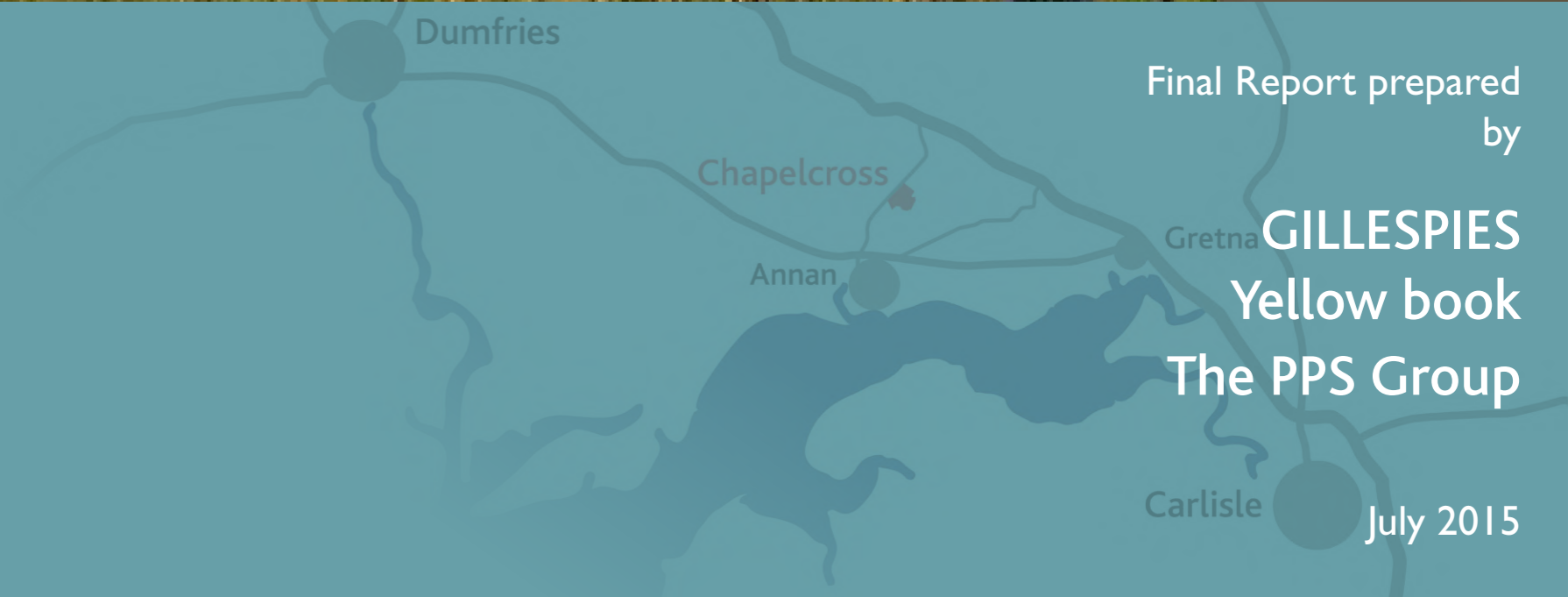


# CHAPELCROSS Development Framework

## *A vision for Chapelcross*

*Charrette Report, including Baseline Economic Study and Marketing Strategy*



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## CONTENTS

<b>Executive Summary</b>	<b>V</b>	The Importance of Place	<b>36</b>
		- Characteristics of Quality Places	36
<b>Introduction</b>	<b>1</b>	Environmental Factors	<b>37</b>
The Site	2	- Air Quality and Dust	37
		- Global Climate Change and Energy	37
<b>The Vision</b>	<b>5</b>	- Biodiversity, Flora and Fauna	37
		- Landscape and Visual	38
<b>Strategic Overview and Development Framework Plan</b>	<b>8</b>	- Archaeology and Cultural Heritage	39
Strategic Overview	9	- Groundwater, Geology and Soils	39
The Development Framework Plan	13	- Surface Water Resources and Quality	39
Development Principles	16	- Waste	39
Phasing	21	- Noise and Vibration	39
		- Electricity	39
<b>The Charrette Process</b>	<b>23</b>	<b>Exemplars</b>	<b>41</b>
		• The Team Valley Trading Estate	41
<b>Context and Analysis</b>	<b>25</b>	• Hillington Park Estate	42
Site Description	25	• Harwell	43
Site History	25	• Trawsfynydd	44
Decommissioning Process	24	• Berkeley Nuclear Power Station	45
The Role of the Nuclear Decommissioning Agency	29	• Coed Darcy	45
Sub-regional Economic Baseline Study Summary	29		
Transport and Movement	32	<b>Towards a Marketing Strategy Summary</b>	<b>47</b>
Planning Policy Framework	33		
- National Planning Framework 3	33	<b>Next Steps</b>	<b>49</b>
- Scottish Planning Policy	34		
- Designing Places	34		
- Dumfries and Galloway Local Development Plan	34		
- Planning Guidance	35		



# EXECUTIVE SUMMARY







## EXECUTIVE SUMMARY

When the Chapelcross Nuclear Power Station ceased generation in 2004 it brought to an end to almost 50 years of electricity generation and marked the start of a programme of defueling and decommissioning with major impacts on levels of activity and employment at the site.

Chapelcross's history as an RAF airfield and more significantly as a nuclear power station has left a deep and lasting connection, both socially and economically, to Annan and the wider area. In addition, as a power station of national importance it has provided crucial infrastructure to meet the country's energy demands.

The site, which extends to approximately 190 ha, is in the ownership of the Nuclear Decommissioning Authority (NDA) and presents a rare, though challenging, opportunity to stimulate and revitalise the economy of the Dumfries and Galloway region.

This Development Framework Plan, supported by a Preliminary Marketing Strategy and based on a Sub-regional Economic Baseline Study, is intended to provide guidance and a long-term vision for the site. Developed through a participatory planning process involving a range of key stakeholders the Development Framework sets out a shared and aspirational vision for the re-development of the Chapelcross site.

Looking forward, it is key to emphasise and recognise that the economy and industry will continue to change, and change will present both opportunities and challenges. We have tried to foresee and account for these changes, knowing that Chapelcross, the NDA and Dumfries and Galloway Council (the Council) will also face situations that could not be predicted in drawing up this plan and report.

Determining the future of the Chapelcross site is a complex and challenging task that requires a very long-term perspective. It is a huge site and only about 30% of the land area will be available for development up to 2028. Thereafter, other parcels of land may be de-licensed incrementally, but the area around the reactors will remain unavailable until 2095. It must also be acknowledged that the site will transition within a context of an oversupply of brownfield and industrial land in an overwhelmingly rural area, with a relatively low population and employment base.

Therefore the Plan attempts to account for both the known and unknown by providing an indication of how the site could be structured to meet these

opportunities and challenges. An option to develop it for strategic business infrastructure, i.e. predominantly large-floor plate, low labour-intensive uses over the period 2015 to, approximately 2030, is presented, as is a further option to accommodate a variety of other uses, including local industrial and manufacturing expansion, R&D, logistics, etc. The longest-term, full build out is also presented as an aspirational option that also illustrates how the previous options, and other unforeseen uses, might be accommodated.

The Development Framework Plan is underpinned and complemented by robust development and design principles which could be embedded in the earliest stages of development and would give the best opportunity for the site to be organised as a 'place'. These principles would continue to shape development in the very long-term (15 years and beyond).

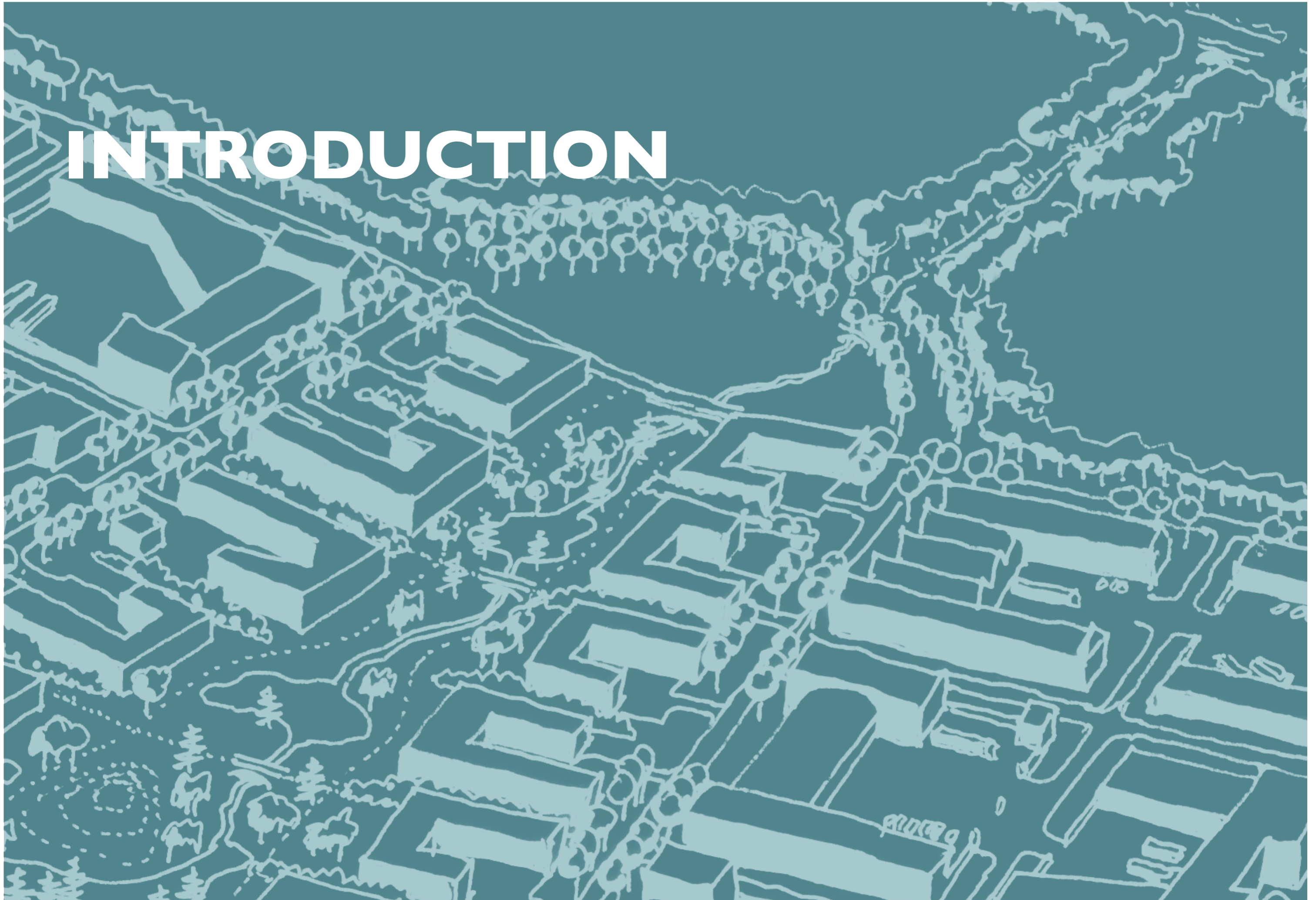
The Development Framework Plan, based on the findings of a Sub-regional Economic Baseline Study and supported by a Preliminary Marketing Strategy, is an initial step in forging a sustainable future for Chapelcross and the region. The Preliminary Marketing Report identifies strategies and mechanisms to raise the profile of the site and to deliver the vision.

Recommendations for action include:

- Reaffirm the key strategic goals and objectives of the project in light of this report and the M74 corridor study being produced simultaneously.
- Project partners support the work already done, and the momentum generated, by formally designating those working on Chapelcross as a 'Task Force', thus providing a clear channel of authority for taking forward proposals for the area will be important.
- The Council should identify local firms with property requirements/ expansion plans and explore opportunities for relocation to Chapelcross, especially where this will relieve conflicts/constraints on existing sites.
- The 'Task Force' should confirm, develop and implement a marketing strategy for the site in the context of the three major sites on the M74 corridor.
- Identify and build a consensus view in regard to the best mechanism for attracting Scottish and UK Government support for taking forward initiatives for the site based on the agreed vision, strategic goals and objectives.

- Establish an identity for the site and area so that it might be marketed.
- Identify a project 'champion' to help take the proposals forward.
- The Council should identify potential funding sources and produce a bid (or series of bids) for sufficient resources under the auspices of the 'challenge' of Chapelcross for submission to the Scottish and UK Governments.
- The Council should review its planning and economic development policies and strategies to ensure that these reflect the wider vision.
- The NDA should prepare a suite of marketing materials for the Chapelcross site including a dedicated website, brochures, fact sheets and briefing, and exhibition boards.
- DGC should develop a more comprehensive and robust planning policy framework for the site, including evolving the development framework plan into a masterplan, and potentially design code, based on work done to date and principles of sustainable planning and design. The masterplan and design code could be adopted as Planning Guidance.
- Further stakeholder and community engagement, with the potential of developing the masterplan through a full and open charrette process.

# INTRODUCTION







## INTRODUCTION

This Development Framework, including Sub-regional Economic Baseline Study and Preliminary Marketing Strategy, was commissioned by Dumfries and Galloway Council and funded by the Nuclear Decommissioning Agency, as landowner, is intended on initiating the visioning process for the former Chapelcross Nuclear Power Station. It presents the development of initial ideas and aspirations, as well as constraints, in regard to the Chapelcross site and its wider context. It is also intended to present preliminary ideas to support the delivery of sustainable economic development in the Annan-Gretna-Lockerbie corridor, which is one of four priority areas identified in the NDA's Socio-Economic Policy.

This report presents the outputs of a consultation process, including two stakeholder events, undertaken and delivered to begin investigating development opportunities based on commercial prospects over the next 10 – 20 years and how the site might be structured (road layout, access options, block patterns, landscape strategy, etc.) to best support the aspirations of Dumfries & Galloway Council in order to realise the economic potential of the site for all stakeholders involved.

Gillespies LLP, a multi-disciplinary design practice, embracing masterplanning, urban design, landscape design and landscape planning was commissioned by the Council for the production of this Development Framework, including Preliminary Marketing Strategy and Sub-regional Economic Baseline Study for the site.

Gillespies team for this work also included economic development and regeneration consultants, yellow book ltd, and communications consultants, PPS Group.

The Sub-regional Economic Baseline Study was undertaken in advance of the charrette workshops and provided the context for these and the report. Two stakeholder charrette events were held and a vision for the site emerged, with a development framework plan drawn up based on an understanding of the issues and opportunities in regard to the three key strategic sites; Chapelcross, Longtown (in England) and Easttriggs. The plan provides a robust layout based on exemplars of commercial/industrial areas and could accommodate the range of potential uses identified through the baseline study and charrette workshops.

The Development Framework is based on the findings developed through the charrette process and the economic analysis, and includes sections detailing:

- The Vision;
- A Strategic Overview, which outlines the key considerations, issues and aspirations for the site and vision;
- The Development Framework Plan, including potential uses, design principles and phasing strategy;
- The methodology, i.e. 'Approach', employed to develop the vision, including how the charrette workshops informed the development of ideas;
- Background information and analysis in regard to the site which provided the context for the for the charrette and the subsequent report, including the Economic Baseline Study, which was crucial in regard to potential uses;
- A variety of identified 'Exemplars' from which lessons might be learned; and
- A series of 'Next Steps' to progress the set to achieve the vision.

The Development Framework Plan report also includes, as appendices, the full Sub-regional Economic Baseline Study and Preliminary Marketing Strategy, i.e. 'Towards a Marketing Strategy'.



