

APPENDIX 2: TRANSPORT
STRATEGY

TRANSPORT INFRASTRUCTURE

Rail infrastructure

Strengthen the **role of Waddon Station** as an important place and destination, and in terms of its functionality.

Waddon Station is a key part of the Waddon local centre, but its role is underplayed by virtue of being set back from the main road corridor, with an unprepossessing building, and poor-quality public realm. In addition step-free access is only available for the westbound platform. Its role should be strengthened by:

- Enhancing the appearance of the station building to reinforce its presence / create a local landmark.
- Redesigning the forecourt area as a distinctive and welcoming station plaza.
- Integrating smart mobility elements into the station environment to turn it into a 'mobility hub' (see smart cities chapter for further details).
- Installing lifts (which may require a new footbridge also) to provide step-free access to the eastbound platform.

Moreover, the opportunity to comprehensively redevelop the station should be explored, ideally in conjunction the adjacent land to the north (where McDonalds and Pets at Home are located). The station could be reimagined as so that it bridges the railway line, providing a new entrance to the north, and offering the potential for a new high-quality pedestrian (and potentially cycle route) running between Epsom Road and the Purley Way/ Croydon Road junction. This would provide a new high quality station and a quiet alternative route for pedestrians and cyclists wishing to avoid Purley Way. Furthermore it would unlock and support intensification of development around this node.

Enhance the **level of service provided by Waddon Station** through the delivery of TfL's proposed 'metroisation' of rail services in South and South East London, and Network Rail's Croydon Area Remodelling Scheme (CARS). Both schemes will help unlock capacity, frequency, and reliability enhancements on services via Waddon Station.

The key elements of metroisation that will benefit the area include:

- Higher capacity rolling stock as currently used on London Overground.
- Digital signalling along the South London Line plus remodelling of tracks in Croydon and Balham to increase service frequency between Belmont and Victoria via Wallington and West Croydon.
- New turnback facilities at Wallington which, with CARS would deliver 4 services per hour from Wallington to London Bridge.

CARS is part of the wider upgrade of the Brighton Main Line comprising major investment in infrastructure at Selhurst junction and East Croydon Station along with other locations on the line. It will unlock capacity for additional rail services on the Brighton Main Line, and in doing so provide knock-on benefits in terms of capacity and reliability of other rail lines passing through the junction.

Tram infrastructure

Increase **tram capacity on Wimbledon branch** by six trams per hour via TfL's mooted proposals (which are subject to outcomes of the Trams for Growth study).

Estimates from TfL indicate that there is spare capacity on the Wimbledon branch of the tram network, in the order of space for around 1,100 passengers per hour per direction. This already goes some way accommodate demand from the masterplan area which is likely to be significant (NB trip generation calculations are undergoing further refinement), however additional improvements to tram capacity would be needed to make a significant step change in level of service, boosting demand for the tram, and helping keep demand for private vehicle trips low. The Trams for Growth Plan update currently being progressed by TfL proposes an increase in service frequency along the line between Ampere Way and Waddon Marsh from 12 trams per hour to 18 trams per hour. The additional 6 trams per hour proposed would add capacity for 1,000 passengers per hour per direction, which when added to the current spare capacity this allows for an additional 2,100 passengers per hour per direction. To operate this higher level of frequency, the following infrastructure investment is required:

- Double tracking of the single-track flyover at Wandle Park.
- Purchase more rolling-stock.
- Build more stabling and maintenance capacity for the trams.
- Upgrade power systems.
- Build a new turnback facility in the west (assumed to be at Belgrave Walk).

It should be borne in mind that these capacity upgrades are currently unfunded, and given the current funding constraints that TfL is facing there is uncertainty about when and if these could be delivered. **Strengthen the role of Waddon Marsh tram stop** as a key public transport hub.

Waddon Marsh would effectively become the main public transport hub for the northern part of the area. As such, its prominence in the area should be enhanced, and access to/from it improved, by:

- Improving the link from Purley Way, making it more direct and visible for ease of access and interchange with bus services.
- Create sense of entrance and arrival at the tram stop with a plaza.
- Integrating micro mobility and drop-off space into the area so that it becomes a mobility hub.
- Redesigning the forecourt area as a distinctive and welcoming station plaza

Explore the provision of **a new tram extension along Purley Way** with series of stops located to support the proposed local centres.

Croydon's Local Plan review issues and options (2019) document includes a suggested tram extension (TE4), connecting Ampere Way and Purley. The 5km route would diverge from the existing Ampere Way stop and proceed south along Purley Way, connecting to Purley station and then proceeding along Brighton Road to connect to Coulsdon south station (in addition to a potential Croydon town centre (via Brighton Road), Purley Cross, Coulsdon tram extension (TE2)) etc. The high-level feasibility of this is currently being reviewed via the Croydon Corridor Study (2020).

A tram extension would be a major step change for the area: positively supporting sustainable growth along the corridor by greatly enhancing public transport accessibility for existing and new development (see section explaining PTAL calculations), and in turn helping support further mode shift and reducing demand on the highways network. The delivery of a tram extension will require further careful consideration from funding, delivery, and engineering feasibility perspectives. The proposal for a tram extension along the corridor is also not fully supported by TfL. Therefore, it should be considered a long-term aspirational proposal at this stage. As a first step to creating a high quality public transport corridor – and as an alternative should a tram extension be ruled out at a future point - then the alternative is for a rapid bus corridor, with a series of bus superstops at the same locations as the tram stops (see page below).

Bus infrastructure

Enhance bus services including a **new limited stop bus service calling at superstops** and **improve local bus services** (see Figure 1).

The intention is to support enhanced local connections to/from places in the local and wider area, that are likely to be key destinations for people living or working in the area. For example:

- Rail stations at Waddon, Purley and in the wider area for interchange to train services;
- Existing and proposed local centres in the Purley Way area, for local shopping and community services;
- Major shopping, leisure and culture facilities, notably in Sutton and Croydon town centre.
- Local areas of employment, notably central Croydon, Old Town, Beddington, Broad Green, Wallington, and Sutton.
- Key health facilities such as Croydon University Hospital.
- Secondary schools such as Harris Academy, Quest Academy, Haling Manor High School, The Link Secondary School, St Mary's Catholic High School, and various colleges including Croydon College, Sutton College and others.
- Travel to work in the Purley Way area from the wider residential catchment, which includes various areas from within or immediately adjacent to the study area and in the slightly wider context including places such as Beddington, Forestdale, Broad Green, and Thornton Heath.

- 119: Purley Way - Bromley North
- 154: West Croydon - Morden
- 157: Morden - Crystal Palace
- 289: Purley - Elmers End
- 407: Sutton - Caterham
- 410: Wallington - Crystal Palace
- 455: Wallington - Old Lodge Lane
- 463: Coulsdon South - Pollards Hill
- Proposed superstop
- Existing tram stop
- Train station

North-south services along Purley Way are proposed to be enhanced so that a combination of services calling at the superstops would provide a turn-up-and-go level of service frequency. This could include a combination of:

- A new limited stop bus service running north-south along Purley Way
 - Increased frequency of existing local north-south services along Purley Way (e.g. route 289, currently 5bph).
- In addition enhanced frequencies should be sought for:
- East-west connections, e.g. via Croydon Road (e.g. 407 or 410) and/or via Stafford Road (e.g. 154 or 157).
 - Service 463 via Beddington Farm Road, serving the Valley park site.

All of the above proposals will need to be considered in more detail in terms of demand, based on areas served and likely trips generated by development. With regard to the limited stop service further investigation will be needed on where it would continue to/from, as well as additional bus priority and other infrastructure within beyond the immediate project area. A business case would be required to secure funding from.

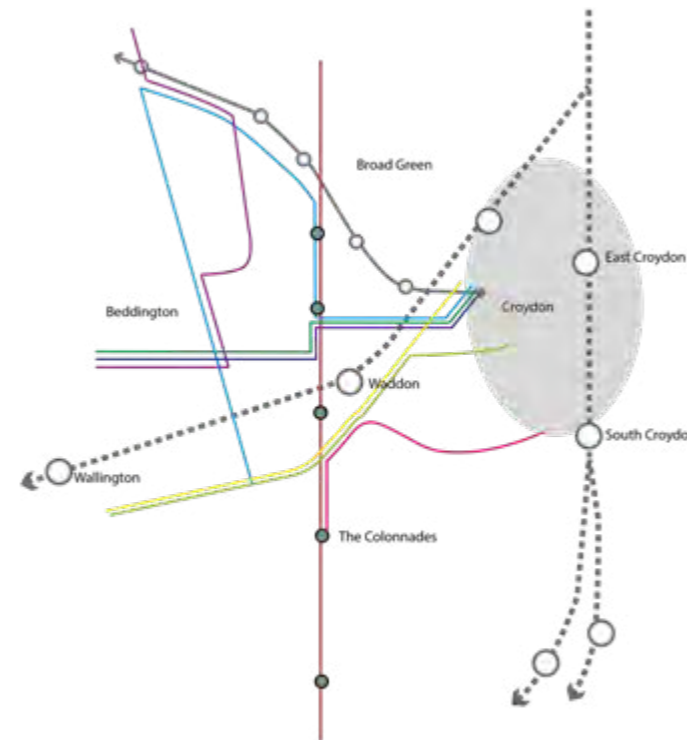


Figure 1: Bus network & proposed superstops

Provide a series of **bus superstops along Purley Way**, both as an interim measure ahead of construction of the tram extension, and an alternative to the extension, should it prove unfeasible.

Each superstop would be designed to relate to its specific context, but would be distinct from standard bus stops and effectively form a multimodal transport hub which could support attractiveness for people to use bus services. E.g. including double-length high-quality bus shelters; real time information about buses and nearby tram and rail services; seating; covered cycle parking to aid modal interchange; and attractive public realm. This will reduce dwell time and improve user satisfaction, helping decrease journey times and ultimately support mode shift.

The superstop nearest to Waddon Marsh should be situated in order to create a smooth and direct interchange between the tram service and any north-south buses. This could either be a new facility at Waddon Marsh or a very high-quality walking route, that is as short as possible, between Waddon Marsh and buses along Purley Way integrated into development proposals for the Sainsbury's site.

Install **bus priority measures** along corridor to protect buses from general traffic, preventing delays to buses and improving reliability of services.

Specific bus priority elements that could be explored in next stage of the masterplan include:

- Bus priority at junctions
- New/extended bus lanes
- Removal of bus laybays
- Bus stop relocation/ consolidation

Explore potential for **demand responsive bus service**, either as an extension to the GoSutton pilot (if successful), or as a new service.

The GoSutton pilot service currently being trialled by TfL includes some parts of the Purley Way study area (see below), including Valley Park Retail and Ampere Way tram stop. The service operates Monday to Sunday 06:30 to 21:30, trips can be booked via the phone or app, and fares cost between £2 and £3.50 (depending on time of day and journey length). The 12-month trial was due to run until the end of April 2020 but has been extended. A similar service has been suggested for Kenley, so there may be an opportunity to run this in combination with Purley Way, or as part of a wider area including Sutton. All the above bus measures are subject to funding availability which will need to be considered in more detail as the masterplan is progressed. Bus-based services are generally both cheaper and quicker to deliver, and offer strong potential as part of the transport strategy for Purley Way. However, as previously noted, TfL faces significant funding constraints, so any bus proposals would need to be supported by detailed analysis of demand, a business case that aligns with TfL's requirements, and potential S106 funds.

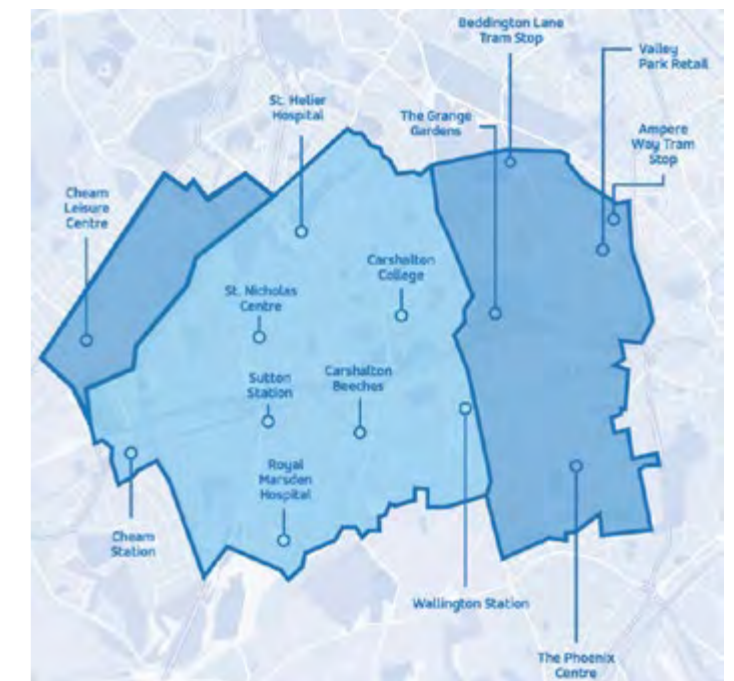


Figure 2: Go Sutton pilot service

PTAL testing

A Public Transport Accessibility Level (PTAL) spreadsheet model was developed to test the impact of the public transport and walking proposals explained above. PTAL assesses connectivity (level of access) to the transport network, combining walk time to the public transport network with service wait times. PTAL values are simple. They range from zero to six, where the highest value represents the best connectivity. PTAL value of one is split into two categories (1a and 1b) and the PTAL value of six is split into two categories (6a and 6b). All together there are nine possible values of PTAL: 0, 1a, 1b, 2, 3, 4, 5, 6a and 6b.

A series of scenarios were input into the PTAL spreadsheet model to test the impact of public transport proposals. These are explained in detail in a technical note included in the Appendices. In summary, the tests comprised:

- Baseline level of improved walking connections; incorporated in all three scenarios (below)
- Scenario 1: Enhance existing rail station and Wimbledon branch of the tram
- Scenario 2: Provide new tram extension
- Scenario 3: Comprehensive bus network improvements

Each scenario was tested separately to understand the potential affect of each set of measures on its own, with a target PTAL of 4. Key results for six short-listed sites (A-F see Figure 1.0) are highlighted below.

Baseline walking improvements

Site F achieves the target PTAL of 4. Most of the sites experience an improvement in accessibility levels, though not quite enough to push them into a better PTAL category; for instance sites A and E are notably close to achieving this. Site H (Valley Park) increases to PTAL 2, however this requires significant reduction of walking distance to be delivered. Site B sees no improvement whatsoever due to limited bus service.

Scenario 1: Enhance existing rail station and Wimbledon branch of the tram

The scenario offers some improvement on the baseline, however not quite enough to push any additional sites to better PTAL levels. The reason being is the geography and proximity of sites to the existing rail and tram infrastructure.

Scenario 2: Provide new tram extension

This scenario shows significant improvement, with three sites achieving PTAL 4 or higher (A, E and F) In addition site B is much improved with PTAL of 3. However sites C and H show only a small improvement over and above Scenario 1 results.

Scenario 3: Comprehensive bus network improvements

This scenario shows good improvements with two sites achieving PTAL 4 (A and F), and site E achieving close to PTAL 4. Site B, C and H only show marginal improvements (PTAL 2).

Site H: Valley Park In all the scenarios the Valley Park site achieves the least improvement, despite significant improvements to the pedestrian network. Further testing has therefore been conducted to establish the level of input required to help the site achieve a PTAL of 4; this requires a level of infrastructure provision which is likely to be unfeasible for this site. Achieving a PTAL of 3 is more realistic, however would still require aspects from all the scenarios explained above. Please see Appendix 2.0 for the full detail.

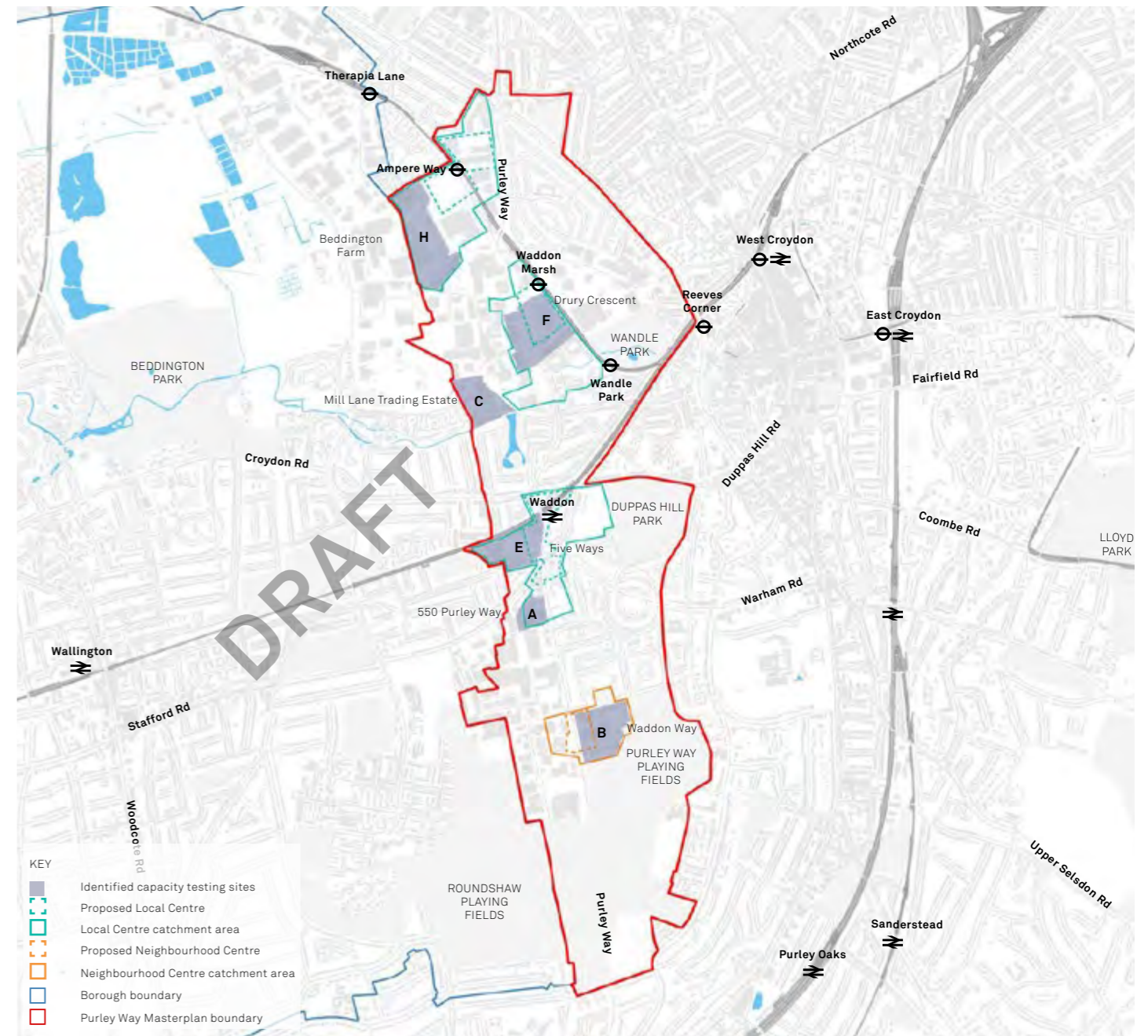


Figure 1.0: Shortlisted site for early capacity study

Walking network

Provide a network of **high-quality pedestrian routes connecting local centres** and new development areas to the public transport network, key local amenities, and to destinations in the wider area. Including:

- Strong links to public transport nodes, so that local centres and new development areas fall within a five-minute walk of a bus or tram stop, and the ten-minute walking catchment for Waddon Station is maximised.
- Improved pedestrian infrastructure along strategic east-west connections within wider area - notably Stafford Road/Denning Avenue, Mill Lane/Waddon Road – providing connections towards Croydon Town Centre.
- New/improved crossings on Purley Way at key locations, located and designed to support public transport nodes and also cycling connections
- Improved, signed local links to promote active travel choices to access health, education, green spaces etc.
- Site specific routes as defined in the Detailed Masterplan include new/improved footways and footpaths through development sites, plus upgraded areas of public realm on Purley Way and other key roads around development sites and more broadly within local centres.

Specific consideration of providing comfortable, safe, and attractive routes for pedestrians through commercial and industrial areas. Wide footways, buffer planting, pedestrian-focused lighting, and natural surveillance will all come into play to help achieve this.

Seek to ameliorate the impact of high volumes and speeds of vehicles along Purley Way, to make this a more welcoming and comfortable pedestrian experience. The transport strategy is structured around providing a high-quality public transport corridor, however the A23 will still need to be used by strategic traffic. To help mitigate against this,

the pedestrian environment should be enhanced as much as possible to buffer from traffic and attendant problems of noise, air pollution, and general vehicle dominance.

Development opportunities should be used to ensure wide, clear footways for people walking along and spending time within the corridor. Landscape should be integrated to buffer pedestrians and help reduce immediate impacts of noise and air pollution.

The design approach will need to vary by segment, recognising that place characteristics and spatial constraints vary considerably along the route. The character and sense of place relating to each local centre should come through in the approach to public realm.

Goods movement

Incorporate a **micro-consolidation / last mile logistics hub** within the area to reduce number of goods vehicle trips on the road.

Micro-consolidation or last mile logistics hubs are examples of approaches to reducing the impact of delivery or servicing by rearranging and combining goods shipments into fewer deliveries close to the final delivery point.

A micro-consolidation centre is usually a point to which multiple carriers are sent in order for goods to be sorted and loaded for the final leg of the delivery, often known as the 'last mile'. Micro-consolidation centres are essentially remote receiving docks for a building, high street or group of businesses, with the aim being to divert delivery traffic from the end destination and to consolidate consignments into a smaller number of final deliveries. As the micro-consolidation centre is typically close (within a mile or two) of the end destination, the final consignments can be delivered by low-emission or ultra-low emission vehicles (e.g. delivered on foot, by cargo cycle or by electric van).

A micro-consolidation centre could be operated for new residential and/or office buildings or existing businesses to reduce the volume of delivery traffic needing to access the building or buildings themselves. Occupiers of the buildings taking part in the scheme would have all their deliveries sent to the micro-consolidation centre in the first instance, and deliveries would then be sorted and brought through at regular times throughout the day by low or ultra-low emission vehicle.

A last mile logistics hub differs from a consolidation centre in that it is operated by one carrier, with the aim of serving that carrier's customers in the vicinity of the hub. It is a 'one to many' model, while the micro-consolidation centre is a 'many to one/few' model. The aim of a last mile logistics hub is to break down a large shipment of goods – usually made by HGV, ideally overnight or when the road network is less busy – into smaller consignments for delivery

to the local area using smaller, cleaner vehicles. The planned Amazon last mile distribution centre to be located on Trojan Way is an example of such a hub. The location of a micro-consolidation or potentially a last mile logistics hub – in addition to the Amazon one being planned, e.g. for a different carrier – would preferably be in the northern part of the study area, given the weighting of proposed new residential development in that part of the Purley Way project area which could be serviced from there.

The WSP study is also considering sites within this part of the study area for a construction consolidation site. There may be an opportunity to co-locate the micro-consolidation facility with this, however this depends on distances from the site to final delivery points (i.e. is it close enough that you can take deliveries by cargo bike), plus specifications for both the construction consolidation and micro-consolidation (e.g. if sites signed up to a micro-consolidation scheme have specific storage requirements such as refrigeration that would need to be included in the specification).

Case study: DPD in London

DPD is using last mile logistics hubs and all electric vehicles at several sites across London. At the hub, parcels are dropped by two 7.5 tonne electric lorries, and final deliveries are carried out by 10 electric vans and eight electrically powered micro-vehicles (albeit not e-cargo bikes). Each hub is capable of handling 2,000 parcels per day.

Designate **freight and servicing routes for industrial and big box retail** areas to keep large and heavy vehicles away from residential areas.

Significant consideration will need to be given to management of delivery and servicing. There are already many LGV/HGV trips along the A23 corridor due to existing uses, and these will only increase with the anticipated growth and committed development in the Beddington Lane Industrial Area. An area-wide strategy for servicing will be required.

Parking

Appropriate level of car parking provision on development sites, seeking low levels in conjunction with uplifted PTAL.

A parking strategy would be developed for the area which would be in line with the approach in the table below. Delivery of new development would, over time, drive down the amount of car parking provision across the area.

Implement **CPZ across entire area** and adjoining areas to avoid displacement of parking onto residential streets.

Design **ample cycle parking** (for residents, workers, and visitors) into development from the outset.

Strong cycle infrastructure should be provided within both residential and business developments in order to support cycling trips and the potential for modal shift.

Use	PTAL 4 and above locations	Rest of the area (mainly PTAL 2, 3)
Residential	Aim for car free (except disabled parking approx. 5 % provision) plus some operational parking/ servicing space.	Max 0.5 parking spaces per dwelling but ideally lower.
Business B1 and B2	Car free except disabled/ operational parking spaces.	As per London Plan standards for Outer London Opportunity areas - Up to 1 space per 600m2 gross internal area (GIA)
Warehousing and distribution (B8)	Case by case basis, but in line with London Plan standards for Outer London: Up to 1 space per 100m2 (GIA) plus disabled and operational parking (more flexible because of the shift patterns of this type of work and need for operational parking).	
Retail (A1-A5)	As per London Plan states - Up to 1 space per 75 sqm gross internal area (GIA)	
Warehousing and distribution (B8) Hotel	Car free except disabled, operational parking and coaches where appropriate.	Schemes should be assessed on a case-by- case basis and provision should be consistent with the Healthy Street Approach, mode share and active travel targets, and the aim to improve public transport reliability and reduce congestion and traffic levels – preferably minimal parking provision except for coaches and disabled.
Community (schools and other)	Case by case basis.	

Behavior Change

Implement targeted behaviour change measures to encourage both existing and new residents to use non-car modes.

Personalised Travel Planning (PTP) is a well-established method which, through one-to-one interaction between a Travel Advisor and a client, encourages people to make healthier and more active travel choices. Existing and new residents of the Purley Way area would be visited by a trained Travel Advisor to talk about their existing travel habits and to identify ways in which they could make changes, for their benefit, to their regular journeys in and around their area, whether to work, to school or to the shops. Forms of residential travel planning have taken place in Kingston, Sutton, Haringey and, most recently, Hackney. Previous projects have delivered up to a 10% reduction in single occupancy car use among the target population.

Moving home is widely recognised as a significant life 'change moment'; a point at which there is the possibility to break with old habits and form new ones, in the wider context of change. Providing new residents of Purley Way with comprehensive and impactful information about the sustainable travel options to them in their new home could support those new residents with making a change to their travel behaviours. Travel information packs can be compiled for new residents and should be accessible to them a month or so in advance of their move, so that they can start forming more sustainable travel habits from the moment they move in.

Construction traffic management

The scale of potential development in the area will generate significant construction activity over the Local Plan period, and impact on the local environment, highway network and access and movement for local businesses and residents. The developer of each individual site and project would be required to produce and enforce an individual Construction Management Plan, which would be done via the planning and approvals processes. However a wider, coordinated approach should be developed to manage construction practice via a range of area-wide measures seeking to mitigate the impact of the construction, improve safety and ease congestion on the highway network, and promote efficiency and best practice throughout.

To deliver this a collaborative developer forum should be established, and an over-arching code of construction practice (construction charter) implemented that all the developments support. A similar approach has been taken in the Vauxhall Nine Elms development area. In this case a bespoke construction charter was prepared based upon the Considerate Constructors Scheme, but with an additional focus on developers and highways authorities actively working together to more effectively plan and manage their sites, and mitigate impact of construction on surrounding developments and communities. For example this included:

- Principles to be followed during construction, addressing risk and impact of this on the area
- Provisions for site operations
- Specific environmental initiatives that pertain through the development period
- Initiatives to strengthen the local economy and protect the local environment
- Collaborative working local authorities, utilities, emergency services and transport operators
- Financial contribution to area-wide measures and initiatives
- Participation in relevant joint working groups and initiatives
- A series of area wide measures and initiatives to improve safety, reduce congestion and assist efficiency.

Phasing

The table below sets out suggested approach to phasing transport infrastructure. TfL is supportive of the aspirations to deliver new homes and industrial intensification along with physical, social and cultural infrastructure as set out in the Purley Way Masterplan. However further work and modelling will need to be undertaken by the Council and TfL

to understand capacity and demand. This will help inform the improvements required and will be needed for the business case for any scheme. This applies to both the Transport for London Road Network (TLRN) highway network and public transport schemes.

Item	Phase 1: 1 - 2000 homes	Phase 2: Years 2001 - 4000 homes	Phase 3: Years 4000+ homes
Walking routes	X		
Cycling routes	X		
Fiveways area junction upgrades		X	
Bus service improvements	X		
New limited stop bus and superstops		X	
Rapid bus priority measures		X	
Other junction upgrades		X	
Capacity increases on tram network		X	
Waddon station redevelopment (complete reconstruction in relation to Waddon Goods Yard site, step-free access, new open space)		X	
Tram extension			X
Behaviour change measures	X	X	X

Calculating development impacts

Work has been undertaken to forecast trips generated by development in the masterplan, and amount of car parking provisions required. The methodology and outputs are summarised in a technical note included in the appendices. This is subject to further review by TfL and LBC and the assumptions and numbers may change.

A new corridor model would be required to assess the proposals for changes to the Purley Way itself (e.g. new crossings, cycle lanes, bus lanes, junction changes etc). A key concern that will need to be addressed is the potential for changes to Purley Way to displace traffic onto other roads.

The Census 2011 data provides the basis for the mode split for the trip generation calculations. Looking at car or van availability for the relevant Middle Super Output Area (MSOA) indicates that 40% of people within the study area have no cars or vans within their household, while the remaining 60% have at least one car or van, of which 12% have two or more, and 3% three or more. Given the proposed car parking ratios outlined within this chapter, car ownership within the proposed masterplan residential development would equate to no more than 50%, at least a 10% reduction on the existing.

In order to justify this reduction in car ownership, an increase in the PTAL within each of the development clusters needs to be achieved, which can help drive up the mode shares for public transport, walking and cycling, and reduce the mode share for car drivers. As no modelling has been undertaken, this mode share adjustment will need to be made manually on a site-by-site basis at the next stage.

This manual adjustment will provide an indication of existing and future trips on the network and enable a high-level assessment of impact for each mode. Further work will be required to understand impact of trips generated and test network capacity for each mode. TfL would also require proposals for changes to the modal networks to be fully assessed and justified by strategic modelling.

This work will need to take account of current planning applications and the cumulative uplifts in traffic volumes and demand on public transport. It is anticipated that modelling using Railplan (public transport) and HAM (highways) models will likely be needed, drawing on LTS model runs to establish background demand.

APPENDIX 3: DIGITAL
INFRASTRUCTURE

Digital infrastructure considerations

This document sets out some research findings and thoughts around the emerging Purley Way Masterplan and how this can secure best-in-class digital connectivity. It provides a platform from which developers can crystallise digital ambitions and progress targeted actions, with some evidence to underpin decision-making.

Ideally, Purley Way will aspire to be an exemplar digital development, where residents and tenants are able to exploit the benefits of connectivity and access to smart technologies.

The Rationale for Digital Investment

Digital technologies are increasingly important to the economy and help to unlock a number of benefits, including significant economic impacts (employment and productivity). They are at the heart of what drives many sectors and industries to grow, innovate and adapt and underpin the UK's competitiveness as a global digital leader.



Figure 1: The Relevance and Value of Digital Technology
Source: Hatch Regeneris, 2020

The far-reaching importance of digital technologies and the infrastructure that propels them is highlighted below. This comes at a time where technology is rapidly developing, demand is increasing and fixed and mobile connectivity converging.

Strategic Imperative: Government and London policy acknowledges the importance of digital infrastructure the scope connectivity has to support economic growth, place-making and is evidenced within the UK Industrial Strategy, national Digital Strategy, South London partnership initiatives and Croydon Borough Council's Digital Strategy.

Economic Impact: the 2018 Tech Nation report estimated the value of the UK's Digital Tech economy to be worth £184 billion, growing at a rate nearly 3 times faster than the rest of the UK economy.

Global Competitiveness: the 2019 Tech Nation report highlights the global race to be digital and the pace of growth internationally, with the UK in close competition with the likes of the United States, Japan, South Korea, China and Germany.

Learning and Skills: educators are increasingly adapting to a digital world, where skills and training can take place online or via virtual channels, opening up access to a larger pool of people, removing barriers and enabling the use of new technologies.

Environmental Sustainability: digital technology is driving a new wave of innovation and research, developing solutions for the world's most prominent environmental challenges in an integrated and smart way.

A Societal Leveller: digital technologies have helped to increase the democratisation of societies, providing new and innovative ways for citizens to contribute, irrespective of locational and geographic limitations.

A Cross-Cutting Enabler: increasingly identified as an economic enabler, digital technology is embedded within a broad cross-section of industries, and development of the fourth industrial revolution (Industry 4.0).

Efficient Public Services: government, central and local, is undergoing a continued programme of digital transformation, aimed at service delivery improvement, greater efficiency, responsiveness and democratisation.

Fast, secure and resilient digital infrastructure lies at the heart of a digital economy – one which is more inclusive, productive and best-placed to prosper.

Relevance to Purley Way Development

Best-in-class digital infrastructure will be central to Purley Way's proposition and its competitive advantage as a new and ambitious development. It will anchor services and facilities and ensure those living and working on-site will have the opportunity to gain maximum benefit from the positive impacts it will bring.

- The need to consider digital infrastructure within Purley Way is framed by:
- The opportunity to demonstrate intent which is commensurate with ambitions set within Council and government policy.
- Potentially a link with securing planning permissions.
- The importance of ensuring connectivity is on par or better than that offered in surrounding neighbourhoods.
- The value to residents as a utility which supports a variety of uses, from working, to social interaction and access to education.
- The need to provide businesses with the connectivity they need and make the commercial offer as attractive as possible.

- To support investment in 'smart' technologies that will make the development more sustainable, safer, efficient and socially integrated.
- The potential commercial opportunity, both direct and indirect, that may arise – i.e. revenues associated with the hosting/locating of equipment and the effect on house values/commercial rents as a consequence of high quality connectivity.

Active engagement with digital infrastructure providers also offers the opportunity for developers to establish longer-term relationships. This will form the basis for a better understanding of the technologies that are being deployed, the deployment models adopted by providers and how proactive engagement can assist in securing highest specification connectivity.

In some cases, engagement may also lead to commercial opportunities, where developers can generate revenues through the hosting of network equipment. This has the added benefit of installed infrastructure also benefiting the local community.

