

CARDIFF COUNCIL

Cardiff East Spatial Strategy

Phase 1: Scoping, Visioning and Spatial Planning
Summary Report

ARUP

© Arup 2019. All rights reserved.

Prepared by Arup on behalf of Cardiff Council.

This report takes into account the particular instructions and requirements of our client. It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

In preparing this report we are relying on information contained in reports supplied by the client and third parties, as stated throughout the document. We have relied in particular on the accuracy and completeness of such reports and accept no liability for any error or omission in this statement to the extent the same results from error or omission in the other consultants' reports.

Please note, this report is intended to be viewed and printed as an A4 double-sided document with cover page.

All images © Arup unless otherwise stated.

Ordnance Survey mapping information: © Crown copyright and database rights 2019 OS 100023376.

Contents

1.	INTRODUCTION	4
1.1	Towards an integrated Spatial Strategy	4
2.	POLICY CONTEXT	6
2.1	Strategic context	6
2.2	Planning context	10
3.	PHYSICAL CONTEXT	12
3.1	Location	12
3.2	Socio-economic context	14
3.3	Landscape context	18
3.4	Transport	21
3.5	Heritage and environmental designations	23
3.6	Site summary	25
3.7	Current knowledge gaps	26
4.	TOWARDS A VISION	28
4.1	Transforming East Cardiff	28
4.2	Phases of Growth	30
4.3	Phase 1	32
4.4	Phase 2	34
4.5	Phase 3	36
4.6	Supporting infrastructure	38
5.	DELIVERING WIDER CITY BENEFITS	40
5.1	Green infrastructure	42
5.2	Transport and movement	44
5.3	Socio-economic	46
5.4	Physical infrastructure	46
6.	KEY CONCLUSIONS AND RECOMMENDATIONS	48
6.1	Conclusions	48
6.2	Potential policy levers	50
6.3	Recommendations and Next Steps	52
	APPENDICES	54
	Appendix A: Cardiff Council Land	54

1. INTRODUCTION

1.1 Towards an integrated Spatial Strategy

East Cardiff has been identified by the council as having major potential for industrial-related development. This development should be brought forward in such a way as it also delivers social, environmental and economic benefits to the communities of East Cardiff and the wider city.

PURPOSE OF THIS DOCUMENT

In 2018, BD Consulting developed the ‘Cardiff Industrial Strategy’ which identifies how “an industrial strategy for Cardiff, placed within the context of the Council’s ‘Capital Ambition’ and ‘Draft Economic Strategy - Building More & Better Jobs’ policies can contribute to the economic, social and environmental well-being through an industrial strategy that has lacked investment in the past.” The Strategy reviewed Government and Council policies and consulted with a wide range of public and private stakeholders.

This study looks at the potential of land in the east Cardiff area and explores how the findings of the Cardiff Industrial Strategy can be realised as areas for future growth, change and mitigation. It should be noted that this report has no planning status and that any necessary approvals and decisions would be made to progress the proposals outlined in the report.

CARDIFF EAST STUDY AREA

The Cardiff East area, as defined in the Cardiff Industrial Strategy 2018, runs from the River Taff eastwards to the Cardiff/Newport municipal boundary and from the Severn Estuary to the A48/A4232/Newport Road.

This report focuses on a core area running from the Port of Cardiff in the west, through to the proposed Cardiff Parkway site at the east, excluding the majority of the Butetown ward.

52,683

Approx. population of core area

23%

Population aged under 16.
Cardiff average: 19%

64%

Population aged 16 to 64.
Cardiff average: 68%

14%

Population aged over 64.
Cardiff average: 14%

Above: Population for small areas in Wales (2001 onwards), by broad age bands and gender, December 2018. StatsWales 2019. Population excludes Butetown.

33%

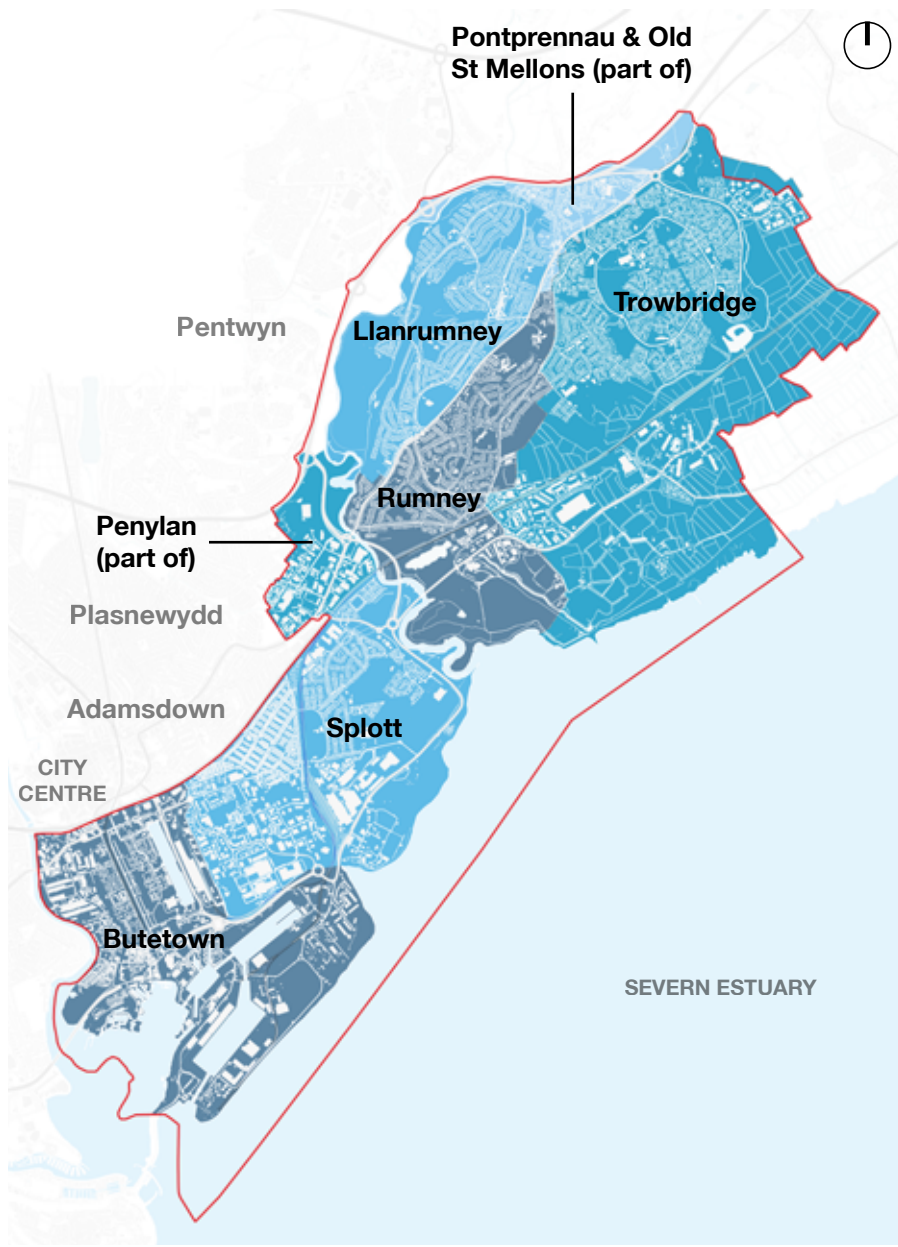
Population aged over 16 with no qualifications.
Cardiff average: 21%

Highest level of qualification (2011). Nomis, 2019. Population excludes Butetown.

7%

Employment in manufacturing.
Cardiff average: 5%

Industry (2011). Nomis, 2019. Population excludes Butetown.



1. CARDIFF EAST LOCATION

Wards lying within Cardiff East, in full or in part.

© Crown copyright and database rights 2019 OS 100023376.

© Crown copyright and database rights 2019 OS 100023376.

2. POLICY CONTEXT

2.1 Strategic context

Cardiff has a strong position as the central settlement and economic powerhouse of the Cardiff Capital Region.

CARDIFF CAPITAL REGION

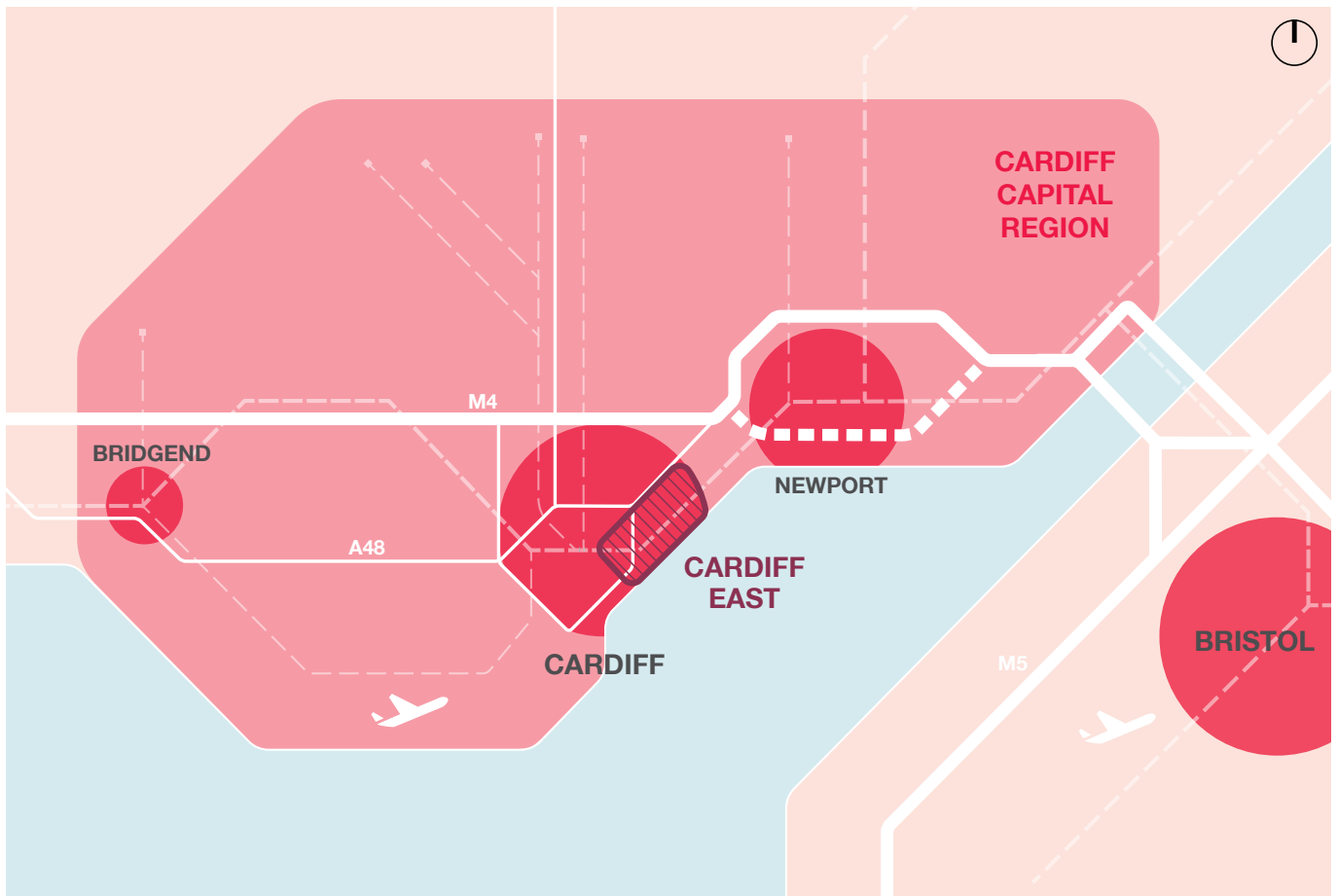
The Cardiff Capital Region (CCR) City Deal is a programme agreed in 2016 between the UK Government, the Welsh Government and the ten local authorities in South East Wales to bring about significant economic growth in the region through investment, upskilling, and improved physical and digital connectivity.