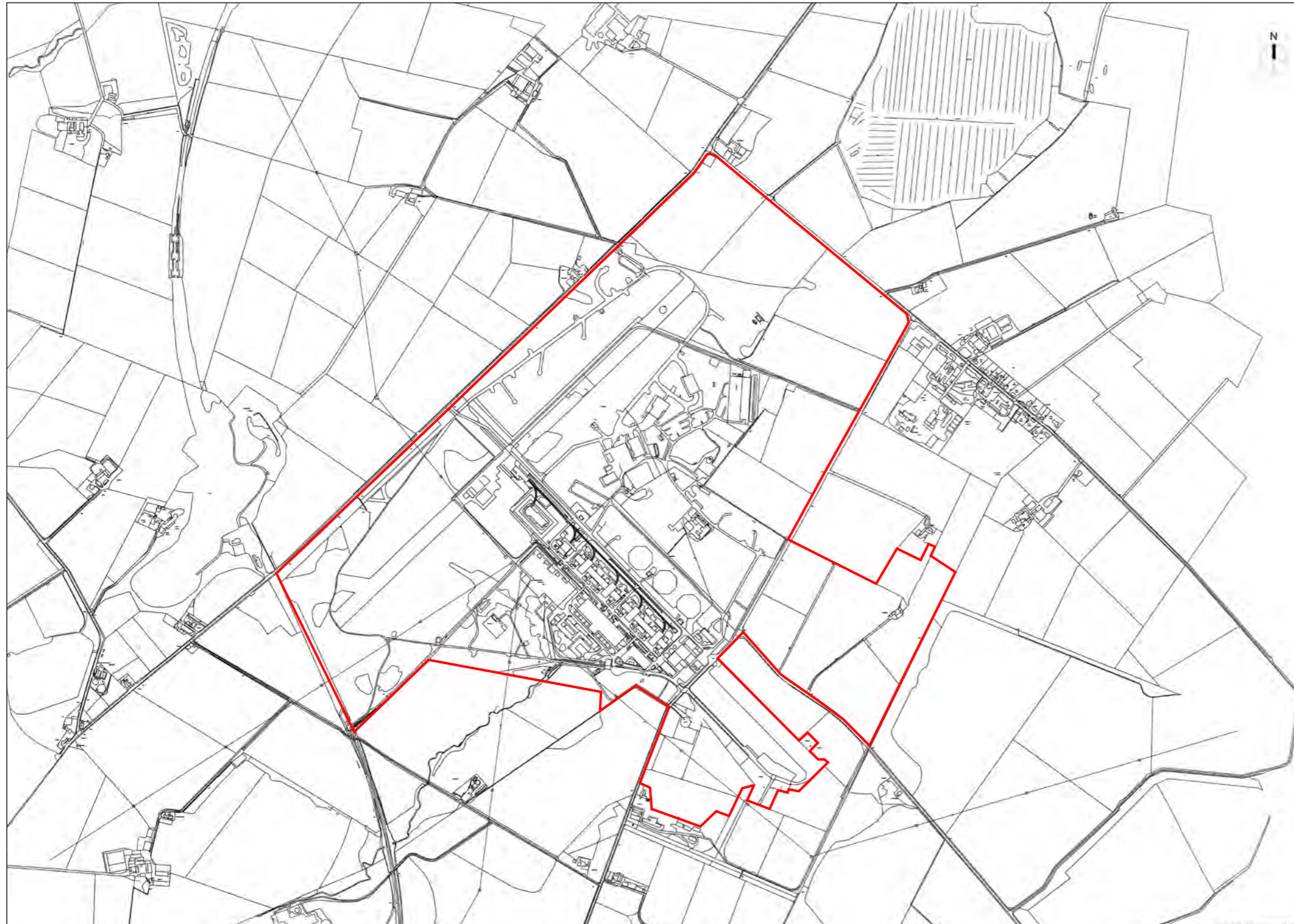
## The Site



Chapelcross is located within a travel to work area that includes Dumfries and Carlisle, as regional employment centres, as well as local centres at Annan, Lockerbie and Gretna.



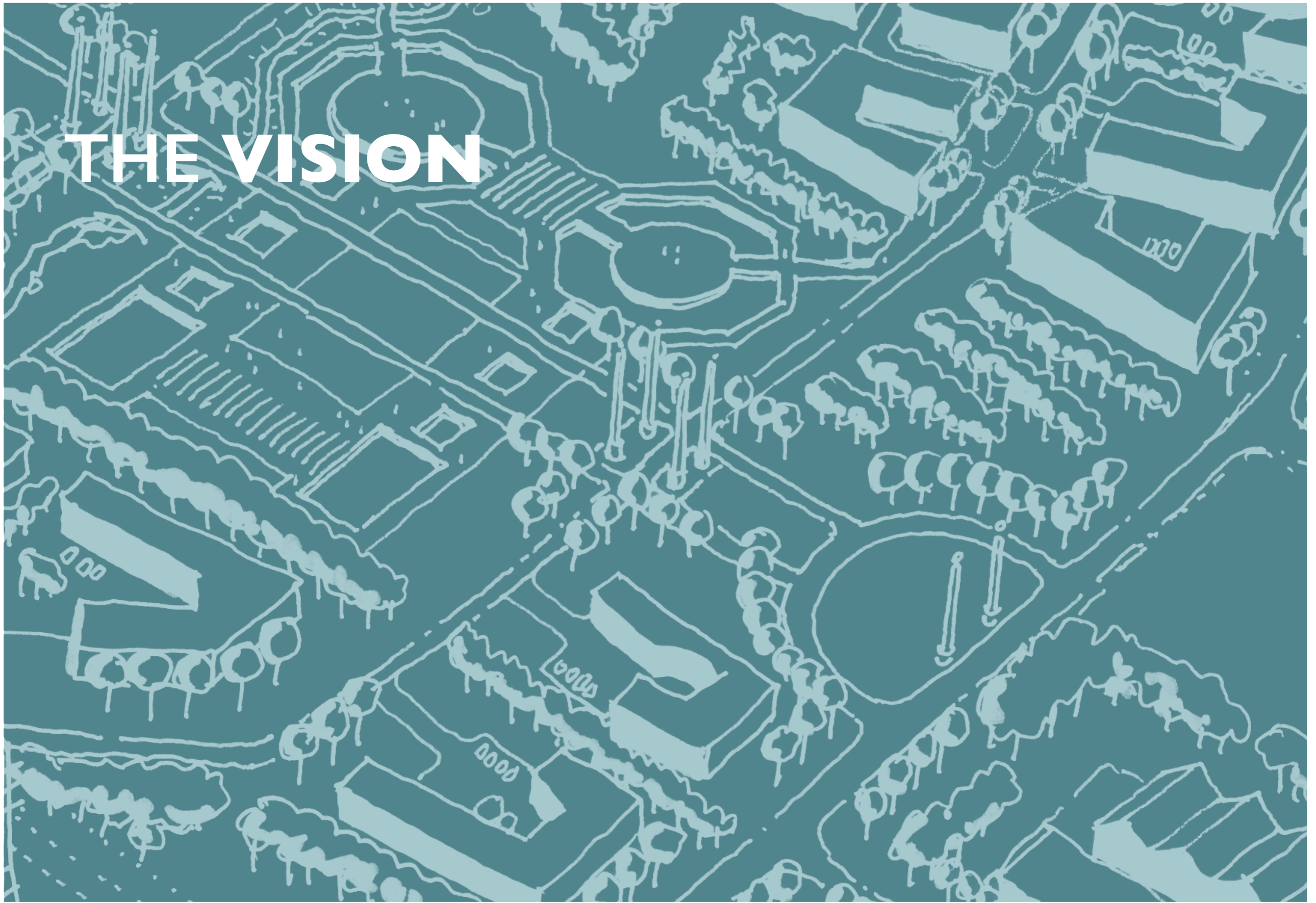
# A vision for Chapelcross



The Chapelcross Development Framework Plan boundary (approximately 190 ha).



# THE VISION





# A vision for Chapelcross



## Vision:



One of the key aims of this project is to be aspirational and paint a picture of what future development at Chapelcross might look like.

A robust and flexible plan for a regional employment centre with the ability to accommodate a range of potential uses, including:

- Energy generation and storage (including renewables);
- Manufacturing, especially forest products;
- Large-scale industrial to small-scale, start-up type premises;
- High-end R&D; and
- Other miscellaneous uses such as coal storage.

A plan that places a strong emphasis on creation of a quality and sustainable place, for both business and people, including:

- A robust and adaptable layout based on a network of connected streets;
- Perimeter blocks, with buildings fronting streets and creating a defined public realm;
- A variety of block sizes which can be subdivided further, for a range of uses/users and buildings/building types;
- The opportunity to create attractive broad, tree-lined avenues;
- New access points with the ability to accommodate HGV traffic;
- Clear edges to development;
- Defined green spaces to provide amenity areas to improve the appearance of development, underpin sustainability aspirations and add character;



Dumfries and Galloway Council is setting out bold and ambitious proposals for the future of the former Chapelcross Nuclear Power Station, which aim to deliver the vision for the transformation from a single use facility to one that could accommodate a variety of commercial and employment activities and supports the regional economy, by providing:

- An economically viable location for predominantly large-scale, 'land-hungry' type industries, but could also accommodate spin-off and associated uses;
- A high quality built and natural environment that maintains and builds upon the site and area's existing qualities;
- Not only functional capacities but also an attractive and distinctive setting that enhances the green network; and
- A raised profile for Annan, and Dumfries and Galloway, in promoting successful regeneration and sustainable development.

Adaptability and sustainability are core components of all aspects of the approach taken to deliver the site and all steps will be taken to embed the principles contained in this document as the site evolves through development.



The Development Framework Plan suggests the potential to incorporate a green 'heart' within the site. Referred to at the charrette as Chapelcross's 'Central Park', it would be focused on a restored Gullielands Burn and offer potential for leisure/recreation, support biodiversity and add to the character of the development.



# A vision for Chapelcross



The Development Framework Plan suggests that buildings should face outward and 'front' the B722, providing a clear edge to the development.



# STRATEGIC OVERVIEW AND DEVELOPMENT FRAMEWORK PLAN





## STRATEGIC OVERVIEW

The Chapelcross site, now owned by the Nuclear Decommissioning Authority (NDA) has an area of approximately **190 hectares**. The nuclear licensed site, currently operated by Magnox Ltd, extends to approximately 92 ha. The remainder of the site comprises areas of freehold land and leased-out grazing.

The **Local Development Plan (LDP)** states that DGC “will encourage business and industrial development proposals at Chapelcross”. The Council’s objectives for Chapelcross include:

- support for the Gretna-Lockerbie-Annan regeneration corridor
- employment creation through business expansion or inward investment
- development of brownfield land
- supporting the relocation of existing businesses in Annan.

Three **development sites** are identified in the LDP:

- Chapelcross North (19.43 ha)
- Chapelcross South (7.13 ha)
- Chapelcross West (32.37 ha).

The first two of these (with an area totalling 26.56 ha) are outwith the licensed area and are currently undeveloped freehold and/or land currently leased out. These sites could be available in the short-term. Chapelcross West forms part of the licensed area, but is expected to be available for development in the short-to-medium term. There is therefore a total of **58.93 ha of land earmarked for business and industry at Chapelcross**. This aggregate area is expected to be available between now and 2028, when the licensed area is scheduled to enter a care and maintenance phase which will run through until 2089. After 2028, other areas may be de-licensed, but the core area around the reactor buildings will remain a closed zone.

The LDP is predicated on a requirement for **112 hectares of business and industry land in Dumfries & Galloway over a 20-year period** at a rate of 5.6 ha a year; this figure is based on historic trends. The requirement will be met by a combination of developing existing business and industry areas around established settlements, and the allocation of new sites.

**The Chapelcross development sites identified in the LDP would be sufficient to meet the entire regional requirement for business and industry land for 10 years.** The whole study area (190 ha) would service the regional requirement for 34 years. In practice, demand for business and industry land

will be distributed across the region. The LDP states that majority of new sites will be in Dumfries, around the district centres along the A75 corridor, or within the M74 corridor, which includes Chapelcross.

The LDP contains limited strategic analysis, but consultations and research suggest that **Chapelcross is most suitable for industrial development, distribution and storage**. The key sectors are likely to include energy, forest products and transport/logistics, although this assessment is based on the characteristics of the site rather than evidence of market demand which is at best fragmentary. It is acknowledged that a former nuclear power station site may not be a suitable location for other industries such as food processing. Office jobs, unless they are ancillary to industrial operations, should normally be located in and around the existing settlements, especially Dumfries, and The Crichton is the preferred location for knowledge-based services and R&D.

Industrial uses are likely to have a relatively low **employment density** but using standard multipliers we estimate that the development areas in the LDP (58.93 ha) would, if fully developed, accommodate 3,100 jobs. If the whole site (190 ha) were developed, it would accommodate 10,100 jobs. The current total of employees in employment in the M74 corridor area is 12,400: even allowing for significant local displacement, these are huge increases and the latter in particular stretches the limits of credulity, even in the very long term.<sup>1</sup>

Even if we were to make the bold assumption that Chapelcross will account for half the take-up of business and industry land in Dumfries & Galloway over the next 20 years, the sites identified in the LDP would have sufficient capacity and **additional land would not be required until 2035**.

However, the requirement for business and industry land set out in the LDP is based on historic take-up and does not take account of **major infrastructure** and other **exceptional projects**. These may occur from time to time; Stevens Croft, near Lockerbie is a good example. We have identified large scale power generation, power storage station and/or data centres as examples of projects which would require a very large land area and major capital investment but with a very low jobs density.

Chapelcross has the capacity to accommodate projects of this type, and is arguably the most suitable available location in the region: the issue for Dumfries & Galloway Council and the Corridor Regeneration Strategy Group (CoRes) partners is whether these (or other more conventional industrial

and warehouse developments) are **appropriate or desirable uses** for the site. In particular, the Council would need to take account of the impact of road traffic movements on local infrastructure, emissions and other environmental impacts, and of the investment that may be needed to address these issues.

The clients have encouraged the consultant team to consider other **bold and innovative ideas**. At the charrette we identified and discussed a range of possibilities, mostly linked to tourism/leisure, of which an indoor adventure sports attraction was considered to be the most attractive and credible. In the absence of any local precedents or evidence of demand the partners concluded that any tourism development would need to be compatible with the character of the site. It would need to be a must-see attraction capable of attracting visits from beyond the thinly populated local catchment area.

We also need to take account of the **sub-regional context**, including the availability of development sites for business, industry and commerce at the 162 ha Kingmoor Park site next to the M6 on the outskirts of Carlisle. In addition, there are two other large former MOD brownfield sites in close proximity to Chapelcross: 267 ha of surplus land at Longtown in Cumbria, and the 445 ha Eastriggs site. At the charrette it was noted that Longtown is already being marketed as a location for haulage, distribution, storage, logistics and container handling, and that it will be competing with Chapelcross in those sectors. Eastriggs, by contrast, has very limited infrastructure and its valuable ecology (SSSI designation) and high landscape value may constrain development.

Our conclusion is that there is a **clear differentiation between Chapelcross and Eastriggs**. The latter could be returned to its natural state and managed as a nature reserve, or development options could be considered including outdoor activities, a holiday village, hotels and/or a golf resort. None of these conflict with potential future uses of the Chapelcross site. Equally, industrial and similar uses would be inappropriate at Eastriggs.

<sup>1</sup> Our estimates are based on 50-50 mix of industry and distribution. We have assumed single storey development accounting for 40% of the site area, and an average of 1 job per 75m<sup>2</sup> of floor area.



Chapelcross is well-connected and strategically located in the M74 corridor, at a gateway location on the main transport route from England to Scotland and benefits from linkages to Northern Ireland.



# A vision for Chapelcross



The three strategic sites (totalling more than 900 ha) are located in close proximity to each other and in an overwhelmingly rural context.



Assuming that the principal focus of marketing efforts for Chapelcross will be on attracting industrial development and warehousing, the site will face **competition from Longtown (Solway 45), Kingmoor Park and established locations in Dumfries & Galloway** such as Cargenbridge and Heathhall. However, an effective marketing campaign, combined with investment in infrastructure and placemaking would have a good prospect of success. The history and character of the Chapelcross site suggest that its greatest competitive advantage may be as a location for large-scale facilities such as large scale power generation, energy storage or data centres.

A review of the **policy response** to the decision to close Chapelcross power station, especially the CoReS strategy, shows that the focus has been on economic development, job creation, diversification and investment *throughout the M74 corridor catchment area*. The redevelopment of the Chapelcross site may have a part to play in achieving these objectives but it is not an end in itself. The emphasis of the CoReS strategy is on “market-led opportunities for economic change”, and the partners have identified six key themes. The **key questions for DGC and the CoReS partners** are therefore: what role will the Chapelcross site play in delivering that strategy? and what investment will be required to unlock the site’s development potential?

These questions lie at the heart of this study and our conclusions are summarised in the table opposite:

CoReS strategy themes	Issues and implications for Chapelcross
Economic diversification	Main competitive strengths relate to established sectors (energy, forest products, transport). Potential in renewable energy and, more speculatively, a major tourism attraction.
Building on Gretna’s international profile	Potential future marketing tool, but no immediate connections.
Transport and communications connectivity	Site is well located close to the M74/A75 but the local roads network may need to be upgraded if new uses generate significant additional traffic (goods/ employees).
Higher value businesses	Chapelcross well-suited for capital-intensive, low-employment density activities. The Crichton will be the preferred location for knowledge-based business and R&D, but Chapelcross could attract ancillary services/ labs etc for industrial occupiers.
Sector opportunities	Energy generation and storage, forest products, transport and logistics.
Image and competitive advantage	Attractive location but the site has a negative image related to existing structures and its nuclear history.

<sup>2</sup> Now being marketed as Solway 45

# A vision for Chapelcross

## The Development Framework Plan

Determining the future of the Chapelcross site is a **complex and challenging task that requires a very long-term perspective**. The consensus view at the charrette was to work back from the ultimate build-out, i.e. longest-term vision, recognising that the economy and industry will continue to change, and change will present both opportunities and challenges. Therefore the Plan attempts to account for both the known and unknown by providing an indication of how the site could be structured to meet both opportunities and challenges.

Chapelcross is a huge site and only about 30% of the land area will be available for development up to 2028 (as indicated on page 16). Thereafter, other parcels of land may be de-licensed incrementally, but the area around the reactors will remain unavailable until 2095. It is also important to remember that the nuclear power station was, environmental impacts apart, a relatively light-touch occupier with only 1000 employees at its peak and modest flows of goods and other traffic.

Against this backdrop there are **four broad strategic options for the Chapelcross site**:

1. Allow the site to revert to agriculture and grazing, and restore the landscape to improve its amenity and enable public access
2. Establish a development framework for industrial, warehousing and ancillary development on the three sites allocated in the LDP
3. Reserve the site for infrastructure and other very large scale projects which would be considered on their merits case-by-case
4. Full development of the site.

