Development Rights Auction Model

Final Report
March 2018

MAYOR OF LONDON

TRANSPORT FOR LONDON
EVERY JOURNEY MATTERS

Contents

1. Preliminary note

This is a report prepared by Transport for London (TfL) for the Development Rights Auction Model (DRAM) Taskforce announced by the Government in March 2017. Members of the Taskforce, which is chaired by the Ministry of Housing, Communities and Local Government (MHCLG) and the Mayor of London's Office, also include HM Treasury, the Department for Transport (DfT), TfL and London Councils. The Government asked the Taskforce to look at the DRAM and a potential application in London.

We had prepared a report in 2016, which was published in February 2017 as a supporting paper for the London Finance Commission (the Land Value Capture Report, 2016/17).[1] The report was based on an analytical study by KPMG with the support of Savills and made a number of proposals for further study, one of which was the DRAM.

We re-engaged KPMG, with the support of Savills (our consultants), to study the DRAM in more detail, and to support the work of the Taskforce. This report presents our views at TfL, informed by our consultants' analysis on the DRAM, as they were given to the Taskforce.

[1] https://www.london.gov.uk/what-we-do/business-and-economy/promoting-london/london-finance-commission

2. Executive summary

Introduction

‘Land value capture’ is an umbrella term for interventions that seek to capture a share of the uplift in land and property value, and of the additional new development opportunities that are catalysed by infrastructure projects, to help pay for the investment required to deliver the projects. Without such approaches, the prevailing tax and planning system does not appear to be adequately responsive to land value creation, which means investments can currently generate significant windfall gains for landowners, property owners, developers and early property purchasers while the costs of the scheme are paid by others.

Work undertaken by KPMG and Savills for us in 2016-17 indicated the potential for major transport schemes in London to catalyse significant land value uplift in the areas immediately surrounding new hubs and stations. Around a quarter of the estimated total land value uplift reflected the planning gain associated with new development (residential and commercial) in the very local areas immediately around the major transport schemes.

The DRAM is a potential new LVC mechanism that was identified following the 2016-17 study as a means of capturing a share of this planning gain. It involves the public sector facilitating the creation and capture of a portion of new development value uplift through – firstly – masterplanning and assembling developable land, and – secondly – by selling the development rights of assembled lots through a series of auctions, with the proceeds shared with the participating landowners at the appropriate point.

Defining the DRAM

The key objectives of the DRAM are to:

- Maximise and capture a share of planning gain, including by realising the ‘marriage value’ from more coherent and integrated parcels of land, recycling some of this into the delivery of key transport infrastructure
- Coordinate the planning of the transport scheme with the planning of development and regeneration
- Support public sector objectives associated with increasing housing supply, seeking to increase the amount and the pace of delivery of both affordable and market housing
- Harness competition from the market to maximise revenues, while ensuring that existing landowners are fairly compensated
- Avoid, where possible, the expense and allocation of scarce financing capacity involved in direct public sector land acquisition

The key design features of the DRAM, as envisaged in this study, are as follows:

- DRAM will work best in circumstances where there is land around a major transport scheme with significant potential for planning gain in terms of price and density to be generated by the scheme and associated masterplanning,

and the auctioning authority can wait until the planning gain is maximised before implementing the auction(s), which is likely to be after the transport scheme is operational

- An integrated development framework (masterplan) for the area adjacent to the identified potential site of the transport hub would be developed prior to the transport scheme being committed, this would envisage the delivery of a well-planned, well-managed place seeking to leverage the connectivity advantage of the transport hub
- Lots to be auctioned will consist of 'developable land' that has been identified through a masterplanning process as underdeveloped when compared to the optimal use and density that would be expected to be permitted once the transport project investment is committed and the local area masterplanning completed
- Landowners and developers will need to be persuaded that the development and uplift opportunities will only be realised if the masterplan and the transport scheme proceed, and that this will only happen if there is a successful DRAM
- Owners of identified developable plots will be invited to contribute their land into the auction based on the agreement of an appropriate reserve price, a predetermined part of which will be returned to them should the auction succeed. Compulsory Purchase Order (CPO) powers may need to be deployed to obtain land that is considered critical to meeting the vision of the masterplan, including the necessary level of LVC, where the landowners do not participate voluntarily
- Once the participating landholdings have been determined, they will be packaged into individual parcels (or 'lots') for sale at auction. The size and configuration of the lots will be determined on a case-by-case basis
- The timing of the land assembly and auction process will be critical to extracting maximum planning gain, and ultimately to the success or otherwise of the DRAM mechanism. The best financial option would be to 'pool early and sell late', and maximising DRAM revenues is likely to mean the majority of auctions take place after the transport scheme is open. However from other perspectives, this may be challenging
- Following a successful auction (ie where the reserve price is exceeded by a compliant bid), the proceeds will be split into a range of components to be distributed to the various stakeholders
- This will include a component of the reserve price directed to repay costs incurred by the authority in pursuing CPO, including the costs of relocating occupiers of land. It will also include a mechanism for meeting the costs of providing necessary ancillary infrastructure
- Factors that impact on the scale or timing of development gain are also likely to impact on DRAM revenues. For residential-led developments this may include, for example, the approach to affordable housing, both in terms of the required share of properties developed and the impact on residual land value per unit

Case study analysis

The potential of the DRAM has been assessed at two case study locations: a station on the Old Kent Road in the London Borough of Southwark on the route of the potential Bakerloo line extension (BLE), and a station in the London Borough of Enfield on the route of the potential Crossrail 2 project (hereafter referred to as 'the Crossrail 2 station').

In each case, a range of scenarios for the DRAM have been developed on the basis of a combination of available information from relevant development studies that exist, analysis of land value uplift from the work undertaken in 2016-17, and the professional judgement of our consultants, working closely with us and other stakeholders in London.

The analysis of these two locations suggests that achieving auction proceeds in excess of the reserve price will, in the majority of scenarios, be challenging. Both case studies involve the development of sites that are predominantly industrial into predominantly residential use.

At the Crossrail 2 station, indeed, there are no scenarios modelled in which the auctions generate net proceeds. This is in part driven by the profile of the forecast value uplift at the Crossrail 2 station, which assumes that the impact of Crossrail 2 on land values would likely be felt after the new service has started, rather than with significant anticipatory effects (like at Old Kent Road), and that the value uplift effects will be spread over a longer period (10 years after the commencement of Crossrail 2) than is typical on account of the need to build up a critical mass of mixed-use development east of the rail line.

At Old Kent Road, the results are somewhat more favourable, but are highly sensitive to, among other factors:

- Timing (the later the auction, the greater the revenue potential), and
- Assumed affordable housing obligations (which has a significant impact on bid prices, due to the implications for developer returns)

The case study analysis highlights four circumstances in which the potential of the DRAM is likely to be limited:

- **If the reserve price is high**. This will be a particular problem in London where current investment values (value of landownership), even of industrial land, are relatively high, as is expected to be the case at Old Kent Road and the Crossrail 2 station. This is exacerbated by the expectation that the reserve price is likely to need to include occupier displacement costs, which has been assumed in the case study analysis to add an additional 50 per cent to the 'no scheme' values, to account for the obligation to relocate existing occupiers and cover closure. These costs can be substantial if, for example, those being relocated have specialist buildings and/or equipment on their sites
- **Where bid prices are significantly discounted relative to future value**. The full expected future uplift potential is unlikely to be factored into the bids for development rights at auctions that occur well in advance of that value being realised. Furthermore, where development is planned to occur over a number

of years in the future, bidders will discount future revenues which can have a material impact

- **If the pace of redevelopment is 'artificially' accelerated**. Development generally becomes viable once value increases are more certain and existing values are sufficiently depreciated. Development decisions on parcels of industrial land are typically made when the current buildings and plant come up for replacement. This process can be sped-up to a degree. However, trying to accelerate the market's view of the rate of redevelopment – as anticipated in the DRAM (in the context of pooling land into consolidated lots to be taken to the market as a single offer) – is likely to be challenging and expensive
- **Where priority is given to policy objectives that impact on the scale and timing of development gain**. This is most obviously the case for affordable housing objectives for lots that are expected to be developed for residential purposes, where the case study analysis highlights the sensitivity of DRAM revenues to assumptions about both the share of housing that is required to be affordable and the impact per unit on residual development values

Appraisal of the DRAM

The theory behind the DRAM is that it can have a positive impact on regenerating local areas around major transport projects through a cohesive and comprehensive development framework, while also converting some of the resultant planning gain into revenue that can be applied to project funding. The case study analysis suggests that, while true, there are important trade-offs between the scale of revenues generated on the one hand, and the pace of development and its contribution to other objectives (such as affordable housing provision) on the other.

In addition, the DRAM is a new and untried mechanism in the UK, and comes with some risks and uncertainties which are important to highlight:

- **Degree of legislative change.** The DRAM assumes that the auctioning authority will have access to relevant powers, including CPO and changes to Community Infrastructure Levy (CIL) rules. To the extent these powers are new and require legislation, implementing the DRAM will depend upon the appetite and capacity of government for legislative change
- **Securing landowner and bidder participation**. If landowners do not choose to participate in the DRAM, then this will add to upfront costs (via CPO) and/or result in no development/sub-optimal development. Securing a sufficient level of landowner participation will be contingent on the motivations, circumstances and perspectives of landowners, and their views of the 'no scheme' value of their land and the extent to which the transport investment is linked to their participation in the DRAM
- **Ability to generate upfront revenue.** The ability of the DRAM to raise funds early is likely to be significantly lower than the total potential value of uplift if – as anticipated – bidders discount future revenues in the context of risks and uncertainties (meaning that much of the planning gain will not be captured as intended). The later in the process the auctions are held, the more potential there is to capture uplift. This, however, has implications for the pace of development

- **Scale of upfront costs.** The possibility of having to resort to CPO introduces the need for capital funding to meet the costs of acquiring non-participating landholdings. These costs, and the need for financing capacity, may be substantial where (industrial) assets are valuable and where relocation costs are significant
- **Ability to capture planning gain.** The case study analysis suggests that – in the scenarios modelled at Old Kent Road and the Crossrail 2 station – the DRAM is at best able to capture a relatively small proportion of total value uplift. This is a consequence of the challenge of generating receipts at a relatively early stage in the development process and the discounting of future revenues by bidders to reflect cash flow timing, risks and uncertainties
- **Increasing the amount and pace of delivery of market and affordable housing.** The DRAM – via a coordinated masterplanning process – can support the achievement of housing policy outcomes. There may need to be a trade-off, however, between the quantum, pace and mix of housing delivery that – on the one hand – is optimal from the authority's perspective (to meet policy objectives) and that – on the other hand – would be likely to generate maximum proceeds through the auction process
- **Flexibility to respond to changing circumstances.** The DRAM assumes that outline planning permission is in place prior to auction and this is the basis upon which bids are made. Landowners' participation in the process is predicated on a fixed view on what the development will be which may result in difficulties if market circumstances change and result in a view that, for example, the development mix should be different

The suitability of the DRAM will depend on the specific circumstances of the area it is intended for. There may be locations where the DRAM could be an effective tool. However, the analysis for the two case study locations suggests that its use at these locations in London would require a combination of favourable circumstances including significant value uplift, trade-offs in respect to other objectives such as affordable housing, the cooperation of landowners, and access to enhanced CPO and CIL powers.

While there may be some specific circumstances in which a DRAM approach could be appropriate, in light of the difficulties that have been identified at the two case study locations, and the requirement for particular conditions to be in place, there is likely to be merit in exploring whether there are modifications to the approach – or, indeed, alternative approaches – that would provide a more achievable pathway to capturing a portion of the planning gain for application to the costs of major transport investment in London.

In this context, this study includes a high level assessment of alternatives to the DRAM that might also meet the objectives of capturing a share of new development planning gain. On the one hand, in light of recent announcements on CIL and Section 106 (s106), it might be that the more effective and creative use of existing tools could go some way to capturing a significant portion of planning gain/value uplift. At the same time, a model in which profits are shared over time as opposed to at an upfront auction, and with more flexibility around the development of the masterplan, may have potential to achieve the objectives of the DRAM in a manner closer to existing practices. These two approaches are considered worthy of further investigation in the

context of all of the objectives of the DRAM (including accelerating the quantum and pace of housing delivery in London).

Part of the challenge with the DRAM is its focus on capturing value through development alone, whereas the research undertaken in 2016-17 found that typically new development value accounted for a little over a quarter of the total land and property value generated by investment. The current analysis suggests that it may only be possible to capture this share by holding back development. If the DRAM were to form part of a holistic LVC strategy, it could therefore benefit from being supported by other mechanisms that more efficiently capture all types of value uplift when they arise.

3. Introduction

Context

Improvements in transport connectivity and capacity can have a profound impact on surrounding land uses, changing a location's residential and commercial potential. As well as supporting economic growth and relieving congestion, transformational improvements in transport connectivity and capacity have the potential to enhance commercial and residential values significantly and unlock substantial development within (and beyond) the areas immediately adjacent to new or improved transport hubs.

Land value capture is an umbrella term for interventions that seek to capture a share of this uplift in land and property value, and of the additional new development opportunities, to help pay for the transport investments, to the extent that it is these transport investments which generate the uplift. Without LVC approaches, the prevailing tax and planning system does not appear to be adequately responsive to these changes, which means investments can currently generate significant windfall gains for landowners, property owners, developers and early property purchasers.

Work undertaken by KPMG and Savills for us in 2016 indicated the potential scale of this opportunity in London. A sample of eight prospective major TfL transport schemes with a total estimated cost of £36bn (including Crossrail 2, the Bakerloo line extension and the Docklands Light Railway (DLR) extension to Thamesmead) was estimated to have the combined potential to produce localised land value uplifts over time of around £87bn.[2] Of the total uplift estimated in that study, around £24bn (28 per cent) related to the value of new development (as opposed to existing stock) in the very local areas immediately around the major transport schemes.[3]

The DRAM is a potential new LVC mechanism that is designed to capture a share of new development value uplift, with the public sector playing a more directional role in delivering new development. Ideally this would mean facilitating both the earlier creation of value and the capture of a proportion of additional value, from new development immediately surrounding major transport schemes. This would involve masterplanning, place-making and a process that ultimately involves an auction of the rights to the extra development gain generated.

DRAM objectives

The key objectives of the DRAM are to:

- Maximise and capture a share of planning gain, including by realising the 'marriage value' from more coherent and integrated parcels of land, recycling some of this into the delivery of key transport infrastructure
- Coordinate the planning of the transport scheme with the planning of development and regeneration

[2] Costs and total value uplift over 30-year period from FY19 to FY48. Unless specified otherwise, all costs, uplift and funding figures in this report are expressed in present value terms.

[3] This includes uplift related to new development forecast to be specifically catalysed by the schemes, and the incremental uplift in value relating to new development that would be permitted even in the absence of the scheme.

- Support public sector objectives associated with increasing housing supply, seeking to increase the quantum and the pace of delivery of both affordable and market housing
- Harness competition from the market to maximise revenues, while ensuring that existing landowners are fairly compensated and
- Avoid, where possible, the expense and allocation of scarce financing capacity involved in direct public sector land acquisition

The DRAM as a mechanism has not yet been implemented and remains an emerging concept.

Overview of the mechanism

The extract below from the Land Value Capture Report, 2016-17 has been used as the starting point for this study.

'The model begins with a transit authority working with urban planners to prepare an integrated zonal development plan for zones of influence around the station locations on a new rail project, where the potential for development is high. The zonal development plan sets desired uses and densities for developable sites across each zone to maximise land value creation from the improvement in transport accessibility (subject to minimum affordable housing requirements) and to maximise regeneration. All outline planning consents across the zone are obtained via the zonal development plan by the authority alongside the planning and consents for the transport scheme. This closely follows the Mass Transit Railway (MTR) approach in Hong Kong. At the same time, the planning authority (either the borough or the Mayor) determines what alternative development (use and density) would be permitted on the site in the absence of the transport scheme, and calculates the market values of land across the zone based on the 'no scheme' principle.

The authority then offers three choices to landowners who wish to realise land value uplift from their land. Landowners can either:

- *Join an authority-led development rights auctioning scheme, under which development rights on their land are pooled with those of other participating landowners and auctioned (say on an annual basis) as assembled packages. The auction sets a reserve price equal to the 'no scheme' market value of land. If the auctioned value is greater than this, landowners simply share the gain with the authority (say in a 60:40 ratio). Planning obligations are factored into the zonal development plan and auction design process, so no other development levies (CIL or s106) are payable*
- *Develop the land themselves, subject to payment of a zonal CIL charge (with CIL rates set so that revenues across the masterplanning zone are broadly equivalent to what the authority would expect to receive through the auction)*
- *Continue to have quiet enjoyment of their land and make minor developments or home improvements, provided they do not change the density or use of the land. Pre-existing planning consents are not affected in any way*

The rights auction model involves developers bidding in open, transparent competition for the right to develop the land entered by the landowners in the zone,

on the basis of the new outline consents secured by the authority. It performs three functions:

- *It makes it very easy for landowners who are not developers to monetise the uplifted value of their land*
- *It makes it very easy for developers who are not landowners to secure new development opportunities in the zone, without the need to take upfront planning stage risks or undertake speculative land purchases*
- *For landowners who are developers, and wish to self-develop but believe the high zonal CIL charge is unviable, the auction provides a transparent, market-based mechanism to test development viability'*

Where is a DRAM likely to be most suitable?