Digital Infrastructure Coverage

The baseline coverage position informs the need to secure **high quality connectivity and the opportunity to leverage assets that are already in place**. As a densely populated London Borough, Croydon has the advantage of being commercially attractive and having a strong presence of high speed fixed and mobile networks already in place.

Fixed Broadband Coverage

The relative attractiveness of Croydon is reflected in fixed broadband coverage which shows a very strong position at a Borough level (see Figure 2)

This highlights a very high level of coverage across the Borough, based on a number of key measures, particularly superfast and ultrafast speeds. These make the Borough highly competitive on a national and London-wide basis and suggest that there may be opportunities to anchor Purley Way redevelopment to assets and infrastructure which are already in place. The data also exposes

the relative health of the market and competition amongst providers – Openreach and Virgin Media in particular.

A deeper look at coverage across the Borough suggests that other providers are also active, the majority of whom are delivering high speeds, some which are gigabit capable. This includes Hyperoptic, OFNL and ITS Technology.

The presence of full fibre, whilst more extensive than the national average, is quite low (18%). This is an area that development across Purley Way could affect and accelerate, given the scale and density of construction proposed. This would also demonstrate a clear alignment with government policy, which has ambitions to secure ubiquitous gigabit capable coverage by 2025. These goals are also consistent with those proposed by the Mayor of London and Borough Council, who seek to gain a first-mover advantage in terms of digital connectivity.

The data suggests a density of fibre networks and assets across the Borough and within the vicinity of Purley Way. This is reinforced when looking at the spatial dimension of ultrafast and superfast coverage at a lower level (see Figure 3)

The map illustrates the high prevalence of ultrafast and superfast broadband across the Borough but also showcases variations that sit within overall

coverage figures. Indeed, some areas within the vicinity of Purley Way exhibit lesser broadband speeds, considerably lower than Borough and national averages.

This suggests there is an opportunity for development to support the uplift of speed and coverage in such areas, including the development itself and adjoining neighbourhoods.

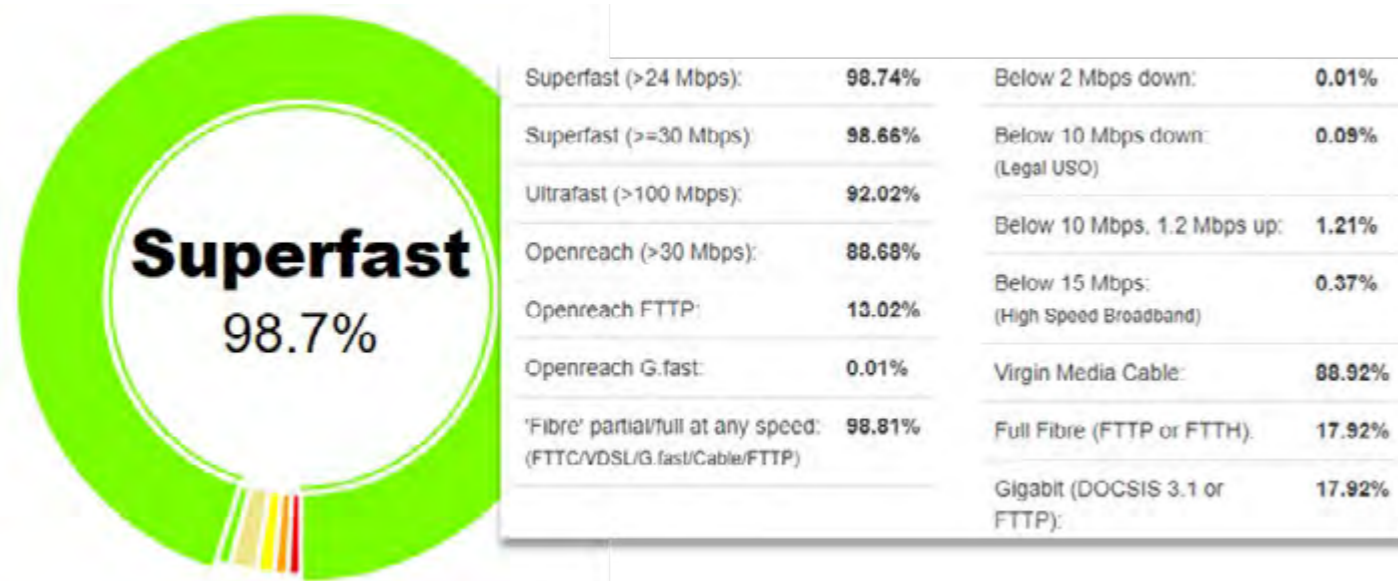


Figure 2: Croydon – Fixed Broadband Coverage
Source: Thinkbroadband, 2020

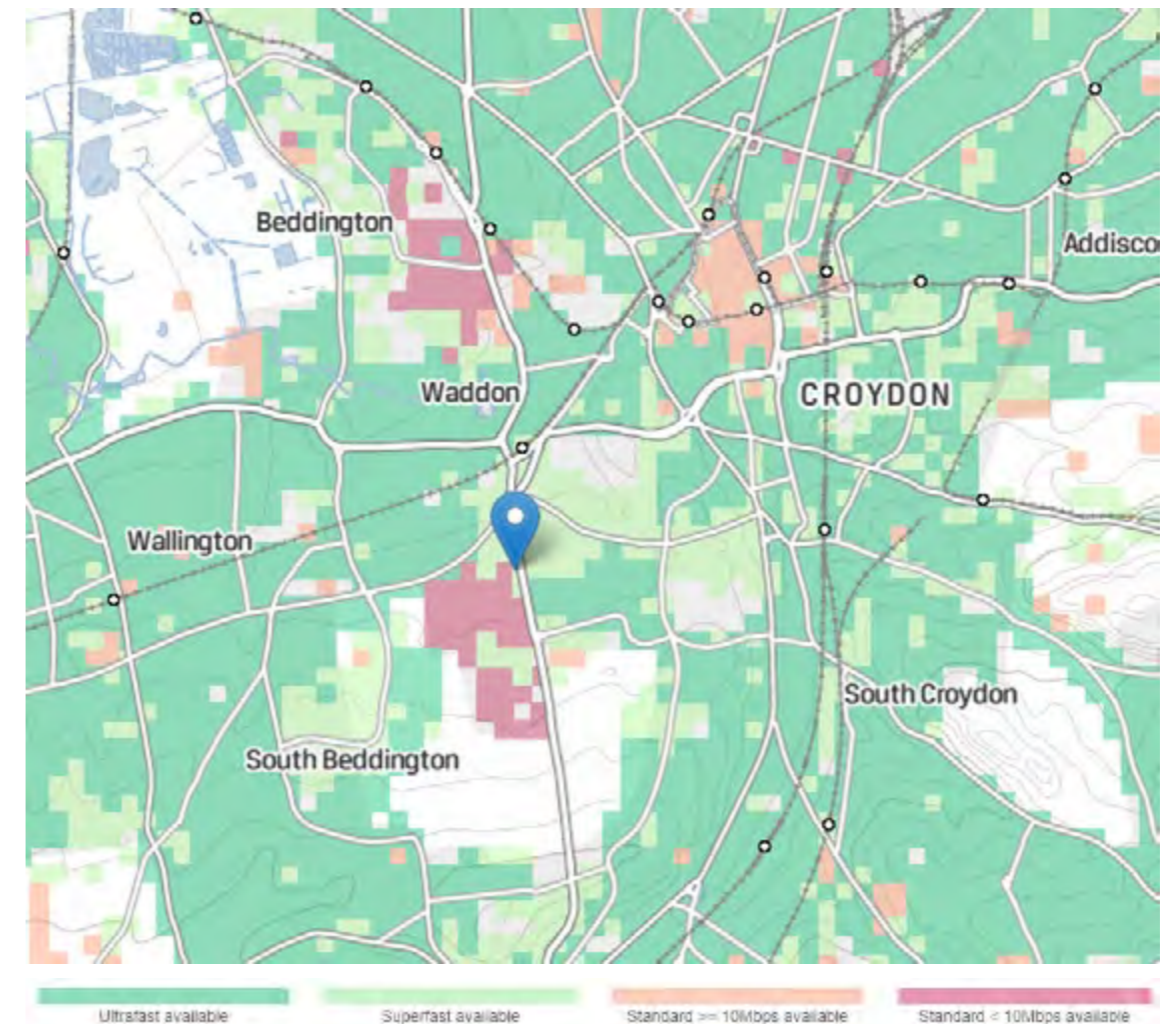


Figure 3: Croydon – Fixed Broadband Mapping
Source: Ofcom, 2020

A different map tells a nuanced but similar story – here the lack of full fibre coverage along the Purley Way corridor is exposed, suggesting the area is positioned to benefit from an upgrade in network infrastructure serving the business and residential premises along it.

A more detailed exploration of data and a conversation with the Borough Council will help to form a fuller picture of connectivity at a local level and the prospects for improvement, through public sector investment or commercial deployments.

Mobile Connectivity

Mobile connectivity complements and interfaces with fixed broadband infrastructure, creating a dense mesh of assets and equipment that services those wanting to access the internet in situ or when on the move. Mobile networks interact with a growing variety of mobile devices and technologies, to provide immediate access to data, information and other devices. It also offers access to higher speeds and download/upload throughput on par with fixed broadband. In summary, they are key to providing the seamless connectivity that people increasingly expect.

As with fixed broadband, the market is dynamic and commercial investments actively taking place, leading to upgrades across the capital. To date, the emphasis has been on extending the reach of the current generation of technology – 4G. Whilst this continues, 5G networks are now being launched and rolled out across densely populated cities and areas, including the London. The exact location of this is difficult to define and subject to commercially sensitive information, but will likely occur where 4G services are already strong. There is a need for Croydon to be at the forefront of 5G, but also have a strong 4G foundation.

a good proxy for connectivity across all four main providers (EE, O2, Three, Vodafone). The picture is mixed along the Purley Way and inherently more variable as a result of the factors which drive actual speeds and connectivity. This data snapshot suggests that there is a need to improve 4G access within proximity to Purley Way and an opportunity for redevelopment to facilitate this.

Given the strength of the policy imperative, the drivers that are leading to increased use and reliance on digital technologies and the opportunity to make developments more commercially attractive, a strategy to secure the best connectivity should be enacted.

The map above showcases EE's 4G (indoor) coverage across Croydon. As the provider with the most extensive network coverage nationwide, this provides

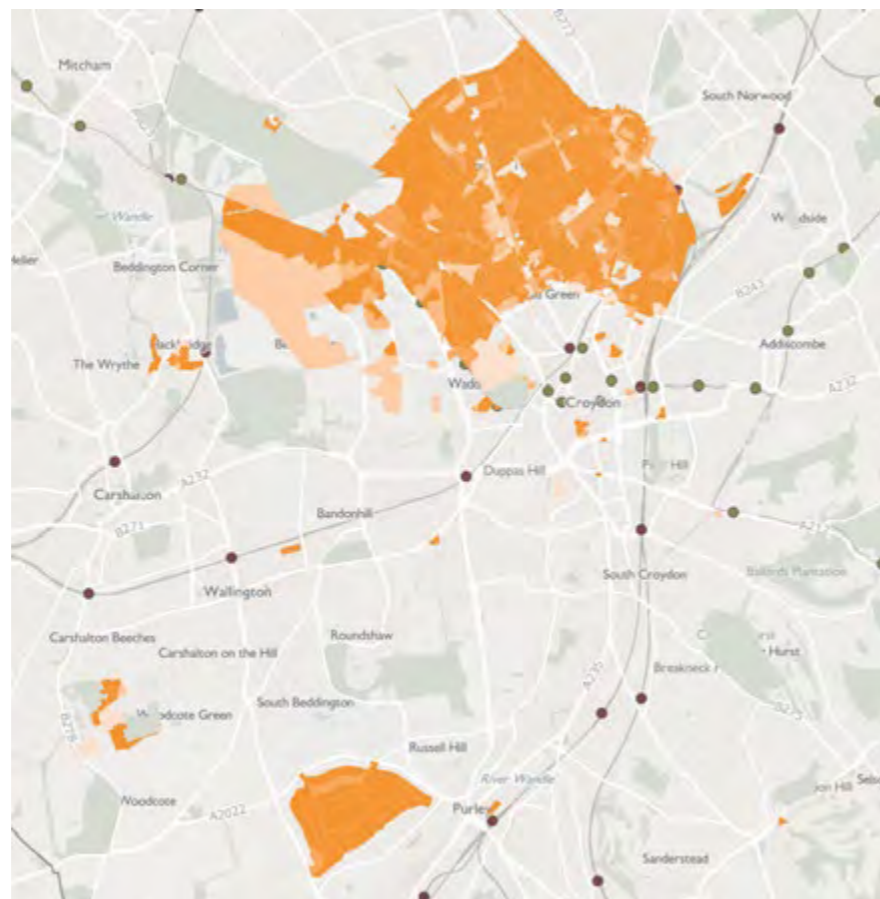


Figure 4: Purley Way – Full Fibre Coverage
Source: Connected London, 2020

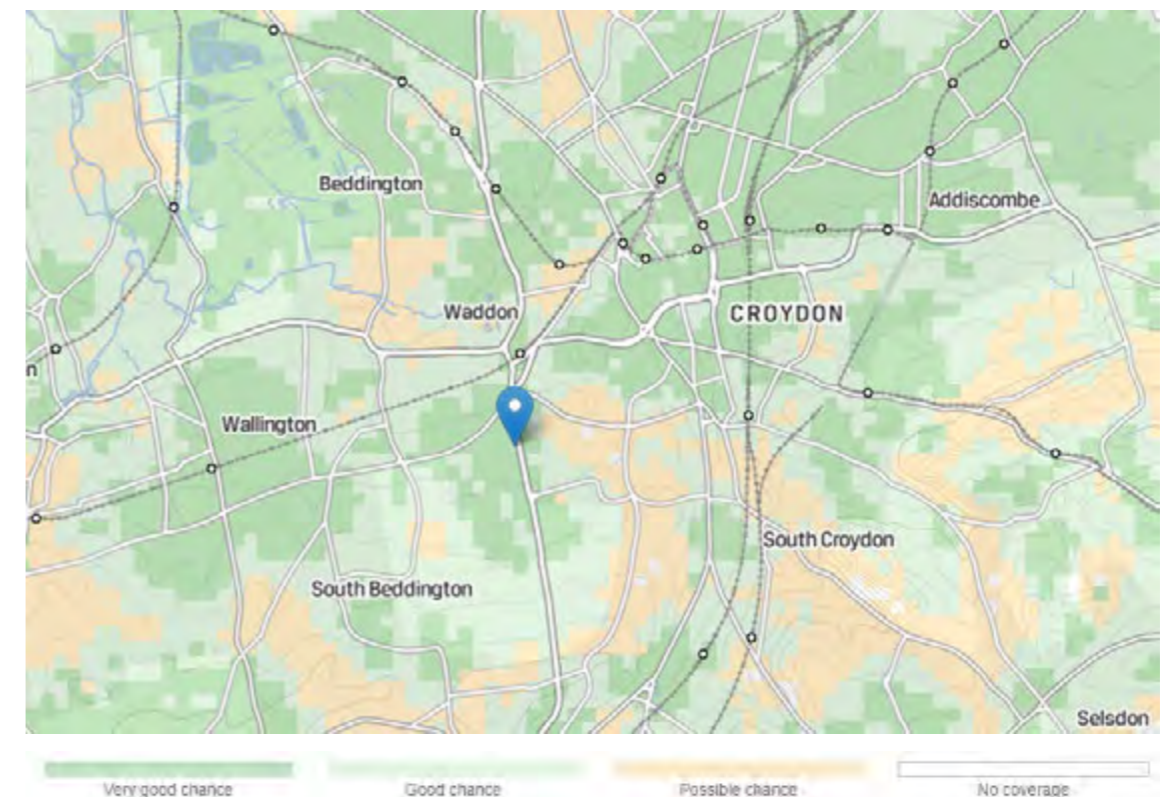


Figure 5: Croydon – 4G EE Coverage (Indoor)
Source: Ofcom, 2020

Moving Forward – An Action-Orientated Approach

Moving forward and as part of the development of the Purley Way masterplan, there is a window of opportunity to consider digital connectivity on site in relation to:

- Opening up a conversation with providers and understanding what their new build offer is and the extent of local investment commitments.
- Speaking to the Borough Council about their ambitions, planning expectations and their work/projects centred on the digital agenda.
- Getting a better sense as to how digital technologies could be supported within scheme designs and the configuration of uses.
- Looking at use cases within the scheme that are likely to drive the need for enhanced digital connectivity (i.e. smart tech, IoT etc).
- Develop a better sense of how first class connectivity will inform development viability and yields/rental values.

This will require a structured approach that looks to develop knowledge around the extent of the opportunity in a systematic way. This should help to shape thinking around the type of connectivity needed, the potential to leverage investment from the private/public sector and how this can be delivered in practical terms.

The following steps could therefore be taken forward to progress this agenda and develop a formal strategy for connectivity along the Purley Way.

- **Initiate a discussion with the Borough Council** (likely their economic development team) to understand their hopes and expectations and the work they are doing around digital connectivity. This should inform how they may approach the planning process, whether they have enhanced data access and if they are delivering projects that may support a common objective. They will also likely have information on what the market is delivering, and the nature of planned fixed/mobile investments being made across the Borough. Moreover, the Council will have a more defined sense of localised demand and the use cases driving improved connectivity.
- **Engage with the market** and get a sense of what fixed and mobile providers are doing. This may be challenged by commercial sensitivities but should allow for clarity around the attractiveness of Purley Way's developments to providers and the opportunity to secure upgrades/new infrastructure installation (perhaps at marginal cost). It will also engage providers on emerging scheme designs and what factors may need to be considered in terms of the deployment of digital infrastructure at specific sites. This should also seek to uncover the revenue opportunity associated with the hosting of equipment (particularly mobile) and potential returns to the developer.
- **Develop a plan of action** at a site specific level, which may vary depending on locational variables. This should set how developers will secure on-site connectivity, the technologies to be deployed and the added value they can bring. This should also be factored into viability work, with the effect of infrastructure upgrades reflected in assumed returns and rental yields. The approach for engaging with the Council and mobile, fixed suppliers should be clearly articulated and how the strategy is likely to inform site specification and design fully considered.
- **Communicate intent to the Council** and delivery partners to secure necessary support and to de-risk the approach. This should pay attention to regulatory changes that make smooth deployment through the planning process in particular. This could also be reflected with regards to community engagement and advocating what development is likely to bring in terms of digital gains.
- **Deploy digital infrastructure networks** in line with the above and in conjunction with planning approval being secured and commercial agreements in place. In parallel, initiate efforts to communicate what infrastructure availability will look and secure the best possible take-up from new users.

APPENDIX 4: PUBLIC
TRANSPORT ACCESSIBILITY
LEVELS (PTAL) TESTING

To We Made That
From Steer
Date 17 June 2020
Project Purley Way Masterplan

Technical Note

Project No. 23791101

Purley Way Masterplan – Public Transport Accessibility Levels

Scope

1. This note has been prepared by Steer on behalf of We Made That to support the Purley Way Masterplan. It explains the approach and methodology to Public Transport Accessibility Level (PTAL) testing that was developed for six Masterplan sites.
2. This Technical Note is accompanied by an extract from the spreadsheet model, which summarises the impact of frequency and distance changes on PTAL scores.

PTAL

Introduction

3. PTAL, first developed in 1992 by the London Borough of Hammersmith and Fulham, and later adopted by Transport for London (TfL) is the standard method of assessing public transport access in Greater London.
4. There are nine PTAL Levels, ranging from 0 to 6b, where with the highest value representing the best connectivity. These are derived from Access Index (AI) scores; the calculation is explained below.

Table 1: Access Index to Public Transport Accessibility Level Conversion Table

PTAL	Access Index	Descriptor
0	0	-
1a	0.01 - 2.50	Very Poor
1b	2.51 – 5.00	Very Poor
2	5.01 – 10.00	Poor
3	10.01 – 15.00	Moderate
4	15.01 – 20.00	Good
5	20.01 – 25.00	Very Good
6a	25.01 – 40.00	Excellent
6b	Above 40.01	Excellent

5. Greater London has been divided into 100m by 100m grid with a PTAL score calculated for each of the areas.
6. PTAL is commonly used as a part of development and strategic planning processes. For example, PTAL is a key factor in determining permitted density of housing or recommended provision of car parking, based on the assumption that areas with high PTAL scores should support high-density, low-car developments.
7. PTAL assesses connectivity (level of access) to the transport network, combining walk time to the public transport network with service wait times. As such, PTAL can be seen as a **measure of the density** of the public transport network. However, PTAL does not take into account the destinations one can travel to from each location or the ease of interchange. Moreover, PTAL does not reflect levels of crowding on buses or trains.

Methodology

8. PTAL is calculated in nine consecutive steps, outlined in **Table 2** below.

Table 2: PTAL Calculation Methodology

No	Step
1.	<p>Measuring the distance to a public transport stop (also referred to as Service Access Points, SAPs).</p> <ul style="list-style-type: none"> The distance is measured from the Point of Interest (PoI) following the road network (as one would follow the streets) not in a straight-line ('as a crow flies'). PTAL walking distances used by TfL are calculated using the Ordnance Survey's Integrated Transport Network. Catchment areas are capped at 640m for bus stops (equal to eight minutes' walk) and at 960m (12 minutes' walk) for rail-based modes.
2.	<p>Converting distance to Walk Access Time, achieved by dividing the distance by average walking speed (4.8km per hour).</p>
3.	<p>Identifying valid routes and assigning service frequency information.</p> <ul style="list-style-type: none"> Most often, service frequency data is selected for morning peak, between 8:15 and 9:15. Bi-directional routes with identical stopping patterns in each direction are considered as one route. As such, only the direction with higher frequency is included in the calculations. However, bi-directional routes with differing calling patterns are presented as two separate entities in the calculations. If one route passes through two stops within the walk catchment area, only the closer SAP is considered.
4.	<p>Calculating Scheduled Waiting Time for each route, by halving the interval between the services:</p> $SWT = 50\% * \frac{60}{Route\ frequency}$ <p>To account for the reliability of the mode of transport, bus routes are assigned additional two minutes and rail-based modes are assigned 45 seconds (0.75 minute). This forms the Average Waiting Time.</p>
5.	<p>Adding Walk Access Time and Average Waiting Time to obtain Total Access Time.</p>
6.	<p>Calculating Equivalent Doorstep Frequency (EDF), obtained by dividing 30 by Total Access Time.</p>
7.	<p>Assigning weight to each route.</p> <ul style="list-style-type: none"> Two weights are available – '1' and '0.5'. For each of the modes, the route with the highest EDF is assigned weight '1', with all others being assigned '0.5'. If two routes have equal EDF, only the first one is assigned weight '1'.
8.	<p>Calculating Access Index (AI).</p> <ul style="list-style-type: none"> AI is calculated by multiplying EDF and weight. AIs for all routes are summed together to obtain the final AI score.

9. Once AI has been calculated, it is converted to PTAL following the ranges outlined in **Table 1** above.¹

Changes to PTAL

10. In short, PTAL is influenced by four factors:

¹ For further information of PTAL please refer to TfL (2015) Assessing transport connectivity in London.

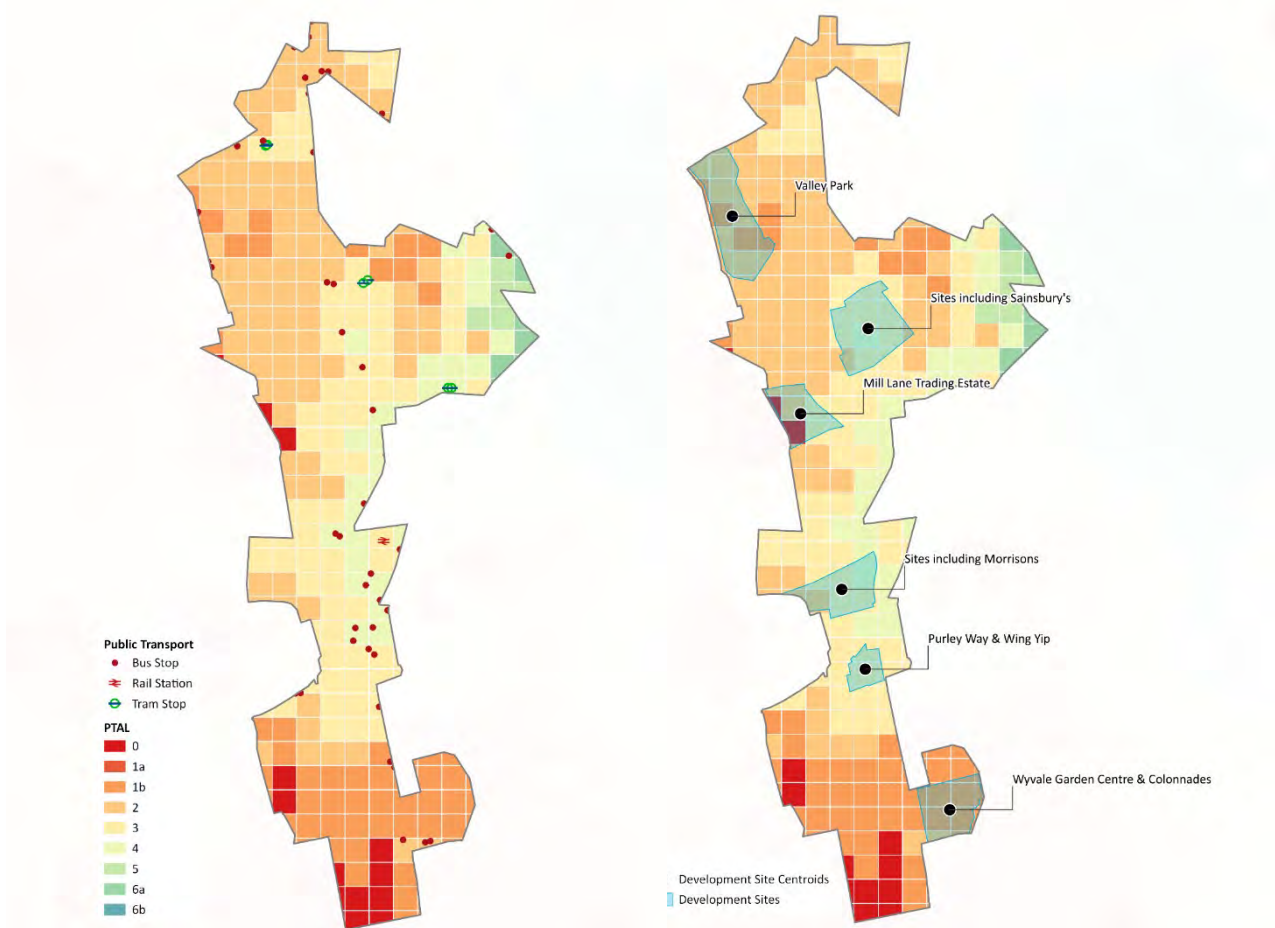
- Distance to public transport stops
 - Number of available services
 - Frequency of available services
 - Service mode
11. Any proposals which influence any of the aforementioned inputs, might result in changes to PTAL. Conversely, certain PTAL score targets might be established and indicative testing might be implemented to outline changes that need to take place to achieve desired PTAL scores.
 12. In such cases, or where the existing available PTAL scores are not sufficient to assess a development in detail, TfL encourages PTAL testing – TfL's (2015) PTAL Spreadsheet Guide outlines that while WebCAT provides pre-calculated PTAL values, TfL recognizes that this level of detail might not be sufficient for some purposes.

Purley Way Masterplan

Introduction

13. At the heart of the Purley Way Masterplan’s transport strategy are a series of interventions intended to make public transport the easy choice for getting to, from and around the Purley Way area. These should support movement by existing and future residents, workers, and visitors, achieved by a combination of measures to:
- Create a sustainable transport corridor, with a spine formed of a major new high-quality public transport route, potentially a tram extension, or a new limited stop rapid bus service;
 - Promote the role of public transport nodes as mobility hubs and special places, located to support efforts to create or strengthen local centres;
 - Reduce walking times from across the area to public transport nodes including bus stops, tram stops and Waddon Station;
 - Increase number of services available, across all modes; and
 - Improve the frequency of service at public transport access nodes, i.e. reduce average waiting time.
14. The proposed changes are expected to benefit the six Development Sites located within the Masterplan area, which currently are ranked as ‘very poor’ to ‘moderate’ in terms of transport accessibility (**Figure 1**).

Figure 1: Purley Way Masterplan – Development Sites and PTAL scores



Proposed Scenarios

15. Three improvement scenarios were initially proposed, in addition to baseline pedestrian network improvements, applicable to all three interventions:

- **Baseline: Improvements to Pedestrian Network**

Provide a network of **high-quality pedestrian routes** connecting local centres and new development areas to the public transport network, key local amenities, and to destinations in the wider area.

The public transport measures coupled with walking infrastructure improvements are intended to enhance walking catchments for rail, tram and bus. The aspiration is for all new development areas to fall within a maximum five-minute walk to a bus or tram stop, as well as maximising the presence of Waddon Station within a ten-minute walking catchment.

Assumptions:

Improved pedestrian infrastructure, including:

- New or improved crossings at key locations
- New or improved footways and footpaths through Development Sites, upgraded areas of public realm on key roads around those Sites and more broadly within local centres

- **Scenario 1: Enhance existing rail station and Wimbledon branch of the tram**

Enhance the **role of Waddon Rail Station** through the delivery of TfL's proposed 'metroisation' of rail services in South and South East London, and Network Rail's Croydon Area Remodelling Scheme (CARS). Both schemes will help unlock capacity, frequency, and reliability enhancements on services via Waddon Station.

Assumption: increase in peak service frequencies at Waddon station to 12tph².

Increase **tram capacity on Wimbledon branch** by six trams per hour via TfL's mooted proposals (Trams for Growth study).

Assumption: increase in frequency to 18 trams per hour³.

- **Scenario 2: Provide new tram extension**

Provide a **new tram extension along Purley Way** (subject to ongoing review of feasibility via the Croydon Corridor Study), with series of stops located to best serve proposed development sites and existing areas.

Assumption: frequency to match current frequency on Wimbledon branch, i.e. 12 trams per hour.

² As per TfL Metroisation paper

³ Email from David Arquati, TfL

- **Scenario 3: Comprehensive bus network improvements**

Provide a series of bus superstops along Purley Way, and enhance bus services including a new limited stop bus service calling at superstops and improved local bus services.

Assumptions:

Enhanced north-south services along Purley Way providing total of 12 buses per hour by combination of:

- A new limited stop bus service running north-south along Purley Way, stopping only at the super stops
- Increased frequency of route 289

Enhanced frequencies of east-west connections:

- Services via Croydon Road (e.g. 407 or 410) increase to 12bph
- Services via Stafford Road (e.g. 154 or 157) increase to 12bph

Increase frequency of service 463 via Beddington Farm Road from to 6bph.

Scenario Inputs

16. Following changes were included as part of the scenario testing.

Table 3: PTAL Scenario Testing - Inputs

Scenario	Applied Changes
Future Baseline	Walking distances were reduced to 80% of their original value (following methodology outlined below), bar for Valley Park, where they were reduced to 50% of their original value.
1	<ul style="list-style-type: none"> • Assumed four rail routes via Waddon Station, with three services each • Assumed increased frequency with 10 vehicles per hour on the Elmers End – Therapia Lane tram route
2	<ul style="list-style-type: none"> • Assumed new tram route along Purley Way, with frequency of 12 vehicles per hour
3	<ul style="list-style-type: none"> • Assumed new bus route along Purley Way, with frequency of 6 vehicles per hour • Assumed increased frequency on route 289 with 6 vehicles per hour • Assumed increased frequency on route 407 with 5 vehicles per hour • Assumed increased frequency on route 410 with 7 vehicles per hour • Assumed increased frequency on route 463 with 6 vehicles per hour

PTAL Target

17. An indicative PTAL target of '4 – Good' (15 AI points) was set for each Development Site. All proposed scenarios were benchmarked against that target to see the scale of improvements.

PTAL Model and Methodology

18. A PTAL spreadsheet model was developed to test the impact of the proposals explained above. The model was divided into 6 sections, which function and set up is discussed in more detail below:
- Existing PTAL (Sheets beginning with 'E')
 - Future Baseline PTAL (Sheets beginning with 'F')
 - Scenarios 1-3 PTAL (Sheets beginning with 'S1' to 'S3')
 - Model Information (Sheets beginning with 'I' or 'H')

Establishing Test Areas

19. All six Development Site areas were tested across the existing and proposed scenarios. As the Development Sites within the Purley Way Masterplan Area are relatively small (under 90,000m², 9% of km²), Development Site centroids (geographical centres) were established as a robust proxy.
20. The centroids were obtained using GIS software (QGIS 3.10.0 La Coruna) and are shown in **Figure 1**.

PTAL Spreadsheet Model

Existing PTAL

21. PTAL Calculation Report was obtained from TfL's WebCAT Planning Tool for each of the six areas, based on the location of the centroid. The Calculation Reports were transferred to the spreadsheet model, with a dedicated sheet for each of the Development Sites. An example of the existing PTAL route information is shown in **Figure 2**, cells marked in **blue** contain values filled in based on the TfL's calculation report, while cells marked in **orange** contain formulas outlined in **Table 2**.

Figure 2: Existing PTAL - Example

Development Site		E - Mill Lane Trading Estate									
WebCAT Info											
Grid Cell	16447										
Easting	530745										
Northing	165352										
Report Date	18/05/2020										
Scenario	Base Year										
Calculation Parameters											
Day of Week	M-F										
Time Period	AM Peak										
Walk Speed	4.8 kph										
Bus Node Max Walk	8										
Bus Reliability Facto	2										
LU Station Max Wall	12										
LU Reliability Factor	0.75										
National Rail Station	12										
National Rail Reliabi	0.75										
Mode	Stop	Route	Distance (metres)	Frequency (vph)	Walk Time (mins)	SWT (mins)	TAT (mins)	EDF	Weight	AI	
Bus	PURLEY WAY COMM		289	456.41	4	5.7	9.5	15.21	1.97	1.00	2.0
Bus	PURLEY WAY COMM		455	456.41	3	5.7	12.0	17.71	1.69	0.50	0.9

22. No changes were made to existing PTAL obtained from TfL's WebCAT website.

Assessing Future PTAL

23. Both Future Baseline and Scenario sections were organised along the same principles, comprising a section master-sheet and a dedicated sheet for each of the Development Sites.
24. The section master-sheet was created to consolidate and control all public transport routes information, including changing the frequency of existing routes and creation of new routes. An example of the master-sheet route information is shown in **Figure 3** – if a new frequency was inputted in cells marked in **blue**, it was transferred to cells marked in **orange**, from where it was carried over to all dedicated Development Site sheets.

