

The Masterplan Framework

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5.1 Introduction and Purpose

In the Perth and Kinross Local Development Plan the H70 site (Figure 2) is designated for 550 homes, and the white land which lies within the settlement boundary may have the potential for development subject to a proposal proving its effectiveness, suitability, and access strategy. Within these areas proposals could potentially come forward as planning applications with supporting masterplans.

P&K Council together with landowners for the area were keen to extend engagement and develop a Masterplan Framework that helps develop the access strategy and clarify future opportunities for the entire area. This includes land to the west of the current LDP settlement boundary that currently lies within the Greenbelt. As part of this Masterplan Framework and to provide details on the key issues which helped to shape it, it is also important to identify the related issues and place qualities, the market viability assessment, and the technical and environmental assessment of the access strategy which are all identified and summarised within this section of the report.

This emerging Masterplan Framework considers the potential of a longer term wider and larger development at Perth West, however the extent of this and its access strategy will need to be tested through the Local Development Plan review as part of a wider consideration of not just its merits, but also of the wider land use planning strategy for Perth and Kinross. A series of more detailed Masterplans with typical cross sections, images and layouts for all elements of the design will be required. There should be clear future reference on the delivery of these and the input stakeholders will have as part of the design process.

The detailed Masterplanning stage may need to be informed by a Noise Impact Assessment and also assessment of potential amenity impacts from the existing Agricar and Kings Businesses at West Huntingtower. Mitigation measures should be identified through these assessments and could include noise attenuation measures adjacent to the A9, and some form of buffer around Agricar and Kings businesses.

This Masterplan Framework considers that long term development in Perth West will provide the following:

- 3,000+ residential units of mixed tenure.
- 25 ha of employment space.
- Multiple vehicular access points into the plan area, providing access to both the trunk road network and to central Perth without detriment to the local and strategic road networks.
- Facilities to enable the expansion area to be connected to Perth's bus network.
- Integration of the existing landscape framework into the plan area, and the protection of existing woodlands and tree belts, contributing to the overall enhancement of biodiversity and ecology within the area.
- Provision of two new primary schools.
- Provision of local employment and community focused centres.
- Potential to consider a district heating system and combined heat and power infrastructure utilising renewable resources from the proposed 20 MW biomass renewable facility to be located within the Ruthvenfield site (identified as E38 within the LDP).
- It may be possible to explore other energy sources to service any potential district heating system.
- Provision of a land for a 5,000m² health centre.
- Phased delivery of infrastructure, and residential and employment land.

5.2 Strategic Development Concept

Perth West seeks to develop an integrated neighbourhood that offers adaptability and recognises changing lifestyles, patterns of employment, enterprise, facility management and community structures. It also looks to encourage a closer pattern of live, work, play and a fuller use of local centres, facilities, and infrastructure.

A quality place will be secured through the integration of the historical elements, landscape features, and topographic constraints of the site, and providing pedestrian and cyclist connectivity to the existing development located to the east through the Old Gallows Road Bridge, and to areas north of the A85 including Almond Valley. Ensuring road connections through the site do not encourage short cutting of traffic from the A9 and A85 is important in creating a safe and pedestrian friendly community. Local centres and employment nodes will enhance the localised feel of the Perth West area.

An inclusive community will ensure there is a good balance of demographic groups within the plan area. A variety of age groups and families will be accommodated through a variety in the housing tenure including affordable housing, and community facilities that can **accommodate** activities locally. A strong local community will help support a range of services and commercial activities within the area which will attract investment through employment and commercial opportunities.

Integrated design approach will be achieved over the life span of the build out of the Perth West site. A strong mixed use development which is integrated with open space and greenway connections will enhance the overall biodiversity and ecology of the area. Heritage aspects of the site should be identified and incorporated to enhance the qualities of the overall site. The phasing of the plan area is fundamental to the economic feasibility of the ultimate build out due to the large amount of frontloading of infrastructure required such as the junction interchange on the A9, and potential developer contributions to the new primary schools.

5.3 Development Structure

Development of the Perth West site will create new mixed use walkable neighbourhoods (as depicted in Figure 12) located to the west of the City of Perth. These will be wholly integrated with the existing neighbourhoods to the east of the A9, Almond Valley and Bertha Park to the north, and to the surrounding countryside through open space provision ensuring a strong link between the town and country prevails. It will provide an opportunity to increase support and patronage of Perth City Centre and local centre shops and businesses, and create an attractive new settlement edge. It will also enable the remediation and restoration of unused or previously underused developed land located to the north of the site adjacent to the A85, and support an increase in public transport services within this area. The principles upon which the framework is based are described in the following sections.

5.3.1 Layout

Development blocks will be arranged in an irregular grid manner to allow for direct and frequent connections throughout the area, focussing in particular on pedestrian and cycle accessibility to the local centre, primary greenspaces, Perth City, and surrounding communities. The existing routes, principal points of connection, topography, landscape features, and significant views combine to influence the proposed layout. Detailed Masterplans should incorporate design statements to ensure that the development does not reflect typical suburban development patterns and that Perth West embraces the topographical strengths and local heritage qualities of the site.

5.3.2 Housing Form

The general layout will be composed of various building typologies and sizes which ensure that buildings face onto and offer a good level of enclosure to the public realm while maintaining secure private spaces within the centre of the block. It also ensures that development blocks benefit from maximum solar gains. This model allows for a wide variety of housing types, sizes, densities and detailed layouts. It should also consider the findings of the Conservation Masterplan in the detailed housing layout at the Masterplan stage.

Corner buildings must address both streets and spaces that they face onto. Featureless and windowless side gable walls will not be acceptable. Features such as corner bay windows and chamfered building lines will be encouraged as a means of contributing to the positive treatment of public spaces.

