; and*
- § *Objective 4: Establishment of a cycle forum.*

4.43 The proposals at Penarth Heights, together with contributions towards off-site measures will assist in achieving many of these objectives. For example, *Objectives 2 and 3* can be contributed towards by the provision of secure cycle storage facilities in the town centre, Cogan and Dingle Road railway stations and other locations to be agreed. If these contributions were combined with discussions with major local employers then they may also be encouraged to provide additional resources such as staff shower facilities.

- 4.44 As discussed in the '**Walking**' section above, the layout of the residential area, together with the associated highway and footway/cycleway infrastructure will be designed in such as way to afford priority to pedestrians and cyclists wherever possible.
- 4.45 Presently, cycling to workplace destinations accounts for only 1.1% of all 'St. Augustines' trips compared to 1.9% for The Vale of Glamorgan. For 'Penarth Heights' residents, the improvements to the surrounding network, together with the provision of dedicated cycleway connections across the site, considerate on-site design, and the provision of cycle storage facilities would help to improve the present use of bicycles within the ward. Indeed, it could help to achieve *Objective 1* outlined in the *LTP*, which seeks to quadruple the number of cycle trips in the Vale by 2012.
- 4.46 A new footway/cycleway bridge is presently being considered that would span between Penarth and the CISV development. The *Transport Assessment* for the CISV development suggests that the developer is not providing this link and that "*external organisations*" are responsible for progressing this new bridge infrastructure. The provision of this bridge is introduced in *VOGC's LTP* document as a proposal that has emerged from the Council's Cycling Forum.
- 4.47 The provision of this bridge link would benefit the residents of Penarth by connecting them to the CISV and providing a safe and convenient link for sustainable travel modes, i.e. walking and cycling. At present, Penarth residents are forced to use either the Cogan Spur (cyclists only – no pedestrian thoroughfare) or the barrage.
- 4.48 From meetings with *VOGC* officers it is further understood that there is a present proposal for a new footway/cycleway from the barrage around to Penarth Esplanade. This so-called Headlands Link is identified within *VOGC's LTP* which suggests that

4.48 Contd..

the scheme will cost around £7.5 million, funding for which has been earmarked by the National Assembly.

4.49 Other cycle scheme proposals within the *LTP* that would benefit the present and future residents of Penarth include the development of cycle routes:

- *from Penarth to Dinas Powys;*
- *from Lower Penarth to Sully via the former railway line; and*
- *through Cosmeston Country Park and St. Cyres Park.*

• ***CYCLING: CONCLUSION***

4.50 Priorities to improve the appeal of cycling in the local area should therefore include the following:

- Provision of public information boards and Travel Packs to promote cycling trips (for both new and adjacent residents);
- Provision of cycle storage facilities for residents and visitors at Penarth Heights;
- Provision of a cycle path towards the marina connecting to the existing route (this to be considered in view of the 'recreational' nature of the existing route);
- Cycle Storage at Dingle Road and Cogan Stations, and local schools (Fairfield and Albert County Primary Schools and Stanwell Secondary School are the nearest);
- Careful consideration to a Signage Strategy for Penarth by VOGC.

4.51 We can conclude that provision for cyclists both within the Penarth Heights development and Penarth will be improved if the proposed re-development is taken forward. Improvements to existing unofficial routes, the addition of new cycle

4.51 Contd..

infrastructure within the site, and the provision of cycle storage facilities for residents and visitors, and in other desirable locations will all be of benefit. Cycling will offer a real choice for future residents.

- **PUBLIC TRANSPORT**

- **RAIL**

- ***Rail: Existing Provision***

4.52 The proposed Penarth Heights re-development benefits from the close proximity of two railway stations – 'Cogan' and 'Dingle Road' (Refer to Plan 3, Appendix 8). **Dingle Road Station** is approximately 350m 'crow-fly' distance from the centre of the proposed site, with an associated walking distance (using kerbside footpaths) of approximately 450m. The railway line is on the Penarth to Cardiff line. **Cogan Station** is slightly further from the development at 660m (crow-fly distance) with an associated walking distance of 900m (via Windsor Road) or 1km (via Terra Nova Way). It lies on the Barry to Cardiff line. Both stations are unmanned. The third station located nearby is **Penarth Station**, which is manned and is situated in the town centre, at the end of the Penarth to Cardiff line, at a distance of some 1200m from the proposed re-development site. However, from Penarth Heights there would be no desire to travel from Penarth station as the same services operate from Dingle Road station that is closer by. **Together, these stations offer an exceptional provision of public rail transport.**

4.53 The publication titled "*Planning for Public Transport in Development*" (page 11) published by the Institution of Highways and Transportation advises that people are willing to walk at least 800 metres to a railway station. Therefore this site is highly sustainable in terms of providing access to rail travel; Dingle Road station is within a 450m walking distance and Cogan is within 900m. It should be noted that these distances have been calculated from the centre of the development site and therefore

4.53 Contd..

approximately 50% of residents will be closer to these railway stations and 50% will be marginally further away. Although this publication does not stipulate acceptable cycling distances these are likely to be related to an acceptable journey time. Walking 800m would be equivalent to a 10-minute walk (4.8kph). A 10-minute cycle ride would equate to a distance of 2.7km (16kph) therefore placing all Penarth stations within easy reach by bicycle.

4.54 It would be expected that future residents within the re-development site would be willing to walk or cycle to these stations. The issues with regard to pedestrian access to both Dingle Road and Cogan stations have already been discussed in the 'Walking' section above.

4.55 The modal split data discussed earlier in this section suggests that some 5.7% of all workplace trips are likely to be by rail. This is relatively high when compared to the Vale of Glamorgan (3.9%), and Wales (1.2%) as a whole and therefore demonstrates the existing rail patronage. Reference to Cogan Station patronage figures provided by VOGC Officers for December 2004 corroborate this assertion (refer to Appendix 5 – Rail Patronage Figures).

4.56 This patronage information also indicates the quality of the rail services provided. On the day of the survey, trains departed (on average) between 2 and 4 minutes late.

4.57 'Arriva Trains Wales' operate all services to and from Penarth, Dingle Road and Cogan Stations. From **Cogan Station** there are approximately **70 trains per day each way** to Barry and Cardiff (Central & Queen Street) with **3-5 trains each hour (each way)** from 07:00 to 19:00. After this time, trains operate on a half-hourly basis until 23:44 (to Cardiff) / 23:50 (to Barry). From Cardiff, connecting trains can be caught to a range of destinations including Bridgend (22 minutes journey time),

4.57 Contd..

Swansea (52 minutes), Newport (15 minutes), Bristol (60 minutes) and London Paddington (3.5 hours).

4.58 From **Dingle Road Station** there are **three trains per hour to Cardiff** (Central & Queen Street) during the week (07:00 – 19:00). Generally trains then run at hourly intervals until 23:51. Weekend services are good with the Saturday service being almost identical to that provided during the week. On Sundays there are four trains from Dingle Road to Cardiff and four trains from Cardiff to Dingle Road.

4.59 The railway stations close to Penarth Heights therefore provide frequent access to Cardiff railway station from where a frequent service is available to major centres. Direct access to Cardiff, Dinas Powys and Barry etc. is also available.

4.60 A summary of the train services available from Dingle Road (timetable information shown below is for Penarth station) and Cogan Stations is given below:

• **Public Rail Transport Provision available from Penarth**

Journey		First Train Departs ... *	Last Train Departs ... *	Frequency (Mon-Fri) Every...**	Daily Number of Trains (Mon-Fri)	Daily Number of Trains (Sat)	Daily Number of Trains (Sun)
From	To						
Cogan	Cardiff (Both)	06:03	23:44	15 minutes	67	63	30
Penarth	Cardiff	07:00	23:51	20 minutes	41	41	4
Cardiff (Central)	Cogan	05:15	23:43	15 minutes	68	63	30
Cardiff	Penarth	06:45	03:48	20 minutes	41	41	4
Cogan	Barry	05:22	23:50	15 minutes	68	63	30
Barry	Cogan	05:20	02:09	15 minutes	68	63	31

\* Weekdays

\*\* General frequency throughout the day, sometimes train frequency will be greater/lesser

Trains shown are direct trains only – other routes between these destinations may be available.

Information gathered from Arriva Trains Wales Timetable (valid from 12 June 2005) and [www.thetrainline.com](http://www.thetrainline.com)

- 4.61 The service levels to/from both Cogan and Dingle Road Stations have recently been improved with effect from June 2005. Trains now depart generally every 15 minutes from Cogan Station and every 20 minutes from Dingle Road Station providing new available capacity. It is understood however that service frequencies cannot be improved further, this being due to the capacity restraints inflicted by the Cogan junction. We further understand from VOGC officers that there is presently a proposal to improve the present capacity of this junction, but that even if taken forward, improvements would not be made until the period 2009 – 2016. However, the capacity of each service could be improved by providing additional 'cars'. Presently each service utilises 2 cars, and capacity could be improved in the future, if necessary, by providing 4 or even 6 cars per service.
- 4.62 Cogan Station has 56 free-of-charge car park spaces. Dingle Road Station has no allocated parking although there is ample on-street parking available during the day. We anticipate however that most new residents would choose to walk or cycle to these stations due to their close proximity to the proposed re-development site. This assertion is confirmed in the Rail Patronage data (Appendix 5) for Cogan Station that shows the occupancy levels in the car park. However, as the car park at Cogan Station is presently free-of-charge there is no incentive to use sustainable modes of travel such as walking and cycling. Furthermore, there are no cycle parking facilities at either of these stations.
- ***Rail: Actions & Recommendations***
- 4.63 Issues with regard to access to both Dingle Road and Cogan stations have already been discussed. Recommendations for improvements in relation to each of these stations are as follows:

4.63 Contd..

- **Dingle Road:**

- Replace footbridge to provide DDA compliant access for pedestrians and cyclists (by others);
- Improve signage to the station from the proposed development (if identified within the suggested Signage Strategy exercise);
- Improve lighting of the footpath from Windsor Road;
- Paint the walls either side of the footpath from Windsor Road (to improve illumination levels etc);
- Provide cycle storage facilities (consider cycle 'bins' or covered storage to further enhance the appeal to users).

- **Cogan Station:**

- Improved signage to the station from the proposed development (if identified within the suggested Signage Strategy exercise);
- 'Pedestrian Access' carriageway markings (hatching and 'pedestrian' symbols) through the car park from the pedestrian access ramp adjacent to the Tesco roundabout on Windsor Road to indicate pedestrian thoroughfare and raise awareness to drivers using the car park (the implementation of this would depend on whether the car park is adopted by the local Highway Authority);
- 'Pedestrian Access' carriageway markings as above but along all-purpose access road to the south;
- Provide cycle storage facilities (consider cycle 'bins' or covered storage to further enhance the appeal to users).





*Photograph 4.3. Example of existing pedestrian signage to Dingle Road Station  
(suggested Signage Strategy for Penarth should consider street 'clutter')*

4.64 CEC understand that some 'Safe Routes to Stations' money has already been secured towards some of the above improvement works. We also assume that the pedestrian bridge at Dingle Road is due to be replaced as part of Network Rail's ongoing bridge replacement programme due to present condition of the bridge. However, it is anticipated that developer contributions will be used towards some of the remainder of the above suggestions.

• **RAIL: CONCLUSION**

4.65 Priorities to improve the appeal and patronage levels of public rail transport in the local area should therefore include the following:

- Provision of public information boards and Travel Packs to promote rail use (for both new and adjacent residents);
- Improvements to existing footpath connections towards Dingle Road and Cogan Stations, to include better crossing facilities on Plassey Street and a controlled pedestrian crossing facility on Windsor Road;

4.65 Contd..

- Provision of covered cycle storage facilities at Dingle Road and Cogan stations;
- Enhance footpath access from Dingle Road Station to Windsor Road;
- Provision of a new DDA compliant footbridge to Dingle Road Station (by others).

4.66 We can conclude that the frequent services offered from both Dingle Road and Cogan stations offer future residents of the proposed development a sustainable travel mode that is convenient and efficient. It offers future residents a real choice.

- **BUS**

- ***Bus: Existing Provision***

4.67 The Penarth Heights re-development is presently served locally by six bus services: the 87, 88, 92, 93, 94 services along Windsor Road and the 89 service that travels through Penarth Marina and into Penarth town centre. Cardiff Buses operate services 92, 93 and 94, service 87 is operated by EST Bus Ltd, and services 88 and 89 are operated under contract by Thomas Motors of Barry (Shamrock). The routes of these services are shown on Plan 6 (Public Bus Transport), Appendix 8.

4.68 Bus stops are "dotted" along Windsor Road and provide access to service numbers 92, 93, & 94. The location of these bus stops is shown on Plan 6, Appendix 8. The nearest bus stop on Windsor Road (immediately south of Plassey Street roundabout) is only 270m walking distance from the centre of the proposed development site.

4.69 The nearest access to the 89 service is available either from Terra Nova Way or Paget Place. The associated walking distances to each of these locations from the centre of the proposed re-development site are 280m and 760m respectively. It is accepted that

4.69 Contd..

the present access to Terra Nova Way via the 'zigzag' footpath is not attractive to everyone due to the gradient and security issues, however, this footpath will be the subject of improvements (as detailed earlier) if the proposed re-development is taken forward.

4.70 The Institution of Highways & Transportation document "*Planning for Public Transport in Developments*" suggests that new development should be so located, that public transport trips involve a walking distance of no greater than 400m to the nearest bus stop (refer to Appendix 6). With respect to the above services the proposal for re-development at Penarth Heights is therefore in line with this recommendation, albeit that access is required via the zigzag footpath to service number 89 (from Terra Nova Way) and therefore would not be suitable for all (e.g. physically disabled persons). However, the services along Windsor Road are close to the development and therefore readily accessible.

4.71 A summary of the public bus transport available to future residents is given below:

• **Public Bus Transport Provision available to/from Penarth**

Bus Operator	Service No.	Route (to / from)	Frequency (Weekday)	No. of services (Weekday)	Weekend Service?
EST Bus Ltd	87	Dinas Powys – Cardiff Bay Retail Park	70-100 minutes	5e/w	Sat Only (as per weekday)
Thomas Motors of Barry (Shamrock)	88	Barry – Llandough Hospital	90-100 minutes	8e/w	Sat & Sun (as per weekday)
Thomas Motors of Barry (Shamrock)	89	Llandough Hospital - Cardiff	90-100 minutes	8e/w	Sat & Sun (as per weekday)
Cardiff Bus	92	Penarth – Cardiff	<b>10-30 minutes</b>	<b>48e/w</b>	Sat & Sun (reduced service*)
Cardiff Bus	93	Barry Island – Cardiff	<b>30-55 minutes</b>	<b>22e/w</b>	Sat & Sun (reduced service*)
Cardiff Bus	94	Barry – Cardiff	<b>15-40 minutes</b>	<b>30e/w</b>	Sat & Sun (reduced service*)

\* Refer to paragraph text below for weekend service details

- 4.72 Service 87 presently operates on an irregular timetable from 09:00 to 14:20 (Monday to Saturday) from Dinas Powys to Cardiff Bay Retail Park and Llandough Hospital. Service 88 offers a 90-minute service frequency between Barry and Llandough Hospital seven days a week. Both of the above services operate via Windsor Road in Penarth.
- 4.73 Service 89 presently operates on a 90-minute frequency throughout the day, seven days a week, including bank holidays. However it does not operate in the evening. It provides access to Llandough Hospital and Cardiff.
- 4.74 Service 92 presently operates on a 15-minute frequency throughout the week. Service 93 presently offers a 30 to 60-minute frequency during the same period. Service 94 offers a 15 to 30-minute frequency. 'Cardiff Bus' Services 92, 93 and 94 collectively offer a service frequency between Penarth (Windsor Road) and Cardiff of 7-8 minutes during the peak hour periods on weekdays. On Saturdays a combined service frequency of 7-8 minutes is also achieved. On Sundays a combined service frequency of 30 minutes is offered. Cardiff Bus offer season tickets on a weekly, two-weekly, monthly, quarterly, or annual basis. An annual ticket for travel between Penarth and Cardiff is £358. The associated charges for other season tickets are contained within Appendix 7.
- 4.75 As well as offering convenient sustainable travel to and from Cardiff, services 92, 93 and 94 also offer connections to Barry Island, Barry, and Dinas Powys.
- 4.76 We also understand from public information at the bus stop adjacent to the Tesco superstore that Tesco provide a free bus, the route of which is shown on Plan 6, Appendix 8. However, there was no timetable information available regarding this service that suggests that it may no longer be in operation.