The Land Value Capture Report, 2016-17 and other literature on the subject, has demonstrated that there is no 'one size fits all' solution for LVC, and that the suitability of any individual LVC mechanism to a particular project or place will be conditional on a number of factors.

The primary consideration is the capacity of the major transport scheme in question to generate incremental development value that can be captured transparently and fairly, and without jeopardising the viability of new development activity. Accordingly, for large-scale 'place-making' and 'city-shaping' projects such as new roads or public transport connections (for example Crossrail 2), which will have a very expansive spectrum of beneficiaries spread over a wide geographic area, a mix of mechanisms that extend across a broad population base (together with more localised approaches) may be appropriate. More contained projects, however, such as the redevelopment of a particular station, may lend themselves better to mechanisms targeting a smaller area and/or group of beneficiaries.

Beyond the geographic 'catchment' of a mechanism, there are a range of design features which will also impact its suitability in a particular circumstance. These questions of mechanism design will have a profound impact on the suitability of the mechanism – not only from the perspective of its revenue potential, but also its equity and deliverability. They are discussed in the remainder of this chapter and in Section 4.

In this context, the DRAM – like other LVC mechanisms – will not be suitable for every project, or for every place.

Ultimately, to fulfil the objective of improving the sharing of planning gain from new development, the key requirement is that the identified potential for planning gain from the major transport scheme should be significant. This means a strong prospect of significant levels of new 'dependent' development being consented and being viable specifically as a result of the transport investment, associated land pooling and masterplanning, as well as local development being more valuable than in a 'no scheme' scenario. The sort of locations most suitable will therefore be those where coordinated planning and consenting of real estate development alongside the transport scheme can produce much better outcomes than fragmented private sector-led place-making and development over time.

To achieve a strong likelihood of such sharing of planning gain, the following conditions are considered to be favourable:

- **Availability of developable land** in the vicinity of a new/improved transport hub. For the DRAM to be successful, there will need to be a critical mass of land that can be packaged into lots for entry into the auction(s). 'Developable land' is land that has been identified as underutilised when compared to the future use and density that would be expected to be consented once the major transport investment and the masterplanning are committed.
- **Fragmented landownership**, thereby maximising the benefits of site assembly and coordination. If there is one single 'anchor' landowner, or a few large landowners, direct negotiations may be more efficient. The DRAM will be better suited to areas with more owners, noting that where a very large number of owners exist, this may increase the complexity of the land pooling process and – potentially – public sector transaction costs, the risk of holdouts and so on. The existence of non-operational public sector land within the auction area should be a positive feature, provided the relevant authority is able to cooperate in the land pooling process.
- **Potential for land value uplift:** an auction will only generate major scheme funding contributions if the auctioned lots generate sales proceeds over and above defined 'reserve prices' which would be returned to participating existing landowners. These reserve prices would reflect 'pre-scheme' or 'current use' values. For this to happen, government, landowners and property developers need to expect that the arrival of the major transport scheme investment and the associated surrounding urban design and masterplanning will catalyse an uplift in the net value of the land, after all required costs (development, other required local infrastructure) have been met. To generate this expectation, the following conditions are likely to be helpful:
    - Existing values are low relative to surrounding areas or other appropriate benchmarks
    - The planned transport schemes are 'new', permanent and relatively large, resulting in significant connectivity improvements
    - There is expectation that development densities can be increased and land uses changed to (more valuable) residential uses if the planned investment in the major transport scheme goes ahead
    - There is little expectation of uplift without investment in the major transport scheme (potentially because of barriers to development or an absence of development plans)
    - There is an expectation that the delivery of the major transport scheme investment is conditional upon the realisation (as a funding contribution to the transport scheme) of a share of land value uplifts
    - The abnormal costs required to deliver the required development are not prohibitive

  The implication of this is that the DRAM will potentially be *less* suitable where existing investment values significantly exceed the net land value of the potential development (for example, where the land and property on the site is

already of high value relative to potential future land values). There will also be an important **timing dimension**. Infrastructure, masterplanning and place-making impact on value and potential density over time, rather than instantly. The value of what is being auctioned is likely to be maximised sometime after the infrastructure is complete, and inevitably this means there is likely to be a trade-off between the pace at which development is allowed to take place and the scale and timing of the contribution it can make through the DRAM to the costs of the infrastructure that enabled that development.

- **Supportive local authority and favourable planning environment**. A DRAM will work best where the relevant local authority (for example London borough) is fully engaged with the development of the proposed masterplanning vision. This will likely require the auctioning authority to consider any existing development plans, with a particular focus on the degree to which development is dependent on the transport scheme investment. As it may be considered difficult to auction what has previously been provided free of charge, planning rights unlocked by the investment may need to be retained until the auction. Furthermore, a more direct role for the public sector – as envisaged in the DRAM – is likely to be of most benefit where there is potential to support central government, Mayoral and local authority housing supply objectives – noting that housing (particularly, but not exclusively, London housing) is currently an extremely high priority at all levels of government

In addition to the above, any policy or other factors that influence the market value of what is being auctioned will affect revenues from that auction. In the context of housing-led development, this means that assumptions made about affordable housing, in particular, will be a material factor in the amount of revenue that a DRAM could be expected to raise and the optimum timing of any auction.

In July 2017, we evaluated the viability and potential barriers to using a DRAM methodology for a long list of 16 potential pilot areas in London, in consultation with the Taskforce.

In the process of selecting the sites, we considered multiple factors, including the potential value uplift resulting from transport investment, the scale of the land use change and timing of delivery of both transport infrastructure and new development.

The two selected sites are:

- A station on the **Old Kent Road**, on the route of the proposed Bakerloo line extension. Old Kent Road is expected to benefit from value uplift from rezoning and densification linked to greatly improved connectivity from the BLE. Currently the area has low density commercial and industrial land, as well as some residential. Some development is already planned in the area, however landownership is varied
- A station in **the London Borough of Enfield**, which would benefit from increased connectivity to central London from Crossrail 2. The area is mostly in industrial use and has few landowners. It could gain from greater development coordination, potentially in tandem with Crossrail 2 delivery.

The taskforce was of the view that the two sites were fairly representative of what could be developed close to Crossrail 2 in the Upper Lea Valley and of other BLE stations. They also provide outer and inner London examples for studying development and densification on industrial land.

Through the assessment of these two sites as part of this study, the issues described above are to be explored in more detail and, where possible, approaches to DRAM design and implementation validated.

Study scope

To support the work of the Taskforce, we engaged KPMG, with the support of Savills (our consultants), to undertake detailed development and evaluation of the DRAM. We were keen that the work should:

- Define the DRAM mechanism – how it could work in practice and how it could be implemented and
- Determine the feasibility and possible revenue generation capability of a version of the DRAM at two case study areas in London – Old Kent Road and the Crossrail 2 station

The DRAM definition workstream has been informed by a range of research and analysis, and supported by a series of workshops with us, our consultants, and other relevant stakeholders – including representatives from London boroughs.

The approach to the quantitative analysis at the case study sites has been informed in the first instance by site visits, data gathering and research, leading to viability (residual value) and uplift modelling for each defined auction lot and ultimately financial modelling of the revenue potential of each under a range of different scenarios.

4. Defining the DRAM

Design features and considerations

Status of the transport scheme and the local development framework

To extract a major scheme funding contribution from realised planning gain, each DRAM auction would need, by definition, to achieve a price that exceeds the default reserve prices attached to the lots which are auctioned. This requires the prevalence among market participants of a view that the DRAM (and all of the associated reserve powers that facilitate its effective functioning) represents (and is necessary for) a transition to a situation in which the value of the lot is worth more than would otherwise be the case.

For this to happen, two seemingly incongruous (or even mutually exclusive) conditions should ideally be in place from the outset. The first is that the development of the proposed transport scheme needs to be advanced enough to have led the authority (and, ultimately, bidders) to conclude that – subject to masterplanning – it will catalyse sufficient opportunities for planning gain and new development that would enable auctionable lots to be assembled and taken to market. The second is that there is enough uncertainty about whether the transport scheme (and associated development framework) will go ahead that local values do not yet fully reflect the associated expected uplift in land values.

The solution to this dilemma lies in the view that landowners and developers take as to the status of the masterplan and the major transport investment. Essentially, they need to be persuaded that the development and uplift opportunities will only be realised if the masterplan and the transport scheme proceed, but that this will only happen if there is a successful DRAM.

We would need to work in a coordinated way with the local planning authority and central and local government to achieve this. Jointly, we would need to undertake planning of the transport scheme investment and local regeneration to a sufficient level to demonstrate the value that these could unlock. At the same time, we would need to hold firm to the line that the commitment to the transport scheme and regeneration plan are contingent on securing a funding contribution from the DRAM.

Even then we are likely to face significant challenges, for example, to convince landowners and developers that a transport scheme investment would really not proceed/be cancelled if DRAM funding was not realised, and also associated with the length of the construction period for major transport schemes and how it relates to the timing of associated land value uplifts. Overcoming these challenges is likely to require the option to resort to powers of compulsory purchase (even if not used in practice). For such powers of last resort to be meaningful, we would need confidence that they could be triggered at a price that largely reflected the ‘no scheme’ value of land holdings and thereby leave a substantial proportion of the transport project and associated masterplan-related land value uplifts available to fund the transport scheme investment.

If these challenges could be overcome, and the financial implications were expected to be favourable to them, landowners could be prepared to participate in the auction, convinced of the fact that their land will be sold through the auction for more than the default reserve price, at a price which would not be achievable without the DRAM. Developers would also be prepared to enter competitive bids for auctioned lots, armed with the certainty that planning consents exist for higher density and more appropriate uses, and ideally with an assumption that values in the future will grow to reflect the fact that transport connectivity and public amenity will be better than it is today.

Determining the lots to be auctioned

Our consultants proposed a methodology that could be followed in order to set up and run a DRAM process.

‘Developable’ land

The first step in the DRAM process is the preparation of an integrated development framework (masterplan) for the area adjacent to the identified potential site of the transport hub investment under consideration. The masterplan will envisage the delivery of a well-planned, well-managed place in terms of the area’s mix of property uses, public realm, design standards and the provision of other local infrastructure and essential services. It will seek to leverage the connectivity advantage of the transport hub to achieve economic growth and deliver a viable community for the location. The development of this masterplan would occur prior to the transport scheme itself being committed – either politically or legally – if value capture is to be maximised.

The size and boundaries of the masterplan area will likely be informed in the first instance by the extent of the assumed ‘zone of influence’ radiating from the transport hub investment, within which planning gain from masterplanned new development can be expected. Previous research – including the Land Value Capture Report, 2016-17 – has indicated that as a ‘rule of thumb’, such a ‘zone of influence’ might extend to one kilometre for residential property uplifts and 400 metres for non-residential properties. This will of course vary with the nature of the transport investment, availability of other public transport alternatives, natural boundaries (rivers, trunk roads) and so on.

Consideration will be given to the pooling of ‘developable land’ within (and probably just outside) the ‘zone of influence’ that is considered eligible for entry into the auction process. For the purposes of this study, our consultants defined ‘developable land’ as land identified through a masterplanning process as underdeveloped, when compared to the optimal use and density that would be expected to be permitted once the transport project investment is committed and the local area masterplanning completed.

Accordingly, the identification of ‘developable land’ will be based on consideration of current use and ownership, and the potential for planning gain from redevelopment as part of a strategic land pooling and masterplanning process and informed by the connectivity and capacity implications of the associated major scheme investment. While the basis of the DRAM as assessed in this study is that all developable land in

the auction area is assumed to be included within the auction process, the following points are worth noting:

- The masterplanning may include the redevelopment of some land that is not individually considered technically 'underutilised'. Some sites may be at 'optimal' use in the absence of the masterplan, but could be put to alternative use as part of the broader development plan to suit the overarching development framework of the area (for example a broader shift in the local area from an industrial to a residential focus). Others may be considered to have a negative impact on their surroundings, for example, because of quality issues or shape of plot
- The masterplanning may exclude the redevelopment of some land that is considered technically 'underutilised'. Some sites might be 'underutilised' but not actually 'developable', due – for example – to prohibitive construction challenges such as geotechnical risks. Such sites may be excluded from the auction, or it may be possible to include within the auction provisions for options to build out such sites at a future point in time when development is considered more feasible
- Non-operational public sector land is likely to be considered 'developable', though the viability of doing so – even with the potential uplift associated with the transport scheme – would of course need to be established
- Consideration will need to be given to sites that are currently underutilised, but for which planning consent exists to change to 'optimal' use

It is further noted that where 'developable land' is occupied, for example by retail or industrial tenants, our consultants assumed compensation payments for relocation and/or cessation of business (similar to the process at the Lower Lea Valley in advance of the London 2012 Olympic and Paralympic Games). The impact of the costs associated with relocation, as discussed later in this report, can be considerable and have a material impact on the viability of lots.

Land assembly and the configuration of auctionable lots

The second step of the DRAM process is to invite owners of identified developable plots to contribute their land into the auction. The impact of any holdout (ie land that is not put forward for the auction) may be assessed following a preliminary pooling of participating developable land. Following this assessment, it might be that an auction can proceed, in full or part, even without the inclusion of all land (if the impact of the holdout does not materially diminish the capacity for masterplanning and value realisation). Alternatively, CPO powers may need to be deployed or considered to compel the final landowners to participate if their land is considered critical to meeting the vision of the masterplan. This is discussed below.

Once the participating landholdings have been determined, they can be packaged into individual parcels (or 'lots') for sale at the auction. The size and composition of each parcel could be informed by, among other factors:

- The architectural contours of individual buildings and sites that comprise the masterplan
- The overall quantum of land put forward by landowners within the auction area

- Any natural boundaries such roads, railways, or open space, or other barriers to integrated development
- The type of development envisaged in the masterplan (for example, it may be sensible to package together residential lots)
- Consideration of the relationship between the volume of local new development and market prices; and
- The market's appetite for scale

The configuration of the lots would be determined on a case-by-case basis, following initial masterplanning. While a larger number of smaller lots may maximise the benefits of competition, there could be a trade-off, with larger lots being required to attract larger developers.

The type of development anticipated for the auctionable lots will be determined on a basis that is consistent with the outline planning consents secured for the overall masterplan development. The development plan will describe desired uses and densities for developable sites to maximise land value creation from the improvement in transport accessibility, and to maximise regeneration, subject to minimum affordable housing requirements and the requirements for other local infrastructure.

Non-participating land

The voluntary nature of the preliminary land pooling process means that there will be a risk of 'holdout', namely, the refusal of some landowners to provide their developable land for inclusion in an auction. In respect of such landholdings our consultants considered there being two possible routes.

Both of these routes are predicated on the availability to the authority of tools (specifically the ability to acquire land via CPO and to levy a targeted developer charge) that are governed by legislation. Deploying these tools for the purposes of the DRAM may represent a departure from their purpose and structure as envisaged in the relevant legislation in its current form and, accordingly, legislative change (primary and/or secondary) may be required before either of the two routes could be used. Legal advice would therefore need to be sought.

The first 'route' relates to identified developable land that is considered essential to the delivery of the development framework, and its absence from the auction process would prevent the full benefits of the masterplan being realised. In this case, where negotiation with landowners is unsuccessful, it is anticipated that the authority will have access to CPO powers to acquire the land.

It will be important that the threat of CPO is real and therefore that the authority has such powers available to it. In the absence of reform to the CPO rules and regulations, acquiring land through this means will be subject to three key considerations:

- Implementing a CPO requires a public interest justification and a demonstration that it is the last resort. As noted in the Land Value Capture Report 2016-17, in the case of the DRAM, the public interest justification could be the delivery of the zonal development plan and area regeneration. The demonstration of last resort would be the fact that the landowner is not

voluntarily proceeding either with self-development or participation in the auction. These assumptions could, however, be the object of challenge if it is not clear that they are legally sufficient

- For the threat of CPO to be effective in the context of the DRAM, it is clear that the terms on which the CPO is executed cannot be favourable to those that the landowner would expect to secure securing through the auction process, were they to participate in it (as this would then negate the incentive that CPO is designed to provide)
- There is an important question of timing. Were land to be acquired after planning consent for the development framework has been secured (which may align to a period during or after construction of the major transport scheme investment), the default reserve price might be more likely to need to include consideration of the approved changes to land use and increases in density. Acquiring land before planning and/or before legal and political commitment to the transport scheme investment is therefore likely to be more closely aligned with the ability to set a default reserve price that is closer to a 'no scheme' land value; but if the auctions take place this early then the auction proceeds may not sufficiently reflect the full 'with project' value uplifts. When considering whether to participate in the DRAM, landowners may also not be able to rely on the fact that planning consents already exist and may need to be persuaded that they will be secured by the authority after the land assembly exercise (but prior to the auction)

In relation to land that is purchased by the authority via CPO, the authority will become the 'landowner' for the purposes of the auction, and will receive any of the proceeds of the auction that are stipulated for allocation to landowners. As explored further below, this can have important implications for the financial burdens of undertaking CPOs. Full land acquisition by the authority would involve the need for capital funds (for example financing facilities). If the auction is held soon after acquisition and is successful, the period of time before these funds are returned to the authority may not be lengthy.

