

Tunbridge Wells Local Plan: Paddock Wood and east Capel

Access and Movement Report

On behalf of Tunbridge Wells Borough Council



Document Control Sheet

Project Name: Tunbridge Wells Local Plan

Project Ref: 332410964

Report Title: Access and Movement Report

Doc Ref: AMR02

Date: November 2023

	Name	Position	Signature	Date
Prepared by:	Felicity Capon	Transport Planner		November 2023
Reviewed by:	Gareth Elphick	Senior Transport Planner		November 2023
Approved by:	Margaret Theobald/Jason Lewis	Director		November 2023

For and on behalf of Stantec UK Limited

Revision	Date	Description	Prepared	Reviewed	Approved

This report has been prepared by Stantec UK Limited ('Stantec') on behalf of its client to whom this report is addressed ('Client') in connection with the project described in this report and takes into account the Client's particular instructions and requirements. This report was prepared in accordance with the professional services appointment under which Stantec was appointed by its Client. This report is not intended for and should not be relied on by any third party (i.e. parties other than the Client). Stantec accepts no duty or responsibility (including in negligence) to any party other than the Client and disclaims all liability of any nature whatsoever to any such party in respect of this report.



Contents

1	Introd	uction	5
	1.1	Preamble	5
	1.2	Purpose of Report	5
	1.3	Sites Reviewed	6
	1.4	Impact of COVID-19 and an Uncertain Future	8
	1.5	Report Structure	8
2	Land l	Jse Assumptions	9
	2.1	Introduction	9
	2.2	Land Use Assumptions	9
3	Trip G	eneration	. 11
	3.1	Introduction	11
	3.2	Trip Generation Methodology	11
	3.3	Linked Trips, Pass-by trips, Rerouted trips, Through trips	. 14
4	Mode	Share	. 15
	4.1	Introduction	15
	4.2	Mode Share Source	15
	4.3	Trip Distribution	19
5	Transp	oort Infrastructure Requirements	. 20
	5.2	Colts Hill (Previous KCC Scheme)	. 20
	5.3	Proposed Alternative Colts Hill Scheme	. 21
	5.4	Other Mitigations	. 22
	5.5	Recommendation	25
Figur	res		
•			
Figure 2 Figure 4 Figure 4 Figure 4	1.2 Futu 2.1 Pad 4.1 Tun 4.2 201 4.3 Asp	dock Wood and east Capel Site Boundaries Ire Access and Movement Options (DLA plan Drawing Number TWBC04-011B) dock Wood and east Capel Site Boundaries bridge Wells 001 MSOA	7 9 15 16 17
Table	es		
Table 3 Table 3	.1 Vehi .2 Vehi	Use Assumptions – Paddock Wood and east Capel	. 11 . 12



Appendices

Appendix A DLA Infrastructure Plan

Appendix B Colts Hill Bypass Alternative Highway Connections



1 Introduction

1.1 Preamble

- 1.1.1 Tunbridge Wells Borough Council (TWBC) is preparing a Local Plan for the period to 2038. During this period, the Plan is required to meet the full assessed needs within the borough.
- 1.1.2 The council have sought external support to assess the suitability, capacity and infrastructure needs for several sites which have been suggested as potential options to provide housing on a strategic level. To achieve this TWBC procured masterplanning and technical support from David Lock Associates (DLA) and Stantec.

1.2 Purpose of Report

- 1.2.1 This report forms part of a suite of reviews and assessments prepared by DLA and Stantec to support the technical assessment of the sites. This Access and Movement report has been prepared to set out the vision for development within Paddock Wood and east Capel as part of the Local Plan, and the transport methodology used to assess the sites, including a forecast of trip generation and distribution of people movements expected to arise from the development. Reference is made to the Stantec Baseline report, where necessary. This has been used to inform the provisional infrastructure requirements to support the masterplanning of the site.
- 1.2.2 There is a need to challenge the 'predict and provide' method of planning for new development and to integrate sustainable transport into new developments from the outset. By using a more forward-thinking approach such as the 'vision and validate' paradigm, a clear vision for new developments can be established with a stronger bias towards sustainable travel modes than has been taken to date. This takes on board the advice set out in the Government's Garden Communities prospectus², which sets out that garden communities should be integrated, forward looking and prioritise accessible transport options. This also aligns with the DfT Circular 01/2022 document which outlines that where Transport Assessments are required, a vision should be set out for the development. The aspirations within this document should be aimed for by developments within the Paddock Wood and east Capel development area when preparing their planning applications.
- 1.2.3 The design process will then explore how this can be delivered in a robust manner to achieve the vision.
- 1.2.4 The person and vehicle trip internalisation represent a forecast for a situation upon completion and full occupation of each development. It is recognized that during the build out stages and for a 'settling' period of time thereafter, levels of external trips will be higher, particularly those made by car. Nonetheless mode share targets should be challenging.
- 1.2.5 It is noted that a separate traffic modelling and Transport Assessment exercise has been undertaken by SWECO, which has been reviewed by Stantec in the Baseline reports. The methodology that has been undertaken by SWECO has been incorporated within this report, and a collaborative approach has been taken to apply to the information within that report. A balanced approach has therefore been taken between 'predict and provide' and 'vision and validate' to ensure assessment accords with the expectations of the highway authorities.