4.77 Reference to bus patronage information provided by VOGC's Public Transport Officer indicates that there is sufficient reserve capacity on the Windsor Road services for a re-development such as that proposed at Penarth Heights (refer to Bus Patronage Data, Appendix 5)

- ***Bus: Actions & Recommendations***

4.78 The Design Brief for Penarth Heights states that bus services should be provided through the new development. However, due to the long 'slender' nature of the re-development site, CEC propose that buses could be re-routed more beneficially along the existing adjacent highways. It has been demonstrated above that access to the bus services on Windsor Road is good, with bus stops within 400m of the proposed development site. We doubt if bus operators would consider it feasible to 'enter' the site, and VOGC Officers have confirmed that any such diversion would be too convoluted to be workable. As related, moving parallel along Paget Road/Harbour View Road is more feasible and will be just as beneficial.

4.79 VOGC's public transport team have suggested that service number 88 could be re-routed from the town centre via the Penarth Headlands, Paget Road and Plassey Street before re-joining Windsor Road on its way to Llandough Hospital. Plan 6 shows a possible diversion route. Services 88 and 89 are presently inter-worked to provide through journey opportunities without the need to change vehicles, therefore such a diversion would actually result in a more streamlined route for this combined 88/89 service. **Such a diversion would have limited benefit to the new residents of Penarth Heights and existing residents in the surrounding areas given the infrequent service that is presently offered.**

4.80 Further discussion with VOGC Officers has also identified a desire to increase the 88/89 service to offer a 60-minute frequency rather than the present 90-minute service. In order to achieve this, VOGC's Public Transport Officer has indicated that

4.80 Contd..

an additional bus would be required at a cost of approximately £60,000 per annum. At the same meeting it was suggested that funding would most likely be sought via developer contributions for the first two to three years, i.e. £120,000 – £180,000.

4.81 CEC question whether any of these VOGC aspirations would be an efficient use of developer contributions. The improvement/diversion of these services would not provide any great benefit to residents of Penarth Heights. The direct bus route into Cardiff offered by the nearby Windsor Road services is likely to be favoured by new residents over the infrequent and indirect 89 service. CEC therefore suggest that monies would be better directed towards improving the appeal of the 'existing Windsor Road' services. It is widely accepted that bus patronage levels are strongly related to the provision of frequent, reliable and direct services. These are offered on Windsor Road. They are not offered by the 88 and 89 services. Therefore improving access to the Windsor Road services and improving the bus shelter waiting facilities is likely to provide a more beneficial improvement than that offered by a 60-minute bus service from elsewhere.

4.82 Should VOGC still require a bus to be re-routed towards the proposed development, then CEC suggest that consideration is given to diverting a certain number of the 'Windsor Road' buses (services 92, 93 or 94) along Plassey Street to provide a half-hourly service. However, there may be commercial reasons why this is not achievable. Refer to Plan 6, Appendix 8 for a possible route. Such a diversion would provide a closer frequent service to the proposed development and surrounding residential streets without great detriment to the existing services on Windsor Road used by others.

4.83 CEC site visits have established that bus shelters are not provided at all bus stop locations, and where they are provided their condition varies considerably. We

4.83 Contd..

understand that Adshel have recently installed new shelters in the town centre. **Improvements to the other Windsor Road bus stops are highly recommended** and could be made through developer contributions. These improvements could include the provision of new shelters, timetable information and seats. The provision of real time information displays at bus stops could also be considered ready for when such a system becomes operational. It is recognised that in some locations bus shelters have not been provided due to footway width constraints. However, Windsor Road is of sufficient width that the footway could be built out to provide additional space for such a facility without compromising the remaining available road width. Indeed, such features could be used along the length of Windsor Road as part of a scheme to reduce vehicle speeds along this corridor, therefore potentially easing peak hour congestion at its junctions. These proposals are in accordance with the recommendations within *VOGC's LTP*.

- 4.84 VOGC officers also highlighted a desire to provide bus links from the proposed development site direct to the train stations. CEC would point out that Dingle Road Station is within a 450m walk from the centre of the proposed re-development site. Similarly, access to Cogan Station is available either directly on foot or via the existing frequent bus services on Windsor Road, which are within 270m of the centre of the proposed re-development site. CEC would suggest that such bus services are not therefore required. We would however suggest that a pedestrian crossing facility is provided in the vicinity of the nearest 'Cardiff bound' Windsor Road bus stop (i.e. immediately south of Plassey Street roundabout – by the cut-through from Plassey Street to Windsor Road opposite Plassey Square [west]). Refer to Plan 2, Appendix 8. This should be the subject of further discussion with VOGC's Senior Road Safety Officer, as we understand that a similar facility is presently being considered adjacent to the Police Station on Windsor Road in order to provide safer pedestrian access to

4.84 Contd..

Dingle Road station and the schools beyond. A crossing in this latter location would also be convenient for access to the nearby 'Cardiff bound' bus stop on Windsor Road.

4.85 Present VOGC initiatives with respect to improved public bus transport include a proposed bus priority scheme between Dinas Powys and Penarth Road. CEC understand that contributions have already been obtained from IKEA for this scheme and that it is presently at the detailed design stage. VOGC anticipate obtaining the remaining capital through a Transport Grant from the Welsh Assembly. This proposal is in line with the SWIFT strategy outlined in *VOGC's LTP* that seeks to provide "*faster bus services through bypassing congestion and pinch points on the network*".

4.86 Another VOGC aspiration is to provide bus access across the barrage into Cardiff. However, at present this scheme is not progressing, although if it did, it would be of considerable benefit to the future residents of the proposed new development at Penarth Heights.

- ***BUS: CONCLUSION***

4.87 We can conclude that public bus transport offers the opportunity for future residents of Penarth Heights to get to desirable destinations both within Penarth, and further afield to places such as Barry, Dinas Powys, Llandough Hospital and Cardiff. VOGC's suggested re-routing of bus service 88/89 does not, in CEC's opinion, make best use of finite developer contributions. A short diversion of one of the Windsor Road services may be more beneficial and less costly. However CEC suggest that monies should first be targeted at improving the access to the Windsor Road services and improving the bus stop facilities along Windsor Road. The existing services on Windsor Road are within close proximity to the entire proposed re-development site



4.87 Contd..

and offer an excellent service into Cardiff and elsewhere. Crest Nicholson will also investigate the possibility of providing a free Penarth Commuter Multiride annual, quarterly or monthly travel ticket (depending on cost and priorities) to each household for the first year in order to further enhance the appeal of public bus transport to new residents; this as part of the developer commitments within the Residential Travel Plan.

- **WATER TAXI**

4.88 Further to our investigations and discussion with VOGC officers, CEC do not propose that use of the water taxis across Cardiff Bay will constitute a significant modal share. However, this service will be promoted within the Travel Plan and the Travel Packs issued to new residents.

- **EMPLOYMENT (WORKPLACE DESTINATIONS)**

4.89 There is a range of employment opportunities within Penarth itself that are readily accessible on foot or by bicycle. The bus services identified above also provide an alternative for travel into the town centre, as well as further afield to major employment destinations such as Cardiff, Llandough Hospital and the Cardiff Bay Retail Park as well as smaller centres such as Dinas Powys and Barry.

- ***Workplace Statistics***

4.90 In order to establish accurately the existing workplace destinations of local residents, information has been obtained from the *Office of National Statistics* regarding travel to work data for the existing residents of St. Augustine's Ward. The proposed re-development site lies within this ward boundary. The information is based on the latest year 2001 census. The full analysis is contained in Table 4.1 within Appendix 1. Table 4.2 also within Appendix 1 gives a summary of the workplace destinations for St Augustine's Ward residents in terms of '*Local / Unitary Authority Name*'.

- 4.91 Table 4.2, Appendix 1 indicates that some 41.7% of local residents work within the Vale of Glamorgan district. However, analysis at this level does not provide a clear picture of the actual workplace destinations. For example, the statistics for Vale of Glamorgan include for those people who work from home who account for some 9.1% of all residents. This is encouragingly high and compares with the average for Wales of 9.7% (and England - 9.2%). We can therefore be confident that a significant percentage of 'Penarth Heights' residents are likely to work from home.
- 4.92 A further 24.5% ( $674 \div 2751$ ) of St Augustine's ward residents work within the same ward, i.e. in Penarth (Refer to Table 4.1, Appendix 1). In totality some 32.3% of this ward's residents work in one of the Penarth wards (Cornerswell, Llandough, Plymouth, St Augustine's and Stanwell). It is likely therefore, that a similar percentage of new 'Penarth Heights' residents will work within Penarth. By improving the local footway/cycleway links and bus facilities a modal shift away from the private car can be expected. It is encouraging that although the Vale of Glamorgan accounts for 41.7% of employment destinations, it only accounts for 29.1% of all car-driver trips. Furthermore, 30.3% ( $269 \div 889$ ) of those people who live in St Augustine's and work in Penarth presently travel to work on foot and 1.1% ( $10 \div 889$ ) do so by bicycle. This demonstrates the accessibility of employment destinations within Penarth on foot and by bicycle. **It suggests that potentially one third of the new residents at 'Penarth Heights' could work locally and walk or cycle to their workplace every day.**
- 4.93 Table 4.2 also demonstrates that, as expected, Cardiff is a major employment centre accounting for 44.3% of all workplace trips.
- 4.94 In order to predict vehicle trips with respect to workplace destinations, further analysis of the statistics shown in Table 4.1 has been completed based on 'Car Drivers' and Table 4.3, Appendix 1 summarises the findings.

- 4.95 Table 4.1, Appendix 1 identifies that over 27% of local residents who drive to work actually work within the St Augustine's ward itself, and over 32% work within Penarth. Outside of Penarth, Table 4.3 indicates that almost 52% of car drivers work in Cardiff. The VOGC's assertion in their *LTP* that the appeal of car parking in Cardiff city centre needs to be reduced is therefore very important.
- 4.96 In terms of vehicular impact on the local highway network, Plan 7, Appendix 8 identifies the likely distribution and assignment onto the highway network of those 'car drivers' travelling to the destinations shown in Table 4.1, Appendix 1: this for the Barons Court Junction and Windsor Road corridor. This exercise has been completed in order to verify the trip distribution assumed by Atkins in their previous *Transport Assessment*. Plan 7 therefore also shows the trip distribution based on the Atkins *Transport Assessment* and it can be seen that the two are very comparable once allowance is made for school escort trips etc. The Atkins model has therefore been used as a basis for the trip distribution and assignment for all car based trips from the proposed re-development site. This is discussed further in Section 7 of this Transportation Assessment.
- 4.97 The re-development site is within easy reach of the town centre and the employment opportunities offered therein. Local employment sites, including the town centre, and the future development at the International Sports Village are located within a 1.0km (0.6 mile) radius of the proposed residential site. The existing bus routes within Penarth also travel past or conveniently close to these employment areas. Given the proximity of the re-development site to both existing and proposed local employment centres, there is no reason why many local employment trips generated by the development could not be completed on foot or via bicycle. The *National Travel Statistics Fact Sheet on Walking* (Appendix 6) relates that 77% of walking journeys are under 1.5km (1 mile). In fact, it further relates that the average length of a walk

4.97 Contd..

trip is 0.6 miles (1.0km). Given the statistics for residents working within Penarth, it is evident that there are ample existing employment opportunities within this walking radius.

4.98 We would also point out that Penarth town centre provides the opportunity for more than one task to be carried out in any one trip. It offers the chance for multi-purpose tasks, e.g. shopping at the Co-op supermarket on the way home from work: linked trips.

4.99 It is important to recognise that the proposed development itself will also generate employment opportunities in the short term during the construction period. The adjacent International Sports Village and Cardiff Bay Retail Park will also generate significant employment opportunities.

• **LEISURE FACILITIES**

4.100 *PPG13 states that 'Local planning authorities should encourage the provision of leisure and entertainment facilities serving local catchments and make provision for attractive local play areas, public open space and other recreational facilities in locations likely to be accessible without the use of the car.'*

4.101 The proposed re-development at Penarth Heights includes for the provision of public open space both through the upgrade of existing facilities and the provision of new facilities. Paget Road play area will be revitalised together with Plassey Square. Subtle improvements will be made to Arcot Triangle in order to provide a transition zone between the existing and the new. The re-development will be designed in such a way as to provide direct linkage for residents to these areas both on foot and by bicycle.

4.102 Penarth Leisure Centre is on Andrew Road (off Windsor Road) to the southwest of the proposed re-development site. It offers the following facilities:

- Lifestyle Health & Fitness studio;
- Main Hall with 6 badminton courts;
- Pool with hydro slide and small children's pool;
- 3 squash courts;
- Health Suite - sauna, steam room, spa bath, sun beds;
- Gullyvers Adventure Play Centre, Party Room & Crèche;
- Dance studio;
- Outdoor multi surface pitch; and
- Bar & Cafe.

4.103 The *National Travel Statistics* suggest that walking is the most popular activity, as reported in the *General Household Survey*. In 1996, some 45% of adults reported walks of 3km (2 miles) or more in the previous four weeks. This would suggest that adults would walk not only for recreational purposes, but also to the nearby leisure centre via the available footway links.

4.104 Other leisure facilities include the marina itself and the Cardiff Bay Barrage. On the other side of the bay attractions such as Techniquest are within relatively close proximity. To the south, Cosmeston Lakes Country Park provides another leisure facility within an area largely protected by a SSSI. Dyffryn Gardens are also nearby to the west of Penarth. Cardiff hosts yet more attractions including museums and sites of historical interest.

4.105 We can conclude that there are a range of leisure facilities and attractions in the local area that mean new residents would not need to travel far for many of their weekly requirements.

### • SHOPPING & SERVICES

4.106 The principal shopping area in the vicinity of the proposed re-development site is the town centre itself. As previously indicated, the town centre is only some 700m (0.4 miles) away and accessible on foot or by bicycle via the existing network of kerbside footways and residential streets. To walk from the centre of the site to the town centre (roundabout) would take approximately 11 minutes at a reasonable walking speed ( $3\text{mph}^i/1.34\text{ms}^{-1}$ ) based on a walking distance of some 870m. A variety of shops and services are available therein, and these include:

§ Co-op supermarket;	§ Butchers;
§ Spar supermarket;	§ Video shop;
§ Bakery;	§ Cafés;
§ Dry cleaners;	§ Florist;
§ Newsagent;	§ Restaurants;
§ Public Houses;	§ Opticians;
§ Pharmacy;	§ Bookmakers;
§ Travel Agent;	§ Launderette;
§ Library;	§ Car Maintenance Shop;
§ Post Office facilities;	§ Estate Agents;
§ Various banks – Barclays, Nationwide, HSBC.	

4.107 The *DETR* publication entitled '*Reducing Transport Emissions Through Planning*', paragraph 2.4.22 and Table 11 on Page 47 (Appendix 6), suggests that some 63% of shoppers living within 1km of a local shopping centre carry out the trip on foot. This publication also relates that '*taken as a whole, the analysis shows that walking (at 53%) for journeys to local and non-local centres, is the dominant mode for trips up to 1.6km*'. This statistic therefore demonstrates the convenience of Penarth town centre to the proposed re-development site, and that it is easily accessible on foot.

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<sup>i</sup> Traffic Planning & Engineering, Third Edition, Volume 1 – C A O'Flaherty

- 4.108 The same publication also relates that there is a clear relationship between the distance to a centre and the frequency of its use on a daily basis. The addition of some 450 dwellings that the proposed re-development will provide will also assist in ensuring the vitality of these local shopping facilities.
- 4.109 Given the location of the proposed re-development site to the town centre, we would expect a significant proportion of shopping trips to be made on foot.
- 4.110 A Tesco supermarket is located at the junction of Windsor Road with Terra Nova Way (Western Road). A home delivery service is offered from this store 7 days a week. This fact will be promoted to new and existing residents via the Travel Packs to be issued by the developer.
- 4.111 In addition to the services offered in Penarth town centre, Cardiff Bay Retail Park also offers a significant number of shops such as IKEA, Asda, Lidl, Staples, Argos, JJB Sports, and Pizza Hut.
- 4.112 There is an ample and diverse range of shopping facilities within a close proximity of the proposed re-development site.

• **SCHOOLS & EDUCATION**

- 4.113 The *National Travel Statistics Fact Sheet on Travel to School* (Appendix 6) relates that some 1 in 10 cars are 'on the school run'. This can lead to major localised problems of traffic congestion especially during the morning peak travel time. We now discuss the proximity of local schools and the likely modal choice of those travelling to and from those schools. The likely walking routes to these schools are shown on Plan 2 (Appendix 8).