Figure 3: Section Master-sheet – Example

All Services

Mode	Route	Existing Frequency	Proposed Frequency	New Frequency
Bus	157	5.00		5.00
Bus	154	5.00		5.00
Bus	X26	2.00	100	100.00
Bus	289	4.00	100	100.00
Bus	119	6.00	100	100.00
Bus	455	3.00		3.00
Bus	410	6.67		6.67
Bus	407	4.00		4.00
Bus	463	3.00		3.00
Bus	New Bus 1	0.00		0.00
Bus	New Bus 2	0.00		0.00
Bus	New Bus 3	0.00		0.00

25. Dedicated Development Site sheets were created to adjust walking distances to public transport stops or add new routes available within the Site’s catchment.

Changing Walking Distances

26. Prior to establishing a new walking distance, straight-line distances from the centroid to the stop were measured. Since it was deemed unlikely that the improved pedestrian network would follow a straight-line from the Site to the public transport stop, a default penalty of 10% of original distance was added to each straight-line distance (‘straight-line cap’).
27. Depending specific case, either a general distance improvement value – an average expected length of the route after the improvements (e.g. 80% of original length) or a manual distance were available to the user.
28. The ‘new distance’ column (marked in orange) was then populated with one of the following, in decreasing order of importance:
- Manual distance, if present
 - Existing distance, if smaller than both the straight-line cap and the distance improvement values
 - Straight-line cap, if distance improvement was smaller than straight-line distance
 - Distance improvement
29. Depending on the choice made in the last column, either ‘existing’ or ‘proposed’ walking distance was applied to PTAL calculations.
30. An example of adjusting walking distances is shown in **Figure 4**.

Figure 4: Dedicated Development Site Sheet – Adjusting Walking Distance – Example

Distance				
Explanation on the Section tab				
Mode	Stop	Distance (metres)	Walk Time (mins)	
Bus	STAFFORD R THE PROPELLOR	403.8	4.0	
Bus	STAFFORD R THE PROPELLOR	403.8	4.0	
Bus	STAFFORD RD DENNING AVE	439.78	4.4	
Bus	PURLEY WAY THE PROPELLOR	229.29	125.0	
Bus	PURLEY WAY THE PROPELLOR	229.29	125.0	

Straight-line Distance	Straight-line Cap	Distance Improv	Manual Distance	New Distance	Choice
150	110.0%	80.0%		323	Proposed
150	165	165		323	Proposed
150	165	323		323	Proposed
150	165	352		352	Proposed
120	132	183	10000	10000	Proposed
120	132	183	10000	10000	Proposed

Adding New Routes

Similar to changing walking distances, new routes were introduced via the dedicated Development Site sheets. Three new route placeholders were included for each mode on the section master-sheet. These

could be then selected via a drop-down menu for each of the Sites. Distances to public transport stops were added as per guidance above.

Future Baseline PTAL and Scenario Testing

31. Both 'Future Baseline PTAL' and 'Scenario 1-3' sections were arranged and controlled as outlined above. However, the spreadsheet followed a two-step approach, resultant from walking improvements being consistent across all scenarios, but public transport improvements being scenario-specific.
1. Changes made to the 'Future Baseline' sheets were carried over to all tested Scenarios.
 2. Changes made to specific scenario sheets were applied only within that scenario.

Results

32. An extract from the spreadsheet model summarising all scenario and option results discussed below is available at **Appendix 1**.

Existing PTAL

33. Existing PTAL for all Development Sites is presented in the table below. Most Development Sites have an existing PTAL of between 1b and 3, meaning 'Very Poor' to 'Moderate' transport accessibility. While the Development Site including Sainsbury's is on the verge of achieving target PTAL of '4', other Sites need significant improvements to meet that level.

Table 4: Existing PTAL Results

Development Site	Existing PTAL	Existing AI	Target PTAL	Target AI	Difference (Target - Existing)
A: Purley Way	3	11.65	4	15.01	3.36
B: Wyvale Garden	1b	4.98	4	15.01	10.03
C: Mill Lane	2	5.75	4	15.01	9.26
E: Morrisons	3	10.51	4	15.01	4.50
F: Sainsbury's	3	14.98	4	15.01	0.03
H: Valley Park	1b	4.64	4	15.01	10.37

Future Baseline

34. Future Baseline results, which include walking distance improvements, are presented in the table below. Most Development Sites experienced some improvements in AI – between 0 and 0.62 AI points. However, as shown, only a minor improvement can help the Site including Sainsbury's achieve the target PTAL of 4.
35. The biggest change is experienced by the Valley Park Site, however that was stipulated by a walking distance reduction of 50%. The walking distances are expected to be significantly improved, as the Site suffers from poor connectivity due to layout and extent of the car parks present on the site, not all of which are included as a part of the walking network. Nonetheless, even with these changes it is notable that this Site only reaches PTAL 2.
36. The Wyvale Garden Site did not see any improvements to PTAL; this is a result of only two bus routes passing in vicinity of the Site, both of which are accessible via a bus stop adjacent to the Site boundary. As such, the

existing walking distance to the stop is particularly short and cannot be shortened, without breaching the straight-line distance cap.

Table 5: Future Baseline PTAL Results

Development Site	Existing PTAL	Existing AI	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target - Proposed)	Difference (Proposed - Existing)
A: Purley Way	3	11.65	3	12.13	4	15.01	2.88	0.48
B: Wyvale Garden	1b	4.98	1b	4.98	4	15.01	10.03	0.00
C: Mill Lane	2	5.75	2	6.07	4	15.01	8.94	0.32
E: Morrisons	3	10.51	3	11.13	4	15.01	3.88	0.62
F: Sainsbury's	3	14.98	4	15.44	4	15.01	Target Achieved	0.46
H: Valley Park	1b	4.64	2	6.20	4	15.01	8.81	1.56

Scenario 1

37. Scenario 1 results, which include walking distance improvements and tram and rail frequency improvements, are presented in the table below. Most Development Sites experienced only minor improvements in AI – between 0 and 0.81 AI points. This level of improvement is insufficient to help Sites achieve target PTAL of 4.
38. Similarly to the Future Baseline, the biggest change was experienced by the Valley Park Site, resultant from a compounded beneficial effect of tram frequency and walking improvements, although it is still insufficient to push it higher than PTAL 2.
39. Again, the Wyvale Garden Site did not see any improvements to PTAL as no tram or rail routes are accessible from the Site.

Table 6: Scenario 1 PTAL Results

Development Site	Existing PTAL	Existing AI	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target - Proposed)	Difference (Proposed - Existing)
A: Purley Way	3	11.65	3	11.84	4	15.01	3.17	0.19
B: Wyvale Garden	1b	4.98	1b	4.98	4	15.01	10.03	0.00
C: Mill Lane	2	5.75	2	6.42	4	15.01	8.59	0.67
E: Morrisons	3	10.51	3	11.28	4	15.01	3.73	0.77
F: Sainsbury's	3	14.98	4	15.79	4	15.01	Target Achieved	0.81
H Valley Park	1b	4.64	2	6.80	4	15.01	8.21	2.16

Scenario 2

40. Scenario 2 results, which include walking distance improvements and a new tram route, are presented in the table below. Due to the high service frequency and short walking distances to proposed stops, Scenario 2 is the most beneficial for all tested Sites, with Sites experiencing improvements of between 2.75 and 5.99 AI points. This level of improvement is sufficient to help achieve target PTAL of 4 by three Development Sites.
41. While Mill Lane Trading Estate experiences the smallest improvement in terms of AI points, the new tram route was nevertheless responsible for 41% of the total score, helping the Site to reach the top end of the PTAL 2 bracket. It can be approximated, that access to an additional bus route with 6 services per hour would help the Site achieve PTAL of 3. While Wyvale Garden and Valley Park did not achieve the target PTAL, they both experienced significant improvements, with Wyvale Garden improving by two levels and Valley Park improving by one level.

42. Thanks to Scenario 2 proposals, Site incl. Sainsbury's was able to achieve a PTAL of 5 – 'Very Good'. Such score is significantly above the established target of PTAL 4.

Table 7: Scenario 2 PTAL Results

Development Site	Existing PTAL	Existing AI	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target - Proposed)	Difference (Proposed - Existing)
A: Purley Way	3	11.65	4	15.67	4	15.01	Target Achieved	4.02
B: Wyvale Garden	1b	4.98	3	10.20	4	15.01	4.81	5.22
C: Mill Lane	2	5.75	2	8.50	4	15.01	6.51	2.75
E: Morrisons	3	10.51	4	16.50	4	15.01	Target Achieved	5.99
F: Sainsbury's	3	14.98	5	20.90	4	15.01	Target Achieved	5.92
H: Valley Park	1b	4.64	2	8.05	4	15.01	6.96	3.41

Scenario 3

43. Scenario 2 results, which include walking distance improvements, a new bus route and changes to bus frequencies, are presented in the table below. Similar to Scenario 3, the improved service frequencies and short walking distances to proposed new stops proved highly beneficial for all tested Sites, improvements of between 1.99 and 3.87 AI points. This level of improvement is sufficient to help achieve target PTAL of 4 by two Development Sites.
44. While Wyvale Garden and Valley Park did not achieve the target PTAL, they both experienced significant improvements, with both Sites improving by one PTAL level. The Morrisons Site also experiences good improvements, coming very close to achieving PTAL 4 (difference of 1.79 AI points).

Table 8: Scenario 3 PTAL Results

Development Site	Existing PTAL	Existing AI	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target - Proposed)	Difference (Proposed - Existing)
A: Purley Way	3	11.65	4	15.52	4	15.01	Target Achieved	3.87
B: Wyvale Garden	1b	4.98	2	8.78	4	15.01	6.23	3.80
C: Mill Lane	2	5.75	2	7.74	4	15.01	7.27	1.99
E: Morrisons	3	10.51	3	13.22	4	15.01	1.79	2.71
F: Sainsbury's	3	14.98	4	18.44	4	15.01	Target Achieved	3.46
H: Valley Park	1b	4.64	2	7.43	4	15.01	7.58	2.79

Valley Park

45. As shown in the tables above, Valley Park Development Site has seen the least improvement from all tested scenarios, despite significant improvements to the pedestrian network. Further testing has therefore been conducted to establish the level of input required to help the Site achieve PTAL of 3. These results are outlined below.

Valley Park – Option 1

46. It is possible for the Site to achieve PTAL 4 (AI 15) by making all of the Scenario changes outlined in the preceding sections and including a large number of additional improvements:
- Diverting route 463 through the centre of the Site, with 9 instead of 3 services per hour

- Providing a walking route to bus stops serving line 455 (currently outside of the Site's catchment) and increasing its frequency from 3 to 6 services per hour
 - Increasing the frequency of Therapia Lane to New Addington tram services from 4 to 10 per hour
 - Providing a new tram and a limited bus service
 - Further reducing walking times to public transport stops, meeting the straight-line distance caps
47. This extensive suite of improvements would help the Site obtain AI score of 15.11 – just over the floor of PTAL 4. However it is important to note that this is a theoretical test and this level of infrastructure provision is unlikely to be supported by the masterplan.

Valley Park – Option 2

48. The new tram and bus services which pertain to Scenarios 2 and 3, and which were included in Option 1, are presumed to be mutually exclusive. Therefore, Option 2 has been developed with this in mind, and includes:
- Diverting route 463 through the centre of the Site, with 15 instead of 3 services per hour
 - Providing a walking route to bus stops serving line 455 (currently outside of the Site's catchment) and increasing its frequency from 3 to 6 services per hour
 - Providing a new tram route
 - Further reducing walking times to public transport stops, meeting the straight-line distance caps
49. New tram route (Scenario 2) was chosen over a new bus route (Scenario 3), due to the higher reliability factor assigned to rail-based modes of transport and resulting in a higher AI score.

Valley Park – Option 3

50. While technically it is possible for any site to achieve any PTAL, the input required to meet the target can often be 'unrealistic' in the sense of the required level of infrastructure and service provision to meet the target is unfeasible. In such cases, it could be desirable to opt for a lower, though achievable target.
51. Option 3 has been developed to discover the inputs required by the Site to meet PTAL target of 3 (10 AI points), which proposed:
- No rerouting of line 463, however services increased from 3 to 6 vehicles per hour
 - Providing a walking route to bus stops serving line 455 (currently outside of the Site's catchment) and increasing its frequency from 3 to 6 services per hour
 - Providing a new tram route
 - Further reducing walking times to public transport stops, however, in line with what can be more readily achieved
52. The proposed set of improvements, while more realistic and hence enforceable, would help the Site obtain AI score of 10.01 – at the exact boundary of PTAL 3.

Further Proposed Improvements

53. Purley Way Masterplan's baseline improvements to the pedestrian network aim to reduce walking distance to public transport stops to a 5 minutes' walk for a bus or tram stop and a 10 minutes' walk for National Rail stations, which is equivalent to respectively 400m and 800m. During scenario testing a limited number of existing public transport stops proved to be farther than the walking distance assumed by the Masterplan's strategy:
- Purley Way Waddon PO bus stop (serving Sites incl. Sainsbury's) is 440m away from the Development Site centroid
 - Waddon Marsh tram stops (serving Mill Lane Trading Estate) are 780m away from the Development Site centroid
 - Therapia Lane tram stops (serving Valley Park) are 930m away from the Development Site centroid

54. Although these distances are slightly above the assumed distance targets using walking speeds proposed by TfL’s PTAL guidance, it is imperative to note that calculating walking times can be an inaccurate task when looking at short distances. As a way of example, TfL itself uses multiple walking speeds in its assessments ranging between 3 and 5 km/h, summarised in table below. In addition, people often follow informal routes and shortcuts, which are not present on mapping software.

Table 9: TfL - Walking Speed

Source	Walking Speed
PTAL Methodology (2010)	4.8 km/h
TfL Journey Planner FOI (2015)	5 km/h (fast)
TfL Journey Planner FOI (2015)	4 km/h (average)
TfL Journey Planner FOI (2015)	3 km/h (slow)

Summary

55. This technical note has outlined the reasoning and methodology of PTAL testing developed for the Purley Way Masterplan. A number of public transport and pedestrian network improvements has been tested and their impacts on PTAL of six Development Sites located within the Masterplan Area outlined. In addition, an iterative testing has been undertaken for the Valley Park Site, to establish the level of input required to help the Site achieve PTAL of 3 and 4.
56. All tested scenarios have a positive impact on PTAL, ranging from mild improvements of ca. 1 AI point (20% of lower PTAL brackets) for the Future Baseline and Scenario 1 to ca. 5 AI points (full lower PTAL bracket) for Scenario 2.

Appendix 1

Steer
Purley Masterplan
PTAL Calculator

PTAL Summary

Existing PTAL

F - PTAL Summary and Frequency

Development Site	Existing PTAL	Existing AI	Target PTAL	Target AI	Difference (Target-Proposed)	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target-Proposed)	Difference (Proposed-Existing)
Purley Way	3	11.65	4	15.01	3.36	3	12.13	4	15	2.88	0.48
Mill Lane	2	5.75	4	15.01	9.26	2	6.07	4	15	8.94	0.32
Wyvale Garden	1b	4.98	4	15.01	10.03	1b	4.98	4	15	10.03	0
Sainsbury's	3	14.98	4	15.01	0.03	4	15.44	4	15	Target Achieved	0.46
Morrisons	3	10.51	4	15.01	4.50	3	11.13	4	15	3.88	0.62
Valley Park	1b	4.64	4	15.01	10.37	2	6.20	4	15	8.81	1.56

Higher = better Higher = better Lower = better Populate on Summary & Frequency tal Lower = better

Existing PTAL

S1 - PTAL Summary and Frequency

Development Site	Existing PTAL	Existing AI	Target PTAL	Target AI	Difference (Target-Proposed)	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target-Proposed)	Difference (Proposed-Existing)
Purley Way	3	11.65	4	15.01	3.36	3	11.84	4	15.01	3.17	0.19
Mill Lane	2	5.75	4	15.01	9.26	2	6.42	4	15.01	8.59	0.67
Wyvale Garden	1b	4.98	4	15.01	10.03	1b	4.98	4	15.01	10.03	0
Sainsbury's	3	14.98	4	15.01	0.03	4	15.79	4	15.01	Target Achieved	0.81
Morrisons	3	10.51	4	15.01	4.50	3	11.28	4	15.01	3.73	0.77
Valley Park	1b	4.64	4	15.01	10.37	2	6.80	4	15.01	8.21	2.16

Higher = better Higher = better Lower = better Populate on Summary & Frequency tal Lower = better

Existing PTAL

S2 - PTAL Summary and Frequency

Development Site	Existing PTAL	Existing AI	Target PTAL	Target AI	Difference (Target-Proposed)	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target-Proposed)	Difference (Proposed-Existing)
Purley Way	3	11.65	4	15.01	3.36	4	15.67	4	15.01	Target Achieved	4.02
Mill Lane	2	5.75	4	15.01	9.26	2	8.50	4	15.01	6.51	2.75
Wyvale Garden	1b	4.98	4	15.01	10.03	3	10.20	4	15.01	4.81	5.22
Sainsbury's	3	14.98	4	15.01	0.03	5	20.90	4	15.01	Target Achieved	5.92
Morrisons	3	10.51	4	15.01	4.50	4	16.50	4	15.01	Target Achieved	5.99
Valley Park	1b	4.64	4	15.01	10.37	2	8.05	4	15.01	6.96	3.41

Higher = better Higher = better Lower = better Populate on Summary & Frequency tal Lower = better

Existing PTAL

S3 - PTAL Summary and Frequency

Development Site	Existing PTAL	Existing AI	Target PTAL	Target AI	Difference (Target-Proposed)	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target-Proposed)	Difference (Proposed-Existing)
Purley Way	3	11.65	4	15.01	3.36	4	15.52	4	15.01	Target Achieved	3.87
Mill Lane	2	5.75	4	15.01	9.26	2	7.74	4	15.01	7.27	1.99
Wyvale Garden	1b	4.98	4	15.01	10.03	2	8.78	4	15.01	6.23	3.8
Sainsbury's	3	14.98	4	15.01	0.03	4	18.44	4	15.01	Target Achieved	3.46
Morrisons	3	10.51	4	15.01	4.50	3	13.22	4	15.01	1.79	2.71
Valley Park	1b	4.64	4	15.01	10.37	2	7.43	4	15.01	7.58	2.79

Higher = better Higher = better Lower = better Populate on Summary & Frequency tal Lower = better

Valley Park

Development Site	Existing PTAL	Existing AI	Target PTAL	Target AI	Difference (Target-Proposed)	Proposed PTAL	Proposed AI	Target PTAL	Target AI	Difference (Target-Proposed)	Difference (Proposed-Existing)
Option 1	1b	4.64	4	15.01	10.37	4.00	15.11	4	15.01	Target Achieved	10.47
Option 2	1b	4.64	4	15.01	10.37	4.00	15.12	4	15.01	Target Achieved	10.48
Option 3	1b	4.64	3	10.01	5.37	3.00	10.01	3	10.01	Target Achieved	5.37

END

APPENDIX 5: TRIP
GENERATION FORECAST &
CAR PARKING PROVISION
METHODOLOGY

To TfL
 Cc LB Croydon
 From Steer
 Date 8th June 2020
 Project Purley Way Masterplan

Technical Note

Project No. 23791101

Trip Generation Forecast & Car Parking Provision – Methodology

This technical note outlines the methodology used to undertake the trip generation forecast and calculate the car parking provision for the proposed Purley Way Masterplan.

Trip generation forecast

Area schedules

1. The area schedules used for the existing and proposed development were provided by Hawkins Brown on 30th April 2020. The area schedules for both are presented within Table 1 and Table 2 below.
2. Please note that where two land uses are listed and separated by a forward slash, the land use in bold has been used in this trip generation forecast:

Table 1: Existing development area schedule (GIA)

Land use	Site A	Site B	Site C	Site E	Site F	Site H
Small retail	0	500	0	0	0	0
Small industrial	0	0	0	8,172	0	0
Medium retail	1,800	0	0	0	0	0
Leisure	0	0	0	0	0	7,428
Large convenience	5,175	0	0	7,601	8,434	0
Community/Small retail	0	0	0	0	0	0
Medium industrial	0	0	4,565	0	0	0
Light industrial	0	0	0	0	0	0
Community/medium leisure	0	0	0	0	0	0
Large leisure/ Retail	0	8,951	0	0	13,389	16,521
Large industrial	0	0	12,761	0	0	0
Community/leisure	0	0	0	0	0	0
Hotel	0	6,050	0	0	0	0

Table 2: Proposed masterplan area schedule (GIA)

Land use	Site A	Site B	Site C	Site E	Site F	Site H
Small retail	1,977	7,666	8,622	0	0	0
Small industrial	7,422	0	0	0	0	0
Medium retail	0	4,029	6,781	0	10,953	0
Leisure	0	7,232	10,456	0	0	0
Large convenience	0	0	0	8,854	0	0
Community/ Small retail	0	0	0	10,161	0	0
Medium industrial	0	0	0	4,189	0	0
Light industrial	0	0	0	0	12,654	0
Community/ medium leisure	0	0	0	0	0	11,583
Large leisure/ Retail	0	0	0	0	0	20,222
Large industrial	0	0	0	0	0	11,476
Community/ leisure	0	0	0	0	4,518	0
Hotel	0	0	0	0	0	0
<i>Residential*</i>	<i>403</i>	<i>958</i>	<i>0</i>	<i>1,313</i>	<i>1,989</i>	<i>586</i>

**residential units*

Mode share

3. With the exception of residential, all land uses use mode share information from the Census 2011 – Method of Travel to Work dataset (QS701EW). To ensure that this mode share was as representative of the local area as possible, data was taken from the Local Middle Super Output Areas which encompass the masterplan area.
4. Hotel and leisure mode shares were amended to better reflect the nature of trips to those land uses, with a higher percentage of localised trips.
5. The residential mode share was taken also taken from Census 2011 data, using the location of usual residence and place of work by method of travel to work dataset (WU03EW).
6. Mode shares used within the trip generation are presented within Table 3:

Table 3: Mode share assumptions

Mode	Hotel	Leisure	Residential	Other land uses
Underground, metro, light rail, tram	7%	7%	4%	7%
Train	20%	22%	23%	26%
Bus, minibus or coach	5%	15%	18%	15%
Taxi	12%	1%	0%	1%
Motorcycle, scooter or moped	1%	1%	1%	1%
Driving a car or van	42%	30%	36%	38%
Passenger in a car or van	5%	3%	3%	3%
Bicycle	1%	1%	1%	1%
On foot	7%	20%	14%	8%

Primary trips

7. In order to account for 'linked' and 'passer-by' trips, an assumption was made on how many trips would be 'primary' to the development, and therefore generating new trips on both the highway and public transport network.
8. For land uses such as residential and industrial this has assumed to be 100%, however for land uses such as retail and leisure, this has been reduced to account for trips made internally as part of the masterplan. These primary trip assumptions are presented within Table 4:

Table 4: Primary trip assumptions

Land use	Primary trip assumption
Small retail	50%
Small industrial	100%
Medium retail	60%
Leisure	80%
Large convenience	70%
Community/Small retail	90%
Medium industrial	100%
Light industrial	100%
Community/medium leisure	90%
Large leisure/Retail	90%
Large industrial	100%
Community/leisure	90%
Hotel	100%
Residential	100%

Trip rates

9. All trip rates were taken from the TRICS 7.7.1 database. To ensure that trip rates were as representative as possible, sites were selected that reflected the PTAL, location and size of the development.
10. Trip rates used are presented within Table 5. Note that all trip rates are per 100sqm GIA, with the exception of leisure which is per 1,000sqm GIA, and residential which is calculated per unit.

Table 5: Trip rates

Land use	AM (08:00-09:00)		PM (17:00-18:00)	
	In	Out	In	Out
Small retail	1.040	0.272	5.523	7.170
Small industrial	1.288	0.801	0.417	0.853
Medium retail	1.040	0.272	5.523	7.170
Leisure	48.550	24.883	71.001	84.284
Large convenience	3.436	2.351	5.559	6.334
Community/Small retail	1.040	0.272	5.523	7.170
Medium industrial	1.288	0.801	0.417	0.853
Light industrial	1.288	0.801	0.417	0.853
Community/medium leisure	48.550	24.883	71.001	84.284
Large leisure/Retail	1.040	0.272	5.523	7.170

Large industrial	1.288	0.801	0.417	0.853
Community/leisure	48.550	24.883	71.001	84.284
Hotel	0.232	0.589	0.715	0.761
Residential	0.149	0.510	0.397	0.236

Trips generated

11. Table 6 presents the existing, proposed and net trip generation.

Table 6: Trip generation forecast

Mode	Existing				Proposed				Net			
	AM		PM		AM		PM		AM		PM	
	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
Underground, metro, light rail, tram	88	49	212	270	128	164	333	369	40	115	121	99
Train	325	180	781	998	524	785	1372	1450	198	605	590	452
Bus, minibus or coach	187	102	449	574	339	574	888	895	152	473	439	321
Taxi	14	11	35	44	14	11	38	47	0	0	3	3
Motorcycle, scooter or moped	13	7	30	39	20	30	53	56	8	23	23	17
Driving a car or van	477	267	1147	1464	778	1194	2039	2138	301	926	892	675
Passenger in a car or van	38	22	92	117	61	90	158	168	23	68	67	51
Bicycle	13	7	30	39	24	42	62	61	11	35	32	23
On foot	104	58	246	314	223	426	575	545	119	368	329	231
Total	1259	702	3022	3857	2110	3316	5517	5730	851	2613	2495	1873

Car parking provision

12. A high-level car parking calculation has been undertaken for the proposed masterplan scheme. The car parking standards outlined in Table 7 have been used to calculate car parking provision, as suggested by LB Croydon. These standards mostly defer to the Draft London Plan, with some minor deviations.
13. As the masterplan progresses, it is intended that these standards will be refined to better reflect the proposed land uses on site and their respective PTALs. As an example, it is envisioned that land uses such as small and medium retail would be mostly car-free.
14. Due to the masterplan encompassing various PTAL areas, a variable standard has been applied to better reflect areas with better or worse connections to public transport.

Table 7: Car parking standards used

Land use	PTAL of 4+	PTAL of 3 or less
Residential	Aim for car-free (except disabled parking)	Max 0.5 parking spaces per dwelling
Business (B1 and B2)	Car-free except for disabled and operational parking	As per Draft London Plan standards for Outer London Opportunity areas – Up to 1 space per 600sqm GIA
Warehousing and distribution (B8)	Case by case basis, but in line with Draft London Plan standards for Outer London: Up to 1 space per 100sqm GIA, plus disabled and operational parking	
Retail (A1-A5)	As per Draft London Plan – Up to 1 space per 75sqm GIA	
Hotel	Car-free except disabled parking, operational parking and coaches where appropriate	Preferably minimal parking provision, except for coaches and disabled parking
Community (schools & other)	Case by case basis	

15. Residential disabled parking was calculated as per the Draft London Plan which states that for 3% of dwellings, at least one designated disabled persons parking bay is available from the outset. It should be noted that this is a minimum standard and it is acknowledged that additional spaces will be required to support provision for visitors and for wheelchair accessible homes.
16. Given the current uncertainty over the Community and Leisure land uses, no car parking provision was calculated for these land uses at this stage. Furthermore, no differentiation in car parking standards for small and medium retail sites been made, however this is something that will be addressed in the next phase of the masterplan.
17. Table 8 presents the maximum car parking provision for the masterplan. Note that for land uses separated by a forward slash, the land use in bold has been used for this calculation. Blue badge and operational car parking have not been calculated for any land use, with the exception of residential.

Table 8: Maximum car parking provision for masterplan

Land use	Site A	Site B	Site C	Site E	Site F	Site H	Total
Small retail	27	103	115	0	0	0	245
Small industrial	13	0	0	0	0	0	13
Medium retail	0	54	91	0	147	0	292
Leisure	*	*	*	*	*	*	0
Large convenience	0	0	0	119	0	0	119
Community/ Small retail	0	0	0	136	0	0	136
Medium industrial	0	0	0	42	0	0	42
Light industrial	0	0	0	0	127	0	127
Community/medium leisure	*	*	*	*	*	*	0
Large leisure/ Retail	0	0	0	0	0	270	270
Large industrial	0	0	0	0	0	115	115
Community/leisure	*	*	*	*	*	*	0
Hotel	*	*	*	*	*	*	0
Residential	202	479	0	0	0	293	974
Residential blue badge	242	636	206	297	274	678	2333
Total	27	103	115	0	0	0	245

Car ownership and changing PTAL

18. Census 2011 data was interrogated to establish what percentage of the study area had access to a car or van. Using the QS416EW 'Car or van availability' dataset, middle super output layers (MSOA) were selected that covered the masterplan study area. The car or van availability for this selection is presented within Table 9.

Table 9: Car or van availability within masterplan study area

Car or van availability	Percentage
No cars or vans in household	40%
1 car or van in household	45%
2 cars or vans in household	12%
3 cars or vans in household	2%
4 cars or vans in household	1%

19. 40% of people within the study area have no cars or vans within their household, while the remaining 60% have at least one car or van, of which 12% have two or more, and 3% three or more. Given the proposed car parking ratios outlined within this chapter, car ownership within the proposed masterplan residential development would equate to no more than 50%, at least a 10% reduction on the existing.
20. In order to justify this reduction in car ownership, we are exploring ways to increase the PTAL within each of the masterplan sites, and subsequently increase the mode share of public transport, walking and cycling, and reduce the percentage of car drivers. As no modelling has been undertaken, this mode share adjustment will be made manually on a site-by-site basis. This manual adjustment will provide us with a good understanding of existing and future trips on the network and allow us to undertake a high-level assessment across each mode.

APPENDIX 6: STREET &
OPEN SPACE TYPOLOGIES

STREET &
OPEN SPACE
TYPOLOGIES

Arterial road



Avenida Gasteiz, Vitoria, Spain

New city street



Prowse Court & Lord Graham Mews, London-HVB

Neighbourhood street



University of Liverpool

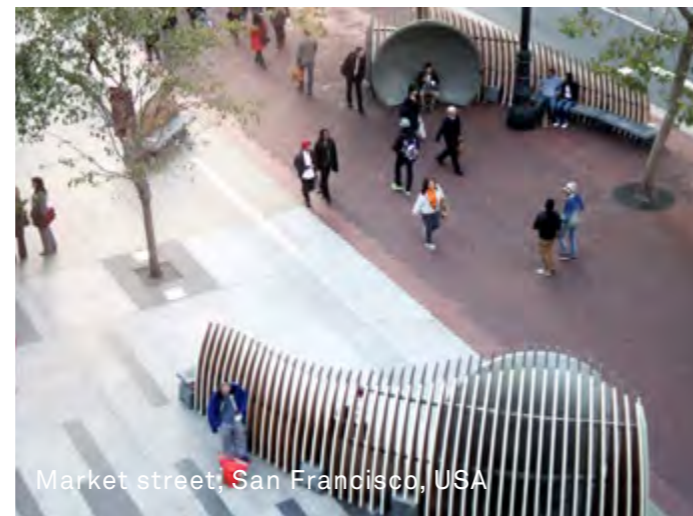
Working street



Ingate Place, Battersea, London



CS1, Tottenham High Road, London



Market street, San Francisco, USA



Clapham Old Town, London



Paintworks, Bristol

↑ Precedents: A road with a high movement function such as the Purley Way A23. Key opportunity to enhance the public realm or place function along proposed Local centres. Important to enable pedestrian crossing opportunities.

- Key elements include:
- Cycle lane
 - Bus “superstop”
 - Tree screening
 - Pedestrian crossings

↑ Precedents: An urban-scale street, with a mix of uses, providing a pedestrian friendly environment whilst ensuring connections with the wider transport network.

- Key elements include:
- Seating areas & spaces for gathering
 - Generous pavement
 - High quality paving materials
 - Lighting
 - Visually appealing identity
 - A small canopy

↑ Precedents: Quiet, safe and desirable residential streets where public realm and architecture are closely integrated. New streets are likely to feature higher densities of development than existing neighbourhood streets.

- Key elements include:
- Seating
 - Material continuity for pedestrian routes
 - High quality paving materials
 - Street vendor areas on designated streets
 - Social space
 - Cycle store/ parking

↑ Precedents: Intensified industrial and employment uses require a robust street type which is both adaptable in accommodating a range of uses and can afford possibilities for complementary uses.

- Key elements include:
- Street trees
 - Rainwater garden
 - Permeable hardscape material
 - Air quality improvement

Working laneways



Lockwood Way Industrial Estate - We Made That



Kaap Noord, Amsterdam

↑ Precedents: Laneways offer opportunities for dense-grain employment and yards to contribute to public realm character and a 'right to roam'.

Key elements include:

- Street trees
- Rainwater garden
- Permeable hardscape material
- Air quality improvement

Green paths & linkages



Parkland Walk, London



Graphic inlays to pedestrian and cycle paths

↑ Precedents: Paths link green space, railway sidings and Wandle river. Linkages connect urban spaces to each other, or other streets. Signage and wayfinding features will enhance the public and help to create a legible Design and Tech quarter identity.

Key elements include:

- A coordinated graphic identity
- Signage integrated into surface design
- Clear signage for buildings and clusters

Key open space



Station square, Rotterdam



Ruskin square, London

↑ Precedents: Spaces of strategic importance which support the identity of a place and provide a place for people to gather

Key elements include:

- Recreational features such as landscaping or high quality public art
- Pocket amenity spaces
- Seating, signage and bins
- Information / history which celebrates the character of the area
- Lighting
- Biodiversity and green visual amenity.