¹ Better planning, Better transport, better places CIHT, August 2019

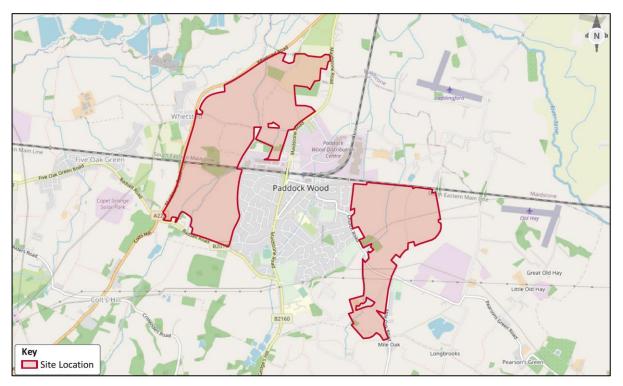
² Ministry of Housing, Communities and Local Government, August 2018



1.3 Sites Reviewed

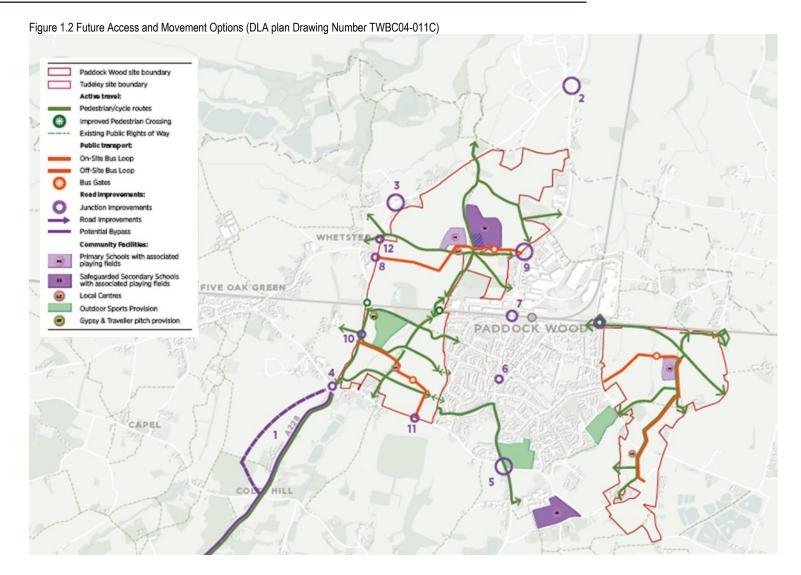
- 1.3.1 Potential site allocations within Paddock Wood and east Capel have been reviewed within this assessment and have been assessed cumulatively.
- 1.3.2 Figure 1.1 shows the location of the site within Paddock Wood and east Capel in the context of the surrounding area.

Figure 1.1 Paddock Wood and east Capel Site Boundaries



1.3.3 Figure 1.2 shows the locations of the sites within Paddock Wood and east Capel in the context of the surrounding area, current and proposed transport schemes, and transport schemes considered necessary to deliver the development options discussed in this report.







1.4 Impact of COVID-19 and an Uncertain Future

- 1.4.1 The COVID-19 pandemic has had fundamental impacts on the way people work and live their lives. Transport has been one of the areas impacted most significantly, with a massive reduction in all transport use during this time.
- 1.4.2 Technology has been a massive enabler of new work and lifestyle practices, for example working from home and the increase in demand for grocery and general deliveries ordered via websites and smartphone apps.
- 1.4.3 The changes that have been made during the lockdown period have made companies and individuals consider how they may travel in the future and indeed whether certain journeys will be necessary if there is a technology driven solution. It is expected that there is likely to be a sustained change in behaviours, but it is going to take a period of months, if not years to understand what any long-lasting change will look like.
- 1.4.4 Working from home has become an increasing way of work for many people, especially given the commuter nature of Paddock Wood and east Capel and its connections to London. This exercise has made some conservative assumptions as to what the future might look like. It is anticipated that working from home will continue to be an important part of the workforce.
- 1.4.5 Government has acknowledged that the future holds many challenges and that these are likely to impact on the way people travel and go about their day to day lives. DfT TAG advice³ acknowledges that COVID, Net Zero, Brexit and OBR downside forecasts are all going to weigh on traffic forecasts for years to come, therefore reinforcing a need to plan for change and a more sustainable future. This is reflected in updated traffic forecasts in DfT TEMPro 8.

1.5 Report Structure

- 1.5.1 The remainder of this report is structured as follows:
 - Section 2 Sets out a summary of the land use assumptions for development at Paddock Wood and east Capel;
 - Section 3 Provides an overview of how the forecast trip generation has been derived for Paddock Wood and east Capel;
 - Section 4 Indicative and aspirational mode shares based on current characteristics.
 - Section 5 sets out the transport infrastructure requirements associated with development at Paddock Wood and east Capel.