4.114 In terms of primary education the following schools are close to the proposed re-development site:

- Fairfield Primary School (Dryden Road) – 750m (10 minutes walk);
- Albert County Primary School (Albert Road) – 800m (10 minutes walk);
- Victoria Primary School (Cornerswell Road) – 860m (11 minutes walk);
- Cogan Primary School (Pill Street) – 985m (13 minutes walk); and
- Westbourne Schools (Hickman Road) - independent fee paying – 1000m (13 minutes walk).

4.115 The associated distances and walk times shown above demonstrate that all of these primary schools could be accessed on foot or by bicycle. Indeed, *National Travel Statistics* (refer to Appendix 6) reveal that some 84% of 5 to 10-year olds walk to their primary school where the trip length is within 1.6km (1 mile). The accessibility of these schools is also in accordance with local policy, which is to encourage parents and students (and staff) to cycle or walk to school.

4.116 It is recommended that measures be implemented to help to ensure that this statistic is borne out for new residents of Penarth Heights; this for both primary and secondary schools. VOGC's Senior Road Safety Officer has advised that presently, within Penarth, only St Cyres Secondary School has produced a School Travel Plan. This is due to the fact that previously in order to apply for Safe Routes to Schools monies, the Welsh Assembly did not require that individual schools had produced a Travel Plan. This has now changed, and it is understood that future applications will have to be supported by a Travel Plan. Notwithstanding the recommendations for infrastructure improvements given below, it is recommended that reference is made to individual requirements that schools have identified, and consideration is given to using developer contributions to assist with these requirements and therefore benefit the



4.116 Contd..

local community. For example, it may be that monies could be made available to provide the software (such as that offered by [www.school-run.org.uk](http://www.school-run.org.uk)) necessary to organise lift sharing, a walking bus, or a cycle train.

4.117 The walking route to each of these primary schools is now discussed. Refer also to Plan 2, Appendix 8.

4.118 Fairfield Primary School is likely to be accessed via the Dingle Road Station footbridge. Therefore schoolchildren and parents alike would benefit from the provision of a controlled pedestrian crossing facility on Windsor Road (as introduced in the '**Bus**' section above). With the exception of Windsor Road, the remaining highway links that are likely to be used are side streets and therefore experience relatively low levels of traffic that do not present significant issues with respect to crossing. However, if the streets adjacent to the proposed development are incorporated in a 20mph Zone as suggested earlier, then the measures that would be implemented could further improve the safety of the walking route from the proposed development to Windsor Road.

4.119 Albert County Primary School can be accessed via the network of relatively quiet residential streets to the north of Penarth town centre. Again, the implementation of 20mph Zones, or at the very least, the provision of isolated footway build-outs, would facilitate safer crossing facilities for school children and parents.

4.120 Victoria Primary School is also likely to be accessed via the Dingle Road Station footbridge. Therefore schoolchildren and parents alike would benefit from the suggested pedestrian crossing facility on Windsor Road described above, together with the associated benefits of the suggested 20mph Zones.

4.121 Cogan Primary School would be accessed via Windsor Road. Again, the provision of the suggested Windsor Road pedestrian crossing facility and implementation of 20mph Zones would be of benefit to attendees at this school.

4.122 The Westbourne Schools are already afforded a safe crossing facility on Windsor Road. Pedestrian access would be via the town centre and schoolchildren/parents would need to use the zebra crossing facility on Windsor Road adjacent to the town centre roundabout. They would then be able to use the pelican crossing facilities at the junction of Stanwell Road and Hickman Road to access any of the various school buildings. Again, school children and parents alike would benefit from improved crossing facilities within the residential streets surrounding the proposed Penarth Heights development.

4.123 Secondary education is offered at the following schools:

- Headlands School (St Augustine's Road) – independent fee paying – 980m (13 minutes walk);
- Westbourne Schools (Hickman Road) – independent fee paying – 1000m (13 minutes walk);
- Stanwell School (Archer Road) – 1390m (17 minutes);
- St Cyres Comprehensive School (St. Cyres Road) – 1690m (21 minutes).

4.124 *National Travel Statistics* also show that some 92% of 11 to 16-year olds attending secondary education walk where journey length is within 1.6km (1 mile). The percentages drop away sharply for distances over 1.6km (one mile). Therefore the close proximity of the re-development site to the majority of these secondary schools should encourage new residents to access them via foot or bicycle. Again, VOGC should give consideration to measures that can be implemented to help ensure that this statistic is valid for new residents of Penarth Heights.

- 4.125 The walking route to each of these secondary schools is now discussed. Refer also to Plan 2, Appendix 8.
- 4.126 Headlands School, like Albert County Primary School, can be accessed on foot via the network of relatively quiet residential streets to the north of Penarth town centre. Improved crossing facilities on the adjacent residential streets to Penarth Heights would enhance the safety of pedestrians accessing this school.
- 4.127 Pedestrian access to the Westbourne Schools has been discussed above. Pedestrian access to Stanwell School would be via the town centre in a similar fashion to that for the Westbourne Schools.
- 4.128 St Cyres Comprehensive School is also likely to be accessed via the Dingle Road Station and therefore pupils/parents travelling to and from this school on foot would also benefit from the aforementioned pedestrian crossing facility on Windsor Road.
- 4.129 We can therefore conclude that the provision of the suggested pedestrian crossing on Windsor Road will be of great benefit to schoolchildren and parents alike who will access local schools situated to the south of Windsor Road. With regards to the streets surrounding Penarth Heights, the possible implementation of 20mph Zones, or at the very least, the provision of isolated footway build-outs, will help to enhance the streetscape and provide safer crossing facilities for all pedestrians, and particularly school children. It will improve their safety as a pedestrian and should therefore help to encourage walking to schools.
- 4.130 The promotion of walking and cycling for these school journeys could relieve road traffic, improve child health and offer greater access to a range of educational opportunities. Walking and cycling to school offers children the opportunity for

4.130 Contd..

regular exercise at a time when the health consequences of sedentary lifestyles are becoming increasingly apparent.

4.131 Other educational facilities nearby include the Welsh School in Barry and Cardiff University.

• **MACRO SUSTAINABILITY**

4.132 From a macro analysis, it is concluded that Penarth is a sustainable settlement as it:

- i) has a wide range of shops and services;
- ii) offers bus and train services to local employment centres;
- iii) is well served by schools;
- iv) offers its residents nearby leisure facilities;
- v) offers a range of employment opportunities;
- vi) has a good provision of footways and cycleways; and
- vii) is well located by road.

• **MICRO SUSTAINABILITY**

4.133 From a micro analysis, it is concluded that the proposed re-development site is a sustainable form of development as it is:

- i) within the existing built-up area;
- ii) close to an existing public transport corridor;
- iii) within a convenient distance of existing local facilities such as shopping, schools, employment opportunities and leisure areas;
- iv) within a convenient distance of the town centre;
- v) adjacent to the existing local highway network which has reserve capacity during the majority of the day, thus avoiding the need for expensive new infrastructure.

• **GENERAL COMMENT**

- 4.134 The accessibility of the proposed re-development site is summarised in Table 4.4, Appendix 1.
- 4.135 In terms of sustainable transport, the site can be considered as highly accessible. The site will offer a real choice of means of travel to future residents, who will not rely solely on the use of the car. Public transport services close to the site are in operation providing services to major employment destinations. However, Penarth itself is an important employment centre with some 32.3% of residents actively working within the town.
- 4.136 The proposed re-development will enhance this existing sustainable infrastructure by providing many improvements and contributions. These incorporate the provision of new bus shelters on Windsor Road and improved access to them, new and improved footway/cycleway links, and the supply of cycle storage facilities in desirable locations within Penarth, as well as within the proposed re-development site. Footway/cycleway links within the Penarth Heights site will be as direct as possible, whilst roads will be circuitous. The opportunities for sustainable travel within Penarth and further afield are excellent. Residents will have a real choice in their selected mode of travel.
- 4.137 Even when the car is used to reach employment destinations outside of Penarth, it is likely that journeys will be relatively short as major employment destinations are close by. Vehicular trips are likely to be short. Furthermore, those trips made outside of Penarth will not necessarily involve use of the private car; this section has highlighted the availability of public transport provision for destinations outside of Penarth.

4.138 It is concluded that in terms of local, regional and national policy, the proposed site complies with the objectives of sustainable development and transport set out in policy guidance notes. It has excellent accessibility to every-day destinations and offers residents a real choice in their mode of travel. Even when car journeys are made, these, in general, are likely to be relatively local and therefore relatively short in length.

## **5.0 TRAVEL PLAN ASPIRATIONS & CAR PARKING PROVISION**

5.1 CEC are advised that VOGC are keen to encourage sustainable travel measures at the proposed re-development site. This section briefly introduces the concepts of sustainable travel and identifies the likely Travel Plan requirements for Penarth Heights. The Client fully subscribes to the principles of sustainable travel and is appreciative of the benefits that can accrue from the implementation of sustainable transport initiatives.

5.2 We also discuss on-site car parking provision within this section. Guidance suggests that car-parking provision can influence travel mode selection. Accordingly, the amount of car parking provided within the site should form part of the Travel Plan for Penarth Heights.

- **What is a Travel Plan?**

5.3 A Travel Plan is not just a document, it is a co-ordinated series of measures and policies designed to meet travel-related objectives, such as reducing single car occupancy use. This can include:

- § the provision of infrastructure, such as cycle racks;
- § cash incentives, such as season ticket loans;
- § information, such as bus and train timetables or a system for promoting car sharing;
- § revenue support for public transport services.

5.4 For a Plan to be successful, it is necessary to provide active management and monitoring to disseminate information and manage the process. Travel Plans not only cover the journey to work, although this is an important part of any Travel Plan.

5.5 The requirement for a Travel Plan for a new residential development is less common than for new office developments. However, their effective implementation can still lead to a modal shift away from the use of the private car. The proposed re-development site at Penarth Heights has particular promise due to its location nearby to the rail stations and bus services offering convenient connections to Cardiff and Penarth town centre (and the employment opportunities, services and facilities offered therein).

- **How Effective are Travel Plans?**

5.6 The Department for Transport recently researched the effectiveness of Travel Plans developed by a variety of businesses and organisations, including hospitals, government offices and universities. The results showed an overall reduction in car access to these sites of 8%. Research into the effectiveness of Residential Travel Plans has not been completed, as traditionally, Travel Plans have only been required for businesses and schools. The requirement for Residential Travel Plans is far more recent.

- **Likely Travel Plan Structure**

5.7 In order to address the necessary requirements, the Travel Plan would include the following items<sup>ii</sup>:

- **Background** to the site and the context within which the Travel Plan must fit. Information from site assessments and travel surveys;
- **Objectives** – identify what it is that is trying to be achieved;
- **Scope of the Plan** – identify the travel elements that are to be addressed;
- **Actions** – identify the proposed actions/measures for achieving the objectives;
- **Marketing** – identify how the plan will be marketed;
- **Targets** – identify targets to determine whether the objectives are being met;



5.7 Contd...

- **Monitoring** – identify how the effectiveness of the Travel Plan will be monitored.

- ***Likely Travel Plan Structure: Background***

5.8 In order to derive the most benefit from a Residential Travel Plan, it would be beneficial to complete a Travel Survey of the residents as soon as all of the units are occupied. This Survey would then allow a detailed analysis to be completed of the workplace destinations of these new residents. It is only then that the best initiatives could be identified that may benefit the residents at that time, and result in a modal shift away from the private car.

5.9 This TA has established that considerable infrastructure is already in place for sustainable travel. For example, the residential units will be close to Dingle Road railway station, and new footway/cycleways within the site will integrate fully with the existing network of footpaths that presently lead to important destinations.

- ***Likely Travel Plan Structure: Objectives***

5.10 Simply put, the main objective would be to achieve a modal shift away from the use of the private car for both workplace trips and non-employment trips (visiting friends, school escort etc).

- ***Likely Travel Plan Structure: Scope of the Plan***

5.11 The Travel Plan scope would include discussion on all forms of green travel, and would include walking, cycling and public transport (bus, coach & rail).

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<sup>ii</sup> "A Travel Plan Resources Pack for Employers" – TransportEnergy Best Practice

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- ***Likely Travel Plan Structure: Actions***

5.12 There are many green travel initiatives and measures that could be implemented as part of a Residential Travel Plan, and these would be discussed within the initial Draft Travel Plan. Measures might include all or some of the following:

- Introduction of a residents lift sharing scheme;
- Personalised journey planning (one-to-one discussions);
- Formation of a cycling club for recreational purposes, lobbying for local improvements etc;
- Arrangement of discounts with local bicycle shops;
- Introduction of walking buses to the local schools;
- Provision of cycleway/footway maps to new residents;
- Assistance with public transport fares through provision of a single annual bus pass (Penarth-Cardiff) per residential unit;
- Encouragement of home working to reduce the need to travel;
- Introduction of a Green Travel Notice Board to display relevant information to residents such as;
  - Bus timetable information;
  - Train timetable information;
  - Information regarding local/national car sharing schemes;
  - Information regarding the location of cycle storage facilities within Penarth;
  - Maps showing local footpaths/cycle network;
  - Maps showing typical walking/cycling distances and times (isochrones);
- Leaflets also showing the information detailed above (distributed to all new 'house owners' and nearby residents);
- Investigate potential for forming a Car Club.

- ***Likely Travel Plan Structure: Marketing***

- 5.13 The introduction of a Green Travel Notice Board as described above would be a good form of marketing. In addition, a residents' website could be set up and regularly updated to show green travel information together with links to the relevant websites for bus and train operating companies, for example. The housing developer would also be expected to promote green travel via their marketing suite when selling individual units. It is at this stage where the personalised journey planning could be introduced by advising new residents of the travel alternatives available to them for their journey to work etc.

- ***Likely Travel Plan Structure: Targets***

- 5.14 The Residential Travel Plan would give a series of targets for modal shift together with measures that would be implemented to try to achieve this modal shift. As already identified, the location of the proposed re-development site adjacent to the town centre and the existing public transport network will assist greatly in achieving a modal shift away from the private car.
- 5.15 Alternatively, simpler targets can be set for Residential Travel Plans whereby a maximum number of car trips per day per residential unit is agreed. Either of these strategies could be adopted following consultation with the local Highway Authority prior to submission of the Draft Travel Plan.

- ***Likely Travel Plan Structure: Monitoring & Review***

- 5.16 Any Travel Plan is subject to change over time and is therefore continually evolving. For this reason, Resident's Travel Surveys should be repeated on a regular basis to reflect any changes in ownership/workplace etc. and therefore changing travel patterns. If these changing travel patterns are observed, then the Travel Plan and the

5.16 Contd..

initiatives/measures contained therein can be modified to suit the changing circumstances. Both the original and the revised actions and targets should be SMART, i.e.:

- Specific;
- Measurable;
- Attainable;
- Realistic;
- Timescale (deliverable within a specified timescale).

• **PARKING PROVISION (AT PENARTH HEIGHTS)**

- 5.17 We understand at the Design Bid stage the proposals put forward by Crest Nicholson (South West) Limited specifically detailed the anticipated parking provision both on the submitted competition drawings and within the *Written Masterplanning Statement*. Both of these documents showed some 495 parking spaces on street with an additional 102 "curtilage" spaces – this gives a **total provision of 597 spaces**: an overall provision of 1.3 spaces per dwelling. As discussed in the *Masterplanning Statement*, this level of parking provision is intended to "*strike a balance between the sustainable objectives of reducing car usage together with the realisation that parking provision must not be so low as to drive new residents to park on surrounding streets*". This latter statement, to CEC, seems a sensible strategy given the availability and quality of a choice of sustainable public transport alternatives within close proximity of the site; i.e. bus and train. This advantage coupled with the employment opportunities that are available within walking/cycling distance of the proposed re-development site suggest that Penarth Heights is a highly sustainable location where a relaxation in the Vale's parking guidelines should be considered.

5.18 The sustainability of the site together with the introduction of a Travel Plan for the residents should ensure that modal shift from the car for this development can be achieved.

- ***Parking Provision: Reference to Policy Documentation***

5.19 With reference to applicable policy documentation, paragraph 6.7 of VOGC's *Local Transport Plan* states the following:

***"Local Transport Plan main objective: To work closely with transport stakeholders to achieve a more efficient, equitable and sustainable transport network in the Vale of Glamorgan. "***

5.20 Paragraph 7.74 of the same document further states:

***"The council acknowledges that parking is a key determinant of managing demand for car use and encouraging a modal shift to public transport and alternative forms of travel."***

5.21 Policy *TRAN9* of VOGC's *Unitary Development Plan* is:

***"TRAN9: The provision of parking facilities will be in accordance with the approved guidelines, and will be related to: the type of land use, its density and location; existing and potential public transport facilities; and the capacity of the highway network."***

CEC would point out that the guidelines referred to above were introduced in 1993: some 12 years ago when the question of parking provision was far different to current thinking with regards to more sustainable modes of travel. Indeed we would make reference to the above policy within VOGC's *Local Transport Plan*.