The second route is in relation to identified developable land that is not considered essential to the delivery of the development framework to broadly its maximum potential (for example after consideration of the politically and financially onerous nature of embarking on CPOs), the authority may decide to proceed with the auction and development programme without including such landholdings in the lots. In this case, the owners of the land will continue to have quiet enjoyment of their land and will be entitled to make minor developments or home improvements, provided they do not change the density or use of the land.

Should they elect to develop the land themselves outside of the DRAM process, landowners would be subject to a charge, set at a rate such that the revenue realised by the authority is broadly equivalent to what it would have expected to receive through the auction had the land been included within a lot. It would need to cover both a contribution to transport infrastructure, and to other ancillary local infrastructure needs.

We would need to consider whether this self-development levy could be delivered within existing regimes such as the CIL framework (for example borough CIL, s106),

whether it requires reform to existing regimes (beyond those proposed by the Autumn Budget 2017) or completely new powers.

An alternative to CIL may be to derive the developer contributions (at least in part) from s106 agreements, but this too has restrictions on the basis that s106 is designed to be highly targeted, with the funds intended to be used for specific infrastructure requirements on the particular site in question only. Again, the Autumn Budget has suggested relaxing pooling restrictions on use of s106 that may – at least in part – address this concern.

An important general consideration is that every landholding will be different, and what incentivises one landowner may not incentivise another. This highlights the inherent drawback of charging structures that are set at consistent levels across wide areas, and points to the potential need for individually negotiated solutions in many cases.

Number and timing of auctions

The next step of the DRAM process would be to determine the number and timing of auctions with the objective to:

- Maximise value extraction by providing opportunities to the market when competition will be optimal and when the market can see the impact the underlying investment is having on potential density and price
- Provide as much certainty as possible to the market (and hence minimise the amount of risk that needs to factored into bidding prices); and
- Make best use of the potential for the auction proceeds to be recycled and contribute sufficient revenues to projects when costs are due

Our consultants assume that the number of auctions to be held within each DRAM area would be determined on a case-by-case basis. Whether one or more auctions are carried out will depend in the first instance on how many lots are available for sale, which itself – as described above – will be informed by the quantum of 'developable' land identified for pooling and provided to the authority by landowners for inclusion within the auction.

In practical terms, if more than one auction is to be held, consideration will need to be given to the appropriate number of lots to be sold at each auction/the associated frequency of auctions – for example, one lot at a time; multiple lots within each auction. This might well be informed by assessments of how much new development the market is considered able to absorb, impacts on market prices (and therefore landowner and authority proceeds), where investment tends to have an impact over time rather than in a single step, the capacity of developers to fulfil requirements to a certain timescale, and the potential impact on development in other locations.

The timing of the land assembly and auction process will be critical to extracting maximum planning gain, and ultimately to the success or otherwise of the DRAM mechanism. The financially optimal, but potentially most challenging from other perspectives, scenario would be to 'pool early and sell late'.

In respect to the former, the agreement of landowners to enter their land into an auction (and the agreement of the reserve price at that point) would ideally be

secured prior to the market having ‘reacted’ sufficiently to the project such that the reserve price will already have factored in a significant proportion of the potential uplift (noting that the basis of the DRAM is that value will also be increased through the masterplanning process undertaken as part of the DRAM itself).

In respect to the latter, the timing of auctions themselves will on the one hand be informed by market conditions, with the aim of ensuring maximum participation and appetite from potential bidders. On the other hand, there may need to be a time limit within which the auction must occur, to ensure that proceeds are returned to participating landowners as soon as possible after the land pooling process.

In this context, projects with long construction timelines will need particular consideration. At one end of the spectrum, if the auction takes place before the transport scheme is politically and/or legally committed and constructed, this could translate into earlier, more certain, contributions towards costs. However, the quantum of value uplift captured may be significantly reduced, as the full impact of the value uplift will not yet have been factored into the sales price of newly developed properties. Auction bidders may need to factor in expensive financing costs if they were required to wait for a lengthy period before commencing development, and this could suppress the quantum of net public sector receipts above the auction reserve prices. Where reserve prices are high and the impact on development value slow, and/or there is some other factor that serves to reduce development value, it is possible that early auctions will fail to reach their reserve prices.

On the other hand, if the auction occurs at a later time, the proceeds should be greater but the reserve price (and indeed valuations for CPO purposes) – if determined at the same time – would need to include an element of being ‘backdated’ to a hypothetical pre-scheme value to achieve a level of planning gain realisation comparable to the land value uplift delivered by the transport scheme investment. This may not be practical for many reasons, and at the very least at that point of the scheme construction programme it would be likely to be difficult to demonstrate the dependence of the scheme upon DRAM funding.

Pricing

Auction proceeds

The auction proceeds reflect the highest price (if above the reserve price) for a lot put forward at the auction by a compliant bidder. In respect of being a compliant bidder, the authority may choose to run a pre-qualification process in advance to select a ‘framework’ of eligible auction participants.

Well in advance of the auction process, bidding entities will be provided with a full suite of documentation and data about the lot for which they are invited to bid, potentially including:

- Development rights within the identified lot

- An obligation to develop the lot within the parameters (for example uses, densities) set out in the development framework, and to a defined maximum timescale[4]
- An obligation to deliver specified affordable/social housing as set out in the development framework; and
- A requirement to deliver and/or finance some other local ancillary infrastructure requirements, which may include some share of pooled 'other infrastructure' funding (see below)

This information would inform bidders as they form views on the prices they are prepared to offer at the auction. Such auction prices will reflect the assessment of the value of the lots, considering, among other factors:

- The net revenue streams that could be earned from the development (in the form of property disposal or rental and service charge incomes)
- The costs to develop the lots to the required parameters
- Risks associated with delivery in full of related schemes, including the transport scheme investment and other components of the local masterplan
- Arrangements for delivery and funding of other ancillary infrastructure requirements (discussed further below)
- Funding arrangements for affordable housing (for example any other available grant income)
- The returns the developer requires
- The developer's view of market risks, including of sales prices and development costs
- Financing costs; and
- The liquidity of the development rights (for example whether they are tradeable or not)[5]

As the Land Value Capture Report, 2016-17 noted, the DRAM allows developers to price the development opportunity on the basis that the only risks they are asked to take are site preparation, construction and sales. Material land acquisition and planning stage risks are removed as outline planning consents are obtained by the authority. The authority can also negotiate and settle rights of light and existing land use covenants prior to the auction. Developer obligations need to be clearly specified in advance, such as any minimum affordable housing requirements, site specific mitigations and financial contributions required to be made towards the funding of other local infrastructure. This significantly reduces developer risk and the bid prices would be expected to reflect this.

[4] The development framework will ideally strike an appropriate balance between the need to build more homes and not 'flooding the market' which will impact the appetite of bidders and the potential for investors to earn a return.

[5] Having been bought at an auction, it is possible that development rights may be tradeable, the advantage of which is that they become more liquid, with lower risk attached, and therefore more attractive to the market. In light of the obligations to develop lots within a certain timeframe, there may need to be a limit to the period during which trading is permitted.

Reserve price

The reserve is the minimum price that will be accepted through the auction for the lot to be sold. It needs to be high enough to provide an incentive for a significant number of landowners to participate, while not being so high that opportunities for value capture are excessively curtailed.

Our consultants suggested that the reserve price may be built-up on the basis of two key elements: a ‘default’ reserve price and a ‘discretionary supplement’.

The ‘default’ reserve price will itself include four components:

1. The pre-agreed amount that will be returned in full to each freeholder, provided that the relevant lot is sold for an amount that is greater than the overall reserve price.

   The basis for this amount will be an agreed 'no scheme' value of each freehold landholding included within the lot. To determine this 'no scheme' value, the planning authority (either the borough or the Mayor) would need to determine what development (for example use and density), if any, would be permitted on the site in the absence of the transport scheme, compare this to the current investment value of existing development on the site and use both to determine the applicable freehold ‘no scheme’ market value of land parcels across the zone. This would likely entail the deployment of specialist valuations expertise and require availability of appropriate data (for example current rental rates) to support the valuation. If the 'no scheme ' value was to be determined at a point of time significantly in advance of the auction (which may be preferable to ‘lock in’ the reserve price early), then a mechanism would also need to be agreed whereby a rate of inflation from that point until the auction is factored into the final reserve price at the time of the auction.

2. The amount necessary to buy out onsite leaseholders. This assumes an approach whereby a portion of the auction proceeds are essentially set aside for this purpose, meaning that the obligation does not lie with the successful bidder. An alternative approach would be to require the bidder (who might take over the freehold of the land) to compensate the leaseholder, the cost of which would be reflected in lower auction bid prices. However, such an arrangement might make auction participation less attractive to developers.

   It is noted that the total value of a freehold with an associated leasehold interest should normally be roughly the same as the total of a freehold with no leasehold. So while the distinction between these two components is important administratively (to ensure correct distribution of funds), the overall impact on the viability of an auction should not be impacted by the existence of a leasehold in relation to any individual landholding.

3. The occupier displacement costs, which is applied to all land in the auctionable lot – whether entered voluntarily by landowners or acquired via the authority using CPO powers.

   In respect of land that is acquired by the authority via CPO because the owners do not provide it voluntarily, the occupier displacement costs amount would be used after the auction to repay the costs incurred by the authority in

pursuing the CPO. These costs include the costs of relocating occupiers of land, which may be relatively high if, for example, land is occupied by a business with significant amounts of high value plant or equipment.

For land that is entered into the auction voluntarily, if the auction is successful, the occupier displacement costs component of the reserve price would be returned to the landowner. It therefore provides an additional incentive to encourage participation by landowners by making the reserve price represent a more attractive offer.

4. An amount that is reserved by the authority to pay for (in part) the delivery of other infrastructure required to support the new development. This would likely be for infrastructure that is essential for the planned new development, without which planning consent could not be granted, and hence must be included in the reserve price to guarantee that it is funded. It is important to ensure that the freehold land values in the reserve price reflect the costs of other local infrastructure that is required to support any ‘no scheme’ development.

   On sites that are marginal (that is, where auction proceeds might only just exceed reserve), there may be a case for taking this component out of the reserve price in order to make sure the auction clears and to maximise participation/the contribution raised. Alternative funding (for example central government, wider authority auction proceeds) would then be sought to meet these costs. The treatment of other ancillary local infrastructure is considered further below.

A ‘discretionary supplement’ could be added to the reserve price at an authority’s discretion to take account of its view that the value of the auctioned land 'after' the transport investment and local masterplanning is likely to be considerably higher than the ‘default’ reserve price – ie to ensure that the authority is only compelled to accept bids that represent at the very least a lower end estimate of what is considered to be a fair price in a 'with scheme' scenario. This amount would essentially be an artificial supplement added to the default reserve price to raise it to a value that is considered a minimum acceptable by the authority. This component of the reserve price would be shared between the authority and landowners, although the sharing regime may be different to that for the value in excess of the reserve price that is achieved through the auction. While, in theory, a competitive process in an efficient and open market should avoid the need for such a measure, it may provide added protection for the authority and a means of avoiding providing developers with inappropriate 'windfall gains'. For example, were the reserve price to be considered much lower than the potential future value of the lots, such a measure could help discourage bidder behaviours and incentives that are not aligned with the objectives of the auction process.

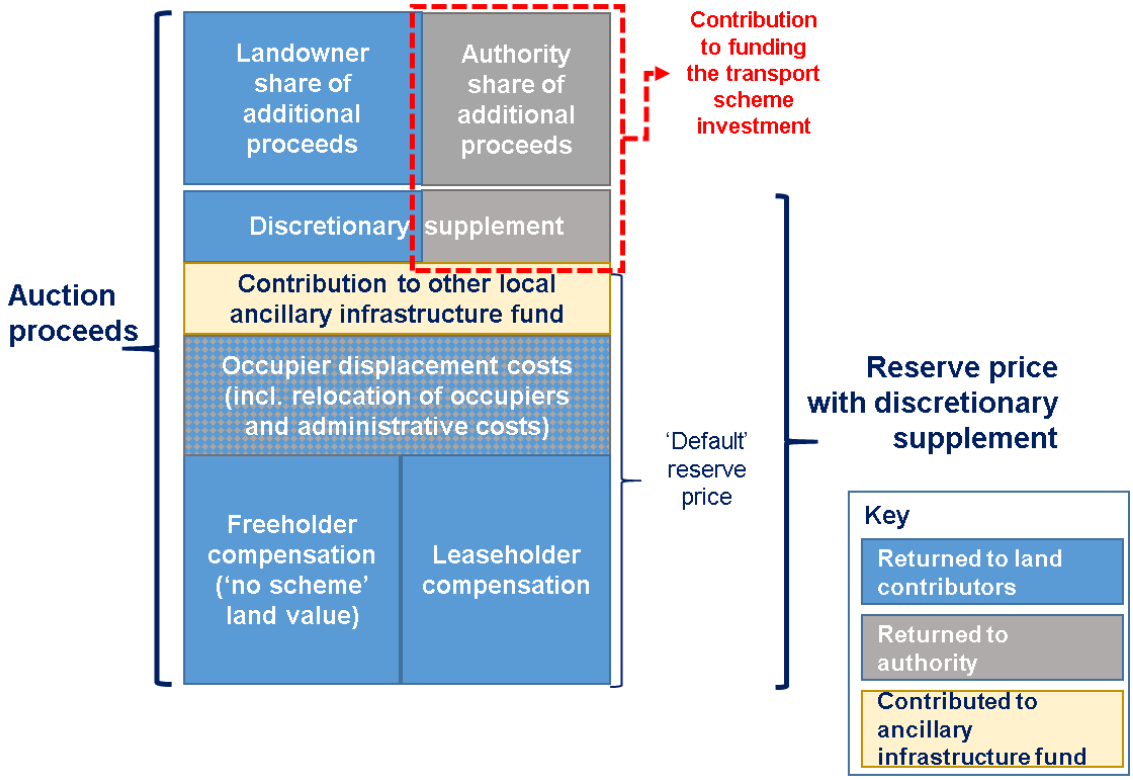
Although there will be an element of negotiation involved in the process of establishing the reserve price, the approach should be demonstrably transparent and fair to all participating landowners and other stakeholders. Where possible this would be aided by components of the reserve price being calculated in a published formulaic manner (as is the case with the CIL). Clear guidelines should be set out well in advance of the start of the land pooling process.

These guidelines and processes will be important to ensure that the reserve price is considered fair and credible by the owners of developable land. There may be complexities if, for example, the relevant local authority already has ambitious regeneration and development plans, even in the absence of the proposed transport scheme investment. The extent to which these plans were reflected in the reserve price could have a material impact on the ability of the market to 'beat' it through an auction with a reserve price out-performance large enough for a meaningful funding contribution to be made to the costs of the major transport scheme investment.

Allocation of auction proceeds

Following a successful auction (where the reserve price is exceeded by a compliant bid), the proceeds will be split into a range of components to be distributed to the various stakeholders. Figure 1 below illustrates how this might occur:

Figure 1 – Allocation of auction proceeds



Source: KPMG

The amount equivalent to the reserve price of the lot will be set aside first. As described above, this will be shared as follows:

- Participating freeholders will receive the amount agreed with the authority to reflect the 'no scheme' value for their individual landholdings (plus any additional 'mark-up' if agreed)
- The occupier displacement costs will be returned to participating landowners or – where CPO has been necessary – retained by the authority to fund certain costs it has already incurred
- Relevant leaseholders will be compensated for the termination of their leases

- A predetermined amount will be diverted to a fund to support the delivery of 'shared' other local ancillary infrastructure (noting that, in some marginal cases, this may be removed from the reserve price to maximise the chance of net auction proceeds)[6] and
- If a discretionary supplement to reflect a minimum acceptable auction price was included, this would be shared between the authority and landowners in line with their agreements

Following the allocation of the reserve price, a predetermined amount may be deducted from the top-line auction proceeds and placed into a fund to be used to meet the costs of other ancillary (ie not directly part of the transport scheme) local infrastructure across the masterplan area (in addition to the amount already diverted from the reserve price). The purpose of this arrangement – as discussed in further detail below – is to ensure that there is provision to pay for other 'shared' infrastructure (only), such as schools, in a manner that avoids burdening the successful bidders for individual lots with disproportionate costs which might make reserve prices unachievable in some cases. Depending on the most cost-effective means of delivery, the funds may be used directly by the authority or local borough to enter into contracts to construct the infrastructure, or be provided to the successful bidder of one or more of the lots who then becomes responsible for delivery of other local infrastructure.