Neighbourhood parks



Cheney Row Park, London - We Made That



Cheney Row Park, London - We Made That

↑ Precedents: Local parks offering green space amenity serving neighbouring residential and employment populations

Key elements include:

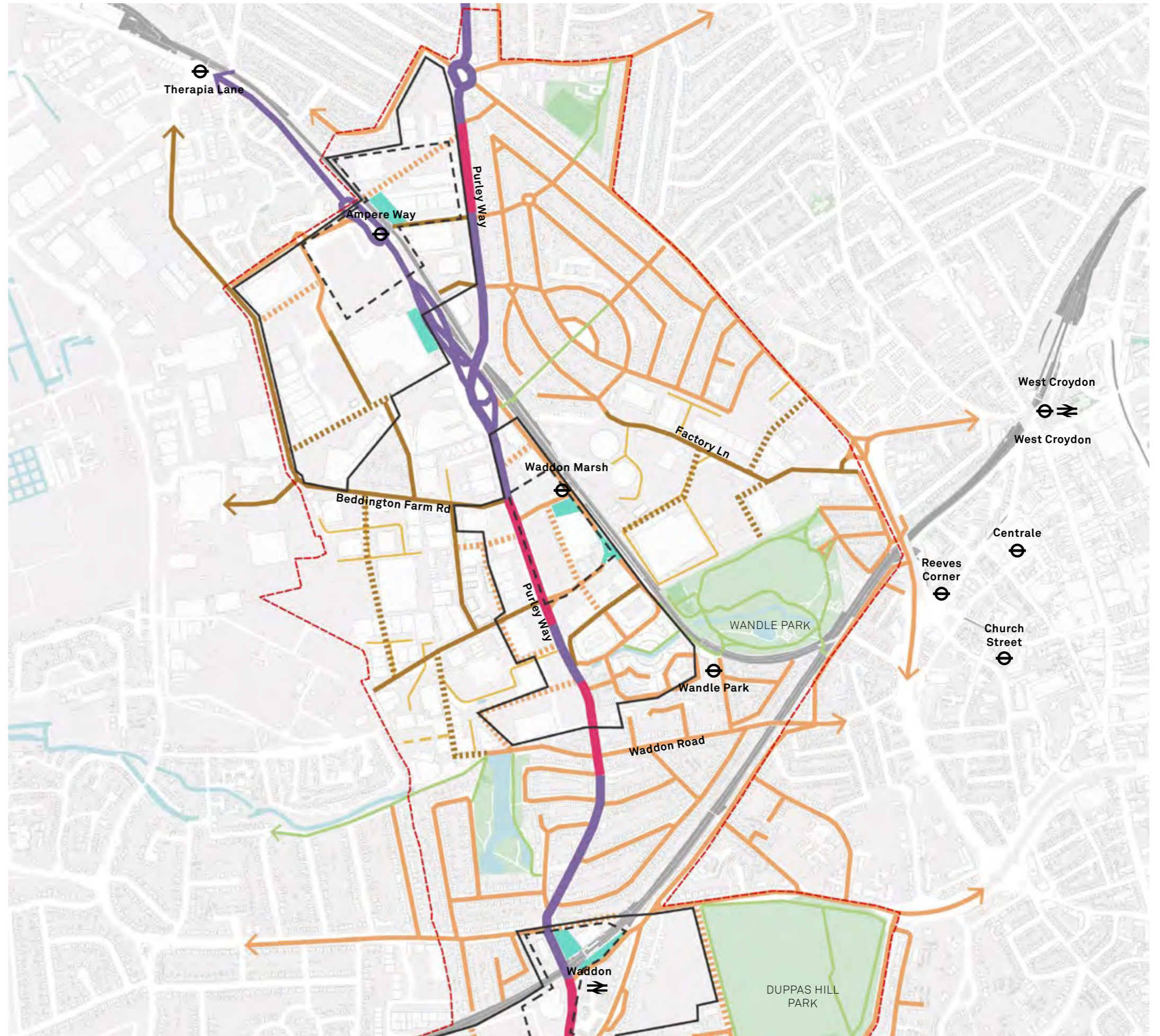
- Trees and planting, landscaped areas
- Play, sports and leisure facilities
- Space to support outdoor events
- Potentially a cafe or pavilion for sheltered space
- Seating, signage and bins
- Well lit paths for pedestrians and cyclists

Proposed open space & street character (north)



- KEY
- Arterial road
 - New city street
 - Neighbourhood street
 - Working street
 - Working laneways
 - Paths and linkages
 - Key open space
 - Neighbourhood park
 - Proposed Local & Neighbourhood Centre
 - Local & Neighbourhood Centre catchment area
 - Purley Way Masterplan boundary

Note: Dotted lines illustrate potential new connections

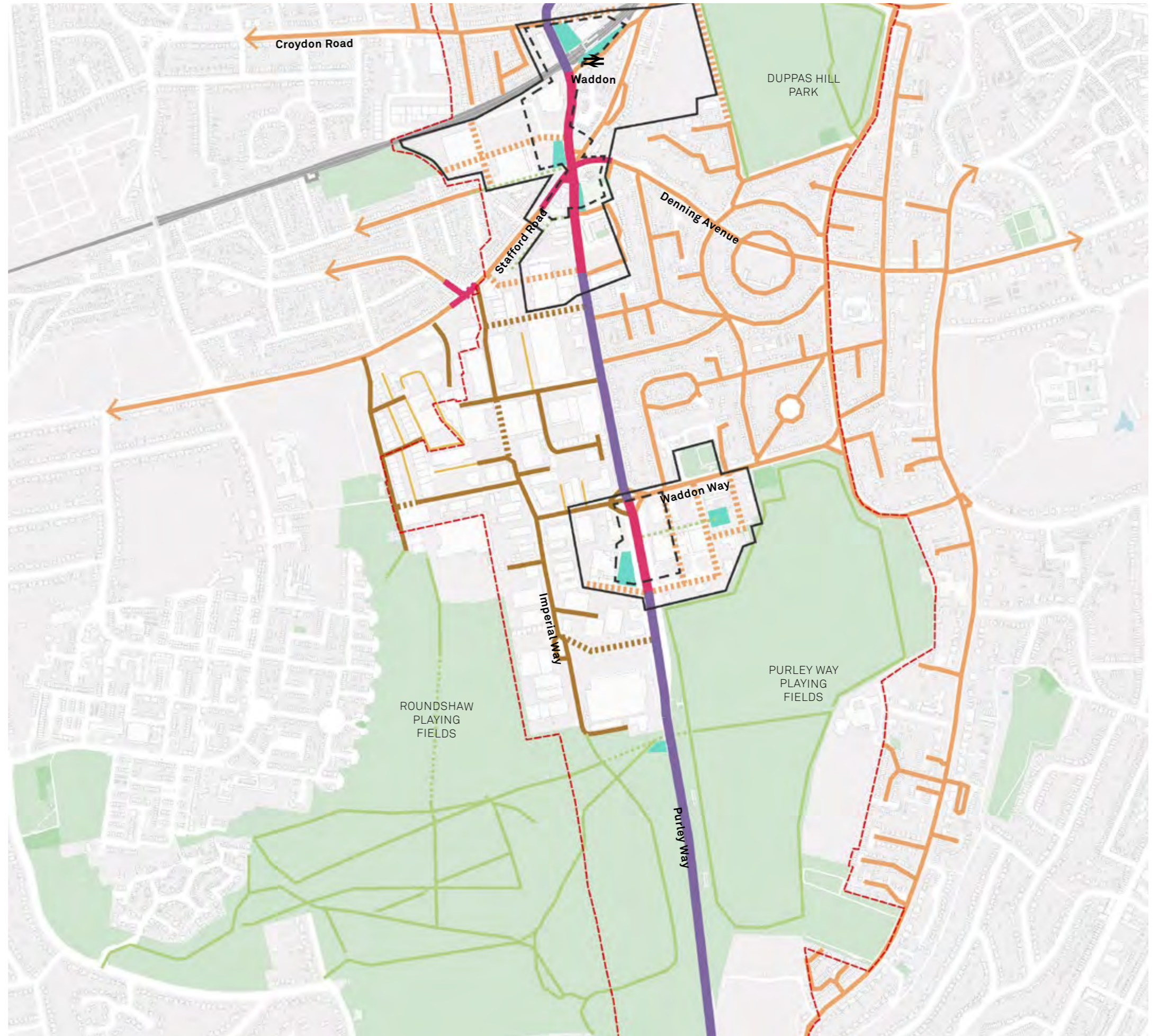


Proposed open space & street character (south)



- KEY
- Arterial road
 - New city street
 - Neighbourhood street
 - Working street
 - Working laneways
 - Paths and linkages
 - Key open space
 - Neighbourhood park
 - Proposed Local & Neighbourhood Centre
 - Local & Neighbourhood Centre catchment area
 - Purley Way Masterplan boundary

Note: Dotted lines illustrate potential new connections



APPENDIX 7: PINCH
POINTS PROPOSALS

PINCH POINT PROPOSALS

Pinch point analysis

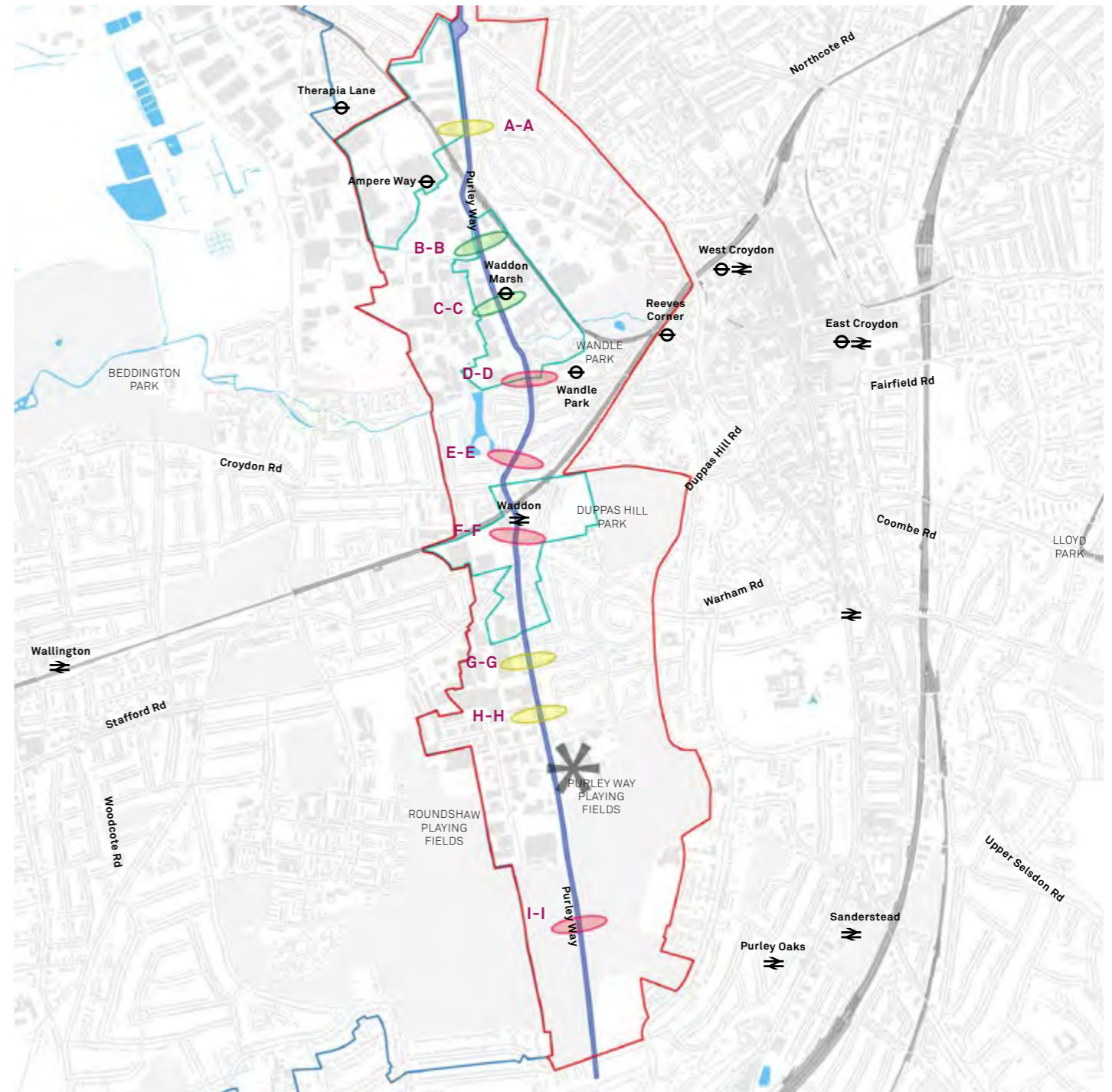
There are a number of relatively narrow sections of Purley Way which act as 'pinch points' which create congestion for traffic and poor-quality conditions for pedestrians, cyclists and buses.

As and when development and/or funding opportunities come forward, the Council will seek to explore possible widening of the carriageway and/or footway of Purley Way to secure improvements for sustainable modes of transport – including wider footways/shared walking/cycling routes, designated cycle lanes for cycling, bus lanes and/or space for a future a possible tram extension.

The Council will proactively work with land owners, developers, TfL, Network Rail and other stakeholders to seek opportunities at pre-application and application determination stage to identify and secure opportunities to remove these pinch points. These include entering in to s106 and/or Highway Agreements to secure additional land and financial contributions towards the costs of implementing schemes. However, capacity issue on the local road network needs to be considered further as it is fundamental to ensuring the success of the Purley Way Masterplan and delivery of new industrial floorspace.

Section	Carriageway width (kerb to kerb)	Total width (boundary to boundary)	Space deficit for bus priority measures	Space deficit for bus priority plus cycle lane	Cycle lanes proposed in this segment	Priority for additional land
A-A	11.5m	18.5m	-2.5m	-6.5m	No	High priority
B-B	23.3m	30.2m	9.2m	5.2m	Yes	Low priority
C-C	27.6m	33.5m	12.5m	8.5m	Yes	Low priority
D-D	13.1m	18.9m	-2.1m	-6.1m	Yes	High priority
E-E	11.6m	18.3m	-2.7m	-6.7m	Yes	High priority
F-F	11.8m	18.4m	-2.6m	-6.6m	Yes	High priority
G-G	13.1m	18.4m	-2.6m	-6.6m	No	Moderate priority
H-H	11.7m	18.9m	-2.1m	-6.1m	No	Moderate priority
I-I	11.8m	18.6m	-2.4m	-6.4m	Yes	Moderate priority

Pinch points by potential future provisions



KEY

Priority for additional land

- High priority
- Moderate priority
- Low priority

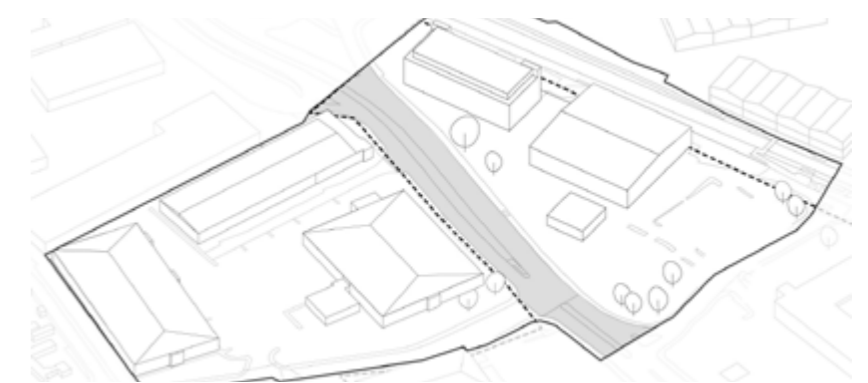
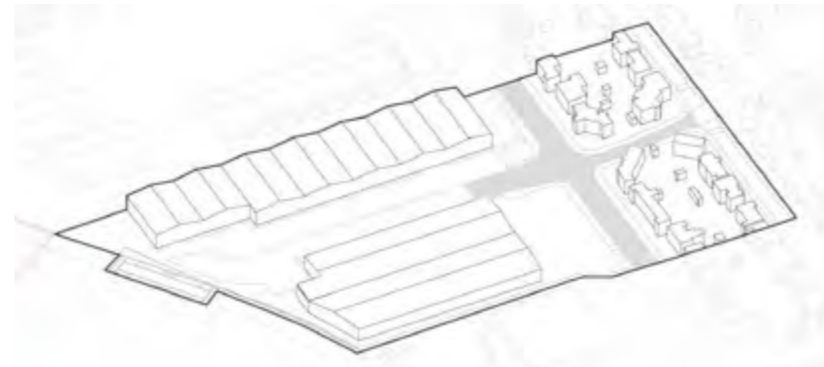
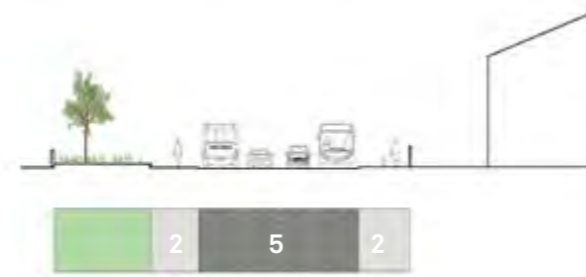
Other

- Purley Way Corridor
- TownCentre and environs
- * Neighbourhood Centre
- Borough boundary
- Purley Way Transformation Area

Existing & proposed cross sections

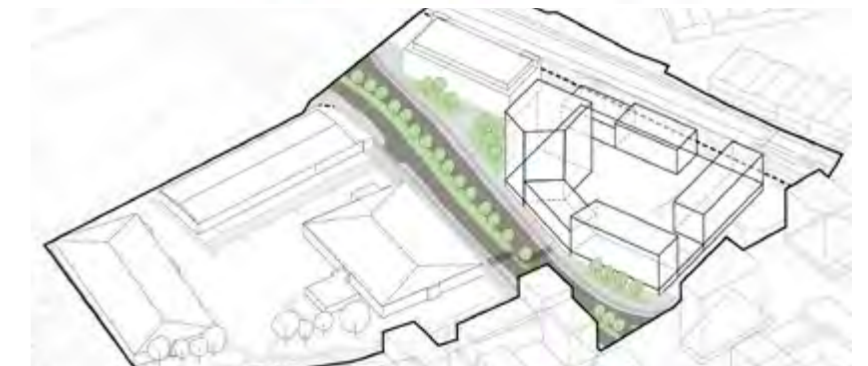
The following diagrams illustrate the potential change across the identified pinch points. The following zones are proposed over the existing cross sections:

1. **Frontage zone:** area to be kept free of fixed street furniture and street signage to minimise obstructing retail frontage and encourage window browsing.
2. **Pedestrian footpath:** a zone entirely free of obstruction with a minimum width of 2 meters.
3. **Tree / furniture zone:** trees and street furniture such as benches (cycle stands, lighting, signage) should be accommodated along the street into a clear zone
4. **Stepped cycle track:** one-way cycle tracks with 1,5m minimum width
5. **Carriageway**
6. **Alighting area:** a clear flat pedestrian route should be provided along the building facade (3m minimum) when a raised platform is required for level access into buses.
7. **Kerb zone:** to be kept completely free with a minimum width of 0.5 meters. To prevent damage from vehicles overhanging the carriageway edge.



Existing section A-A

Existing section A-A



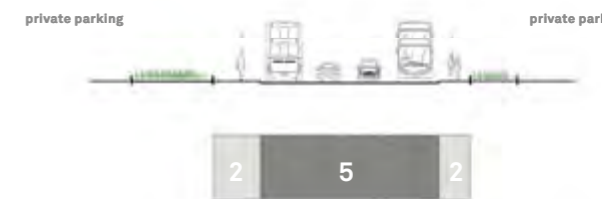
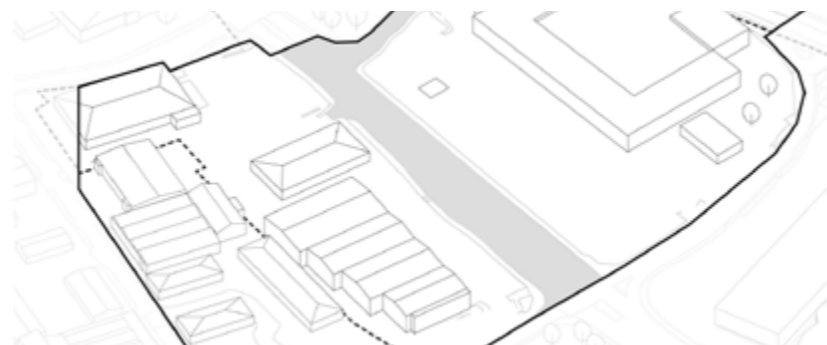
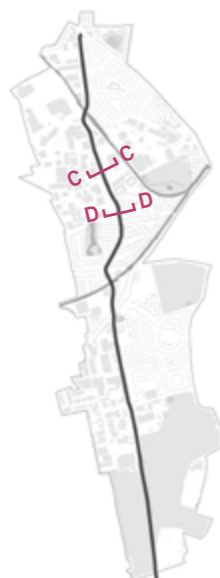
Proposed section B-B

Proposed section B-B

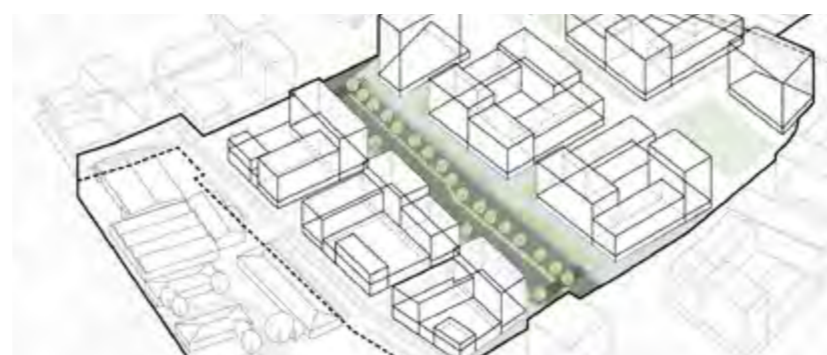
Existing & proposed cross sections

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1. **Frontage zone:** area to be kept free of fixed street furniture and street signage to minimise obstructing retail frontage and encourage window browsing.
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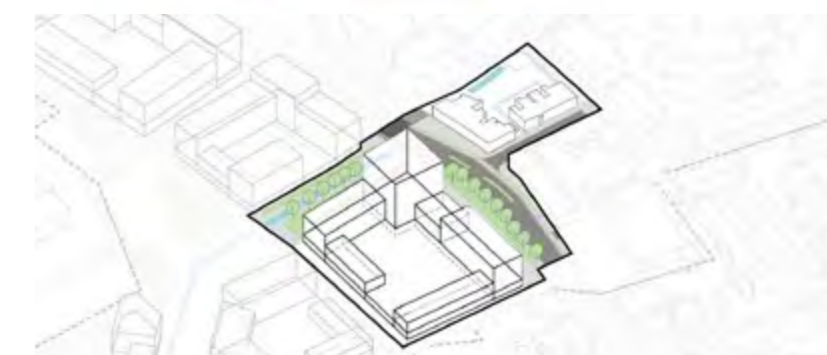
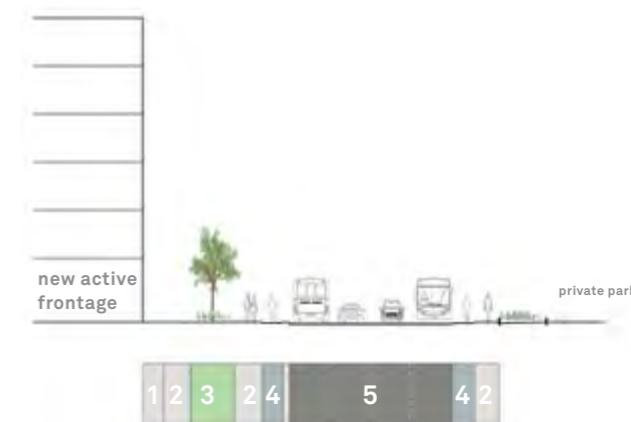


Existing section C-C



Proposed section C-C

Existing section D-D



Proposed section D-D

Existing & proposed cross sections

The following diagrams illustrate the potential change across the identified pinch points. The following zones are proposed over the existing cross sections:

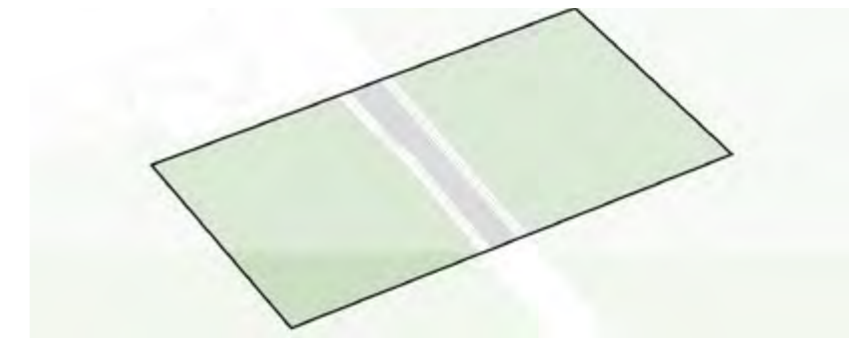
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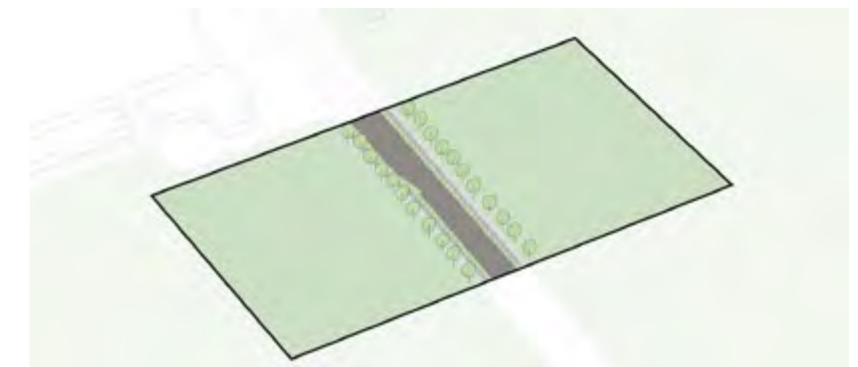
Existing section E-E



Proposed section E-E



Existing section F-F



Proposed section F-F

APPENDIX 8:
SMART CITIES & IOT
INFRASTRUCTURE

Background

Smart cities are often defined as the places where digital and communication technologies are used to make networks and services more efficient. Internet of Things (IoT) sensors, video cameras, social media, and other data inputs act as an integrated system, providing the city and its population (residents and workers) with constant feedback to help them make informed decisions.

In fact, a smart city goes beyond the use of information and communication technologies for better resource use and less emissions. It also includes smarter urban transport network, waste disposal facilities and safer public spaces. There are a range of smart city and transport innovation technologies and approaches which could be used to inform provisions within the Purley Way Masterplan area.

This document describes key trends and considerations, supported by a series of case studies, and makes suggestions for elements to be included within the Purley Way Masterplan. Key themes covered include:

- Shared mobility;
- Electrification of vehicle fleet;
- Mobility Hubs;
- Connected and Autonomous Vehicles;
- Mobility as a Service (MaaS);
- Logistics and deliveries (automation, use of drones, cycle freight); and
- Smart Waste management.

Shared mobility

Ownership models are transitioning to mobility services, in which transport modes are shared and on-demand. Shared mobility refers to either shared assets such as bike share or car clubs, or shared rides such as ride sharing or micro-transit. Technology provides people with greater flexibility and real-time data to inform travel decisions and provides landowners means to better manage transport services.

Increased provision of shared mobility can be provided by working in partnership with private operators of shared services, such as car clubs, bike sharing (including e-bikes), e-scooter sharing (subject to legalisation), taxi and private hire services and micro-transit services.

With increased adoption of shared mobility services there is likely to be a reduction in demand for private car parking. There will also be an increased need to make provision for shared mobility services such as:

- provision for **car clubs** (including marked bays for round-trip services and permission to park for flexible services); and
- space for **micromobility** modes such as dockless bikes/e-scooter share services (when e-scooters become legal to use on public roads in the UK);
- increased space for pick-up and drop-off for **on-demand services** such as taxi, minicab and micro-transit services including on-demand buses.

Car clubs

Car clubs are proposed as a measure to reduce single car driver trips and are a key component for future sustainable transport solutions. Various housing associations and developments are offering car clubs services to their residents partnering with car club operators in the UK. There are currently no car club spaces in the Purley Way area.

A key challenge for car club operators is commercial viability of their services, which also is driven by take up of their services by residents. Allocation

of parking bays for car clubs should be done in collaboration between car club operators and organisation, which own the public space (public or private ownership). In case of private ownership, property developers should engage with car club operators and explore opportunity to use Section 106 funding for development of car clubs. Opportunities for EVs and provision of EV infrastructure for car clubs can also be considered.

Purley Way Masterplan: Work with existing car club providers in Croydon and London to make sure the services are offered at the key locations in Purley Way, emphasising offer of Electric Vehicles (EVs). The provision of parking for car clubs should be integrated within the masterplan.

Micromobility

Micromobility can support mode shift and active travel and contribute towards meeting the Mayor's Transport Strategy and Croydon LIP3 objectives. For example, Croydon's Cycling Strategy 2018-23, includes trialling a dockless bike hire scheme.

TfL analysis found Croydon has the highest potential for cycling of all London boroughs but currently many trips are done by car. To date LBC has had limited success in working in partnership with dockless cycle hire operators with Lime withdrawing their public scheme after six months operation. Notwithstanding this mixed success, the opportunity for new bike share initiatives could be brought forward in association with areas of intensive development which offer more scope for increased numbers of cycle trips. E-scooter share services could also be introduced in the area subject to changes in the UK legislation. It has recently been announced that the government will fast-track e-scooter trials. Purley Way Masterplan: A private bike share scheme and e-scooter share services (when e-scooters become legal to use on public roads in the UK) can be considered for residents and workforce in Purley Way. In addition, availability of bike storage on site and at key interchanges (e.g. railway station and bus superstops) should be

considered as part of the masterplan for private bike/ebike and micromobility use.

On demand minibuses

On-demand minibuses can be ordered using a mobile app within a designated area. Customers pay per ride, which would likely be cheaper than a taxi but slightly more expensive than a standard public bus. A scheme is being trialled in Sutton (Go Sutton), offering the public a flexible service with no fixed routes or timetables. This already serves part of the study area, and if successful could be extended into Purley Way, or a new standalone service provided. Although much of the Purley Way area will be within a relatively short walk of a bus stop for fixed routes, this type of service would further add to the public transport offer, in particular catering for shorter trips within the general area which may not be served by the fixed route network.

Purley Way Masterplan: Explore the opportunity to introduce an on-demand transport service linking the key areas of interest: tram stops, railway station, future bus superstops, retail and leisure facilities in the northern part of the study area, Waddon local centre, the Colonnades area etc. This could be in addition to, or as an extension of, the current GoSutton services (should it prove to be viable). The masterplan should consider potential pick up and drop off locations for this type of service

Case study: ArrivaClick

ArrivaClick is an example of a flexible minibus service that takes multiple passengers all heading in the same direction. It operates a corner-to-corner service, where pick-up location is a nearby corner and drop-off location is within a couple of streets of the requested destination. Passengers can order a track a vehicle from the app, which informs them of the name of their driver and allows them to choose their pick-up-point and reserve a seat. Section 106 funding has been used to help provide the service.

Electrification of vehicle fleet

The UK Government has a target to ban new diesel and petrol vehicle sales by 2040. A Climate Emergency has been declared by Croydon Council and one of the key objectives is for it to become the greenest borough in London.

Charging infrastructure is fundamental to the speed of adoption and the strategic siting of public charging points is important to maximise use whilst considering public realm. Electrification offers further opportunities to encourage a shift to e-bikes for medium distance trips when combined with enhanced dedicated cycle infrastructure.

It will also be important to consider allocated or shared charging infrastructure for other vehicles such as car club cars, taxis and private hire. There will also be opportunities to incorporate Vehicle to Grid technologies to help manage demands for power across the day as this technology develops.

The use of lighting columns for EV charging along with other uses (see case study below) could be considered. As the masterplan progresses the feasibility of this will need to be confirmed in terms of procurement via the existing PFI contract for lighting, space required for the infrastructure, and considering that many columns on existing footways are located at the back of the footway rather than the kerbside.

Case study: combined electric charging & street Lighting

Lampposts are no longer only a source of light, but have become multifunctional, smart or “Humble Lampposts”, which can also be used to monitor air quality (though installation of atmospheric sensors), provide electrical charging points and act as WiFi hotspots. Using existing lampposts in this way, provides operational savings, delivers better services to citizens and offers the potential for additional revenue for the town centre.

Oxford County council has recently trialled five different types of on-street electric vehicle charging technologies. As part of the trial, 29 lamppost EVCPs have been installed with a power output of 3.2 – 5.5kW. The feedback from users was positive and users reported lamppost chargers to be reliable and easy to use. The average costs of hardware were £1050 plus £400 for installation, making it a low-cost charging solution. It has been noted that public awareness of lamppost chargers is low, and marketing and promotion will increase future uptake.

Mobility Hubs

Mobility Hubs are an evolving concept with some of the first developed by the City of Bremen, Germany, and later expanded to cities and regions in Norway, Belgium and the Netherlands. A Mobility Hub is a recognisable place with an offer of different and connected transport modes supplemented with enhanced facilities and information features to both attract and benefit the traveller. Mobility Hubs present an opportunity to integrate public transport and shared transport (such as bike share and car clubs) to enhance connectivity and user experience encouraging and facilitating more sustainable travel. There are several different components proposed for various planned or implemented Mobility Hubs around the world including public transport, car clubs, EV charge points, e-bike share and e-cargo bike share used for first/last mile deliveries. Each Mobility Hub is unique, and a tailor-made approach should be applied to each location.

Mobility Hubs should be strategically situated to provide reliable first and last mile personal transport solutions and be complementary to the existing transport network. Mobility Hubs are designed to raise the profile of public transport and shared mobility as a viable competitor to the private car and increase more sustainable travel.

Purley Way Masterplan: Facilitate provision of electric charging vehicle points in the area, including slow, fast and rapid chargers. Draft New London Plan Policy T6.1 states that all residential car parking spaces must provide infrastructure for electric or ultra-low emission vehicles.

At least 20 per cent of spaces should have active charging facilities, with passive provision for all remaining spaces. London Plan Policy 6.13 Parking also states that employee parking should provide 20% active and 10% passive parking spaces, and visitor or shopper parking should provide 10% active and 10% passive parking spaces.

In addition provision of EV charging points for car clubs, taxis and fleet operators could be considered as part of the masterplan. The Council can explore opportunities to fund implementation of charging infrastructure such as OLEV, GULCS and public-private partnerships with share in up-front costs and operating revenue (particularly for rapid charge points).

Purley Way Masterplan: The existing and proposed public transport nodes within the Purley Way area could be enhanced with a selection of the feature described above to turn them into multi-functional Mobility Hubs. The masterplan area has prerequisites for success, including a significant population increase as part of the masterplan with a need to offer commuting links and links to local facilities such as health, education, green space etc.