The Industrial and Economic Plan has been developed by Cardiff Capital Region Economic Growth Partnership in conjunction with CCR Regional Cabinet, to set direction, and to identify and address the priorities facing the region. The Plan is designed to be flexible, in order to better adapt and respond to the dynamic challenges the region will face over the next twenty years.

Below

2. CARDIFF CAPITAL REGION

Cardiff East holds a strategically strong location with access to the M4, A48 and mainline railway



CARDIFF DRAFT ECONOMIC STRATEGY

The approach is based on the principles of Cohesion, Leverage, Ecosystem Development, Scale and Return on Investment. The strategy identifies cross-sector collaboration and stakeholder cohesion as a central feature with target sectors including Compound Semiconductors and the Creative Economy. The need to upskill the current and future workforce is recognised, as is a need for reliable and resilient infrastructure.

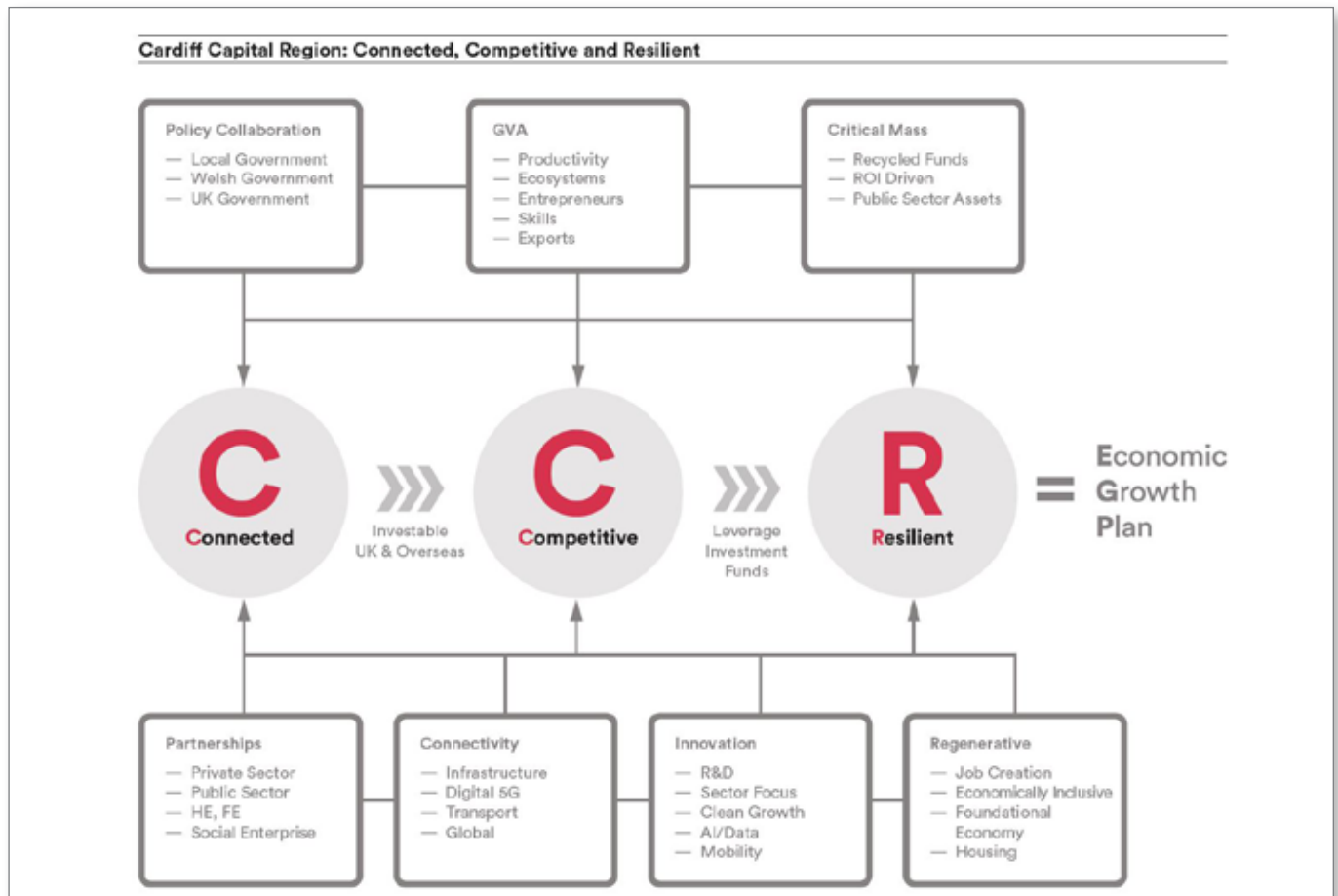
In April 2019, Cabinet resolved to approve the Draft Economic Strategy “Building More and Better Jobs”, which “sets out the Council’s vision for the city’s economy and establishes how the key development priorities will be delivered.” The Strategies and proposed projects are identified overleaf.

The Strategy seeks to encourage investment at all scales and of a variety of forms, considering the city centre and further outlying areas and recognising the role of transport in supporting business and access to work. It takes a broad view of Cardiff’s economic needs, recognising the need for inclusive growth and building a skilled workforce while recognising the need to consider wellbeing.

Below

3. CARDIFF CAPITAL REGION ECONOMIC GROWTH PLAN

Extract from Cardiff Capital Region Industrial and Economic Plan, 2018.



Below

4. CARDIFF DRAFT ECONOMIC STRATEGY - PRORITIES AND PROJECTS

Key priorities and projects affecting the Cardiff East area are highlighted.

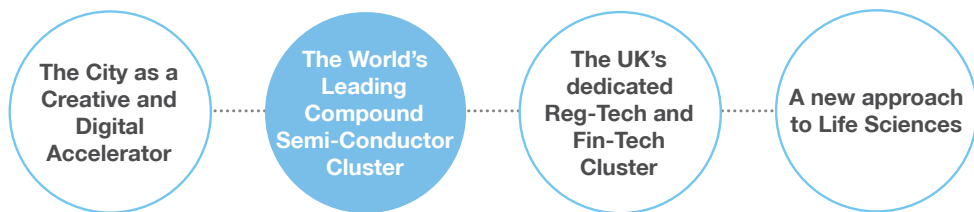
SPATIAL STRATEGY: KEY PRIORITIES



PROPOSED PROJECTS



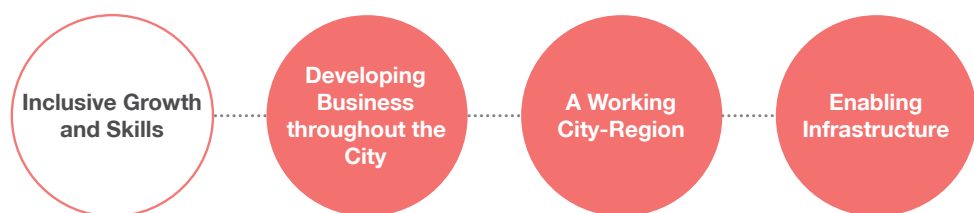
INDUSTRIAL STRATEGY: KEY PRIORITIES



KEY PROJECTS



UNDERPINNING THEMES: KEY PRIORITIES



KEY PROJECTS



CARDIFF INDUSTRIAL STRATEGY

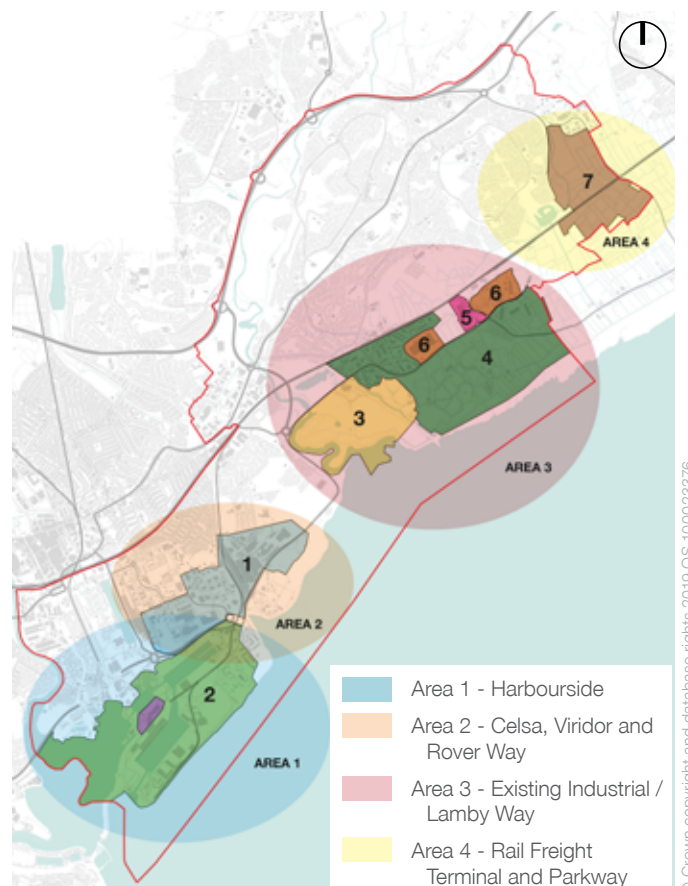
The 2018 Cardiff Industrial Strategy by BD Consulting identifies a corridor of interest in eastern Cardiff, within which are emerging themes: employment, land supply, transportation, technology, sustainable energy and industrial strategy. Cardiff East has a diversity of employment, including manufacturing, creative industries and logistics, however there is a lack of suitable sites for potential industrial investors and a need to release further tranches of land. The Strategy identifies potential for a range of sustainable energy solutions, including microgrids and district energy and heating, linked to education and skills. The Strategy structures its recommendations around four core areas and seven clusters which form the basis for an action plan:

- Area 1 - Harbourside: The area includes ABP Port of Cardiff and the Porth Teigr site. While the area has strong highway links, the Port is not linked to the rail freight terminal and there is poor public transport connectivity to the Port area. There is, however, land available.
- Area 2 - Celsa, Viridor and Rover Way: Dominated by Celsa and Viridor, the area has a strong support supply chain and benefits from the new link road. High energy prices are threats to Celsa however there is significant potential to expand existing energy generation and build a district heating network. There is little expansion land and limited connection to mainline rail infrastructure.
- Area 3 - Existing Industrial/ Lamby Way: The area has seen significant employment development but expansion is limited by flooding and remediation costs alongside limited highway and public transport accessibility. There is however renewable energy generation potential and opportunity for refurbishment of poorer quality stock.
- Area 4 - Rail Freight Terminal and Parkway: Private developers are creating a masterplan for Cardiff Parkway, including a new passenger railway station. There has been a lack of use of the rail freight terminal, due in part to the poor road connectivity.

5. CARDIFF INDUSTRIAL STRATEGY - AREAS & CLUSTERS

Information drawn from BD Consulting report.

© Crown copyright and database rights 2019 OS 100023376.



© Crown copyright and database rights 2019 OS 100023376.

2.2 Planning context

The Cardiff Local Development Plan 2006-2026 identifies appropriate land uses and operations across the city.

EXISTING EMPLOYMENT LAND (EC1)

Much of Cardiff's defined Existing Employment Land lies within Cardiff East, protecting many but not all of the area's employment sites. This land identifies primary uses as a mix of B1, B2 and B8 development. These areas are protected for employment development to prevent incremental loss of land and premises. The majority of land within these areas has already been developed although some land at Wentloog Avenue remains vacant.

Areas around Newport Road and Colchester Avenue have been removed from the protection due to pressure for alternative uses.

STRATEGIC SITE - CARDIFF PARKWAY (KP2)

The Cardiff Parkway site (known in the LDP as 'South of St Mellons Business Park') is proposed for strategic employment development, linked to a new railway station and park and ride facility. A masterplan is being developed by Cardiff Parkway Developments Ltd.

SPECIAL LANDSCAPE AREA (EN3)

This policy aims to "ensure that those features of the landscape that contribute to its character, value, distinctiveness, sense of place, and quality, with particular priority given to SLAs are protected from inappropriate development. It seeks to manage and enhance this rich asset in order to maintain Cardiff's unique distinctiveness whilst helping to mitigate against climate change."

Much of the SLA area designated at Wentloog Levels is currently subject to groundworks and operations by Dawson. A comprehensive approach is needed to development in this area, though there is a significant opportunity to reinstate biodiversity across the site while incorporating employment development.

RIVER CORRIDOR (EN4)

The designation provides a framework for the Council to protect, promote and enhance the Rhymney River corridor, relating to sustainable access, social needs and natural environment. The area is subject to the River Rhymney and Nant Fawr Corridor Action Plan which aims to bring together the collection of different environments and habitats into a coherent corridor. New development within, or adjacent to the river corridors may be required to contribute to projects which help to achieve the objectives set out in the River Corridor Action Plans.

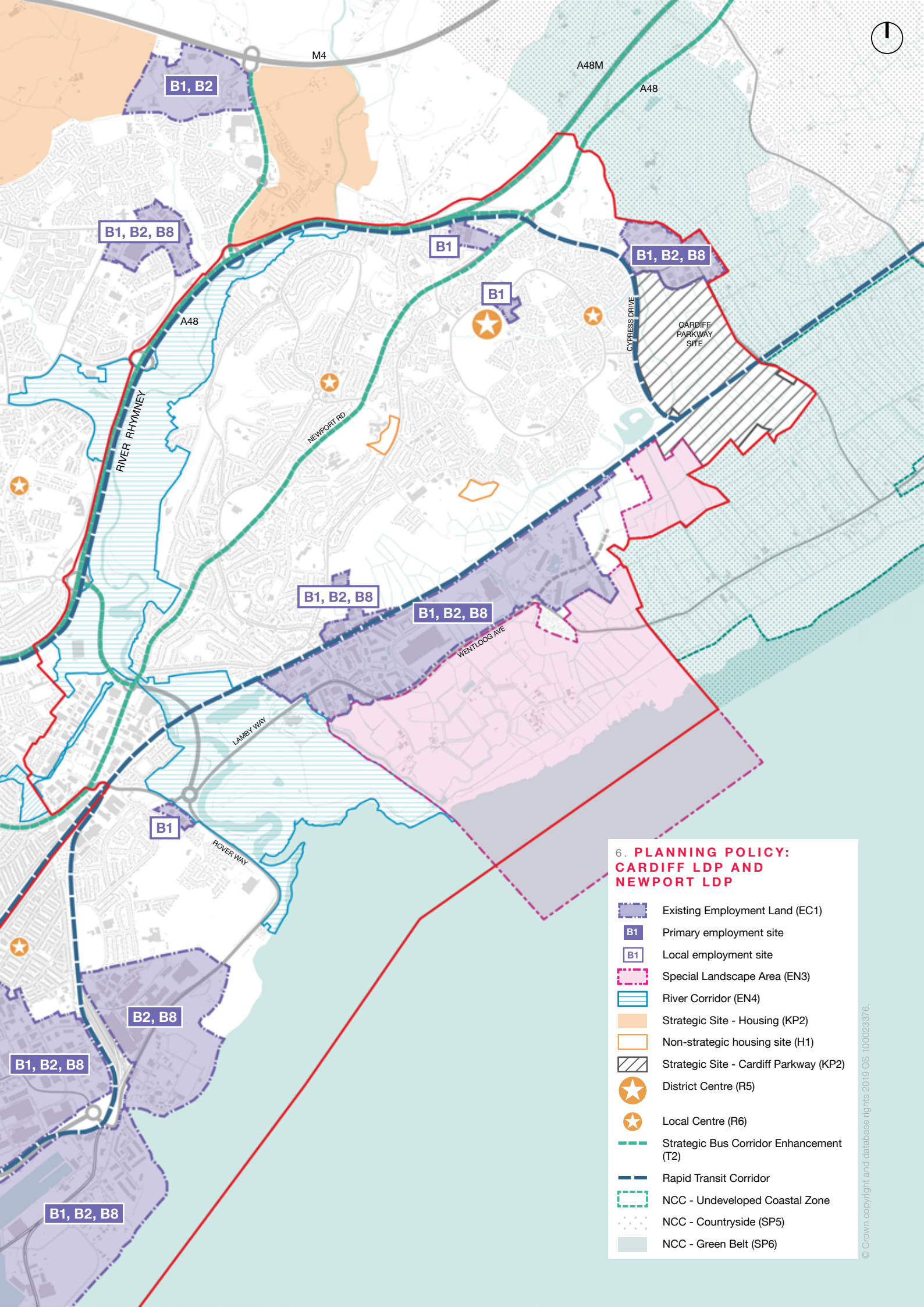
STRATEGIC RAPID TRANSIT AND BUS CORRIDORS (T2)

The Eastern Bus Corridor identifies enhancements along A4161 Newport Road, Southern Way and the A48M Trunk Road. Under this policy, "provision will be made to facilitate the functional integration of these corridors and associated services with the wider transport network including the bus network and local walking and cycling routes".

Potential Rapid Transit Corridors are identified along the railway network and A48, with alignment and interchange to be determined through further technical assessment work.

NEWPORT CITY COUNCIL ADOPTED LOCAL DEVELOPMENT PLAN (2011-2026)

Land adjacent to the study area boundary is protected under NCC's Undeveloped Coastal Zone, Countryside and Green Belt policies, which aims to protect the open, undeveloped nature of the Levels and adjacent countryside. Development at East Cardiff should have regard to these designations and the transition to open countryside.



**6. PLANNING POLICY:
CARDIFF LDP AND
NEWPORT LDP**

- Existing Employment Land (EC1)
- Primary employment site
- Local employment site
- Special Landscape Area (EN3)
- River Corridor (EN4)
- Strategic Site - Housing (KP2)
- Non-strategic housing site (H1)
- Strategic Site - Cardiff Parkway (KP2)
- ★ District Centre (R5)
- ★ Local Centre (R6)
- Strategic Bus Corridor Enhancement (T2)
- Rapid Transit Corridor
- NCC - Undeveloped Coastal Zone
- NCC - Countryside (SP5)
- NCC - Green Belt (SP6)

3. PHYSICAL CONTEXT

3.1 Location

STUDY AREA

The existing employment land around Rover Way, Lamby Way and Wentloog Avenue is considered as the starting points for geographic focus, linking to Cardiff Docks and areas straddling the mainline railway corridor.

The eastern corridor includes some of the city's key infrastructure including the Port of Cardiff, the new Viridor Waste-to-Energy plant, the Celsa Steelworks, and the Euro-freight rail terminal. The Council wishes to explore how additional employment related development could help deliver further important infrastructure improvements.

