Tortworth Estate / St. Modwen Development

Buckover Garden Village

Transport & Highways Position Statement for JSP Submission

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Contents

1 Introduction

1.1.1 This document presents a Position Statement on the emerging development transport strategy for Buckover Garden Village (BGV), located in South Gloucestershire. PJA are appointed as the Transport Planning and Engineering Design Consultant by the Tortworth Estate and St. Modwen Developments. PJA form part of a larger multi-disciplinary team which was formed in September 2017.

1.1.2 A development transport strategy has been developed which builds upon work undertaken by the JSP authorities. Mostly notably, the Transport Topic Paper 8 (update Nov 18) [WED007] and the Emerging Findings Report (Nov 2018) [WED008].

1.1.3 PJA have established a sound working relationship with the Local Highway Authority, South Gloucestershire Council (SGC) and have conducted monthly pre-app meetings to guide the emerging strategy. In parallel with this, PJA and SGC have formed a M5 Junction 14 workgroup to look specifically at strategic improvements to this junction. The workgroup includes stakeholders from Highways England (the strategic road authority), Stroud District Council (in their capacity as LPA for neighbouring developments) and highways consultants acting for developers of the Charfield SDL.

1.1.4 Additionally, several local engagement events with local stakeholders and residents have been undertaken to understand local issues. These engagements have helped guide the direction of the transport strategy.

2 Transport Assessment Process & Programme

2.1.1 A comprehensive Transport Assessment (TA) is being prepared to support BGV through any future Outline Planning Application. In accordance with Planning Practice Guidance, the scope of the TA has been agreed with SGC, as Local Highway Authority (LHA). This was done via a Scoping Study submitted in late 2017 and agreed in early 2018. Building on the stated criteria for BGV, the TA will establish a transport and policy baseline, forecast multi-modal trip patterns, assess road impacts using a Vissim microsimulation model of the A38 and Junction 14, explore M5 impacts via the HE SW strategic model, develop and test public transport strategies and finally present a viable and deliverable development transport package. It will enable the BGV SDL to function as a successful sustainable settlement, whilst avoiding any cumulative severe impacts.

2.1.2 It is anticipated that the BGV Transport Assessment will be ready in October '19, with final pre-application agreement on the assessment being sought November '19.

2.2 Transport Baseline

2.2.1 A baseline position has been established and agreed with SGC. This includes area wide traffic surveys which were undertaken in early 2018 at M5 Junction 14, several main junctions on A38 and a series of junctions in Thornbury. The surveys included:

- Automatic number plate recognition (ANPR) – to understand journey times and origin-destination within the study area,
- Classified junction turning counts - to understand individual junction demands,
- ATC surveys - at various location over a whole week to gauge weekly and sessional traffic patterns. Additionally, these surveys report on average speed and vehicle classification.

2.2.2 This data has allowed the production of a baseline Vissim microsimulation model for a typical weekday AM peak and PM periods. The base model has been fully validated in accordance with DfT standards and is fully agreed with SGC as a basis for further testing.

2.2.3 Although the A38 has been de-trunked, it still acts as a primary road within SGC. However, the section of road between Junction 14 to 16 acts as a strategic diversionary route for planned M5 roadworks and in the event of M5 emergency closures.

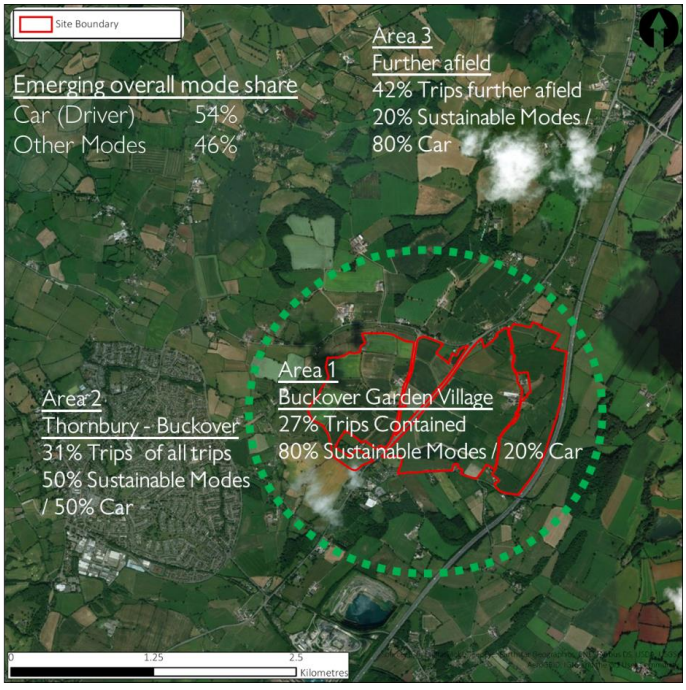
2.2.4 Additionally, it is noted that during some holiday periods, the A38 can become busy with traffic seeking to avoid delays on the M5 strategic road network. For these reasons, ATC data has also been obtained over several monthly periods in order to understand and qualify these issues, which are specific to the A38 in this location.