There are various types of Mobility Hubs which can be identified in a range of contexts. There is not a universal approach for implementation of Mobility Hubs. Each Hub will be unique, and a tailor-made approach should be applied for each location building on the needs of local community.

For Purley Way Masterplan the following types are suggested for further exploration at the next stage of work (for further explanation see next page):

- Station interchanges / city hubs
- Transport corridor / linking hubs
- New housing development clusters / mini hubs

Mobility Hub type	Description	Potential Locations
Station interchanges / city hubs	High passenger numbers for starting / ending journeys / transferring between modes could support the provision of a range of elements such as: EV charging bays designated for car club or electric taxi; secure bike storage; designated area for dockless e-bikes or e-scooters; space for e-cargo bike delivery services, delivery lockers.	Waddon Station, Waddon Marsh tram stop
Transport corridor / linking hubs	Focus on services which link residents in surrounding areas to core network services. Could include: secure bike storage; designated area for dockless e-bikes or e-scooters; delivery lockers.	As per London Plan standards for Outer London Opportunity areas - Up to 1 space per 600m2 gross internal area (GIA)
New housing development clusters / mini hubs	Support for a variety of trips, including 'back to base' from other mobility hubs. For example could include a mix of car club spaces, secure cycle parking for residents and visitors, pick up point for Demand Responsive Transport (DRT), delivery lockers, designated area for dockless e-bikes or e-scooters.	Within proposed development clusters, and existing higher density developments

Table 1: Mobility Hub types and potential locations

Case study: Bremen, Germany

The Municipality of Bremen has created a network of mobility hubs or “mobil.punkt” in the public realm, starting in the city centre and along transport corridors as early as 2003 and expanding into residential and more suburban neighbourhoods over the past few years.

The network currently consists of more than 40 “mobil. punkte” – 10 of which are larger, centralised hubs while the remainder are smaller in scale and serve as microhubs in neighbourhoods where daily trips start. This network will be continuously expanded by 8-10 new hubs each year to ensure equality of coverage throughout the city. Locations link the extensive tram system and local buses to shared mobility services and cycling infrastructure with space for car club services at the core of the mobility hub.

In recent research, it was proven that, in Bremen, each station-based club car vehicle removes 16 vehicles from the roads. The hubs have become an impetus for reclaiming public street space and positive community engagement while reducing the dominance of the private car. Last mile delivery will be tested in Bremen this year alongside car clubs with EVs and cycle pumps.
Case study: Mobility Hubs, Bergen, Norway

The Norwegian city of Bergen launched its first Mobility Hub (Mobipunkt) in the Møllendal neighbourhood in May 2018. The Mobility Hub features spaces for car club vehicles, bicycle parking, easy pedestrian access and public transport stops. It also includes rubbish collection facilities and bicycle hangers that can be rented by residents to park e-bikes. The aim of the city was to develop a Mobility Hub that caters to the wider needs of the local community. After implementation of the first hub, the city launched eight Mobility Hubs across the city centre and residential areas to promote car clubs and reduce private car ownership. The neighbourhood of Møhlenpris, where three new Mobility Hubs are located witnessed 30% decline in private car ownership over the last 2 years. The area is also being developed as a car-free neighbourhood. The EV charging infrastructure for the shared vehicles is available at each hub and some of them also have digital pillars providing travel information. One of the hubs is located next to a new student housing development.

The Mobility Hubs in Bergen are a direct result of the transnational cooperation in the SHARE-North project and were directly inspired by the City of Bremen’s “mobil.punkt” concept.

Connected and Autonomous Vehicles

Level 4 (fully autonomous in a controlled area) and Level 5 (fully autonomous) automation is expected to provide a range of benefits such as network optimisation, enhanced safety, greater mobility options and accessibility. Trials of autonomous cars, shuttle buses and taxis are undergoing across the world. Designing and adapting space for these vehicles, will require infrastructure and appropriate servicing facilities. Automation has the potential to dramatically change the way in which people travel.

Purley Way Masterplan: This is more of a long term consideration for the masterplan and depends on manufacturers achieving Level 5 automation and a subsequent replacement of the existing vehicle fleet. Nonetheless it would be pragmatic to build in flexibility into designs for parking and public space to be able to successfully adapt to an expected future where demand for parking is lower, while demand for pick up and drop off is expected to increase.

Mobility as a Service

Mobility as a Service (MaaS) is a concept that provides access to an integrated package of transport services on a single platform. MaaS aims to improve accessibility for users with less dependency on private vehicles and single occupancy vehicles. Shifting to mobility services rather than ownership, in which transport modes are shared, can reduce or remove the need for private car ownership.

Mobility as a Service works best when public transport is supported by a range of share mobility options. By providing a range of shared mobility options as an integral part of the development, this provides preparation for the successful implementation of a MaaS platform (which is likely to be introduced across a wider area, e.g. London wide). It is also possible to build elements of a MaaS platform into a wider 'concierge app' for residents and employees of the development, which could manage a wider range of services, such as personal deliveries, food deliveries and property management.

Purley Way Masterplan: There is a potential to trial MaaS on a selected group of residents in the area depending on availability of funding, and levels of interest.

Case study: Sweden

A property management company LFK in Lund, Sweden is currently trialing Mobility as a Service (MaaS) concept for car free housing. LKF intends to create a "car-free accommodation" in the property Xplorion at Södra Brunnshög in Lund by providing the mobility service for residents instead of private car parking. It is a new concept for including Mobility as a Service as an integrated part of the accommodation. Residents are provided with a mix of mobility services such as public transport, car pool and bicycle pool, gathered in an integrated offer available via an app.

Logistics and deliveries

Cycle freight

Cargo bikes and electrically-assisted cargo bikes have significant potential to replace vans in urban areas and help reduce congestion and pollution. Estimates suggest about 10-30% of trips by delivery and service companies might be substitutable by e-cargo bikes. The potential is likely to be greater in areas where traffic is restricted, for reasons such as poor air quality.

Cycle freight (involving cycles, cargo cycles or electric cycles) can be the fastest, cleanest and most efficient option for transporting goods in cities. These vehicles are zero emission, light, quiet and can use both highways and specific cycling infrastructure; meaning that they can take short cuts through areas restricted for general traffic to gain a competitive advantage. Electric cargo bikes also offer a practical solution for families without cars or individuals shopping or making other large purchases.

Purley Way Masterplan: In addition to the proposed cycle connections, availability of bike storage on site and at key interchanges (e.g. railway station) should be considered as part of the masterplan for e-cargo use. Cargo or e-cargo bikes can be introduced as part of Mobility Hubs.

Case study: Royal Borough of Greenwich

A butcher in the borough of Greenwich has cut its carbon dioxide (CO2) emissions by using an electric cargo bike for local deliveries, as part of a six-month trial, delivered by the walking and cycling charity Sustrans.

The Royal Borough of Greenwich commissioned the project to monitor the environmental impact of the van and bike over two fortnight periods. During the trial, 95% of local butcher deliveries under 5 km were made by the e-cargo bike, travelling over 200km in total, while the van was still used for longer journeys. CO2 emitted fell by an estimated 75%, with the e-cargo bike releasing less than 0.5 kg into the atmosphere. This equates to a potential annual saving of 2,171kg.

Case study: Berlin-Wilmersdorf

Zhang et al (2018) report on an assessment of DHL deliveries in Berlin-Wilmersdorf, an area of 68,925 inhabitants, 1,629 commercial clients, a distribution centre, 24 post offices and 6 'packstation' lockerbanks. DHL delivers approximately 3,700 parcels a day in this area, including 1,188 private parcels and 2,519 commercial parcels.

In their first evaluation, they hypothesized that all the commercial parcels were delivered to the nearest post office, and then delivered by cargo bike (with the bike delivery to take place between 12.00 and 18.00). The result was to replace 22 vans, (each making 22 tours carrying 195 parcels) with 13 vans and 32 cargo bikes, with the vans still making 20 tours, but the cargo bikes also making 121 tours carrying 21 parcels each.

The overall effect was a cost reduction of about 29%, and an emissions reduction of 22%, with a 58% reduction in the operating time of the vans.

Smart Waste Management

Drop-off Boxes

As only a small proportion of deliveries are of a size that they will fit through a letterbox, people often choose to have their online shopping deliveries made to their work address rather than running the risk of missing the delivery at home (and the associated inconvenience of rearranging the delivery, or going to a depot to pick up the item).

Allocating space for parcel drop-off boxes within the developments would allow residents to receive deliveries at their home without having to be at home. This would minimize the proportion of 'failed' deliveries and the negative impacts of couriers making one or more additional journeys to try and re-deliver. Parcel lockers can be selfservice, with residents receiving a code for the locker in which their parcel has been left on delivery or can be managed by a concierge.

Purley Way Masterplan: Consider allocation of space for drop-off boxes in the residential areas and at main transport nodes (e.g. tram and train stations).

Drone Deliveries

Until recently, legislation has required drone operators to fly within the line of sight, where if their view of the drone is obstructed, they would be violating the Civil Aviation Authority Drone Code. The National Air Traffic Control Service and NATS have since stated that drones will be permitted to fly beyond the line of sight. Combined with technology advancements, tracking of small unmanned devices is possible at low altitude. Drone deliveries are sustainable alternatives to conventional servicing practices and would significantly reduce the number of vehicle trips on the local highway network and within the masterplan site.

Purley Way Masterplan: Consider rooftop 'vertiports' to provide passive provision for future drone delivery activity, as a sustainable alternative to vehicle-based trips.

Autonomous Deliveries

Trials of autonomous delivery vehicles are taking place. Ocado, the online-only grocery company, recently trialled a system whereby a driverless delivery vehicle, laden with deliveries, makes a stop outside a delivery address for a short period of time, allowing the recipient to come and retrieve their delivery from the vehicle.

Purley Way Masterplan: To 'future proof' developments, drop-off space, with the facility to charge an electric vehicle, can be allocated for the possibility of widespread adoption.

Case study: Lyons Place, Maida Vale, London

Lyons Place, Maida Vale is the first residential scheme in the UK to be designed to accommodate a drone delivery service.

The scheme includes a rooftop 'vertiport' for drones to land. Skyports, a drone delivery company, are purchasing roof space ahead of drone deliveries becoming 'common space', starting with Lyons Place.

Case study: Milton Keynes, UK

Milton Keynes Council is testing out a first/last mile transport solution for local people, shoppers and visitors. Up to 40 pods were operating in the city centre from Central Station to Campbell Park and Silbury Boulevard to Avebury Boulevard.

The current state of technology in the field of smart waste management involves use of sensors that measure fill level of the rubbish bin. Measured data is sent to the cloud for further processing and analysis. By exploiting this data, rubbish collection can be planned as well as truck routes can be optimised. For example, the routing data can be sent directly to the collection trucks fleet management system, enabling drivers to focus on routes with only bins that are at the optimum fill-level.

Purley Way Masterplan: Integration of smart bins and waste management systems should be considered as early as possible as part of the waste management strategy for the masterplan.

Case study: Lyons Place, Maida Vale, London

Quintain developer installed the Envac automated vacuum waste system in 2008. The Envac system (see Figure below) vacuums waste that has been emptied into inlets through a series of underground tunnels at speeds of up to 70kph into a single collection station

Key benefits of the systems are reduced need for on-street bins and for refuse lorry collections. Since the system has been installed in Wembley Park, the following has been achieved:

- The local authority's recycling rates increased by 30% and the Wembley Park residents have recycled up to five times more food waste than the national average for apartments;
- Refuse lorry trips have been significantly reduced cutting emissions down by 90% and saving an estimated 700 tonnes of carbon emissions each year;
- A significant amount of ground level space has been saved - the space of 1,116 traditional wheelie bins, which is the equivalent of 237 car park spaces or 184 shipping containers.

Transport innovation
Summary)

Innovation/Technology/Service	Purley Way Recommendations
Shared mobility: micromobility	A private bike share scheme and e-scooter share services (when e-scooters become legal to use on public roads in the UK) can be considered for residents and workforce in Purley Way. In addition, availability of bike storage on site and at key interchanges (e.g. railway station and bus superstops) should be considered as part of the masterplan for private bike/ebike and micromobility use.
Shared mobility: on-demand buses	A private bike share scheme and e-scooter share services (when e-scooters become legal to use on public roads in the UK) can be considered for residents and workforce in Purley Way. In addition, availability of bike storage on site and at key interchanges (e.g. railway station and bus superstops) should be considered as part of the masterplan for private bike/ebike and micromobility use.
Shared mobility: on-demand buses	Explore the opportunity to introduce an on-demand transport service linking the key areas of interest: tram stops, railway station, future bus superstops, retail and leisure facilities in the northern part of the study area, Waddon local centre, the Colonnades area etc. This could be in addition to, or as an extension of, the current GoSutton services (should it prove to be viable). The masterplan should consider potential pick up and drop off locations for this type of service.
Electrification: EV charging points	Facilitate provision of electric charging vehicle points in the area, including slow, fast and rapid chargers. Draft New London Plan Policy T6.1 states that all residential car parking spaces must provide infrastructure for electric or ultra-low emission vehicles. At least 20 per cent of spaces should have active charging facilities, with passive provision for all remaining spaces. London Plan Policy 6.13 Parking also states that employee parking should provide 20% active and 10% passive parking spaces, and visitor or shopper parking should provide 10% active and 10% passive parking spaces. In addition provision of EV charging points for car clubs, taxis and fleet operators could be considered as part of the masterplan. The Council can explore opportunities to fund implementation of charging infrastructure such as OLEV, GULCS and public-private partnerships with share in up-front costs and operating revenue (particularly for rapid charge points). Assessment of the grid capacity will be required ahead of installation of the electric charging points.
Mobility Hubs	The existing and proposed public transport nodes within the Purley Way area could be enhanced with a selection of the feature described above to turn them into multi-functional Mobility Hubs. The masterplan area has prerequisites for success, including a significant population increase as part of the masterplan with a need to offer commuting links and links to local facilities such as health, education, green space etc. There is not a universal approach for implementation of Mobility Hubs. Each Hub will be unique, and a tailor-made approach should be applied for each location building on the needs of local community. For example, a Mobility Hub at a bus superstop could feature facilities like secure bike storage and designated area for dockless e-bikes or e-scooters, while one at Waddon rail station could include these along with delivery lockers and space for e-cargo bike delivery services.
CAVs	This is more of a long term consideration for the masterplan and depends on manufacturers achieving Level 5 automation and a subsequent replacement of the existing vehicle fleet. Nonetheless it would be pragmatic to build in flexibility into designs for parking and public space to be able to successfully adapt to an expected future where demand for parking is lower, while demand for pick up and drop off is expected to increase.
MaaS	There is a potential to trial MaaS on a selected group of residents in the area depending on availability of funding, and levels of interest
Freight and logistics: e-cargo bikes	In addition to the proposed cycle connections, availability of bike storage on site and at key interchanges (e.g. railway station) should be considered as part of the masterplan for e-cargo use. Cargo or e-cargo bikes can be introduced as part of Mobility Hubs.
Freight and logistics: autonomous deliveries	To 'future proof' developments, drop-off space, with the facility to charge an electric vehicle, can be allocated for the possibility of widespread adoption.
Freight and logistics: drone deliveries	Consider rooftop 'vertiports' to provide passive provision for future drone delivery activity, as a sustainable alternative to vehicle-based trips.
Freight and logistics: drop-off boxes	Consider allocation of space for drop-off boxes in the residential areas and at main transport nodes (e.g. tram and train stations).
Smart Waste Management	Integration of smart bins and waste management systems should be considered as early as possible as part of the waste management strategy for the masterplan.

APPENDIX 9: SOCIO-
ECONOMIC STRATEGY

Introduction

The Purley Way Masterplan has the potential to unlock significant quantities of additional housing and employment opportunities as well as improved access to services, facilities, public realm and local amenity.

A development capacity testing exercise has been used - during the early stages of the Detailed masterplan - to understand the potential implications for the scale of housing, population and employment uplift on the local economy as well as on the potential requirements for social and community infrastructure.

In addition to these quantifiable implications, ways in which the Detailed masterplan can maximise these opportunities for local residents and the local economy through a high-level socio-economic strategy are also outlined.

It should be noted that based on the early development capacity testing exercise, estimates are indicative and based on a broad set of assumptions. The following pages are not taking into account the developed proposals of the Detailed masterplan. At this stage in the process these estimates do not take account of transport capacity modelling or other constraints.

Housing and Population

Based on a number of assumptions, early stage capacity testing work carried out as part of preparing the Purley Way Masterplan identified the potential to successfully accommodate between about 5,550 and 8,310 additional homes over the plan period.

All new housing is assumed to be additional, resulting in a significant uplift to the borough's housing supply.

The implications of additional housing in terms of population will be highly dependent on the precise tenure mix and size of units that are brought forward. At this stage, it is possible to make high-level assumptions based on the following steps:

- An indicative tenure mix based on the GLA's housing mix calculator has been applied to each site assessed within the development capacity testing exercise for the Masterplan area as a whole.
- The outputs in terms of the number of market, intermediate and social rented units by number of bedrooms have then been used as inputs to the GLA's population yield calculator (V3.2, October 2019) to derive population estimates.
- The assumptions on tenure mix are consistent with those used in the development capacity testing exercise and have been applied to both the low and high estimates of residential unit capacity across each of the sites.

The above expected level of growth is likely to increase the number of people living in the area over the plan period by between about 11,640 and 17,420. The need to make additional provision of physical, social, cultural, and green infrastructure to serve this bigger population and integrate with existing residential and business communities.

Tables 1.0 and 2.0 below set out the potential population yield by age group according to the population yield calculator for each phase of the Masterplan. Phasing has been based on the infrastructure phasing scenario (for more information see Section 7.0 of the Detailed masterplan) on the basis that this represents a reasonable mid-point scenario for each phase compared to the indicative phasing for the transport infrastructure scenario and landowner interests scenario.

The total child yield (0-17 years of age) would range from 2,060 (low estimate) and 2,740 (high estimate), the proportion of which is below the current proportion of children residing in the Purley Way Masterplan area (26%) and may be indicative of the tendency of new housing to attract a higher proportion of working age population.

	Phase 1: Years 1-5	Phase 2: Years 6-10	Phase 3: Years 11-15	Total
Units	1,759	1,399	2,221	5,380
Population	3,670	2,920	4,630	11,210
Aged 0-4	310	250	400	960
Aged 5-11	230	180	290	700
Aged 12-17	130	100	170	400
Aged 18-64	2,920	2,330	3,690	8,940
Aged 65+	70	60	90	210

Table 1: Low Estimate – Population Yield

	Phase 1: Years 1-5	Phase 2: Years 6-10	Phase 3: Years 11-15	Total
Units	2,279	2,249	2,656	7,184
Population	4,750	4,690	5,540	14,970
Aged 0-4	410	400	470	1,280
Aged 5-11	290	290	340	930
Aged 12-17	170	170	200	530
Aged 18-64	3,790	3,740	4,420	11,940
Aged 65+	90	90	100	280

Table 2.0: High Estimate – Population Yield

Implications for Social and Community Infrastructure

The Purley Way area includes Kingsley Primary and Harris Primary Academy Schools and the Haling Manor High School and (just outside the area) the former St Andrew's Secondary School. Planning permission has been granted for an additional 3-FE primary school at 91-93 Canterbury Road (18/03408/FUL, February 2019). The area also has a number of children nurseries and play groups. It is also home to Broad Green Library, Waddon Leisure Centre and commercial leisure and entertainment uses at the Colonnades, Valley Park (including VUE Cinema) and other locations. However, there are relatively few community, youth, and sports facilities and places of worship.

The potential uplift in housing and population across the Masterplan area will place pressure on existing social and community infrastructure and will generate demand for additional facilities. The precise requirements in terms of types and quantities will need to be defined in more detail as the Masterplan evolves, and will be highly dependent on the eventual scale, mix and phasing of the residential components. The broad implications based on the capacity testing and initial phasing assumptions are outlined below:

Primary Healthcare: the uplift of between 11,640 and 17,420 new residents to the Purley Way area will generate increased demand for General Practice (GP) services. The NHS London Healthy Urban Development Unit (HUDU) uses a benchmark ratio of 1,800 registered patients per FTE GP. This ratio will vary between each surgery depending on local capacity and services being provided, but it is nonetheless a useful benchmark. On this basis, the population uplift could be expected to generate a total requirement for 6.5-9.7 FTE GP's. The extent to which any of this requirement can be met by existing providers will depend on local capacity, which will need to be regularly reviewed, the degree to which demand is net additional, as well as eventual phasing of the proposed masterplan.

However, with a population uplift of this scale, it is anticipated there will be requirements for additional primary healthcare services to meet the increase

in demand particularly in later phases of the development when any existing capacity may have been absorbed. The Council's IDP identifies primary care infrastructure requirements across its GP networks. Substantial additional space requirements are identified in both East Croydon and Purley to cater for anticipated population growth in these areas based on the Local Plan housing targets. This does not take into account any uplift in housing targets that may arise through the London Plan process.

The requirements for primary health care provision will need to be tested with Croydon Clinical Commissioning Group (CCG) and South West London Health and Care Partnership and their strategy for estates and capital planning as the Masterplan evolves. At a high level, we assume that the demand generated from Phase 1 of the Masterplan could be accommodated within existing or planned provision (the IDP identifies planned additional provision for Purley).

It is proposed to make provision for two health hubs of about 1,200sqm each to cater for around 12 FTE GPs in total and associated services (the Council's IDP uses a benchmark of 200 sqm per GP implying a 6 FTE GP facility would require 1,200 sqm). The IDP also notes that the opportunity for colocation should be explored, particularly alongside pharmacies and other community facilities. The proposed mixed-use development in the new Town Centres and environs and Waddon Way Neighbourhood Centre provide a number of opportunities to incorporate health facilities and are detailed in specific site allocations.

Additional facilities will generally be directed to the new Town and Neighbourhood Centres, where existing and new residents can best access them to help foster a united local community based on shared local facilities and experiences.

Early Years: the Masterplan has the potential to generate a significant number (960 – 1,280) of children aged 0-4 years of age residing in the area. The requirement for additional early years places will depend on the capacity of existing providers in the local area, which will need to be regularly reviewed, as well as take-up of places. Whilst it is highly unlikely that all children within this age cohort will require an early years place, given the scale of the potential uplift, additional early years provision will almost certainly be required to meet the increase in demand. This will need to be tested with Croydon's Child Care Sufficiency department as the Masterplan evolves and more detail is understood about potential phasing.

Primary and Secondary Education: the scale of increase in demand for primary and secondary school places will depend on the extent to which those taking up occupancy in the Masterplan area are not already attending local schools (e.g. not net additional), the phasing of the Masterplan and existing and planned capacity amongst local providers.

The expected additional housing and population growth is likely to result in between 730 and 1,090 additional primary-aged children over the plan period (0 in the short-term, 170-260 in the medium-term and a further 540-830 in the long-term). In terms of school places, there is very little additional demand in the short term and 3 to 5 Forms of Entry (FE) in the medium and long terms. These additional school places could be accommodated within existing/expanded schools in Croydon. Depending on actual levels of growth, there may be the need for additional primary school places in the area in the long term ([for more information see Section 7.0 of the detailed masterplan](#)). If additional provision does prove necessary a new 2FE primary school could form part of new mixed-use development in the Waddon Marsh centre and environs, as identified in Development site 332 (Superstores, Drury Crescent).

The Council's Infrastructure Delivery Plan (2019) indicates that six sites have been allocated in the Local Plan to meet long term need including 95-

111 Brighton Road, Purley. The degree to which this planned provision is capable of accommodating the increase in demand from the Masterplan area will need to be tested in close liaison with education officers at Croydon responsible for pupil place planning across the borough as the Masterplan evolves.

The potential yield of secondary school aged pupils is between 400 and 530 – the equivalent of three forms of entry per year group for years seven to twelve. The expected level of demand for secondary school places should be capable of being absorbed by existing secondary schools, including re-use of St Andrews just outside the area, and in to the proposed additional secondary school on Duppas Hill (Development site 16).

Community Facilities: According to 'Shaping Neighbourhoods – A Guide for Health, Sustainability and Vitality' the catchment population required to sustain one community centre is around 4,000 people. With a potential population uplift of between 11,640 and 17,420 people the Masterplan will need to make provision for additional community facilities. Community facilities include but are not limited to community centres, places of worship, libraries and youth centres. The specific need for these facilities will depend on existing local provision and capacity and as well as eventual phasing of the Masterplan.

Employment

In order to estimate the potential employment that could be achieved through intensification across the Masterplan area, the following steps have been undertaken:

1) For each of the six sites included within the early capacity testing exercise (see Figure 1.0), commercial floorspace has been converted from GIA to NIA using a ratio of 0.9 to avoid over-estimating numbers.

2) Employment densities have then been applied to the commercial floorspace outputs of the development capacity testing across the six sites based on the descriptions of proposed uses identified by Hawkins Brown. The assumed densities are as follows:

- Small/medium retail – 1 FTE per 20 sq m Net Internal Area (NIA)
- Small/light industrial – 1 FTE per 47 sq m NIA
- Leisure/community – 1 FTE per 70 sq m NIA
- Large leisure/mixed retail – 1 FTE per 55 sq m NIA
- Retail warehousing – 1 FTE per 90 sq m NIA
- Flexible workspace – 1 FTE per 12 sq m NIA

This provides an estimate of the Full Time Equivalent (FTE) employment, which has then been scaled up to reflect to the additional floorspace that could arise from other development sites across the wider Masterplan area. Estimates of existing employment across the identified development sites have been estimated using the same method. The same phasing strategy (SCI Infrastructure) has been used to estimate the number of jobs in each period, these estimates are set out in Table 3.0 below.

	Phase 1: Years 1-5	Phase 2: Years 6-10	Phase 3: Years 11-15	Total
Existing	910	1,280	720	2,910
Masterplan Proposals	1,250	2,430	980	4,660
Potential Uplift	37%	90%	36%	60%

Table 3.0: Employment Impacts

Based on this, it is anticipated the development sites across the Masterplan have the capacity to support around 4,660 gross FTE jobs. These jobs will be across a range of sectors and occupations including industrial, retail, leisure as well as community and social infrastructure uses that will also generate employment.

When compared with estimated existing employment levels, this suggests the Masterplan has the potential to achieve an uplift in FTE jobs of around 60% overall, with the greatest uplift likely to occur in Phase 2.

Clearly this is an indicative exercise at this stage based on capacity testing, but nonetheless gives a sense of the uplift in employment that could be achieved through a combination of additional floorspace and higher density uses. The uplift in jobs capacity will also lead to an increase in induced and indirect employment through supply chain impacts (indirect) and local expenditure (induced).

Whilst it is clear there is potential capacity to support a substantial uplift in FTE jobs, this does not take account of the potential effects of Covid-19 on various sectors of the economy such as retail. The early phases of the Masterplan in particular may be impacted by a short-term slowdown in demand for and delivery of residential and commercial accommodation. Predictions from the Office for Budget Responsibility (OBR) have indicated a UK wide rise in unemployment rates from 4% to 10% in Q2 of 2020 and falling to 8.5% in Q3, whilst GDP is predicted to decline by -12.8% for 2020 compared to 2019.

Croydon's economic development team are keen to support the masterplan process bringing their own knowledge as to the evolving economic situation in relation to Covid-19 and the impact it will have on sectors of the economy as well as overall economic activity and unemployment rates.

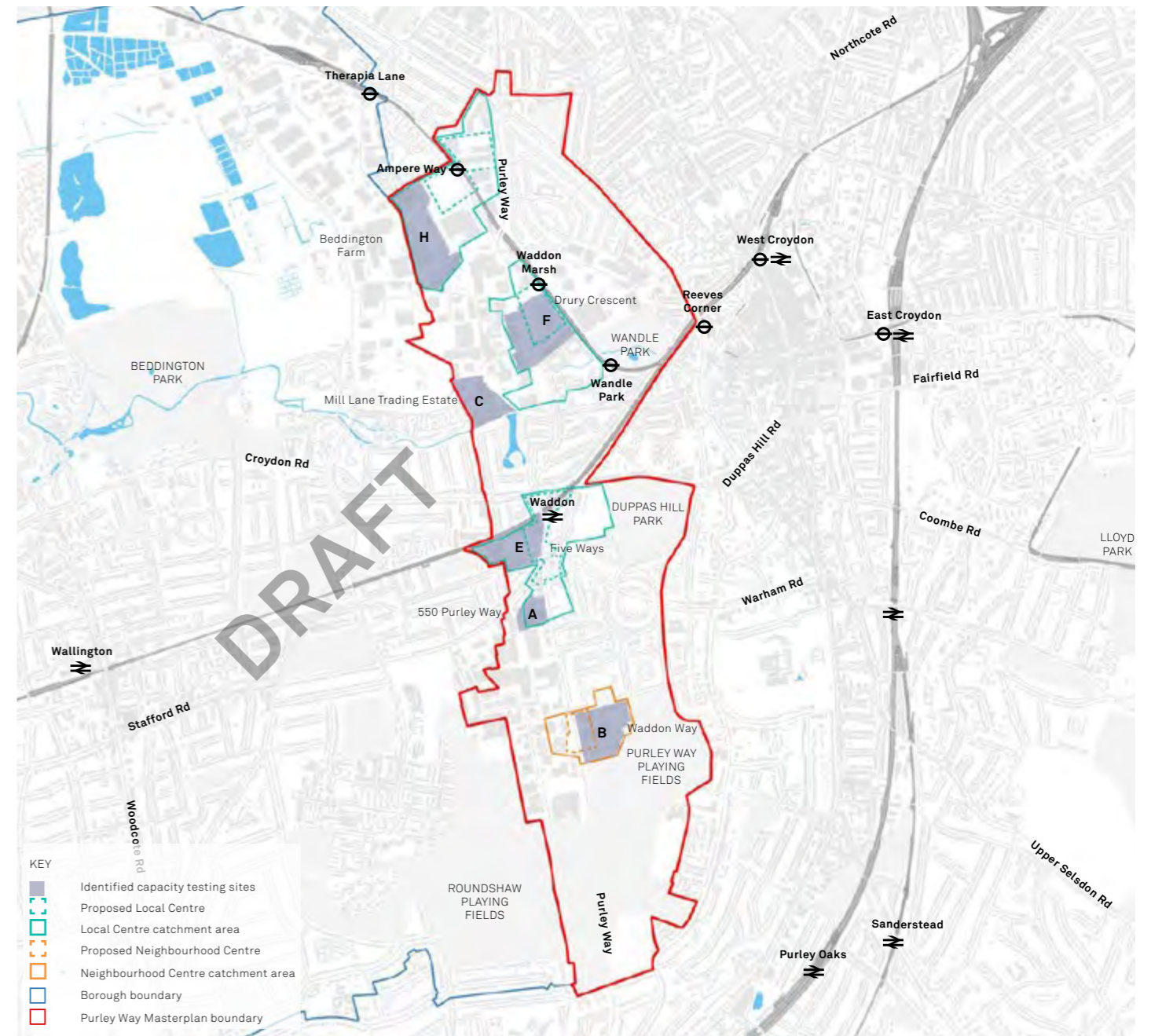


Figure 1.0: Shortlisted site for early capacity study

Strategy for embedding socio-economic priorities within the Masterplan

Beyond the measurable impacts of employment population and housing outlined above, the Masterplan will have the potential to deliver a series of wider and transformational regeneration benefits for the local area and Borough and to generate significant social value. The findings from the socio-economic baseline for Purley Way provide important context which shape how the detailed Masterplan can respond to these challenges and in so doing help maximise the opportunities for local residents and the local economy to benefit from the proposals.

Since the socio-economic baseline was prepared, the country's economy has been fundamentally impacted by the global pandemic, COVID-19. The fallout from this will significantly impact the UK's economy over the short, medium and long term with real and tangible implications for Croydon's residents and businesses. Most local economies have a handful of sectors that are critical to ongoing economic vitality, typically including those related to consumer demand such as retail, leisure, food and beverage as well as high GVA sectors. Whilst early evidence suggests town centres will be one of the hardest hit local economies, Purley Way's reliance on the retail sector for employment clearly makes it vulnerable, particularly when combined with the ongoing uncertainty of Brexit and potential impacts on trade and investment. As Croydon Council leads the borough's economic response, principles of good growth, local economic resilience and inclusive growth will be vital to economic recovery. In this respect, the Masterplan presents an opportunity to aid Croydon's long-term recovery through the provision of secure employment opportunities, increased diversity in the business base and greater resilience to economic shocks.

Population growth: Croydon's population has been below the London average over the last five years and going forward is expected to see higher proportions of growth amongst the older population. New housing with a range of sizes and price points presents an opportunity to attract growth amongst the working age population to the borough. Indeed, under housing scenario 1, the indicative housing mix yields a population with a higher proportion

of working age residents compared to the current average. An increase in working age residents is an opportunity to increase the spending power of the local community supporting local businesses, increase and sustain economic activity levels and attract skilled residents to the area to meet the requirements of local employers. Overall, the population of the Masterplan area will comprise a mix of those already residing in Croydon and the local area, including those seeking to access social and affordable housing tenures, as well as attracting people from outside of the borough although it is not possible at this stage to estimate the proportion.

Housing: in line with much of London, housing affordability has been worsening across Croydon and access to housing and services is one of the worst performing domains according to the index of Multiple Deprivation. Additional housing across the Masterplan area generates the opportunity to address demand from the wider area for a range of tenures and sizes including affordable housing as well as alleviate pressure in other parts of the borough to meet housing targets.

Local employment opportunities: there are around 1,500 people unemployed within the Purley Way wider study area (although this is likely to have increased significantly since lockdown measures have been introduced in response to Covid-19) and the number of people claiming benefits is increasing. Zero-hour contracts are likely to be prevalent in local sectors and a significant proportion of residents may have insecure employment or are paid below the real living wage. The retail sector which dominates the employment base has seen recent contractions and will be one of the worst hit sectors following the current Pandemic. Employment opportunities across a range of types of commercial space will be important in offering secure and fair salaries for local people as well as a more diverse and resilient employment base moving away from a reliance on low paid and low skilled jobs. Croydon's Good Employment Charter and Croydon Works will be instrumental in helping residents to access these opportunities.

Improving the business environment: part of Purley Way's success to date has been driven by the availability of cost-effective space and the business base has grown considerably compared to London and borough averages, however productivity remains below average. In order to remain competitive, new workspace provision across a range of size and types and supporting amenities can improve the business environment and enable small firms to be more competitive and sustainable. It will be important to establish a 'sense of place' across the Masterplan areas through integration of retail, food and beverage and community uses alongside employment uses enhancing attractiveness and usability of the area. The Purley Way forum will also have a strong role in this respect through effective communication and marketing.