- 5.22 The *Local Transport Plan* suggests that the requirements stated in the guidelines for non-operational parking (i.e. at offices/retail) should now be taken as a maximum – this in recognition of the requirement to reduce the appeal of car use. We suggest that VOGC should adopt the same principles with respect to residential parking standards in sustainable locations such as at Penarth Heights.
- 5.23 *Planning Policy Wales (Chapter 8 – Paragraph 8.4.2) states "Car parking provision is a major influence on the choice of means of transport and the pattern of development. Local authorities should ensure that new developments provide lower levels of parking than have generally been achieved in the past. Minimum parking standards are no longer appropriate."*
- 5.24 The above policy extracts do point towards a move to more sustainable development. However CEC suggest that VOGC's present parking guideline requirements do not necessarily accord with this aspiration: the guidelines are still being treated as a minimum requirement. Accordingly, such parking standards, if adopted, will encourage car use and car ownership, echoing the ethos of "predict and provide" that was relevant some 12 years ago when the guidelines were written.
- 5.25 These parking guidelines would seem not to comply with the objectives to encourage the use of more sustainable modes of travel at sustainable housing locations.
- 5.26 The most recent drawing produced by Edward Cullinan Architects (SK151 – Parking Provision, Appendix 8) shows a slight improvement on this previous proposal. Some 467 "street parking" spaces and 138 "garages/covered parking spaces" are shown on the basis of 436 dwellings giving a **total provision of some 605 spaces**.
- 5.27 Reference to the present *Parking Guidelines* Document (refer to Appendix 6), assuming the "non-central area" values suggests a required allocation for Penarth

5.27 Contd..

Heights of some 772 spaces for the residents (assuming 1 space per affordable housing unit) plus a further 145 spaces for visitors (1 space per 3 dwellings). If, however, a visitor allocation of 1 space per 5 dwellings were assumed (within the recommended range of 3 to 5 spaces/dwelling as stipulated in the *Parking Guidelines*) then a provision of 87 visitor parking spaces would be sufficient. The above infers that the total parking provision, according to the guidelines, would be between **859 to 917 spaces**. Refer to Parking Requirements for Housing Documents (produced by Edward Cullinan Architects), Appendix 5.

5.28 In contrast, if the "central area" parking guidelines are considered, then some 436 resident parking spaces would be required together with an additional 109 to 218 visitor parking spaces. This infers a total provision of between **545 to 654 spaces**. The present proposed provision of some 605 spaces (paragraph 5.26) falls within the upper half of this range.

5.29 Parking allocation at Penarth Heights should be made very clear at the marketing stage of the scheme, such that potential new residents are fully aware of their allocated parking entitlement. Flats/houses can be sold with an allocated number of spaces. CEC therefore propose that the current total provision of some 605 spaces is suitable for a development of this nature, given its highly sustainable location and the factors outlined above.

5.30 To assist with the objectives that will be contained in the Travel Plan, car parking management within this development site will be necessary. For example, the following can be incorporated within the Plan:

- i. Housing Association units will not necessarily have an allocated parking space. Those who wish to have a car will need to lease a parking space on an annual basis;

5.30 Contd..

- ii. All owners or tenants could be members of an on-site Car Club where an annual contribution towards membership and administration is paid. Car clubs are becoming popular in the UK and this location would seem to provide an ideal opportunity for success. There are many well-established car clubs operating across the country who could take on the operation of such as scheme at Penarth Heights.

- **General Comment**

- 5.31 The introduction of a Travel Plan will assist in reducing vehicular impact of this development on the surrounding highway network. The uptake of alternative sustainable modes of transport could be expected to reduce single car occupancy trips by up to 10%, given the proximity of the railway stations, the proposed improved footway/cycleway facilities and the proposed bus improvements, and indeed the existing excellent service offered from Windsor Road.
- 5.32 The provision of on-site car parking is known to influence travel behaviour. Present local and national policy encourages Planning Authorities to carefully consider the provision of parking on residential schemes, with a view to providing a sustainable development that encourages its residents to consider the sustainable alternative travel modes to that of the private car. This consideration has formed part of the design process ethos when considering the present Masterplan layout. The latter would seem to take into account the location of likely nearby amenities and the excellent provision of public transport close the proposed re-development site. We therefore suggest that the 605 spaces presently proposed are appropriate for this development. We understand that parking provision is the subject of continuing discussion between Crest Nicholson and VOGC. However, we further understand that VOGC's Director



5.32 Contd..

of Environmental and Economic Regeneration is presently considering a "*reasonable and sensible relaxation*" of the parking standards that can be applied to the Penarth Heights site.

5.33 In making this conclusion regarding the presently proposed number of parking spaces, we rely on the LPA making a condition to planning approval that the development will be subject to a Travel Plan. The latter can incorporate car parking management policies such as that detailed in paragraph 5.29 above.

## 6.0 PREDICTED FUTURE VEHICULAR TRIP GENERATION

6.1 Likely vehicle trip generation to and from the proposed re-development site has been based on the current proposals as defined in Section 2 of this Assessment.

6.2 The *Trip Rate Information Computer System (TRICS 2005(a))* computer database information has been used as the basis for estimated trip generation to and from the proposed re-development site. The trip generation for the various residential classifications is discussed in turn below.

- **Residential Use**

6.3 The Penarth Heights re-development will be a mix of houses and flats. Furthermore, a percentage of these will be affordable units. Whilst it is acknowledged that affordable units tend to have a lower vehicle trip generation, the *TRICS* database does not contain details for these affordable units. Therefore the '*privately owned*' category has been selected for both flats and houses. Accordingly, this does provide a robust analysis of the likely trip generation associated with the development scheme.

- ***Residential Use: Houses***

6.4 Surveyed sites in the category titled '*Houses Privately Owned*' that have been surveyed on a weekday have been selected from the *TRICS* database. All sites in Northern Ireland and the Republic of Ireland have been omitted during our selection process. All '*free standing*' sites were also omitted. All sites with low public transport accessibility (<20 buses or trains/day) were then manually omitted. The remaining sites were deemed to be suitable.

6.5 The results of this analysis are shown in Appendix 4 and summarised below. These are comparable to the trip rates assumed by Atkins in their previous assessment.

6.5 Contd..

**§ Predicted Trip Generation Rates for Proposed Residential Houses**  
**(trips/household)**

	Arrivals	Departures	Total
• AM Peak (0800-0900)	0.16	0.46	0.62
• PM Peak (1700-1800)	0.42	0.23	0.65
• Daily	3.73	3.76	7.51

6.6 Applying these trip generation rates together with an assumed total of 292 residential houses gives the following number of predicted vehicle trips:

**§ Predicted Vehicle Flows for Proposed Residential Houses**

	Arrivals	Departures	Total
• AM Peak (0800-0900)	47	134	181
• PM Peak (1700-1800)	123	67	190
• Daily	1089	1098	2187

• ***Residential Use: Flats***

6.7 Surveyed sites in the category titled '*Flats Privately Owned*' that have been surveyed on a weekday have been selected from the *TRICS* database. All sites in the Republic of Ireland and Greater London have been omitted during our selection process. All sites with low public transport accessibility (<20 buses or trains/day) were then manually omitted. The remaining sites were deemed to be suitable.

6.8 The results of this analysis are shown in Appendix 4 and summarised below. They are comparable to the trip rates assumed by Atkins in their previous assessment.

6.8 Contd..

**§ Predicted Trip Generation Rates for Proposed Residential Flats**  
(trips/household)

	Arrivals	Departures	Total
• AM Peak (0800-0900)	0.05	0.24	0.29
• PM Peak (1700-1800)	0.21	0.09	0.30
• Daily	1.47	1.51	2.99

6.9 Applying these trip generation rates together with an assumed total of 158 residential flats gives the following number of predicted vehicle trips:

**§ Predicted Vehicle Flows for Proposed Residential Flats**

	Arrivals	Departures	Total
• AM Peak (0800-0900)	8	38	46
• PM Peak (1700-1800)	33	14	47
• Daily	232	239	471

6.10 It has been assumed that there will be no HGV movements associated with the residential dwellings apart from normal delivery movements etc.

**Predicted Development Trip Summary**

6.11 Below we provide a summary of the total predicted development flows:

**§ Total Predicted Vehicular Flows**

Development Proposal	AM Peak Hour Period			PM Peak Hour Period			Daily Totals (24-hours)		
	Arrivals	Departures	Total	Arrivals	Departures	Total	Arrivals	Departures	Total
Houses	47	134	181	123	67	190	1,089	1,098	2,187
Flats	8	38	46	33	14	47	232	239	471
<b>Total</b>	<b>55</b>	<b>172</b>	<b>227</b>	<b>156</b>	<b>81</b>	<b>237</b>	<b>1,321</b>	<b>1,337</b>	<b>2,658</b>

## 7.0 VEHICLE TRIP DISTRIBUTION & ASSIGNMENT

7.1 The predicted development vehicular trips discussed in Section 6 have been assigned to the local highway network according to the previously completed Atkins *Transport Assessment*. This follows verification of their model by comparison with Travel to Work statistics obtained from the Office of National Statistics (refer to Section 4). Existing traffic flow information has been taken from a number of sources, as stated in Section 3 of this Assessment. The distribution and assignment of vehicle trips associated with the development proposal is discussed below.

- **Assignment Assumptions**

7.2 The assignment assumptions (in accordance with the Atkins *Transport Assessment*) are as follows:

- All traffic generated by Penarth Heights destined for the TESCO foodstore will route via Terra Nova Way;
- In the AM peak hour period, 75% of traffic from Penarth Heights destined for the Barons Court Junction and beyond will route via Terra Nova Way;
- In the PM peak hour period, 25% of traffic from Penarth Heights destined for the Barons Court Junction and beyond will route via Terra Nova Way;
- For all time periods, traffic coming towards Penarth Heights from the Barons Court Junction and beyond will route via Windsor Road.

- **Assignment Figures**

7.3 The assignment of arrival and departure trips associated with the residential units for the Penarth Heights re-development proposal in the AM and PM peak hour periods, expressed as a percentage of total vehicle generation, is shown on Figures 7.1a and 7.1b, Appendix 2.

7.4 Figures 7.2 & 7.3, Appendix 2 show the total development flows in the AM and PM peak hour periods respectively.

• **Base Traffic Flows – Year 2005**

7.5 The existing 'base' traffic flows for the AM and PM peak hour periods (year 2005) are shown in Figures 3.1 - 3.2 respectively (Appendix 2).

• **Design Year Traffic Flow – Years 2012 & 2017**

7.6 The draft construction programme indicates a construction period of some 77 months, commencing in July 2006. This infers that the re-development will be fully complete in December 2012. Accordingly, we have assessed the impact on the local highway network for the completion year and some five years afterwards, i.e. in years 2012 and 2017.

7.7 To estimate the effects of traffic growth over time the *DfT TEMPRO* computer software has been used. National Road Traffic Forecasts (NRTF) by Road Type (central estimate) have been adjusted by local car driver trip end growth for Penarth ('Wales\A53(SGlam)\Vale of Glamorgan\Penarth') as advised in *TEMPRO* guidance in order to derive adjusted local peak period growth factors. These local growth factors are summarised below:

§ **Adjusted Local AM Peak Hour Period Growth Factor\***

Growth Period	(A) NRTF97 Urban "Trunk & Principal Dual" Road**	(B) TEMPRO AM Peak Car Driver Trip End Growth for Penarth (average of productions & attractions)	(C) TEMPRO Average Day Car Driver Trip End Growth for GB	(D) Adjusted Local AM Peak Period Growth Factor
2005-2012	1.0634975	1.025	1.074	1.0150
2012-2017	1.0380685	1.025	1.034	1.0290

7.7 Contd..

**§ Adjusted Local PM Peak Hour Period Growth Factor\***

Growth Period	(A) NRTF97 Urban "Trunk & Principal Dual" Road**	(B) TEMPRO PM Peak Car Driver Trip End Growth for Penarth (average of productions & attractions)	(C) TEMPRO Average Day Car Driver Trip End Growth for GB	(D) Adjusted Local PM Peak Period Growth Factor
2005-2012	1.063497509	1.029	1.074	1.0189
2012-2017	1.038068498	1.029	1.034	1.0330

\* Formula: (A)×(B) / (C) = (D)

\*\* Table 3 NRTF 1997 NTF by Road Type (Central Estimates) – “Dual & Single Carriageway 'A' Roads”.

**• WITHOUT Proposed Development – Forecast Flows**

7.8 Using the adjusted local growth factors indicated in the tables above, the forecast flows for years 2012 and 2017 have been produced. Figures 7.4 & 7.6, Appendix 2 show the Forecast (WITHOUT Development) scenarios for years 2012 and 2017 respectively.

**• WITH Proposed Development - Forecast Flows**

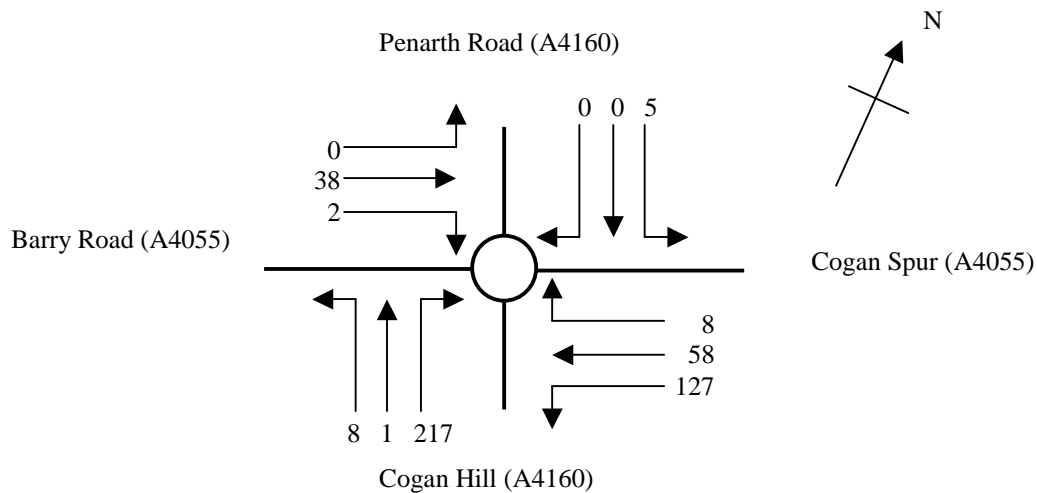
7.9 These forecast flows have then been added to the predicted development flows (Figures 7.2 & 7.3) to predict Forecast (WITH Development) Flows. These Forecast (WITH Development) Flows for year 2012 are shown on Figure 7.5, Appendix 2. The Forecast (WITH Development) Flows for year 2017 are shown on Figures 7.7, Appendix 2.

**• Other Committed Development**

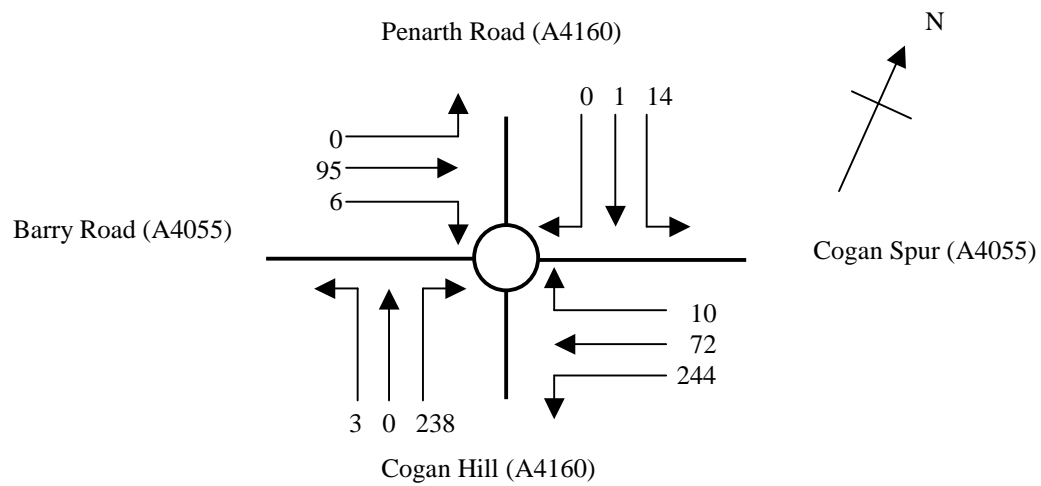
7.10 Whilst other committed developments are not included in the Figures shown above, consideration has been given to adjacent developments that will have their own impact on the surrounding highway network. Reference to the Transportation Assessment produced for the Cardiff International Sports Village (CISV) suggests the following development flows at the Barons Court Junction in the AM and PM peak hour periods (refer to Arup Figures H1.1 and H1.2, Appendix 6):

7.10 Contd..

AM Peak Hour Period:



PM Peak Hour Period:



7.11 Development flows beyond the Barons Court Junction for the CISV are not detailed within the Arup Transport Assessment. However, when assessing the operation of the Tesco and Plassey Street Roundabouts in Section 8 of this Transportation Assessment,



7.11 Contd..

analysis is carried out for the 'with' and 'without' CISV scenarios so that comparisons can be made.