³ Appraisal and Modelling Strategy, A route map for updating TAG during uncertain times, Moving Britain Ahead (July 2020)



2 Land Use Assumptions

2.1 Introduction

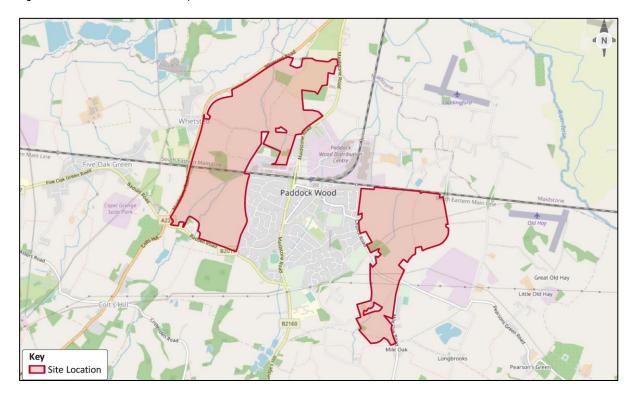
2.1.1 This section sets out the land use assumptions which have been considered in preparing this Access and Movement report. The land uses and quanta below are indicative and do not prejudge what could or should be developed on any of the sites.

2.2 Land Use Assumptions

Paddock Wood and east Capel

2.2.1 The potential development allocations at Paddock Wood and east Capel are predominately split on the north western and south eastern edge of Paddock Wood. Figure 2.1 below shows the site boundaries within Paddock Wood and east Capel.

Figure 2.1 Paddock Wood and east Capel Site Boundaries





2.2.2 Table 2.1 below sets out the land use assumptions for Paddock Wood and east Capel.

Table 2.1 Land Use Assumptions – Paddock Wood and east Capel

Land Use	Paddock Wood and east Capel
Dwellings	2,633

Source: David Lock Associates

2.2.3 It is also expected that community and sport facilities will be provided on site, but as the council's sports strategy is unknown at this time, no assessment has been undertaken and would need to be considered when an application comes forward for this use.



3 Trip Generation

3.1 Introduction

3.1.1 This section sets out the background and methodology used to forecast the trip generation of the sites.

3.2 Trip Generation Methodology

3.2.1 The trip generation exercise has been undertaken by SWECO for vehicle trips for the residential and employment land uses. Trip generation tables have been provided to Stantec from SWECO and have been reported below. Details about how SWECO have generated the trip numbers below can be found within the SWECO modelling report. The trips below do not account for any internalisation or mode share reduction and are full rates based on TRICs. More information about the data below can be found within SWECO reports.

Table 3.1 Vehicle Trip Generation for Residential Units

			АМ			PM			
Site Address	Total Dwellings	Zone Dwellings	Departures	Arrivals	2- way	Departures	Arrivals	2- way	
Paddock Wood and east Capel	1,284	899	338	129	467	138	332	470	
– SEQ		385	145	55	200	59	142	201	
Paddock Wood and east Capel	488	244	92	35	127	38	90	128	
- SWQ		244	92	35	127	38	90	128	
Paddock Wood and east Capel	771	231	87	33	120	36	85	121	
- NWQ		308	116	44	160	47	114	161	
Paddock Wood and east Capel	90	231	87	33	120	36	85	121	
- NEQ		45	17	6	23	7	17	24	



Table 3.2 Vehicle Trip Generation for Employment

	Area		AM			PM		
Site Address	(m²)	Jobs	Departures	Arrivals	2- way	Departures	Arrivals	2- way
Land E of Transfesa Rd	17,250	431	13	73	86	64	30	95
Swatlands Farm	18,150	454	13	77	90	68	32	100

- 3.2.2 The trips within the above tables are a highway worst case 'predict and provide' scenario in terms of vehicle trips with no mode share initiatives being applied to reduce this.
- 3.2.3 Full trip generation for each site would be required to be presented as part of the Transport Assessments for planning applications. These trip rates should act as a starting point, with developments aiming to design a development which actively aims to reduce car driver trips, in accordance with Circular 01/2022.
- 3.2.4 There has been no account of internalisation within the non mitigation calculations that SWECO have done. The trips that have been identified above assume that all vehicles leave Paddock Wood and east Capel and enter onto the wider network.
- 3.2.5 The vision of the TWBC Local Plan anticipates that there will be internal trips being undertaken by residents within Paddock Wood and east Capel which have not been accounted for, and that these can be undertaken mostly by walking or cycling. It is the aspiration that most, if not all trips for the primary school and sport facilities will take place internally within Paddock Wood and east Capel and wouldn't interact with the highway network assessed by SWECO.
- 3.2.6 Some internalisation and mode share assumptions have been assumed within the SWECO modelling for the mitigation scenarios, that see during a "high" scenario that 9% mode share is removed from car trips. This has been assumed for Paddock Wood as a whole and is not specific to each development site.
- 3.2.7 Internalisation would likely occur at different rates for each land use of the site and would need to be considered individually. It is highlighted that these levels of internalisation are based on full occupation of the development and are not necessarily reflective of the build out period, where facilities such as schools and local shops will have a material proportion of external trips until the surrounding housing reaches levels to sufficiently internalise the proportions set out below.
- 3.2.8 Developments within Paddock Wood and east Capel should be aspiring to encourage walking and cycling trips within Paddock Wood, the whole town and urban area existing and proposed being within walk and cycle distance (as per government guidance). Aspirational targets for mode share should be included within Travel Plans for development and supported by quality facilities and infrastructure on site to make walking and cycling a choice from occupation.
- 3.2.9 It has been assumed that internalisation could occur for the purposes below:
 - trips to the primary schools on site
 - trips to the local shops