2.2.5 To understand the current levels of accessibility to the area by walking, cycling and local bus, a series of baseline accessibility studies have been undertaken over the study area and are agreed with SGC.

2.3 Travel Forecasting

2.3.1 As a true Garden Village, development at Buckover will provide a genuine mix of land uses including employment, local retail, education, community and leisure facilities. As a result, the development will operate with many trips being contained within the SDL area. However, some trips will require facilities further afield and forging a close relationship with the nearby market town of Thornbury with its wider range of local high street uses, larger food stores, regional leisure centre, local employment and secondary school are important aspects of the movement strategy. Beyond the local area, people will access jobs within the wider region, including the mass employment on the Bristol Northern fringe, but also in smaller settlements like Charfield, Yate and within the wider rural economy.

2.3.2 With these issues in mind, a bespoke Transport Demand Model (TDM) has been prepared for BGV. The model makes use of empirical data sources from Local Census and National Transport Survey sources and draws on the DfT TEMPRO database, which forecasts long term changes in growth and mode share. Finally, local traffic surveys in Thornbury have been undertaken to gauge actual neighbourhood travel patterns, based on current transport accessibility. The approach and core outcomes for this are agreed with SGC, the graphic below presents the key emerging findings.

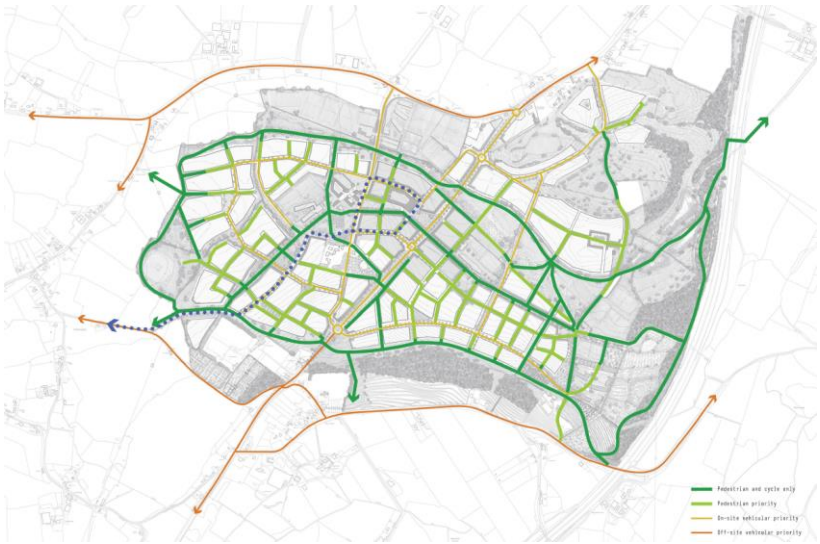


2.3.3 The TDM presents movement patterns within three areas of influence. Firstly, it is forecast that 27% of trips are contained with BGV (Area 1). Given the proximity and nature of BGV, it is forecast that 80% of these trips will be by non-car driver means. Secondly, it is forecast that 31% of trips will be between BGV and Thornbury (Area 2). Of these trips, 50% will be by sustainable modes based on the anticipated local transport infrastructure improvements, including an active travel link from BGV to Thornbury for use by walking, cycling, buses and overtime, AV shuttles. Finally, it is forecasting that 42% of trip will be further afield (Area 3). These are mainly work based trips for commuters to and from BGV and the likely sustainable mode share is 20%, based on improvements to Metrobus and other private shuttles and local buses.