Enhancing Productivity and Value: The combination of technology improvements within existing sectors, together with large scale regeneration means that Purley Way is well placed to benefit from diversification into new sectors including knowledge based businesses, STEM, niche manufacturing, tech and the green economy as well as to support higher value within existing sectors. This will enable the area to remain competitive and deliver a wide range of socio-economic benefits including higher wages and a more diverse mix of employment and training opportunities for the local workforce and surrounding communities. It will also be important to support innovation and technology adaptation, including around automation and green technology, within existing sectors in order to achieve gains in productivity competitiveness and value.

Encouraging Inclusive Growth: the Masterplan will see the intensification of uses including the co-location of industrial and commercial space with residential, the transition between SIL uses and other commercial, leisure and residential uses and improved linkages to the wider area. It will be important to ensure complementarity between new uses and existing activities ensuring that the mix of uses integrates in a cohesive way. The development of local supply chain linkages between existing and new businesses and places should be facilitated

via brokerage schemes, together with supporting existing and new residential communities to access the local employment opportunities that will arise from the Masterplan.

SMES and Start-ups: the recent and above average growth in micro businesses is indicative of start-up activity and reflective of the strong SME base within Purley Way which exists alongside much larger, space hungry retail, trade and industrial operators. New commercial space should aim to respond to the needs of micro and small businesses by providing a range of unit sizes suitable to SMEs to support continued growth and retain the firms with the greatest prospects. Whilst the office sector is not currently strong in Purley Way, there is an opportunity to provide small scale office provision alongside shared or managed workspace and studios. This type of provision will be ideal for transition areas between industrial (SIL) uses and residential communities and may attract demand from those seeking cheaper alternatives to town centre locations as well as those seeking to work close to home in areas accessible by walking or cycling. The latter point is an important consideration given Covid-19 and the potentially longer term impacts it will have on individuals and business in their choices to work flexibility and close to home.

Space of this nature will also be important in harnessing growth amongst particular sectors which are also important to the wider borough, including the creative and digital industries. These have already seen strong growth in employment within Purley Way demonstrating its ability to attract these kind of occupiers.

Improving Public Transport: improvements to public transport, including tram, rail and bus connections as well as active travel routes, will be vital in supporting the growth of new housing and connecting residents to social, education and community facilities as well as training and jobs opportunities both within and outside of the Masterplan area.

Skills and training: Purley Way scores relatively high in terms of deprivation within the education and skills domain. In order to achieve good growth, enhancing skills and training opportunities will be critical to ensuring the local resident workforce is suitably skilled to access employment opportunities and benefit from the Masterplan. There will be skills and training opportunities during the construction phases of the Masterplan, but as each phase is delivered it will also be important to ensure opportunities over the longer term. There is strong potential to utilise Council partnerships with workspace and education providers to build skills and capacity within the local population and workforce through skills pathways in order to ensure good growth.

As the Masterplan evolves, further work will be required to map current skills performance and identify gaps attached to economic aspirations for the area and develop specific interventions related to each delivery phase. This could be brought together under a specific employment and skills strategy workstream as a means of ensuring existing residents are ready to benefit from the new employment prospects and to ensure the right skills are available at the right time. Croydon's economic development team will have a crucial role in helping to identify and mobilise partners and identify specific employment pathways.

Potential interventions could include:

- In partnership with Croydon Works, Employment Pathways in Croydon (EPIC), the Purley Way Forum and FE and HE providers (Croydon College and sixth forms), supporting effective brokerage of opportunities, providing early alerts and labour planning information to support local partners support residents into training and employment.
- Form collaborative models for industry-led skills training
- Identify opportunities for higher level and general apprenticeships working in partnership with the Croydon Apprenticeship Academy
- Formulate upskilling and mentoring programmes
- Identify opportunities for work experience/work taster days amongst local employers
- Accommodate site visits/tours from local education providers
- Host careers events and 'work readiness' workshops
- Work with local higher and further education and training providers, including Croydon's Creative Campus to formulate industry-specific learning content

Health and quality of life: Purley Way suffers from high levels of deprivation in terms of the living environment with the potential for the local environment to have adverse effects on the health and wellbeing of local residents. Good quality public realm and open space, improving linkages across the Masterplan area as well as to neighbouring communities and increasing the range of active travel opportunities will help to improve the local living environment.

Flexibility: Whilst the global pandemic of Covid-19 plays out and the uncertainty around Brexit continues, it emphasises the importance of maintaining flexibility in terms of quantum's and types of space that are accommodated as part of the Masterplan. The long-term nature of the proposals will likely see significant evolution in terms of innovation, technological advances, changes in working patterns and practices and the role of supporting infrastructure and amenity space. A proactive role will need to be taken with local businesses and strategic partners over the long term to understand changes in demand and to identify new opportunities as they emerge in order that the supply of space is suited to market needs.

APPENDIX 10: PRECURSOR
PROJECTS

PRECURSOR PROJECTS

Pre-cursor projects: introduction

This section details a series of proposals for precursor projects within the area. The proposed projects outline early potential activations within the area that build on findings from the masterplan's engagement processes and test specific concepts that are relevant to the future sites. Ranging from alternative employment, to diverse public realm, to co-location within SIL, the projects all seek to generate interest through creative activities and public programming whilst providing clear, tangible community benefit.

In this document, the proposed projects are positioned within a two-phase delivery strategy. The first phase is centred around the proposed Waddon Marsh Local Centre, whilst the second phase captures projects that spill out into the remaining masterplan area.

Each proposed project in this document includes a spatial proposal, an activity detail and a programme and management plan. The spatial proposals are specific in location but propositional in design, so should be understood as guides rather than instructions. The 'activity details' section show the constituent elements of each project including both physical design to programmatic content. Finally, the 'programme and management plan' section describes the feasibility of the proposed projects for interested parties.

The projects follow a period of engagement surrounding the Purley Way Masterplan, in which local stakeholders provided feedback through personal experience in order to engage with future concepts for the area.

It is important to note that these projects are subject to local landowner discussions, the input of which will inform critical aspects of these initiatives in order to provide greater benefits for local communities, economies, and ecologies



Precursor Project Programme

Masterplan Phase	Short Term	Medium Term	Long-Term
Masterplan Phase	Valley Park: 707 homes	Valley Park: 0 homes	Valley Park: 1,631 homes
	Waddon Marsh: 961 homes	Waddon Marsh: 1657 homes	Waddon Marsh: 0 homes
	Five Ways: 126 homes	Fiveways: 111 homes	Fiveways: 1,291 homes
	Waddon Way: 177 homes	Waddon Way: 0 homes	Waddon Way: 813 homes

Year (Speculative)	2021	2022	2023	2024	2025	2026	2026	2027	2028	2029	2030	2031	Long Term	
Precursor Project	River Park: Urban playscape, diverse public realm, R&D and Creative Meanwhile Use		Proof of concept for creative meanwhile use and R&D – Applicable for future decanting in Waddon Marsh and wider											
			Active Travel Network: e.g. bike fixing and green walking routes				Continued development and engagement for necessary behaviour change							
	Purley Oasis: Community greenspace, local toolkit, landscape and historical reference, Waddon Marsh gateway		Purley Oases: Green spaces across the masterplan and link to historic leisure uses				Green and Blue Infrastructure Proposition							
	Parklets and Recs: Upcycled parklets, creative programming, employment and upskill facilitation		Parklets and Recs: Valley Park In collaboration with SPACE 10 – creative programme and future public realm activation									Valley Park Public Realm Integration		
	MAIA Artist Hotel: Hospitality, employment and skills, creative programme, co-location potential							Continued co-location and development						
	Purley Way Finding & Crossing: co-designed ground art, local stakeholder engagement and future business conception		Fiveways Crossing • Self Initiated Ground Art opportunities with local stakeholders • Purley Way Finders Signage				Business Forum Fiveways Junction Update							
	Purley Way Finders Website Expansion													

Phase 1 Precursor Project

Phase 2 Precursor Project

PHASE 1: INTRODUCTION AND LOCATION

The Purley Way Precursor Projects will be delivered in phases so as to coordinate with the proposed development in the area, generating interest and engagement whilst testing key masterplan concepts on opportunity sites within the area.

The first phase of the precursor projects will be concentrated in the proposed Waddon Marsh Local Centre. As an area with a diverse mix of future activity and current potential for short term initiatives, Waddon Marsh was an intuitive starting point for creating a 'zone of interest' to prelude future activity.

As such, key sites within Waddon Marsh have been identified for the delivery of precursor projects that aim to test future employment uses and business opportunities, co-location around SIL, public spaces activation, potential green and blue infrastructures, community engagement and governance models, and co-design. Simultaneously, the projects aim promote and catalyse local character and identity with the masterplan area.

The first phase of precursor projects will aim to create short-term impact in Waddon Marsh whilst catalysing mid-term and long-term changes in the masterplan area by providing a conceptual framework to projects delivered in the remaining local centres during phase 2.

All Phase 1 Precursor Projects will be delivered alongside the short-term delivery of the Purley Way Strategic Masterplan.



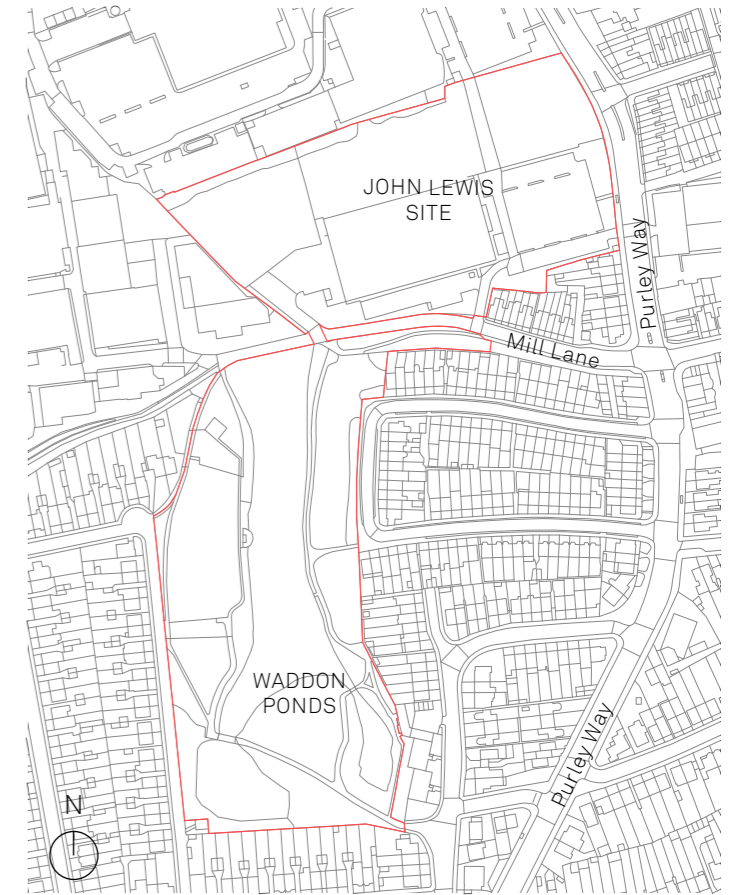
- KEY
- 1. River Park
 - 2. Meanwhile use
 - 3. Purley Oasis
 - 4. Parklets and recreation
 - 5. MAIA Artist Hotel
 - 6. Purley Wayfinders Crossings



Site Proposal - John Lewis, 330 Purley Way

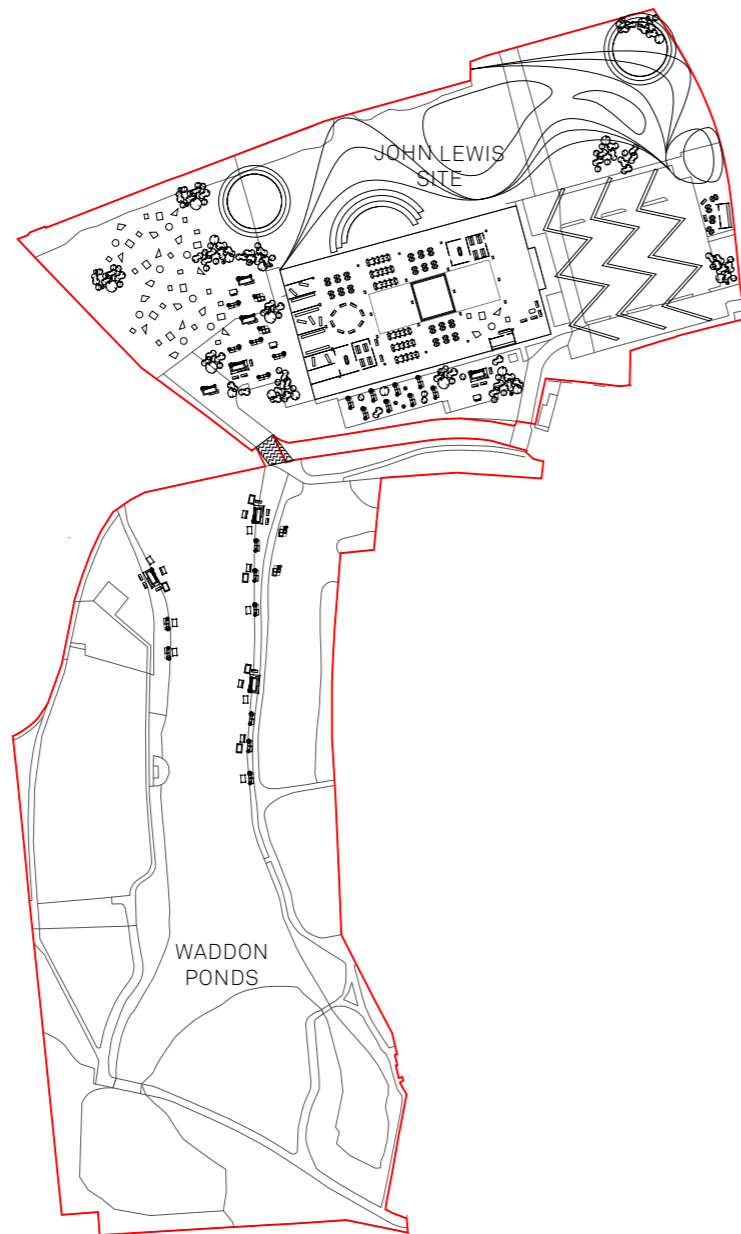
330 Purley Way, occupying the former John Lewis Site, is the inaugural precursor project, providing an opportunity to test strategies that will be implemented throughout Waddon Marsh Local Centre and the wider masterplan. Located at 330 Purley Way, the site, previously occupied by John Lewis Purley Way, presents an opportunity to capitalise on currently vacant land in close proximity to an area of significant activity in the masterplan, with significant development capacity. 330 Purley Way seeks to promote changing behaviours and explore future opportunities through testing, and in doing so, indicating possible future short term vacancies in the masterplan area. Through three interconnected proposals on the John Lewis site and its environs, the project will test:

- All-age play and active transport possibilities and behaviours.
- Urban playscape within the public realm.
- Promoting R&D and creative/employment activities within vacant sites.
- Community-led greening and citizen science in order to celebrate and build bottom-up connections to existing and future local green and blue spaces.



330 Purley Way: Proposal & precedents

Three integrated precursor projects in the former John Lewis, Purley Way, utilising the car park, interior and service yard and it's connection to Waddon Ponds. The project includes, an urban playscape/ active transport hub, creative meanwhile use and citizen's science outlet.



Raumlabor, Milton Keynes, UK

1. A temporary bike school with dedicated repair and maintenance team and an energetic, cycle-themed programme in Milton Keynes.



Milton Keynes, UK

2. The Utopia Station for the 2019 Festival of Creative Urban Living doubled as an engagement platform for Midsummer Boulevard East Regeneration plan.



Superkilen Park, København, Denmark

3. Superkilen Park: a collection of global found objects that come from 60 different nationalities in the local area.



Riga, Latvia

4. A vertical garden and climate data station that brings together urban planners, designers, environmentalists and scientists in Riga.



Brixton Highroad, UK

5. A public green space & community growing space off integrated growing into urban spaces.



Loughborough Junction, UK

6. A community food growing project as a demonstration of joining derelict or underused spaces for urban farming.



Project 1: River Park



Activity Detail

The first project within the former John Lewis site at 330 Purley Way is 'River Park', an outdoor, public space utilising the former car park in order to create:

- An urban playscape within the public realm, including seating, ground markings and other active infra-structure.
- An active transport hub (positively encouraging walking and cycling to the site) with on-site resources for maintenance, repair and upskilling.
- Public space and community programming that targets local communities and stakeholders laying the foundations for growing demand and behaviour change required during short-term masterplan phase (0-2000 homes).

Programme and Mangement Plan

Below summarises the proposal for the delivery of Lewis Park, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities.

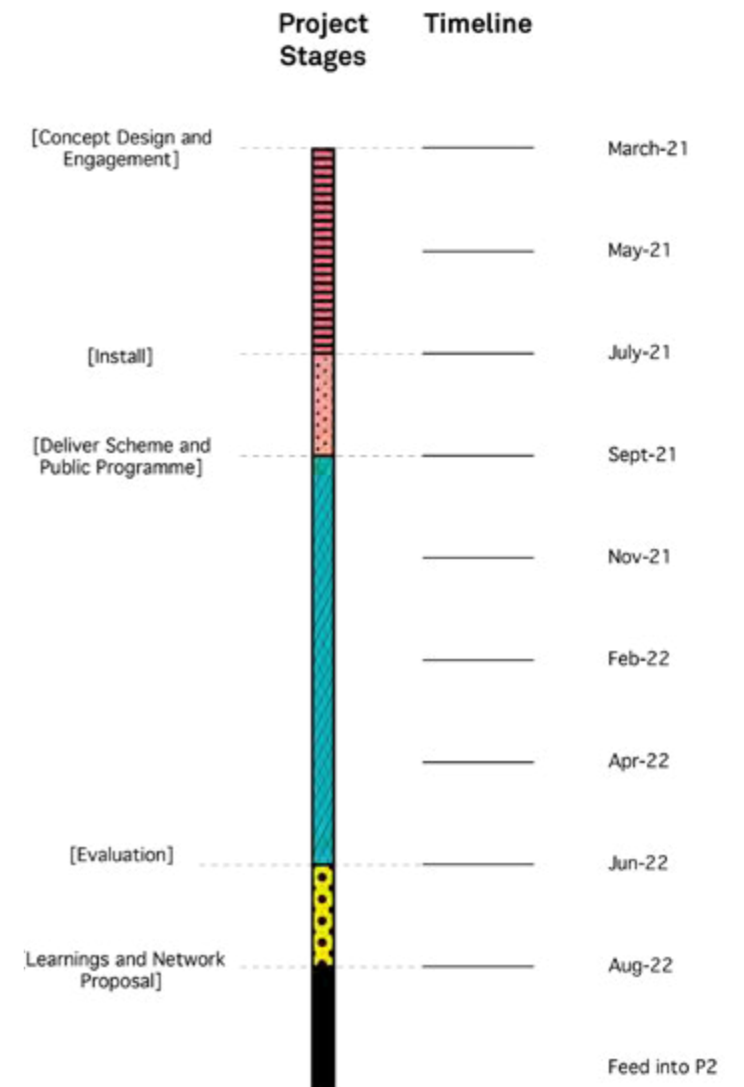
Concept & design	<ul style="list-style-type: none"> • Turf Project • First Floor • Cycle Storm
Engagement and programme	<ul style="list-style-type: none"> • Croydon Youth Zone • Let Me Play
Management & legacy	<ul style="list-style-type: none"> • Purley Way Active Transport Network (See Phase 2 Active Transport Network)

Funding Statement

Initial budget to be primarily allocated to site clearing activities (e.g. clearing, secure storage, and utilities) and facilitation (for suggested personnel see Management & Legacy above). Consequent budget to be used to kickstart activities, encouraging lo-fi materials, upcycling, and circular economy principles to reduce material costs.

Funding Opportunities

Biffa Recreation Fund:
www.biffa-award.org/recreation/
 Walking and Cycling Grants Funding:
www.groundwork.org.uk/apply-for-a-grant/london-grants/walking-cycling-grants/
 Sport England, Tackling Inequalities fund:
www.sportengland.org/how-we-can-help/our-funds/tackling-inequalities-fund



Project 2: Meanwhile use



Activity Detail

The second proposal on the John Lewis site is a meanwhile space for the former John Lewis building, which should encompass:

- The temporary take over of the former John Lewis Purley Way building to host R&D and creative activities with an initial focus on two areas:

-Active transport and public health: ; hosting organisations and community initiatives to support the promotion of alternative transport (pedestrian and cycling), investigate behavioural change through community engagement, and propose future strategy across the future masterplan site (mid-term and long-term demands). These activities will align with Lewis Park's outdoor activities aid in the outdoor activities contributing to overarching R&D findings

-Creative programming and employment; concept testing programmes and initiatives that can be integrated into the longer term, proposed Phase 2 use of the Gasholder site. Programmes and initiatives to be tested includes local workshop space creation and management and the provision of 'messy space' for local creatives.

- A managerial focus on developing potential longer-term uses with key stakeholders including the introduction of Medtech initiatives into the area.
- A continuous monitoring and evaluation process where findings are captured throughout the project's lifespan in order to develop proposals and understand the feasibility of other prospective vacant sites across the masterplan (both mid-term and long term).

Programme and Mangement Plan

Below summarises the proposal for delivery of meanwhile use within the former John Lewis building, including the key activities and time frames, proposal stakeholders and funding opportunities.

Concept & design	<ul style="list-style-type: none"> MAIA Group Turf Projects First Floor
Engagement and programme	<ul style="list-style-type: none"> MAIA Group Turf Projects
Management & legacy	<ul style="list-style-type: none"> Turf Projects Meanwhile Space

Funding Statement

Budget to be primarily allocated to facilitation of activities and simple fit outs with fairly paid and timed labour, incorporating lo-fi materials, upcycling, and circular economy principles.

Funding Opportunities

Arts Council - National Lottery Project Grants:

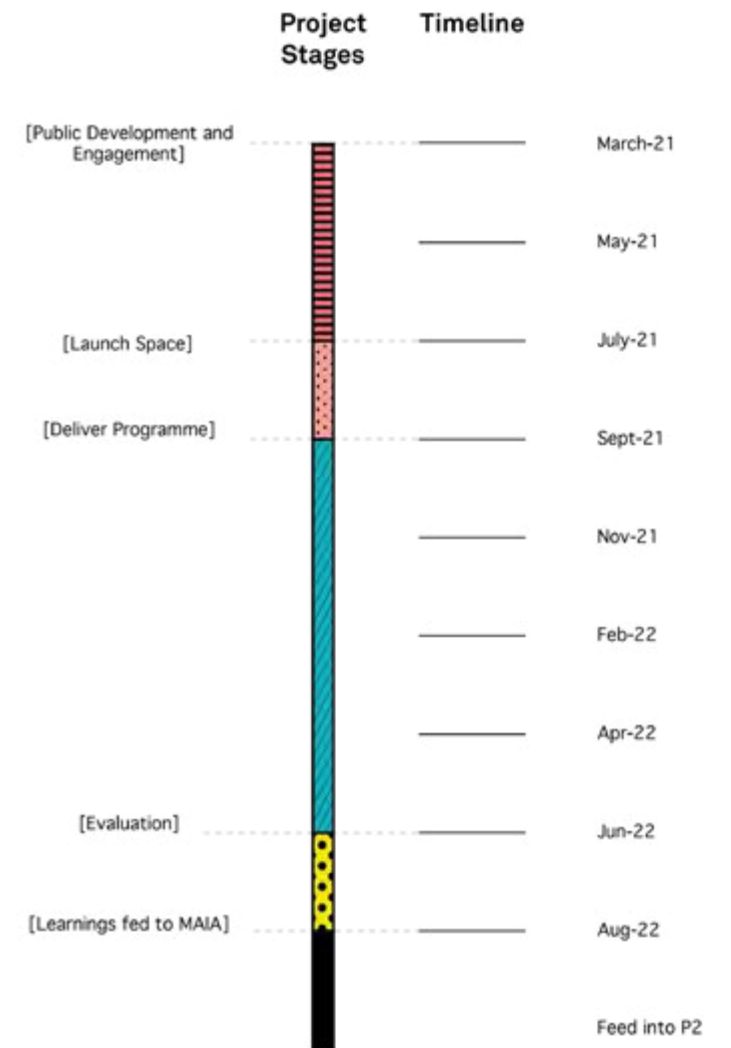
<https://www.artscouncil.org.uk/projectgrants>

Spacehive Crowd Fund:

<https://www.spacehive.com/>

City Bridge Trust, Connecting the Capital:

<https://www.citybridgetrust.org.uk/what-we-do/grant-making/>



<10k



£10k-£25k



£25k-£50k



£50k-£100k



<£100k

Project 3: Purley Oasis



Activity Detail

The third proposal on the John Lewis site is Purley Oasis, a community-led greening initiative that visually and programmatically connects the site to Waddon Ponds.

- Co-designed 'community greening stations' that are placed throughout the service yard and the entrance/mouth of Waddon Ponds. These should highlight and promote green and blue infrastructure within the local centre by providing a platform for people to conduct local citizen science activities, engage in greening/growing, and focus collective upcycling efforts.
- A site, or multiple sites, that allows the public to plant and grow together. Using a range of materials and resources that test circular economy principles and integrate with the green space and industrial/commercial land use.
- A physical and digital citizen science toolkit with each site to encourage local engagement, the exploration of local heritage landscapes, the relevance of green and blue infrastructure and future possibilities for green/ blue projects from the bottom-up.

- A framework for the co-creation of various Purley Oasis sites within the Purley Way masterplan. The up-scaling of the Purley Way oases format should allow for community-initiated proposals on green and blue infrastructure in the Purley Way and aid in the local identification of important pedestrian/active transport routes in the area.

Programme and Mangement Plan

Below summarises the proposal for delivery of meanwhile use within the former John Lewis building, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities.

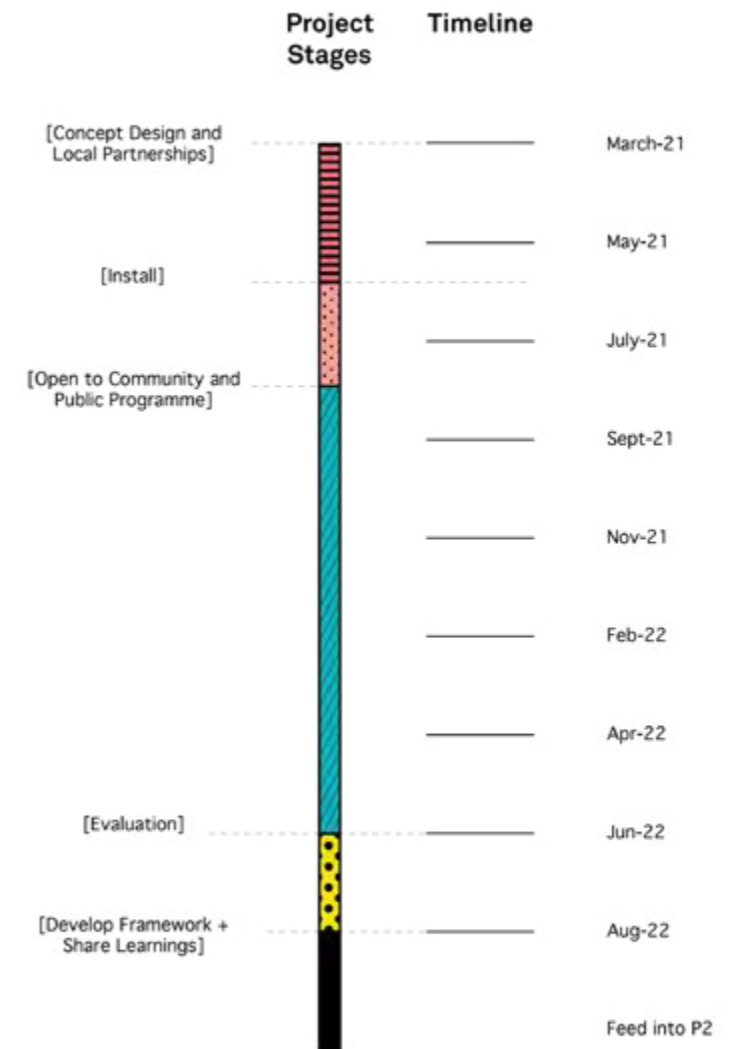
Concept & design	<ul style="list-style-type: none"> • Public works • R-Urban • Migrants Bureau • UrbanGrowth
Engagement and programme	<ul style="list-style-type: none"> • MOSS • Friends of the Earth Croydon • Groundwork London - Croydon Base
Management & legacy	<ul style="list-style-type: none"> • Turf Projects • Meanwhile Space • Edible Bus Stop • Groundwork London - Croydon Base

Funding Statement

Initial budget to be primarily allocated to design and production of units within the park and then consequently to their maintenance, management, and evaluation, aimed at encouraging a 'community governance approach'.

Funding Opportunities:

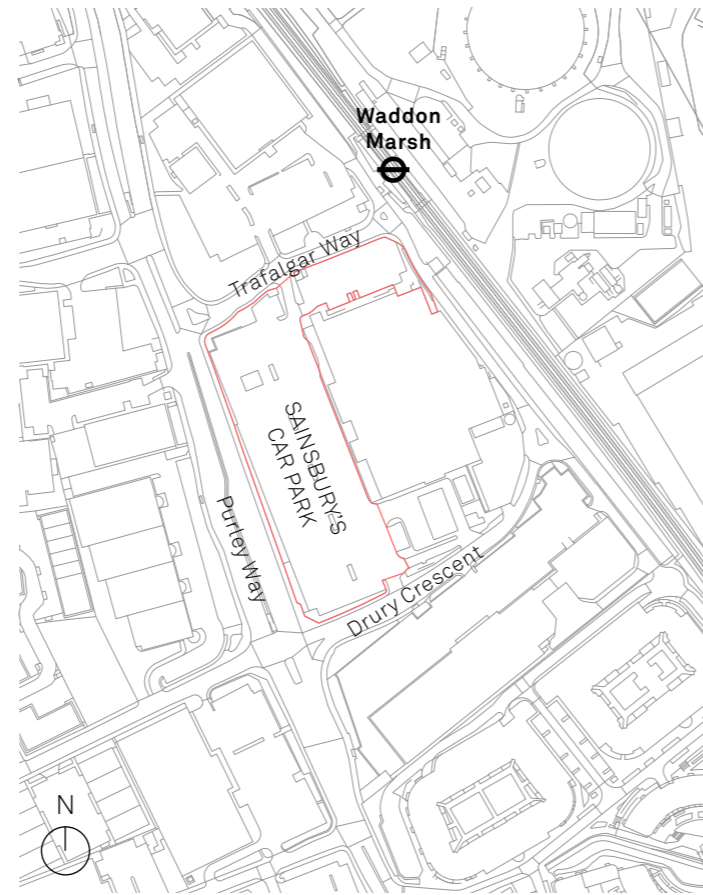
Biffa Award Rebuilding Biodiversity fund:
<https://www.biffa-award.org/rebuilding-biodiversity/>
 Small Grant Scheme:
<https://www.citybridgetrust.org.uk/what-we-do/grant-making/what-we-fund/>
 Veolia Environmental Trust:
<https://www.veoliatrust.org/>
 Spacehive Crowd Fund:
<https://www.spacehive.com/>



Site Proposal - Sainsbury's Car Park, Trafalgar Way

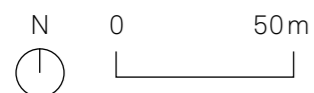
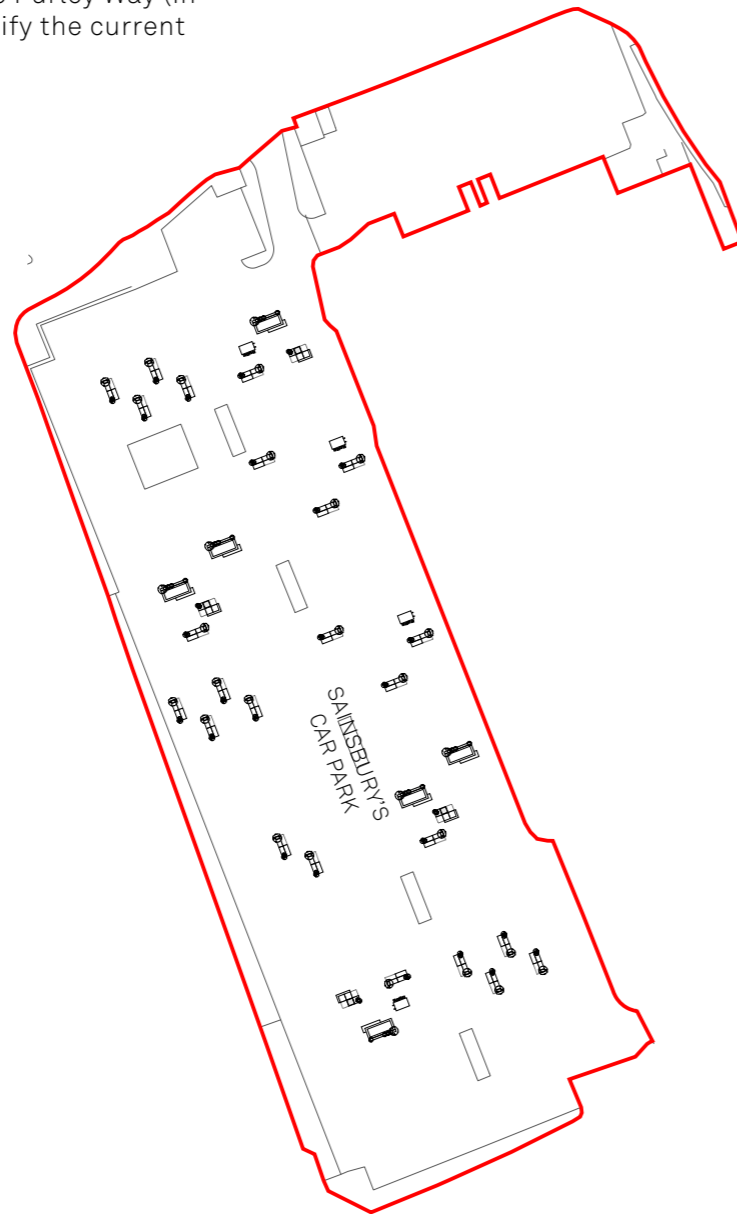
The Sainsbury's car park, off of Trafalgar Way, Purley Way, presents an opportunity to promote the alternative use of public space through local collaboration. By enabling a programme of creative events, employment, and upskilling through interim public realm interventions the aim of a precursor on this site should be to prelude an increased diversity of uses within the area.