Finally, the component of the auction proceeds achieved above the amounts previously allocated will be shared between the auctioning authority and the original landowners. The mechanism for sharing this amount will be a critical design feature of the DRAM, as it represents – for the authority – the principal amount that will be raised by the DRAM as a contribution to the transport scheme investment and, for the landowners, the primary mechanism through which they can earn back a portion of the achieved planning gain. The opportunity for landowners to do so is a key incentive for participating.[7]

Given the importance of this element of the DRAM process, a robust and transparent sharing mechanism will need to be agreed in advance. The mechanism could be based on:

- A simple split (for example 60/40)
- A sliding scale or cap, based upon the amount by which the auction proceeds exceed the reserve price
- Some other mechanism (for example informed by the general rate of taxation in the economy)

[6] In respect of the illustration provided, the freehold land value in the reserve price should be lower as a result of it reflecting the need to provide some other local infrastructure in the 'no scheme' world (provided it is the development value driving the freehold value, and not the investment value of the current buildings). The additional amount diverted from the auction proceeds would not then provide a cost allowance for the element of other local infrastructure that would otherwise be required in the 'no scheme' world.

[7] It is noted that if the authority is also the landowner (either due to existing landholdings or as a result of a CPO process), then any portion of the auction proceeds returned to it in its capacity as landowner could also be used to augment the amounts that are directed towards funding the transport scheme.

As a key objective of the sharing mechanism is to incentivise private landowners to participate in the DRAM process, there is likely to be a case for ensuring that the share received by landowners does not fall below 50 per cent, which reflects a view of the level at which they may be more likely to feel that they are appropriately incentivised by the sharing arrangement.

A further mechanism will then be required for the allocation of the landowner share among the contributors of land. It is anticipated that the proceeds could be allocated in proportion to the 'no scheme' values of the land agreed prior to the auction, which is considered to be a more equitable approach than, say, reflecting the use to which land is to be put after the auction (ie recognising that the planning gain on some landholdings may be greater than others).

An alternative approach might be to defer and spread the sharing mechanism over a longer period through a 'profit share' arrangement, whereby rather than paying an amount upfront in the auction, successful bidders would instead commit to share with the authority and participating landowners a portion of the profits from development they receive once the development is complete. In certain circumstances this might prove to be a more favourable arrangement, replacing a heavily discounted upfront amount with an income stream over time. On the other hand, delaying the receipt of funds would clearly have a negative impact on the ability of the revenues to support the financing of the transport scheme and would introduce additional risks for the landowner and the authority (for example commercial and residential market prices achieved).

Costs to administer

A range of costs will be borne by the authority to administer the DRAM. Some of these relate to the core costs of land pooling itself – such as the costs of compensating leaseholders for the termination of leases and potentially for acquiring land through CPO.

Related to these will be costs associated with legal advice, land valuation and developing guidelines for stakeholders. Depending on the amount of masterplanning that may have already been undertaken at a particular location (for example by the relevant borough), it may also be the case that the authority will need to fund the production of a development framework for the area adjacent to the potential transport hub investment.

A detailed assessment of these costs has not been undertaken at this stage.

As noted above, certain costs may be recovered through the auction process by including an amount within the reserve price that is returned to the authority. These would need to be tightly controlled to avoid jeopardising the chances of landowner participation and/or a successful auction.

Ancillary infrastructure

In addition to the provision of the core housing and commercial premises within the masterplan zone, integrated masterplanning is expected to include other required local infrastructure, such as roads and walkways, utilities, community facilities, schools, other social infrastructure, and so on. This would be akin to the other

infrastructure identified in the Development Infrastructure Funding Study (DIFS) in relation to the Northern line extension. These all form essential components of building sustainable communities, encouraging regeneration and fostering economic growth, as well as supporting and enhancing the realisation of the benefits of the proposed transport scheme investment itself.

There are some types of ancillary infrastructure that can be most efficiently and cost effectively delivered by the public sector. These are likely to include the larger shared projects with a wider footprint. For these projects, the risk of construction and funding will be retained by the authority or another relevant public sector entity (for example the relevant London borough).

Other ancillary infrastructure projects may be more effectively delivered and financed by developers as part of an integrated construction programme. In these cases the private sector can be best placed to manage the risk of the construction of the infrastructure alongside the development they are undertaking. In respect of the DRAM, requirements may therefore be included in the specification for a lot, which the successful bidder will be obliged to follow. These might include delivering other local infrastructure that is integral to the development projects within individual land parcels. However, they might also include some of the larger projects, such as shared community facilities, which will span across different lots – both in terms of footprint and the benefits they will bring across the masterplan zone – but are not delivered by the authority.

To help fund the provision of ancillary infrastructure, it is anticipated that a predetermined portion of the reserve price will be set aside and placed into a 'fund'. This is to ensure that funding is ring-fenced for the other infrastructure that forms an essential part of the new development framework and without which the new residential and mixed-use stock cannot be supported. In some marginal cases, this may be removed from the reserve price to maximise the chance of net auction proceeds being received, the authority’s share of which could instead supply the amount to be diverted to the fund.

The fund will then be applied to the delivery of the other local ancillary infrastructure, which might involve either the authority or borough undertaking this activity itself (via a separate procurement exercise) or reallocating certain amounts back to particular bidders whose obligations include other local infrastructure delivery for which the authority has decided to provide some funding support. The objective of this arrangement, as mentioned above, is to ensure that there is provision to pay for other local infrastructure that benefits more than one auction lot, in a manner that avoids burdening the successful bidder for an individual auction lot with disproportionate costs which might make reserve prices unachievable.

Governance

The ‘authority’ as described throughout this paper refers to the entity or vehicle that will be responsible for implementing the DRAM mechanism. Accordingly, it will require the ability to determine the DRAM area, assemble the land, specify the lots, set the timing and number of auctions, and receive and allocate the proceeds of the auctions.

The authority may not need to be the planning authority for the local area. However, it would need to work closely with the borough to develop the local development framework (masterplan) required to generate the potential for planning gain large enough to deliver a successful DRAM outcome. Where the masterplan area spans the boundaries of multiple boroughs, or where the interface with the transport scheme investment is integral to the proposed masterplan development, it may be appropriate that the authority is the planning authority. Where this is the case, an important component of the authority's work will be to be work closely with the relevant boroughs on matters of planning, to ensure consistency of purpose and to demonstrate the continued role of democratically elected governing entities and their local plans for the area.

The authority will need access to certain legal powers – principally those required to provide an effective incentive to landowners to participate in the DRAM process. These will include powers to undertake CPO and to raise a supplementary development charge to be applied to any development that does not participate in the DRAM auction process. These powers will either need to be vested in the authority itself or, should this involve significant administrative difficulty or cost (for example primary legislation), it may be preferable for the authority to use the powers which are already held by organisations with which it could partner, such as boroughs, the Homes and Communities Agency (HCA), DfT, TfL or the Greater London Authority (GLA).

There is precedent for innovative funding arrangements to be implemented successfully by boroughs, either individually or in partnership with each other and/or with us (TfL) and the GLA (such as at Vauxhall-Nine Elms-Battersea). The appropriate arrangement needs to be decided upon in the light of consideration of the scale of financial risks and major transport investment contribution that the DRAM is required to deliver. Where this contribution and/or risk is larger than boroughs are able to bear, there is likely to be a case for greater Mayoral involvement and/or some form of central government guarantee.

In London, powers exist to create Mayoral Development Corporations (MDCs), which present an important precedent and potential model for the DRAM. MDCs have been established in Stratford and Old Oak Common for the purposes of coordinating major development programmes (both of which included a significant transport element). They have many of the characteristics and powers required (for example planning powers) and – crucially – more powerful CPO powers than boroughs. Furthermore, the risks assumed by a MDC lie ultimately with the Mayor, who arguably is well placed to manage and mitigate significant risks on account of the resources (including limited tax and fare raising powers) available to him and his ability to diversify risk across a broader portfolio of activities, powers and assets. While there are some drawbacks to the established MDC approach (watering down of very local democratic accountability; additional administration requirements and costs), there appears to be a potential case that a DRAM required to make a significant financial contribution may require powers akin to such an established structure for the purposes of planning and delivery.

Financial management

As work undertaken by KPMG during the Land Value Capture Report, 2016-17 highlighted, potential LVC funding mechanisms should be assessed for their ability to support the raising and servicing of finance, which can then be applied to meeting the costs of delivering major transport infrastructure projects. The capacity of an LVC funding stream to support financing efficiently is primarily linked to two main features: timing and predictability. These are explored below in relation to the DRAM.

Many 'taxation-based' LVC mechanisms have the disadvantage that revenue raising is often contingent upon land value uplifts being realised over time, and evidence suggests that in relation to major transport scheme investments the crystallisation of a significant proportion of the benefits occurs well after the completion of the projects, meaning that there will be a timing disconnect between the need to meet upfront capital costs and the realisation of LVC revenues. The DRAM is designed to bring forward (essentially 'capitalise') to some extent the future benefits of the scheme into upfront auction proceeds. These proceeds – and, crucially, the portion of the proceeds returned to the authority – can be, subject to the timely execution of the auction, received at an early stage in the project's lifecycle such that they can be available to be applied towards upfront capital spending requirements when they arise. This may also mean, however, that auction proceeds are suppressed to reflect a significant risk adjustment in relation to assumed future local land value increases. Alternatively, it might mean that auctions have to be delayed to a point in time at which such risk adjustments are no longer necessary, in which case it will be more difficult to agree the 'no scheme' reserve prices with existing landowners.

The upfront nature of DRAM receipts also means that there is no continuing income stream that can be applied to servicing other financing that may have been raised to support the funding requirement. In this context, we consider there may well be a role for other 'taxation-based' LVC mechanisms to support DRAM funding and provide a mix of upfront and recurrent income across the full range of beneficiary groups of major transport scheme investments. In addition, there may be variations of the DRAM that allow for a more regular and longer-term income stream, rather than one-off capital receipts. These might include mechanisms whereby successful bidders provide payments to the authority over time, as they are able to realise the planning gain of development within the masterplan zone, rather than as a one-off capital payment.

In respect to predictability, if DRAM auctions were to take place relatively early in the transport investment cycle (accepting the potential for significantly lower net proceeds to the authority) then the DRAM could be relatively effective. By the time construction of the scheme commences, provided the auctions are successful, the authority could know exactly how much money has been raised to contribute towards the transport scheme investment. However, an 'in-principle' (ie 'subject to DRAM') commitment to invest in the transport scheme may be needed in advance of the auction, to provide the developer market with adequate certainty that (again, subject to the DRAM) the transport investment will proceed. This would enable developers to have more confidence to price the future benefits into bid values. To secure this commitment, it is likely that the scheme will need to be fully funded. However, the exact quantum of DRAM funding would not yet be known. Although a degree of certainty will be provided by the existence of a reserve price for all lots, which may

include a discretionary supplement which will in part be returned to the authority, the exact size of the successful bids (and hence the amounts to be allocated to the authority) will not be known.

DRAM options and alternatives

For the purposes of the quantitative and qualitative assessment of the DRAM in this study, our consultants developed two versions of the mechanism:

- **'DRAM Max'**: This reflects the DRAM mechanism operating at what is considered to be its most effective, in the context of the design features and considerations described in Section 4. It assumes that all required powers are in place, and that the authority has successfully communicated the message that the transport scheme and associated regeneration programme will only proceed if the DRAM is successfully executed
- **'DRAM Light'**: This reflects a modified version of the 'DRAM Max' which acknowledges and addresses some of the key risks and challenges. Accordingly, it assumes limited change to legislation, limited ancillary infrastructure requirements for bidders, limited CPO and auction proceeds that reflect a slightly less positive view from the market than the 'DRAM Max'

Our consultants used these two versions of the mechanism to frame the analysis of the revenue potential of the DRAM at two case studies in London, as described in Section 5.

Additionally, to provide a reference point for the DRAM and to understand better the alternative pathways that might exist to achieve its objectives, two further options have been identified. These have not been subject to revenue modelling undertaken by our consultants, but are used to support the qualitative assessment of the DRAM in Section 5. The two alternative options are described below:

- **Enhanced CIL and s106:** This reflects the improved use of CIL and s106 as LVC mechanisms, in particular including the following potential changes that were identified for consultation in the Chancellor's Autumn Budget 2017[8]:
    - Removing the restriction on s106 pooling towards a single piece of infrastructure where the local authority has adopted CIL, in certain circumstances such as where the authority is in a low viability area or where significant development is planned on several large strategic sites. This will avoid the unnecessary complexity that pooling restrictions can generate
    - Speeding up the process of setting and revising CIL to make it easier to respond to changes to the market. This will include allowing a more proportionate approach than the requirement for two stages of consultation and providing greater clarity on the appropriate evidence base. This will enable areas to implement a CIL more quickly, making it easier to set a higher 'zonal CIL' in areas of high land value uplift, for example around stations

[8] Autumn Budget 2017, page 61, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/661480/autumn_budget_2017_web.pdf

- Allowing authorities to set rates which better reflect the uplift in land values between a proposed and existing use. Rather than setting a flat rate for all development of the same type (residential, commercial), local authorities will have the option of a different rate for different changes in land use (agricultural to residential, commercial to residential, industrial to residential). All the protections for viability from CIL, such as the Examination in Public, will be retained
- Changing the indexation of CIL rates to house price inflation, rather than build costs. This will reduce the need for authorities to revise charging schedules. This will ensure CIL rates keep up with general housing price inflation and if prices fall, rates will fall too, avoiding viability issues giving combined authorities (CA) and planning joint committees with statutory plan-making functions the option to levy a Strategic Infrastructure Tariff (SIT) in future, in the same way that the London Mayoral CIL is providing funding towards Crossrail. The SIT would be additional to CIL and viability would be examined in public. DCLG will consult on whether it should be used to fund both strategic and local infrastructure[9]

- **'Super JV':** In this option, profit sharing happens as a result of collaboration between the public sector, landowners and a selected master developer to bring forward development. The broad principles of the approach are:
  - Landowners would agree to partner with the public sector and a master developer based on an agreed approach to payment and profit share
  - If key landowners do not cooperate then the public sector would use appropriate CPO powers to secure land/cooperation
  - The public sector would hold a competition to procure a master developer/developers
  - The selected developer would work up details of their preferred scheme and secure planning consent. The scheme would be consistent with the development framework/vision for the area but may evolve and differ on a range of matters
  - Landowners would be paid for their land at a time to be agreed, but probably no later than start of construction
  - A profit share arrangement would be agreed where the master developer and the public sector (and potentially landowners) receive agreed percentages of value based, for example, on sales values per square foot of the scheme

Table 1 sets out the characteristics of the two DRAM scenarios and two alternative options.

[9] It is noted, however, that this may introduce the possibility of build cost inflation matching or exceeding house price inflation, in which case the CIL rate may be lower under the new proposal.