There is a **persuasive case for allowing Chapelcross to revert to its original state**. The strategic goal is to replace the skilled jobs that were lost with the cessation of operations on site. The impact of closure has been mitigated by the decommissioning process but this is rapidly winding down. The CoReS partners are aiming to create employment in the M74 corridor, but there is no compelling reason why the new jobs should be on the Chapelcross site. Indeed it may make more sense to focus employment creation efforts in and around existing settlements rather than on an isolated site in the countryside. Clear planning policy direction, perhaps in the form of a sequential test, would be helpful. On balance (and taking account of views expressed at the charrette) we have concluded that Chapelcross has some attributes that no other location in the M74 corridor can match and that, for this reason, it should be kept in play as an employment location for the future. We have therefore discounted Option 1.

Essentially Option 2 adheres to the Local Development Plan by identifying Chapelcross as **a suitable location for mainstream industrial development**: factories, transport and distribution and ancillary development. Demand for such uses will come from existing firms' expansion and relocation plans, new ventures and inward investment and is considered to be reasonably predictable. It is not clear whether uses of this type would satisfy the CoReS aspiration for "higher value" jobs, but a supply of land for business and industry is essential to enable local firms to grow and prosper and to meet the needs of relatively well-paid full-time jobs. We would expect some ancillary office jobs and supply chain operations to cluster around the large occupiers, and the development of the site would create opportunities to supply childcare, convenience shopping, a cafe and other services. More detailed work will be required, beyond the scope of the present study, to examine the traffic and environmental impacts of a new business location with up to 3,000 employees by 2028.



Option 2 adheres to the LDP allocation and provides land for manufacturing uses among other potential uses and accommodation for the relocation of local industries seeking a large site.



Option 3 envisages that the Chapelcross would be reserved, wholly or in part, for **very-large footprint, “area impacting” type development projects** that could not readily be accommodated elsewhere in the M74 corridor. Examples we have discussed include power generation (renewable or conventional), a facility for the storage of renewable energy or data centres. Each would have its own requirements but the common features are that these would be “land-hungry” developments (with large footprint buildings or extensive installations) and that the direct employment effects would be modest, although they might attract other more jobs-rich investment. Projects of this type would contribute more to regional/national economic infrastructure than to local employment, although they would require valuable construction contracts. In some respects this is the continuity option: the site has previously been home to an RAF base and a nuclear power station, but another generation of bad neighbour developments would undoubtedly be controversial. It is impossible to generalise about the likely effects on the local roads network, air quality and neighbouring communities; these issues would need to be examined case-by-case, and the partners would need to test whether more than one project of this type could be accommodated on the site, or whether they would be mutually exclusive.











# A vision for Chapelcross



Our proposals for the **2015-2028 development framework** comprise five key elements:

- land use
- placemaking and urban design
- landscape framework
- green infrastructure
- wider area infrastructure.

In terms of **land use** we propose the following allocations:

- Chapelcross North provisionally allocated for light industry, distribution, ancillary offices and services
- Chapelcross South provisionally allocated for 1 or 2 large industrial users
- Chapelcross West provisionally allocated for power generation/capture facility

These nominal allocations reflect the best available fit between the proposed uses and the characteristics of the three sites in terms of scale, proportions, visibility and access. However, there continues to be considerable uncertainty about demand and the Council will need to respond flexibly as proposals come forward.



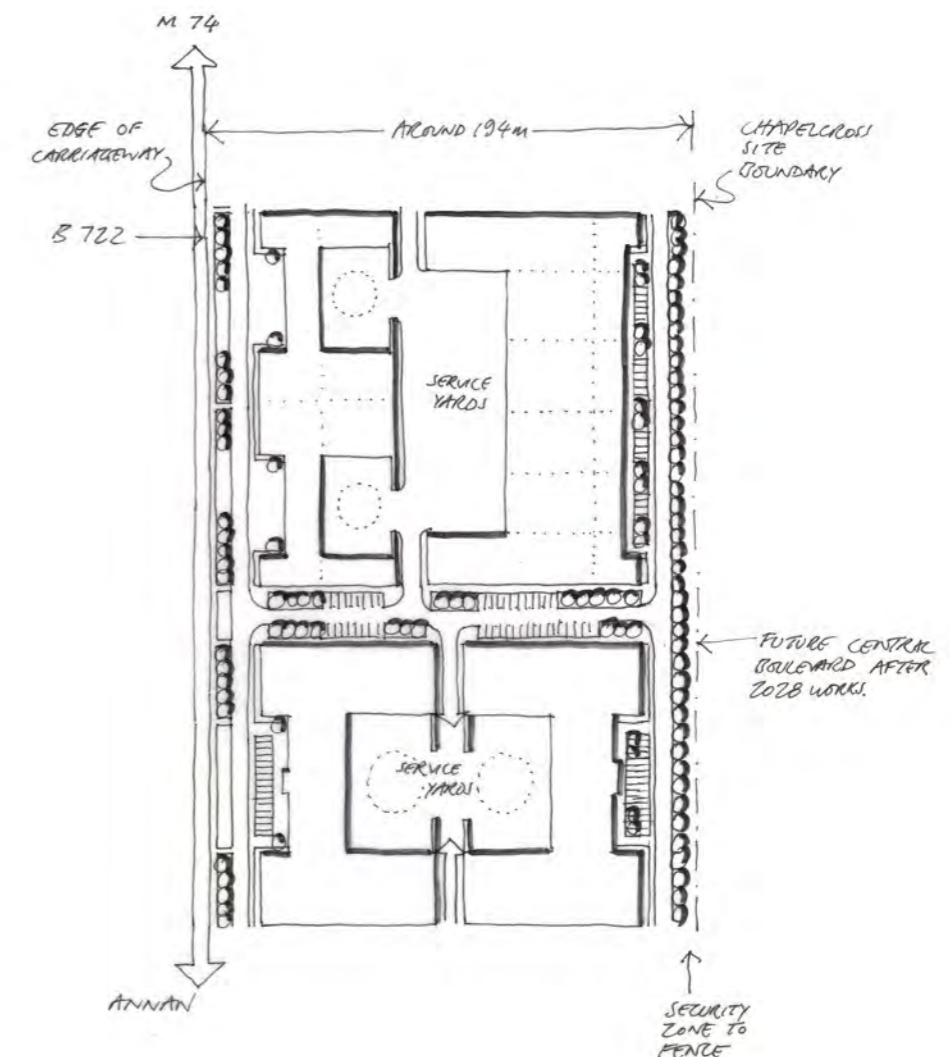
# CHAPELCROSS Development Framework

The north and west sites (B&I1 and B&I3 respectively in the LDP) are contiguous and form a strip running parallel with the B722 which connects Annan to the M74 motorway. This area presents opportunities to embed principles for **placemaking and urban design**, which could set a template or establish baseline approaches should development occur over future phases. The key elements of our design proposals can be summarised as follows:

- the main **site entrance** aligned with the entrance to the south site (B&I2) which, in the very long term, will enable a principal axis running NW-SW across the site on the line of the former reactor buildings; ancillary services (creche, retail, heritage centre etc.) would cluster around the entrance;
- a **building hierarchy** with small office and light industrial units facing the B722, partially screening a parallel strip of larger buildings and the power generation/storage facility;
- the incorporation of **perimeter blocks** with buildings fronting streets and planting will minimise the impact of surface parking and help create a defined public realm;
- a robust **street pattern** with the rows of buildings facing a tree-lined boulevard, and HGV access to the large units via a separate service road to the rear.
- a **variety of block sizes** (including those large enough to accommodate large floor plate uses/users), which can be subdivided further, to host a range of uses/users and a finer grain of buildings/building types; and
- publication of **design guidance** to set an appropriate benchmark for building heights, massing and materials, streetscape, parking, signage etc. (the guidance should also include green infrastructure, see below).



**CENTRAL BOULEVARD**

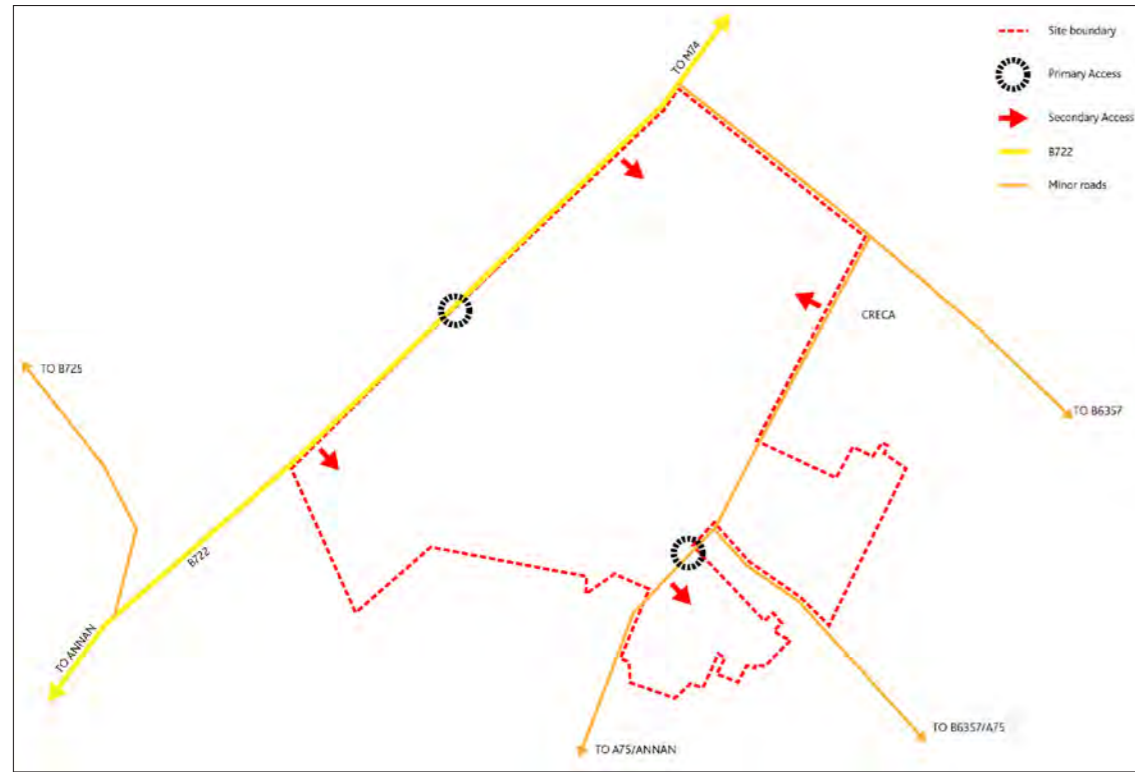


**PERIMETER BOULEVARD**

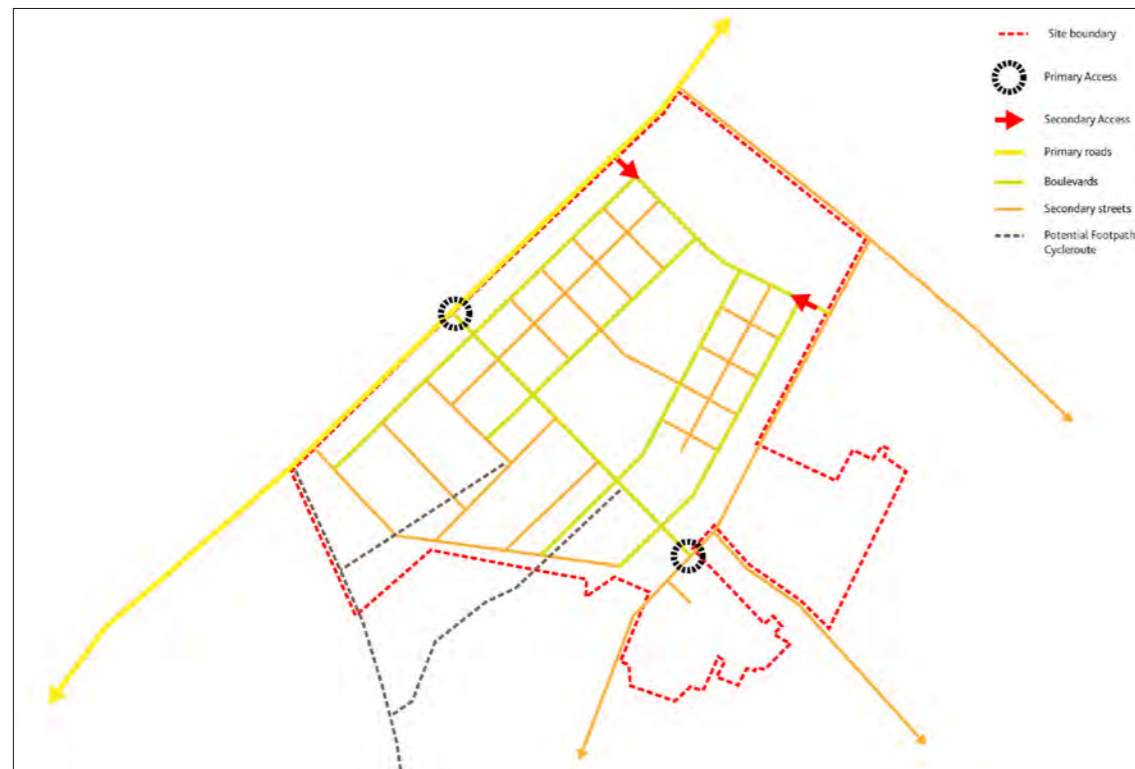
CHAPELCROSS  
DEVELOPMENT OPTIONS FOR  
STRIP ADJACENT TO B722  
SCALE 1:500 MARCH 2015  
GILLESPIES



# A vision for Chapelcross



Key, or primary, access points have been identified as well as potential secondary access point, enabling access not only to the wider road network but enhancing internal permeability.



The internal road layout is based on a network of connected streets, including a variety of block sizes.



The south site is separated from the rest of the developable area by an area of land which will be unavailable until the 2090s. The first phase of development will inevitably be fragmented, and we recommend the adoption of a robust **landscape framework** to diminish the visual impact of development, and define the site boundaries. Our specific proposals include:

- creation of a **public recreation site and nature reserve** on the south west boundary of the site;
- new and extension of **existing shelter belt** planting to link the south and west development sites;
- tree planting to **enclose the south site** (Local Development Plan site B&I2);
- planting to **screen the approach to the north site** (Local Development Plan site B&I1);
- patterns of development that respect site contours with southerly orientation that allow distant **views** to Solway Firth and Cumbria; and
- **formal planting**, including specimen trees for the full length of the frontage onto the B722.

It is further advised that consideration be given to the formation of an **amenity green space** at the 'heart' of the site. Referred to at the charrette as Chapelcross's 'Central Park', it would be focused on a restored Gullielands Burn and could either be framed by development in an ultimate and maximum build out or within a scenario at which development along its northerly edge frames it. This green heart would provide links to the through corridors or as a transition to the wider countryside. This space would provide amenity areas for leisure/recreation, improve the appearance of development, help the development blend in to the landscape, support biodiversity, and add to the character of the development.



Consideration should be given to the development of a central open area, focused around the Gullielands Burn, which could either form a green heart and amenity space framed by development or as a transition to the countryside, should development not occur on the southerly side.

The Chapelcross site presents challenges relating to its history, first as a military airfield and latterly as a nuclear power station. It will be important to establish a new brand and reputation for environmentally responsible, low-carbon development. We recommend that the provision of **green infrastructure** should be an integral part of the development framework, with features including:

- **energy efficient and sustainable buildings;**
- **sustainable urban drainage, including swales and permeable surfaces; and**
- **wildflower meadows.**

The partners might also examine the feasibility of introducing a **district heating system** for the site, installing arrays of solar panels and/or wind turbines on surplus grassland, and potentially capturing energy from offshore wind turbines in the Solway Firth.

The first phase of development at Chapelcross (2015-2030) may also require some complementary investment in the **wider area infrastructure**. Priorities are likely to include:

- improvements to **increase the capacity of the B722** at pinch points between Chapelcross and junction 20 of the M74;
- investment in **walking and cycling links** between Chapelcross and Annan along the former branch railway;
- a restoration scheme for **Gullielands Burn** between Chapelcross and the river Annan, and;
- an action plan to improve the quality and amenity of **Creca village**.