Proposals are already being brought forward by the private sector that will see a new mainline station delivered at St Mellons Business Park by 2023, to be known as Cardiff Parkway. Design works to further progress delivery of the Eastern Bay Link Road are currently being taken forward by Welsh Government.

The existing employment areas lie close to significant residential areas at Splott, Tremorfa, Trowbridge, Rumney, St Mellons and Llanrumney, however connectivity between these areas is constrained by the rail network, the River Rumney and major roads.

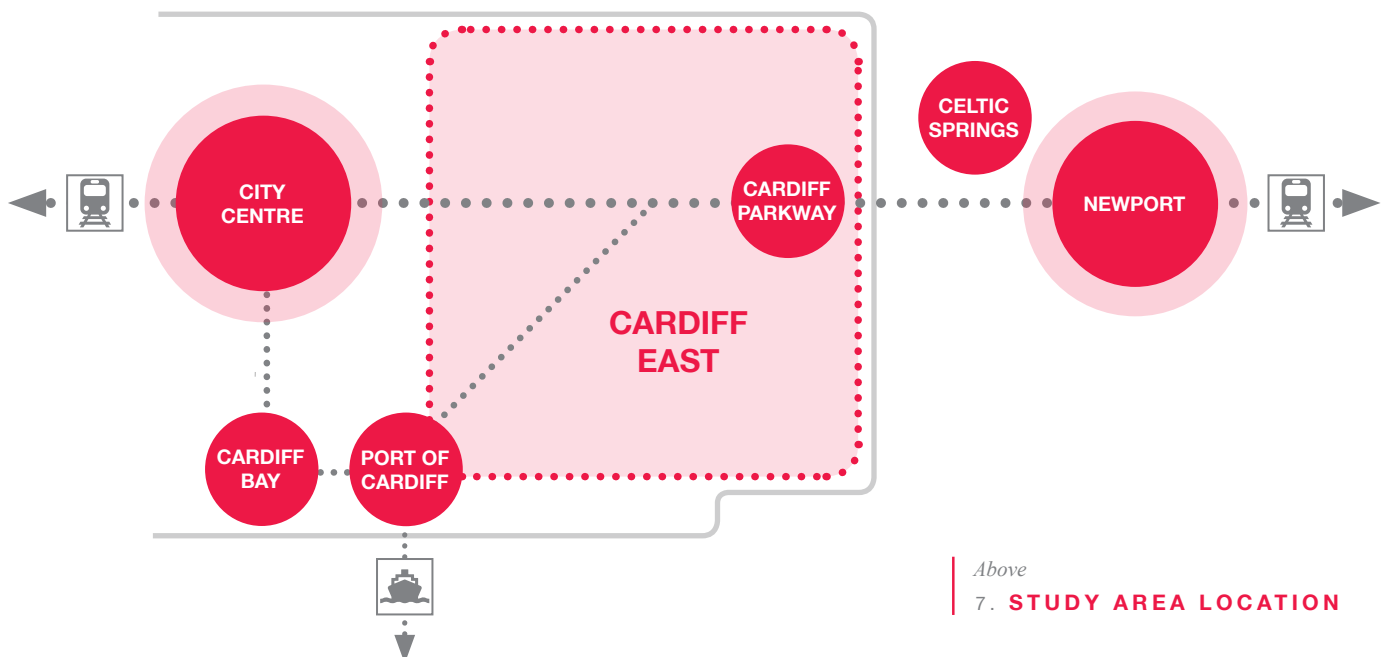
INDUSTRIAL CONTEXT

Cardiff has a low supply of available employment sites, which is further threatened by plans to redevelop and regenerate existing industrial and mixed-use areas including Dumballs Road and incremental losses at Newport Road. There will be increasing pressure on eastern Cardiff to offset these losses and provide new capacity.

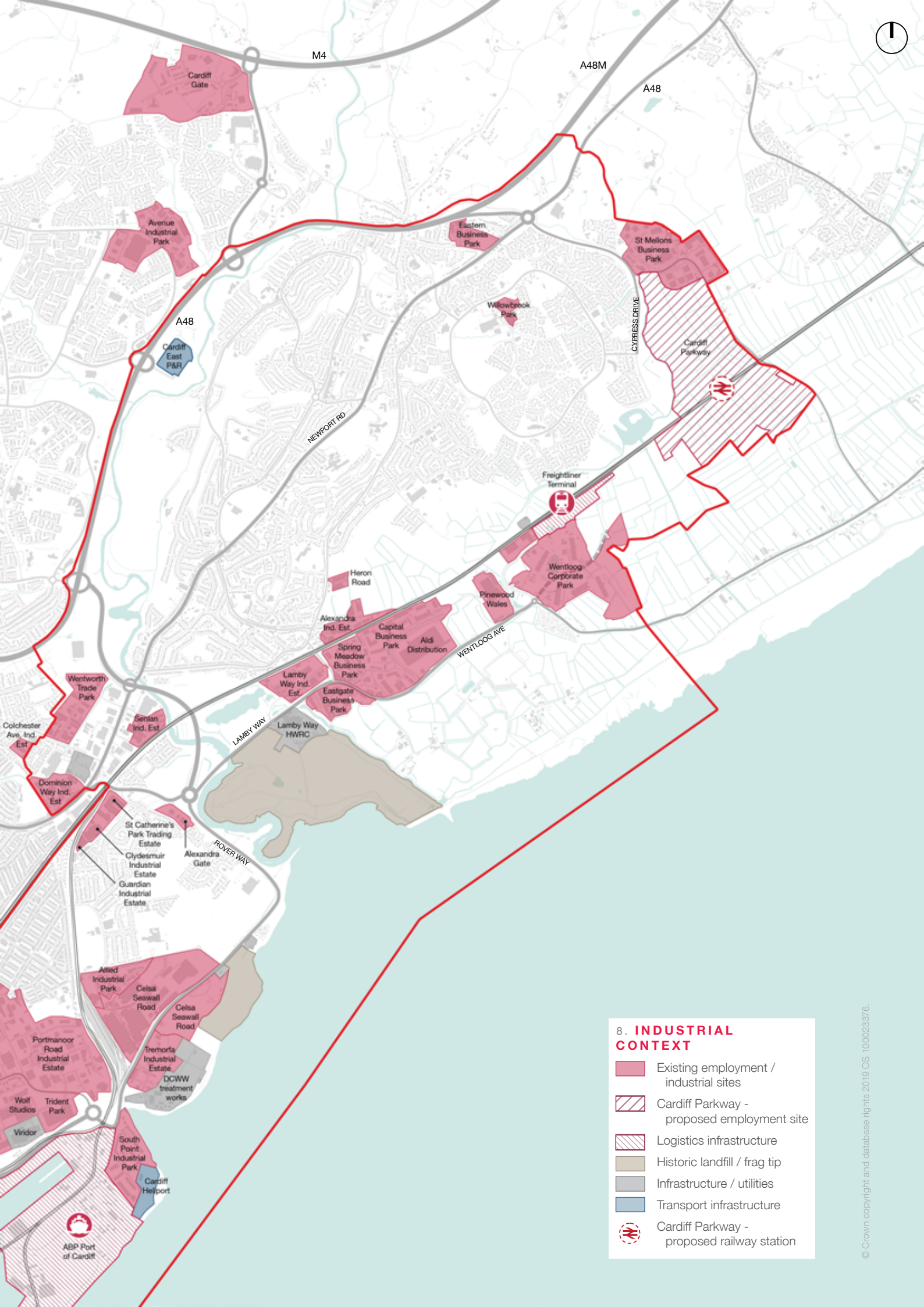
The East Cardiff area has a large number of industrial and employment estates, particularly clustered around the railway lines. There have been incremental changes in use with a number of non-employment activities arising including gyms, sport and leisure activities and specialist retail; Badwolf Studios has added a significant new land use to the area, with potential for growth of related industries.

The Freightliner facility is operated as a Joint Venture by Welsh Government and Cardiff Council. The site has potential for expansion to the east if demand grows.

Access to these areas is car-orientated with poor public transport and active travel connectivity to most areas, including to neighbouring residential areas. Constrained access may reduce scope for logistics developments and use of the Freightliner facility.



Above
7. STUDY AREA LOCATION



8. INDUSTRIAL CONTEXT

- Existing employment / industrial sites
- Cardiff Parkway - proposed employment site
- Logistics infrastructure
- Historic landfill / frag tip
- Infrastructure / utilities
- Transport infrastructure
- M Cardiff Parkway - proposed railway station

3.2 Socio-economic context

THE WELL-BEING OF FUTURE GENERATIONS (WALES) ACT

“The Well-being of Future Generations (Wales) Act 2015 gives us the ambition, permission and legal obligation to improve our social, cultural, environmental and economic well-being.”

The Well-being of Future Generations Act requires public bodies in Wales to think about the long-term impact of their decisions, to work better with people, communities and each other, and to prevent persistent problems such as poverty, health inequalities and climate change.

The Future Generations Act defines Sustainable Development in Wales as: “The process of improving the economic, social, environmental and cultural well-being of Wales by taking action, in accordance with the sustainable development principle, aimed at achieving the well-being goals.” It sets out five ways of working needed for Public Bodies to achieve the seven well-being goals. This approach provides an opportunity for innovative thinking, reflecting the way we live our lives and what we expect of our public services.

An integrated growth plan approach could demonstrate how the seven well-being goals could be achieved.

SOCIAL INFRASTRUCTURE

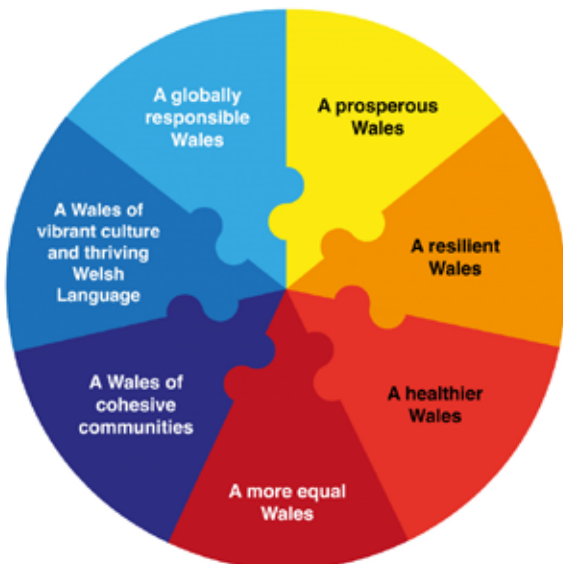
The Cardiff East area is diverse in land use and built environment, with a wide range of land uses sitting alongside and within the extensive residential communities.