- trips for the GP surgery.
- 3.2.10 The sustainable transport note by TWBC published November 2023 outlines that internalisation within Paddock Wood will be supported by providing the level of development needed to sustain the requirement for facilities and provide these facilities within the Local Plan growth. This includes enhancing existing community facilities and careful consideration of connectivity throughout



3.3 Linked Trips, Pass-by trips, Rerouted trips, Through trips.

- 3.3.1 Local centres would attract pass-by trips. This is where people passing the local centre with a different trip purpose would stop and make a purchase.
- 3.3.2 Rerouted trips include where a person would be making a trip for a specific purpose regardless, but it is now made to a different destination. For example, someone living outside the sites changes to job to one of the employment units within the sites. If the development was never built, the trip would have been made anyway to a different location, but it diverts to the new employment provision instead.
- 3.3.3 The trips within the SWECO assessment have not taken into account any linked trips occurring as a result of the development and has presented a worst case highway scenario. It is likely that linked trips would occur and that site promoters should demonstrate the opportunity for linked trips within their Transport Assessments. Linked trips have been included within the private vehicle mode share reduction within the mitigation model.
- 3.3.4 The assessment does not consider where new transport infrastructure is provided as part of a development which could result in additional existing trips passing through the development as a more attractive route to a destination.
- 3.3.5 Full analysis of all of the above trip types would be expected as part of a Transport Assessment at such time as a planning application is made. This could be in the form of strategic modelling undertaken using TWBC's highways model. For the purposes of this report, the trip generation forecasts should be considered as robust.



4 Mode Share

4.1 Introduction

4.1.1 This section sets out an indicative mode share for the trips forecast to be generated by the proposed development sites.

4.2 Mode Share Source

4.2.1 Existing mode share has been determined using 2011 Census Mode Share data. This data is based on the mode of travel which Census respondents indicated was their main mode of travel to work. Journey to work data has been extracted to determine indicative modal share for the development sites using the appropriate Middle Super Output Area (MSOA) as follows.

Paddock Wood and east Capel - Tunbridge Wells 001 MSOA

4.2.2 This area was selected as it covers the whole of Paddock Wood and east Capel and therefore likely to best reflect the future travel patterns for residential developments at Paddock Wood and east Capel. The MSOA can be seen in Figure 4.1.

h Wood East Peckham Higham Wood Golden Green idge Whetsted Tudeley Five Oak Green Paddock Wood Capel A228 Brooms Matfield Brenchley Sherwood Pembury idge Horsmonde Leaflet | Map data @ OpenStreetMap contributors, CC-BY-SA, Nomis

Figure 4.1 Tunbridge Wells 001 MSOA

Source: Nomis

4.2.3 The census modal share data has been indicated below demonstrating private modes, public transport, sustainable modes and working from home. The pie chart below is provided to



indicate relative proportions for grouped main modes, which aids review with the aspirational mode share.

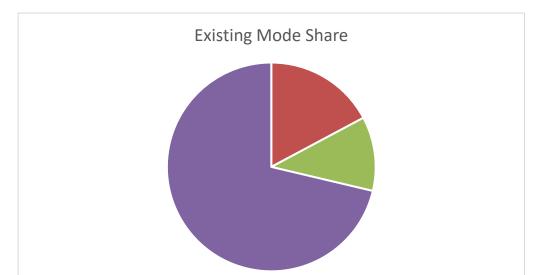


Figure 4.2 2011 Census Local Mode Share (Tunbridge Wells 001 MSOA)

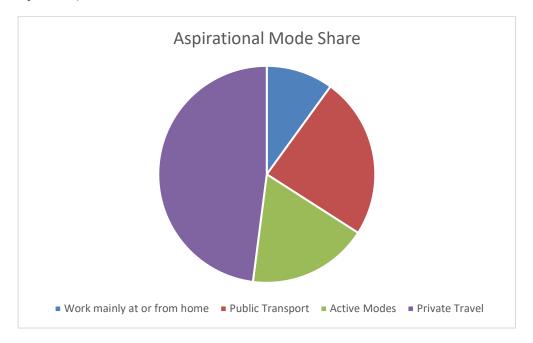
4.2.4 Based on the 2011 Census data, with no interventions, a significant proportion of the forecast trips generated by the development would likely be undertaken by private car. It is crucial that any development of the site places a high priority on mode shift, turning car journeys into trips made via sustainable modes (public transport/walk/cycle).