# A vision for Chapelcross



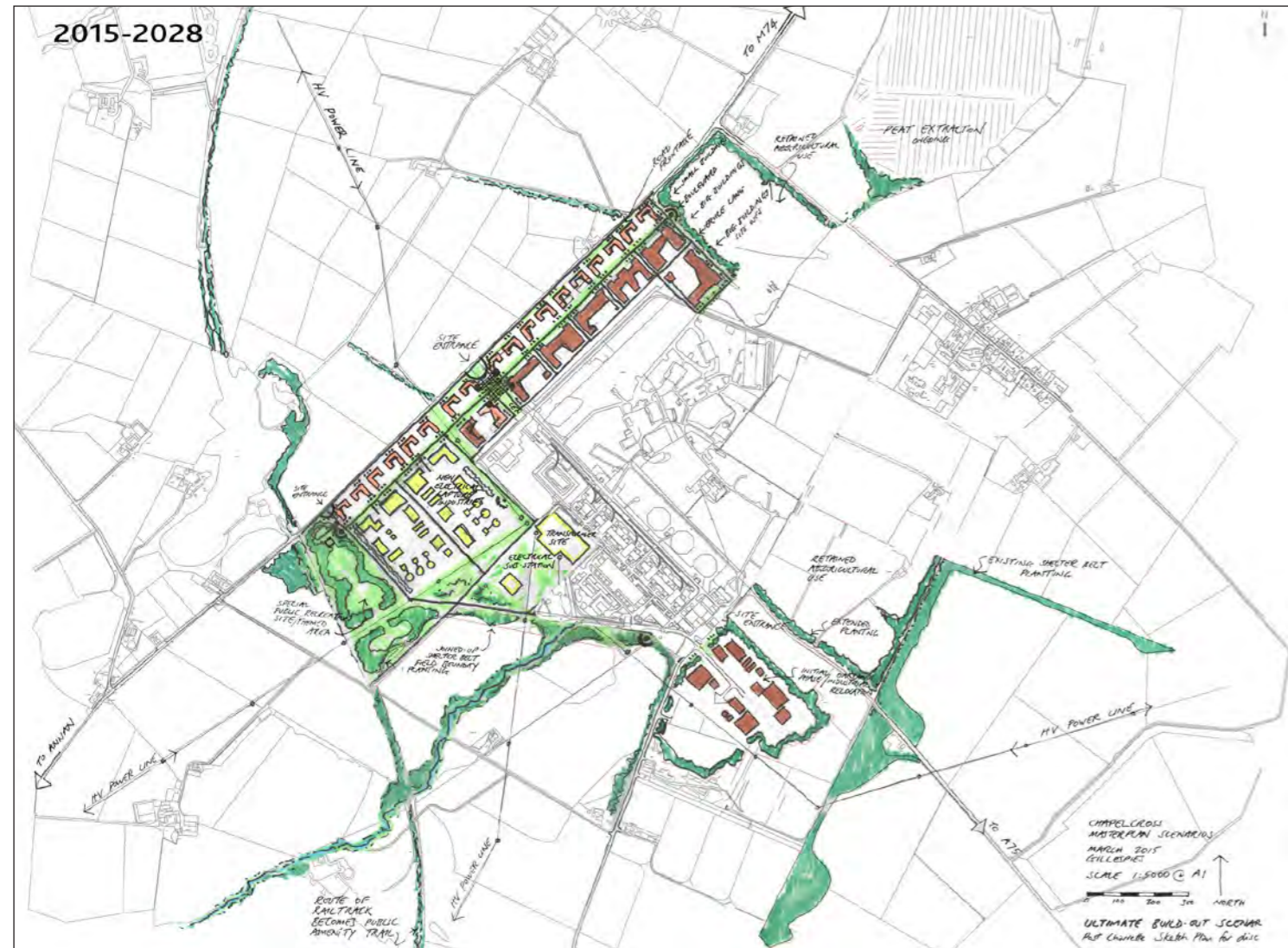
## Phasing

Planning for the **development of the Chapelcross site beyond 2030** is a purely speculative activity at this stage. The next 10-15 years will reveal whether there is demand for development land at Chapelcross and what form it will take. However, we have already argued that there is no evidence to suggest that the whole site will be developed, even in the very long-term (50 years+), unless the partners are able to attract one or more very large scale infrastructure projects. In our view, developing the whole site with, for example, large scale power generation, large manufacturing facilities and logistics/distribution hubs would be inappropriate and unacceptable in this rural setting even if it were practicable.

At this stage, therefore, we think it is sufficient to proceed on the basis of a concept for the very long-term development of the site based on the following **guiding principles**:

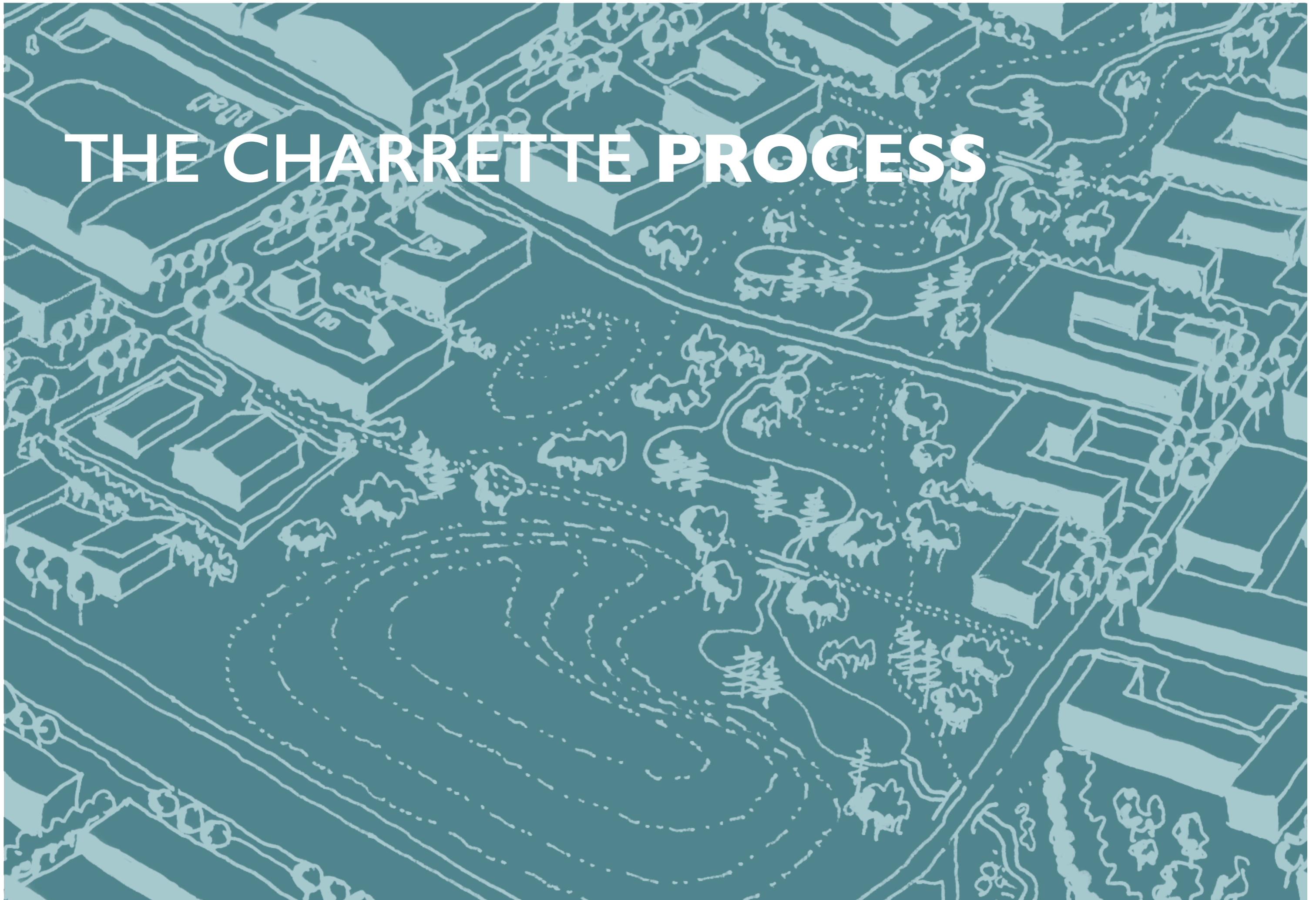
- an assumption that development will extend **beyond the 2030 boundaries** but not to the whole Chapelcross site;
- any development beyond the sites specified in the LDP to be conditional on a **robust appraisal** of market demand, labour market capacity and traffic and environmental impacts;

- creating an extensive **landscape park** – the green heart of Chapelcross – around the course of Gullielands Burn;
- safeguarding the route from the main entrance to Chapelcross South as the **principal axis** of the site (a project for 2090 and beyond);
- maintaining a robust **urban form** and updating design guidance as new areas are opened up for development; and
- creating additional site **access points** as new areas are opened up for development.





# THE CHARRETTE PROCESS







## CHARRETTE PROCESS

The Development Framework Plan emerged from a participatory visioning and planning process that developed over stages. The initial stage involved an information gathering workshop, including the Sub-regional Economic Baseline Study, which provided a strategic context for the main charrette workshop. It was at this gathering that consensus views were generated in terms of identifying potential uses and commercial activities which might be accommodated on the site. The charrette brought a range of stakeholders together to develop, analyse, test and agree a vision for the site. Based on the findings of the Sub-regional Baseline Study and further informed by the charrette, a Preliminary Marketing Strategy has been developed to assist in mapping the delivery of the site.

### WHAT IS A CHARRETTE?

*“An inclusive, design-led approach to gathering information, analysis, option generation and formation of design proposals.”*

### OVERARCHING AIMS OF THE BRIEF

*“To work with key stakeholders to produce a Development Framework that sets out a shared vision for the re-development of Chapelcross.”*

### Information Gathering Workshop

The charrette process to draw up the Development Framework Plan commenced with an initial ‘Information Gathering’ workshop held at Annan Town Hall in late January 2015. A ‘core’ group of stakeholders, representing those with direct interests in the site, attended.

The workshop provided all attendees with a solid grounding in regard to issues, constraints and opportunities through a series of presentations, question and answer sessions and open discussion. Stakeholders were also given an opportunity to tour the Eastriggs MOD site and view the Chapelcross site, providing a significantly better appreciation of the nature of each site and their relationship, in both geographical/spatial and practical sense.

Attendees included representatives from key organisations including:

- Dumfries & Galloway Council Economic Development, Roads and Planning Departments;
- Scottish Enterprise;
- Magnox Limited (site operators);
- GVA (site agents); and
- NDA.

### The Development Framework Charrette

The Development Framework Charrette, held over two days in early March 2015, formed the core aspect of both consultation process and the drawing up of the Development Framework Plan. At the heart of the charrette process was the opportunity to discuss issues and options for the site based on technical input and feedback from expert consultants and key stakeholders, including representatives from Dumfries & Galloway Council (elected members and officers), Scottish Enterprise and GVA (representing the NDA) and various organisations and consultees, including SNH, SEPA and Scottish Water; all aspects relevant to the delivery of a vision and plan for the site.

The grounding and context element of the charrette concluded with a bus tour of the three regional strategic sites: Longtown, Eastriggs and Chapelcross.

Informed by site visits, presentations by key stakeholders and subsequent discussion, attendees worked in themed groups to assess and analyse in detail the relative strengths and weaknesses of the three strategic sites across a variety of identified issues, e.g. infrastructure, access, distinctive characteristics, etc. Based upon the outputs of these exercises, and a significantly improved understanding of strategic issues and opportunities, the process evolved into considering the future development of Chapelcross in terms of:

- Economic activity and land use; and
- What the site will be like, e.g. scale and form of development.

Through the depth of discussion across the various issues related to the effective transition and planning of the site, stakeholders were able to agree a set of principles in terms of form of development and a broad understanding of the nature of potential uses. These principles were then translated, through further open group work, into the basis for the Development Framework Plan.

The team for the Chapelcross charrette was led by Gillespies, urban design and landscape architects. Gillespies were supported at the charrette by John Lord, yellow book and Donald Anderson of PPS. Several key officers from Dumfries and Galloway Council were fully engaged in the charrette process with the Gillespies team.



Group work involved discussion and drawing up options for the site.



# CONTEXT AND ANALYSIS









## The Decommissioning Process

Chapelcross Nuclear Power Station (hereafter Chapelcross) ceased generating electricity in June 2004 after 45 years of operation. In accordance with Government Policy, work has now begun to systematically remove (or decommission) the plant and buildings associated with electricity generation at the site. The site has recently completed defuelling ahead of schedule and is progressing decommissioning for entry into its interim care and maintenance phase.

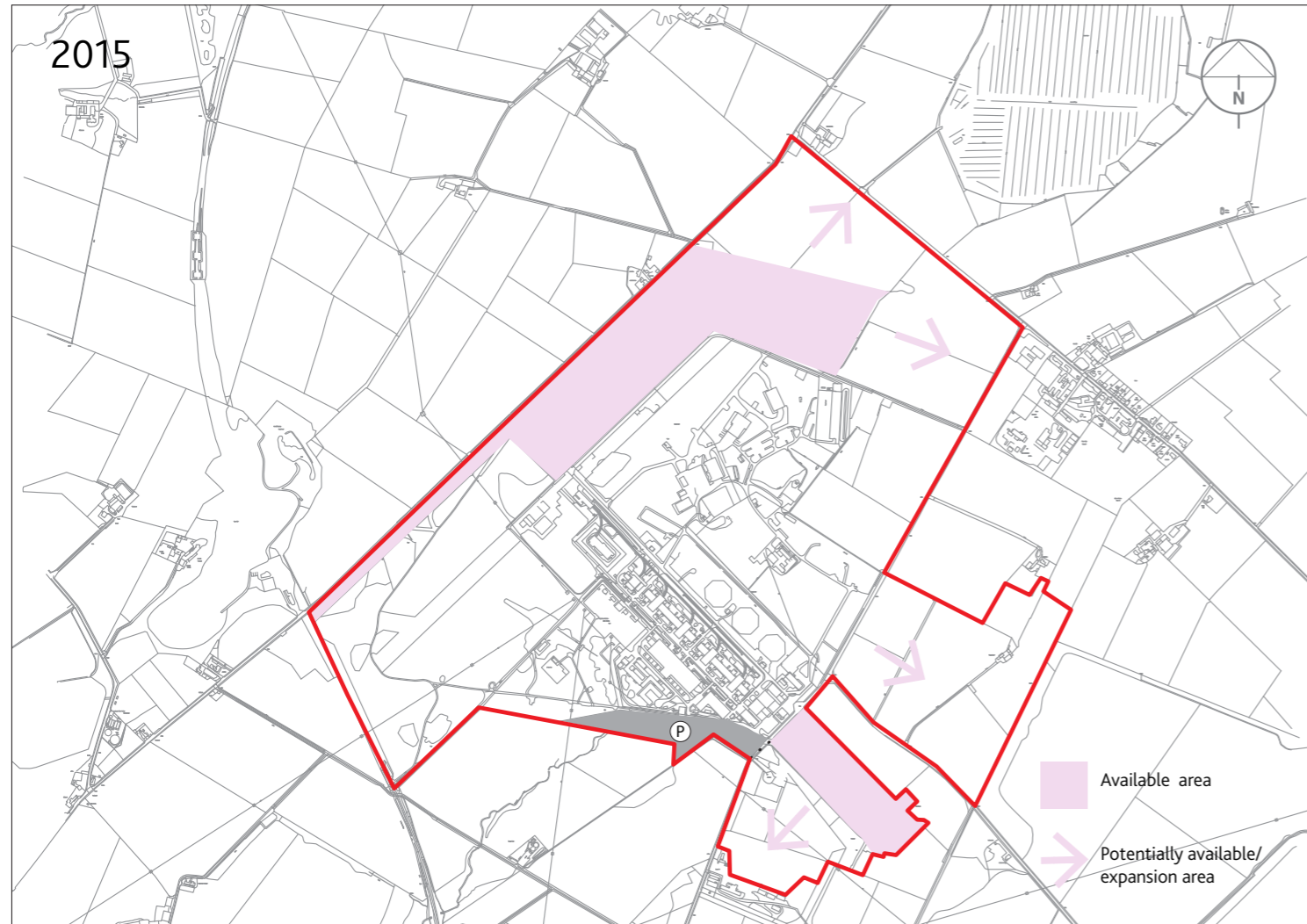
Timescales	Phases
Present - 2017	<p><b>Optimised Care and Maintenance Preparations -</b></p> <p>Is the work required to prepare Chapelcross for a quiescent period where all of the significant hazards have been reduced to a minimum. This phase of the decommissioning process is scheduled to be completed in March 2017, at which point the site will enter into an Interim Care and Maintenance (IC&amp;M) phase.</p>
2017 - 2023	<p><b>Interim Care and Maintenance -</b></p> <p>Upon completion of the Optimised Care and Maintenance Preparations the site will be in a quiescent period of asset care for 6 years. During this phase the site will be in a semi-quiescent state with a much reduced maintenance schedule.</p>
2023 - 2028	<p><b>Care and Maintenance Preparations (C&amp;MP) -</b></p> <p>Will recommence for a period of approximately 5 years. During this time the site is reduced to a condition that includes only four safe stored reactor buildings, with heat exchangers stored horizontally and an ILW Interim Storage Facility, all other significant buildings will be decontaminated and demolished.</p>
2028 - 2089	<p><b>Care and Maintenance (C&amp;M) -</b></p> <p>Is a mainly quiescent period, potentially lasting for around 60 years. During this phase the site will continue to be managed, monitored and maintained but human intervention will be minimised.</p>
2089	<p><b>Final Site Clearance -</b></p> <p>Is the last phase and is expected to take 6 years. It involves the dismantling of all the remaining structures on the site, including the reactors, the clearance of any residual radioactivity and delicensing of the site to make it available for alternative use.</p>