Table 1 – DRAM options and reference case alternatives

Characteristic	'DRAM Max'	'DRAM Light'	Alternative: enhanced CIL & s106	Alternative: Super JV
Aim/nature	Major investment in DRAM approach as an effective tool	Pragmatic approach, flexibility to cover small elements	More effectively implement current tools	Build on current good practice with a more ambitious approach
Development framework in place?	Yes	Yes	Yes	Yes
Incentive to participate (carrot)	Share in uplift above open market value (higher of investment value and development value without infrastructure) paid at time of auction		n/a	Share in uplift based on profit share during development
Incentive to participate (stick)	1) CPO if do not participate 2) Substantial CIL on self-development	May use threat of CPO in some limited circumstances	n/a	CPO if do not participate
Type of planning application	Outline, either for whole area or for each lot		Individual outline and detailed planning applications (PAs)	Outline/hybrid, covering whole JV area
When is outline planning permission secured?	Prior to auction	Prior to auction	At various times as sites come forward	After auction
What is the reserve price?	No transport scheme, no uplift value + occupier displacement costs + local infrastructure costs		n/a	No transport scheme, no uplift value + occupier displacement costs + local infrastructure costs

Characteristic	'DRAM Max'	'DRAM Light'	Alternative: enhanced CIL & s106	Alternative: Super JV
What infrastructure is included in bid price?	If CIL and s106 excluded then developers or the public sector will need to pay for some other local ancillary infrastructure.		n/a (infrastructure paid for from s106 and CIL)	Known non-CR2/BLE infrastructure costs are included
Size of lots in each auction	Lots size of around 250,000 to 5 million square feet of development	Min. could be individual residential blocks – say 100 units. Max. around 3 million square feet.	n/a	Estimate optimum size is around 3-5 million square feet
Number of lots per auction	Assumed to be between 1 and 20	Assumed to be between 1 and 10	n/a	Assumed to be one lot per auction
Assumed changes to wider legislation	New planning powers and possibly changes to CIL/CPO regulations	None	None	None
Implications for upfront pump priming expenditure	Possible major upfront costs, particularly for CPO (to extent needed). Might be recovered via auction reserve price	Some additional upfront costs. Might be recovered via auction reserve price	Required as per usual processes	Possible major upfront costs, particularly for CPO (to extent needed). Might be recovered via auction reserve price

Source: KPMG

5. Case study analysis

This section of the report summarises the analysis carried out by our consultants on two case study sites and it:

- Sets out the approach and assumptions used for modelling the reserve price and auction values for the DRAM options that have been assessed
- Describes the results of the modelling of 'DRAM Max' option at Old Kent Road and the Crossrail 2 station, and the sensitivities tested; and
- Reviews the findings and implications of the case study assessment

Approach

Phasing and scale of development

Our consultants based the phasing and scale of development under each modelled scenario and at each case study location on the following assumptions:

- The anticipated level of development forecast to come forward as part of the development framework at each site is based on information within various development studies made available to the consultancy team
- The total scale of development is assumed to vary to a modest degree. The 'DRAM Max' option is assumed to fully implement the scale of development in the development framework. The 'DRAM Light' option is assumed to achieve reduced total development due to the more limited application of CPO powers and consequent challenges in bringing forward fragmented sites. It is assumed that the 'DRAM Light' would achieve 90 per cent of the density and 90 per cent of the values that 'DRAM Max' would achieve. This adjustment has been informed by research into precedent schemes with characteristics in common with the 'DRAM Max' (ie single landownership) and with 'DRAM Light' (ie fragmented landownership), covering King's Cross and Vauxhall-Nine Elms-Battersea
- Development is assumed to come forward at an average rate each year calculated by dividing the total floor space by the assumed total development timeframe. This approach is based on the assumption that the average scale of demand is at least equivalent to the average scale of assumed supply per annum
- At each location, a phased approach to the development of each of the auctioned lots has been assumed whereby each lot is assumed to be developed sequentially on the basis that the annual demand is capped. The exception is if appropriate parts of different lots are developed in parallel at a combined rate equivalent to the assumed level of annual demand/achievable supply
- The total timescale for development varies by DRAM option, with the 'DRAM Max' assumed to have the most condensed development timeframe and the 'DRAM Light' assumed to have the most extended. This is assumed to in part reflect the more positive assessment of the ability to capture wider demand arising from a successful development process

Auction timing

As a starting point for the analysis, the following 'central case' assumptions in respect of auction timing were developed:

- Old Kent Road. Analysis of the development framework suggests 40 per cent of the development volumes (in a 'DRAM Max' scenario) could be constructed without the BLE, and so it is assumed development can start immediately, therefore the first auction is assumed to take place in 2018
- The Crossrail 2 station. It is assumed that the Crossrail 2 station could not accept further patronage until Crossrail 2 opens in 2033. Allowing for two years for demolition and development, starting the year after the auction, therefore leads to an assumption of a first auction in 2030

These assumptions were also informed by a recognition of the policy advantages of early development. The 'central case' assumption was not selected with a view to maximising revenues.

The length of time between subsequent bidding rounds reflects the scale of floor space in each round, so there will be a longer gap between auctions at a larger lot compared to a smaller lot.

The DRAM model is, however, designed to show potential auction values for each lot at any given year, provided it is held in advance of the development of that particular lot. As explained earlier, other things being equal, this means that a later auction results in later development. The timing of auctions can have a significant impact on the modelling results, and under some scenarios later timings are required for auctions to generate positive net revenues. This is because the timing of auctions results in differing impacts of:

- The value uplift effects associated with the proposed transport infrastructure (ie the point at which value uplift occurs and when it can be captured); and
- The timing of the development of the lot in relation to the same value uplift effects

It is likely that the outcomes would also be sensitive to the discount factor applied by the developer (accounting for the length of time they would need to hold on to the development rights at risk, before commencement of the development), although it is noted that the model used to assess the DRAM does not at this stage include the functionality to test this in detail.

Reserve price

The approach taken to modelling the reserve price is consistent with the components of the reserve price set out in Section 4. The modelling has determined a 'default' reserve price at a value that is considered to reflect reasonable expectations of value/development in a 'no-scheme' world, plus the opportunity cost to the public sector if landowners do not participate, such as the CPO costs of acquiring land with vacant possession if landowners do not cooperate.

'No scheme' valuation

The component of the reserve price of each lot that includes the 'no scheme' valuation of the land (representing the freeholder and leaseholder compensation components described in Section 4) has been set by reference to two values:

- **Investment values (IVs):** indicative valuations of assets in reference to the forecast future rental streams from leases and the prevalent yields on their assets. They do not factor in specific information on lease lengths, and in effect assume that the landowner assumes any short leases can be renewed on favourable terms, or that leases are indefinite. The IVs applied to the analysis are based on Savills' assessment of average rental values (informed by analysis of recent relevant industrial rental transactions) and an average net initial yield (informed by analysis of industrial investment transactions). An average tenant (and therefore covenant) and income profile has been assumed
- **Residual values (RVs):** calculated based on an Argus software appraisal of the assumed scale of development for each lot. The RV represents the difference between gross development value (GDV) and total costs associated with development, including developer profits (assumed to be 20 per cent of costs including land)

The overall assumption is that landowners would value their assets at the higher of the valuation approaches – IV, or RV after redevelopment.

For the Crossrail 2 station, this means the assumption is that the 'no scheme' valuation is represented by the IV, ie the continuation of existing land uses, as these are estimated to be higher than the equivalent RVs after redevelopment.

For Old Kent Road, a more nuanced approach has been adopted. It is assumed that 50 per cent of the development in the 'with scheme' world would come forward anyway in the 'no scheme' world. This is assumed to equate to 50 per cent of the sites being developed at the 'with scheme' densities (rather than, for example, 100 per cent of the sites being developed at 50 per cent of the 'with scheme' densities). Accordingly, 50 per cent of the land area is valued as a continuation of existing land uses in the area, at investment values.

On the balance of the land in each lot at Old Kent Road, our consultants set the reserve price by taking the higher of the IV and the RV in a 'no scheme' scenario. This is because, in practice the RV will need to be higher than the IV, otherwise there is no financial incentive to develop. The RVs have been based on known schemes in and around the area.[10] For the purposes of the RV estimates, the level of affordable housing in the 'no scheme' scenario is assumed to be 25 per cent – while it is noted that this is not consistent with current policy, our consultants considered it (based on various scenarios tested) to be the maximum level at which development would be viable – or at least the view which would be reflected in the land market. It is assumed that IVs will vary across the area and as a generalisation the higher IVs will relate to the land not developed and the lower IVs to the land that is developed.

[10] In practice such sites are likely to be allocated via a local plan process. It is anticipated that these sites will tend to be those with lower IVs but that a number of allocated sites will have higher IVs than non-allocated sites.

Occupier displacement costs

The occupier displacement costs are sized to cover the costs of relocating existing occupiers and administrative costs (reflecting standard practice).

In the context of commercial land uses the existing occupier relocation costs can add a significant additional cost above freehold and leasehold costs. Accordingly, the modelling allows for an additional 50 per cent beyond estimated freehold and leasehold values to reflect these costs. This figure is based on the experience of Savills and is likely to be at the higher end of such costs, but is considered prudent, particularly if covering scenarios where land is acquired at an early stage before assets have been allowed to depreciate in anticipation of change (implying it could potentially reduce if auctions were held later). The model allows sensitivity testing on this assumption.

As described in Section 4, the inclusion of the occupier displacement costs in the default reserve price represents no net income to the public sector once the auction has taken place, regardless of the amount of land that is subject to CPO, as there are two paths:

- Land is compulsorily purchased: the public sector pays CPO price and is then fully reimbursed at auction by the preferred bidder via the occupier displacement costs; or
- Land is not compulsorily purchased (landowner cooperates and sale agreed): no income or cost to public sector but income above reserve price is the same as if the public sector had compulsorily purchased the land

The occupier displacement costs is therefore applied to all land in the lot, reflecting the fact that the approach adopted ensures that the degree to which some or all of the land in a lot is compulsorily purchased does not affect the outcome of the auction. It is noted, however, that there will be some transition costs and potential financing needs to the public sector where CPO is required, reflecting the cost of acquiring the land before this is reimbursed at the auction sale.

Auction proceeds

'With scheme' RV valuations of the auction lots are based on an assessment of blended sales values per square foot (psqft), yields and costs psqft based on Savills' experience, knowledge of the relevant markets and information made available to our consultants.

Accepted good and prudent practice in valuing development is to base RV appraisals on prevailing sales values at the time of purchase. As outlined below (and in the Land Value Capture Report, 2016-17), Savills' research has found that most of the sale value uplift associated with infrastructure schemes follows completion of the projects and takes time to feed fully through. The consequence of this is that early auctions will not capture most of the eventual uplift, as 'prudent practice' market valuations will only reflect the uplift that has occurred at that point.

In practice a degree of 'hope value' can be part of developers' appraisals of development values, for example, in the context of a track record of consistent growth in values over time. Given the context of the auctions taking place on the

basis that with sale the transport infrastructure will be put in place, a modest degree of hope value in advance of development has been allowed for. This takes the form of assuming developers will anticipate an increase in value between the date of auction and the middle of the development, and that they will account for 20 per cent of that increase in their bid price. The value uplift effects are based on the Land Value Capture Report, 2016-17 research carried out by KPMG and Savills. The specific growth in value curves over time for Old Kent Road and the Crossrail 2 station are presented in the relevant sections below.

To illustrate this element of the valuation, taking Old Kent Road as an example:

- Our consultants assumed that the auction for Lot D (the fourth auction to be held) takes place in 2029 and property values have already increased by 14.5 per cent from 2017 values as a result of the BLE
- The development of that particular lot is phased for 2030-34 in the 'DRAM Max' scenario
- By the middle of the development period for the lot, property values are anticipated to increase by 25 per cent from 2017, because of the BLE
- The developer would account for 20 per cent of the incremental 10.5 per cent increase in property values 2029-32 at the time of bidding in 2029, ie 2.1 per cent
- From 2017 this would mean a +12.6 per cent increase to the auction price (+10.5 per cent value uplift effects already achieved by the auction in 2029 and +2.1 per cent hope value for continued increase to the middle of the development in 2032)

Our consultants note that, in the 'central case', there are no value uplift effects (or consequent hope value) captured by the auctions of the first two lots at Old Kent Road, as the value uplift effects start in 2023, five years before the opening of the station, which is later than the middle of the development of these lots. This reflects the fact that development can proceed at Old Kent Road well in advance of the BLE opening. Similar effects are seen at the Crossrail 2 station.

The following development costs have also been included in the 'central case' RV valuations:

- **Affordable housing.** It has been assumed that affordable housing provision will be at rates reflecting current GLA policy, which is 50 per cent of all housing. This assumption is applied to total 'with scheme' new housing volumes and new housing that would occur without the scheme. In the 'central case', the sale price of affordable housing is assumed to be set that it is sold at cost (for example to a housing association), noting that in reality there might be a range of different types of affordable housing that could be provided, or alternative structures for funding affordable housing. The assumptions of 50 per cent affordable housing and 'sold at cost' together have a substantial impact on viability and thus overall auction revenues. It is noted that the assumption of a lower proportion of 'sold at cost' affordable housing would be consistent with retaining the overall portion of affordable housing but delivering a more profitable mix of types of affordable housing, accessing alternative

funding perhaps through grant or some combination, with the same overall impact on viability

- **Developers' profit margin.** Developers' profit margin is assumed to be 20 per cent of development costs, including land acquisition
- **Local infrastructure.** Consistent with the approach described in Section 4, some local infrastructure costs are accounted for in the reserve price. It is assumed in the 'central case' that 50 per cent of the total cost of providing local infrastructure is included as a proxy for this allowance. The costs are derived from the infrastructure studies for the Upper Lea Valley and Draft Old Kent Road Area Action Plan (AAP). In principle, the infrastructure studies cover all infrastructure required for development to be acceptable in planning terms and so planning permissions should require provision of this infrastructure. In practice, developers do not necessarily cover all the costs of this infrastructure and the 50 per cent is an estimate of the actual costs covered by the developer. While local infrastructure costs cover a range of abnormal development requirements, they do not necessarily capture all site abnormals such as remediation requirements and it is possible additional allowance would be needed for such costs
- **Financing costs**. The costs of construction finance are assumed to be six per cent per annum. This represents Savills' assessment of the current average cost of capital for development assuming a good covenant. Each lot is expected to be developed over a two-to-seven-year timeframe under the 'DRAM Max' scenario. Finance is assumed to be raised at the start of the project but drawn down over the course of the phased development
- **Discounting.** Where auctions are held before development commences, then it is anticipated that developers will also factor in the opportunity cost of capital in committing upfront funds to secure longer-term returns. In scenarios where the auction date is brought forward (but the date of development commencement remains the same), therefore, the RV of each year's development is discounted to the date of the auction at a discount rate of 12 per cent per annum. This rate reflects both cost of capital and risk premium to the longer-term revenues

Old Kent Road

Overview and area characteristics

The Bakerloo line extension is expected to entail two new stations serving the Old Kent Road Opportunity Area (OA), plus new Underground stations at New Cross Gate and Lewisham interchanges to facilitate improved connectivity in southeast London. The Bakerloo line upgrade plans include new trains and improved signalling, allowing a more frequent service to operate.

The area around the Old Kent Road has been designated an OA in the London Plan and it is expected to deliver significant numbers of homes and jobs. In particular, the area around the assumed site of the case study station is characterised by predominantly industrial and warehouse premises, of varying age and condition, north of Old Kent Road. To the south are retail premises close to Old Kent Road itself and residential stock in the hinterland, with a number of high-rise public housing estates.

Lots

For the purposes of the DRAM analysis, our consultants divided the areas identified for redevelopment in the development framework into four auctionable lots, based on the following considerations:

- Location: proximity to the proposed Underground station and primary access roads
- Size: large enough to appeal to a master developer; small enough to encourage competition; and
- Configuration: a 'natural' grouping of properties

In respect of the development framework for these lots in a DRAM scenario, it is assumed that:

- Residential units will increase from 5,872 (reference case) to 13,169 ('DRAM Light') or 14,632 ('DRAM Max'); and
- Commercial floorspace will increase from 379,000 square metres (sqm) (reference case) to 467,000 sqm ('DRAM Light') or 519,000 sqm ('DRAM Max')

Value uplift effects

Sales values for the site were benchmarked against surrounding locations, ie values that Old Kent Road could aspire to be with greater accessibility, such as Elephant and Castle and Oval/Vauxhall – see Table 2 below.

Table 2 – Residential sale values in surrounding locations, Old Kent Road

Location	Lowest (psqft)	Highest (psqft)
Old Kent Road	£550	£900
Oval/Vauxhall	£700	£1,100
Elephant and Castle	£750	£1,000
Peckham/Camberwell	£600	£850

Source: Savills, 2017

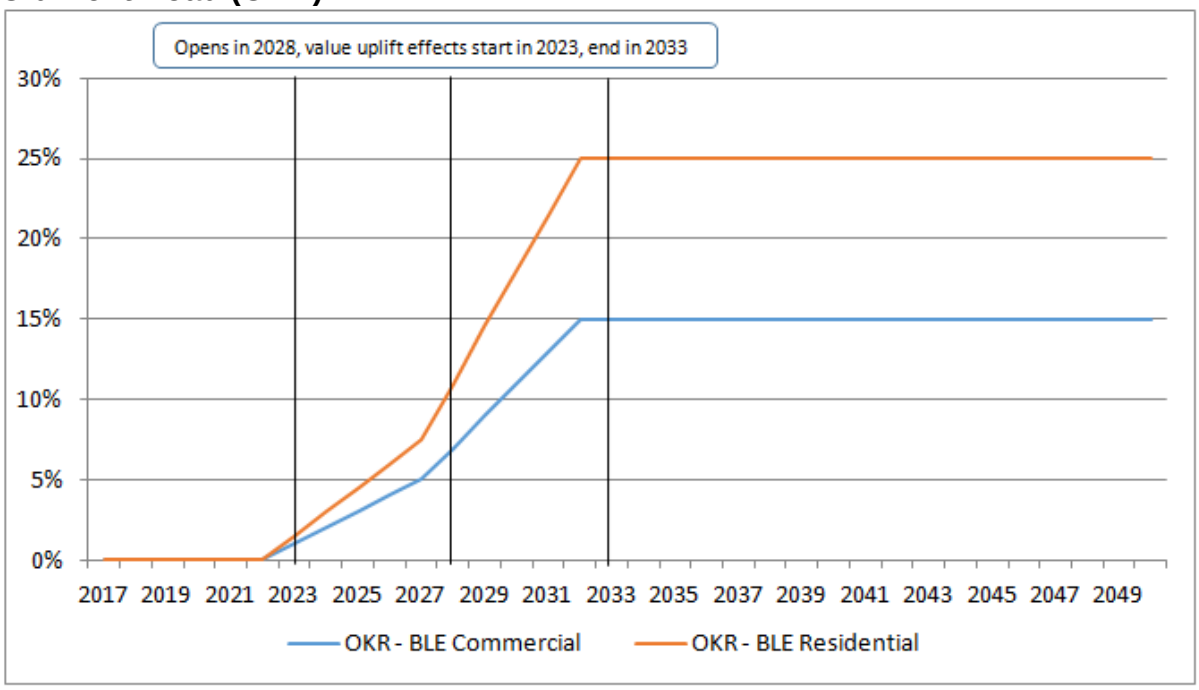
Based on this analysis it is estimated that residential values could increase by 25 per cent due to the BLE.