2.4 On-site Streets & Transport Integration

2.4.1 The emerging masterplan has been designed to ensure high levels of walking and cycling permeability. Some streets will be 'walking and cycling' only, whilst others will limit traffic volumes by modal filters to allow 'pedestrian priority' streets. The schematic below constitutes illustrative work-in-progress and current thinking on an emerging network for active modes.

2.4.2 Work on development parking strategies is ongoing, but the team are seeking solutions which maximise opportunities for the full electrification of vehicles and ensuring parking is adaptable overtime, should demand change. The use of smart travel planning will also form an important element of the strategy.



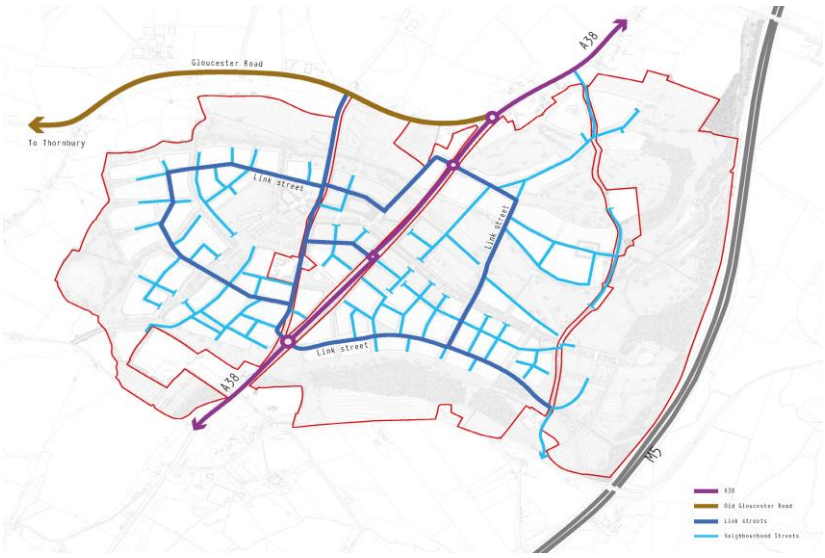
Illustrative work-in-progress for a network of active modes.

2.5 A38 High Street Transformation

2.5.1 A transformed A38 will form a new central spine to BGV and is an integral part of the scheme design. The A38 within Buckover carries relatively low traffic volumes (circa 8000 veh / day), but retains its former character and speed limit as a national trunk road. The M5 now performs this strategic function and the A38 is now just a local primary road with a reduced link function.

2.5.2 The team has applied significant resource to the proposals for the transformed A38. In the future, the transformed road will need to better balance its 'Link' (transport road demand) with its 'Place' functions. At the centre of BGV, the new High Street and Village Square will form an integral part of the street design proposals. This means the road will need to better cater for pedestrian movement along and over, enable cycle access, allow development frontage, whilst carrying forecast traffic loads.

2.5.3 The illustrative work below constitutes current thinking on the relationship between BGV and the A38. It shows how a secondary network of 'Link Streets' might emanate from new junctions on the A38 to serve the new village.



Illustrative work-in-progress on the relationship between BGV and the A38.

2.5.4 To better balance the needs of all future users, a comprehensive street engineering scheme is evolving and being developed for the A38. The emerging scheme has been subjected to a recent Design Review Panel. The DRP provided positive comments on the overall principle. The emerging scheme layout is shown below.

Illustrative work-in-progress on current thinking in respect of the design of the A38.

2.5.5 The emerging proposals include the following design features which have been formulated using best practice in UK and international traffic engineering and placemaking:

- Continental Style Roundabouts – will be accommodated at four locations to manage turning traffic, whilst having a slowing and smoothing effect on A38, whilst allowing excellent walking and cycling integration via parallel cycle crossings. These roundabouts will have tighter entry and exit geometry, when compared with normal UK roundabout, making them more accessible to pedestrians and cyclists.
- Integrated Street design – the new carriageway will be treated with a near flush central median strip to reduce the dominance of carriageway space and help manage speed. To the sides, landscape verges, footways and unidirectional segregated cycleways will be installed along with new development frontage.
- Garden Village Centre – within the core area, the A38 will be formed on a new long table to further reduce the dominance of the street and integrate new development frontage. As the new street passes the market square, it will kink towards a new urban square shaped junction

space. The space will in effect operate like the other Continental Style Roundabouts but have the appearance of the a more urban place. The central area will have several formal pedestrian / cycle crossings.