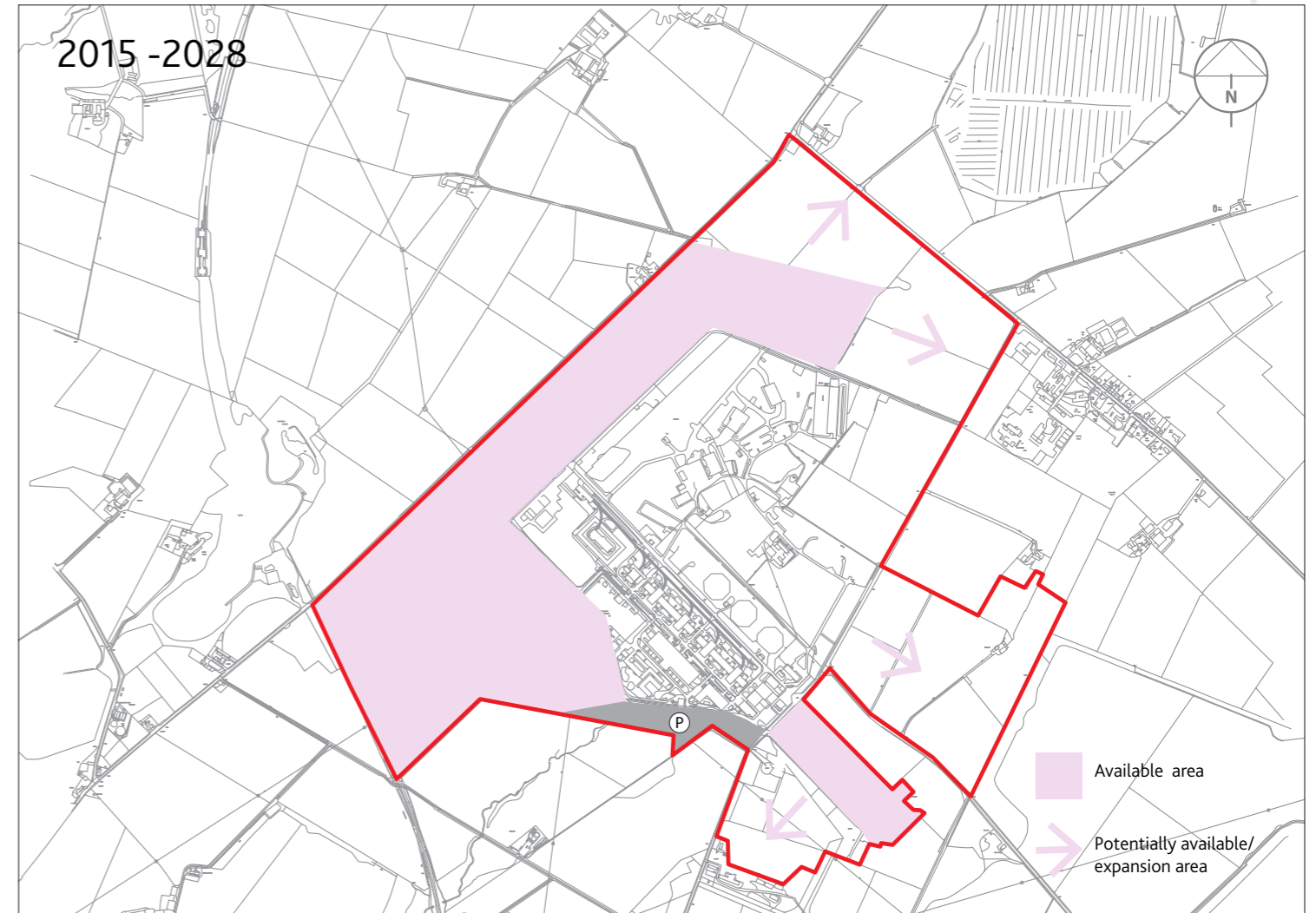
Footnote:  
Time-scales subject to change per operational requirements.



# A vision for Chapelcross

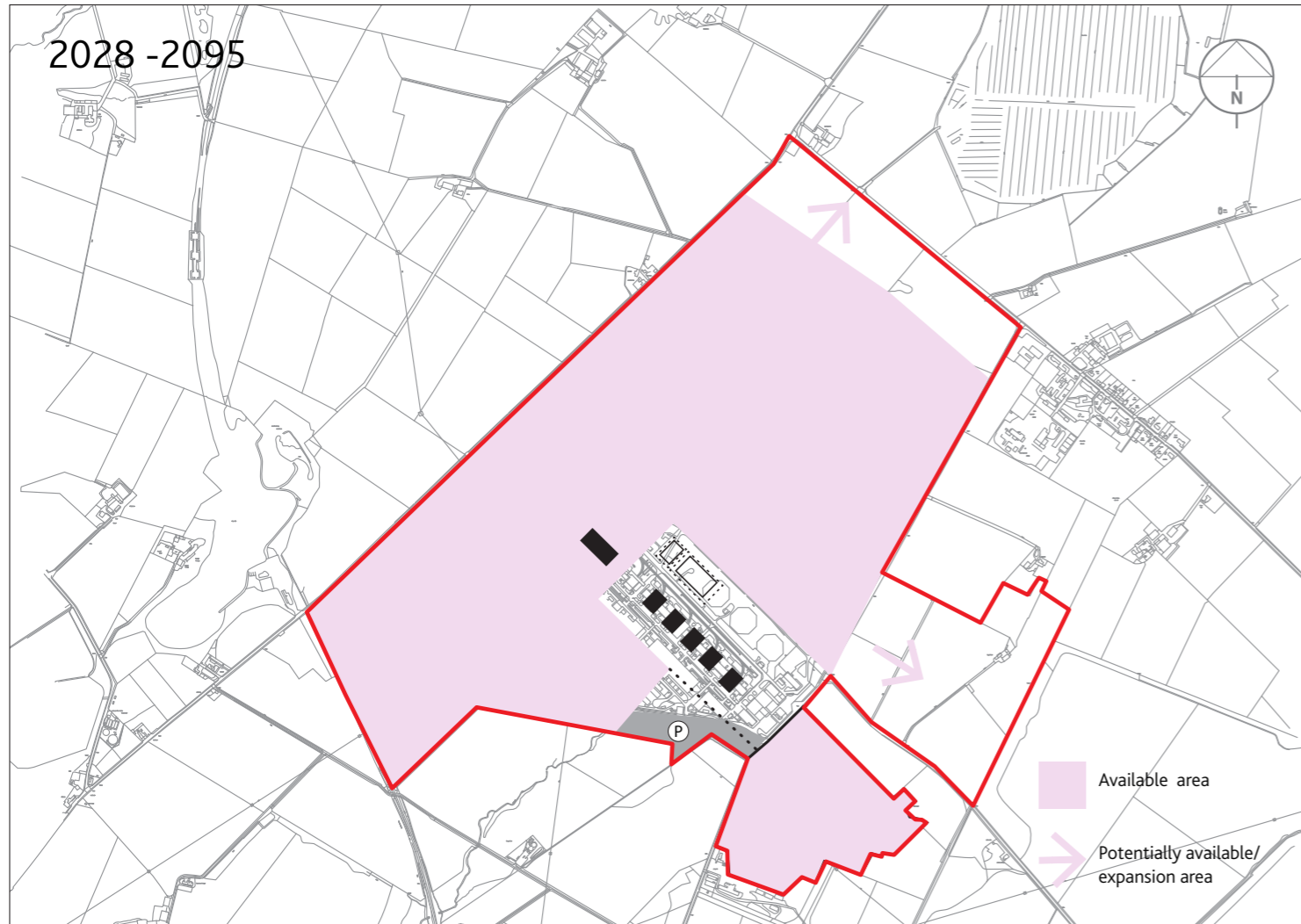


Land immediately available for development, with potential expansion areas identified.

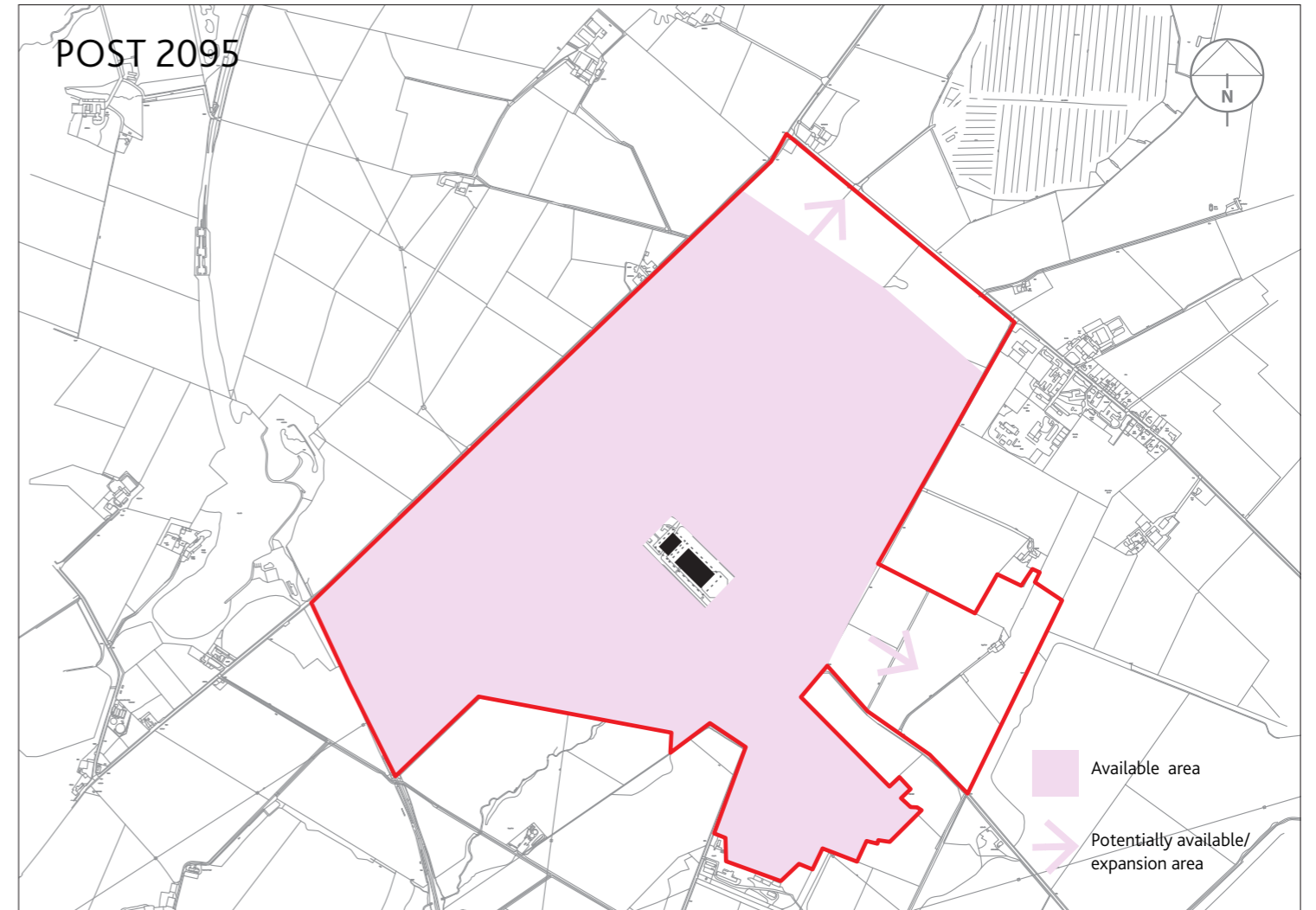


Land available for development within the period 2015 - 2028, with potential expansion areas identified.





Land available for development within the period 2028 - 2095, with potential expansion areas identified.



Land available for development post 2095, with potential expansion areas identified.



# A vision for Chapelcross



## The Role of the Nuclear Decommissioning Authority

The Energy Act (2004) requires the NDA to prepare a strategy for carrying out its functions and from time to time to revise that strategy. This strategy must set out the steps that the NDA proposes to take forward:

- “giving appropriate publicity to its responsibilities and strategy;
- explaining them both to persons having a particular interest in matters relating to the carrying out by the NDA of its functions and to the general public;
- ensuring that the NDA is kept informed at all times of the opinions about such matters of persons having such a particular interest; and
- facilitating the communication by such persons of their opinions to the NDA.”

The NDA is also required to give encouragement and other support to activities that benefit the social or economic life of communities living near those sites for which it has responsibilities, including Chapelcross.

The NDA’s strategy requires it to review Site End States in consultation with stakeholders. The process consists of various stages of stakeholder consultation aimed at arriving at Site End State Definitions that will be reconciled with national requirements before being incorporated into the revised NDA Strategy.

The NDA participated in the initial Information Gathering Workshop, where they stressed that they are “not a regeneration agency, but can provide the spark to deliver it.” The NDA were represented by their agents, GVA, at the Charrette and it is understood that they have given a commitment to openness, transparency and further engagement to evolve the vision for the site and further develop ideas and projects.

## Sub-regional Economic Baseline Study - Summary

One of the key tasks at the charrette was to develop a viable strategic proposition for the Chapelcross site, taking account of the attributes of the site, evidence of demand, policy aspirations and the socio-economic aspects of the local area and the wider sub-region, including Carlisle as the largest population and employment centre in the region.

A report (the Sub-regional Economic Baseline Study, contained in Appendix A) based on a desktop review of current regional strategies and policies, reports and sector studies, as well as further research to review of demographic, economic and labour market data for the M74 corridor area was produced and informed the charrette. The key messages from this report can be summarised as follows:

- The 2014 Crichton Institute report on the economy of Dumfries and Galloway identifies challenges including an economy based on a few key sectors, low productivity, low-wage/low-skill jobs and an ageing population. All these are causes for concern but there are bright spots, notably the region’s enviable quality of life and the success of developments at Steven’s Croft (Lockerbie) and the Crichton Campus (Dumfries).
- The decommissioning programme has sustained employment at Chapelcross (500 at its peak), but the defueling process has been completed and employment will reduce sharply in the years ahead. Chapelcross has been a source of well-paid, skilled jobs which are in short supply in this rural area and which will be very hard to replace.
- The new local development plan highlights the potential of the M74 corridor as a site for the growth of existing businesses and inward investment. Chapelcross is identified as a priority location for business and industry, and the M74 corridor is one of four priorities in the South of Scotland Rural Regional Economic Development Programme for 2014-2016.
- The 2009 Chapelcross Development Framework report includes a brief property market appraisal which highlights the competitive threat posed by Carlisle, especially the Kingsmoor Park site.

- The NDA and the CoReS partnership have framed a response to the site closure, focusing on the workforce, diversifying the local economy and attracting investment. A series of masterplans has focused on the future role of Gretna, Annan and Lockerbie as the principal centres in the catchment area.
- A series of sector studies and strategies suggests that the most likely future uses of the Chapelcross site include energy, forest industries, transport and logistics and data centres. A first-cut appraisal suggests that:
  - Chapelcross would be a suitable location for a biomass power generation plant, but local timber supplies are already extended by the demands of Steven’s Croft; an investment in tidal energy from the Solway Firth remains a possibility but it is not clear whether it would deliver any significant local benefits.
  - Chapelcross would be a suitable site for timber processing or other value added activities.
  - the site has ample capacity to accommodate a road haulage operation or large distribution centres, although it would benefit from the proposed improved road link to the M74; however, the Longtown site appears to enjoy some advantages over Chapelcross in terms of location and infrastructure
  - Chapelcross could be a suitable site for one or more large data centres and the M74 is being marketed by SDI as a data centre location.





Chapelcross is well-connected and strategically located in the M74 corridor, at a gateway location on the main transport route from England to Scotland and benefits from linkages to Northern Ireland.

The M74 corridor covers an extensive land area but the resident population (42,600) is small and there are only 12,400 people in employment in the area (excluding the self-employed). The loss of well-paid scientific, technical and skilled jobs at Chapelcross will have a significant direct and indirect impact on the local economy, and there is a pressing need to replace them.

- The area's economic specialisation is manufacturing, which accounts for 21% of all jobs, the vast majority of which are full-time. This is an exceptionally high share, but it needs to be seen in the context of a continuing decline in manufacturing employment in Scotland and the UK. As in many rural areas, tradable and knowledge-based services are under-represented. Other key sectors, such as retail and tourism, are characterised by relatively low wages and a high incidence of part-time employment, and the story is similar in health and social care.
- The study area is dominated by micro-businesses, some of which have growth potential; 15% of local workplaces employ 10 or more people, including a cohort of 25 units that employ between 50 and 249 people. These SMEs will have a key role to play in the future as providers of jobs and a source of future growth.
- Census data on the local workforce show that the economic activity and employment rates compare favourably with Scotland, although the M74 Corridor has a high level of self-employment and is slightly more dependent on part-time employment. The industries worked in are typical of many rural areas in Scotland, with a bias towards agriculture, forestry, manufacturing and forestry offset by a low level of participation in knowledge-based services, scientific and technical activities. This is reflected in (a) a bias towards manual, routine and elementary occupations, with professional and technical occupations under-represented, and (b) relatively low levels of educational attainment.
- The study area has a small resident population and a small economic base, but it forms part of a wider travel-to-work area that includes Dumfries and Carlisle. There is a flow of commuters in both directions between the M74 corridor area and these larger urban centres, but all the evidence points to a net daily outflow towards the larger towns.

At the charrette we used this analysis and the local knowledge of participants to explore possible future uses for the Chapelcross site. Despite its rural location Chapelcross is well-connected and strategically located in the M74 corridor. The M74 is the principal gateway to Scotland, linking Glasgow, Edinburgh and the central belt to Manchester, Birmingham and London. The A75 trunk road carries traffic to and from Ireland via Stranraer. There are main line railway stations at Lockerbie and Carlisle, and the Glasgow – Carlisle rail service serves Dumfries, Annan and Gretna. There is direct rail access from the west coast main line to the MOD site at Longtown, and from the Glasgow – Carlisle line to the brownfield site at Eastriggs (Gretna).