For non-residential development, values have been derived from Savills' analysis of comparable transactions in Elephant and Castle and Southwark, resulting in an estimate that commercial values could increase by 15 per cent.

The Land Value Capture Report, 2016-17 suggested that the value uplift effects for a station similar to the assumed Old Kent Road station ('high impact project'; 'medium potential, high change' zone) would typically start to be felt five years before opening, and then up to five years after opening and to a more significant degree after opening.

Based on these assumptions, Figure 2 below shows the assumed value uplift effects (with the station scheduled to open in 2028).

Figure 2 – Projected property value uplift effects from the transport scheme, Old Kent Road (OKR)

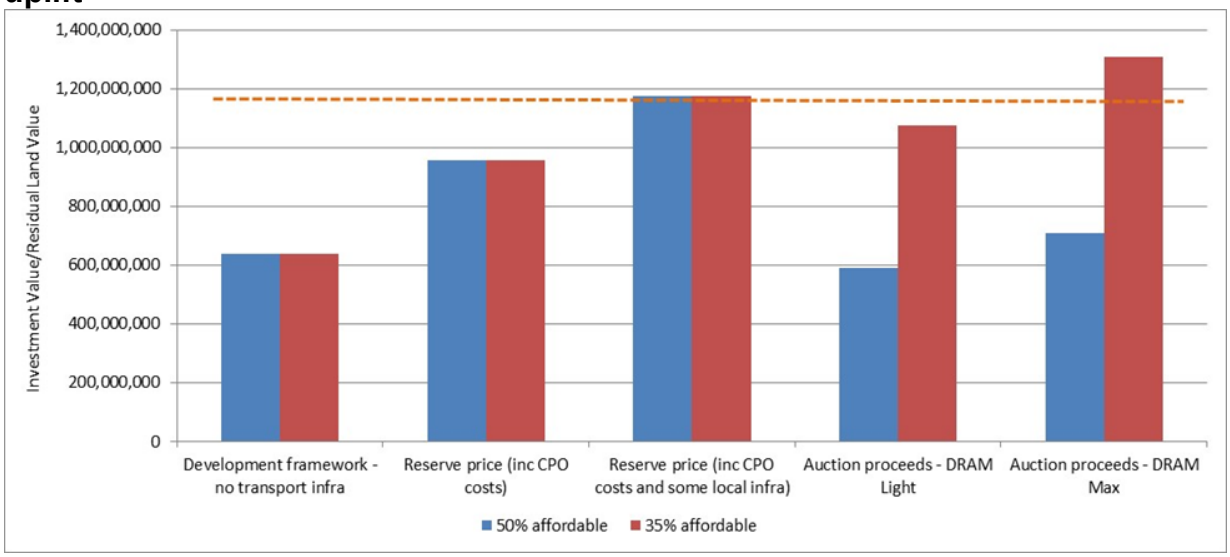


Source: Savills, 2017

Auction outcomes

Figure 3 below shows the estimated DRAM outcomes for Old Kent Road as calculated by our consultants. It assumes '100 per cent capture of value uplift effects', meaning that it shows the results of the appraisals run at the highest values that could be achieved once the transport infrastructure is in place. In this scenario, on a total basis, it is only with 35 per cent affordable housing that the DRAM proceeds would exceed the reserve price, and that is only under the 'DRAM Max' scenario, with £130m excess proceeds. At 35 per cent affordable housing 'DRAM Light' is short of the reserve by £100m. Neither DRAM option results are a successful outcome if affordable housing is required to be 50 per cent.

Figure 3 – DRAM scenarios at Old Kent Road: 100 per cent capture of value uplift

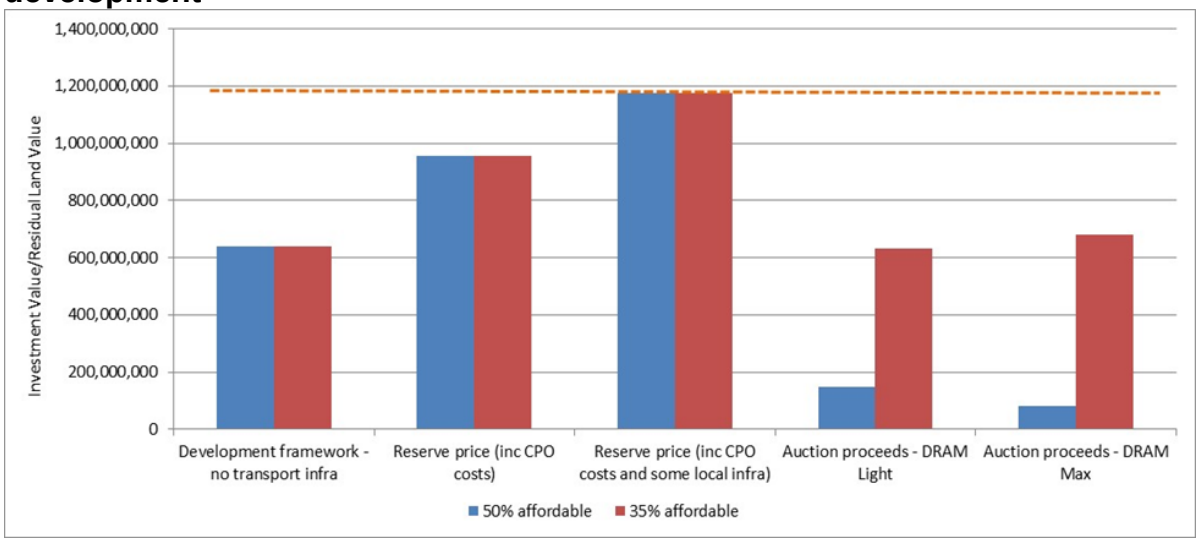


Source: Savills, 2017 (IVs relate to the existing stock and RVs relate to the redevelopment proposal)

In the case of the BLE, '100 per cent capture of value uplift effects' would mean development commencing after five years of the new BLE station opening (the limit of value uplift effects). The modelling assumed, however, that the development rights would be auctioned off before the BLE station was due to open, and even before construction commenced (the reference case suggests that 40 per cent of the residential stock could be developed in advance of the BLE station opening).

Figure 4 shows the potential outcome, on a total basis, if the auctions were held the year before development of the lot commences. This therefore accounts for the maximum possible amount of value uplift effects that the developer could account for in its bid price. If it is assumed that each auction was timed to capture the maximum proportion of value uplift effects possible – that is, as late as possible – then it shows that, even with 35 per cent affordable housing, none of the scenarios would result in a successful outcome. At 35 per cent affordable housing 'DRAM Light' would be short of the reserve by £540m and 'DRAM Max' by £500m. In practice, there may be other compelling reasons why auctions should be held earlier than this, such as to obtain funding to pay for the transport infrastructure itself, but this would be at the cost of lower auction values.

Figure 4 – DRAM scenarios at Old Kent Road: auction final year before development



Source: Savills, 2017 (IVs relate to the existing stock and RVs relate to the redevelopment proposal)

This suggests limited value capture potential from a sequence of auctions. If auctions were to be held earlier, or at the same time, then the value of the development rights would be discounted back by the bidders, and even lower values would be achieved.

The Crossrail 2 station

Overview and area characteristics

Crossrail 2 is a proposed new railway serving London and the Wider South East. It will connect the National Rail networks in Surrey and Hertfordshire via new tunnels and stations between Wimbledon, Tottenham Hale and New Southgate, linking in with London Underground, London Overground, Crossrail 1, national and international rail services. Crossrail 2 will add capacity to the regional rail network, cutting journey times across the South East. It will also support economic regeneration and new homes across the region.

After discussion with the Taskforce and the consultants, we selected one of the stations in the Upper Lea Valley. These stations are on the West Anglia Main Line, with land uses markedly separated. On the east side of the railway is a Strategic Industrial Location (SIL) and the focus of potential land use change. On the west side is predominantly suburban residential stock. The industrial stock at the Crossrail 2 station is in generally good condition, with significant modern stock and purpose-built manufacturing premises.

Lots

For the purposes of the DRAM analysis, our consultants divided the areas identified for redevelopment in the development framework into four auctionable lots, based on the following considerations:

- Location: proximity to the proposed Underground station and primary access roads

- Size: large enough to appeal to a master developer; small enough to encourage competition; and
- Configuration: a 'natural' grouping of properties

In respect of the development framework for these lots in a DRAM scenario, it is assumed that:

- Residential units will increase from zero (reference case) to 5,764 ('DRAM Light') or 6,404 ('DRAM Max'); and
- Commercial floorspace will reduce from 190,000 sqm (reference case) to 23,000 sqm ('DRAM Light') or 25,000 sqm ('DRAM Max')

Value uplift effects

Sales values for the site were benchmarked against surrounding locations, ie values that the Crossrail 2 station could aspire to be with greater accessibility, such as Tottenham and Colindale – see Table 3 below.

Table 3 – Residential sale values in surrounding locations, the Crossrail 2 station

Location	Lowest (psqft)	Highest (psqft)
Enfield	£500	£800
Tottenham	£450	£700
Stratford	£700	£900
Barnet	£550	£900
Colindale	£500	£800

Source: Savills, 2017

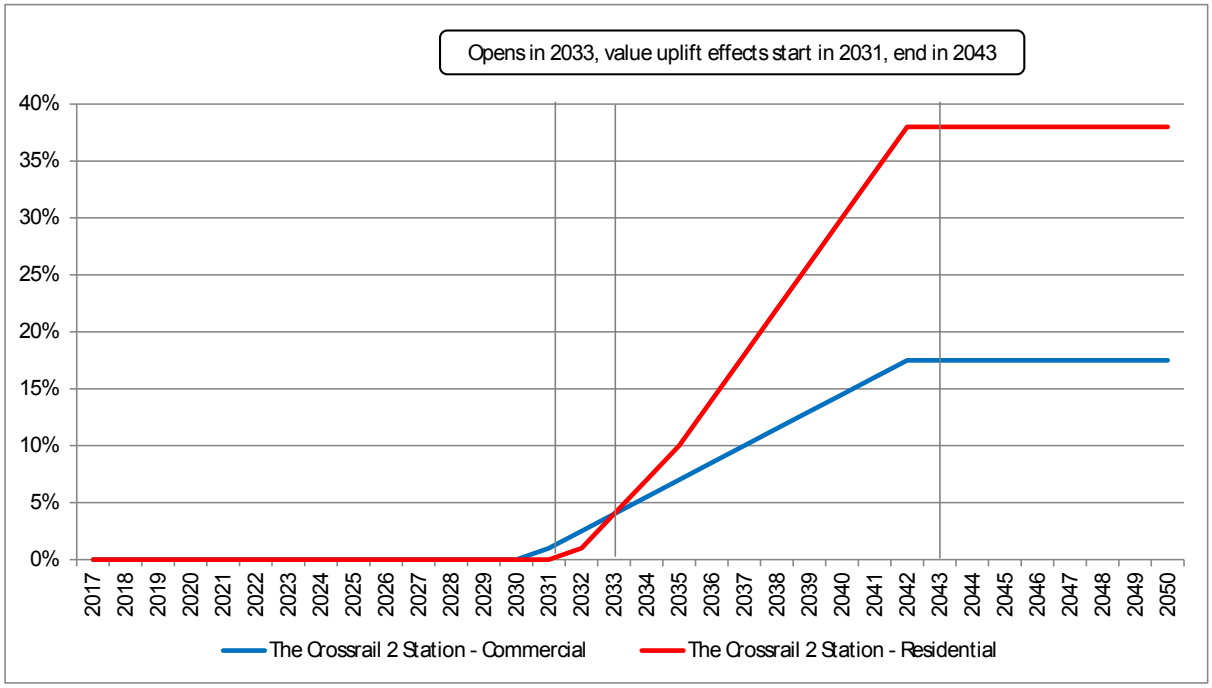
Based on this analysis it is estimated that residential values could increase by 38 per cent due to Crossrail 2 (from a lower base than at Old Kent Road).

For non-residential development, values have been derived from Savills' analysis of comparable transactions in Enfield and Tottenham Hale, resulting in an estimate that commercial values could increase by 18 per cent.

The Land Value Capture Report, 2016-17 suggested that the value uplift effects for a station similar to the Crossrail 2 station ('high impact project'; 'low potential, high change' zone) would likely be felt after the new service has started, rather than with significant anticipatory effects as at Old Kent Road. It is also anticipated that the value uplift effects will be spread over a longer period of time after the commencement of Crossrail 2 (10 years) than is typical (five years) as these are anticipated to be influenced by the need to build up a critical mass of mixed-use development east of the rail line.

Based on these assumptions, Figure 5 below shows the assumed value uplift effects (with the station scheduled to open in 2033).

Figure 5 – Projected property value uplift effects from the transport scheme, the Crossrail 2 station

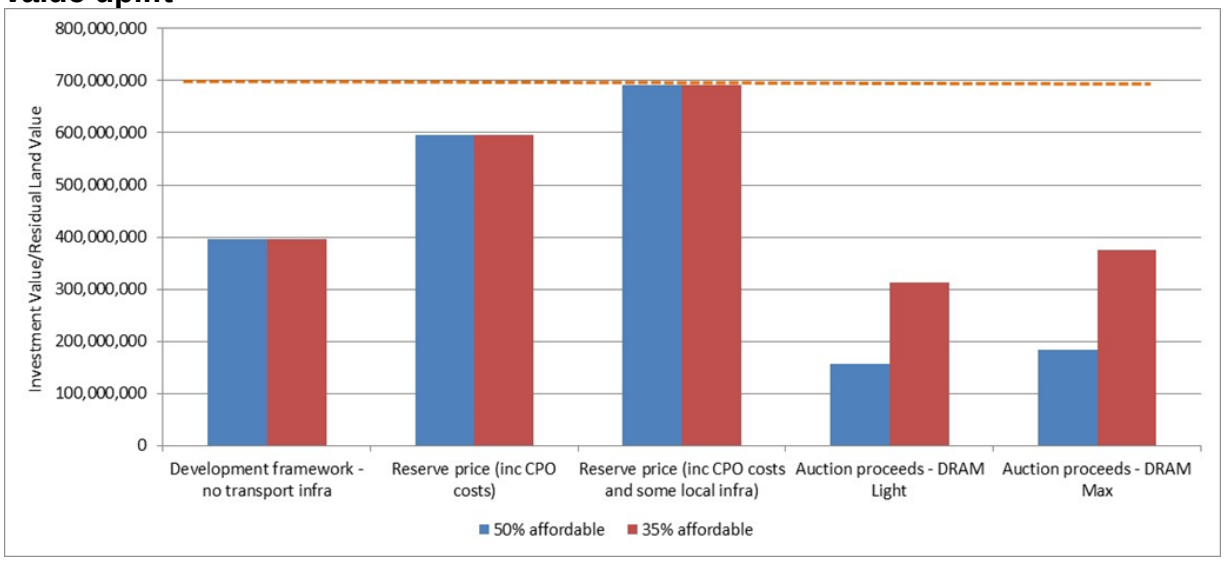


Source: Savills, 2017

Auction outcomes

Figure 6 below shows the DRAM outcomes for the Crossrail 2 station, as calculated by our consultants. It assumes '100 per cent capture of value uplift effects', meaning that it shows the results of the appraisals run at the highest values that could be achieved once the transport infrastructure is in place. In none of the scenarios modelled is there a positive outcome.