2.5.6 To assess the capacity of the proposal under typical conditions, a Vissim microsimulation traffic model has been set up to explore the performance of the A38 within Buckover and the wider area. This process indicates that the emerging proposal can deal with current and 2036 future traffic demands without causing excess network delay.

2.5.7 The initial modelling indicates the A38 will continue to operate with satisfactory network capacity, albeit slower through the Buckover section due to speed limit changes. The style of street engineering has been selected to ensure that traffic flows are generally smooth and slower, meaning the air quality and community severance concerns are better managed. It is anticipated that the model will be rerun once the final development scheme is agreed.

2.5.8 A further consideration is the M5 diversionary route nature of the A38. The A38 is used several times over the year for these events. For planned works these diversions are often overnight or during off-peak conditions, such as weekends.

2.5.9 Within emergency situations on the M5, diversion routes are put in place rapidly by the Police in accordance with pre-set plans. One such emergency closure on the M5 was recorded during a traffic survey in 2018. This resulting data has been used to inform a 'reliance strategy' for the proposed A38 scheme, which seeks to retain the current peak hour residual capacity over and above what is required by normal traffic demands. This work will form part of the ongoing Transport Assessment process.

2.6 Active links to Thornbury

2.6.1 The team has developed several options for creating a high quality and direct linkage between Thornbury and BGV. That linkage will ensure that walking and cycling is maximised as main modes of travel for this journey and that distance is minimised.

2.6.2 Depending on the final alignment, the active travel link may also include a busway which could cater for local buses and Metrobus and, overtime, AV shuttles.

2.7 Public Transport

2.7.1 A multi-level public transport strategy is being formulated for BGV and its relationship with Thornbury and the wider area;

- Thornbury - Buckover Shuttle – a rapid shuttle service between Buckover and Thornbury providing a frequent and reliable journey experience. The system might be Demand Responsive to reduce wait times and better utilise smart phone apps.
- Local Buses – local buses will remain on the network and are likely to be enhanced by a new route linking Thornbury, Buckover, Charfield, Wotton-under-Edge and other possible destinations within South Gloucestershire. This new East – West route has been identified by local people during the engagement workshops and is being promoted jointly with the Charfield SDL developers. A detailed working paper on that route has been produced and discussions held with a potential operator; Stagecoach. Stagecoach has confirmed that the route is likely to be a commercially viable one.
- Metrobus – the team is committed to facilitating a Metrobus service extension along the A38 to Thornbury and onwards to BGV. This would allow rapid bus transit to mass employment on the Bristol Northern Fridge and interchange with other modes including rail.
- P&R – the team support the notion of P&R located on the A38 and supporting accessibly for Metrobus.
- Rail Station Access – The team support the proposal and the business case for a new station at Charfield. Although, while Buckover Garden Village can assist the business case for that Railway Station, that piece of transport infrastructure is not considered a necessary requirement of the Garden Village. The team also recognise the nearby Bristol Parkway as a major rail hub. Opportunities for employer-based bus shuttles to local stations are being explored.

2.7.2 It is anticipated that the above measures are secured via a combination of financial contributions (Planning Obligations) and physical improvements delivered via Section 278 Agreements.

2.8 M5 Junction 14

2.8.1 The BGV team acknowledges current capacity limitations at the junction and welcome the strategic improvement of this junction. In early 2018, the BGV team were instrumental in the setting up of a Junction 14 working group to look specifically at strategic improvements to this junction. This working group includes stakeholders from Highways England (the strategic road authority), Stroud District Council (in their capacity as LPA for neighbouring developers), Gloucestershire County Council, SGC, and highways consultants acting for developers of the Charfield SDL.

2.8.2 Evidence from the JSP, and work undertaken by SGC, considers there is only one option for improvement at this junction, which comprises a conventional two-overbridge roundabout solution (Option 1). The BGV team accept this option provides satisfactory capacity and have prepared modelling to support that conclusion. However, the BGV team have prepared a further option (option 2) for ongoing consideration.