■ Work mainly at or from home ■ Public Transport ■ Active Modes ■ Private Travel

4.2.5 It is the vision of the Local Plan (in accordance with the DfT Circular 01/2022) that there is a shift in mode share towards public transport/sustainable measures. The below graph illustrates the mode share aspiration for Paddock Wood and east Capel. It is outlined within the sustainable transport note produced by TWBC that the mitigation scenario includes a 10% mode shift to sustainable modes from the car. The modal shift scenarios within the SWECO Stage 3 report outlines that a low mode share has been assumed a level of 4% reduction and a high mode share of 9% reduction. This assumes all measures from the LCWIP document, the WSP bus feasibility studies and the TWBC sustainable transport note are implemented. The mode share percentages do not appear to have considered working from home as a way of reducing vehicle trips.



Figure 4.3 Aspirational Mode Share



- 4.2.6 It is an expectation that any development of the site would provide exceptional connectivity within the site for pedestrians and cyclists. Attractive and legible routes connecting housing, the local centre and the school are essential.
- 4.2.7 It will also be crucial to ensure that trips made outside of the development are made using sustainable modes where possible. Targets for reducing car trips should be ambitious within Paddock Wood and east Capel to achieve the vision. It would be for each development application to outline how they would propose to influence behaviour from or to their site, and promotors should prepare their own targets with the above in mind.
- 4.2.8 It is reiterated that the mode shares above are main mode of travel and therefore do not reflect multimodal journeys. For example, the rail mode share does not account for the mode of travel to the railway station, which would aim to see a high level of walking and cycling trips.

Public Transport

- 4.2.9 Due to the location of the sites (surrounding the outskirts of existing Paddock Wood) and proximity of Paddock Wood railway station, the proposed sustainable infrastructure package could see a significant modal shift away from the private car. To that end, it is considered that the developments could be ambitious to have their development encouraging travel by rail. The station is central to the proposed development parcels so would be accessible from all development sites.
- 4.2.10 The Census data from which the above was calculated is based on the main mode of travel used. Therefore, although there may be an increase in train journeys, the journey to Paddock Wood railway station is also an important factor which is not directly considered in the above. Providing opportunities to travel sustainably from the development to the railway station is therefore important. This ties in with a need to provide attractive off-site pedestrian, cycle and bus infrastructure in order to increase these modes shares.
- 4.2.11 WSP have prepared a report which looks at the options for providing bus transport to support the development of Paddock Wood and east Capel within the Local Plan. The developments



should seek to support the provision of bus services between Paddock Wood and the local area, making bus travel a strong choice for new residents/employees to the area.

Sustainable Modes

- 4.2.12 Internalisation within Paddock Wood and east Capel would likely see many trips made by walking or cycling. Improvements to walking and cycling facilities should be proposed within Transport Assessments. The Paddock Wood Centre is central to the proposed developments and therefore it is reasonable to aim for a high level of walking and cycling within Paddock Wood and east Capel.
- 4.2.13 PJA have undertaken a report reviewing the cycle routes within the surrounding area and how they link to Paddock Wood and east Capel. They have identified where there are gaps in the infrastructure and what would be required to provide advanced routes serving Paddock Wood and east Capel.
- 4.2.14 The PCT bike propensity to cycle tool provides an indication of the change in cycle depending on how cycling is pushed within the scenario. Within the tool there is a scenario for Government target which sees a 2% increase in cycle trips compared to the 2011 Census (1% to 3%). It is the vision of this document and the Tunbridge Wells Local Plan to be more ambitious with the number of people cycling than the Government target is. Improving the infrastructure as set out in the PJA report will assist with making this a possibility. It will also be the responsibility of the developments to encourage cycle travel as part of their Travel Plans.

Working from home

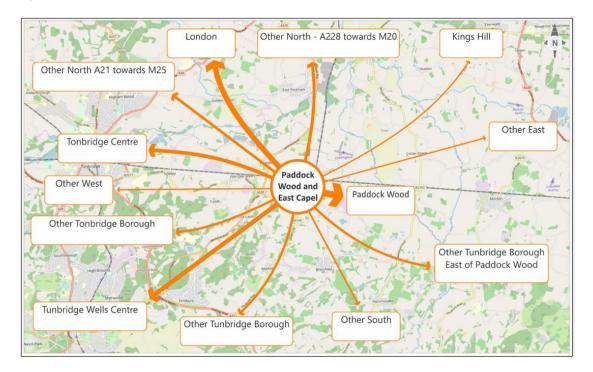
- 4.2.15 Working from home has rapidly become an important "mode of travel" for professionals. Many people no longer commute to an office 5 days a week, rather splitting their time between home and the office, or fully remote. This was not a substantive occurrence during the 2011 Census and therefore the Census was recorded at 0%. The vision for the development would be for the Paddock Wood and east Capel development to facilitate the ability to work from home to reduce the number of journeys that need to be made onto the network. This will aid the Paddock Wood development in reaching the aspirational mode share targets. It is also likely that working from home could be a larger proportion, in comparison to the above, as this is a mode that is increasing in popularity.
- 4.2.16 The increase in working from home, would aid the aspirational mode share targets in the figure above. Travel Plans for the developments would need to outline how the development would fundamentally aim to reduce the need to travel, which includes promoting working from home where possible.



4.3 Trip Distribution

- 4.3.1 Distribution has not been undertaken by Stantec as this has been informed by modelling undertaken by SWECO.
- 4.3.2 Figure 4.4 below illustrates the indicative distribution of external trips generated by the development.