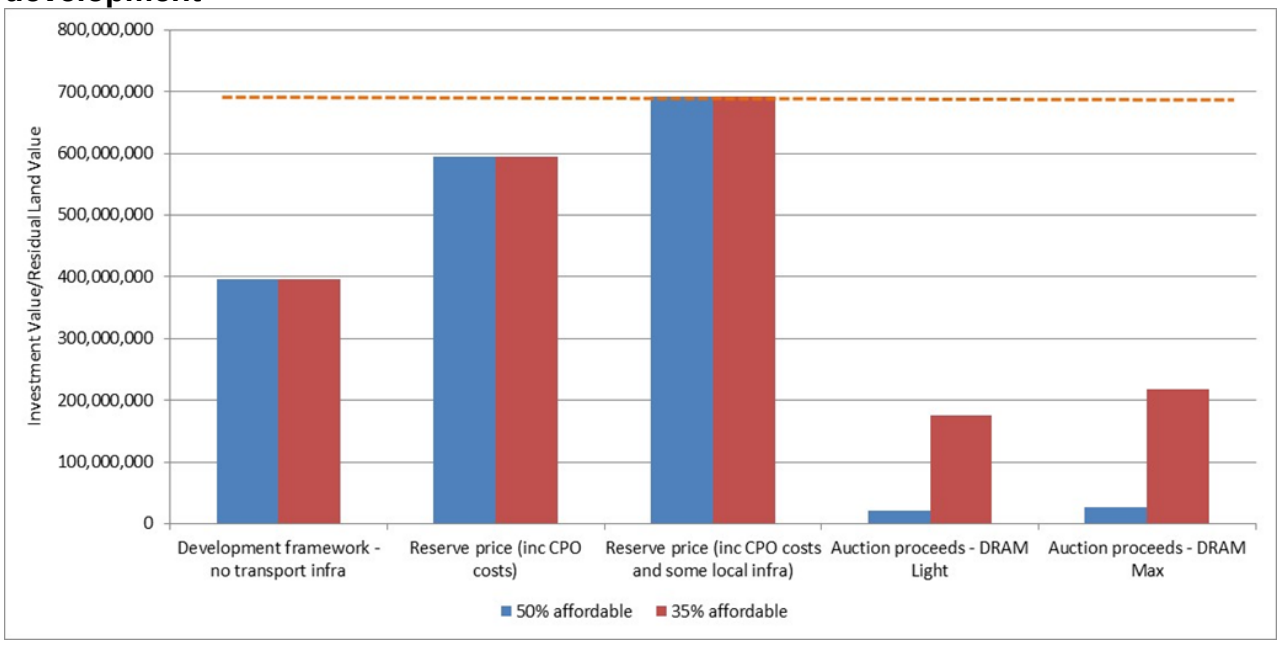
Figure 6 – DRAM scenarios at the Crossrail 2 station: 100 per cent capture of value uplift



Source: Savills, 2017 (IVs relate to the existing stock and RVs relate to the redevelopment proposal)

If it is assumed that each auction was held as late as possible, then – as demonstrated by Figure 7 – with 35 per cent affordable housing, the auction proceeds under 'DRAM Light' would be £510m under the reserve price and in 'DRAM Max' would be £470m under the reserve.

Figure 7 – DRAM scenarios at the Crossrail 2 station, auction final year before development



Source: Savills, 2017 (IVs relate to the existing stock and RVs relate to the redevelopment proposal)

Sensitivity testing

As indicated in Sections 3 and 4 of this study, there are a number of different design features and variables that together define the mechanism, each of which forms an input or assumption to inform the modelling of the potential of the DRAM at the two case study locations.

To assess the sensitivity of the outcomes to the key design features and assumptions, and therefore to better understand the factors that are driving the results of the modelling, our consultants assessed a range of scenarios in which key inputs and variables have been adjusted – both individually and in combination.

The following observations can be made in respect of the sensitivity testing undertaken.

- At the Crossrail 2 station, there are no scenarios modelled in which the auctions generate net proceeds either on an individual lot basis or in total
- At Old Kent Road, changes to assumptions around modelling inputs, market conditions and other considerations can generate scenarios in which the auctions generate net proceeds
- Affordable housing is the single variable that appears to have the biggest impact on the auction outcomes, with significant decreases in the portion of affordable housing assumed to be provided resulting in significantly better

auction outcomes. In this context, it is worth recalling that the impact of the affordable housing assumption is a function of (a) the proportion of units affected, (b) any differences in affordable housing percentages between the 'with investment' and 'no-scheme' case and (c) and the assumption on RV per unit

- Timing is the other main key driver of outcomes, with the chances of successful auctions increasing when the auctions are brought forward

These conclusions are interpreted and analysed in the next section.

Case study interpretation

Introduction

The analysis undertaken by our consultants of the potential of the DRAM at two case study locations – the Old Kent Road and the Crossrail 2 station – suggests that achieving auction proceeds in excess of the reserve price will, in the majority of scenarios, be challenging. The results of the modelling show that, in total, the residual values of residential-led mixed-use development at Old Kent Road and the Crossrail 2 station would not be expected to exceed the reserve values, even if affordable housing requirements were reduced from 50 per cent to 35 per cent of developed housing (either in absolute terms or as a proxy for an alternative mix of housing types and/or funding arrangements).

The analysis also suggests that it may be difficult to speed up substantially the pace of development until well into the construction phase of the relevant transport project.

Our consultants' interpretation is that fundamentally there are four likely reasons for the limited potential of the DRAM to capture significant uplift:

- The reserve price will tend to be relatively high
- Bid prices are likely to be significantly discounted to reflect future uncertainties and the timing of cash flows
- The characteristics of industrial land suggest it may be difficult to speed up the pace of development
- There is a trade-off between value capture for transport infrastructure and for other objectives such as accelerating the pace of housing supply and affordable housing, especially where the increase in density is relatively modest compared to the affordable housing assumption

Each of these is explored in more detail below. These conclusions, as well as having implications for DRAM, also have implications for value capture in general and these are explored in Section 6.

The reserve price will tend to be relatively high

The core component of the reserve price is the 'no scheme' valuation of each landholding that is included within the auctioned lot, which has been estimated as the higher of the prevailing investment value of the land and the residual value in a 'no scheme' scenario (noting that at the Crossrail 2 station the two are assumed to be the same – refer to Section 6).

The analysis indicates that current investment values at both case study sites are relatively high. Even for industrial land, which might be expected to have a lower investment value, values are in fact high. This is because where industrial stock is in a good location and in good condition, the context in London is increasingly influenced by a tight market with healthy demand, restricted supply, growing rents and falling yields. Consequently the investment values, which are calculated on the basis of floorspace, occupation, rental values and yields, are often high. At the Crossrail 2 station, the industrial stock is in generally good condition, with a number of modern and purpose-built manufacturing premises. At Old Kent Road, while on average the stock may not be of as high quality, the value is inflated by its central location and the fact that demand for industrial stock across Greater London has increased over recent years as supply has become more constrained. This contrasts with the historic situation when poor quality industrial land was typically vacant or significantly under-occupied with low rents and high yields.

A second key input into the reserve price that is causing it to be high is the occupier displacement costs. This includes the additional costs which either the authority would need to pay to acquire the land or the current landowners would need to pay to move tenants off the land. The occupier displacement costs is estimated by Savills to be 50 per cent of the investment value and therefore adds a significant extra premium on the 'no scheme' valuation within the reserve price. The reason this is so high is that it needs to cover the costs of relocating existing occupiers or closing businesses, and these costs can be substantial if, for example, they have specialist buildings and/or equipment on their sites.

It is noted also that the modelling of the reserve price in the case study examples does not explicitly factor in a 'discretionary supplement' or an additional incentive for landowners to sell beyond breaking even on their current values. Such a supplement would result in a reserve price that is even higher.

Bid prices are likely to be significantly discounted

The underlying profile (quantum and timing) of forecast value uplift is an important factor in itself. At the Crossrail 2 station, for example, it has been assumed that the impact of Crossrail 2 on land values would likely be felt after the new service has started, rather than with significant anticipatory effects (like at Old Kent Road), and that the value uplift effects will be spread over a longer period (10 years after the commencement of Crossrail 2) than is typical on account of the need to build up a critical mass of mixed-use development east of the rail line. This has implications for the ability of the DRAM to generate a successful outcome at the Crossrail 2 station.

In addition, our consultants anticipate that developers bidding for lots would significantly discount their offers to reflect anticipated cash flows, risks and uncertainties.

Typically developers will appraise schemes based on current market values. While they may in a positive environment also factor in a degree of 'hope value', this will come with a significant risk allowance (owing to the sensitivity of future value uplift assumptions to a range of factors such as economic cycles) and a cautious approach is likely to be prudent. This means that the full anticipated uplift potential is unlikely to be factored into the bids for development rights at DRAM auctions. As described above, for the purposes of this study it has been assumed that developers will

account for 20 per cent of the anticipated increase in value between the date of auction and the middle of the development in their bid prices.

The issue is further exacerbated if the development is planned to occur over a number of years. While this allows for more uplift in later years, it represents downstream revenue at risk, compared to an upfront cost, and so is likely to be heavily discounted in bids.

Accordingly, the ability to capture planning gain through the auction proceeds, in advance of value uplift occurring, is challenging.

The overall pace of development on industrial land is likely to be slow

In the context of the healthy industrial market in London, the analysis carried out by our consultants suggests that the pace of development on industrial areas will tend to be constrained by supply side issues (rather than by the scale of demand for new housing), particularly in the years prior to substantive construction of new transport infrastructure.

The relatively high investment value of industrial stock implies that development will typically have to wait until individual buildings depreciate in value to the point at which they become viable for redevelopment (assuming no/limited upgrades and continuing investment, which may not be the case). If there is an expectation of high value new development, the evidence suggests that some existing owners will not invest in upgrading their stock and will tend to put new tenants on shorter-term leases, which tends to discourage further investment and value input to the assets. Under these circumstances over time the investment value of existing sites will steadily decline (even if fully occupied) to the point at which the residual value of (typically residential-led) development will exceed investment value and it becomes financially advantageous to redevelop these sites.[11]

Applying these assumptions to the case study analysis, many individual schemes, particularly at Old Kent Road, are considered to be viable developments (including taking into account assumptions for affordable housing, s106 and CIL payments) but they are on sites with below average investment values. Development generally becomes viable later in the process once value increases are more certain and also, to a degree, once existing assets depreciate and investment values decrease. If there is a mix of building in different conditions across an area, as is the situation at Old Kent Road, this suggests comprehensive redevelopment of an area will typically take many years as sites depreciate in value to the point at which they become ‘ripe’ or ‘soft’ and ready for redevelopment.

This process can be speeded up to a degree. However, trying to accelerate the normal rate of redevelopment – as anticipated in the DRAM (in the context of pooling land into consolidated lots to be taken to the market as a single offer) – is likely to be significantly more expensive and difficult than allowing change at a pace implied by the characteristics of an area. Acquiring or promoting sites earlier will be (potentially

[11] These characteristics are to a significant degree separate from the scale of potential demand in an area. Even if housing developers could achieve high sale rates at high values this may not be possible because there will not be sufficient ready sites coming forward to achieve this development rate.

considerably) more expensive as the acquisition costs need to cover the non-depreciated investment values and CPO costs of assets that otherwise are not ready for redevelopment.

This is a key reason why the DRAM outcomes, particularly for the Crossrail 2 station, show that gross auction proceeds do not exceed 'default' reserve prices in most scenarios assessed. The reserve price reflects the significant investment values and CPO costs in place now, without capturing in full the future anticipated uplift. At a later stage these costs may reduce if there is a growing expectation over time that alternative residential values will increase significantly more than industrial values.

Combined with the factors that cause the auction reserve price to be high (such as the occupier displacement costs, as described above), a successful auction is only likely to be possible where new gross development values are particularly high and/or where the value of existing stock is particularly depreciated or inherently of low investment value. Sites in London where these conditions prevail are becoming more difficult to find, in particular because industrial land supply is increasingly constrained.[12]

A transformation to residential-led development in a location where industrial assets have a high value and are in (relatively) good condition, and where residential values are (relatively) low, is likely to be challenging. If the recent strength of the industrial market in London is assumed to continue (which appears likely given continued restrictions on supply) this constraint will only change if residential values increase substantially and industrial assets are allowed to depreciate.

This suggests that locations such as the Crossrail 2 station are unlikely to be ready for development that generates net DRAM proceeds until at least sometime after the full impact of new transport infrastructure occurs and consequent significant increases in residential values are realised.

It also means that development at locations such as Old Kent Road will tend to see market-led development happen fairly slowly over a number of years, as residential values increase and existing industrial assets continue to depreciate.

There is a trade-off between maximising LVC funding and affordable housing provision

The case study analysis suggests that new development residual value is around 10-20 per cent of gross development value.[13] The implication of this is that it is

[12] Our consultants highlight an example of where rapid transformation from industrial to high density, high value new residential (and to a degree commercial) led development is taking place is Vauxhall-Nine Elms-Battersea. This is in the context of (at least until recently) high central London residential values and a transition period covering a number of years. An example of where a more gradual process of change is taking place in the context of historic decline in industrial demand/asset values and high (though not as high as Vauxhall-Nine Elms-Battersea) alternative values is Hackney Wick/Fish Island.

[13] This compares to market perceptions that land value is usually around 25-33 per cent of gross development value (GDV). Our initial review suggests that the differences are attributable to the scale of development assessed. Larger scale development will tend to trigger a wider range of additional costs, and will tend to be based on a site area that includes a range of non or lower value components such as access roads and public open spaces. This tends to suppress land value as a percentage of

particularly sensitive to changes in other costs and revenues, as there is a significant levering effect. The consequence of this is the DRAM's capacity to generate successful outcomes and funding for transport schemes could be improved materially, in the right circumstances, if adjustments to these costs and revenues were possible.

Having taken into account construction costs and developers' profit, then the 'remaining parts' of the overall value of development are land value and public sector planning gain, which are available to be 'put towards' the costs of the major transport investment, other local infrastructure, and affordable housing. If land values are at as low a level as possible while still providing a sufficient incentive to sell and develop, then the key consideration is whether the remaining 'slice of the pie' is large enough to cover the transport investment, other infrastructure contributions and affordable housing. If it is not, and other local infrastructure is viewed as an essential requirement for planning permission, then it may not be possible to use the planning gain to meet the costs of affordable housing obligations and transport and other infrastructure, and a trade-off or choice between the two may be needed.

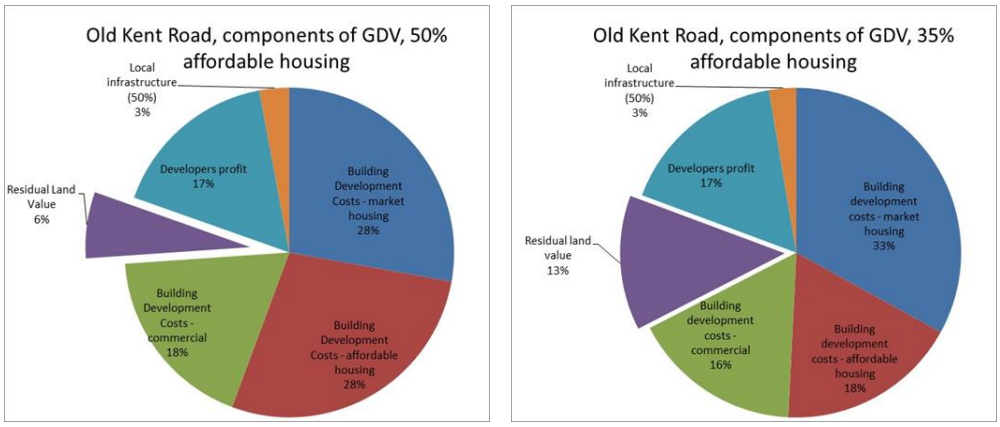
In the modelling undertaken, the central assumption for affordable housing is 50 per cent of all new residential stock with the RV on each unit of affordable housing reduced to zero, which has a material impact on viability as it reflects significant foregone revenue from what (in a different policy environment) might otherwise be market housing. The testing of scenarios in which the affordable housing assumption is reduced to 35 per cent demonstrates the impact of this on the overall auction outcomes. There is also a potentially important interaction between what is assumed about the timing of an auction and the affordable housing assumption, given the expectation that the impact of investment on RVs (and thus, under the assumptions made, the revenue forgone) is only maximised sometime after the investment is operational.

The impact of different levels of affordable housing on land value (and hence land value capture for transport infrastructure) are illustrated in Figure 8 and Figure below. These show two illustrative scenarios for Old Kent Road: 50 per cent and 35 per cent affordable housing.[14] In these scenarios, the residual land value changes from £490m (six per cent of GDV) to £1.1bn (13 per cent of GDV).

GDV, though this does not necessarily mean that it is lower in absolute terms (£/acre) when compared to deals on smaller plots. This means that gross development values need to be substantially greater (up to around 10 times) than current investment values (its equivalent) for it to make financial sense for the current owner to sell and the future developer to develop the land.

[14] This is illustrative only. It is recognised that zero per cent affordable provision is not consistent with the draft London Plan and would be unlikely to be acceptable at a Mayoral or borough level.

Figure 8 – Illustrative impact of changes in other costs and revenues



Source: Savills, 2017

Figure 9 – Illustrative impact of changes in other costs and revenues, Old Kent Road

Source: Savills, 2017

Clearly this analysis needs to be weighed against the full range of objectives of the DRAM, as summarised earlier in this study.

Although the case studies illustrate how a reduction in the costs associated with affordable housing obligations can significantly affect residual land value and increase the potential for value capture, such reductions could be achieved by varying the mix of affordable housing types or by seeking external grant funding contributions, as an alternative to reductions in the headline affordable housing proportions.

6. Appraisal and conclusions

Appraisal of the DRAM

Introduction

This section presents our consultants' appraisal of the DRAM options against a range of considerations, listed below, linked to the objectives of the mechanism:

- Degree of legislative change
- Securing landowner and bidder participation
- Ability to generate upfront revenue
- Scale of upfront costs
- Ability to deliver a coherent framework with greater value
- Ability to capture planning gain
- Increasing the quantum and pace of delivery of market and affordable housing
- Flexibility to respond to changing circumstances

It is recognised that there may be some overlap/causal links between the different considerations and so they should not necessarily be treated as distinct, but rather as building up an overall picture. It is also recognised that there is a degree of subjectivity in the assessment.