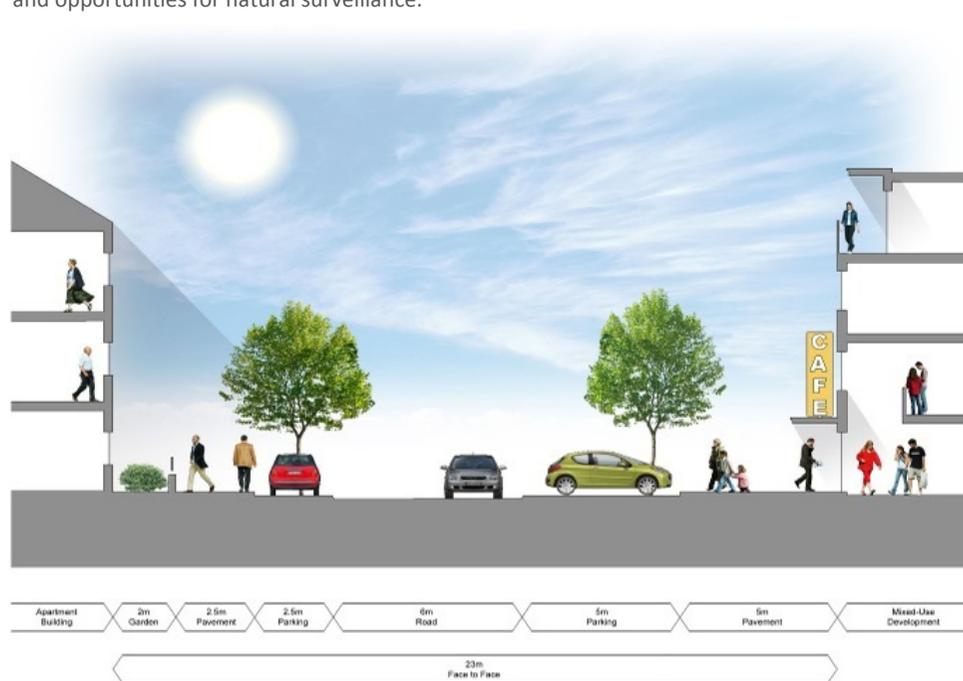


Figure 12
Concept Plan

It is essential that buildings front the A85 to help create more of a street rather than a traffic dominated route. This will be achieved in combination with the Almond Valley development located to the north, which will enhance the gateway entrance feel into Perth City. The appropriate orientation and configuration of these buildings will be addressed at the detailed Masterplan stage. A potential A85 urban design strategy would detail the exact layout of this street including frontage and landscape treatments. This would help determine the best means of creating a strong gateway street into Perth encouraging connectivity between Almond Valley and Perth West.

5.3.3 Primary Public Realm Network

The 'primary public realm network' identifies those built edges that will enclose the key public spaces. These spaces will form the principal part of the public realm hierarchy, which will usually be the most accessible areas and see the greatest levels of activity and movement. The edges that address the primary green spaces must have strong and continuous street frontages with fewer gaps and higher numbers of building entrances and opportunities for natural surveillance.



5.3.4 Entrances and Edges

The principal entrances into the site will be marked out by changes in the building line, elevation and/or height. This may include for example, the corner block being chamfered or stepped forward to emphasise a key junction or public space. Visible sections of the new settlement edge will be addressed by the fronts of buildings. It should take into account the findings of the Conservation MF and the setting of Scheduled Monument 3630 and Huntingtower Castle (SM 90164).

5.3.5 Density and Mixed Use

The areas of highest density will be located towards local centres, educational facilities, key greenspaces throughout the site, and around leisure and play areas. Concentrating higher densities closer to these areas will strengthen the viability of services and amenities, lend a greater sense of activity and surveillance, reduce vehicular trips, and strengthen the primary public realm network through increased built form and enclosure while reinforcing the hierarchy of the built environment.

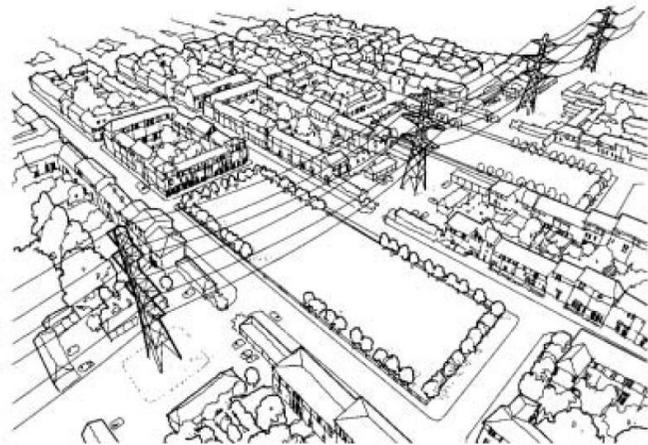


5.3.6 Development Adjacent to Powerlines

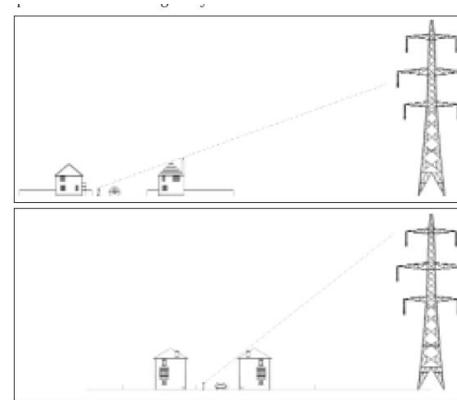
Incorporate national grid 'Sense of Place' guidelines for development that is located near high voltage overhead power lines which considers the following:

- Streets should be narrower with taller buildings no more than 4 storeys.
- Streets should be offset from the pylons to make them less prominent and blocks should be orientated perpendicular to the route.
- Development design should not reinforce the linear nature of the overhead lines, and should incorporate a strong mix of greenspace and housing with meandering paths and varied planting in the open spaces beneath the overhead powerlines.

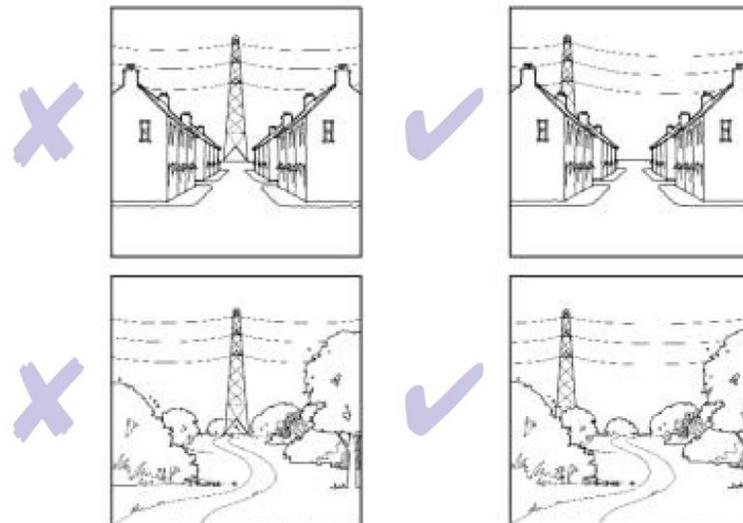
The Didcot residential development in South Oxfordshire is a good example of how powerlines have been incorporated into a development. Strong landscape buffering is used in combination with meandering paths which help to increase natural surveillance within the space.



A mix of land uses and design responses helps to break down linearity.



Narrower streets with taller buildings enables development to be sited closer to pylons without increasing visual impact.



Offsetting the views of pylons will help to make them less prominent.

5.4 Landscape Strategy

Connectivity of green space and the provision of quality path networks are key outputs required for creating a sustainable place and follow the principles identified within the *P&K Green Infrastructure Supplementary Guidance*. Greenspace is a multi-functional asset offering social, environmental, and economic benefits to communities. Quality green space requires ongoing care and management to ensure that it is 'fit for purpose' and can deliver meaningful benefits to communities at both local and wider regional levels.

Specific measures setting out the sustainable management of both local greenspace and green networks, and the mechanisms for their funding and sustainable management will be set out within a greenspace network management plan which will accompany the detailed Masterplan. This management strategy and specific associated funding costs can be delivered through a third part management company (factoring) or by P&K Council under an endowment agreement.