The relationship between activities is more successful and symbiotic in some areas than others, with some awkward juxtapositions of housing with industrial or utility infrastructure developments. Other areas, particularly on Rumney Hill, are less diverse, with residents living much further from employment opportunities.

The area currently has a relatively good range of services within and close to residential areas but poor intra-area connectivity (whether by vehicle, active travel or public transport) may limit people’s access and range of choice.

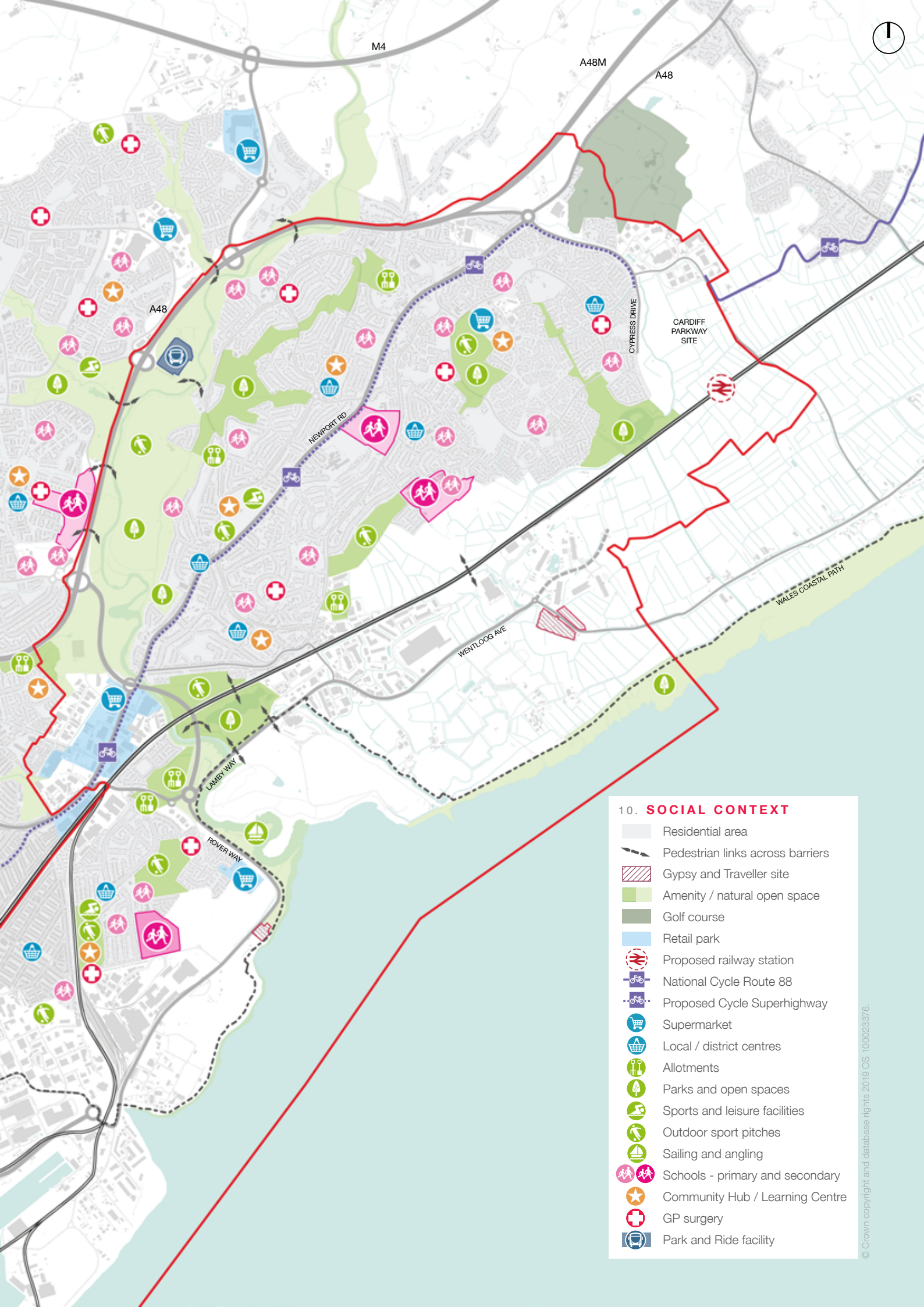
Cardiff East has extensive areas of open space but much of this is either poorly accessible or of a poor quality. Llanrumney is interspersed by swathes of open space which have poor amenity value for their high maintenance requirement. In other areas, housing backs onto amenity spaces.

Peripheral areas of open space are underused, particularly the coastline, which has potential to be a major public asset and a defining feature of the area.



Left

9. WELLBEING OF FUTURE GENERATIONS (WALES) ACT 2015 GOALS



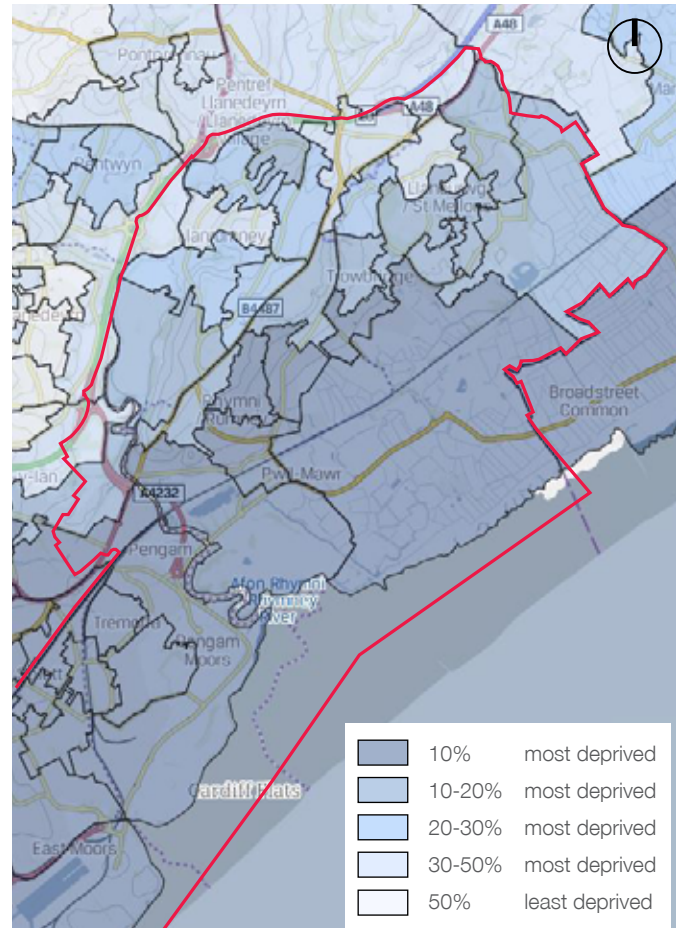
10. SOCIAL CONTEXT

- Residential area
- Pedestrian links across barriers
- Gypsy and Traveller site
- Amenity / natural open space
- Golf course
- Retail park
- Proposed railway station
- National Cycle Route 88
- Proposed Cycle Superhighway
- Supermarket
- Local / district centres
- Allotments
- Parks and open spaces
- Sports and leisure facilities
- Outdoor sport pitches
- Sailing and angling
- Schools - primary and secondary
- Community Hub / Learning Centre
- GP surgery
- Park and Ride facility

WALES INDEX OF MULTIPLE DEPRIVATION 2014

The Wales Index of Multiple Deprivation (WIMD) shows that significant areas of East Cardiff fall within the 20% most deprived in Wales, as part of the ‘Southern Arc’ of deprivation. Proposals and strategies that address eastern Cardiff should take into account the socio-economic issues faced by the area and consider the wider opportunities that investment can bring.

- **Access to Services** is generally relatively good to average, apart from areas around the railway line where accessibility is lower.
- **Physical environment** is generally in the lowest 10% and 20%, particularly in southern areas. The indicator considers Air Concentrations, Air Emissions, Proximity to Waste Disposal and Industrial Sites, and Flood Risk, all of which particularly affect this area of the city.
- **Housing**, a measure of overcrowding and access to central heating, is varied across the area with significant areas of relatively poor and very poor quality.
- **Health** score distribution broadly follows the overall scoring, with particularly high deprivation in Trowbridge, Tremorfa and Splott.
- **Employment** is highly varied with pockets of high deprivation but also areas falling in the lowest deprivation brackets.
- **Income deprivation** is widespread with most areas falling in the 10% and 20% most deprived.
- **Education** is quite clustered with particularly strong deprivation in Trowbridge, northern Llanrumney and Tremorfa.
- **Community safety** scores put most of the area into the 30% most deprived and above.



© Crown copyright and database rights 2019. OS 100023376.