Figure 4.4 Indicative distribution of External Trips – Paddock Wood and east Capel



4.3.3 The band widths above demonstrate indicatively the distribution of trips, with a larger proportion of external trips will be heading to Tunbridge Wells, Paddock Wood, Tonbridge, London and 'Other North'. 'Other North' includes trips that travel north towards either the M25 or M20 to route to their destination.



5 Transport Infrastructure Requirements

- 5.1.1 The infrastructure requirements to support the vision of the Local Plan for travel have been outlined below. An emphasis needs to be made on providing sustainable infrastructure to encourage a shift towards a sustainable future.
- 5.1.2 DLA Drawing TWBC04-011B in **Appendix A** present transport strategies for Paddock Wood and east Capel for general movement and for public transport respectively.
- 5.1.3 The proximity of the sites to Paddock Wood town centre and the rail station provides a good base for sustainable travel. However, to strengthen the connectivity of the developments with Paddock Wood and the surround area, sustainable infrastructure is proposed with cycle routes and improvements to bus services.
- 5.1.4 Public transport will also be a key measure in ensuring car trips are kept as low as possible. At present it is considered that the existing service through Paddock Wood and east Capel would not be sufficient to provide a reasonable modal shift towards bus usage due to infrequency. As a result, shuttle type buses may be explored as part of Bus Rapid Transit (BRT) to provide frequent services to key destinations. Although this report concentrates on bus routes, the principle for the routes would be the same regardless of how transport evolves in the future.
- 5.1.5 In addition to hard infrastructure measures like pedestrian/cycle routes and bus services, soft measures such as Personal Travel Planning are essential. PTP will allow individuals to understand the best options to travel to regular destinations by sustainable modes. The key measures to encourage non-car travel should be in place from first occupation to ensure that car use does not become a default option for new residents from out of which they then have to be encouraged.
- 5.1.6 There are a few highway infrastructure requirements that may need to come forward with the development in Paddock Wood and east Capel as a result of the additional traffic. These are described in the following paragraphs.

5.2 Colts Hill (Previous KCC Scheme)

- 5.2.1 There have been several schemes that have been proposed to provide improvement to safety to the A228 near Colts Hill. A bypass scheme was devised by KCC which has been the basis for all optioning that has been undertaken. The following options have been considered historically and as part of this exercise:
- 5.2.2 Options have been explored for the provision of online route improvements which would not impact the surrounding area as significantly. During the feasibility study of these improvements, it was concluded that the constrained nature of Colts Hill, particularly the available road width and listed building in the northern section in the vicinity of the row of cottages on the west side of the A228, made suitable online improvements unviable. Further options for interim safety improvements at the A228 / Crittenden Road / Alders Road junction were also investigated alongside KCC, however these are not considered as viable long-term solutions.
- 5.2.3 The KCC full bypass scheme incorporates roundabout junctions at the north and south links to the A228 Maidstone Road (Pembury), with junctions being sized to accord with the number of junction arms at each connection. The full KCC scheme is not considered necessary to mitigate the impacts of the Local Plan development in accordance with the NPPF and the CIL regulations. This is detailed further in the Masterplanning and Infrastructure Study undertaken by DLA.
- 5.2.4 A combination of both online and offline hybrid mitigation options were explored by Stantec throughout the Local Plan process, as set out in the prior Access and Movement report



(November 2020). The conclusions from this exercise support the proposed option to be progressed below.

- 5.2.5 The culmination of the prior options exercise concluded that the southern section of the A228 from Alders Road junction should remain online, while the section north would be offline to the west of the row of cottages. Improvements south of south of the proposed Alders Road link roundabout include:
 - Local Distributor type road, designed to Kent Design Guide, which is considered appropriate for an online widening scheme that would accommodate HGVs and buses
 - Verges up to 3m wide which could also facilitate cycle/ pedestrian facilities
 - Road curve radii which meet DMRB standard for a 40mph road, improved junction and forward visibility
 - Roundabout junction with Alders Road, right turn lane junction with Crittenden Lane.
- 5.2.6 The offline section north of Alders Road would comprise:
 - Road width up to 10.0m wide (as per KCC bypass scheme)
 - New four arm roundabout at A228 / B2017 junction
 - New roundabout connections with Alders Road
 - Verges up to 3m wide which also facilitate cycle/ pedestrian facilities to conform to LTN 1/20
 - Road curve radii which meet DMRB standards.
- 5.2.7 The online link section would result in loss of a number of roadside trees and hedgerows, and the loss of a single dilapidated outbuilding. The scheme option assumes an alignment that avoids flood land, ancient woodland and seeks to minimise the number of landholdings through which it passes. Given the short distance of the offline link (approximately 1.1 to 1.2 kilometres) there are limited options available for this route, hence that shown is the most logical and economical that minimises length of road and impact.