The existing public open spaces located around the western edge of Perth and in close proximity to the site are mostly large open grass areas of a formal and semi-formal nature. Playing fields are located within the existing development to the east of the A9 along Newhouse Road. P&K have indicated that it may be challenging to determine the exact number of football pitches required at this stage because of allocations being provided in the proposed new neighbourhoods to the north. However, at least two pitches would be required at this Masterplan Framework stage. Future provision of fields will be in line with Sport Scotland requirements. These would be accommodated as part of the school sites with a range of play equipment for active and passive recreation, and would be designated as the Neighbourhood Equipped Areas for Play (NEAPs). Local Equipped or Local Landscaped Areas for Play (LEAPs) with the appropriate play equipment will be located ideally within a 5 minute walk from all residential houses and will include a range of open space areas located throughout the site. The strong green networks that traverse the site allow opportunities for the easy location of Local Areas for Play (LAP), which will provide recreational opportunities for young children in close proximity to homes.

A range of formal and informal spaces will be created, along with leisure facilities and multi user games areas (MUGA) to support the expanding community. The P&K playground strategy will be implemented ensuring facilities are provided within appropriate locations within the site. There is a requirement for 1 major park linked to one of the school/neighbourhood centres with facilities potentially including a changing Pavilion and concrete Skate Park. The exact configuration of a future allotment area will be confirmed at the detailed masterplan stage, but it will be approximately 1 ha in size. Integrated SUDS and utility rights of way also strengthen the overall open space network. Opportunities exist within the powerline rights of way for meandering trail connections and landscape buffering which will strengthen the overall pedestrian and cycle network throughout the site.



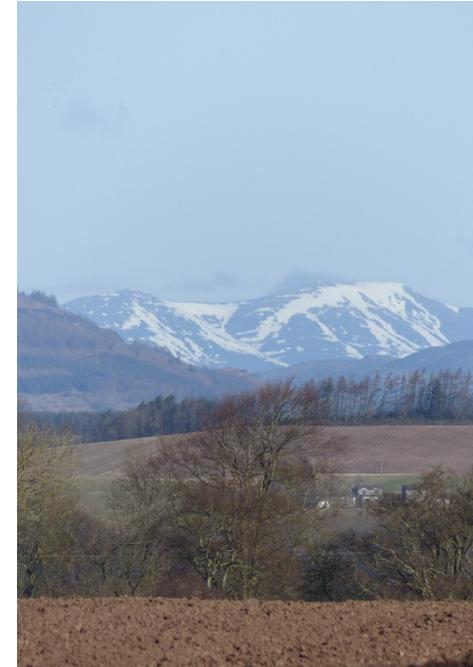
It is essential that the A85 is landscaped in an appropriate manner that ensures the creation of an attractive gateway into Perth, and strengthens the amenity qualities of this 'street' and setting of the Scheduled Monuments at Huntingtower. This can be achieved through an urban design strategy for the A85 corridor which will establish parameters for frontage and design, landscaping and connectivity between Almond Valley and Perth West. A cemetery may be required within Perth West which must be located 200m from any watercourse. The proposed open space network is outlined in Figure 13.

The Masterplan Framework proposes the retention and enhancement of the existing and established planting within the site (as outlined within Table 8.1 of the SEA) to help create enclosed development areas and define key pathways. It is important that woodland strips and open space areas are of sufficient width to accommodate a variety of facilities such as pathways, and to ensure their long term sustainability, and that housing is setback a suitable distance from woodland areas to minimise any shadowing effect from trees on nearby properties. This will reduce the need for felling trees at a later date as a result of trees blocking sunlight penetration. Detailed green

space cross sections will be provided at the Masterplan stage. The enhancement of planting along the western edge of the site will provide a strategic boundary for the future expansion of Perth City. The landscape strategy will potentially incorporate heritage components (outlined within Section 3.9), which may help shape the Masterplan Framework phasing and land use.

5.5 Key Views and Vistas

The central area of the site adjacent to the Old Gallows road and Noah's Ark is elevated with strong views to the southern part of the site and the A9. Views exist from the northern portion of the site to Huntingtower Castle. There are strong views to the surrounding mountains from the elevated central area and western edge. The Masterplan Framework and Conservation Masterplan will seek to incorporate these vistas and battlefield views into the design strategy for the area.



5.6 Listed Buildings and Scheduled Monuments

A Scheduled Monument identified as “Mains of Huntingtower, henge, enclosures, pits and road” (Index Number 3630), traverses the site in a north easterly to north westerly direction adjacent to the A85. This area is preserved within the development to protect the related historical elements identified, which include an old Roman Road and ditches. The three listed buildings located within Perth West are incorporated into the Masterplan Framework. Findings from the Inventory Battlefield of Tippermuir and The Conservation Masterplan including non scheduled and battlefield information should be incorporated into the detailed Masterplan.

5.7 Local Centres

Two new local centres are proposed within Perth West, with each of these to be different and distinctive. The “Sainsbury’s site” located within the north east of the plan area adjacent to the A85 may be brought forward for development at a later stage as a separate and more regional type centre. The existing Noah’s Ark site will continue to operate as a smaller leisure orientated centre. The two new local centres will be developed in a phased manner to ensure there is a sufficient population residing within Perth West to support future commercial and retail activities. The strategic north south street connection will link the two new local centres and the leisure centre node located at Noah’s Ark, which will ensure easy access for residents, and the provision of centralised public transport interchanges.

The Perth West north local centre will focus around the Newhouse Farm and proposed primary school. This local centre is divided between the H70 site and the property located to the south. This will enable the phased development of the local centre going forward. Buildings within the local centre will create strong frontages and help to enhance the sense of place and enclosure. The layout of the street network will enable opportunities to develop narrow and pedestrian friendly streets ensuring enhanced safety and shorter crossing distances for pupils and residents.

The Perth West south local centre will incorporate the local school and playing fields, with the East Mid Lamberkine Farmhouse located to the south. P&K and NHS Tayside have indicated a healthcare hub is required within this local centre. The method of delivery of this facility will be explored at the more detailed masterplan stage. Separating the school from the street which connects the employment land to the east ensures that a narrower street can be developed around the school and local centre as the main movement of traffic will be towards the employment site. The buildings around and within the local centre should create strong street frontages to enhance the overall sense of place and enclosure. Figure 14 outlines a conceptual overview of how this local centre may be developed in the future.