- **Construction Traffic**

7.12 The phasing of the construction programme together with 'Just In Time' (Egan principles) ordering will help to ensure that deliveries to the construction site on any one day are minimised as far as possible and spread evenly throughout the week.

7.13 Further initiatives that the contractor could explore in order to minimise the impact to the surrounding neighbourhood include:

- Discussing and agreeing acceptable working hours with VOGC;
- Providing sufficient on-site parking for all staff and implementing a 'No Parking' on adjacent residential streets rule with an associated warning/disciplinary process;
- Specifying off-peak delivery times for key suppliers;
- Undertaking early discussion with 'neighbours' via the Local Residents' Associations and Penarth Heights Community Consultative Group;
- Agreeing a specified vehicle access route(s);
- Producing a 'Code of Conduct' for Suppliers/Sub-Contractors detailing acceptable working hours, vehicle access routes, parking restrictions etc;
- Ensuring delivery drivers turn their engines off when waiting;
- Investigating the possibility of a Lift Share scheme for construction workers.

## **8.0 PREDICTED TRAFFIC IMPACT**

- **ADJACENT HIGHWAY LINKS**
- **Comment**

- 8.1 The morning and evening peak hour periods along the highway network have been assessed, as these are likely to be the time periods when greatest impact occurs. These time periods represent the busiest traffic conditions along the highway network.
- 8.2 Tables 8.1 & 8.2, within Appendix 1, list the forecast year two-way traffic flows on the adjacent highway network, including those that will be generated by the proposed development in Years 2012 and 2017.
- 8.3 The forecast traffic flows (WITH development) along specific highway links are discussed below. The predicted impact at the designated junctions in the vicinity of the development is also analysed.
- 8.4 It can be seen from Tables 8.1 & 8.2 (Appendix 1) that the percentage impact in terms of traffic flow along the various highway links in Years 2012 and 2017 ranges from some 3.4% (Cogan Spur) to 82.8% (Arcot Street), with an average impact in year 2012 of 9.5% in the AM peak hour period and 9.4% in the PM peak hour period (excluding High Street and Arcot Street). In 2017 these values reduce to 9.2% and 9.0% respectively due to the growth in background traffic levels.
- 8.5 The highest predicted impact in percentage terms is on High Street and Arcot Street, and this is a direct result of the low base flows compared to the additional predicted 'Penarth Heights' vehicular traffic. However, it should be noted that vehicular trips from the previous 'Billybanks' development of 329 units are no longer on this local highway network. Therefore vehicle flows along these highways are likely to have been higher in the past than that presently experienced. Also, the Atkins assignment

8.5 Contd..

model (as used in this TA) assumes that vehicles leave the site along Paget Road, Arcot Street or High Street. In reality, drivers may leave via Plassey Square (×2no. highways) and this would have the effect of reducing the number of 'Penarth Heights' trips along each highway by half (i.e. because there would be four highways to the south for access/egress rather than the two assessed). However, it is understood that a further possibility is to 'stop-up' Plassey Square to through-traffic.

8.6 The average percentage impact shown in Tables 8.1 and 8.2 is artificially inflated due to these low base flows on High Street and Arcot Street (in the vicinity of the proposed re-development site). Indeed, the average predicted vehicular impact in year 2012 when excluding these highways is 9.5% in the AM peak hour period and 9.4% in the PM peak hour period, i.e. below the 10% threshold impact level suggested for the production of a Transportation Assessment for a development. The associated impact of the Penarth Heights development along these highways could be offset by the provision of streetscape enhancements. The implementation of the aforementioned 20mph Zones in these areas would help to improve their appearance, reduce vehicle speeds, provide safe pedestrian crossing facilities and offset local residents' concerns about increased vehicle movements. This would ensure local residents benefit and are included as part of the scheme.

8.7 Reference to Tables 8.1 and 8.2 also indicates that there is significant reserve capacity on the adjacent highway (approximately 50% to 60% in both the AM and PM peak hour periods). However there are some isolated areas of concern and these are discussed in more detail below together with all highway links assessed.

- **Terra Nova Way**

- 8.8 The predicted percentage impact on Terra Nova Way east of the Tesco Roundabout (Windsor Road) as a result of the proposed Penarth Heights re-development is between 1.8% and 8.4% in both the AM and PM peak hour periods (for year 2017). This impact is below the 10% threshold impact level suggested by the IHT for the production of a Transportation Assessment.
- 8.9 It is noted that this highway link is predicted to continue to have considerable reserve capacity of 40-55% in both the AM and PM peak hour periods in year 2017.
- 8.10 The associated predicted impact of the re-development in this location is higher in the AM peak hour period than it is in the PM peak hour period. This occurrence is due to the fact that more 'development' vehicles are assigned via Terra Nova Way in the AM peak hour period, as it is assumed that they will do so in an attempt to avoid peak hour northbound congestion along Windsor Road. In contrast, in the PM peak hour period, more vehicles will return along Windsor Road when congestion is not as apparent. Refer also to discussion in Section 3 of this TA.
- 8.11 The environmental impact for this link for both peak periods can be categorised as 'less slight' in accordance with *IEA Guidelines on Environmental Assessment*. The *IEA Guidelines* state that environmental conditions on a road do not change significantly with changes in flow of less than 30%. Changes of less than 30% are categorised 'less slight', 30% - 'slight', 60% - 'moderate' and 90% - 'substantial'.

- **Windsor Road (North of Tesco Roundabout)**

- 8.12 The predicted percentage impact of the proposed Penarth Heights re-development in terms of total vehicular flow on Windsor Road (North of Tesco Roundabout) is between some 7.7% and 7.8% in Year 2017. This development traffic impact is also below the aforementioned 10% threshold level.

- 8.13 The link is predicted to reach capacity in 2017 in the PM peak hour period, and has marginal reserve capacity in the AM peak hour period of the same year. The link does have reserve capacity in year 2012. Referring to Tables 3.1, 8.1 & 8.2 it is noted that this occurrence is largely due to background growth rather than the effect of the proposed re-development.
- 8.14 Although it has already been acknowledged that the Windsor Road corridor experiences high volumes of vehicular traffic there are several reasons why, in reality, the practical link capacity may not be reached. Firstly, this TA has assumed a central growth factor. This assumed growth includes for natural growth that includes the addition of vehicular traffic from new developments, and may therefore include the likely vehicle trips to be generated from 'Penarth Heights'. Furthermore, a discussion with VOGC Officers has suggested that the 'low' growth factor may be more appropriate. The 'central' growth factor was adopted in order to provide a robust assessment of the highway network.
- 8.15 The environmental impact for this link for both peak periods can be categorised as 'less slight' in accordance with *IEA Guidelines on Environmental Assessment*.
- **Windsor Road (North of Plassey Street Roundabout)**
- 8.16 The percentage impact of the proposed 'Penarth Heights' re-development on Windsor Road (north of Plassey Street roundabout) is predicted to be some 6.3% to 10.5% in Year 2017 in either of the peak hour periods. This link is still predicted to have a reserve capacity of between 18% and 39% in 2017.
- 8.17 The environmental impact for this link for both peak periods can be categorised as 'less slight' in accordance with *IEA Guidelines on Environmental Assessment*.

- **Windsor Road (West of Town Centre Roundabout)**

- 8.18 The percentage impact of the proposed 'Penarth Heights' re-development on Windsor Road (west of Town Centre Roundabout) is predicted to be some 3.4% to 5.0% in Year 2017 in either of the peak hour periods. This link is still predicted to have significant reserve capacity of between 62% and 74% in 2017.
- 8.19 The environmental impact for this link for both peak periods can be categorised as 'less slight' in accordance with *IEA Guidelines on Environmental Assessment*.
- 8.20 Reference to Figures 7.1a and 7.1b demonstrates that only 10% of all development traffic is predicted to travel through this junction. Indeed, only those drivers with destinations within Penarth (south of the roundabout) are likely to travel in this direction.

- **Cogan Spur**

- 8.21 The percentage impact of the proposed 'Penarth Heights' re-development on the Cogan Spur (east of Barons Court Junction) is predicted to be some 3.4% to 3.8% in Year 2017 in either of the peak hour periods. This link is still predicted to have a reserve capacity of between 38% and 47% in 2017.
- 8.22 The environmental impact for this link for both peak periods can be categorised as 'less slight' in accordance with *IEA Guidelines on Environmental Assessment*.

- **High Street (North of Plassey Street)**

- 8.23 The percentage impact of the proposed 'Penarth Heights' re-development on High Street (north of Plassey Street) is predicted to be some 47% to 64% in Year 2017 in either of the peak hour periods. This relatively high impact is due to the low base flows presently experienced, and this has already been discussed under the 'Comment' section above. Regardless of the predicted impact of the proposed re-development

8.23 Contd..

site, this link is still predicted to have significant reserve capacity of between 87% and 88% in 2017.

8.24 The environmental impact for this link for both peak periods can be categorised as 'moderate' in accordance with *IEA Guidelines on Environmental Assessment*. However, as discussed earlier, the impact should be offset against the likely traffic flows when the 'Billybanks' development was fully occupied, and the link continues to operate with significant reserve capacity.

- **Arcot Street (North of Plassey Street)**

8.25 The percentage impact of the proposed 'Penarth Heights' re-development on Arcot Street (north of Plassey Street) is predicted to be some 40.1% to 78.7% in Year 2017 in either of the peak hour periods. This link is still predicted to have significant reserve capacity of 88% in 2017.

8.26 The environmental impact for this link for both peak periods can be categorised as 'moderate' in accordance with *IEA Guidelines on Environmental Assessment* (though it is approaching 'substantial'). The fact remains however, that there will continue to be significant reserve capacity and the volume of traffic is likely to return to that previously experienced when 'Billybanks' was fully occupied.

8.27 The impact on Arcot Street and High Street is considered acceptable given the size of the proposed re-development in terms of dwelling numbers.

- **Plassey Street (East of Roundabout Junction with Windsor Road)**

8.28 The percentage impact of the proposed 'Penarth Heights' re-development on Plassey Street (east of Plassey Street roundabout) is predicted to be some 24.2% to 27.6% in

8.28 Contd..

Year 2017 in either of the peak hour periods. This link is still predicted to have significant reserve capacity of between 64% and 81.6% in 2017.

8.29 The environmental impact for this link for both peak periods can be categorised as 'less slight' in accordance with *IEA Guidelines on Environmental Assessment*.

- **Highway Link Mitigation Measures**

8.30 The predicted vehicular impact on the adjacent highway links, as described above, does not take into account the possible improvement that a Travel Plan for the proposed development could have. Section 5 has indicated that such a Travel Plan could potentially reduce single car occupancy trips by up to 10%.

8.31 After the influence of a Travel Plan and the restraints imposed by parking provision, there is very little that can be done to reduce the actual percentage impact of development vehicular traffic on the surrounding streets. However, what can be influenced is the perception of this impact and the 'feel' of these streets. Presently, the wide linear streets encourage vehicle speed and do little to encourage local trips to be made on foot. Engineering measures such as those required to implement 20mph Zones can help to allay fears about increased volumes of traffic by reducing vehicle speeds and improving conditions for pedestrians over that presently experienced. Such measures could also help existing local residents to feel "included" in the development.



- **JUNCTION ANALYSIS**

8.32 Further to discussions with VOGC Officers, the following junctions have been analysed:

- Tesco Roundabout (Windsor Road); and
- Plassey Street Roundabout (Windsor Road).

8.33 Contrary to the previously completed *Transport Assessment* by Atkins, the Barons Court junction and the Merrie Harrier junction have not been analysed. The Barons Court junction has not been analysed as a highways improvement scheme to change the roundabout to a fully signal controlled junction is presently at the detailed design stage and construction work is due to commence later this year. Therefore, once complete, this junction will be optimised as far as possible given the surrounding constraints. The Merrie Harrier junction has not been analysed as the Atkins TA acknowledges that the proposed 'Penarth Heights' re-development only changes the existing flows by less than 1%. The decision therefore not to model both these junctions was agreed at a meeting with VOGC Officers.

8.34 In addition, the Plassey Street/High Street and Plassey Street/Arcot Street junctions have not been analysed. This is due to the low RFC levels ( $<0.3$ ) and queue lengths ( $<0.4$ ) predicted in the Atkins report. CEC are confident therefore that significant queues or delays will not occur at either of these junctions due to the similar level of development traffic predicted within this TA.

- **Tesco Roundabout (Windsor Road)**

8.35 In order to analyse the operation of this roundabout in capacity terms, the *ARCADY* computer software program has been used. Several different scenarios have been assessed including the 'with' and 'without' development scenarios. The 'with' development scenarios include analysis assuming that the Cardiff International Sports

8.35 Contd..

Village (CISV) is in full operation. The flow information for the CISV has been taken from the *Transport Assessment* produced by Arup and its impact at the Barons Court Junction is summarised in section 7 of this TA. Full details of the *ARCADY* analysis are contained on the CD ROM in Appendix 5 and summarised below:

• **ARCADY Results Summary – Tesco Roundabout (Windsor Road)**

Scenario	Development	RFC / QUEUE (AVE)		
		Arm A Windsor Road (N)	Arm B Terra Nova Way	Arm C Windsor Road (S)
AM Peak Hour Period 2005	Without	<u>0.535</u> 1.2	<b><u>0.890</u></b> <b>10.1</b>	<u>0.541</u> 1.3
PM Peak Hour Period 2005	Without	<b><u>1.114</u></b> <b>&gt;30</b>	<u>0.342</u> 0.5	<u>0.500</u> 1.0
AM Peak Hour Period 2012	Without	<u>0.545</u> 1.2	<b><u>0.909</u></b> <b>15</b>	<u>0.553</u> 1.3
PM Peak Hour Period 2012	Without	<b><u>1.138</u></b> <b>&gt;30</b>	<u>0.350</u> 0.6	<u>0.511</u> 1.1
AM Peak Hour Period 2017	Without	<u>0.568</u> 1.3	<b><u>0.946</u></b> <b>22.0</b>	<u>0.572</u> 1.4
PM Peak Hour Period 2017	Without	<b><u>1.180</u></b> <b>&gt;30</b>	<u>0.363</u> 0.6	<u>0.531</u> 1.2
AM Peak Hour Period 2017	With (PH only)	<u>0.597</u> 1.5	<b><u>1.064</u></b> <b>&gt;30</b>	<u>0.596</u> 1.6
PM Peak Hour Period 2017	With (PH only)	<b><u>1.281</u></b> <b>&gt;30</b>	<u>0.391</u> 0.6	<u>0.562</u> 1.3
AM Peak Hour Period 2017	With (& CISV)	<u>0.698</u> 2.4	<b><u>1.265</u></b> <b>&gt;30</b>	<u>0.651</u> 1.9
PM Peak Hour Period 2017	With (& CISV)	<b><u>1.488</u></b> <b>&gt;30</b>	<u>0.587</u> 1.5	<u>0.636</u> 1.8

'PH only' refers to purely the Penarth Heights re-development (i.e. no CISV)

'& CISV' refers to the Penarth Heights re-development plus the CISV development

8.36 The summary results shown above indicate that the existing Tesco Roundabout is already approaching its useful capacity on some arms during the AM and PM peak hour periods. In the AM peak hour period the queuing and delay occurs on Terra Nova Way, and this is due to the high volume of vehicles using this approach to travel

8.36 Contd..

northwards towards the Barons Court Junction. Conversely, in the PM peak period the queuing and delay occurs on the Windsor Road (N) arm; as is to be expected.