The appraisal is largely qualitative and draws on the results of the case study analysis as well as the professional judgement and experience of our consultants. The appraisal also includes a high level assessment of the potential of the two alternative models outlined in Section 4 to better meet the objectives or considerations set out (noting that these options have not been scoped or modelled in detail at this stage). The appraisal does not assess DRAM and the alternatives against other possible LVC mechanisms outlined in the Land Value Capture Report, 2016-17.

Appraisal

Degree of legislative change

The DRAM anticipates that the authority will have access to relevant powers. The appetite within government for primary legislation is likely to be limited and therefore, to the extent the powers are new and require legislation, the potential for the DRAM to depend upon such powers represents a key risk. The greater the likelihood of requirements for changes to primary legislation the greater the drawback of the option.

The 'DRAM Max' option is likely to require new legislation relating to planning and potentially CPO as well. In particular:

- DRAM is unlikely to work effectively if landowners/developers can submit planning applications for alternative schemes (whether or not consistent with the wider development framework) in parallel with the outline permission

assumed to be in place for DRAM. This may require a change to planning legislation to prevent alternative planning applications in a DRAM area in relevant circumstances

- Levying a CIL charge for development that occurs outside of the auction process may require at least changes to secondary legislation if this is set in a way not consistent with current CIL legislation. This may also be the case if the CIL tariff were to be based on auction values
- DRAM may be difficult to cost-effectively implement if there are not changes to CPO legislation

The 'DRAM Light' option is intentionally designed not to require changes to primary legislation. It may though benefit from changes to secondary legislation, such as CIL regulations.

The enhanced CIL and s106 is assumed to include the changes to legislation that are proposed to be consulted on in the Chancellor's Autumn Budget 2017. These are assumed to primarily involve changes to CIL statutory instruments (secondary legislation).

The Super JV option is not assumed to require changes to primary legislation.

Securing landowner and bidder participation

DRAM clearly requires land to be entered into auctions if it is to raise any revenue to contribute towards major transport investments. As CPO will be a last resort and used as sparingly as possible, the focus will be on providing incentives for landowners to participate voluntarily. Critical to this will be the agreement of a reserve price with landowners that reflects the fair 'no scheme' valuation of their landholdings and – at the same time – is anticipated to be exceeded by prices bid at auction that reflect the capacity for value uplift from coordinated development on an assembled basis. It also depends upon the landowners buying into the development vision in the outline planning permission.

If landowners do not choose to participate then this will add to upfront costs (via CPO) and/or result in no development/sub-optimal development.

For the DRAM options, securing a sufficient level of landowner participation will be contingent on the following considerations:

- There are a range of different types of landowners, including investors, owner-occupiers and developers. Each group and individual owners will tend to have different motivations, circumstances and perspectives that make it difficult to achieve an overall consensus
- In some cases, landowners may take a different view of the 'no scheme' value of their land to the valuation determined by the DRAM authority
- Landowners will need to be convinced that the transport infrastructure investment is dependent on a successful DRAM process
- Landowners and developers may have a range of different views on the best approach to development of an area

Like landowners, developers (and their partners) will need to be convinced that by helping to secure a successful DRAM, they are fulfilling a prerequisite for the commitment to the transport scheme and the associated masterplan, and that only by successfully acquiring the rights to a lot through the DRAM will the opportunity exist to develop that lot to the use and density parameters set out in the development framework, which in turn will unlock opportunities for profits in time.

The 'DRAM Light' option is assessed to be more exposed to landowner and bidder non-participation than the 'DRAM Max' option, as it is assumed that the authority will have fewer and less powerful incentives at its disposal.

The enhanced CIL and s106 alternative option is not nearly as dependent upon landowner (and developer) cooperation as the DRAM, as it implies they can bring forward their own schemes as and when they wish. However, in practice a degree of incentive/threat of intervention (for example via CPO) is likely to be required in certain circumstances (for example areas with particularly fragmented landownership).

The option of a Super JV will require considerable landowner participation, which will be dependent on the development of acceptable option and profit share arrangements.

Ability to generate upfront revenue

Given the objective of contributing to project funding as and when it is needed, schemes that generate upfront revenues (ie in advance/during infrastructure construction) will be preferable to those that generate down-stream revenues (ie during/after infrastructure construction). There is, though, a trade-off and if upfront revenues are substantially discounted compared to down-stream revenues then this does not represent good value for money.

The greater the ability to generate upfront revenues that reflect a significant proportion of the value capture potential and represent good value for money, the greater the benefit of the option.

As the case studies illustrate, generally the later in the process the auctions are held the more potential there is to capture uplift. Upfront revenues rely on a combination of favourable circumstances including significant value uplift, sacrificing/scaling back other objectives such as affordable housing, and assuming the cooperation of landowners or use of CPO. Even with favourable conditions the scale of upfront revenues is likely to be significantly lower than the total potential value of uplift if – as anticipated – bidders discount future revenues in the context of risks and uncertainties.

The 'DRAM Light' option is assumed to be less effective at generating revenue than the 'DRAM Max' option, due to the volume of land included within the auction process.

The enhanced CIL and s106 option does not offer an upfront payment and receipts will typically be secured on commencing phases of development associated with planning permissions. This means that revenues will probably not be generated as early in the process as the DRAM.

The Super JV option assumes a profit share arrangement based on future sales. These revenues will mostly be generated later in the process than the DRAM and the quantum will not be known at the outset. Having said that, they should not suffer from the same discounting effect, and therefore the long-term revenue potential could be significant.

Scale of upfront costs

An overall objective for value capture mechanisms in the context of major public infrastructure projects is to reduce net upfront costs.

In the context of the DRAM, the most significant potential upfront cost item is anticipated to relate to CPO requirements if landowners do not participate. The possibility of having to resort to CPO introduces a very real possibility that capital funding (for example additional public sector borrowing capacity) will be required to meet the costs of acquiring non-participating landholdings. These costs may be substantial where (industrial) assets are valuable and where relocation costs are significant.

While capital spend may be a challenge for the authority (especially in the context of borrowing constraints), it may be possible to avoid (or at least reduce) the need for large acquisition budgets by auctioning the development rights immediately after securing a CPO, such that large-scale ongoing public sector landownership can be avoided.

The ‘DRAM Max’ option assumes a significant cost premium for CPO, which is factored into the reserve price and therefore has implications for the ability of a lot to be successfully sold at auction. The ‘DRAM Light’ option is assumed not to have the resources for comprehensive CPO and so is assumed to have less upfront costs.

The enhanced CIL and s106 alternative option is likely to require some upfront costs, for example associated with developing an appropriate framework, and some selective use of CPO.

The Super JV option is anticipated to require considerable land assembly and upfront costs, for example, where the DRAM requires resort to CPO powers.

Ability to deliver a coherent framework with greater value

One of the objectives of the DRAM is to support the implementation of a cohesive development framework. The advantages of this can be demonstrated by the many precedents of successful implementation of visionary development frameworks under a unified approach (for example, London 2012 Olympic and Paralympic Games and King’s Cross).

In contrast, the use of enhanced CIL and s106 arrangements assumes a more market-driven development process, which is less easy to control and ensure successful implementation of a vision or accelerated housing supply timescales. Whether a positive or negative outcome is achieved will to a degree depend on the specific characteristics of each area.

The Super JV approach has the advantage of increased flexibility compared to the DRAM as the design is finalised at a later stage in the process and can benefit from a master developer's experience and vision.

Ability to capture planning gain

As illustrated in the case studies, the 'DRAM Max' option is at best able to capture a relatively small proportion of total value uplift. This is a consequence of the challenge of generating receipts at a relatively early stage in the development process and the discounting of future revenues by bidders to reflect cash flow timing, risks and uncertainties (noting that, as explained above, the modelling for this study applies this discounting to a limited degree only).

The 'DRAM Light' option is assumed to be less effective at generating revenue than the 'DRAM Max' option as it is assumed that less land will be auctioned and the authority will have fewer or weaker incentives at its disposal.

The enhanced CIL and s106 option, if applied creatively and taking advantage of the measures identified for consultation in the Autumn Budget 2017, may have the potential to enhance historic rates of value capture from developer contributions. For example, if it is acceptable to base the CIL inflator on a locally-defined house price index (HPI), then this offers more opportunities to track and capture localised value uplift resulting from the delivery of the transport infrastructure, noting that this would occur at a later stage in the process.

The Super JV option could, in principle, capture the largest portion of actual value uplift as the profit share principles are intended to be linked to the achieved sale values, which will reflect the uplift at the time of transaction.

Increasing the quantum and pace of delivery of market and affordable housing

A key advantage of the DRAM is that a coordinated masterplanning process and the ability to dictate – to a degree – the timing and nature of land release and development on it, means the authority is able to 'put its stamp' on the development that occurs. This implies that it has a potentially greater degree of control over the volume, mix and density of development than it might otherwise enjoy, which in turn can support the achievement of its policy outcomes. To the extent the nature and timing of proposed development is at odds with the market's expectations and capacity, however, this may – as discussed elsewhere in this study – impact on the viability of the auctions, especially if the provision of affordable housing is not designed in a way (ie type of housing, alternative funding available) that mitigates the risk of making an auction unviable.

The timing of the land assembly and auction process – and hence the delivery of housing – will be critical to the success or otherwise of the DRAM mechanism. As the modelling of DRAM scenarios at the two case study locations has shown, the later the auction, often the greater the chance of success. This, however, also implies a delay to the start of development and – consequently – the opportunity to deliver housing (market or affordable). There is therefore likely to be a trade-off between revenue maximisation and timely (or quick) delivery of housing.

Flexibility to respond to changing circumstances

Market circumstances can change, which for example may trigger the need to revise the mix and scale of uses in a scheme, and the flexibility to respond to changing circumstances is an advantage.

In the DRAM options it is assumed that outline planning permission is in place prior to auction and this is the basis upon which bids are made. If market circumstances change and result in a view that, for example, the development mix should be different, this could be difficult to achieve as landowners' participation in the process is predicated on a fixed view on what the development will be.[15] The DRAM options are consequently assessed to be relatively inflexible.

The enhanced CIL and s106 option has greater flexibility as landowners/developers can prepare new planning applications in the light of changing circumstances such as evolving market circumstances.

The Super JV approach allows more flexibility than the DRAM options, as design and planning permission(s) are secured later in the process.

Summary

The theory behind the DRAM is that it can have a positive impact on regenerating local areas around major transport projects through a cohesive and comprehensive development framework while also converting some of the resultant planning gain into revenue that can be applied to project funding. However, the DRAM is a new and untried mechanism in the UK, and comes with a range of risks and uncertainties. The nature of the risks differ between the 'DRAM Max' and 'DRAM Light' options with 'DRAM Max' requiring a more comprehensive approach whereas 'DRAM Light' is more at risk of failing due, for example, to insufficient buy-in.

The suitability of the DRAM will depend on the specific circumstances of the area it is intended for. There may be some locations where DRAM could be an effective tool. However, the analysis suggests that, in the locations tested in this study, it may be difficult to implement in a manner that captures a significant portion of the overall scale of estimated development value uplift.

CIL and s106 are established and well known approaches and so this option has the lowest overall risk. The main risk identified associated with the enhanced CIL and s106 approach is a failure to capture a significant portion of planning gain/value uplift. However, it may be that to date the use of CIL and s106 has not been applied as creatively as the mechanisms allow. The Autumn Budget includes consultation on measures that may result in their more effective application.

The Super JV option represents a significant undertaking on a similar scale to the 'DRAM Max' option and has associated risks around, for example, developer participation. The approach is closer to existing practices than the DRAM.

[15] It is noted that in the modelling, this is mitigated – to a degree – by the fact that it is assumed that lots are developed separately and consecutively, over a period of two to seven years after each auction.

Appendix 1 – Glossary and definitions

Abbreviation	Description
BLE	Bakerloo line extension
CPI	Consumer price index
CPO	Compulsory Purchase Order
CR2	Crossrail 2
DRAM	Development Rights Auction Model
GDV	Gross development value
GLA	Greater London Authority
HPI	House price index
Investment value (IV)	As defined in the Royal Institution of Chartered Surveyors (RICS) Valuation – Global Standards 2017, this is 'The value of an asset to the owner or a prospective owner for individual investment or operational objectives'. For this exercise, we have calculated the investment value for properties that are assumed to have an existing income stream and therefore limited short-term redevelopment potential. This has been calculated by capitalising an average rental income for the area by an average net initial yield.
LB	London borough
LVC	Land value capture
m	million
NIA	Net internal area
OA	Opportunity Area
Open Market Value	This is the same as investment value.
pa	Per annum
psqft	Per square foot
Residual value (RV)	As defined in the RICS Valuation – Global Standards 2017, the 'residual value' indicates the residual amount after deducting all known or anticipated costs required to complete the development from the anticipated value of the project when completed after consideration of the risks associated with completion of the project. The residual value, derived from the residual method, may or may not equate to the market value of the development property in its current condition.
TfL	Transport for London
sqm	Square metre

Appendix 2 – DRAM design features

The table below provides an overview of the key design features that were considered in the definition of the DRAM as part of this study.

Design feature	Description
Site identification	What makes a site suitable for a DRAM?
Definition of DRAM area	The boundaries around each transport hub location within which the auction(s) will occur.
Land included within each auction	Which land within the auction zone is entered in the DRAM, and how should it be packaged up for sale?
Number of auctions	How many auctions should occur at each site?
Timing of auctions	When in the development cycle should pooling and the auction occur?
Reserve price	How the reserve price for lots is determined.
Auction proceeds	What should be assumed for the proceeds of the auction and what factors are bidders likely to factor in?
Allocation of auction proceeds	How the 'profits' from the auction are allocated between the public and private sector, and – further – among participating landowners.
Non-participating land	Treatment of land that is developed outside of the DRAM arrangement.
Ancillary infrastructure	How ancillary infrastructure is to be delivered and paid for to support the masterplan development.
Costs to administer	What are the likely administration costs associated with the DRAM?
Governance	Who might run the auctions (and whether new structures or vehicles may be required) and with what accountability?
Availability of required powers	What legal powers will be required to undertake a DRAM?
Role of local authorities	How will boroughs participate in the DRAM process (planning, administration)?
Financial management	How will DRAM revenues support the funding of the infrastructure scheme?
Affordable housing requirements	How will developers need to take into account the requirement to build affordable housing within the masterplan area?
Borough CIL	Will Borough borough CIL be payable by the winning developer(s)?
Interaction with other LVC mechanisms	What needs to be factored into the DRAM design and the design of other LVC mechanisms?

Appendix 3 – Consultants' advice – basis of preparation

The analysis described in this report is based on work undertaken by our consultants, KPMG LLP and supported by Savills UK Ltd.

The analysis undertaken by KPMG was prepared in accordance with the terms of our engagement with them, and was provided for our benefit and use. It is not suitable to be relied on by any party wishing to acquire rights against KPMG (other than TfL) for any purpose or in any context. Any party other than TfL that chooses to rely on the analysis (or any part of it) does so at its own risk. To the fullest extent permitted by law, KPMG does not assume any responsibility and will not accept any liability in respect of the analysis to any party other than TfL.

Nothing in this report constitutes a valuation or legal advice.

KPMG's analysis is based upon publicly available information, information provided to KPMG by us, information provided to KPMG by its sub-contractor, Savills, in accordance with the terms of their confidential, commercially sensitive sub-contract, and information provided to KPMG on a non-attributable basis from third parties. It reflects prevailing conditions and KPMG's views at the time, all of which are accordingly subject to change. KPMG relied upon and assumed, without independent verification, the accuracy and completeness of the information upon which the analysis is based, including that available from public sources and that provided by third parties.

The financial spreadsheets and analysis that provide outputs referred to in this report have not been audited by KPMG. The financial projections have been prepared for illustrative purposes only and do not constitute a forecast. While KPMG and its sub-contractors have prepared these spreadsheets and analysis in good faith, no warranty, expressed or implied, is made in respect of the accuracy, completeness or appropriateness of its assumptions, calculations or results. No reliance may be placed upon the spreadsheets and analysis by any party, except where specifically referred to in an agreed KPMG letter of engagement. All users are accordingly advised to undertake their own review of the spreadsheets and analysis, their assumptions, calculations and results before making any decision or entering into any commitment based on the information therein.

The views on price set out in this paper are not intended as a formal valuation and should not be relied upon as such. While our consultants did look at individual plots of land, the results in this report have been generalised. They are given in the course of Savills' consultancy role. No liability is given to any third party and the figures suggested are not in accordance with Professional Standards PS1 and PS2 of the RICS Valuation – Professional Standards, effective from 6 January 2014. Any advice attached is not a formal ('Red Book') valuation, and neither Savills nor KPMG nor the author can accept any responsibility to any third party who may seek to rely upon it, as a whole or any part as such.