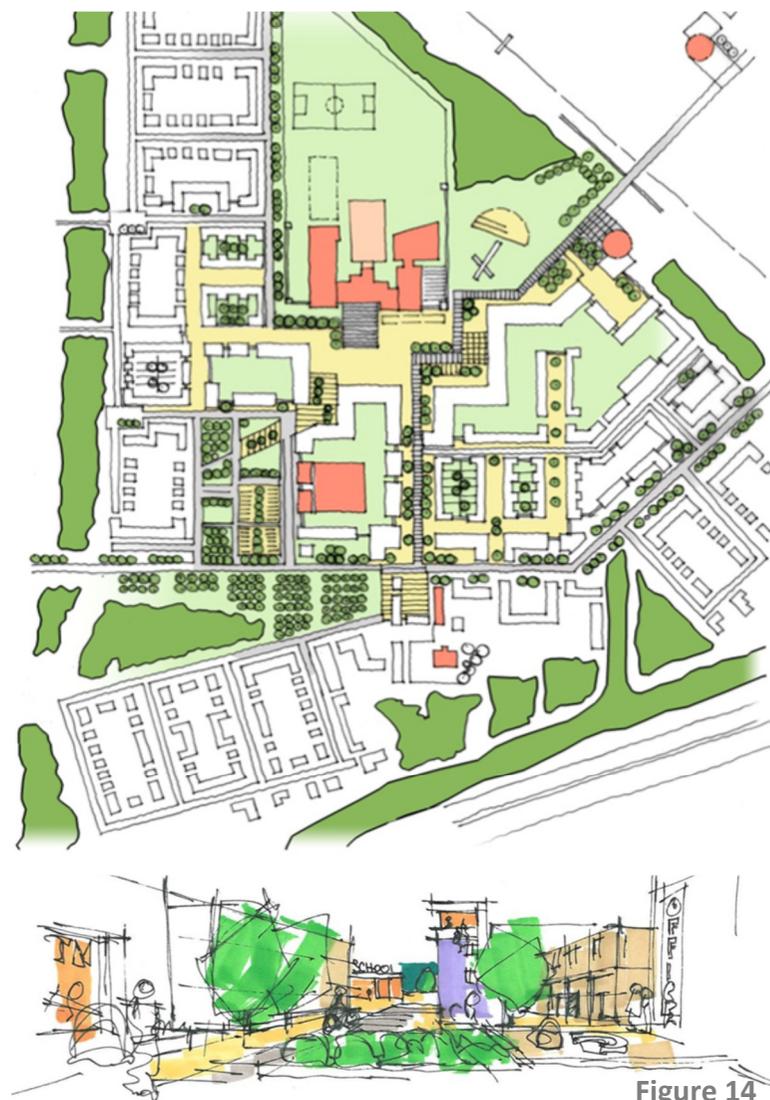


Figure 14
Local Centres

5.8 Access, Movement and Connectivity Strategy

The Perth West strategy envisages the phased delivery of new transport access arrangements that will support all modes and delivered through a combination of new junctions to be confirmed through detailed studies and agreement with Transport Scotland (TS) and Perth and Kinross Council Transportation Services (P&K). The strategy promotes a Perth West Phase 1 access under the A9 accessed from Tweed Place with future connections to a new grade separated junction on the A9 (west of Broxden), and at grade junction to the Crieff Road. (see Appendix B)

The strategy and details of the junctions will be confirmed through detailed Transportation Assessment(s) and network studies scoped and agreed through dialogue with TS and P&K. The main junctions proposed are as follows:

- A85/ Crieff Road to the north
- The Old Gallows Road/Burghmuir Bridge (public transport and pedestrian/cycle connection)
- A9 grade separated interchange west from Broxden Roundabout to the south west
- The Broxden Underpass connecting to Tweed Place to the south east

The Burghmuir Bridge will continue to provide access to the existing Noah's Ark site and as an emergency access for initial phases of development. There is the possibility that this route could offer a designated public transport link in the future, with further assessment to be undertaken to confirm that the existing bridge structure and infrastructure is sufficient to accommodate controlled access for public transport vehicles. P&K Council have indicated the requirement for a pedestrian bridge across the N-S section of the A9. Arrangements for any potential bridge will require detailed discussions with TS and P&K to confirm the location, design detail, and construction management.

The access strategy for Perth West requires an integrated transportation planning approach with both the strategic and local road networks. Future transportation studies agreed with TS/P&K will ensure close coordination with all current transportation and engineering studies associated with the planned upgrading of Broxden Roundabout. The Perth West Framework sets out a high level strategy with detailed proposals, road safety, traffic management, phasing and capacity issues all to be determined through future detailed assessments.

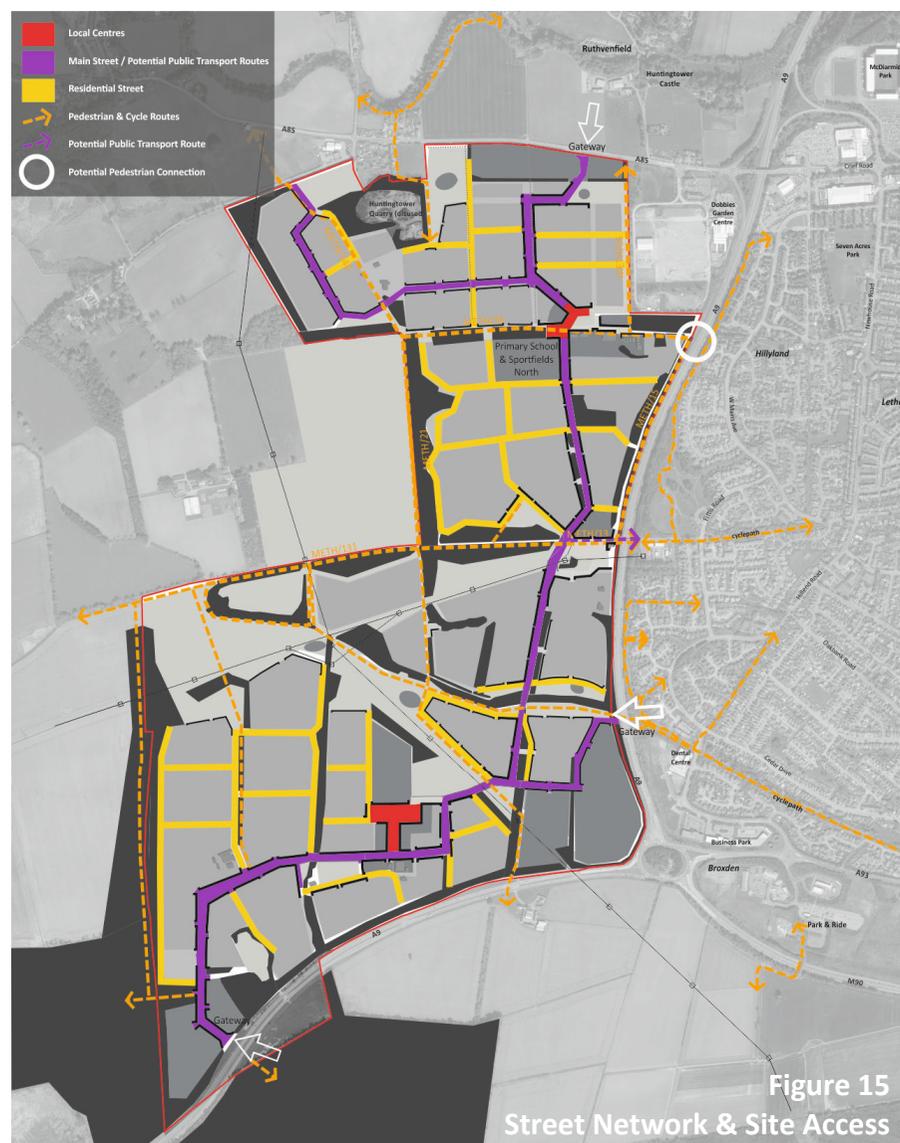


Figure 15
Street Network & Site Access

The developer(s) will be required to work in close collaboration with TS and P&K to ensure that transport modelling and associated studies being completed by all parties are appropriately scoped and coordinated to secure effective solutions that address transportation needs, support modal shift, deliver TS/P&KC wider objectives for the A9 and A85 transportation corridors, and include reference to wider housing allocations and development.