8.37 The above analysis does indicate that the **queuing and delay at this roundabout is a result of existing base traffic**. Indeed, the above table highlights there is already an issue in year 2005, and this is corroborated by observations on site. Unfortunately, the traffic flow information provided by VOGC does not contain queue length information so that the ARCADY model can be validated. However, observation would suggest that the predicted level of queuing in the AM and PM peak hour periods by ARCADY is presently experienced. It should be noted that above an RFC value of 0.85, the ARCADY software predictions become somewhat unstable. However, the analysis does indicate that the presently experienced problem is exacerbated in the future by background growth, and the vehicular impact of the CISV and Penarth Heights. The traffic generated by these proposed developments may however already be included in the natural growth that has been assumed for the base traffic. It is further noted that **the CISV development has a more significant impact than either background growth or the proposed Penarth Heights re-development**.

8.38 Given the spatial restraints imposed by the two railway bridge abutments/parapets, there is very little scope for improving this roundabout junction without major structural extensions to the two bridge sections. Within the present constraints the only alternative would be to provide complete traffic signal control. Such a system could then be linked to the future signals at Barons Court junction in order to provide the most efficient system. Given the present volume of traffic experienced at the Tesco roundabout, the signals may provide some increased capacity but are likely to at least manage the traffic flows as efficiently as possible. Signal control would also improve safety at this location by eliminating as far as possible the potential for

8.38 Contd..

collisions during turning movements. It is suggested that this in an option that VOGC should consider further given the existing capacity problems at this location. CEC are not aware whether developer contributions have been secured from the CISV for improvements at this location.

- **Plassey Street Roundabout (Windsor Road)**

8.39 In order to analyse the operation of this roundabout in capacity terms, the *ARCADY* computer software program has been used. Again, the 'with' and 'without' development scenarios have been analysed together with the addition of the CISV development traffic for comparison purposes. Full details of the *ARCADY* analysis are contained on the CD ROM in Appendix 5 and summarised below:

- ***ARCADY Results Summary – Plassey Street Roundabout (Windsor Road)***

Scenario	Development	RFC / QUEUE (AVE)		
		Arm A Windsor Road (N)	Arm B Plassey Street	Arm C Windsor Road (S)
AM Peak Hour Period 2017	Without	<u>0.299</u> 0.5	<u>0.121</u> 0.2	<u>0.333</u> 0.5
PM Peak Hour Period 2017	Without	<u>0.605</u> 1.6	<u>0.203</u> 0.3	<u>0.200</u> 0.3
AM Peak Hour Period 2017	With (PH only)	<u>0.324</u> 0.5	<u>0.146</u> 0.2	<u>0.337</u> 0.5
PM Peak Hour Period 2017	With (PH only)	<u>0.677</u> 2.2	<u>0.242</u> 0.4	<u>0.204</u> 0.3
AM Peak Hour Period 2017	With (& CISV)	<u>0.334</u> 0.5	<u>0.147</u> 0.2	<u>0.353</u> 0.6
PM Peak Hour Period 2017	With (& CISV)	<u>0.695</u> 2.4	<u>0.246</u> 0.4	<u>0.178</u> 0.3

'PH only' refers to purely the Penarth Heights re-development (i.e. no CISV)

'& CISV' refers to the Penarth Heights re-development plus the CISV development

8.40 The summary results shown above indicate that the existing roundabout is predicted to operate satisfactorily, with minimal levels of vehicle queue and delay. However, as discussed in section 3 of this Transportation Assessment, in the AM peak hour

8.40 Contd..

period, traffic does queue back from the Tesco roundabout to this roundabout. It is anticipated though that this present situation will improve following the introduction of traffic signal control at the Barons Court Junction.

- **General Comment on Vehicular Impact**

8.41 The average impact on the adjacent highway network in terms of the environment can be categorised as '**less slight**' when considered in accordance with *IEA Guidelines on Environmental Assessment*. These *IEA Guidelines* state that environmental conditions on a road do not change significantly with changes in flow of less than 30%.

8.42 The Tesco roundabout junction on Windsor Road presently experiences queuing and delay in the AM and PM peak hour periods. The junction is already approaching its useful capacity. This capacity problem is exacerbated in the future by background growth and the addition of other development traffic. The CISV development has the greatest impact at this junction, even though it has not been analysed within the CISV Transportation Assessment. VOGC should consider the available options for improving this junction given the present problems that will only worsen over time. It is possible that improvements made remote to this junction could help the existing situation at the Tesco Roundabout. There is a close interaction between the Tesco Roundabout and the Barons Court junction. The scheduled improvements to this latter junction may alleviate the congestion presently experienced at the Tesco roundabout. Furthermore, measures can be imposed to reduce vehicle speeds on the approaches to this roundabout such that it can operate more efficiently by distributing the volume of traffic more evenly along the network.

8.43 This Assessment has shown that the proposed residential re-development can be efficiently and safely accessed via the existing highway network. The majority of the highway network including its junctions will continue to operate satisfactorily even

8.43 Contd..

with the additional development traffic. Improvement works at the Barons Court junction will improve traffic flow in this location and should also improve the operation of the Tesco roundabout and the Windsor Road corridor. In terms of highway junction and link capacity, this scale of re-development can be accommodated in Penarth.

## **9.0 ROAD TRAFFIC ACCIDENT ANALYSIS**

- 9.1 The recorded personal injury accidents along the adjacent highway network have been obtained from Vale of Glamorgan Council and are listed within Appendix 3. This data covers the five-year period from September 1999 to September 2004. The information provided is very basic and does not allow for detailed examination of accident factors, trends and groups, to identify for example, a regular type of accident for one type of road user. Each line of the accident data contained in Appendix 3 refers to an individual casualty rather than a single accident. Therefore one accident may have several entries dependant on the number of casualties involved.
- 9.2 In order to provide some meaningful analysis for this study, CEC have produced Plan 8 (Appendix 8) that identifies information relating to these accidents. Plan 8 identifies accident clusters by displaying them pictorially. Each accident is notated by a symbol together with a number that indicates the casualty reference in the table (also on Plan 8). Where accidents involve more than one casualty, two (or more) numerical references are made.
- 9.3 Plan 8 (Personal Injury Accident Data) contained in Appendix 8 shows the type, severity and location of personal injury accidents (PIAs) on the adjacent highway network. Discussion regarding accidents at particular locations is detailed below. However, only those locations where four or more accidents have occurred are discussed. All accidents are shown on Plan 8.

- **Junction: Windsor Road with Plassey Street (Roundabout)**

9.4 The fifteen recorded accidents over the five-year period at or on the approach to this junction resulted in twenty casualties and can be summarised as:

Frequency	Type	Severity	Casualties
4	Car / Motorbike	Slight	6
8	Car / Car	Slight	10
1	Pedestrian / Unknown vehicle	Slight	2
2	Pedestrian / Unknown vehicle	Serious	2

- Average of 3 accidents per annum

9.5 These accidents appear to have occurred consistently over the five-year period. However accident causation cannot be established, as the data is not detailed enough. The fact that the accidents appear to have occurred evenly on the three approach arms of this roundabout suggests that they are generally all shunt-type accidents, which unfortunately are commonplace at roundabout locations. There were no fatal accidents and only two serious accidents involving pedestrians.

9.6 The causation of these accidents could be investigated further by interrogating the records held by VOGC. This may establish a common thread between the majority of these accidents. Without this further information, CEC would suggest that the accidents might be speed related. There is very little deflection on this roundabout allowing drivers to traverse the roundabout without slowing down to an appropriate speed. Indeed, on one of CEC's visits, when travelling northbound along Windsor Road, another driver approached from Plassey Street at speed, could obviously see that Windsor Road (N) was clear, and crossed the roundabout heading northbound without slowing down at all. If the accidents are simple shunts, then it is possible that the provision of anti-skid surfacing in the vicinity of the roundabout may help.

9.7 Furthermore, if the VOGC proposal to make Plassey Street and the adjacent section of Windsor Road a one-way system is taken forward, then much of the potential for



9.7 Contd..

accidents at this roundabout would be removed due to the reduced number of turning movements.

- **Junction: Windsor Road with Pill Street**

9.8 The four recorded accidents over the five-year period at or on the approach to this junction resulted in eight casualties and can be summarised as:

Frequency	Type	Severity	Casualties
1	Car / Car / Motorbike (accident refs. 43, 44, 45, 46)	Slight / Serious	3 / 1
2	Car / Car	Slight	3
1	Car / Motorbike	Slight	1

- Average of <1 accident per annum

9.9 Reference to casualty numbers 43-46 would suggest that these casualties were all the result of one accident (on 04/04/01). There was one serious casualty and three slight casualties. Further information is required regarding this accident but it may coincide with the opening of the new pedestrian crossing facility that is provided in this location.

9.10 The average accident rate of less than 1 accident/annum together with the associated slight injury nature of the majority of casualties would indicate that there is not a serious accident problem in this location.

- **Junction: Windsor Road with Arcot Street**

9.11 The four recorded accidents over the five-year period at or on the approach to this junction resulted in six casualties and can be summarised as:

9.11 Contd..

Frequency	Type	Severity	Casualties
1	Car / Car	Slight	2
1	Car / Motorbike	Slight	1
1	Pedestrian / Unknown vehicle	Slight	1
1	Pedestrian / Unknown vehicle	Serious	2

- Average of <1 accident per annum

9.12 Reference to casualty numbers 29 & 30 (car/car accident) would suggest that these casualties were all the result of one accident (on 01/09/99). Similarly, casualty numbers 40 & 41 (pedestrian/unknown vehicle) were the result of a single serious accident (on 17/01/01).

9.13 The average accident rate of less than 1 accident/annum together with the associated slight injury nature of the majority of casualties would indicate that there is not a serious accident problem in this location. However, the two accidents involving pedestrians would suggest that there might be a need for a pedestrian crossing facility in this location (although these may be isolated incidents). The existing zebra crossing adjacent to the town centre roundabout provides some benefit to pedestrians but is obviously not on their desire line when wishing to cross from the opposite end of the 'High Street' shopping area.

9.14 It is anticipated that the provision of pedestrian crossing facilities in the town centre will be reviewed in the full study of Penarth that is presently being undertaken by VOGC.

- **Junction: Windsor Road with Glebe Street**

9.15 The four recorded accidents over the five-year period at or on the approach to this junction resulted in five casualties and can be summarised as:

Frequency	Type	Severity	Casualties
1	Car / Car	Slight	1
2	Pedestrian / Unknown vehicle	Slight	3
1	Pedestrian / Unknown vehicle	Serious	1

- Average of <1 accident per annum

9.16 Reference to casualty numbers 83 & 84 (pedestrian/unknown vehicle accident) would suggest that these casualties were all the result of one accident (on 13/08/04). Three of the four accidents involved pedestrians, and this is likely to reflect the high level of pedestrians using the area for local shopping purposes.

9.17 The average accident rate of less than 1 accident/annum would indicate that there is not a serious accident problem in this location. However, the three accidents involving pedestrians would suggest that there might be a need for a pedestrian crossing facility in this location. The existing zebra crossing adjacent to the town centre roundabout provides some benefit but is obviously not on the pedestrian desire line when wishing to cross from the opposite end of the 'High Street' shopping area.

9.18 We reiterate that it is anticipated that the provision of pedestrian crossing facilities in the town centre will be reviewed in the full study of Penarth that is presently being completed by VOGC.

- **Junction: Plassey Street with Arcot Street**

9.19 The four recorded accidents over the five-year period at or on the approach to this junction resulted in four casualties and can be summarised as:

Frequency	Type	Severity	Casualties
2	Car / Car	Slight	2
1	Car / Motorbike	Slight	1
1	Pedestrian / Unknown vehicle	Slight	1

- Average of <1 accident per annum

9.20 One of the four accidents in this location involved a pedestrian.

9.21 The average accident rate of less than 1 accident/annum together with the slight injury nature of the casualties would indicate that there is not a serious accident problem in this location.

- **Junction: High Street with Harbour View Road**

9.22 The two recorded accidents over the five-year period at or on the approach to this junction resulted in four casualties and can be summarised as:

Frequency	Type	Severity	Casualties
1	Car / Car / Motorbike	Slight / Serious	1 / 2
1	Car / Motorbike	Slight	1

- Average of <1 accident per annum

9.23 Reference to casualty numbers 8-10 (pedestrian/unknown vehicle accident) would suggest that these casualties were all the result of one accident (on 07/11/00). The remaining accident occurred only two weeks later on 19/11/00. This suggests that the accidents may be related to conditions at that time (perhaps roadworks) rather than the highway layout.

- **Miscellaneous**

- 9.24 The remaining accidents are all well dispersed along the remainder of the highway network and cannot be attributed to one single cause.

- **General Comment**

- 9.25 More detailed information regarding each of these accidents would be required in order to suggest the likely accident causation. This information would need to be provided by VOGC. CEC suggest that specific areas of further investigation are identified by VOGC; however, we suggest that the Plassey Street Roundabout and Windsor Road (in the vicinity of the town centre) are considered first and foremost. The aim of this further investigation would be to identify whether there are particular accident causation trends in these locations.
- 9.26 Elsewhere on the highway network, CEC do not at this stage consider that specific highway improvement works are required as a result of either the existing road traffic accidents to date or the additional traffic movement generated by the Penarth Heights development.
- 9.27 The implementation of 'footway/cycleway' measures both within the proposed re-development site and improvements within Penarth itself (as part of safe 'routing') will assist to ensure that conflict between pedestrians, cyclists and motorists is reduced.

## **10.0 DISCUSSION & CONCLUSIONS**

- 10.1 Cole Easdon Consultants have prepared this Transportation Assessment on behalf of Crest Nicholson (South West) Limited with respect to the proposed residential re-development at Penarth Heights, Penarth. The re-development proposal presently comprises of a maximum of 450 residential units, a proportion of which will be affordable housing.
- 10.2 This Assessment has considered the highway engineering and transportation issues associated with the proposal together with the potential impact on the surrounding local highway network.
- 10.3 The re-development site is located on the northern side of Penarth town, and is adjacent to an existing highway network. The proposed re-development would replace the existing, largely disused development of 329 residential units known as 'Billybanks': therefore the site can be considered as brownfield. The vast majority of these 'Billybanks' units are derelict and have been boarded up for some time. The site area is 6.7 hectares (16.6 acres).
- 10.4 The developer would also be responsible for the improvement to areas known as Plassey Square, The Bowl, Paget Road play area and Arcot Street Triangle.
- 10.5 The re-development site is approximately 700m (0.4 miles) northwest of Penarth town centre (from centre of site to Town Centre Roundabout). Shops, schools, leisure and employment facilities are all conveniently located within Penarth and closely related to the development site. Further opportunities exist within Cardiff to the north, and Dinas Powys and Barry to the southwest. Cardiff ('Cardiff Central' Train Station) is

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located only some 3.5km to the north of the proposed re-development site, and is accessible by train from the nearby 'Cogan' and 'Dingle Road' stations.

10.6 This final section summarises the conclusions reached within each previous section of this Assessment. It then summarises what CEC believe are the priorities for improvement that should be considered further by VOGC.

- **Walking**

10.7 Pedestrians currently benefit from the linkages between the site and the town centre. The town centre offers shopping and employment opportunities.

10.8 The re-development proposals include for the enhancement of the existing pedestrian linkages to the town centre and elsewhere. The internal layout of the residential areas within the Penarth Heights site will create a network of attractive and suitable footway/cycleways that provide direct links to the surrounding footway network. Within the re-development site, the Design Team strongly promotes the concept of 'shared streets' (rather than roads and pavements) where priority is returned to pedestrians and cyclists.

10.9 A main aim of the on-site layout is to provide a path along the northern boundary of the development demarcating the boundary between the built-up area and the woodland. This path will connect to the 'Bowl' and the 'zigzag' footpath and the design team endeavour to form a direct connection to the Tesco superstore to the west. Dedicated footway links that are surfaced and illuminated will provide access to the following areas:

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- § to the north along the northern site boundary connecting to the 'Bowl' and the 'zigzag' footpath, providing access to Terra Nova Way, Penarth Marina and the Tesco superstore;
- § to the east to the Paget Road play area and Arcot Triangle, connecting to the town centre and the bus stops on Windsor Road;
- § to the south to Plassey Square, connecting to Cogan and Dingle Road Rail Stations and the bus stops on Windsor Road (linking to the 'Bowl' to the north);
- § to the southwest to Hill Terrace adjacent to the Plassey Street Roundabout connecting to Cogan Rail Station and the leisure centre; and
- § to the west down to the Tesco superstore (to be confirmed).

10.10 The Penarth Heights re-development proposals address many of the walking objectives and policies outlined in VOGC's *Local Transport Plan* and *Technical Advice Note 18 (Planning Policy (Wales))* documents.