2.8.3 Option 1 comprises a large signalised gyratory utilising the current overbridge but necessitating a further new overbridge to the south. The design would require realignment of the B4509 on the approaches and the dualling from Junction 14 to the A38 junction. Those works can be delivered within Highways Land and land controlled by the Tortworth Estate (promotor of BGV). The layout can be designed in accordance with DMRB standards and there appears to be no adverse design risks identified.

2.8.4 The Option 1 layout has been subjected to traffic model testing and this has been submitted to SGC and HE for comment. Based on the 2018 surveys, the robust test makes allowances for background growth increases to 2036 using TEMPRO, includes local committed development (22 sites in all), allowances for Severn Crossing Toll removal uplift and SDL allocations at Buckover and Charfield.

2.8.5 Linsig modelling shows the junction to operate with satisfactory queuing and delay. At the request of HE and SGC, a microsimulation model has also been prepared which confirms the performance of this option in both AM and PM peaks.

2.8.6 Option 2 comprises a dumbbell junction with signal gyratory on either side of the current overbridge. This option again can be delivered with HE and Tortworth Estate land and requires less work on the approaches to the junction.

2.8.7 Unlike Option 1, the junction improvement is cable of being phased overtime to allow the incremental release of capacity, perhaps aligned with SDL phasing. The layout can be designed in accordance with DMRB standards and there appear to be no adverse design risks identified.

2.8.8 The layout for Option 2 has been subjected to traffic model testing which highlights the junction has less capacity than Option 1. However, sensitively testing indicates that with some minor the refinements to assumptions, the design operates satisfactory. As such, the BGV team wish to retain Option 2 as a fall-back position and will continue to refine its design.

2.9 Wider A38 & M5 Junction 16

2.9.1 The BGV team acknowledge there are peak hour capacity issues on the A38, particularly at Junction 16. The main junctions all form part of the BGV Microsimulation model and will be mitigated as necessary, as part of the Transport Assessment process.

2.10 Managing traffic in the lanes

2.10.1 BGV sits within a network of rural lanes, many of which are very minor and don't allow proper two-way flow. These issues were further highlighted at a local resident engagement workshop undertaken in mid-2018. As a result of these issues, the BGV team has committed to undertaking

a further workshop with local people to explore methods to manage current and development traffic in the area.

2.10.2 A further related consideration is ensuring the lanes remain safe for pedestrians, cyclists and equine users. The team considers there are a variety of traffic management measures to suitably manage these issues and suggested measures include: selective one-way plugs, partial closure to restrict movement, and sign free rural traffic calming and gateway signage; such as 'Quiet Lane Status'.

2.11 Thornbury transport impacts

2.11.1 The BGV team have established a baseline Vissim microsimulation model on the main streets in Thornbury. This will be used to gauge any transport impact issues and the testing of mitigation solutions.

2.12 Infrastructure phasing / funding

2.12.1 The BGV team have been carefully considering the phased implementation of infrastructure and its relationship with development phasing. To this end, a developer phasing strategy been drafted and is being further developed.

2.12.2 Regarding infrastructure delivery, it is envisaged transport & highways infrastructure will be delivered in 3 ways:

- **On-site streets** - will be implemented directly by the developer and regulated by the Outline Planning Permission and subsequent Reserved Matter Planning applications with Section 38 Adoption agreements as necessary.
- **Off-site Highways** – will be implemented directly by the developer and regulated by Planning Conditions / Section 278 Agreements. At this stage, it is envisaged that the Buckover A38, Gloucester Road and Old Gloucester Road will be improved in this way. Other local improvements such as works to rural lanes and works in Thornbury would also be undertaken. The BGV - Thornbury active travel link may also fall under this category.
- **Planning Obligation / Section 106 / CIL** – Provision of a strategic transport package including appropriate delivery of / or contributions towards: Metrobus Extension to Thornbury and Buckover GV, A38(N) Park & Ride, A38 Cycle Measures, M5 J14 improvements and local bus service improvements (including new local shuttlebus to Thornbury) will be regulated via Planning Obligations.

2.12.3 The BGV team will offer to make financial contributions towards off-site infrastructure in accordance with recent local presidents for strategic development, such as Filton Airfield, as noted within the JSP evidence base. It is noted that for some projects, further public sector assistance is needed. The Tortworth Estate and St. Modwen are content that strategic funding strategies and

business cases are in place. The Tortworth Estate and St. Modwen will continue to assist the JSP authorities in the making of the case to draw down that funding.

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