Chapelcross is one of three brownfield strategic sites located within a few miles of each other. There are 190 ha of developable land at Chapelcross, including 60 ha allocated in the Local Development Plan, while the former MOD munitions store on the Solway coast at Eastriggs, near Gretna extends to 445 ha. The MOD continues to use the Longtown site in Cumbria for weapons and equipment storage, but 267 ha of surplus land have been released and are being marketed to the private sector (as Solway 45). The three sites have an aggregate area of more than 900 ha. To put this in context, the underlying take up rate of land for business and industry in Dumfries and Galloway is 5.6 ha a year. This figure does not take account of the take up in the previous decade of 44 ha of land at Stevens Croft; that was exceptional by local standards, but still equivalent to only about 5% of the land now available at the three sites.

It is clear that, barring a wholly unexpected combination of circumstances, there is no serious prospect that the three sites will be fully developed for many decades. Even if we assume low density uses such as general industry and warehousing, development on this scale would far exceed the capacity of the local labour market, housing supply and community infrastructure. This leaves open options including the part-development of all three sites, more or less in parallel, or prioritising development at one or two locations. The relative strengths and weaknesses of sites were discussed at the charrette and the results are summarised opposite:



# A vision for Chapelcross



Chapelcross	Eastriggs MOD	Longtown MOD
<p><b>Strengths</b></p> <p>Strategic location close to M74/A75                      Access to the grid – may need upgrading                      Nuclear licence may be an asset                      Opportunities for businesses to purchase land                      Site serviced and easy to develop                      Proximity to Annan                      Attractive landscape setting: visible and with good views</p>	<p>Strategic location close to M74/A75                      Beautiful site overlooking the Solway Firth                      Rich wildlife and nature (SSSI designation)                      Heritage and history                      Rail access from Glasgow – Carlisle line</p>	<p>Strategic location close to M74/A75                      Direct rail access from west coast main line                      Some existing warehousing etc. available                      Network of serviced roads                      On-site security                      Solway 45 brand launched and being actively marketed by MOD                      UK Government support                      Site serviced and easy to develop</p>
<p><b>Weaknesses/threats</b></p> <p>Part of the site will remain quarantined for 75 years                      Weak/unproven demand for some uses                      Need to improve local access roads                      Nuclear history of the site may deter some users                      No direct rail access                      Strong competition from Longtown for transport/ logistics</p>	<p>Huge site with very limited infrastructure                      Low priority for MOD: not being actively marketed                      Contaminated areas but can be cleaned up                      SSSI designation may constrain development                      Local roads access needs improvement</p>	<p>Business units will be leased                      Proximity to housing                      No immediate access to the grid</p>
<p><b>Potential uses</b></p> <p>Suitable for a range of uses, especially energy generation and storage, transport and distribution, forest industries, coal storage, data centres                      Possibility to attract industry-related R&amp;D                      Niche tourism a possibility but small-scale</p>	<p>Nature reserve with associated outdoor/ adventure activities                      Center Parcs-style holiday village                      Hotel                      Golf course/resort                      Industry/coal storage etc. possible but could conflict with other uses</p>	<p>Site already being marketed for haulage, distribution, storage, logistics, container handling (road and rail services)                      Potential for bonded warehousing (NB: Only whisky is matured in Scotland can be called ‘Scotch Whisky’)</p>

It is not possible to be prescriptive about the future of the three sites and how they will relate to each other. In the absence of up-to-date research and intelligence, any emerging propositions would need to be market-tested, but the charrette reached some broad agreements:

- Given the massive over-supply of brownfield land it makes sense to try to reach agreement on distinct, complementary roles for the three sites.
- Eastriggs has a clear advantage over the over two sites in terms of its coastal setting and natural environment; it is clearly the most suitable site for tourism-related development, and activities that might compromise its future use (for example, as a nature reserve, a holiday village or a golf resort) should be discouraged.
- Chapelcross and Longtown are the two most suitable sites for business and industry; apart from its rail access, Eastriggs only limited site infrastructure.
- Longtown has the best infrastructure for transport, distribution, logistics and related activities and is already being actively marketed for those purposes; those uses remain possible at Chapelcross, but Longtown has a competitive advantage.
- Chapelcross is best suited for industrial uses, notably energy generation and storage (including renewables); manufacturing, especially forest products; and other miscellaneous uses such as coal storage. The partners should also aim to attract higher value uses, such as industry-related R&D, innovation centres and start-up businesses.
- The scale of the site means that new uses will co-exist with grazing and surplus land for the foreseeable future. Key challenges for the development framework will be to manage the impact on the landscape of large industrial uses, create a sense of place, and establish walking and cycling links to Annan.
- The Chapelcross Development Framework should also consider the relationship between the site and the neighbouring village of Creca. There are historic associations between the two with a number of the village’s current commercial operations using buildings developed in tandem with the RAF use at Chapelcross. These businesses include a sawmill, a small engineering works and a specialist cleaning company who are located on generally low amenity sites and traffic movements have a negative impact on local residents: there may be an opportunity to relocate all or some of them to Chapelcross.



## Transport and Movement

### Existing

A network of minor roads; B, C class and unclassified, provide cross country links to the adjacent strategic road network. The current main vehicular access route to Chapelcross, entering through its main gate, is from the south, via the B6357. Strategic access is provided by the A74 (M) and the A75 (Trunk Road) between Annan and Gretna. The preferred HGV route identified by Dumfries and Galloway Council follows these routes. The west gate, located along the B722, provides a prominent access point but is currently rarely used.

There is a railway-line, which passes through Annan (approximately 3 miles to the south), but no railhead near Chapelcross. Gretna station is approximately 9 miles to the east. Both Annan and Gretna stations provide passenger rail services to Dumfries and Carlisle, however service frequency is low, with around 1 train per hour from Annan to Dumfries in the am & pm peak periods.

Chapelcross has very limited access to bus services. The nearest stops are located on the B6357 and at Brydekirk, both of which are approximately 2.4km from the site. There is currently no service which runs north-south along the B722.

The Chapelcross Nuclear site has been a significant employer and traffic generator in the Annan area for a very long time. Since de-commissioning began the nature and type of vehicle movements associated with site has probably changed and may well continue to change until the clean-up is complete.

### Going forward

In regard to the wider area and road network, and per the Council's Local Development Plan (LDP), the B722 is the preferred route between the Chapelcross sites and the A74(M) / B7076. This route also has potential to be the preferred HGV route. However, the B722 at the Annan end runs through residential areas, which would be undesirable as an HGV route. Whilst the local road network is considered to be of a reasonably good standard, it was acknowledged that improvements, realignments, alterations, etc. may be required. Ultimately, the road network in the vicinity of Chapelcross has restrictions and constraints that may affect or have an impact upon the access that is available for regeneration at Chapelcross, however, some of those restrictions and constraints may be removed by improvements or mitigated against by appropriate design and planning.

In terms of direct access to the site, D&GC Roads Engineers stressed that there are various options available with exact locations, and any upgrades required, to be determined by the nature of proposed uses and potential traffic generation. In planning the layout of the site, it was emphasised that there is a need to acknowledge the future traffic needs of nuclear-related activities within the site throughout the longer-term decommissioning process.



# A vision for Chapelcross



## Planning Policy Framework

In developing a vision and development framework for Chapelcross, cognisance must be given to the existing and emerging planning policy context. The importance of Chapelcross is acknowledged and identified in both national and local planning documents.

## The National Planning Framework 3 (NPF3)

The NPF3, formally approved in June 2014 provides a framework for the spatial development of Scotland as a whole. It sets out the Government's development priorities over the next 20-30 years.

Chapelcross is specifically identified as a priority location for the Scottish Government to achieve its longer term goals and deliver the aims of the spatial strategy in NPF3 and states that Dumfries and Galloway Council will continue to work with partners and communities to develop planning frameworks associated with the decommissioning of the nuclear power station.

The strategic assets of the region are cited in the document, including:

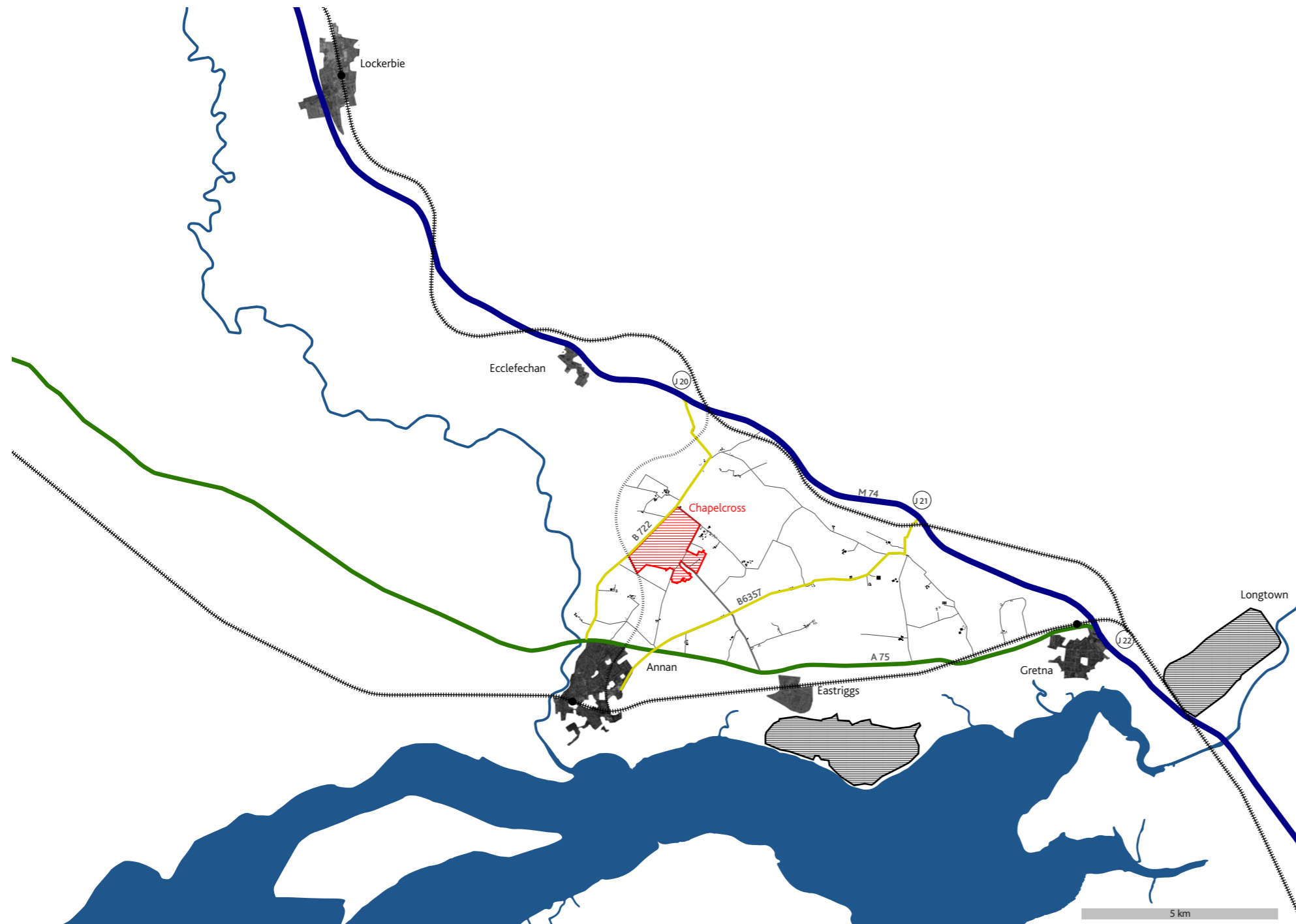
- the potential of A/M74 corridor to contribute to economic growth;
- the area's close relationship with Carlisle;
- its connections, including by rail and via the A77 and A75; and
- links to Ireland, England and Europe (via road, rail and ferry).

## Regional spatial priorities – South of Scotland

*“The South of Scotland has a key role to play as a Gateway to Scotland. In 2013, the ‘Borderlands’ Report highlighted the opportunities arising for closer collaborative working between local authorities in the south of Scotland and north of England. Building on this, cross-border working is*

*now being explored, focusing on opportunities for tourism, transport connections and business development across the region as a whole. Complementing this, our national spatial strategy aims to facilitate sustainable rural development across the south of Scotland...The strategy also reflects the importance of connections between this area and other parts of Scotland, the north of England and Northern Ireland.”*

NPF3



Strategic Transport

## Scottish Planning Policy (SPP)

The purpose of the SPP is to set out national planning policies which reflect Scottish Ministers' priorities for operation of the planning system and for the development and use of land. The SPP is complementary to the NPF3 and sets out policy that will help to deliver its objectives.

The aspiration to embed and deliver Chapelcross as an attractive place to invest and work is supported in this document as it explicitly stated that planning should take every opportunity to create high quality places by taking a design-led approach.

## Designing Places

Planning Policy Statement 'Designing Places' sets out the role of the planning system in delivering the Scottish Government's aspirations for design and making places. It states that 'good design is an integral part of a confident, competitive and compassionate Scotland'. Six qualities that make a successful place are identified in the Policy document as:

- distinctive,
- welcoming,
- safe and pleasant,
- adaptable,
- easy to get to and move around,
- resource efficient.

## Dumfries & Galloway Local Development Plan (LDP)

The LDP, adopted in September 2014, covers all of Dumfries and Galloway and guides the future use and development of land in towns, villages and the rural area. There is an emphasis within the document that the LDP will act as a facilitator of economic development and this will be achieved through a policy framework which supports wider economic development and regeneration strategy documents and the agencies involved in its delivery.

Chapelcross is specifically acknowledged to be located within the Gretna-Lockerbie-Annan regeneration corridor adjacent to the A74(M) corridor. As such the site (as well as others within the corridor) offer strategic inward investment opportunities over the longer term. Should they not be developed during the Plan period they will be carried forward into future LDPs.

### Chapelcross

*"Chapelcross is a former nuclear power station currently undergoing the process of decommissioning and defueling, that process should be complete within the first five years of the Plan. As it is a large brownfield site within the Gretna-Lockerbie-Annan regeneration corridor it provides expansion potential for existing businesses and opportunities for inward investment projects. Almost 60 hectares of land has been allocated for development within this Plan and the rest of the site will become available for development over the course of future LDPs."*

### Policy ED4: Chapelcross

*The Council will encourage business and industrial development proposals at Chapelcross. Proposals should be developed in accordance with the Chapelcross masterplan. Priority will be given to the reuse of brownfield land.*

*- Extracted from the D&GC LDP*

In terms of identifying acceptable or proposed uses, the LDP states that Chapelcross benefits from significant electricity infrastructure which may offer an opportunity for electricity producer(s) or high power users.

The LDP also introduces the notion of the production of a development framework to be prepared for Chapelcross to supplement the site guidance and policy which will supplement the site guidance framework.

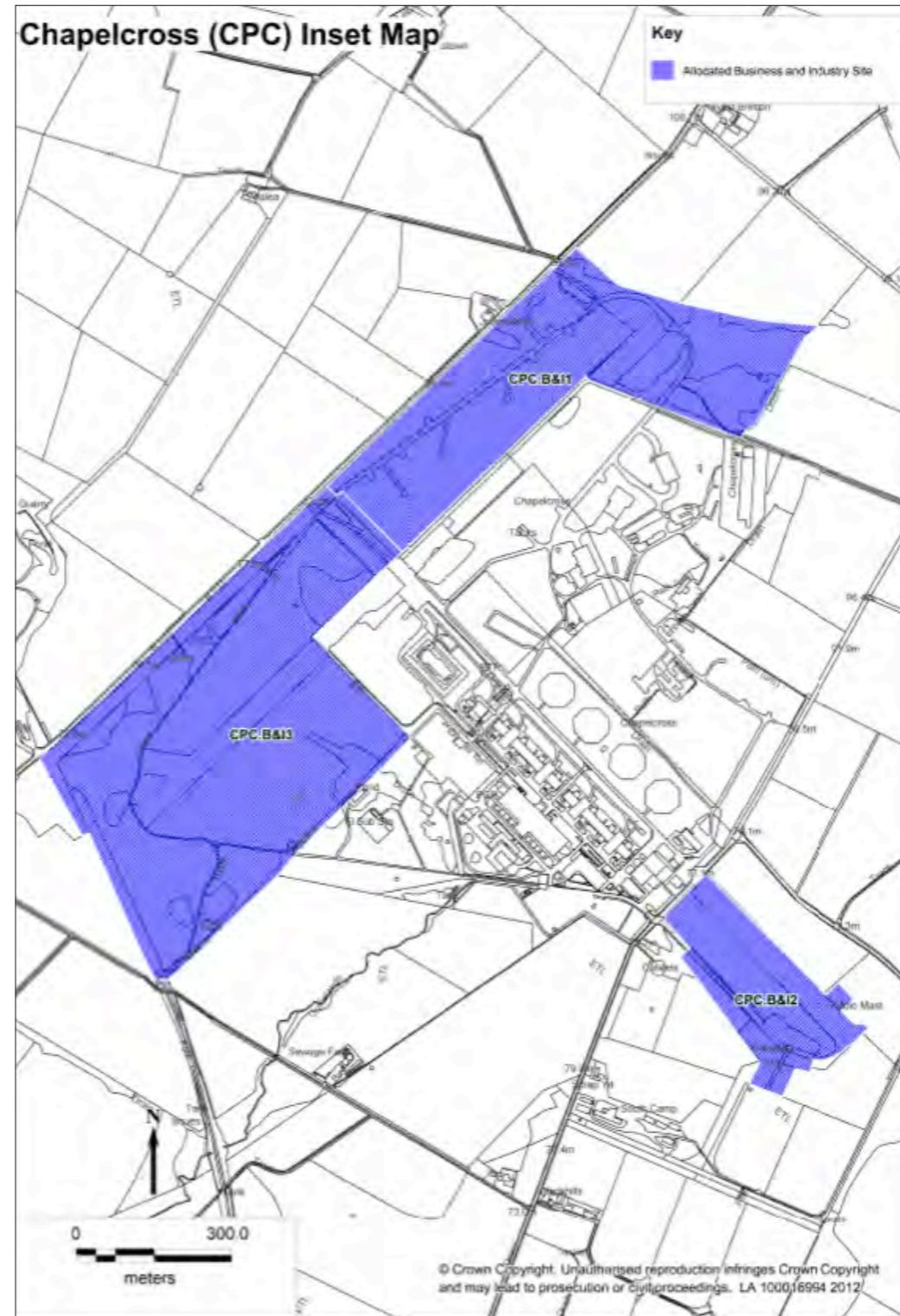
The type and scale of development proposed may require improvements to be made to the B722. The cost of any improvements will need to be borne by the developer. Planning policies would enable additional land to be brought forward during the plan period should the market require.