- **Offsite Improvements for Pedestrians**

10.11 In order to satisfy specific VOGC requirements regarding the existing 'zigzag' footpath, CEC suggest the following improvements:

- cut back and maintain thereafter the foliage adjacent to the existing 'zigzag' footpath;
- resurface the existing 'zigzag' footpath and provide proper surface water drainage and landing stages at each 'turn' in the footpath;
- illuminate the existing 'zigzag' footpath to provide safer access in the winter months and generally during the hours of darkness;
- erect 'Cyclists Dismount' signs at either end of the 'zigzag' footpath; and



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- provide an alternative cycleway facility off-street eastwards through the existing park on Paget Road (to be upgraded as part of the re-development) and then on-street along Paget Road as it traverses down the hill towards Cardiff Bay Barrage.

10.12 However, CEC believe that this zigzag footpath due to its gradient and orientation provides more of a recreational route than a functional route and that those footpaths/footways to the south and east of the proposed development are likely to be more heavily used by pedestrians. We therefore suggest the following additional improvements with regards to walking:

- Provide public information within Penarth Heights detailing the optimum pedestrian/cyclist routes to important destinations and public transport interchange (this would be done in any event as part of the actions outlined in the Travel Plan);
- Provide Travel Pack information to new and existing residents detailing local walking routes to desirable destinations such as shops, schools and public transport facilities;
- Consider the implementation of 20mph Zones, or at the very least, isolated footway build-outs to provide safer crossing facilities on pedestrian desire lines to Albert County Primary School, Fairfield Primary School, Stanwell School, Windsor Road bus stops, Dingle Road Station, town centre, etc.;
- Provide a controlled pedestrian crossing on Windsor Road for the benefit of those accessing Dingle Road and Cogan Station, the Windsor Road bus services, and the schools to the south of Windsor Road. The location of this facility is still to be determined – CEC have suggested a position to the south of Plassey Street roundabout assuming that pedestrians would make use of the cut-through from Plassey Street (opposite Plassey Square-west) to Windsor Road. It is understood that the Council are presently considering an alternative location near the Police Station; and

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- Consider provision of pedestrian route signage from the Penarth Heights re-development to bus and rail links.

10.13 CEC recommends that the Council undertake a comprehensive survey of the footway condition on adjacent highways. This exercise would identify those areas outside of the suggested 20mph Zones (if implemented) where resurfacing and the provision of dropped kerbs/pedestrian refuges would be most beneficial. It is suggested that in the first instance, those routes that lead to the nearby bus stops on Windsor Road, Dingle Road and Cogan train stations, Albert County Primary School, Fairfield Primary School, Stanwell School, and the town centre are prioritised. This method of priority will encourage the most walking trips by providing improved facilities along the desire lines to the most beneficial destinations. Refer to Plan 2, Appendix 8, which shows the likely pedestrian desire lines from the proposed re-development and the possible route of the cycleway alternative to the 'zigzag' footpath.

10.14 This TA has established that even before any of the above improvements have been implemented, there is a wide choice of destinations that are accessible on foot. These destinations include primary and secondary schools, the town centre, workplace destinations and leisure facilities. Reference to travel to work statistics from the 2001 Census indicates that walking within the ward that Penarth Heights lies (St Augustine's) already accounts for a high proportion of workplace trips (11.6%) when compared to elsewhere. Furthermore, 30.3% of those people who live in St Augustine's ward and work in Penarth presently travel to work on foot

10.15 We can conclude that walking will be a real choice for future residents for all types of trip such as that for employment, recreational and school escort purposes.

- **Cycling**

- 10.16 National Cycle Network Route 8 (Taff Trail) runs to the north of the proposed re-development site through Penarth Marina and across the Barrage towards the Cardiff docks. This route could potentially connect Penarth with the southern outskirts of Cardiff where significant regeneration has taken place within the Cardiff Bay Development Area. However at present, access beyond the northern end of the barrage is not permitted. CEC stress the importance of VOGC negotiating the provision of this connection to Cardiff in order to encourage cycle travel into and out of Cardiff. The Taff Trail follows the River Taff from Cardiff Bay northwards to the Brecon Beacons, with connecting links into Cardiff Bay and the city centre. It therefore provides an ideal facility for recreational cycling and access to the many opportunities (employment and otherwise) within the city of Cardiff. Furthermore, National Cycle Route 88 to the south of Penarth is proposed to link the town with Barry, Llantwit Major and Bridgend. When complete, this facility will provide a safe, convenient and attractive route for utility and leisure trips.
- 10.17 Plan 5, Appendix 8 identifies the close proximity of the site by bicycle to desirable destinations. For example, Penarth town centre and Cogan and Dingle Road train stations can be reached within 5 minutes, the majority of the developed area of Penarth can be reached within 10 to 15 minutes and Cardiff city centre can be reached on bicycle within 20 minutes.
- 10.18 It is proposed as a high priority that a cycle link will be provided by the developer between the Penarth Heights sites and Penarth Marina, connecting with National Cycle Route 8.
- 10.19 Cycle lane provision elsewhere within Penarth is made difficult due to the proliferation of on-street parking. However, the provision of the aforementioned

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20mph Zones could facilitate an improved cycle friendly environment. The majority of the adjacent residential streets do not experience high levels of vehicular traffic and therefore developer contributions may be better spent on providing quality bicycle storage 'bins' or covered storage facilities at desirable destinations such as the town centre, local schools (Fairfield Primary School and Stanwell Secondary School are the nearest), Dingle Road and Cogan railway stations and major workplace destinations which could be agreed with VOGC officers. The proposed re-development will provide dedicated cycle storage facilities at Penarth Heights for both residents and visitors.

10.20 The developer will provide public information boards at Penarth Heights detailing the proximity of local amenities by bicycle, together with recommended cycle routes and available cycle parking facilities. This information will also be contained within the Travel Packs to be provided to new residents (and nearby existing residents).

10.21 The proposals at Penarth Heights, together with contributions towards off-site measures will assist in achieving many of the objectives outlined within the Vale of Glamorgan's *Local Transport Plan*.

10.22 Other off-site proposals detailed within the Local Transport Plan will further enhance the appeal of cycling locally.

10.23 We can conclude that provision for cyclists both within 'Penarth Heights' and Penarth will be improved if the proposed re-development proceeds. The creation of a new cycle link, the addition of new cycle infrastructure within the site, and the provision of cycle storage facilities on site and at other desirable locations will all be of benefit. Cycling will offer a real choice for future residents.

- **Public Transport: Rail**

- 10.24 The proposed re-development benefits from the close proximity of two railway stations – 'Cogan' and 'Dingle Road'. Dingle Road station is on the Penarth to Cardiff line and is approximately 450m walking distance from the centre of the proposed site. Cogan station lies on the Barry to Cardiff line and is slightly further from the development at 900m walking distance (via Windsor Road) or 1km (via Terra Nova Way). A third station, 'Penarth', is situated in the town centre at the end of the Penarth to Cardiff line at a distance of some 1200m from the proposed re-development site. **Together, these stations offer an exceptional provision of public rail transport.** According to *IHT Guidelines*, Dingle Road is within the recommended 800m walking distance. For many new residents of Penarth Heights, Cogan station would also be within this walking distance, and it is also within a short cycle ride. It is therefore expected that future residents within the development site would be willing to walk or cycle to these stations.
- 10.25 From **Cogan station** there are approximately **70 trains per day each way** to Barry and Cardiff (Central & Queen Street) with **3-5 trains each hour (each way)** from 07:00 to 19:00. After this time, trains operate on a half-hourly basis until 23:44 (to Cardiff) / 23:50 (to Barry). From Cardiff, connecting trains can be caught to a range of destinations including Bridgend, Swansea, Newport, Bristol and London Paddington.
- 10.26 From **Dingle Road station** there are **three trains per hour to Cardiff** (Central & Queen Street) during the week (07:00 – 19:00). Generally trains then run at hourly intervals until 23:51. Weekend services are good with the Saturday service being almost identical to that provided during the week. On Sundays there are four trains from Dingle Road to Cardiff and four trains from Cardiff to Dingle Road.

10.27 There is therefore a good level of service from both of these stations. They both provide frequent access to Cardiff where a frequent service is available to major centres. Direct access to Cardiff, Dinas Powys and Barry etc. is also available.

- **Improvements to Rail**

10.28 Recommendations for improvements in relation to each of these stations are as follows:

- **Dingle Road Station:**

- Replace footbridge to provide DDA compliant access for pedestrians and cyclists (by others);
- Improve signage to the station from the proposed re-development (if identified within the suggested Signage Strategy exercise);
- Improve lighting of the footpath from Windsor Road;
- Paint the walls either side of the footpath from Windsor Road (to improve illumination levels etc); and
- Provide cycle storage facilities (consider cycle 'bins' or covered storage to further enhance the appeal to users).

- **Cogan Station:**

- Improve signage to the station from the proposed re-development (if identified within the suggested Signage Strategy exercise);
- 'Pedestrian Access' carriageway markings (hatching and 'pedestrian' symbols) through the car park from the pedestrian access ramp adjacent to the Tesco roundabout on Windsor Road to indicate pedestrian thoroughfare and raise awareness to drivers using the car park (the implementation of this would depend on whether the car park is adopted by the local Highway Authority);

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- 'Pedestrian Access' carriageway markings as above but along all-purpose access road to the south; and
- Provide cycle storage facilities (consider cycle 'bins' or covered storage to further enhance the appeal to users).

10.29 Improvements to existing footpath connections to Dingle Road and Cogan Stations are also important and these should include better crossing facilities on Plassey Street and a controlled pedestrian crossing facility on Windsor Road.

10.30 We can conclude that the frequent services offered from both Dingle Road and Cogan stations offer future residents of the proposed re-development a sustainable travel mode that is convenient and efficient. The proposed improvements will further improve the attractiveness of rail travel. Rail offers future residents a real choice in their travel mode.

- **Public Transport: Bus**

10.31 The Penarth Heights re-development is presently served by six bus services: the 87, 88, 92, 93, 94 services along Windsor Road and the 89 service that travels through Penarth Marina and into Penarth town centre. The nearest bus stop on Windsor Road (immediately south of Plassey Street roundabout) is only 270m walking distance from the centre of the proposed re-development site. Access to the 89 service is available either from Terra Nova Way or Paget Place. The associated walking distances to each of these locations from the centre of the proposed development site are 280m and 760m respectively. Pedestrian access to all of these bus services is in accordance with the IHT document "*Planning for Public Transport in Developments*" where it suggests that new development should be located so that a walking distance of no greater than 400m to the nearest bus stop is involved.

10.32 Services 92, 93 and 94 collectively offer a service frequency between Penarth (Windsor Road) and Cardiff of 7-8 minutes during the peak hour periods on weekdays. On Saturdays a combined service frequency of 7-8 minutes is also achieved. On Sundays a combined service frequency of 30 minutes is offered. No improvements to these services are proposed.

- **Suggested Bus Route Diversion**

10.33 VOGC's public transport team have suggested that service number 88 could be re-routed from the town centre via the Penarth Headlands, Paget Road and Plassey Street before re-joining Windsor Road on its way to Llandough Hospital. Services 88 and 89 are presently inter-worked to provide through journey opportunities without the need to change vehicles, therefore such a diversion would result in a more streamlined route for this combined 88/89 service. Such a diversion would have limited benefit to the new residents of Penarth Heights and existing residents in the surrounding areas given the infrequent service that is presently offered.

10.34 VOGC Officers also wish to increase the 88/89 service to offer a 60-minute frequency rather than the present 90-minute service at a cost of approximately £60,000 per annum. Funding would most likely be sought via developer contributions for the first two to three years.

10.35 However, the direct bus route into Cardiff offered by the nearby Windsor Road services is likely to be favoured by new residents over the infrequent and indirect 89 service. CEC therefore suggest that monies may be better directed towards improving the appeal of the 'existing Windsor Road' services. It is widely accepted that bus patronage levels are strongly related to the provision of frequent, reliable and direct services. These are offered on Windsor Road. They are not offered by the 88 and 89 services. Therefore improving access to the Windsor Road services and improving



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the bus shelter waiting facilities is likely to provide a more beneficial improvement than that offered by a 60-minute bus service from elsewhere.

10.36 Should VOGC still require a bus to be re-routed towards the proposed development, then CEC suggest that consideration is given to diverting a certain number of the 'Windsor Road' buses (services 92, 93 or 94) along Plassey Street to provide a half-hourly service. However, there may be commercial reasons why this is not achievable. Such a diversion would provide a closer frequent service to the proposed development and surrounding residential streets without great detriment to the existing services on Windsor Road.

- **Other Improvements**

10.37 Improvements to the Windsor Road bus stops are highly recommended. These improvements could include the provision of new shelters, timetable information, seats, and real time information displays (for future use). Where the footway width is insufficient to provide a bus shelter, it is suggested that footway build-outs may be achievable without compromising the remaining carriageway width. Many of these improvements could be made through developer contributions. A new controlled pedestrian crossing facility on Windsor Road, south of Plassey Street roundabout, will afford safe pedestrian movements across Windsor Road to these bus stops. Other highways improvements (which may form part of a series of 20mph Zones) will improve the safe access from Penarth Heights to Windsor Road.

10.38 Crest Nicholson will also investigate the possibility of providing a free Penarth Commuter Multiride annual, quarterly or monthly travel ticket (depending on cost and priorities) to each household for the first year in order to further enhance the appeal of public bus transport to new residents; this as part of the developer commitments within the Residential Travel Plan.

10.39 Aside from the improvements listed above, present VOGC initiatives include a proposed bus priority scheme between Dinas Powys and Penarth Road. Another VOGC aspiration is to provide bus access across the barrage into Cardiff.

10.40 Public bus transport offers the opportunity for future residents of Penarth Heights to get to desirable destinations both within Penarth, and further afield to places such as Barry, Dinas Powys, Llandough Hospital and Cardiff. Improved waiting facilities on Windsor Road together with better access to them will make public bus transport more attractive. The existing services on Windsor Road are within close proximity to the entire proposed re-development site.

- **Employment**

10.41 There is a range of employment opportunities within Penarth that are readily accessible on foot or by bicycle. The bus services provide an alternative for travel into the town centre, as well as further afield to major employment destinations such as Cardiff, Llandough Hospital and the Cardiff Bay Retail Park as well as smaller centres such as Dinas Powys and Barry.

10.42 Some 41.7% of local residents (within St Augustine's Ward) work within the Vale of Glamorgan district. This percentage includes those people who work from home who account for some 9.1% of all residents. We can be confident that a significant percentage of 'Penarth Heights' residents are likely to work from home.

10.43 24.5% of St Augustine's ward residents actually work within the same ward. In totality, some 32.3% of this ward's residents work in one of the Penarth wards (Cornerswell, Llandough, Plymouth, St Augustine's and Stanwell). It is likely therefore, that a similar percentage of new 'Penarth Heights' residents will work

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within Penarth. By improving the local footway/cycleway links and bus facilities a modal shift away from the private car can be expected.

10.44 It is encouraging that although the Vale of Glamorgan accounts for 41.7% of employment destinations, it only accounts for 29.1% of all car-driver trips, i.e. a substantial number of people already travel to work by sustainable means. For example, 30.3% of those people who live in St Augustine's and work in Penarth presently travel to work on foot and 1.1% do so by bicycle. This demonstrates the accessibility of employment destinations within Penarth on foot and by bicycle. It suggests that potentially one third of the new residents at 'Penarth Heights' could work locally and walk or cycle to their workplace every day.

10.45 Outside of Penarth, Cardiff is an obvious major employment centre accounting for 44.3% of all workplace trips. The excellent access to Cardiff via the rail network has been established within this TA.

10.46 With respect to car drivers, it has been identified that over 27% of local residents who drive to work actually work within the St Augustine's ward itself, and over 32% work within Penarth. Outside of Penarth, almost 52% of car drivers work in Cardiff. It is the travel patterns of the above people that the Travel Plan would seek to influence.

10.47 It is important to recognise that the proposed re-development itself will also generate employment opportunities in the short term during the construction period. The adjacent Cardiff International Sports Village and Cardiff Bay Retail Park will also generate significant employment opportunities. It has therefore been demonstrated that there are ample employment opportunities that can be accessed on a daily basis using sustainable travel means.