The site provides an opportunity to test an approach that is centred around local design and community programming. This should in turn work toward a recognisable and flexible intervention that can be found across the masterplan area.



Parklets and recreation: Proposal & precedents

'Parklets and Recreation' combines the typology of market stalls and upcycled parklets in order to utilise the public realm in a strategic site for future development. The bringing together of local commerce and sustainable public realm design aims to pave the way for increases in alternative employment spaces in the area, create an argument for further pedestrian spaces in the Purley Way (in lieu of vehicular spaces) and diversify the current public space offering.



Croydon, UK

1. A series of parklets tested in Croydon in response to the lack of seating and planting in the public realm.



PKMN, UK

2. IKEA's Bekvam stool hacked to create a raised platform for storage, hosted by SPACE 10.



Casa Encendida, Madrid

3. A zero waste display system using scaffolding and canvas to display.



Hackney Wick, UK

4. A transformation of a motorway undercroft into an arts venue and new public space.



Folkestone Triennial 2017, UK

5. A seating structure to host public gatherings between public space.



Basurama, Peru

6. Transformation of the space underneath and around the elevated railway into a brightly colored amusement,



Activity Detail

Parklets and Recreation Phase 1 provides an experimental site for public space, employment and creative programme. Activities should encompass:

- A configuration of upcycled parklets situated in the Sainsbury’s car park designed in collaboration with local creatives and businesses such as Solo Wood Recycling on Factory Lane with the intention of hosting events, market stalls and other community focused opportunities through a year of creative programming. The offering of these collaborations will be distinctly local, not in competition with the surrounding site.
- Promoting alternative local employment and upskilling opportunities through public realm interventions that platform current local organisations whilst testing and promoting future employment uses within a central masterplan area.
- Developing a typology for parklets/spaces that responds to the identity of Purley Way with a replicable ‘palette’ and roaming set of features dispersed across the masterplan site as the project evolves. Findings to be fed into a framework for continued small scale public realm interventions and future Public Realm proposal for specific sites within the Masterplan.

Programme and Mangement Plan

Below summarises the proposal for the delivery of Parklets and Recreation, Phase 1, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities.

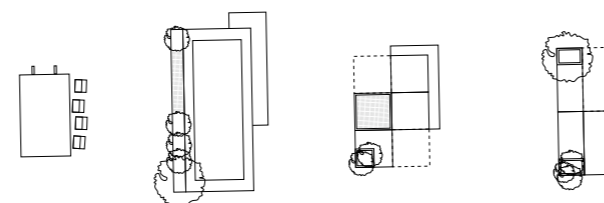
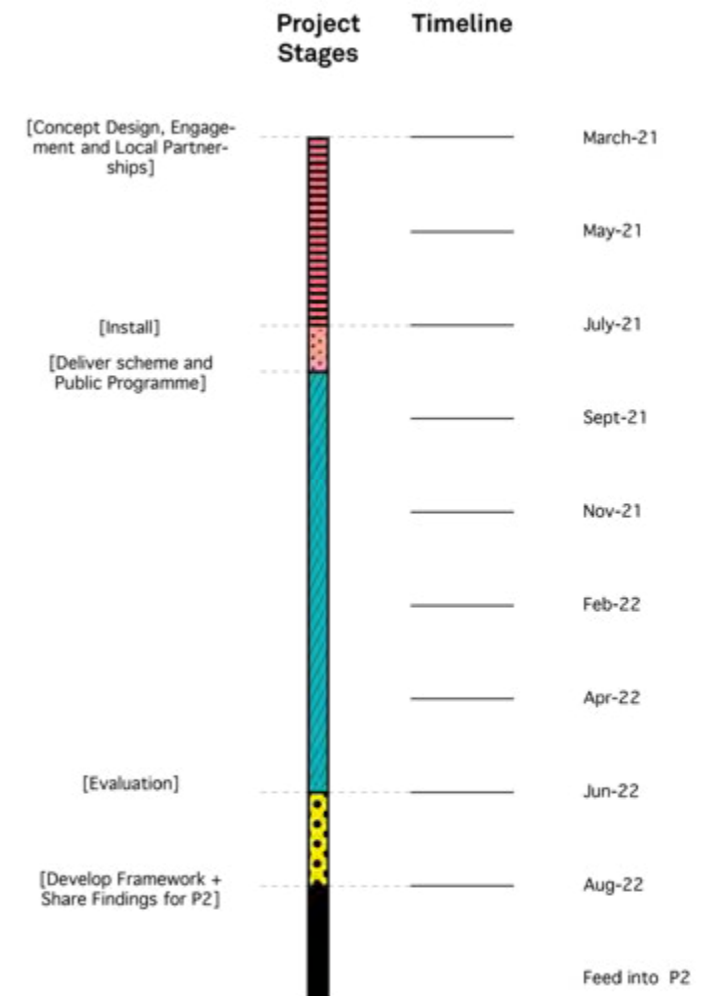
Concept & design	<ul style="list-style-type: none"> • MUF Art/Architecture • Migrants Bureau • Turf Projects
Engagement and programme	<ul style="list-style-type: none"> • Migrants Bureau • Turf Projects • Croydon Council NEET Team • Let Me Play
Management & legacy	<ul style="list-style-type: none"> • Groundwork London - Croydon Base

Funding Statement

Initial budget to be primarily allocated to design and development of the parklets, encouraging lo-fi materials, upcycling, and circular economy principles to reduce material costs. Individual parklet costing should model lower-cost models such as the London Design Festival Parklet competition and community-led parklet initiatives.

Funding Opportunities

City Bridge Trust, Small Grant Scheme: <https://www.citybridgetrust.org.uk/what-we-do/grant-making/what-we-fund/>
 City Bridge Trust, Connecting the Capital: <https://www.citybridgetrust.org.uk/what-we-do/grant-making/>
 Arts Council, National Lottery Project Grants: <https://www.artscouncil.org.uk/projectgrants>

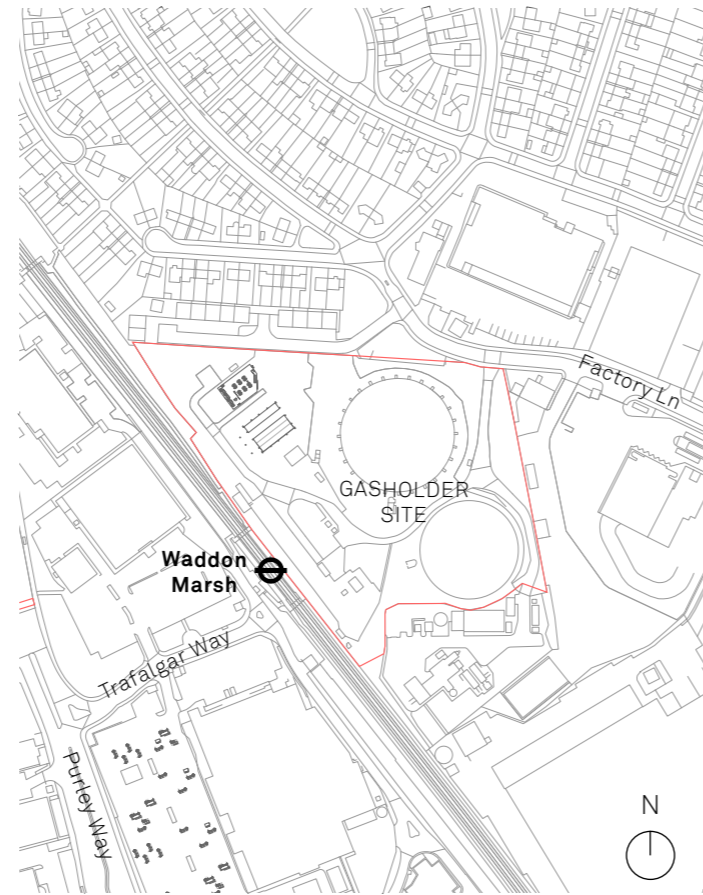


Site Proposal - Gasholders, Enterprise Close

The gasholder site presents an opportunity for long-term industrial intensification as referenced in the masterplan. The site also presents an opportunity to combine creative opportunity and industrial output as is done, somewhat organically, in many cities across the world.

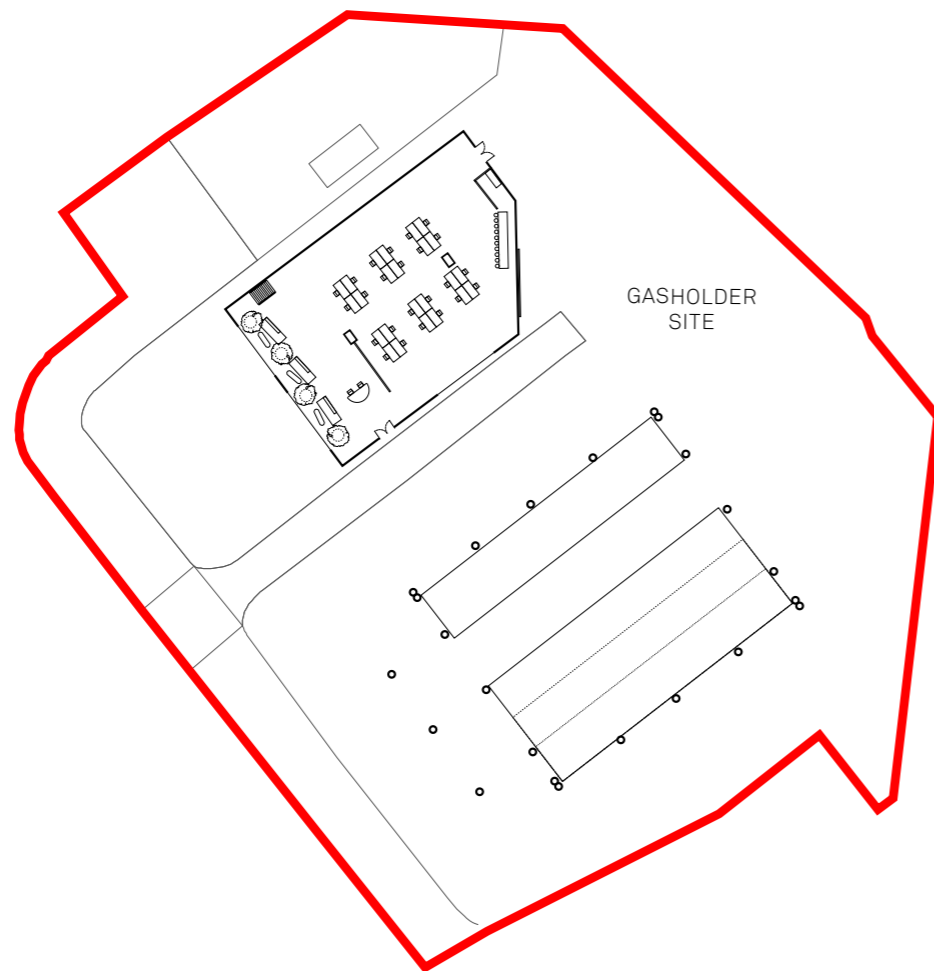
The site has been identified to prototype and test an artist-centred and led hospitality space, first proposed in Urban Splash's Port Loop development in Birmingham, UK, by MAIA Group. MAIA's focus is to position the operation and management of arts sector hospitality in Birmingham with the local creatives who drive the industry and in doing so, combining the creative 'messiness' of cultural production with the managerial logic and financial incentives of cultural consumption. In the Purley Way, this precursor should embody those values whilst also taking on an explicit SIL and co-location focus.

The site provides an opportunity to test how creative employment and skills programmes can better operate within, compliment, and grow SIL functions, promoting a harmonious and mutually beneficial relationship between the local creative sector and industrial sector.



MAIA Artist Hotel: Proposal & precedents

A space in which artists can redistribute the income from the creative/events sector in order to support grassroots/local initiatives, with a particular emphasis on testing and proposing the co-location of industrial and creative uses and encouraging local employment and skills.



MAIA Group, Birmingham, UK

1. An 'Art House' in new residential development in Birmingham to support sustainable creativity in cities.



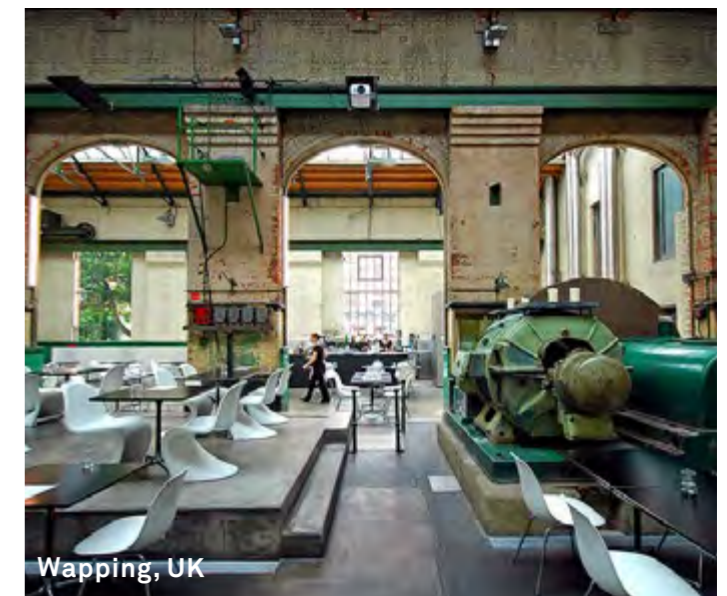
Lee Seung-hyuck, Mullae, Korea

2. A Guesthouse founded by artist in artist/light industrial neighbourhood of Mullae, Korea.



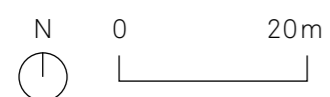
Lewisham, UK

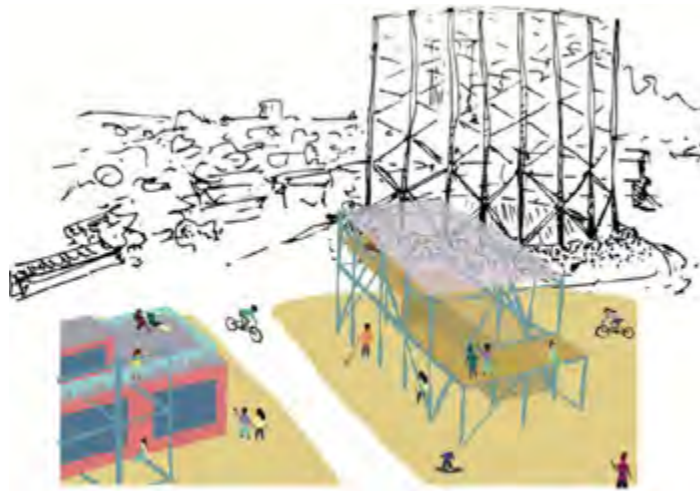
3. A new-build Youth & Community Venue that provides a range of support services for the young people of Lewisham.



Wapping, UK

4. A small private gallery and restaurant housed in an old hydraulic power station in Wapping.





Activity Detail

The MAIA Group’s Artist Hotel, a hospitality space proposed in the SIL at Enterprise Close and run by artists, seeks to support the local creative community by retaining value generated through hospitality to re-invest in locally focused, community initiatives. The proposition should encompass:

- An artist-led hospitality space within the gas-holders site that connects the local creative community with the local industrial sector, demonstrating an example of positive co-habitation within SIL.
- A programme for local creatives and grass-roots organisations that focuses on skills and employment, building on initial programming testing in Lewis Park including ‘messy space’ for creatives, workshop space and public programme targeting schools and youth organisations.
- Various means of testing co-location potential that precludes significant industrial intensification within the site, whilst exploring the potential for future uses.
- Providing and testing a vision for how artists programmes can exist in tandem with and benefit local industry and industrial sites, seeking influence from best practice across the world in order to generate local impact.
- A summary and findings report with the intention of evidencing and feasibility-testing a permanent site and providing detail on alternative opportunities within SIL.

Programme and Mangement Plan

Below summarises the proposal for the delivery of the MAIA Artist Hotel proposal, Phase 1, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities.

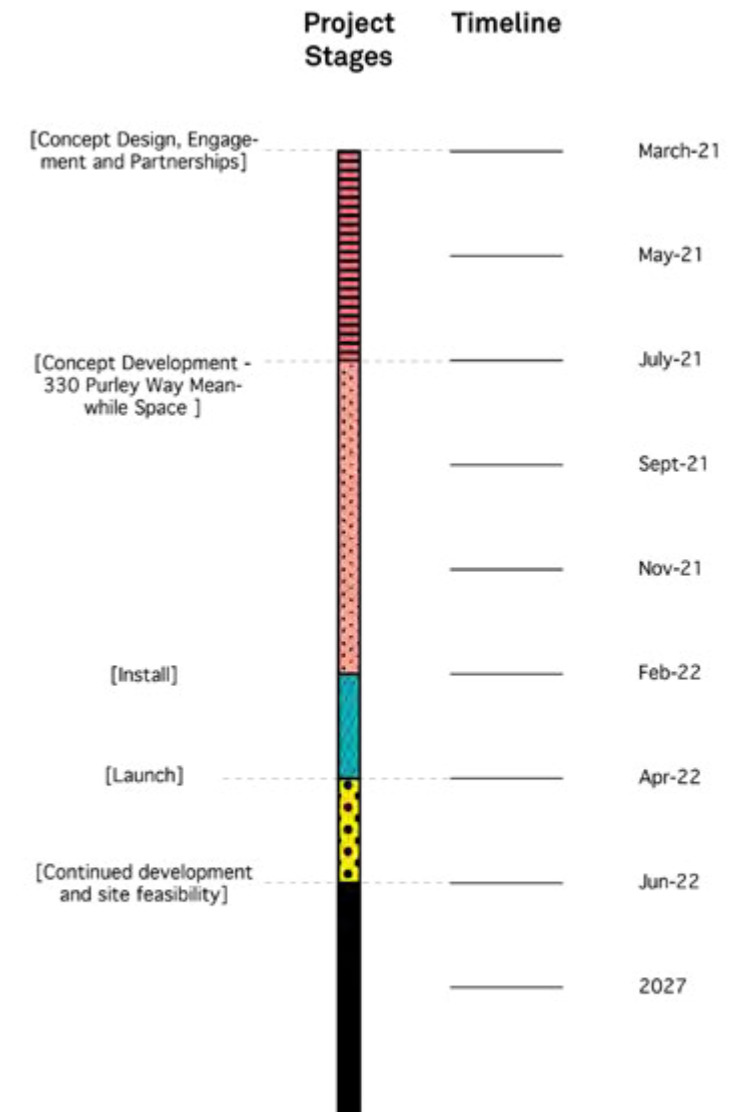
Concept & design	<ul style="list-style-type: none"> • MAIA Group • Migrants Bureau • Turf Projects • First Floor
Engagement and programme	<ul style="list-style-type: none"> • MAIA Group • Let Me Play • Education Development Trust
Management & legacy	<ul style="list-style-type: none"> • MAIA Group and/or equivalent local partnership

Funding Statement

Budget to be primarily allocated to the design and delivery of the space, its maintenance and management, and the facilitation of site-specific activities.

Funding Opportunities

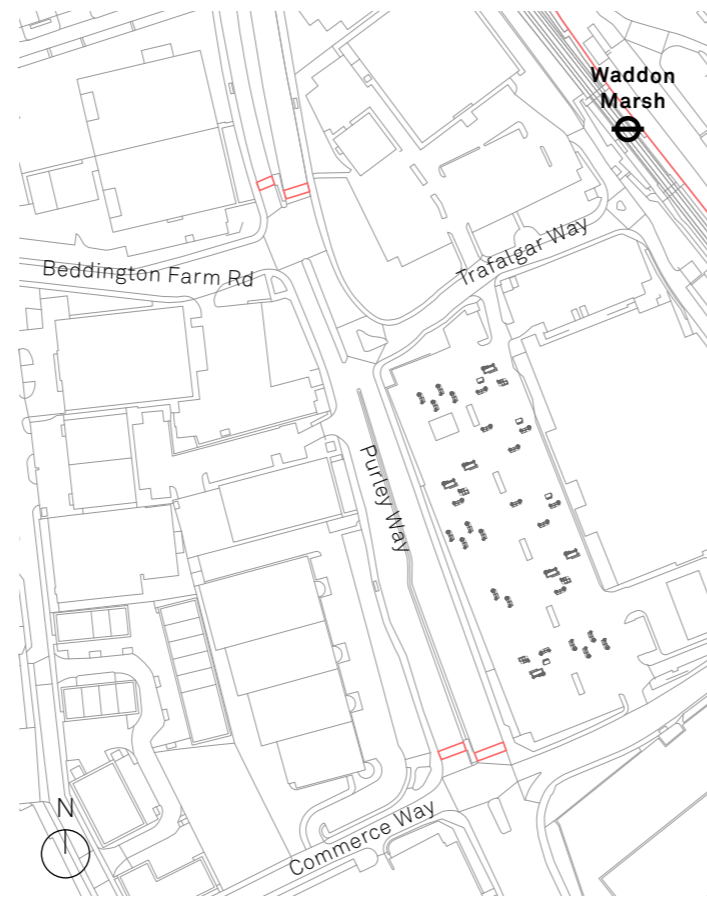
Bridge Trust, Small Grant Scheme: <https://www.citybridgetrust.org.uk/what-we-do/grant-making/what-we-fund/>
 City Bridge Trust, Connecting the Capital: <https://www.citybridgetrust.org.uk/what-we-do/grant-making/>
 Arts Council, National Lottery Project Grants: <https://www.artscouncil.org.uk/projectgrants>



Site Proposal- Commerce Way/
Drury Crescent, Beddington
Farm Road/Purley Way A23

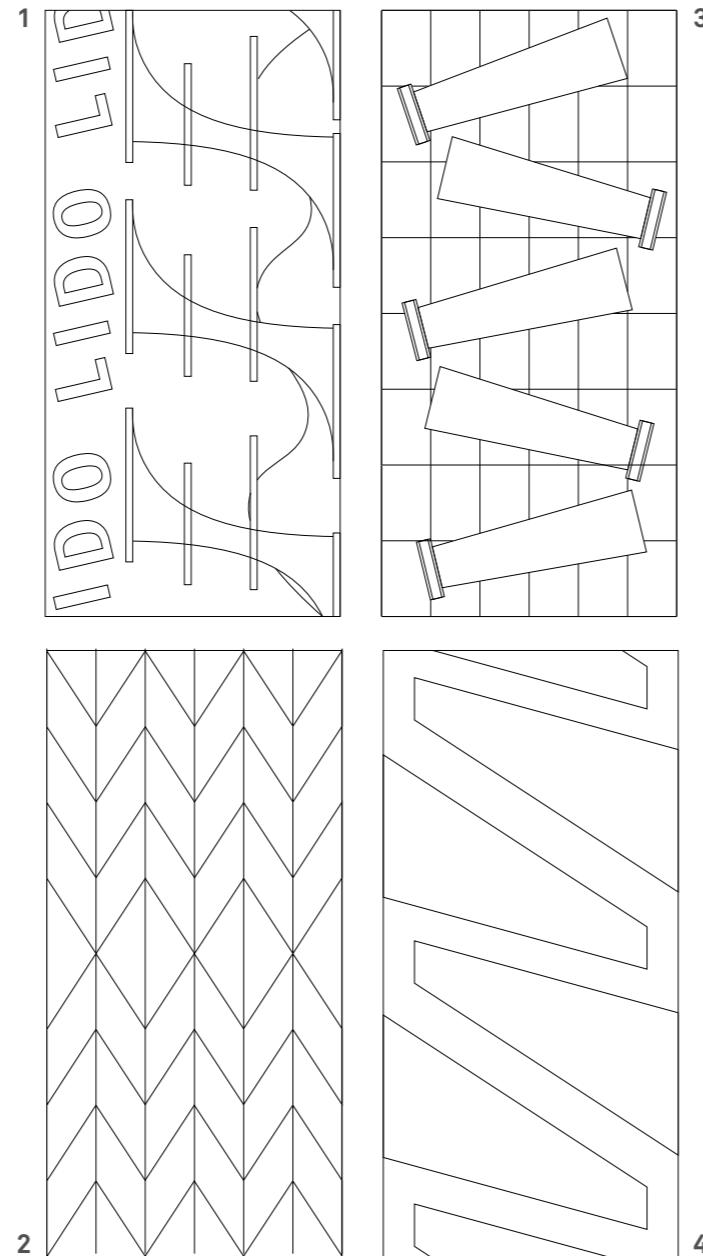
In order to bring together the Phase 1 precursor projects in Waddon Marsh through a unique and engagement graphic identity, sites have been identified in order to celebrate and build upon the local character of Purley Way, utilising previous feedback throughout the masterplan development programme (2020) and encouraging further stakeholder engagement.

Intersections between Commerce Way/Dury Crescent and Purley Way A23 and Bedding Farm Road have been identified as initial sites to design and deliver ground art that captures the character of the area, celebrating local visual markers, and encouraging widespread engagement in the future character and identity of the area. In doing so, continuing the use a replicable 'palette' for Purley Way Precursor Projects as arrived at through a process of continued engagement.



Purley Wayfinders Crossings: Proposal & precedents

A ground art installation that celebrates local heritage whilst encouraging participation in the future identity and character of the local centre and masterplan.



- 1. Purley Way Lido
- 2. Wandle Park Nature
- 3. Ikea Towers
- 4. Croydon Airport



Adam Nathaniel Furman, Croydon, UK

1. Large ground artwork in Croydon that uses patterns and shapes along every-day routes.



Studio Walala, Southwark, UK

2. A crossing in Southwark as part of the London Design Festival 2017 that reimagines everyday experiences.



Addis Ababa, Ethiopia

3. A multi-coloured ground artwork designed to improve pedestrian safety across the LeGare intersection in Addis Ababa.



Eley Kishimoto, Brixton, UK

4. A ground artwork pieced designed to replace the zebras outside a busy junction in Brixton.



Activity Detail

The Purley Wayfinders Crossings promote the character and identity of Purley Way, responding to heritage sites and visual markers and working with local creative organisations and stakeholders in order to explore the future character of the area. The project should encompass:

- A co-designed ground art installation exercise that works collaboratively with local creative organisations in order to promote and explore local character in Waddon Marsh and suggestive of the wider masterplan site.
- A stakeholder engagement programme targeting community organisations, schools and others in order to continue the feedback received on local character and identity and continue to test and develop the typology for Purley Way Projects.
- A programme that engages with current businesses and business forums operating in the Purley Way area to contribute to the future identity. This process should also seek to incubate future businesses and support early conception in the area through a lateral co-design process.

Programme and Mangement Plan

Below summarises the proposal for the delivery of the Purley Way Finders Crossing, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities.

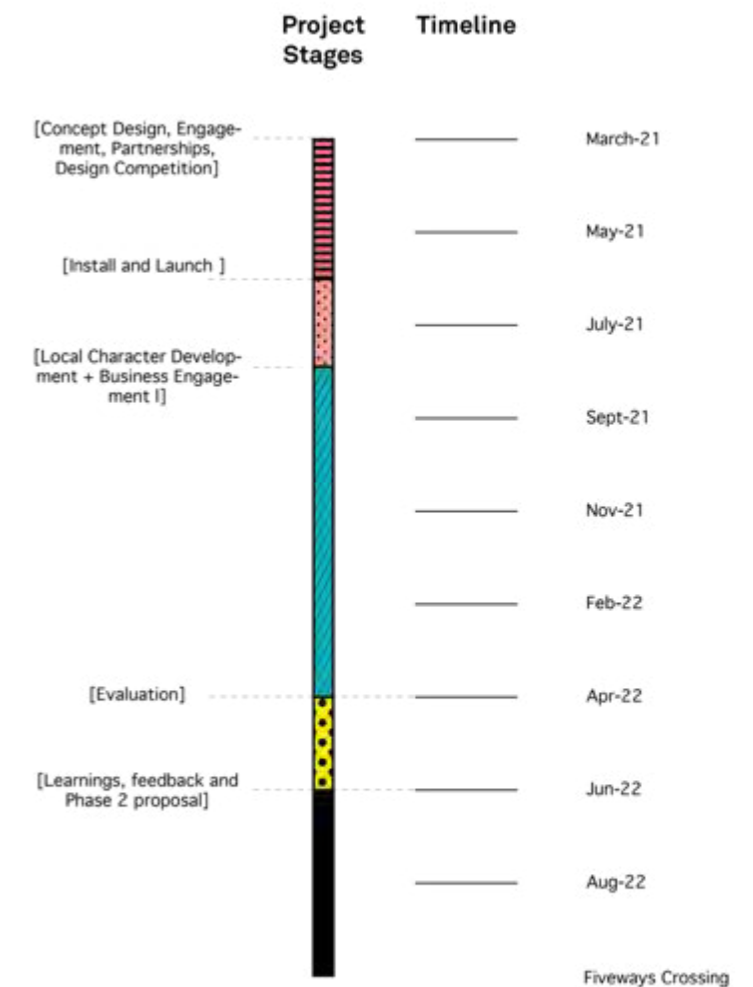
Concept & design	<ul style="list-style-type: none"> • Turf Projects • 48four • Migrants Bureau • The Decorators • Adam Nathaniel Furman • Adam Halliday
Engagement and programme	<ul style="list-style-type: none"> • Croydon Youth Zone • Let Me Play • Education Development Trust (Schools Engagement)
Management & legacy	<ul style="list-style-type: none"> • Purley Way Forum

Funding Statement

Budget to be primarily allocated to design and development of the crossings with significant budgeting towards facilitation of business engagement processes and activities that foster local partnerships throughout the design and development process.

Funding Opportunities

Arts Council, National Lottery Project Grants: <https://www.artscouncil.org.uk/projectgrants>
 Bedding Community Fund: <https://www.viridor.co.uk/energy/energy-recovery-facilities/beddington-erf/community/>
 Spacehive: <https://www.spacehive.com/>
 City Bridge Trust, Small Grant Scheme: <https://www.citybridgetrust.org.uk/what-we-do/grant-making/what-we-fund/>



Site Proposal -
Purleywayfinders.com

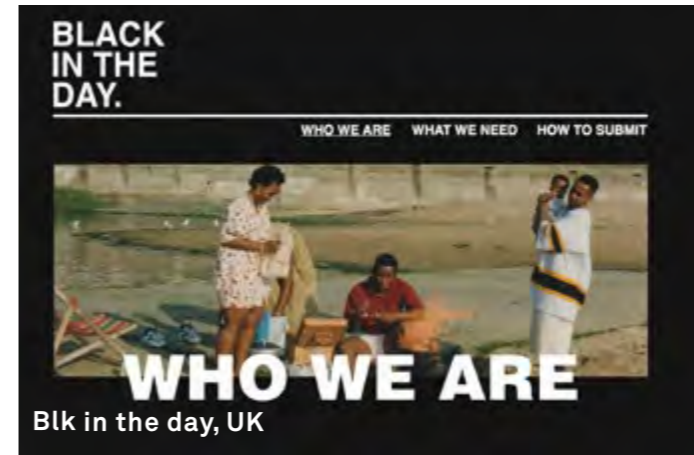
The Purley Wayfinders website was developed to support continued engagement with the proposals regarding the future of Purley Way, encouraging users to reflect and share their memories of the area in order to contribute to the vision of the future and promote the character and identity of the area in all future proposals.

There is an opportunity to continue the development of the Purleywayfinders.com platform, maintaining engagement in the past present and future of the area and contributing to the social infrastructure in order to support the existing and future community.



Purleywayfinders.com:
Proposal & precedents

The website is to become a useful learning resource, tool for resourcing community focused initiatives and continuous local engagement platform.



1. A submission based archive documenting the lives and experiences of Black people in the UK.



TACO!, Thamesmead, UK

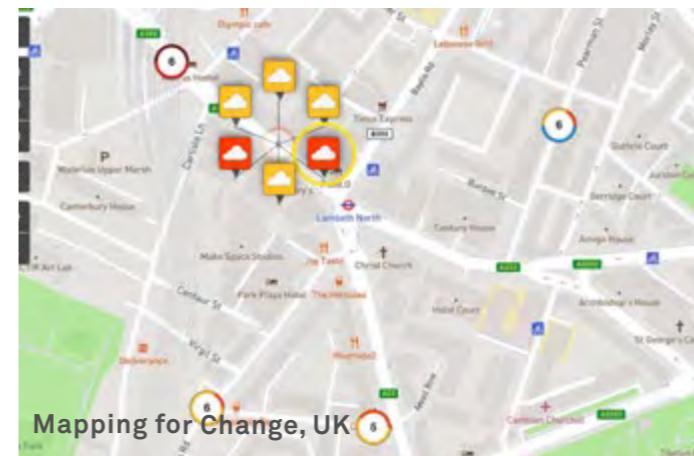
2. A radio station based in Thamesmead, run by the artist space TACO! as a platform for community-produced culture.



3. An online multimedia, multidisciplinary journal exploring the social and cultural interplay of black and European cultures.



4. An online directory of Lambeth's vibrant voluntary, community and social enterprise sector.



Mapping for Change, UK

5. A participatory mapping services to community groups, business organisations & government bodies.



Activity Detail

The Purley Wayfinders website is to be upheld as a future learning resource and repository for local community and social infrastructure, listing organisations and individuals who work in the area and support existing communities. The platform would encompass:

- Providing an active learning resource for local schools and education providers to encourage developing and understanding of, and contributing to, development in the local area including, mapping exercises, schools project pack (taking influence from RESOLVE and Harris Academy Work Experience Project) and integration with local character development (crossings and wayfindings contributions through the platform).
- A list of organisations and individuals that work to support communities in the area in order to promote local social infrastructure, share resources with interested parties and enable collaboration on future projects, including but not limited to precursor projects within Waddon Marsh and wider masterplan area.

Programme and Mangement Plan

Below summarises the proposal for the delivery of the Purleywayfinders.com, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities.