### PLANNING OBJECTIVES FOR CHAPELCROSS SITES

1. Support the Gretna-Lockerbie-Annan regeneration corridor.
2. Encourage employment creation through business expansion or inward investment.
3. Identify new business and industrial land to provide employment opportunities.
4. Support in principle the redevelopment of brown-field land.
5. Support the relocation of existing businesses in Annan to Chapelcross as per the Annan Regeneration Masterplan



# A vision for Chapelcross



## Planning Guidance

Three sites, one of which is incongruous with the other two, have been allocated for business and industry use and the LDP contains guidance for each development site which outlines the scale and type of development expected along with the main elements that need to be taken into account when designing the layout of the site. The sites have been identified as Chapelcross (CPC) Business & Industry (B&I) Sites CPC.B&I1 Chapelcross North (19.43 hectares), CPC.B&I2 Chapelcross South (7.13 hectares), aka the 'Oaklands site' and CPC.B&I3 Chapelcross West (32.37 hectares). Reference is made to the inset map and the LDP for full particulars.

Plan showing Chapelcross's three allocated sites in the LDP.

## The Importance of 'Place'

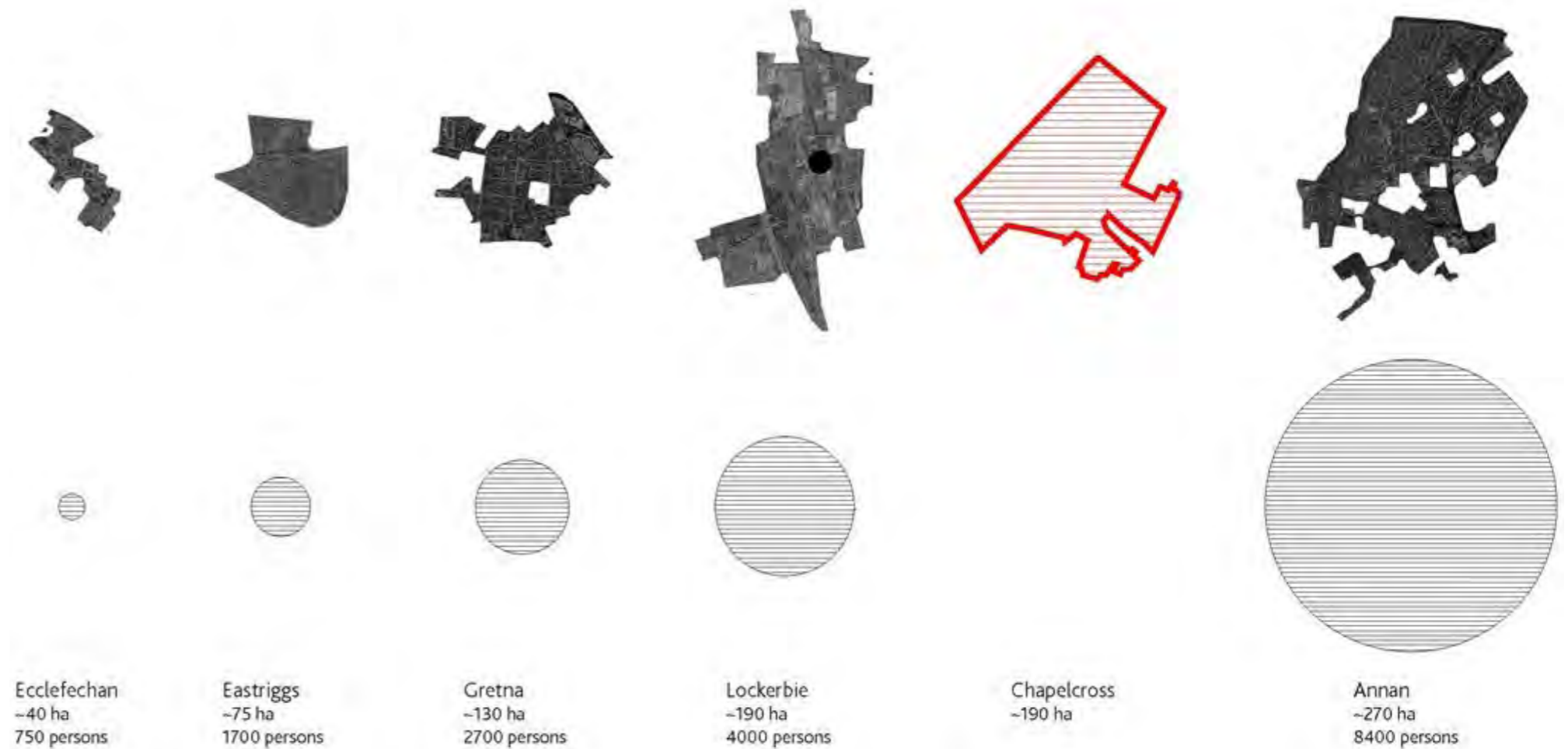
There is an economic rationale to the desire to raise aspirations for the nature and quality of development at Chapelcross. The ability to attract talent is a fundamental dimension of regional economic growth, that quality of 'place' matters significantly and provides the infrastructure required to generate, attract, and retain talent and capital investment. Whilst providing a layout and environment that enables economic development and commerce is the overriding aim, there is nonetheless an aspiration to deliver a framework that allows Chapelcross to develop as a 'place' in its own right, with its own distinct identity. With a hierarchy of buildings, spaces and roads/streets that are pleasant and accommodate pedestrian and cycle movement as well as vehicular, in effect a 'sense of place', which can be considered as the character or atmosphere of a place and the connection felt by people with that place. It comes largely from creating a strong relationship between roads/streets and the buildings and spaces that frame them.

## Characteristics of Quality Places

Quality places, even predominantly industrial areas, have characteristics that are typically the result of good urban form. Quality places with good urban form tend to be walkable and scaled to the pedestrian. Quality places with good urban form also tend to include:

- Buildings, with appropriate building-to-street relationships, mass, frontage types and architecture;
- Properly scaled streets, as part of a connected network;
- Appropriately placed parking; and
- Properly defined space that connects private land and public land.

The size of the full Chapelcross site, at approximately 190 ha also invites critical thinking about how uses could be accommodated, scale of development possibilities and ultimately what type of place it will be. By way of comparison the site is larger than the town of Gretna and roughly the same size as Lockerbie. Thus, in planning for the future of Chapelcross it might be useful to bear in mind that the site is large enough to accommodate single large users (Steven's Croft, the UK's largest biomass station covers approximately 36 ha), a variety of uses/users (which could be clustered), areas of green space, focal points/nodes and different character areas.



Sense of place and industrial areas are not mutually exclusive; they can be function as commercial centres without sacrificing certain amenities. A range of examples of are provided below of industrial areas, trading estates, former nuclear sites and other compromised and/or stigmatised sites.

Illustration showing the size of the Chapelcross site in relation to the size of towns and villages in the area. At approximately 190ha Chapelcross is roughly the same size as Lockerbie.





## Environmental Factors

A Strategic Environmental Assessment Site Specific Baseline Study was completed for the NDA in September 2014. The report was prepared to support the NDA's Strategic Environmental Assessment of its decommissioning strategy for Chapelcross and contains baseline environmental information and other relevant environmental data across a range of issues.

## Air Quality & Dust

There are limited aerial radioactive discharges, including small-scale levels of tritium which will occur over the course of the decommissioning process until Final Site Clearance. Conventional Discharges Vehicles and diesel generators are employed on the site, which are sources of air quality contaminants including NO<sub>x</sub> (oxides of nitrogen), SO<sub>x</sub> (oxides of sulphur), and PM10 (particulate with a diameter <10µm). These sources run only intermittently, and due to the rural nature of the site average levels of these pollutants are likely to be low. Discharges from these sources will likely remain steady throughout the Care and Maintenance Preparations (C&MP) phase.

Dust is currently, and will in future, be generated from construction and demolition activities undertaken on the site as part of C&MP.

## Global Climate Change and Energy

The inland nature of the site means that it is not vulnerable to increased risk from sea flooding due to climate change-induced sea level rise and more frequent storm surges.

It is possible that changing patterns of rainfall during the Care and Maintenance (C&M) phase due to the effects of climate change could affect the site through changes to the local hydrology; however, the potential for flooding at the site due to changes in flow rate and course of River Annan is negligible as the site is 2km from River Annan and elevated 40m higher. Such impact could be mitigated against, especially given the timescales involved.

## Biodiversity, Flora and Fauna

Chapelcross is situated in a predominantly rural setting, with the following statutorily designated areas in proximity to the site:

- Upper Solway Flats and Marshes Site of Special Scientific Interest (SSSI)
- Upper Solway Flats and Marshes Special Protection Area (SPA)
- Solway Flats and Marshes Ramsar
- The Solway Firth Special Area of Conservation (SAC)
- Raeburn Flow SSSI
- Raeburn Flow SAC
- Royal Ordnance Powfoot SSSI

A Biodiversity Action Plan, which is reviewed and updated on a regular basis, considers how the site manages its impacts on local ecosystems.

## Landscape and Visual

Chapelcross is set within an attractive rural landscape at the head of a small valley encompassing Gullielands Burn, which flows directly through the site and is culverted. The site is located inland, to the north of the Solway Firth coastline within a broad, gently undulating lowland plain surrounding the Solway Firth.

The majority of the nuclear element of the site lies at approximately 70 to 90 m Above Ordnance Datum (AOD). To the north and across the B722, the ground rises gently to a local high point, at 126 metres AOD. To the south the ground falls gently east towards Kirtle Water and, beyond that towards the estuarine landscape of the Solway Firth. To the west, the ground falls towards the pronounced valley of the River Annan, into which the Gullielands Burn drains.

The flood risk relating to the site due to the River Annan and Gullielands Burn is considered to be low. The inland nature of the site means that it is not vulnerable to increased risk from sea flooding due to climate change-induced sea level rise and more frequent storm surges.

There are existing hedgerows, trees and shelter belts which could inform patterns of development and consideration should be given to retaining and enhancing the overall quality of the landscape with additional planting and the potential reopening of the Gullielands Burn as a feature element. The surrounding area contains several copses and small areas of woodland that are visually important within the local landscape.

The site contains several prominent structures that feature in the local landscape, although to a lesser extent than prior to the demolition of the cooling towers in 2007.

There are no landscape designations within the Chapelcross site.



Chapelcross is set within a rural/agricultural context that could inform patterns of development within the site itself.



# A vision for Chapelcross



## Archaeology & Cultural Heritage

There are no Scheduled Ancient Monuments or Listed Buildings near to the site. Whilst the site has been heavily redeveloped in the 20th Century, there remains the possibility for undiscovered archaeological features beneath the ground, especially in regard to remnants from WWII. For any development which would involve ground works an archaeological assessment, and possible recording, would be required to accompany any planning application. Local Development Plan Policy HE3: Archaeology should be considered when preparing proposals for the site.

## Groundwater, Geology and Soils

The site is underlain by areas of reworked Glacial Till, which is underlain by a layer of glacially reworked bedrock fragments, consisting of the Permo-Triassic Sherwood and St Bees Sandstone Groups.

The site is considered a Major aquifer of local importance.

The soil in the area surrounding the site is classified as lowland brown earth soils of high agricultural value.

The site contains both radioactive and non-radioactive land contamination, resulting from its nuclear-related use and land uses prior to construction of the power station. There are also low levels of radioactive contamination present in sub-surface soils adjacent to the part of the original concrete effluent pipeline nearest to the Solway Firth. The non-radiological contamination is primarily associated with contamination of groundwater associated with the historical practice of disposal of waste solvents to ground. Contamination has also been detected in groundwater outside of the NDA landholding. A programme of work leading to long-term management of this contamination (including assessment of potential remedial intervention options) is currently under way.

In addition, crushed concrete created by demolition of the four cooling towers was deposited in the below-ground cooling tower basins. The high water table in this area of the site has caused the basins to fill up with water which has attained a high pH as a result of contact with the crushed concrete. The management of this alkaline water presents a challenge to the site and is currently being dealt with, thus protecting the water quality of the Gullielands Burn that runs through the site. Monitoring and investigation of ground contamination is on-going at the site.

## Surface Water Resources and Quality

The nearest water courses to the site are Gullielands Burn (which flows directly through the site and is culverted), Kirtle Water, the River Annan and the Solway Firth at a distance to the south.

The flood risk relating to the site due to the River Annan and Gullielands Burn is judged to be low.

The inland nature of the site means that it is not vulnerable to increased risk from sea flooding due to climate change-induced sea level rise and more frequent storm surges.

## Waste

Ongoing decommissioning activities at Chapelcross are expected to generate radioactive and conventional waste, this will include Intermediate Level waste (ILW), Low Level Waste (LLW) and Very Low Level Waste (VLLW). ILW has accumulated at several locations at the site, the majority of which will be retrieved during IC&M when an ILW store becomes available on site.

## Noise and Vibration

The profile of noise and vibration from the site is considered significant due to the nature of decommissioning works. Noise and vibration originate from a number of sources at the site. Specific data is available in the full Baseline Study, which itself refers to the Chapelcross Environmental Impact Assessment Baseline Report.

## Electricity

Chapelcross has existing supply point which exits there and enters Scottish Power's network at 33kV. Therefore, any connection at 33kV can be accommodated.

All other supplies at Chapelcross are fed from Annan Primary (Prestonfield Road Annan).

Scottish Power have indicated that in order to give the supplies at 11kV (depending on size of load):

- There is scope for 5MVA at 11kV but they would need to run cables back to Annan Primary as there are 2 spare breakers on the 11kV Board there. They could run 11kV to the site and multi panel board @ approx. 4.8km with estimated costs of £960,000 cable, £80,000 switch gear and potential comms/intertipping £75,000.
- There is 11kV available at the Chapelcross Site which could accommodate up to 1MVA. Costs would be approximately £75k to establish a new 11kV metering point and associated works. There is an assumption of 1km of cabling from existing line to the site but if Scottish Power established the substation nearer these costs would be less.

# EXEMPLARS







## EXEMPLARS

A range of built examples of Industrial Estates or brownfield regeneration projects, of a similar scale to the Chapelcross site or shared nuclear use, have been identified as well as aspects of each which may be relevant to Chapelcross.

### Team Valley Industrial Estate in Gateshead

#### Description

Built in the 1930s as a heavily industrial area of Gateshead in Tyne and Wear, England, it has recently developed as a business park, incorporating elements of big box retail as well. There are currently approximately 700 companies on the estate, with approximately 20,000 people travelling every day to Team Valley to work there.

Much of its success can be attributed to its layout; the original designs for the estate were heralded as an excellent example of planning and the estate was visited by architects from all over Europe. Its uniform grid pattern and wide boulevards create a spacious and easily understandable network.

#### Relevant aspects

- Robust and adaptable layout - transitioned from predominantly industrial use to mixed-use 'business park'
- Range of block types
- Strong grid pattern with central 'boulevard'
- Degree of landscaping
- Mixed-use



The Team Valley Industrial Estate has a robust grid structure of connected streets, with a strong central spine and varying sizes of blocks, allowing it to accommodate a variety of building types and uses.



The Team Valley Industrial Estate's central spine/boulevard. From <http://www.skyscrapercity.com/>



## Hillington Park Industrial Estate

### Description

Hillington Park Industrial Estate in Glasgow is a successful business park providing offices and industrial units. Originally constructed in the 1930s, it shares similarities with Team Valley in terms of layout, with broad, tree-lined boulevards and a network of connected streets, with buildings generally fronting onto them. It also included amenities such as a bowling clubs for industrial estate workers.

Hillington Park Industrial Estate is now home to over 300 organisations with over 3,500 employees directly engaged in manufacturing, distribution, technology and the service sectors, Hillington Park extends to approximately 2 million sq. ft. of existing office and industrial accommodation.

### Relevant aspects

- Robust and adaptable layout
- Mixed use, incorporating civic/social amenities
- Strong grid pattern with central 'boulevard'
- Degree of landscaping
- Buildings 'front' streets, with discreet parking



The Hillington Park Industrial Estate is also structured on a robust grid of connected streets.