- **Leisure**

- 10.48 The proposed re-development at Penarth Heights includes for the provision of public open space both through the upgrade of existing facilities and the provision of new facilities. Paget Road play area will be revitalised together with Plassey Square. Subtle improvements will be made to Arcot Triangle in order to provide a transition zone between the existing and the new. The re-development will be designed in such a way as to provide direct linkage for residents to these areas both on foot and by bicycle.
- 10.49 Penarth Leisure Centre is on Andrew Road (off Windsor Road) to the southwest of the proposed re-development site and offers a host of facilities including swimming pools and a crèche.
- 10.50 Other leisure facilities include the marina and the Cardiff Bay Barrage. On the other side of the bay attractions such as Techniquest are within relatively close proximity. To the south, Cosmeston Lakes Country Park provides another leisure facility within an area largely protected by a SSSI. Dyffryn Gardens are also nearby to the west of Penarth. Cardiff hosts yet more attractions including museums and sites of historical interest.
- 10.51 We can conclude that there are a range of leisure facilities and attractions in the local area that mean new residents would not need to travel far for many of their weekly requirements.

- **Shopping**

- 10.52 The principal shopping area in the vicinity of the proposed re-development site is the town centre itself. The town centre is only some 700m (0.4 miles) away and accessible on foot or by bicycle via the existing network of kerbside footways and residential streets. To walk from the centre of the site to the town centre (roundabout)

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would take approximately 11 minutes at a reasonable walking speed ( $3\text{mph}^{\text{iii}}/1.34\text{ms}^{-1}$ ) based on a walking distance of some 870m. A variety of shops and services are available therein, and these include supermarkets, banks, restaurants and a pharmacy. These facilities are within 1km meaning that according to the *DETR* publication entitled '*Reducing Transport Emissions Through Planning*' some 63% of shoppers can be expected to carry out the trip on foot. This demonstrates the convenience of Penarth town centre to the proposed re-development site, and that it is easily accessible on foot.

10.53 The addition of some 450 dwellings at Penarth Heights will assist in ensuring the vitality of these local shopping facilities.

10.54 A Tesco supermarket is located at the junction of Windsor Road with Terra Nova Way (Western Road). A home delivery service is offered from this store 7 days a week. This fact will be promoted to new and existing residents via the Travel Packs to be issued by the developer. In addition to the services offered in Penarth, Cardiff Bay Retail Park also offers a significant number of facilities such as IKEA, Asda, Lidl, Staples, Argos, JJB Sports, and Pizza Hut.

10.55 There is an ample and diverse range of shopping facilities within a close proximity of the proposed re-development site. Public transport access to Cardiff also provides further choice to future residents.

- **Schools & Education**

10.56 The likely walking routes to local primary and secondary schools are shown on Plan 2, Appendix 8.

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10.57 In terms of primary education the following schools are close to the proposed re-development site:

- Fairfield Primary School (Dryden Road) – 750m (10 minutes walk);
- Albert County Primary School (Albert Road) – 800m (10 minutes walk);
- Victoria Primary School (Cornerswell Road) – 860m (11 minutes walk);
- Cogan Primary School (Pill Street) – 985m (13 minutes walk); and
- Westbourne Schools (Hickman Road) - independent fee paying – 1000m (13 minutes walk).

10.58 The associated distances and walk times shown above demonstrate that all of these primary schools could be accessed on foot or by bicycle. Indeed, *National Travel Statistics* reveal that some 84% of 5 to 10-year olds walk to their primary school where the trip length is within 1.6km (1 mile). The accessibility of these schools is also in accordance with local policy, which is to encourage parents and students (and staff) to cycle or walk to school.

10.59 Secondary education is offered at the following schools:

- Headlands School (St Augustine's Road) – independent fee paying – 980m (13 minutes walk)
- Westbourne Schools (Hickman Road) – independent fee paying – 1000m (13 minutes walk)
- Stanwell School (Archer Road) – 1390m (17 minutes)
- St Cyres Comprehensive School (St. Cyres Road) – 1690m (21 minutes)

- 10.60 *National Travel Statistics* also show that some 92% of 11 to 16-year olds attending secondary education walk to school where the journey length is within 1.6km (1 mile). Therefore the close proximity of the re-development site to the majority of these secondary schools should encourage new residents to access them via foot or bicycle.
- 10.61 It is recommended that measures be implemented to help to ensure that these statistics are borne out for new residents of Penarth Heights; this for both primary and secondary schools. Reference should be made to individual requirements identified within local School Travel Plans, and consideration given to using developer contributions to assist with these requirements; therefore benefiting the local community. For example, it may be that monies could be made available to provide the software (such as that offered by [www.school-run.org.uk](http://www.school-run.org.uk)) necessary to organise lift sharing, a walking bus, or a cycle train.
- 10.62 The provision of a new pedestrian crossing facility on Windsor Road to the south of Plassey Street roundabout would benefit schoolchildren, parents and teachers in walking to those schools situated to the south of Windsor Road. For example, primary school children presently cross Windsor Road adjacent to Dingle Road station to get to Fairfield Primary School. Schoolchildren and parents alike would also benefit from the aforementioned improved crossing facilities on the nearby streets (which may be implemented on an individual basis or as part of a wider 20mph Zone).
- 10.63 Other educational facilities nearby include the Welsh School in Barry and Cardiff University. These trips would likely be made by bus or train.

- **Overall Sustainability**

10.64 In terms of sustainability, the site can be considered as having good accessibility. The site will offer the choice of means of travel to future residents and employees, who will not rely solely on the use of the car. In terms of *Planning Policy (Wales)* and *Government Planning Policy Note PPG 13*, we can conclude that this site will be a sustainable form of development.

- **Travel Plan**

10.65 The introduction of a Travel Plan will help to reduce the impact of this development on the surrounding highway network. The uptake of alternative sustainable modes of transport could be expected to reduce single car occupancy trips by up to 10% given the proximity of the railway station, the proposed improved footway/cycleway facilities and the proposed bus improvements.

- **Parking Provision**

10.66 Policy extracts quoted within this TA, all have the objective of achieving sustainable development. Notwithstanding this objective, VOGC's current parking guideline requirements for residential development do not necessarily accord with this aspiration, especially as they are treated as a minimum requirement. In contrast, these guidelines would seem to encourage car use and car ownership, even at sustainable locations such as Penarth Heights.

10.67 Present local parking guidelines would suggest that between some 859 to 917 spaces would be required on the Penarth Heights site based on the 'non-central area' standard. In contrast, the 'central area' standard suggests between 545 to 654 spaces. These Guidelines make no allowance for a reduction in the number of spaces provided for the affordable units where typically one space per two units is sufficient. CEC propose that the current total provision of some 605 spaces as shown on the present



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Masterplan would be suitable for a development of this nature, given its highly sustainable location and present policy objectives and guidelines.

10.68 In making this conclusion we rely on the LPA making a condition of planning approval that the development will be subject to a Travel Plan. The latter can incorporate a car parking management strategy including the possible introduction of a Car Club within the development, as well as potentially leasing parking spaces on an annual basis to some of the Housing Association tenants.

- **Trip Generation & Distribution**

10.69 Trip generation for the re-development proposal has been predicted using the *TRICS* database on the assumption of a total of 450 residential units. These generated flows have then been assigned to the highway network according to the model contained in the previously completed *Transport Assessment* by Atkins (for the Council). The accuracy of this model was validated by CEC by comparison with workplace statistics.

10.70 'Forecast WITH development' scenarios for the AM and PM peak hour periods in years 2012 and 2017 have been calculated. These are compared to the 'Forecast WITHOUT development' scenarios. Further distinction has been made between the vehicle trips generated by the Penarth Heights re-development and the adjacent Cardiff International Sports Village (CISV) development.

- **Predicted Traffic Impact**

10.71 The proposed Penarth Heights site can be efficiently accessed via the existing highway network. Local to the site, the percentage impact of the proposed development's vehicular traffic on individual highway links is high. This is due to low base traffic volumes. However, it is suggested that the vehicular traffic generated

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by the Penarth Heights re-development will actually restore the traffic levels on these adjacent streets to that previously experienced when the 'Billybanks' development was fully occupied. Regardless of the above, all of the adjacent highway links still have adequate reserve capacity.

10.72 Further away from the proposed site, the section of Windsor Road north of the Tesco roundabout is predicted to reach its practical vehicular capacity in year 2017. However, it is noted that this would happen regardless of whether Penarth Heights is constructed, i.e. it is mainly due to background growth. Furthermore, for robustness, a central growth factor was assumed, whereas in reality, low growth may be more appropriate meaning that reserve capacity would still be available in 2017.

10.73 In environmental terms, according to *IEA Guidelines on Environmental Assessment*, the predicted average impact can be considered as 'less slight' (i.e. less than 30%).

10.74 With the agreement of VOGC officers, the Barons Court and Merrie Harrier junctions have not been analysed within this Study. Furthermore the priority junctions of Plassey Street/High Street and Plassey Street/Arcot Street junctions have not been analysed due to the low demand to capacity ratios and queue lengths predicted in the previous Atkins report. Two roundabout junctions have however been analysed within this report, both of which are located on Windsor Road. These are the Tesco Roundabout and Plassey Street Roundabout.

10.75 The ARCADY model demonstrates that queuing and delay are already experienced at the Tesco roundabout, and this is corroborated by on-site observations. Understandably, the model predicts a worsening of this present situation during future years as a result of background growth and the introduction of both the Penarth Heights and CISV developments. Despite the fact that the Tesco roundabout has not

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been analysed in the CISV report, the analysis demonstrates that the CISV will have the greatest impact on this junction over that created by natural growth and the implementation of the Penarth Heights re-development. We suggest therefore that, given the existing problem, VOGC give consideration to improving this junction, possibly to full signal control. Alternatively, the concept of reducing traffic speeds along Windsor Road on the approach to this junction may aid its more efficient operation.

10.76 Assessment of the Plassey Street junction using ARCADY demonstrates that this junction will continue to operate satisfactorily, with minimal levels of queues and delay for all scenarios to year 2017.

- **Road Traffic Accident Analysis**

10.77 The recorded personal injury accident data supplied by VOGC is not sufficiently detailed to provide any indication of accident causation. However the data provided has been used to plot the accident clusters along the adjacent highway.

10.78 CEC suggest that more detailed information regarding each accident would be required in order to suggest the likely accident causation. Specific areas of further investigation should be identified by VOGC; however, we suggest from the data available that the Plassey Street Roundabout and Windsor Road (in the vicinity of the town centre) are considered first and foremost. The aim of this further investigation would be to identify whether there are particular accident causation trends in these locations. This is likely to have already been carried out by the Council's Safety Team. If not, it is assumed that accident clusters such as those detailed above will be further investigated by VOGC in their full study of Penarth.

10.79 The implementation of footway/cycleway measures both within the proposed re-development site and within Penarth will ensure that conflict between pedestrians, cyclists and motorists is reduced from its present levels. In particular, the provision of a pedestrian crossing facility on Windsor Road adjacent to Plassey Street roundabout will provide additional safe crossing facilities along this busy corridor for pedestrians and cyclists. Other minor improvements elsewhere, such as anti-skid surface dressings on the approaches to Plassey Street roundabout may help to reduce the likelihood of accidents further.

- **PRIORITIES FOR IMPROVEMENT**

10.80 This Assessment has identified a considerable number of possible improvements that could be introduced to benefit both new residents and the existing residents living in the housing areas adjacent to Penarth Heights.

10.81 National Policy is to encourage walking and cycling, and this can be particularly focused towards school escort trips, employment trips and access to local amenities. Public transport use should also be encouraged over the private motor vehicle. **It has therefore been shown that the site is highly accessible in terms of its relative location to local amenities and public transport infrastructure.** Furthermore, present government policy is not to provide highway improvement works purely for the reduction of peak hour vehicle queuing and delay. It is not therefore proposed to provide further infrastructure improvements to the Barons Court Junction (traffic lights being provided by IKEA funding etc) or Tesco Roundabout (constrained by railway bridges). Instead it is proposed that a strategy should focus on:

1. Reducing traffic speeds within the site (Homezone concepts), immediately adjacent to the site (20mph Zones) and along Windsor Road in order to improve the flow and capacity of junctions;

10.81 Contd..

2. Improve the pedestrian and cycling environment, particularly to local schools, bus stops (including waiting facilities) and train stations to encourage alternative modes of travel at peak times; and
3. Promote practical initiatives to encourage alternatives to the private car, through a Site Travel Plan.

Our suggested 'priorities for improvement' reflect these policies and this strategy.

10.82 Many of the recommendations made within this Assessment will address the actions to be implemented as part of the Residential Travel Plan for Penarth Heights. Others may be provided via developer contributions (both Penarth Heights and other schemes), or council funded schemes, or indeed, a combination of the two.

10.83 Therefore the **priorities listed below**, in order of CEC's perceived importance, **summarise the recommendations made within this report for improvements to the surrounding area. In many cases, they will benefit the local community as a whole, and not just the new residents of Penarth Heights. Obviously, this list is not exhaustive whereas the developer contributions for Penarth Heights are. Therefore they will not address all of these issues.** VOGC will therefore need to decide which recommendations they believe are the most important and provide the most benefit, given their local knowledge of the area and the available contributions. Our recommended priorities are therefore:

1. Travel Packs for new and existing residents [detailing walking, cycling, lift sharing, public transport etc. information];
2. Public Information Boards at Penarth Heights [detailing the above];
3. Controlled pedestrian crossing facility on Windsor Road [either adjacent to Plassey Street roundabout, or the Police Station, or both];

10.83 Contd..

4. 20mph Zones - Plassey Square, Arcot Street, High Street, Paget Road (part), Plassey Street (part) [to 'throttle' unnecessarily wide streets and provide safer pedestrian crossing facilities and improved walking routes];
5. Other isolated footway build-outs (in addition to those within 20mph Zones) [on pedestrian desire lines to town centre, nearest Windsor Road bus stops, Fairfield, Albert & Stanwell Schools, and Dingle Road & Cogan rail stations];
6. Consider developer contributions towards sustainable measures outlined within local School Travel Plans [such as monies required to set up an internet based lift-sharing/walking bus/cycle train scheme etc.];
7. Improve bus waiting facilities on Windsor Road [to include provision of new bus shelters and footway build-outs where required];
8. Provision of one annual, quarterly or monthly bus pass (Penarth-Cardiff) per unit (by Crest Nicholson) [to pump-prime public transport patronage];
9. Covered cycle storage facilities [in the town centre, local schools (possibly Fairfield, Albert & Stanwell), Dingle Road and Cogan Rail Stations and major workplace destinations];
10. Diversion of some 92, 93, & 94 bus services onto Plassey Street [to bring existing excellent service provision closer to proposed development];
11. Cycle connection to Penarth Marina [afford higher priority if connection to Cardiff across the Barrage can be secured];
12. Consider provision of an on-site Car Club;
13. Consider future recommendations of VOGC's Penarth Study;
14. Improve lighting and reflective qualities of wall surfaces on the footpath from Windsor Road to Dingle Road Rail Station footbridge;
15. Improvements to existing zig-zag footpath [low priority due to recreational usage – budget improvements only];
16. Provide indicative pedestrian walkways (using carriageway markings) through Cogan Rail Station Car Park to the station;

10.83 Contd..

17. Consider a Signage Strategy for Penarth [and whether new signage close to the development, and on routes to the town centre and bus/rail links, would benefit pedestrians and cyclists or simply add 'clutter' to the surrounding streets – this information could alternatively be provided on maps within the Travel Packs. Once someone has travelled to, for example, Dingle Road station, they will know how to get there in the future without the need for signage];
18. Improvements to Tesco Roundabout (Windsor Road) [consider present government policy, the relative merits that any improvement scheme would offer, and the impact by other developments, specifically the CISV];

10.84 Other issues which CEC believe VOGC should pursue as a matter of urgency include:

1. A cycle connection across the barrage to Cardiff city centre (by VOGC);
2. A connecting pedestrian/cycle bridge to CISV (by VOGC);
3. Obtaining permission to operate bus services across the barrage into Cardiff city centre (by VOGC);
4. The replacement of Dingle Road Rail Station footbridge (by Network Rail) [with DDA compliant alternative];

• **Conclusion**

- 10.85 The proposed site offers a sustainable form of development that can be provided within a relatively short period of time without the need for additional expensive infrastructure. It will support the survival of local services and therefore promote the vitality of this important town within the Vale of Glamorgan. It will be in accordance with the aims and objectives of policy set by the Welsh Assembly with respect to accessibility by walking, cycling and public transport. It will offer future residents a real choice in their mode of travel, rather than having to rely on the car. It will benefit existing residents in the surrounding areas through the provision of many offsite improvements.

10.86 The Penarth Heights scheme offers a sustainable development opportunity.

CEC – August 2005

*Vale of Glamorgan Council Involvement:*

*Tom Bevan*

*Andrew Eccleshare*

*Paul Gay*

*Neil Hart*

*Emma Harvey*

*John Roach*