5.3 Proposed Alternative Colts Hill Scheme

- 5.3.1 An alternative by-pass scheme has been produced by Stantec and is shown as a concept drawing in **Appendix B** as follows:
 - Drawing 332610964-STN-HGN-SW-DR-H-0702: Colts Hill Bypass Alternative Highway Connections
- 5.3.2 This option partly follows the route of the bypass scheme proposed by Kent County Council, but will have a comparatively smaller corridor width. This would be less intrusive on the surrounding area than the KCC scheme. The section of the A228 to the south of the Alders Road / Crittenden Road junction is considered suitable to accommodate the proposed local plan development traffic without any further upgrade being required.
- 5.3.3 It is considered that the above arrangement takes into consideration the alternative schemes previously explored and puts forward a scheme which has the least impact on constraints (Land available, trees, existing buildings) whilst providing an improvement appropriate to meet the guidance on local plan development and the relevant planning tests.



- 5.3.4 This scheme by passes the row of cottages in Colts Hill, with a roundabout to the south of the Colts Hill Roundabout which ties the road into Alders Road and the existing A228 to the south. The road tying into Alders road would 6m wide with a footway cycleway provided on the east/southern side. Where the road joins with the existing Alders Road, cyclists would transition between the road and the cycleway to continue their journey towards/from Half Moon Lane and onwards towards the North Farm area.
- 5.3.5 This option provides appropriate highway access to the development sites without adding traffic to Colts Hill, which currently is very width constrained and historically has experienced road safety issues. It is likely to reduce traffic on Colts Hill in the vicinity of the row of cottages which is likely to reduce the risk of collisions in this area. This proposal includes infrastructure for active travel by providing pedestrian facilities and segregated cycle facilities and so encourages travel by sustainable modes.
- 5.3.6 As well as the options shown on the drawings referenced above, variants of these options could also be considered. All alternatives to KCC's current bypass option would need to be subject to the thorough assessment process before they could proceed to ensure they represent a viable option and that there are not substantial costs relating to matters including level changes and ground conditions which would make the alternative less attractive than the current KCC option.

5.4 Other Mitigations

- 5.4.1 With the added vehicle trip movements expected from the sites the following junctions are expected to need some form of junction improvement:
 - A228 Whetsted Road/A228 Bransbridges Road/B2160 Maidstone Road roundabout
 - A228 Maidstone Road / Whetsted Road priority roundabout junction
 - A228 Maidstone Road / B2017 Badsell Road (Colts Hill) roundabout
 - B2017 Badsell Road / B2160 Maidstone Road signalised junction
 - B2160 Maidstone Road / Commercial Road priority junction
 - Shuttle signal Bridge Paddock Wood High Street.
- 5.4.2 The above schemes provide an insight into schemes that may be required internal to Paddock Wood and would need to be considered within Transport Assessments. The modelling undertaken by SWECO provides a strategic basis for understanding the trips impact on the network, however local modelling would be subject to planning applications.
- 5.4.3 The A228 Maidstone Road/B2017 Badsell Road roundabout and B2017 Badsell Road/B2160 Maidstone Road signalised junction has partial funding for a scheme from contribution from local developments, but it is expected that strategic development at Paddock Wood and east Capel will necessitate further improvements at these locations.
- 5.4.4 The shuttle signal bridge on Maidstone Road provides additional benefits to pedestrian and cycle connectivity between the northern and southern side of Paddock Wood. Further assessment would be required to assess the highway impact of providing this scheme. This scheme has not been included within the modelling work that has been undertaken by SWECO.
- 5.4.5 Mitigation requirements as part of the Local Plan would be identified by SWECO, and further mitigations would be identified if required during the planning stage through the submission of a Transport Assessment to be carried out by applicants.



5.4.6 Table 5.1 below sets out the highways and transport infrastructure which it is considered would be required to induce a mode shift to the order of magnitude shown above. It also lists the infrastructure which would be necessary in order to access the site. The infrastructure shown forms part of a wider list covering multiple facets of the development's requirements.

Table 5.1 Recommended Transport Infrastructure – Paddock Wood and east Capel

Ref	On Site Transport Infrastructure						
	Redrow Land						
	Internal road off main access road						
	Bus / cycle / ped 'causeway' to Countryside						
	Hop Pickers Line integration to the Pedestrian and cycle infrastructure.						
	Proposed cycleway/footway routes through site						
	3m shared cycleway/footway along internal link road						
	Bus stops on site along link road						
	Crest Land						
	Internal link road between the A228 and B2160 Maidstone Road						
	Road/bus/cycle/ped 'causeway' over river (x1)						
	Pedestrian/cycle Bridge across Railway						
	Proposed cycleway/footway route						
	3m shared cycleway/footway along internal link road						
	Bus stops on site along link road						
	Dandara Land						
	Internal road						
	Pedestrian/cycle Bridge across Railway						
	3m shared cycleway/footway along internal link road						
	Bus stops on site along access road						
	Pedestrian/cycle route through site						
	Site Access Arrangements						
	Redrow Land						
	Access road with loop within site						
	Internal road off main access road						
	Crest Land						
8	Roundabout Access with A228						
9	Priority access with Maidstone Road						
	Dandara Land						
10	Access with A228						