Above

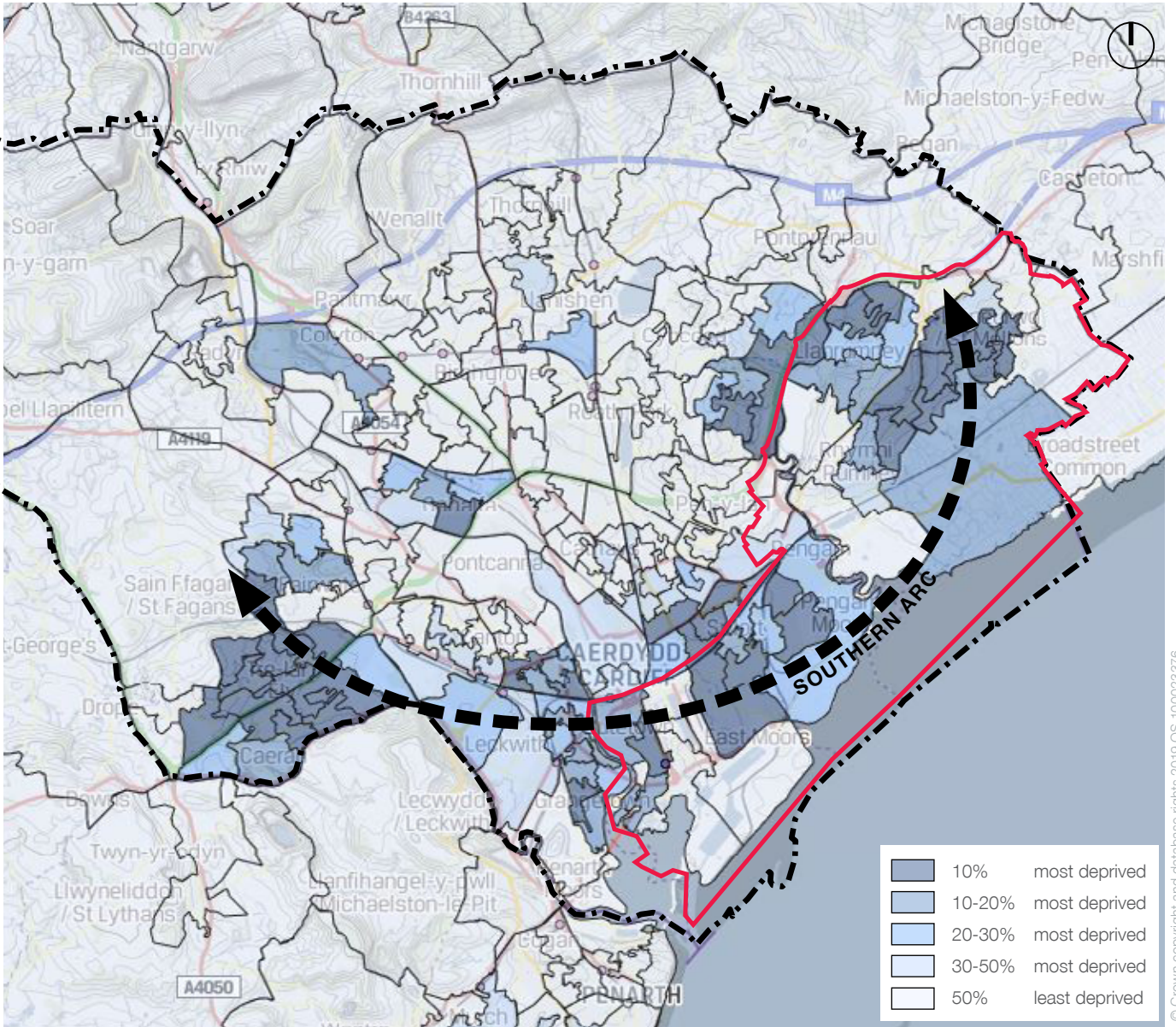
11. PHYSICAL ENVIRONMENT WIMD 2014 SCORE

© Crown copyright Welsh Government 2018. © Crown Copyright and database right 2014. Ordnance Survey 100017916

Right

12. CARDIFF COUNCIL OVERALL WIMD 2014 SCORE

© Crown copyright Welsh Government 2018. © Crown Copyright and database right 2014. Ordnance Survey 100017916



© Crown copyright and database rights 2019 OS 100023376.

3.3 Landscape context

LANDSCAPE CONTEXT

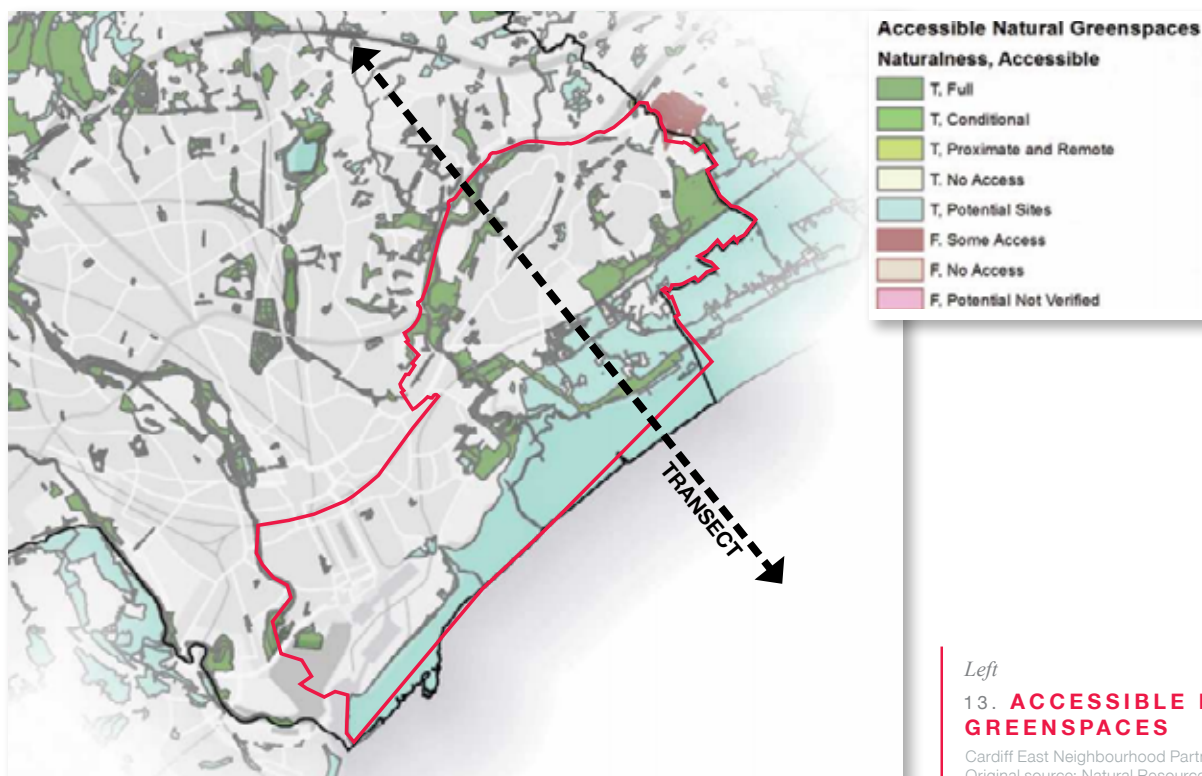
Eastern Cardiff sits within a transition between the hills to the north, at Cefn Mably and Ruperra, through to the Rhymney River Valley, to the Wentloog Levels and Severn Estuary to the south. Areas of residential and employment development interspersed by linear bands of natural landscape and major infrastructure corridors, giving the area a unique diversity.

The Wentloog Levels form part of Wales' largest area of reclaimed wet pasture, crossed by an extensive network of hedgerows and tree belts alongside drainage ditches and reens. The area is considered rich in biodiversity including many nationally rare plant and fauna species. The hand-crafted landscape retains clear historic evidence of settlement, enclosure and drainage with various Roman finds at Rumney Great Wharf.

These linear elements currently form barriers to connectivity, poorly traversed by road and pedestrian/ cycle infrastructure, but could be remodelled as movement corridors and linking spaces, forming a high-quality green infrastructure network with enhanced ecological and recreational value.

Studies by Natural Resources Wales have assessed the existing availability of accessible greenspace across Cardiff East and identified significant potential for new sites, particularly across the Wentloog Levels and along the coastline. There is additional scope to increase connectivity between habitat areas and form area-wide green corridors.

Many publically accessible areas suffer from fly-tipping and require ongoing management and maintenance. Many paths and routes require resurfacing in order to improve access.

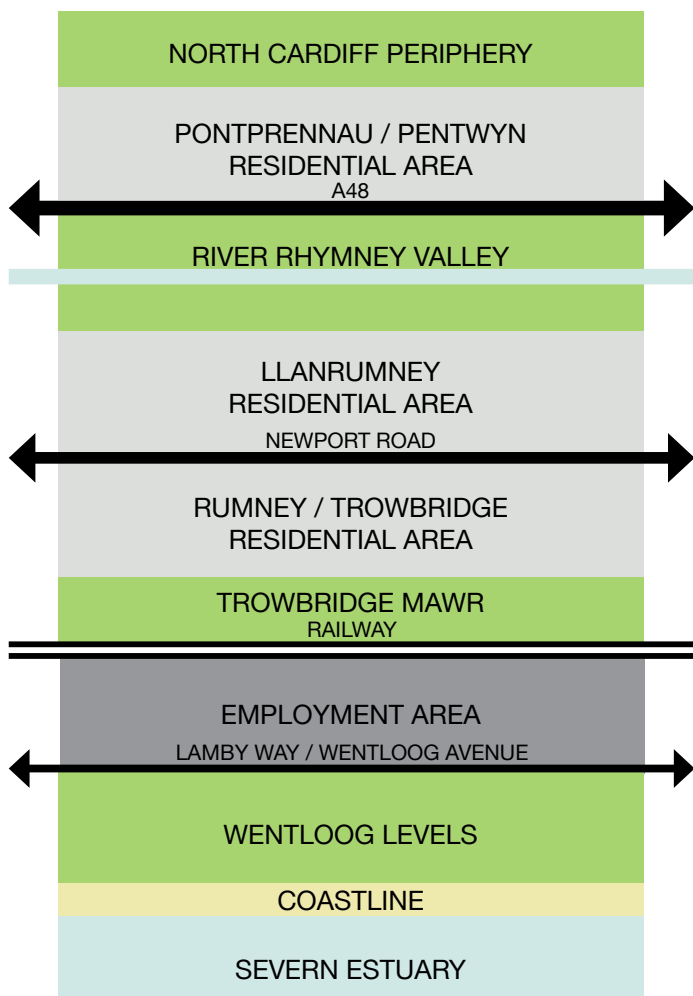


Left

13. ACCESSIBLE NATURAL GREENSPACES

Cardiff East Neighbourhood Partnership Area report. Original source: Natural Resources Wales.