The internal road network will adopt the Designing Streets policy and National Roads Development Guide (SCOTS) and connect the northern and southern junctions with a series of secondary residential streets serving the development as a whole (see Figure 15).

Residential Streets

The new residential streets within the plan area will be carefully designed incorporating the principles of *Designing Streets* so as to be attractive and vibrant places for residents to interact and play, as well as safe routes for all road users. It will be important to avoid wide street sections that tend to encourage higher vehicle speeds and are unfriendly for more vulnerable users. A typical residential street might have a 10.8 metre wide section, incorporating a 4.8m road, 1.5m either side for footpaths and include as a minimum a 1.5m privacy strip (hence a 7.8m adoptable highway). However, for variety, other configurations should also be considered, including shared surface or 'Home Zones', to ensure high quality residential streets that all users including cyclists and pedestrians feel safe and comfortable using.

Pedestrian and Cycle Network

The public realm will be made up of an interesting and attractive sequence of streets and spaces which are connected and appropriately enclosed to allow optimum levels of natural surveillance. It is envisaged that ease of access and movement will contribute to the vitality and character of development. A network of footpaths and cycleways (identified in Figure 13)

integrated into the greenspace, Core Paths Network, and public realm, will allow greater mobility throughout the development. Connections will be made to the wider network of paths and tracks in the countryside outwith the development. All streets should be designed to form part of the overall pedestrian and cycle network.

Equestrian Routes

The existing core path network incorporates bridle paths. A strong bridle path network extends west along the Old Gallows Road to link up with the proposed north south green network along the western boundary of Perth West. Opportunities may exist to incorporate bridle paths along utility rights of way, which can be explored at the more detailed masterplan stage.

Public Transport

Bus stops will be located along the main road connection within the mixed use development ensuring that all parts of the proposed site will be within a 400 metre walk of a bus service. The exact location of bus stops and routes will be explored at the more detailed planning stage. The park and ride facility located off Broxden Avenue to the south east provides bus connections to other cities within Scotland. However, this facility is separate from the local bus service which will be provided within Perth West.

Parking Standards

Parking standards for vehicles, bicycles, and motor cycles will be provided in accordance with Perth and Kinross Council planning policies. The exact orientation and typology of buildings, and the location and layout of parking facilities will be shown at the more detailed masterplan level. At the more detailed design phase it is encouraged to reduce parking requirements where possible through mixed land use areas and sustainable transport options. Car parking will be accommodated through a variety of designs, but care must be taken to ensure parking does not dominate streets or open spaces.



5.9 Reduce Carbon Dioxide Emissions

The P&K *Sustainable Design and Zero Carbon Development Supplementary Guidance* identifies a range of policies for carbon dioxide reductions including;

- The promotion of sustainable forms of transportation.
- Enhance and protect wildlife habitats.
- Proposals for development of renewable energy will be supported where their need can be justified.
- SUDS are employed in new development.
- Separation of noise sensitive and noise generating lands.
- Development would not adversely affect air quality.

Lighting

Through capital investment and spend to save policies, the Street Lighting Partnership has sought to mitigate the increased price of electricity largely due to the proactive approach of taking advantage of the developing lighting technology to reduce electricity consumption and reduce maintenance. The Street Lighting Partnership is already well advanced in many of these new technologies such as the use of energy efficient white light sources and part night dimming. LED lanterns are now becoming more affordable and becoming more attractive as spend to save solutions.

Sustainable Development

Development design will consider the use of the Building Research Establishment (BRE) Sustainable Checklist for Developments to assess performance and to bring forward innovative new measures. These measures will include the following where practicable:

- **Integration of SUDS and Biodiversity.** Early design integration to secure nature conservation benefits through sustainable urban drainage.

- **Integration of SUDS and Climate Change.** Provision of measures to reduce storm water flows with porous surface paving, household provision of water butts, and provision for grey water recycling etc.
- **Green Networks, Landscape, Gardens and Biodiversity.** Ensuring greenspace, public realm, and gardens support biodiversity and habitat development with native plant assemblages and good connectivity.
- **Energy, Climate Change and Renewables.** Ensuring buildings maximise passive solar gains. Ensure best practice and opportunity is explored for exemplar and pilot schemes, and servicing enables adaptability for future opportunities.
- **Waste Management.** Ensuring provision for neighbourhood waste management and supporting measures for recycling and composting.
- **Green Materials.** Ensuring building specifications and detailing have regard to environmental impacts and all material specifications are rated C or above in the BRE Green Guide to Housing Specification, unless otherwise agreed. The use of locally sourced building materials will also help reduce CO₂ emissions.

As outlined previously, the use of public transport and sustainable forms of movement such as walking and cycling will help to reduce carbon dioxide emissions. All residents are within 400m of potential public transport routes, and connectivity is provided through the proposed underpass to the park and ride facility located in Broxden. Mixed use local centres will also reduce vehicular trips within the community. All of these initiatives will combine to help reduce carbon dioxide emissions in Scotland by 80% by 2050, as identified within the National Planning Framework 3 and Scottish Planning Policy.



Electric Car Charging Points

There may be an opportunity to incorporate an electric car charging point within Perth West, ideally at one of the local centres. This would strengthen the existing network of charge points located within the City of Perth at South Inch Car Park, The Best Western Lovat Hotel, and at Broxden Park and Ride. This will be explored at the more detailed masterplan stage.

Waste and Recycling Strategy

New development should provide easy and efficient access for residents and collection teams to both recycling and general waste facilities. There should be provision for segregated waste streams including dry mixed recyclables, food waste, and colour separated glass. New commercial development should comply with Waste (Scotland) Regulations 2012.

District Heating Strategy

There may be challenges with the implementation of a district heating system, but this will be determined at the more detailed masterplan stage. The district heating pipework would be laid within the adoptable highway and other wayleave and servitude corridors as may be necessary. Pipework spacing relative to other utility and service installations will need to be agreed with the various statutory and non statutory utility providers. Other infrastructure facilities may be required such as a supporting energy centre, which will also be determined at the more detailed masterplan stage.