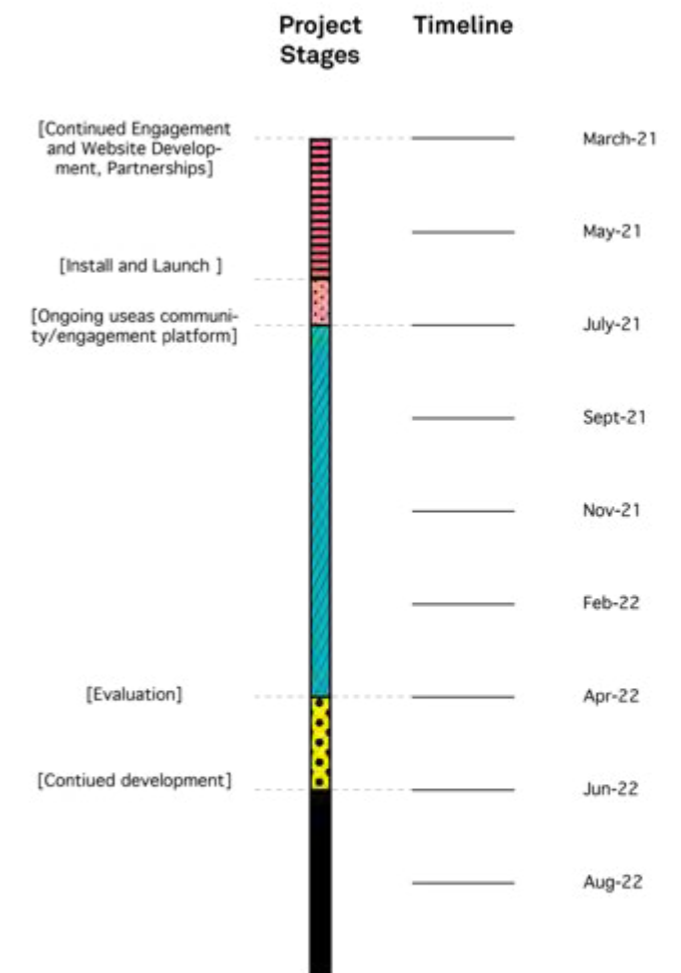
Concept & design	<ul style="list-style-type: none"> • RESOLVE Collective
Engagement and programme	<ul style="list-style-type: none"> • Croydon Youth Zone • Let Me Play • Education Development Trust (Schools Engagement) • Go2Games
Management & legacy	<ul style="list-style-type: none"> • Education Development Trust • Purley Panel

Funding Statement

Budget to be primarily allocated to development of online resource for schools and ongoing maintenance and development of the site. Appropriate budget to be retained for comms and awareness work around the website and schools resource.

Funding Opportunities

Spacehive:
<https://www.spacehive.com/>

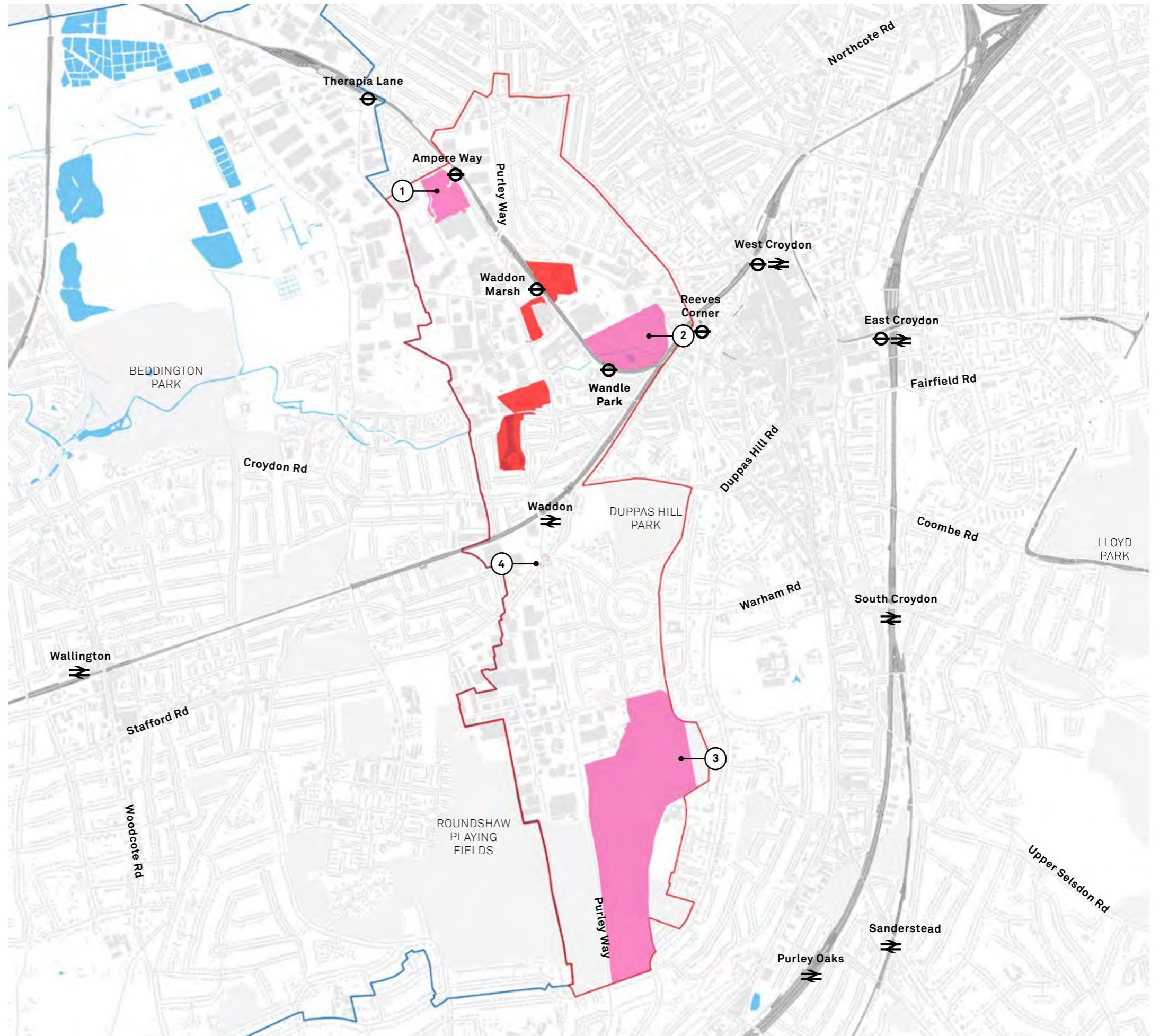


PHASE 2: INTRODUCTION AND LOCATION

Phase 2 of the Purley Way Precursor Projects focuses on the evolution of the Phase 1 projects, distributing key projects across the masterplan site, in the remaining local centres.

They will aim to sustain the impact of phase one projects, building on frameworks established in order to create sustainable projects that coincide with increased activity in key masterplan areas, supporting necessary behaviour changes and or supporting the exploration of increase demand on the area.

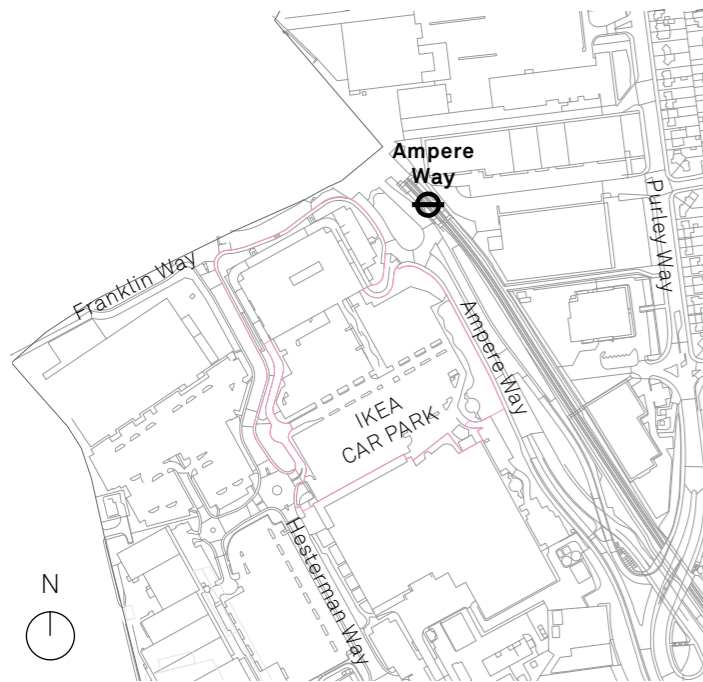
Phase 2 precursor projects have a particular focus on afterlife and integration with future masterplan areas, indicating the thematic proposals for current areas and long-term projects.



- KEY
- 1. Parklets and Recreation - Valley Park
 - 2. Purley Oasis - Wandle Park
 - 3. Purley Oasis - Purley Way Playing Fields
 - 4. Purley Wayfinders Crossings - Five Ways
 - Precursor projects - Phase 2
 - Precursor projects - Phase 1
 - Borough boundary
 - Purley Way Masterplan boundary



Parklets and Recreation-Valley Park: Proposal & precedents

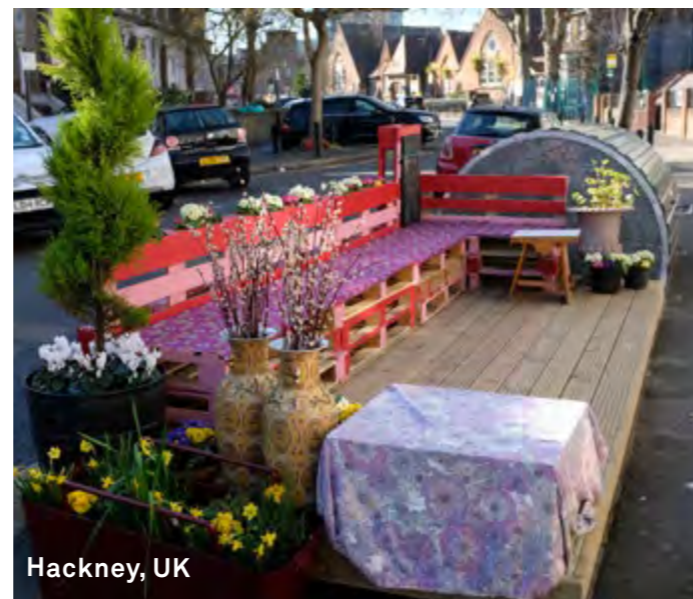


Valley Park

Phase 2 of Parklets and Recreation should encompass the specific application of Phase 1 principles in Valley Park Local Centre. Working specifically within the IKEA Car Park, using upcycled furniture in collaboration with SPACE 10 and local creative organisations to test prospective public realm improvement around Ampere Way, enhancing North-South pedestrian links through alternative public space. To coincide with a framework from Phase 1 that allows for further parklets across the area, detailing design palette, and engagement partnership approach.



1. A community customisation programme of IKEA furniture.



2. Hackney Council supporting residents to use kerbside spaces for community parklets on residential streets.

Programme and Management Plan

Below summarises the proposal for the delivery of the Parklets and Recreation Phase 2, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities. It includes a proposal for public realm integration in Valley Park.

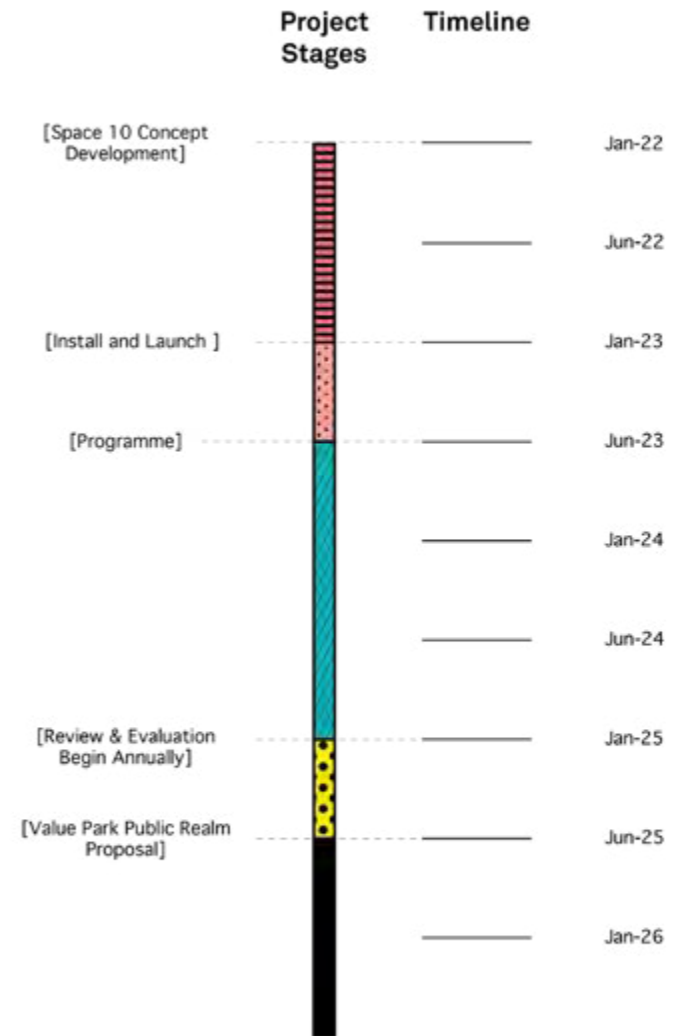
Concept & design	<ul style="list-style-type: none"> SPACE 10 Turf Projects First Floor Liz Knuckles/Born N Bred White Hut Studios 48Four Studios
Engagement and programme	<ul style="list-style-type: none"> Groundwork London - Croydon Base
Management & legacy	<ul style="list-style-type: none"> SPACE 10 x IKEA

Funding Statement

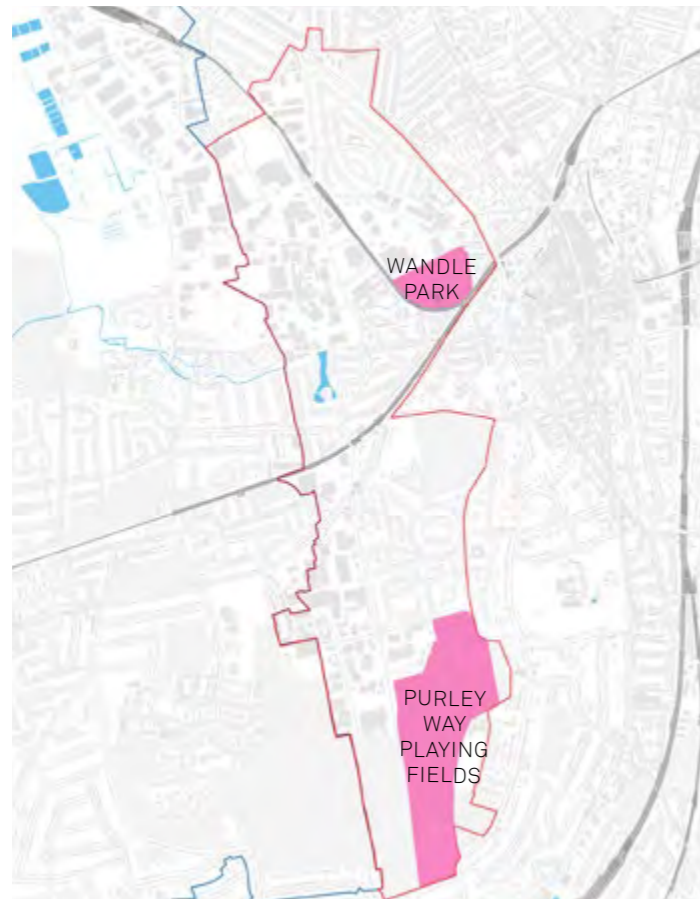
Budget to be primarily allocated to facilitation of local creative organisations and programming on the IKEA site through the parklets, in addition to appropriate budget allocated to development of ultra-low-cost, upcycled parklet models with SPACE10. Significant budget to be allocated to development of a framework that enables area-wide parklet co-creation.

Funding Opportunities

IKEA Space 10 Partnership
 City Bridge Trust, Connecting the Capital:
<https://www.citybridgetrust.org.uk/what-we-do/grant-making/>
 Arts Council, National Lottery Project Grants:
<https://www.artscouncil.org.uk/projectgrants>

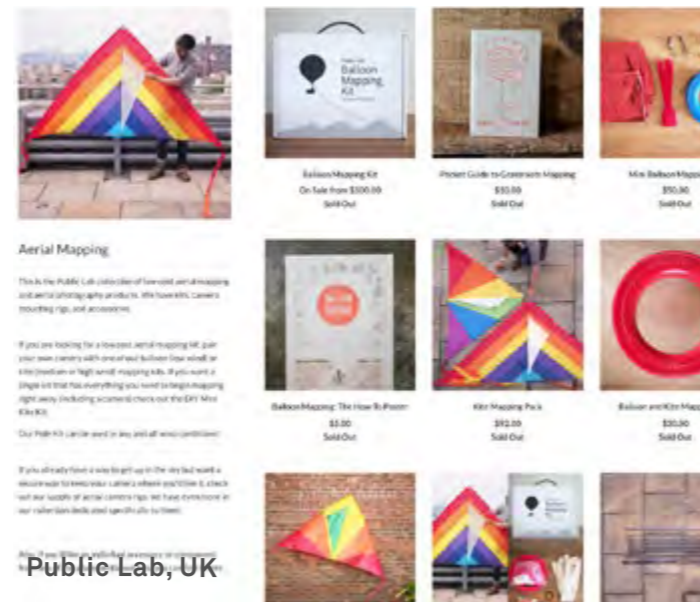


Purley Oases:
Proposal & precedents



Wandle Park, Purley Way Playing Fields
Phase 2 of Purley Oasis (titled plurally Purley Oases) should encompass the expansion of the Purley Oasis typology tested 330 Purley Way/Waddon Ponds, utilising green spaces across the masterplan area to explore a network of green and blue infrastructure.

Phase 2 should encourage civic participation in Purley Way green spaces, promoting new pedestrian routes and celebrating historic leisure sites. Additionally, Phase 2 should expand the toolkit, building a framework for continuous activities within green and blue routes and enabling exploration into future enhancements e.g. de-culverting the river Wandle.



1. An initiative that helps to support community projects through sending physical kits.



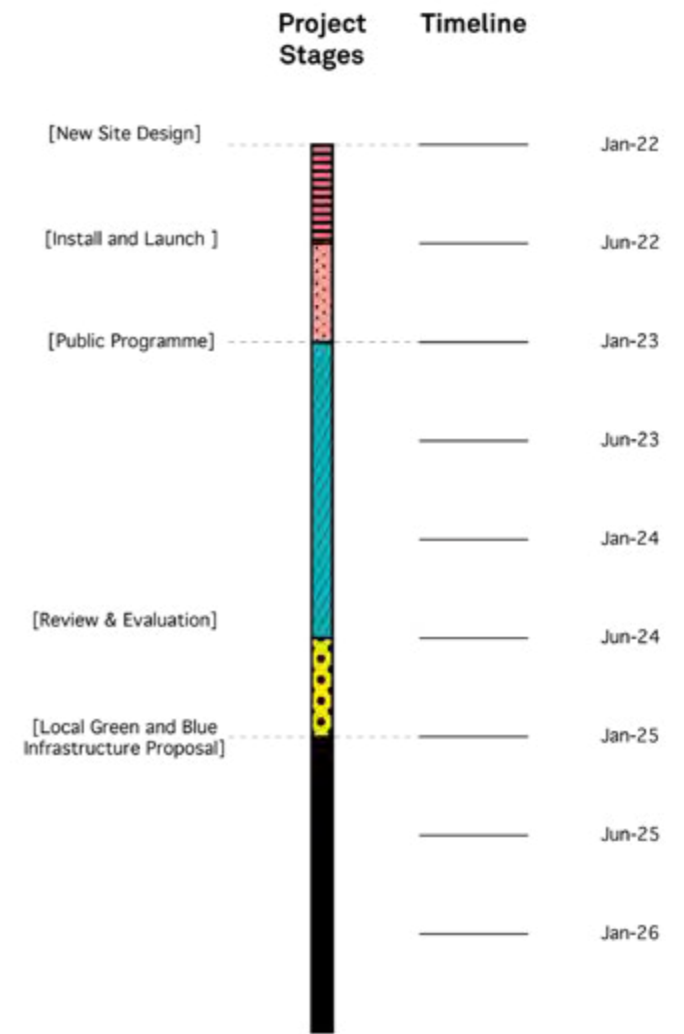
2. Newly commissioned billboard posters at Wandle Park's community garden and pond, UK (Turf Project)

Programme and Management Plan
Below summarises the proposal for the delivery of Purley Oases Phase 2, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities.

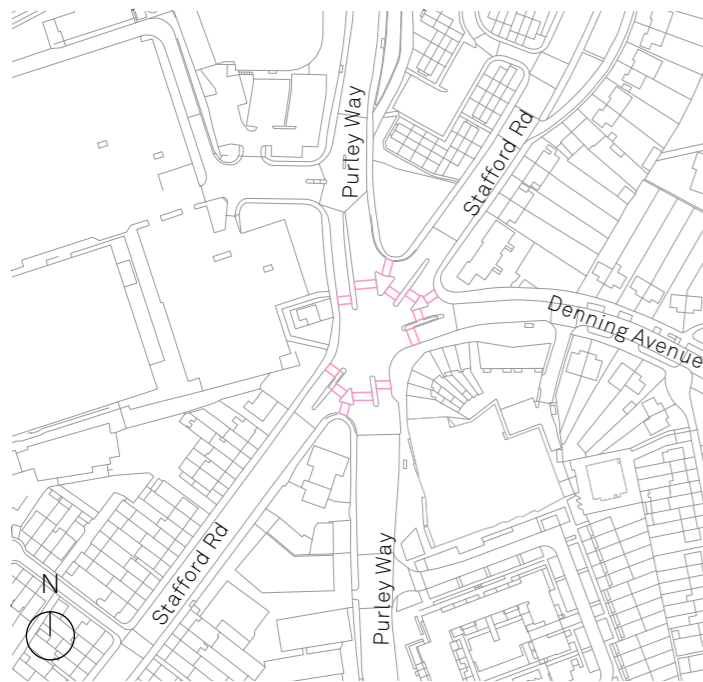
Concept & design	<ul style="list-style-type: none"> • Collaborators on previous design: • Public works • R-Urban • MUF Art/Architecture • Migrants Bureau • UrbanGrowth
Engagement and programme	<ul style="list-style-type: none"> • Friends of the Earth Croydon • Groundwork London - Croydon Base • Local organisations identified for new sites
Management & legacy	<ul style="list-style-type: none"> • Groundwork London - Croydon Base • Purley Way Active Transport Network (see precursor project 4)

Funding Statement
Budget to be primarily allocated to development of toolkit and framework for continuous community-led and citizen science activities across the Purley Way, enhancing and celebrating green and blue infrastructure.

Funding Opportunities
Biffa Award Rebuilding Biodiversity fund: <https://www.biffa-award.org/rebuilding-biodiversity/>
Veolia Environmental Trust: <https://www.veoliatrust.org/>
Bedding Community Fund: <https://www.viridor.co.uk/energy/energy-recovery-facilities/beddington-erf/community/>



Purley Wayfinders Crossings - Fiveways: Proposal & precedents



Fiveways

Phase 2 of the Purley Wayfinders Crossing should expand upon the typology developed for ground art crossings in Waddon Marsh and deliver a scheme specific to Fiveways. Building upon stakeholder feedback in order to provide pedestrian support whilst exploring the character and identity of Fiveways local centre.

Phase 2 should encourage broad stakeholder engagement with concept, including schools and community groups.

Additionally, Phase 2 should use ground art as an opportunity to support integration for future businesses in the area, seeking buy-in from current businesses and encouraging formation of new business forum network/expansion of current network e.g. PWF.

This phase is dependent on continuing to work with TfL whilst they carry out necessary traffic modelling in Five Ways. The outcome of these endeavours will critically inform this phase, which will adapt accordingly.

Programme and Mangement Plan

Below summarises the proposal for the delivery of Purley Wayfinders Crossing Phase 2, delivered in Fiveway, including the key activities and time frames, proposed and/or similar stakeholder groups and funding opportunities.

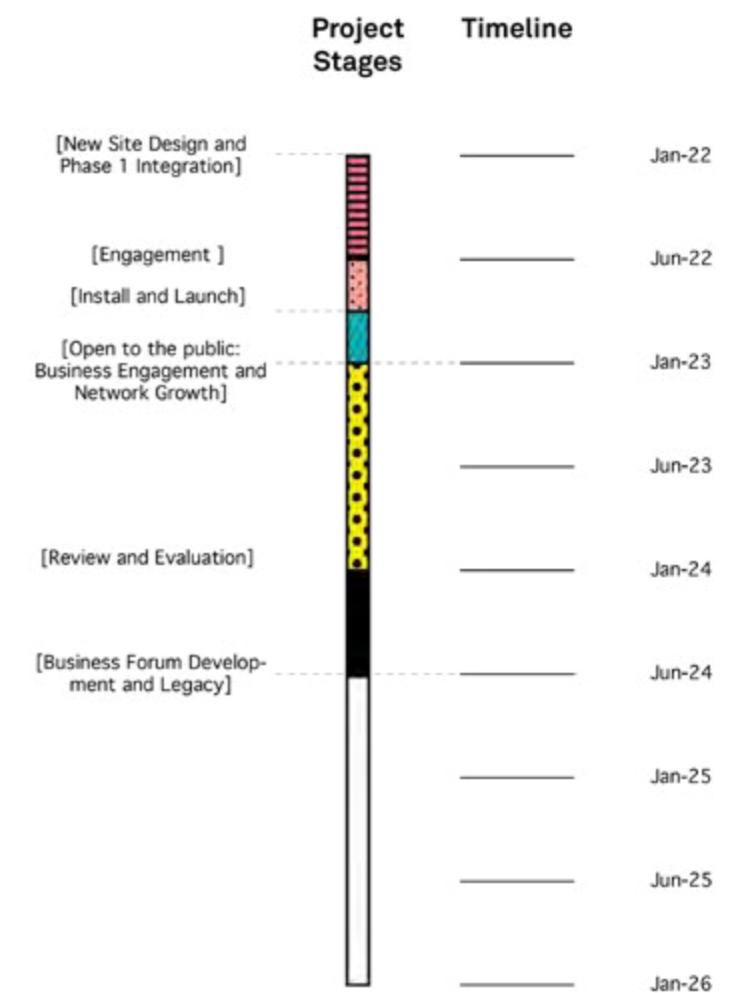
Concept & design	Collaborators from Phase 1, a selection of below: <ul style="list-style-type: none"> • Turf Projects • 48four • Migrants Bureau • The Decorators • Adam Nathaniel Furman
Engagement and programme	<ul style="list-style-type: none"> • Croydon Youth Zone • Let Me Play • Education Development Trust (Schools Engagement)
Management & legacy	<ul style="list-style-type: none"> • TBC - Purley Form or New Group

Funding Statement

Budget to be primarily allocated to broad stakeholder engagement and facilitation of Phase 1 processes in the Five Ways area.

Funding Opportunities

Arts Council, National Lottery Project Grants: <https://www.artscouncil.org.uk/projectgrants>
Spacehive: <https://www.spacehive.com/>



PW Active Transport Network: Proposal & precedents



Location Plan and Project Proposal - Valley Park
 An active transport network that connects lateral routes across the Purley Way. Building from the activity generated in Lewis Park and allowing for dissipated practice across the Masterplan site, connecting active/public health organisations with public space in Purley Way, expanding resources across the site e.g. bike stations and encouraging participation from stakeholders throughout the area.

Addressing the need for increased pedestrian and cycling routes in the Short Term masterplan phase (0-2000 homes) and encouraging behaviour changed through continued engagement.
 Relationship with other precursors:
 — Parklets and Recreation
 — Purley Oases sites as key destinations
 — Review and proof of concept proposal from 330 Purley Way



1. A temporary bike school with dedicated repair and maintenance team and an energetic, cycle-themed programme in Milton Keynes.



2. Map of the 6 community parklets in Hackney linked by cycle routes.

Programme and Management Plan

Below summarises the proposal for the delivery of the Purley Wat Active Transport Network, delivered across the Masterplan site, including the key activities and timeframes, proposed and/or similar stakeholder groups and funding opportunities.

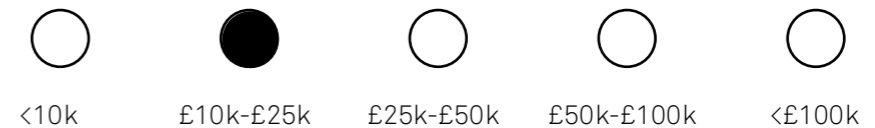
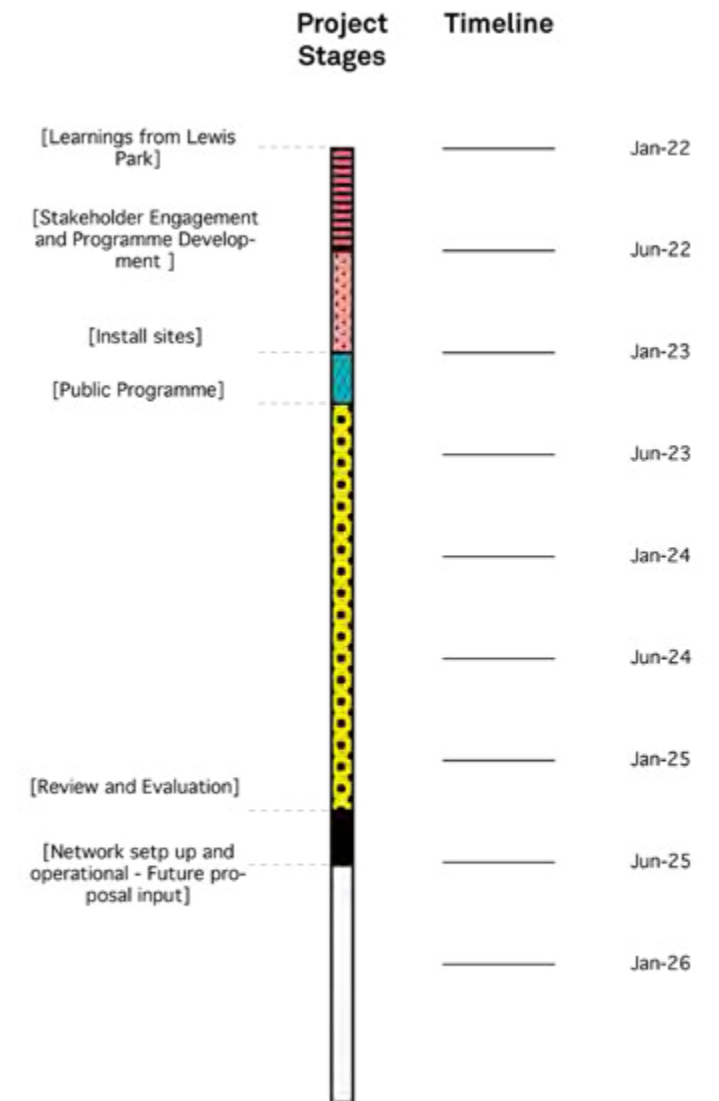
Concept & design	Collaborators from Phase 1: <ul style="list-style-type: none"> • Turf Projects • Cycle Storm • 330 Purley Way Legacy Group • Street Space CIC
Engagement and programme	<ul style="list-style-type: none"> • Croydon Youth Zone • Let Me Play • Public Health England • Street Space CIC
Management & legacy	<ul style="list-style-type: none"> • Purley Way Active Transport Network

Funding Statement

Budget to be primarily allocated to design, development, and maintenance of low-cost stations across an active transport network that encourages local participation. Significant budget to be allocated to comms and engagement around the network, e.g. posters, flyers, and network-specific activities.

Funding Opportunities

Walking and Cycling Grants Funding:
<https://www.groundwork.org.uk/apply-for-a-grant/london-grants/walking-cycling-grants/>
 Sport England, Tackling Inequalities fund:
<https://www.sportengland.org/how-we-can-help/our-funds/tackling-inequalities-fund>
 London Marathon Charitable Trust:
<https://www.lmct.org.uk/apply-funding/applying-major-capital-grant/index.html>



Monitoring and Evaluation

Approach

Each precursor project seeks to deliver value within the area it is situated, therefore, there will be a universal approach to monitoring the projects proposed. The monitoring and evaluation programme for the precursor projects will seek to:

- Determine overall impact and public benefit delivered in accordance with the projects aims.
- Gather learnings to feed into the continuous development of the masterplan e.g. Lewis Park in relation to pedestrian and cycling behaviour change.

Monitoring and evaluation is complementary to the phased process of the precursor projects to ensure learnings are applied and developed upon. The framework for monitoring and evaluating is reflective of that used by Croydon Council for the award-winning Croydon Meanwhile Programme, and as such is guided by the requirement to capture both qualitative and quantitative data.

Metrics:

Quantitative (Internal and non public external use): Data gathered from methods	<ul style="list-style-type: none"> • Tangible deliverables against money spent • Attendees for programmed events e.g. Parklets and Recreation • Programme Participants e.g MAIA Artist Hotel, Schools/young people's activity shared through Purleywayfinders.com
Qualitative (External)	<ul style="list-style-type: none"> • Information collected in the public sphere • Public perception through media, general participation e.g. Lewis Park feedback and public interaction • Change in behaviours engendered through the project e.g. build of activity generated through Purley Oasis
Qualitative (Internal): Data gathered from methods	<ul style="list-style-type: none"> • Analysis of qualitative information collected (see method) e.g. Survey feedback from 330 Purley Way Meanwhile Use, Interview with co-design participants for Purley Wayfinding crossing

Methods

- Surveys: Public, Users and Participants to complete surveys for quantitative and qualitative feedback
- Interviews: Extended interviews with project stakeholders for learnings and detailed feedback to contribute to evaluation

Guidelines

Building upon the learning and guidelines from Croydon Meanwhile Programme, a series of guidelines have been set out in order evaluate the Purley Way Precursor projects.

Guideline #1: Prioritise Participatory Approaches as an integral part of the early stages of a meanwhile use project. As well as achieving more substantial long-term stakeholder engagement and enhanced public opinion, this will help frame the opportunity costs of delivery without participation.

Guideline #2: Early-stage vision sharing between involved stakeholders and Partners. Early-stage vision sharing sessions between stakeholders, delivery partners, and officers will help establish roles and responsibilities more clearly and create a shared set of long and short-term project principles that each actor can be held to account by and affirm contractual obligations.

Guideline #3: Pre-delivery evaluation and evidence base gathering during and after the project and informing early aspects of the physical and programmatic delivery by users of the space. This encompasses the use of hashtags in propagating videos but also seeks to prioritise interventions whereby participants' mobiles and social media profiles are incorporated into the interventions. This aims towards the creation of a qualitative and quantitative data set that is external from our own documentation.

Guideline #4: Local audiences should be reached primarily through the communication of a spatial 'narrative' for each project (the story behind its conception). A narrative will ensure stakeholder buy in as well as solidify a bottom-up approach for the projects.