14. **LANDSCAPE TRANSECT**



15. **CURRENT LANDSCAPE CONTEXT**



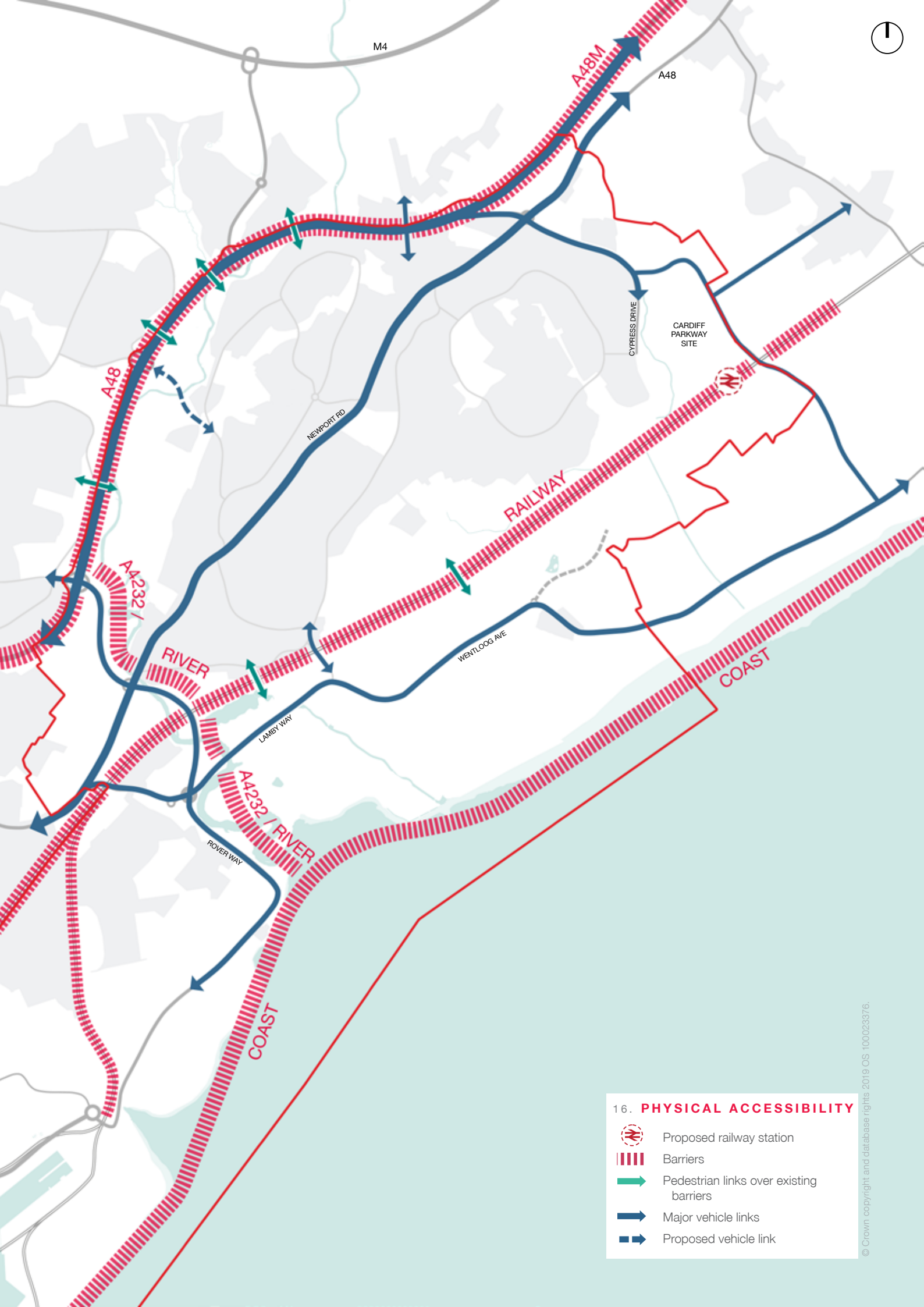
River Rhymney estuary at Rover Way








Wentloog Levels at Cardiff Parkway



Coastline at Wentloog Levels



16. **PHYSICAL ACCESSIBILITY**

-  Proposed railway station
-  Barriers
-  Pedestrian links over existing barriers
-  Major vehicle links
-  Proposed vehicle link

3.4 Transport

The area is served by major highway routes, including the A48M, A48 and A4232, although these form significant barriers to cross-movement and lack pedestrian and cycle facilities along much of the route. The proposed connection between the A48 and Ball Road would significantly increase highway connectivity between the Pentwyn/Pontprennau/Llanederyn and Llanrumney/Trowbridge/St Mellons areas.

The railway, River Rhymney and A-road network are major barriers to movement between residential and employment areas, increasing reliance on cars for access to work and limiting accessibility to the coastal area. The Wales Coastal Path provides a long distance route but has poor quality surfacing in parts, limiting amenity for cyclists, wheelchair users and other groups. The existing routes across the railway are poorly signposted and connected into the wider footpath network, reducing legibility.

Routes across the Rhymney River are limited, with access only available at Lamby Way and Newport Road, with hostile environments around highway junctions. Other routes through the area are also disconnected and poorly identified. Some highway routes lack pedestrian and cycle facilities, including the A4232 and stretches of Rover Way and Wentloog Avenue.

The Wentloog Levels area is currently poorly accessible due to the railway, effectively forming a cul-de-sac accessed from the A4232/Lamby Way roundabout. Crossing points are available to New Road and at Heol Las however these routes have limited capacity and suitability to accommodate larger vehicles. At present, the road through Wentloog Corporate Park is in private ownership but could form a valuable part of a new eastern link road.

PUBLIC TRANSPORT

Residential areas are relatively well served by public transport however most routes are arterial from the city centre and do not provide intra-area connectivity, with particular service gaps between areas east and west of the A48. The industrial areas along Rover Way and Wentloog Avenue are poorly served with only a peak time service from the city centre to Wentloog Corporate Park.

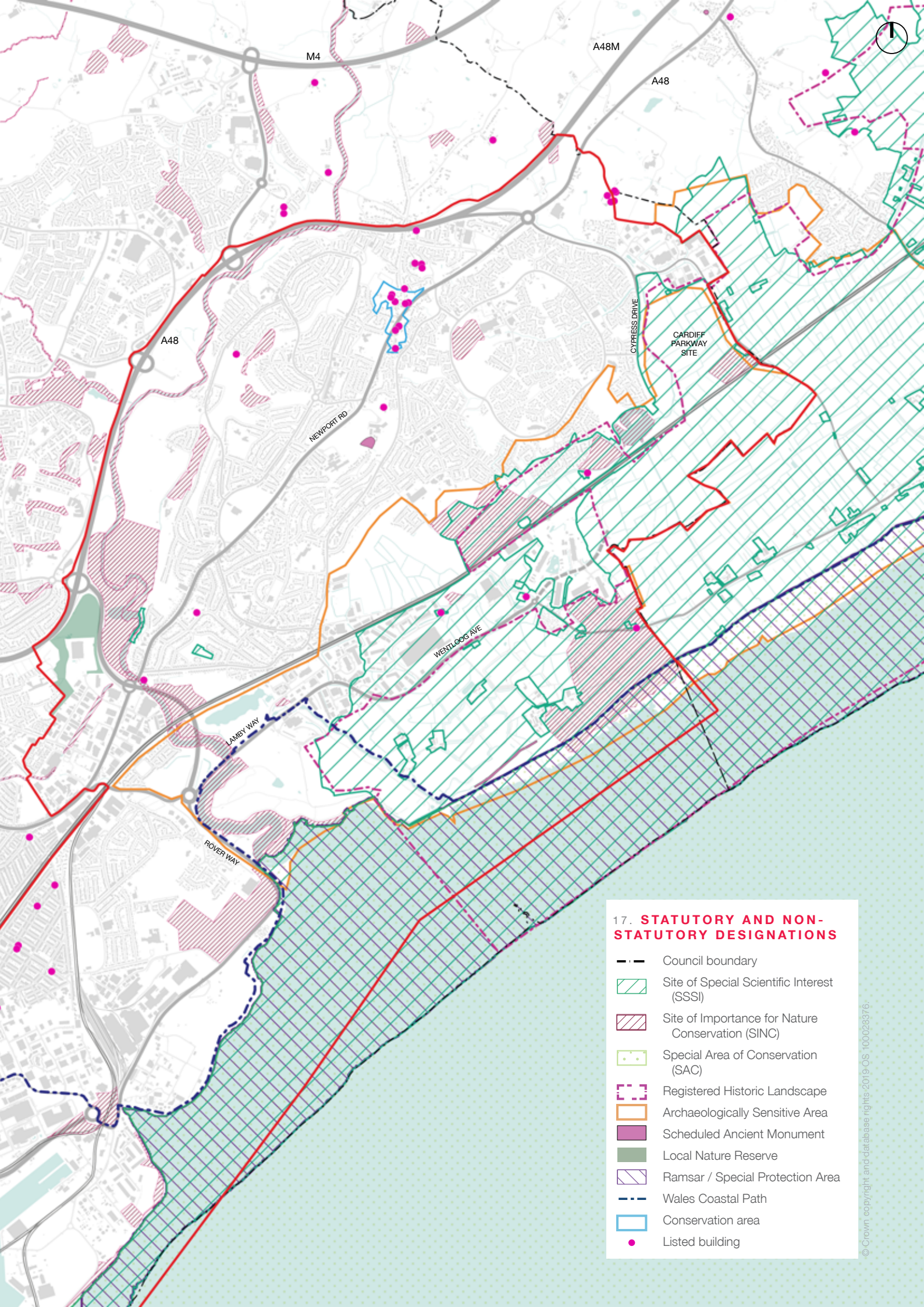
A new railway station is proposed at Cardiff Parkway, giving the area a mainline rail service. The Transport White Paper identifies the opportunity for a light rail service running along the relief lines, linking the City Centre and Cardiff Bay, through Splott/Tremorfa and on to the proposed Cardiff Parkway station.

TRANSPORT AND CLEAN AIR WHITE PAPER






The Transport and Clean Air White Paper is currently being developed on behalf of Cardiff Council. The document is a development on the 2018 Green Paper which includes six core themes: The Future of the Metro & Buses; Active Healthy City; Clean Air City; International Capital City of Business, Work and Culture; The Future for Cars; and Smart City.