5.10 Servicing Opportunities

Developers shall provide separate surface water and foul drainage to service the site in accordance with Scottish Water Policy, with drainage infrastructures that meet the standards set out in Sewers for Scotland (3rd edition). A Section 7 agreement will identify the relative responsibilities for the operation and maintenance of the SUDS. These responsibilities may be discharged by the Local Authority/ appropriate body or be discharged by a Factor on their behalf.

Drainage

In conjunction with the development of the detailed Masterplans, a Surface Water Management Plan will be required, with surface water drainage and treatment addressed in accordance with SEPA requirements, the CIRIA C697 guidance document, and Scottish Water publications as deemed appropriate for a SUDS management plan. The SUDS facilities will accommodate surface water and road drainage. The Masterplan Framework outlines the potential location of SUDS attenuation ponds throughout the development which serve different catchment areas.

SEPA previously stated that any discharge to the Newton Burn and subsequently the Town Lade would not be acceptable. However, since those original comments from SEPA the national guidance on addressing runoff have changed, and in previous discussions the P&K Flood Team had indicated that discharge post development which was less than the current discharge value would be acceptable. Opportunities also exist to deposit in the East Pow.

The site is divided into a number of catchment areas with drainage patterns identified in Figure 7. The northwest of the site will outfall westwards to the East Pow, the north of the site will outfall to the north, and the southern areas of the site will outfall into the burn that traverses the site from southeast to northwest.

Sewerage

A detailed Drainage Impact Assessment (DIA) will be required to determine the exact details of the foul network for the plan area. A high level analysis as part of this report identifies that sewerage will gravity drain to low points on the site. The DIA will determine the ultimate outfall of sewerage from these points.

Water

An existing 9 inch pipe which traverses the site in a southwest to north east direction will be relocated within the local road system during development. There is also a four inch pipe which runs along the A85 to the north. A more detailed water impact assessment will determine the water system requirements within the development.

Any private water supplies to existing properties and premises will need to be identified and incorporated into the future development.

5.11 Enhance Biodiversity

Biodiversity, ecological and environmental connectivity is central to the proposed Masterplan Framework both within the site, and to the surrounding countryside and residential areas. The powerline rights of way and the underpass to the southeast of the plan area will provide enhanced corridors for wildlife movement and biodiversity.

It is encouraged to provide a range of green infrastructure alternatives to grey infrastructure, as identified within Scottish Government's '*Green Infrastructure Design and Placemaking*' and P&K '*Green Infrastructure Supplementary Guidance*'. These could include;

- Street trees instead of bollards.
- Green/living roofs instead of traditional roofs.
- SUDS, swales and natural flood management instead of engineered flooding solutions.
- Permeable paving incorporating water storage in the sub base of the street instead of standard roads and sewers. This may be possible on residential driveways and pathways for example.
- Multifunctional infrastructure instead of single function. This could include multiuse trails with permeable surfaces, and multifunctional open space areas enhanced with planting and landscaping.

Safe pedestrian movement corridors which connect schools and residential areas should incorporate existing green infrastructure such as hedgerows and mature trees, which will combine to enhance overall biodiversity and ecology. Green corridor connections also provide opportunities for swales, small scale amenity areas, and street trees to be integrated into the design. This will be explored at the more detailed Masterplan stage.

Enhance Biodiversity through Sustainable Drainage and Discharge Options

Explore the opportunity and feasibility of incorporating a Biomatrix type drainage system into the proposed plan area. This will be explored in more detail at the masterplan stage and will involve discussions with Scottish Water to determine the feasibility of such a system. The system could incorporate wastewater into a wetland and greenhouse type complex which will help to 'polish' the water to an acceptable standard before being discharged into the appropriate watercourse. A similar type system is currently being explored in Bertha Park and is awaiting feedback from Scottish Water.



5.12 Residential Development

Residential Mix

A full range of housing types, sizes and tenures (including provision for live work units, self and custom builds) should be provided to encourage a balanced community mix. This ensures that households do not need to move away from the local area in order to satisfy their changing housing needs and demands, it avoids the creation of socially restricted or dormitory settlements, and ensures that there are more 'eyes on the street' throughout the day. Homes should also be designed to adapt easier to changing household circumstances such as disability challenges.

Housing styles should be mixed to create interesting and varied streetscapes, rather than a single standard house-type which dominates. Exceptions may exist for example, where a particular style and order is desired in creating a more formal frontage to the main greenspace areas, thereby contributing to the overall urban hierarchy.

Residential Density

The average residential density is approximately 30 units per hectare. Higher densities are located towards the local centres, while lower densities are located away from the central area.

Affordable Housing

There will be a mix of housing tenures throughout including affordable and special needs housing. Affordable and special needs housing will be an important part of the Masterplan Framework and phased delivery. In accordance with Local Development Plan policy RD4 on Affordable Housing residential development including conversions consisting of 5 or more units will include provision of an affordable housing contribution amounting to an equivalent of 25% of the total number of units proposed. The affordable housing will be integrated with and indistinguishable from the market housing.



5.13 Employment Land – Business, Industrial and Commercial Space

The creation of a sustainable community and successful vision for Perth West requires a comprehensive approach to build upon the existing employment base within Perth and extend opportunities for enterprise.

The SDP recognises that as the plan progresses over its lifespan that changes in employment space will evolve to meet market demands. This in conjunction with emerging smart technologies, changing people behaviours, and increased demand for locally based services suggests that current trends are more geared towards local based employment centres, and small and medium sized enterprise including small office home office (Soho). Flexibility of provision within Use Class 4, 5 and 6 will be an important factor in ensuring the employment land remains viable. The Masterplan Framework provides 25ha of employment land (identified within the LDP and SDP), with easy access provided from these sites to the A9 trunk road and Scotland’s motorway network. The provision of employment uses will be market led and integrated with residential phasing, and will include dialogue with Perth and Kinross Council (Economic Development), Scottish Enterprise, major local employers and local business groups.

5.14 Education Provision

The LDP and Strategic Development Framework identify a need for two primary schools to be located within Perth West based on the full build out of the plan area as identified within Figure 12, as the existing schools within the local area are close to capacity. These primary schools will provide for future population demands and student generation within Perth West. A proposed new secondary school will be located within Bertha Park north of Almond Valley, which in combination with Perth Academy and High Schools will serve the Perth West area.

School Catchment Areas

The Perth West site is currently located within the primary school catchment areas of Oakbank, Our Ladys RC, Letham, and Ruthvenfield. The closest secondary schools to Perth West are Perth Academy and High Schools.

Delivery of Education Provisions

The delivery of funding for educational facilities from developer contributions will be correlated with phasing of future development, and will be confirmed at the more detailed masterplan stage. As the population projections of this development are estimated at 6,000+ people, based on 3,000+ residential units, this would equate to providing two primary schools. P&K indicated that the primary school sites would be provided by the developers, with the Council taking responsibility of building the school structure, and developers paying the Council on a pro rata basis as phasing is rolled out across the site.