Hillington also features areas of landscaping and a central boulevard which enhances its sense of place.  
From <http://www.drookitagain.co.uk/>





## Harwell Oxford

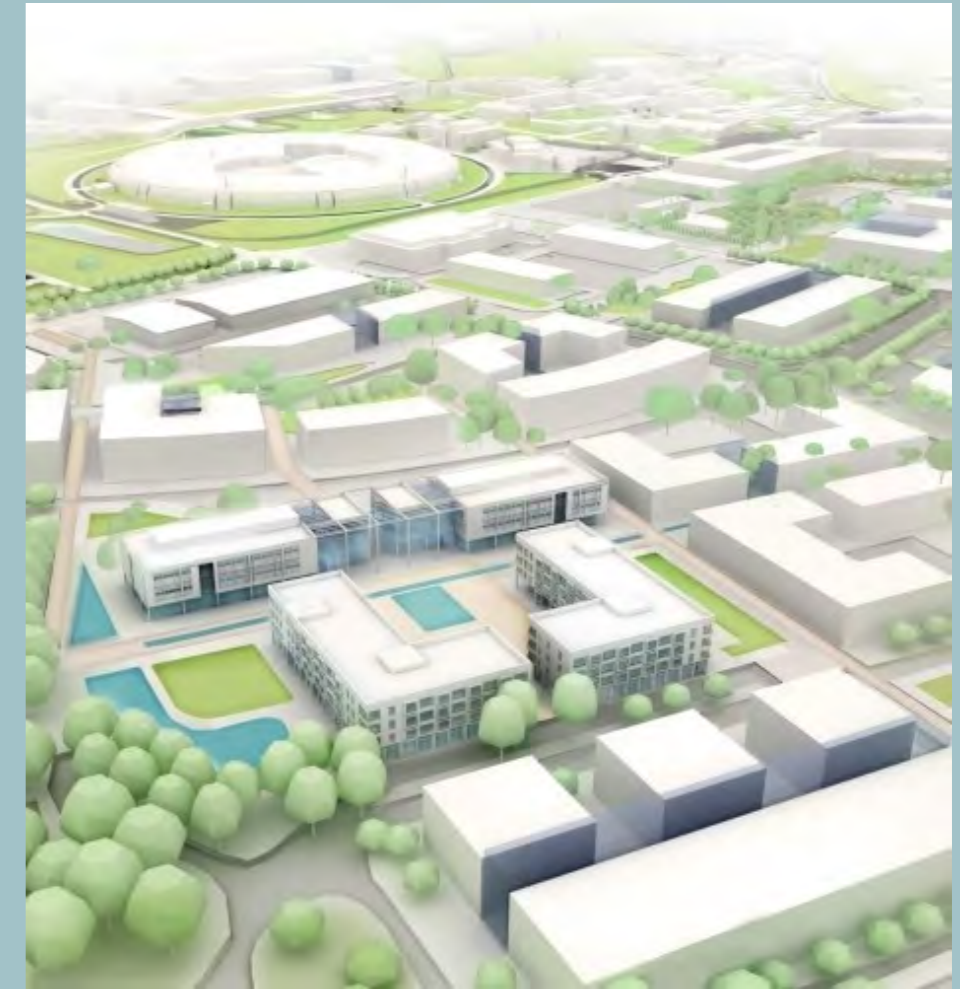
### Description

Harwell is a 113ha nuclear site located on a larger science campus (approximately 290 ha) in Oxfordshire and is the birthplace of the UK's nuclear industry. Harwell Oxford is home to around 150 science/research organisations and private companies.

Operated by UK Atomic Energy Authority until 1990 when decommissioning started, it forms part of an overall strategy of returning land suitable for next use; in the case of Harwell as a world-class science and innovation campus. The campus has been rebranded as Harwell Oxford and is being developed by a joint venture between the UK Atomic Energy Authority, the Science and Technology Facilities Council, Prorsus Ltd and Development Securities Plc. Harwell Campus is a world leading hub for science, technology and business, boasting the Diamond Light Source, the largest UK-funded scientific facility to be built for over 40 years. In this innovation ecosystem, established academics and entrepreneurial start-ups, big science and big business all work side by side, supported by world class scientific facilities.

### Relevant aspects

- Transitioning of a nuclear facility
- Clear vision
- Branding
- Partnership working
- Masterplan for commercial zone with a degree of place-making



The Masterplan for the Harwell science and innovation campus exhibits a strong commitment to place-making principles, with buildings framing streets and spaces. From <http://harwellcampus.com/>



## Trawsfynydd

### Description

Trawsfynydd is located on a 15.4 hectare site, on an inland lake in Snowdonia National Park, North Wales. Trawsfynydd was the first inland civil Magnox nuclear station and drew its cooling water from Llyn Trawsfynydd. The nuclear power station has been closed since 1991 and the site is in the process of being decommissioned by the Nuclear Decommissioning Authority.

A number of developments are ongoing to develop the Trawsfynydd area, in response to the economic challenge of the decommissioning process. Following the approval of the "Snowdonia Centre of Excellence" bid in 2009, a package of activities to attract more world class outdoor activities is being realised. New facilities, including a visitor centre, cafe, three-kilometre cycle trail plus fishing and boating facilities aimed at drawing tourists to Llyn Trawsfynydd opened in 2014. Llyn Trawsfynydd is part of The One Big Adventure, a £4 million project to create top class outdoor activity opportunities at four Centres of Excellence in the Meirionnydd area of southern Snowdonia.

The NDA has part-funded the work to ensure a positive legacy for the community once the site is closed.

### Relevant aspects

- Transitioning of a rural nuclear facility
- Successful lobbying at Government level
- NDA part-funding
- Partnership working
- Successful challenged nuclear stigmatisation to develop leisure/tourism offer



Trawsfynydd is being transitioned to a leisure and outdoor activities destination through significant grant funding. From [http://upload.wikimedia.org/wikipedia/commons/5/5b/Trawsfynydd\\_Nuclear\\_Power\\_Plant\\_retouched.jpg](http://upload.wikimedia.org/wikipedia/commons/5/5b/Trawsfynydd_Nuclear_Power_Plant_retouched.jpg)



New boating facilities are part of the recent investment package. From <http://www.dailypost.co.uk/>





## Berkeley Nuclear Power Station

### Description

Berkeley Power Station in Gloucestershire was the first in the UK to be decommissioned, in 1989. Located on a 27 ha Site of Special Scientific Interest (SSSI) on the eastern bank of the River Severn, it is being transformed into a new campus as part of South Gloucestershire and Stroud College (SGS).

The Gloucestershire Renewable Energy, Engineering and Nuclear (GREEN) project has been awarded £5m from the Government's Growth Fund as the first phase of an anticipated £40m development. This funding will be matched by £5m investment from the College, to develop 14 acres of the now un-licensed Berkeley site and turn it into a state-of-the-art campus which will focus on Engineering and Technology with an emphasis on low-carbon energy generation. SGS has formed an agreement with the Nuclear Decommissioning Authority to gain a lease to the majority of the unlicensed part of Berkeley Power Station. This gift of land and facilities by the NDA exceeds the £5m asked to support the project.

### Relevant aspects

- Successful transition of a nuclear facility
- NDA-funding



Artist's impression of the converted engineering hall as part of the new campus at South Gloucestershire and Stroud College. from <http://www.nda.gov.uk/>

## Coed Darcy

### Description

Coed Darcy is an ambitious brownfield regeneration project being built on the former BP Llandarcy oil refinery, which was decommissioned in the 1990s. The masterplan for the development covers more than 1000 acres (400+ha) and includes more than 4,000 homes, as well as elements of retail, leisure, sports and community facilities and open space. It will also provide 500,000 sq. ft. of new commercial space, accommodating more than 4,000 new job opportunities. The overall scheme is estimated to have an economic impact of over £1 billion and is envisaged to be "...a flagship project to underpin economic development and investment helping raise the aspirations for development and regeneration across Wales".

### Relevant aspects

- Heavily stigmatised brownfield site
- Long-term masterplan underpinned by clear principles/structure in regard to place-making
- Mixed-use
- Partnership working



The masterplan for Coed Darcy covers more than 400ha and includes houses, as well as retail, leisure, community facilities and more than 500,000 sq ft of commercial space. It is one of Europe's largest brownfield site regeneration projects and includes ambitious commitments to placemaking. From <http://www.coeddarcy.co.uk/>

Development at Coed Darcy is being built on the former BP Llandarcy Oil Refinery, which employed 2,000 people. BP stopped production at Llandarcy in the mid-1980s. From <http://news.bbc.co.uk/>



# TOWARDS A MARKETING STRATEGY







## TOWARDS A MARKETING STRATEGY – SUMMARY

The initial marketing study, Towards a Marketing Strategy is contained fully within Appendix B and is based on the findings developed through the charrette process and the economic analysis carried out by John Lord of yellow book.

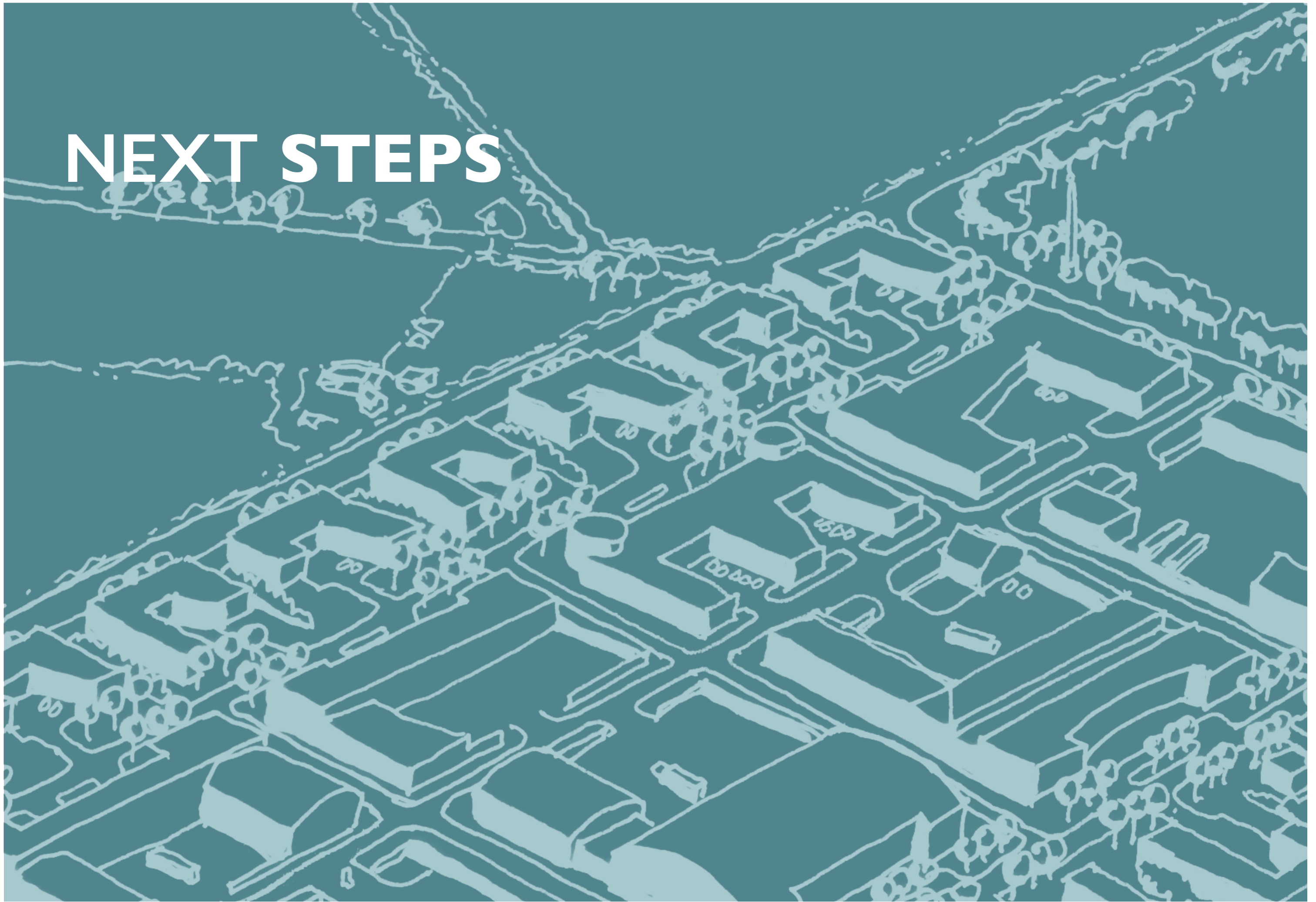
Towards a Marketing Strategy represents the steps that need to be taken to get the infrastructure in place to support the development of a Marketing Strategy for the Chapelcross site as well as the practical steps that could be taken now to help develop such a strategy. Chapelcross is a major long term economic project that should have a high priority for the council, and the appropriate level of support from the Scottish and the UK Governments.

The 'yellow book' report very accurately sets out the economic challenges facing the local economy around the Chapelcross site, but it goes further and helpfully sets out some of the structural characteristics of the local economy that the council and the area needs to address regardless of the challenges posed by the closure of Chapelcross. Dumfries & Galloway is an important part of the Scottish economy and important to Scotland because of its strategic location, and because of its function as the principal road 'gateway' to Scotland. It is also important as one of the medium sized local authorities in terms of population.

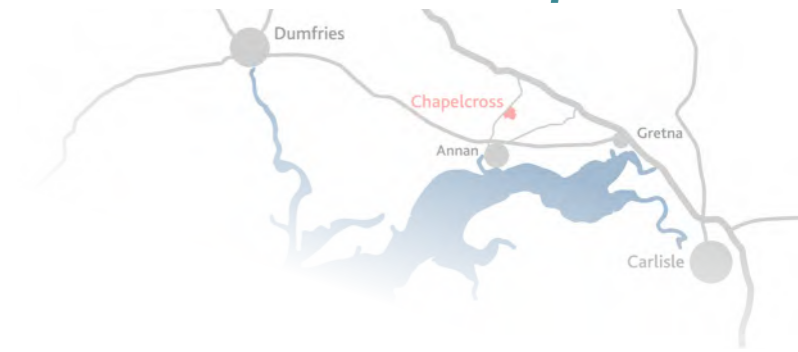
However, despite the relative importance of the area, there remain obstacles to creating the right infrastructure and funding support to tackle the consequences of the closure of Chapelcross and to maximise the opportunities for growth in the south of Scotland. Dumfries & Galloway and the Scottish Borders do not have the support for their local economies that other parts of Scotland benefit from. Whether in the principal cities, or in the Highlands through Highlands and Islands Enterprise, many other areas have access to funding that helps to attract funding and develop local initiatives to boost investment and job creation. This 'gap' has been eloquently set out in the 'Scottish Borderlands' report from the Scottish Affairs Committee of the Westminster Parliament.

There will be differing responsibilities and responses regarding these issues from the two partners. Towards a Marketing Strategy sets out the draft recommendations where it is felt that these responsibilities are best addressed by one, other or both of the council and the Nuclear Decommissioning Agency. Of course there will be some areas of crossover, but in essence the actions of advocacy and area promotion would instinctively fall under the scope of Dumfries & Galloway Council, and areas of partnership working, employee support and site redevelopment would involve greater input from the NDA.

# NEXT STEPS







## NEXT STEPS

A series of 'next steps' have been identified to take the site forward.

- An initial step would be to reaffirm the key strategic goals:
  - create new skilled, well-paid jobs to replace employment lost at the site and as the decommissioning process winds down: these jobs may not be at Chapelcross
  - concentrate on key sectors: growing local firms and attracting inward investment
  - invest in training and retraining.
- Another initial step should be that the partners support the work already done, and the momentum generated, by formally designating those working on Chapelcross as a 'Task Force', thus providing a clear channel of authority for taking forward proposals for the area.
- The 'Task Force' develops and implements a marketing strategy for the site in the context of developing the three major sites on the M74 corridor.
- Identify and build a consensus view in regard to the best mechanism for attracting Scottish and UK Government support for taking forward initiatives for an 'Energy Park' or 'Enterprise Zone', or indeed some other vision of how Chapelcross can be successfully promoted.
- The Council and the NDA work co-operatively to enhance the wider regeneration of the M74 corridor in the context of Chapelcross as a key long-term inward investment location.
- The council should register domain names relevant to the marketing of Dumfries & Galloway and Chapelcross.
- Establish an identity for the site and area so that it might be marketed, e.g. as either 'Scotland's Gateway Business Park' and/or 'Scotland's Gateway Region', or suitable alternatives. This will help inform and provide guidance for the development of a marketing strategy.
- Identify a project 'champion' to help take the proposals forward.
- The Council should identify potential funding sources and produce a funding bid (or series of bids) for sufficient resources under the auspices of the 'challenge' of Chapelcross for submission to the Scottish and UK Governments.
- The Council should review its planning and economic development policies and strategies to ensure that these reflect the wider vision necessary to develop Dumfries & Galloway as one of Scotland's most important economic hubs, and as a centre for economic development and enterprise that attracts investment from throughout and beyond the UK.
- DGC/NDA should prepare a suite of marketing materials for the Chapelcross site including a dedicated website, brochures, fact sheets and briefing, and exhibition boards.
- DGC should identify local firms with property requirements/expansion plans and explore opportunities for relocation to Chapelcross, especially where this will relieve conflicts/constraints on existing sites.
- DGC should develop a more comprehensive and robust planning policy framework for the site, including evolving the development framework plan into a masterplan and potentially design code, based on work done to date and principles of sustainable planning and design. The masterplan and design code could be adopted as planning guidance.
- Further stakeholder and community engagement, with the potential of developing the masterplan through a full and open charrette process.







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