Ref	On Site Transport Infrastructure					
11	Access with Badsell Road					
	Off Site Pedestrian and Cycle Improvements					
	Pedestrian/Cycle Route to Tunbridge Wells - A228 Route					
	Pedestrian and cycle improvements - JA presentation routes					
12	Crossing on A228 - possibly a bridge					
	Improvement to NE existing pedestrian/cycle bridge over Railway					
	Cycle storage improvements at Paddock Wood Station					
	Off-site Highway Improvements					
1	Colts Hill route improvements / Bypass					
2	A228 Whetsted Road/A228 Bransbridges Road/B2160 Maidstone Road roundabout					
3	A228 Maidstone Road / Whetsted Road priority junction					
4	A228 Maidstone Road / B2017 Badsell Road (Colts Hill) roundabout					
5	B2017 Badsell Road / B2160 Maidstone Road signalised junction					
6	B2160 Maidstone Road / Commercial Road priority junction					
7	Shuttle signal Bridge Paddock Wood High Street					
	Other Off-Site Infrastructure					
	Bus Subsidy					
	Personal Travel Planning					
	Travel Cards/tickets for new residents					

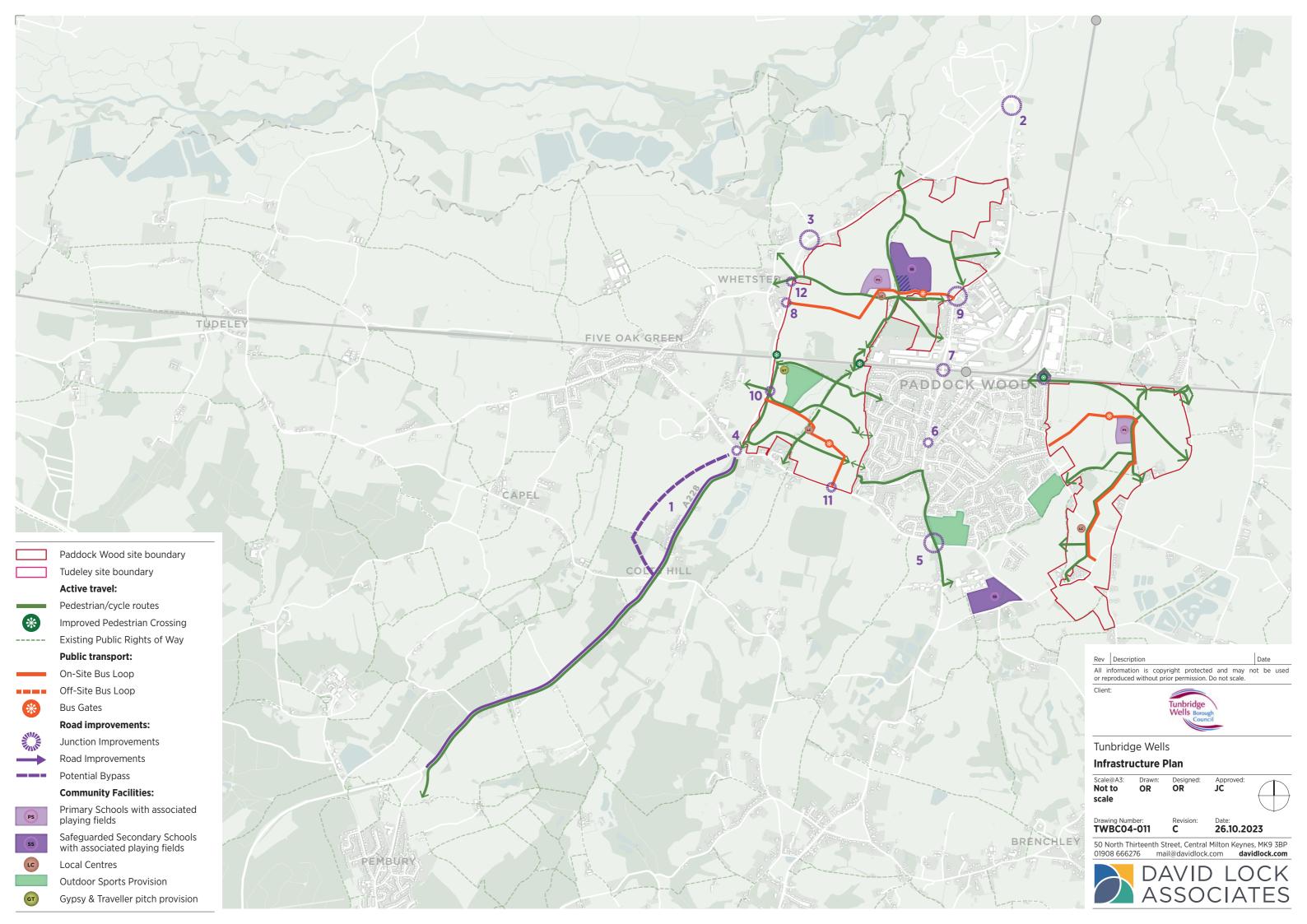


5.5 Recommendation

Should TWBC wish to proceed with promotion of Paddock Wood and east Capel for allocation, it is strongly recommended that more detailed evaluation of the transport impacts is conducted, at the relevant masterplanning and planning application stages to determine the appropriate timeline milestones when this infrastructure, and others, would be necessary.



Appendix A DLA Infrastructure Plan





Appendix B Colts Hill Bypass Alternative Highway Connections