Pedestrian/Cycle Connectivity to Schools

The Masterplan Framework incorporates pedestrian and cycle connectivity to the proposed primary schools to be located within Perth West. It also considers connectivity to open space areas located to the north of the A85, which in turn will link to Almond Valley and the secondary school located within Bertha Park.



5.15 Integration with Surrounding Communities

The Perth West plan area is linked to surrounding housing areas located to the east of the A9 through the Burghmuir Bridge, and to the west through the Old Gallows Road. Connections (including the core paths) also provide linkages to Almond Valley to the north. Careful consideration will be given to pedestrian and cycle routes around the site, and connections to communities in Tibbermore, Strathearn and Strathalmond. It is intended that the proposed layout will aid permeability and promote integration between the new and the established communities.

The connection north to Almond Valley will be examined in further detail at the masterplanning stage and will consider and explore joint access opportunities for both Perth West and Almond Valley. A potential urban design strategy for the A85 will further enhance opportunities to integrate the Perth West and Almond Valley sites through design detail, ensuring the A85 acts as a strong Gateway into Perth and becomes more of a ‘street’ rather than a ‘road’. This will encourage easier pedestrian and cycle connectivity between the two communities.

Woodland planting is proposed along the western boundary to strengthen the connection from Lamberkine Wood and link to other planted areas such as along the Old Gallows Road and Newton Burn. The findings of the Conservation Masterplan will help to form the final planting strategy for the area at the Masterplan stage. Existing farmsteads within the site could be integrated into future development opportunities.

5.16 Phasing

SWOT Analysis

Critical early considerations were access issues, which have a strong influence on the creation of serviceable land and phasing, with two options being considered:

- Primary access taken early in the development of the scheme from a new grade/ part grade separated junction at the A9 west of Broxden.
- Initial access taken to initiate development from an underpass under the A9 from Tweed Place and connecting to Lamberkine Drive.

The two options are outlined as part of a SWOT assessment within Table 2.



Figure 16: Phasing

East to West Development based on Broxden Underpass

<p>Strengths:</p> <ul style="list-style-type: none"> ■ Development is largely contiguous with existing neighbourhoods. ■ Builds strong connections to existing infrastructure (schools/ facilities). ■ Ensures residential development not ‘orphaned’ within phasing. ■ Initial engineering assessment highlights viability / feasibility. ■ Reduces front-loaded dependency on A9 grade separated junction. ■ Secures stronger place-making around local centres. ■ Secures a stronger, more adaptable Masterplan with better outcomes. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> ■ Requires early investment and agreement with Transport Scotland. ■ TA needs to demonstrate capacity on local networks.
<p>Opportunities:</p> <ul style="list-style-type: none"> ■ Builds the long term connection of path/cycleway to Scouring Burn. ■ Facilitates employment investment in an identified and developed location. ■ Supports delivery of employment in initial phase – west of Broxden. ■ Offers opportunity for connecting utility/servicing to existing networks. ■ Allows retention of agricultural land management on farmland/ estate. ■ Allows wider greenbelt designation options to be considered in LDP. 	<p>Threats:</p> <ul style="list-style-type: none"> ■ Detailed Technical Appraisal required to confirm construction specification and traffic management implications ■ TS approval required.

West to East Development based on A9 Grade Separated Junction

<p>Strengths:</p> <ul style="list-style-type: none"> ■ Secures major investment on A9 at early stage and early closure of Tibbermore Road access. ■ Addresses secondary farm access on A9 in early phases. 	<p>Weaknesses:</p> <ul style="list-style-type: none"> ■ Early phase housing disconnected from existing settlement and infrastructure. ■ Promotes housing in designated greenbelt in initial phase. ■ Potential issues with access to local facilities (schools / local centres) ahead of delivery of local centre. ■ Single access may limit housing number/ flexibility to 300 units in advance of second access. ■ Lacks planning resilience in terms of adaptability to changing housing demand. ■ Place quality challenging in initial phase releases and heavily influenced by road engineering. ■ Local centre could be accessed from single access point. ■ Unlikely to support public transport connectivity in early phases.
<p>Opportunities:</p> <ul style="list-style-type: none"> ■ Provides opportunity for phased interchange with east facing legs of junction completed to support initial phase. 	<p>Threats:</p> <ul style="list-style-type: none"> ■ Development phasing may not proceed to plan creating ‘orphaned’/discrete settlement. ■ May encourage pedestrian / cycle activity on busy trunk road.

Table 2: SWOT Analysis

Phasing Strategy

The phasing strategy can be seen in Figure 16. An important element of placemaking is building and strengthening the connection between people and places. This focuses on the links that connect people to their local centres, green networks, adjacent neighbourhoods and wider destinations such as the city centre. More than just promoting better urban design, placemaking looks to enhance ease of movement that supports sustainable lifestyles and connects the physical, cultural, and social identities around which strong neighbourhoods are built.

A key part of the strategy for Perth West is to ensure that new neighbourhoods emerge and grow in a sustainable manner. This is most readily secured through ‘organic growth’ that builds on the existing settlement pattern and capitalises on existing infrastructures. Strong and safe connections to existing schools, path networks, and community facilities also help connect established communities and support integration. Additionally this pattern allows the use of shared infrastructures (utilities/services/etc) and reduces the risk that housing can become disconnected and fragmented through development phasing which creates discrete or orphaned housing clusters.

The Perth West Strategy therefore promotes:

- Construction of the Broxden Underpass in Phase 1 (path/cycleway/road connection) will connect the initial phase of housing release with the local established communities adjacent to Burghmuir and Broxden.
- Development of the Green Network in parallel with housing (mixed tenure and affordable options) and employment land to ensure strong early connections between existing housing, employment sites, public transport hubs (encourage modal shift), and the path-cycleway connection to the city centre along the Scouring Burn.
- Development of strong employment opportunities within each phase based on land allocations (industrial and commercial), and enterprise activities in local centres.
- A phasing strategy that releases land east-to-west ensuring each phase represents a contiguous settlement pattern of development building on and strengthening the local centres and established corridors of movement.
- Advanced landscaping and green network measures to allow long term greenbelt buffers to be established, and progress and determine mitigation and interpretation of battlefield issues in advance of development.

- Support of a stronger quality investment case with investment in education, local centres, major infrastructure, and the trunk road grade separated A9 junction following initial land releases.

This strategy is reflected in the Masterplan Framework, phasing plan and investment programme. Details of the Broxden Underpass Appraisal are summarized within Appendix B. The overall strategy will be delivered in combination with upgrades to the Broxden Roundabout and new A85 access points.

The landowners are seeking to progress with the first phase of development within Perth West, following site preparation and any necessary infrastructure enhancements. It is essential that in considering the phasing and delivery of development, account is taken of the programming of investment to ensure that the waste water and other infrastructure have the required capacity for the proposed new development. Action will be taken as necessary to ensure the effective delivery of the infrastructure improvements identified as part of the existing LDP.

Housing Provision*					
Location	Phase 1	Phase 2	Phase 3	Phase 4	Total per area
North ‘white area’		7.5 ha	15.2 ha	8.1 ha	30.8 ha
H70	10.3 ha	9.4 ha	7.5 ha	9.8 ha	37 ha
South of Gallows Road	19.7 ha	13.1 ha	17.3 ha	2.1+ ha	61.2 ha
Total per phase	30 ha	30 ha	40 ha	20+ ha	129+ ha

*These areas are estimates that will be developed in more detailed at the Masterplan stage. The Sainsbury’s site could potentially incorporate residential development of approximately 8 ha.

Table 3: Housing Provision

Employment Land	Total ha	Phase 1	Phase 2	Phase 3
A9 East Broxden	11 ha	11 ha		
A9 West	4.8 ha		2.4 ha	2.4 ha
A85	4.2 ha	4.2 ha		
Local Centre North	2 ha		1 ha	1 ha
Local Centre South	2 ha		1 ha	1 ha
Sainsburys	1-3 ha+	1 ha+		
Total	25 ha+	16.2 ha+	4.4 ha	4.4 ha

Table 4: Employment Land Provision

Transportation Considerations for A9

The Perth West Framework outlines a phasing of key infrastructure that will inform detailed transportation assessments and studies. The phasing is based on delivery of a DMRB compliant interchange on the A9 at the south west of the site agreed with TS. The Detailed Transportation Assessment for Perth West will define the key threshold (housing numbers / trip generation) that will define the timing of delivery and operational opening date of the junction. All design detail including location, engineering design, traffic management, phasing and delivery will be agreed with TS / P&K.

Any interim solutions for the A9 grade separated interchange identified to facilitate delivery and short term access to the site, will be agreed with TS and P&K. The design requirements for the A9 interchange and closure of secondary road junctions, and wider accommodation works and/or park and ride facilities will be examined by more detailed studies. No decision has been made at this stage however opportunities have been identified to introduce phased closures of secondary A9 accesses (single property/farm access points) and integrate the Tibbermore Road junction into the new access arrangements.

Infrastructure Provision	Phase 1	Phase 2	Phase 3	Phase 4
Broxden Underpass	o			
A85 Access		o	o	o
A9 Interchange		o	o	o
Utilities/ICT	o	o	o	o
Primary School North		o	o	o
Primary School South		o	o	o
Advance Woodland	o			
Green Network	o	o	o	o

Table 5: Infrastructure Provision

The developer will work closely with TS and P&K to coordinate and scope all transportation studies and modelling to ensure that proposed development and access solutions fit with emerging short, medium and long term options for strategic infrastructure. These interim options will be confirmed going forward as part of the detailed masterplan stage, and through discussions with Transport Scotland and the P&K Transportation team. The provision of educational facilities will be negotiated with P&K as part of the phasing strategy.

Delivery

The landowners consider that development of the Perth West site will play a strategically important role in meeting Perth's housing and employment land requirements during the Development Plan period and beyond. It is likely that development will occur from both the north and the south of Perth West (Figure 16) in Phase 1, due to the traffic capacity constraints associated with the A85, and landowner conditions.

It is essential that P&K ensure that future planning consent is conditioned in a way that ensures that the H70 site is connected to the rest of Perth West and the local school located within the north of the site. This will ensure that development land does not become landlocked in stage 2 because there is no road access available to the school site from the A85. It is also essential that an appropriate woodland management agreement is in place to ensure that all woodland areas, including those outside the main housing land, will be identified for the purpose of determining future maintenance responsibilities. Developers will be expected to enter into an agreement to transfer at nil value the required serviced site for the health centre either through a Section 75 agreement or a separate legal agreement with the Community Planning Partnership. A financial contribution may also be required for the possible creation of a pavilion (£120,000) and all weather pitch (£650,000). A Section 75 agreement will also be required to provide a minimum of x hectare of serviced employment land prior to the occupation of the x home. Thereafter, the second hectare of Employment Land would be made available by the time 50% of the first hectare of Employment Land has been occupied. Bus service provision identify at the Masterplan stage will need to be subsidised by the developer at a level and time period agreeable to by the Council and service provider. P&K will seek a

Green Network	Location	Phase 1	Phase 2	Phase 3	Phase 4
Paths and Cycleway Connections	Almond Valley	o			
	Broxden Underpass	o			
	Burghmuir Bridge	o			
	Sainsburys Site	o			
Greenspace and Parks	Local Centre North		o		
	Local centre South		o		
Allotments		o			
Amenity Landscape		o	o	o	o
Advanced Woodland Planting		o			
Lamberkine Woodland Park				o	o

Table 6: Delivery of Green Network

suspensive condition for funding local and trunk road networks.

There is an opportunity for key business growth working with the objectives of the City Plan and vision to ensure high quality sustainable development is achieved through mixed use investment opportunities which support the wider growth of the city centre and meet the wider regional infrastructures and practical transportation, green networks, and digital infrastructure.

5.17 Market Viability

The Perth West site is under the control of 3 major landowner/developers with specific interests in bringing forward residential development. The site is part allocated (H70), sits within the settlement boundary and has greenfield status. Providing that the critical delivery issues of consents, access, drainage and servicing are technically deliverable in sensible phases, and if market collaboration between the landowner(s) / house-builder can be coordinated in an efficient way then the site demonstrates all the attributes of being strong and viable. Critical issues to securing a strong new market and commercial success will be phased infrastructure delivery and the timing of servicing linked to agreement on planning gain payments. The Business Case and quality of delivery including advanced works are strongly influenced by allowances made for front end investment costs and a good market and land parcelling strategy has an important role in delivering commercial success which is vital in the early stages. More detailed information on the market viability study can be found in Appendix C.

5.18 Developer Contributions and Conforming to Existing Planning Policies

A range of developer financial contributions will be provided by the landowners to P&K to support future development within Perth West. Development levies are outlined within the following supplementary guidance documents, identified within the LDP;

- Open Space Provision and Developer Contributions
- Developer Contributions Transport Infrastructure
- Developer Contributions December 2011 incorporating Primary Education and A9
- Junction Guidance

Design considerations will also incorporate the policies and objectives set out within the following P&K documents, as identified within the LDP;

- West/North West Perth Strategic Development Framework
- Berthapark Masterplan
- Almond Valley Village Masterplan
- Placemaking Guide
- Transport Standards Guide
- Employment and Mixed Use Areas
- Forestry and Woodland Strategy
- Green Infrastructure
- Green Belt Management Plan
- Renewable and Low Carbon Energy Generation, Climate Change, Carbon Reduction and
- Sustainable Construction
- Spatial Strategy for Wind
- Flood Risk and Flood Risk Assessments
- Landscape Guidance
- Delivering Zero Waste in Perth and Kinross
- Affordable Housing Guide
- A Guide to Incorporating Biodiversity into Development
- Householders' Guide to Biodiversity
- Biodiversity: A Developer's Guide