One of the 'big ideas' of the Green Paper concerns "Developing the South East Corridor: A major opportunity exists to increase accessibility for residents and businesses to the east of Cardiff, one of the city's most deprived and disconnected communities. Aligned with the new Industrial Strategy for the east the city, this would include a new park and ride rail station for St Mellons, the completion of the Eastern Bay Link road, further improvement to Queen Street Station, linked to improved cycling and walking routes." This concept is being developed into specific proposals and strategies in the White Paper.

An initial outline of the transport vision was revealed by the Council in July, which included proposals for a light rail/tram line that connects central Cardiff with major population centres to the east and west, proposed to eventually terminate at a Cardiff Parkway station in the east.



17. STATUTORY AND NON-STATUTORY DESIGNATIONS

-  Council boundary
-  Site of Special Scientific Interest (SSSI)
-  Site of Importance for Nature Conservation (SINC)
-  Special Area of Conservation (SAC)
-  Registered Historic Landscape
-  Archaeologically Sensitive Area
-  Scheduled Ancient Monument
-  Local Nature Reserve
-  Ramsar / Special Protection Area
-  Wales Coastal Path
-  Conservation area
-  Listed building

3.5 Heritage and environmental designations

Eastern Cardiff is subject to a number of statutory and non-statutory designations at a national and local level of importance.

The Wentloog Levels area is protected by a number of overlapping designations for both ecological and historic value, including the Gwent Levels (Rumney and Peterstone) Site of Special Scientific Interest (SSSI) and Gwent Levels Registered Historic Landscape.

Site of Importance for Nature Conservation (SINC) designations protect specific additional habitat areas including woodland, river and stream corridors, Pengam Moors and Hendre Lake.

The built heritage is recognised through individual listed building designations and the conservation area at Old St Mellons.

The Wales Coastal Path provides a continuous footpath along the Severn and Rhymney River estuaries, providing public access to the coastline.

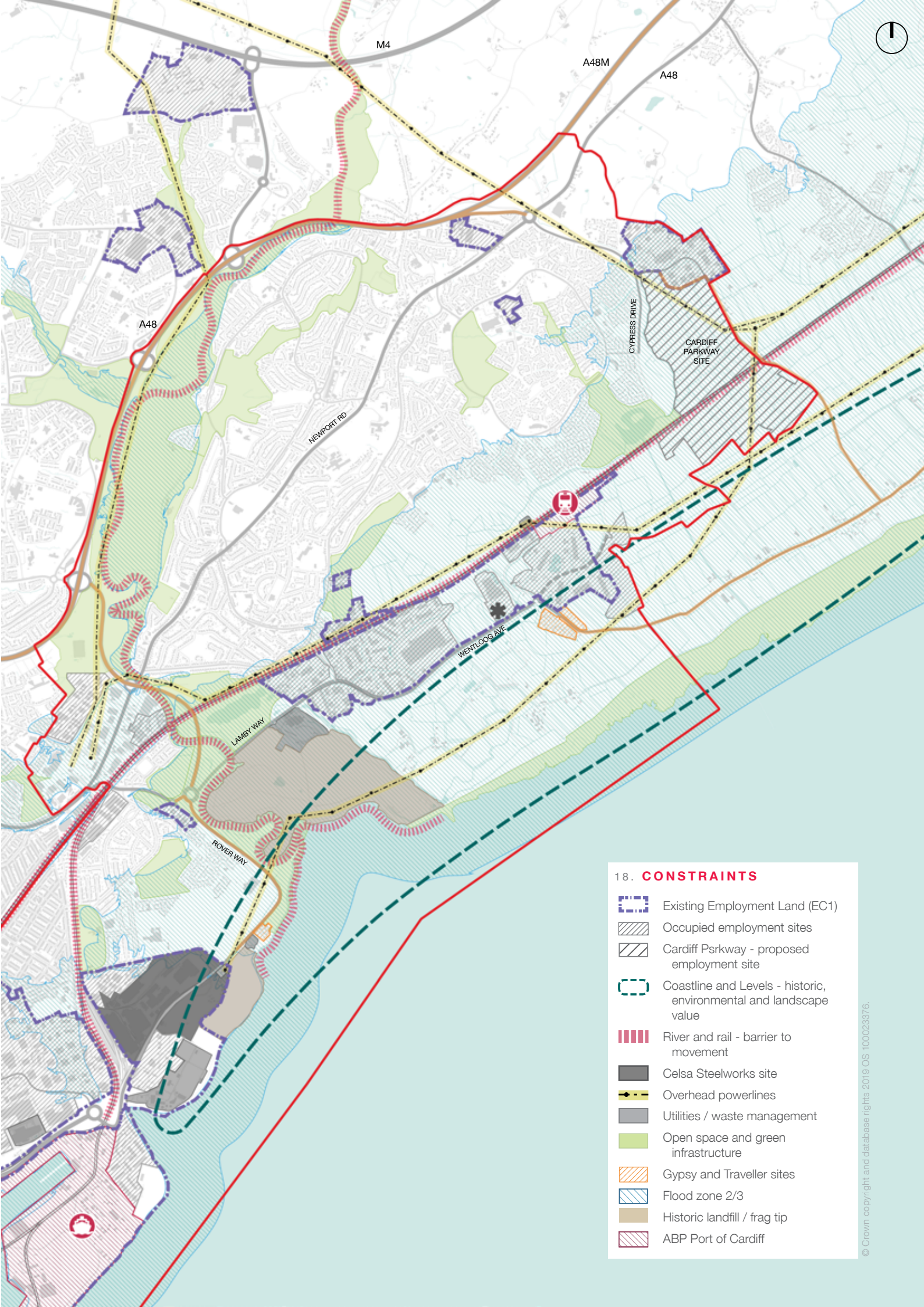
Development within the Wentloog Levels should have regard to the joint report by Cardiff Council, Countryside Council for Wales and Welsh Development Agency, "Landscape Study of Cardiff - Volume 2: Design Guidelines for the Wentloog Levels (1999).

Due to the potential for well-preserved historic finds across the Levels, development should also be informed by appropriate archaeological research and on-site investigations.

FLOOD RISK

The vast majority of the area lies within Flood Zones 2 and 3, vulnerable to coastal flooding from the Severn Estuary and fluvial flooding along the River Rhymney. Surface water flooding is an additional issue due to the low-lying flat land, sitting below residential areas on the Rumney hill.

Cardiff Council has commissioned a Coastal Defence Detailed Design and Full Business Case study to identify options to protect land around the Rhymney River estuary from flooding and erosion. The design solution has not been finalised and will be selected following a period of public consultation in 2019.



18. **CONSTRAINTS**

-  Existing Employment Land (EC1)
-  Occupied employment sites
-  Cardiff Prskway - proposed employment site
-  Coastline and Levels - historic, environmental and landscape value
-  River and rail - barrier to movement
-  Celsa Steelworks site
-  Overhead powerlines
-  Utilities / waste management
-  Open space and green infrastructure
-  Gypsy and Traveller sites
-  Flood zone 2/3
-  Historic landfill / frag tip
-  ABP Port of Cardiff

3.6 Site summary

The plan, left, summarises the major constraints affecting development potential within the eastern Cardiff area.

- Existing Employment Land (EC1): Much of the land designated as Employment land has already been built out with few sites available.
- Cardiff Parkway: The Cardiff Parkway development is a significant opportunity for the area and may be a catalyst and anchor development for further growth, however there is no current planning consent in place for the proposals. Highway improvements will be required to facilitate the scheme but are not confirmed.
- Coastline and Levels: The Severn Estuary and Wentloog Levels area have significant historic, environmental and landscape value, protected by a number of local and national designations. Development in this area will require careful design and potentially significant negotiation with stakeholders including Natural Resources Wales. Some areas may be considered undevelopable.
- River and rail: The Rhymney River and railway are considerable barriers to pedestrian/cycle and vehicle movement, limiting access to jobs and services and reducing the potential for expansion and diversification of employment development.
- Celsa Steelworks site: The site is a major employment and has a large local supply chain, however workers and associated vehicle movements can impact traffic flows on Rover Way.
- Overhead powerlines: The powerlines have a visual impact and constrain development under and around their route.
- Open space and green infrastructure: The area has major green infrastructure corridors along the Rhymney River, and Severn Estuary/Wentloog Levels however these are poorly accessed, under promoted and lack visitor amenity.
- Utilities and waste management infrastructure: The existing sites may be undesirable neighbours for potential development due to environmental health issues, including noise, odour and air quality.
- Flood risk: The major flood risk across the east Cardiff area means significant investment is required in fluvial/tidal flood protection works and sustainable drainage in order to open up development plots.
- Historic landfill and frag tip: These two sites have some potential for redevelopment but require extensive remediation.
- ABP Port of Cardiff: The site has a major role in supporting Cardiff's economy but limits highway access towards the Bay area and blocks public access to the coastline. Further development at the site may be limited by congestion on the local highway network and poor mainline rail connectivity.

3.7 Current knowledge gaps

At present, there are a number of current knowledge gaps and unconfirmed proposals that affect the validity of the proposals within this report will impact on the delivery of employment and other growth in the Cardiff East area.

GROUND CONDITIONS AND FLOODING

- Ground conditions and potential for rehabilitation and redevelopment of Lamby Way landfill site.
- Current activities and ground conditions on land south of Wentloog Avenue.
- Coastal defence scheme not determined - extent of land protected and the footprint of the defence works are unknown.
- Technical feasibility and environmental acceptability (by NRW) of remodelling green network.

INFRASTRUCTURE

- Easements to overhead lines.
- Underground utilities - location, easements and capacity, including high-speed internet connectivity.
- Generation potential for renewable energy on Wentloog Levels.
- Potential of existing facilities to create district heating network.

DEVELOPMENT SITES

- Future growth and/or relocation plans of existing occupiers and related requirements and desirable enhancements.
- Layout, land use and delivery timescale of Cardiff Parkway. The proposed Cardiff Parkway development (including the new station, park and ride, employment development and access improvements) will anchor the far eastern edge of the East Cardiff zone. This private sector-led development will deliver transformational change and will do much to alter the perception of the area and build a more positive image in the minds of investors and residents alike.

TRANSPORT AND ACCESS

- Delivery timescale of Cardiff Parkway station and related infrastructure improvements.
- Certainty of proposals for light rail on relief lines.

ENVIRONMENTAL

- Ecological and arboricultural value of specific sites.

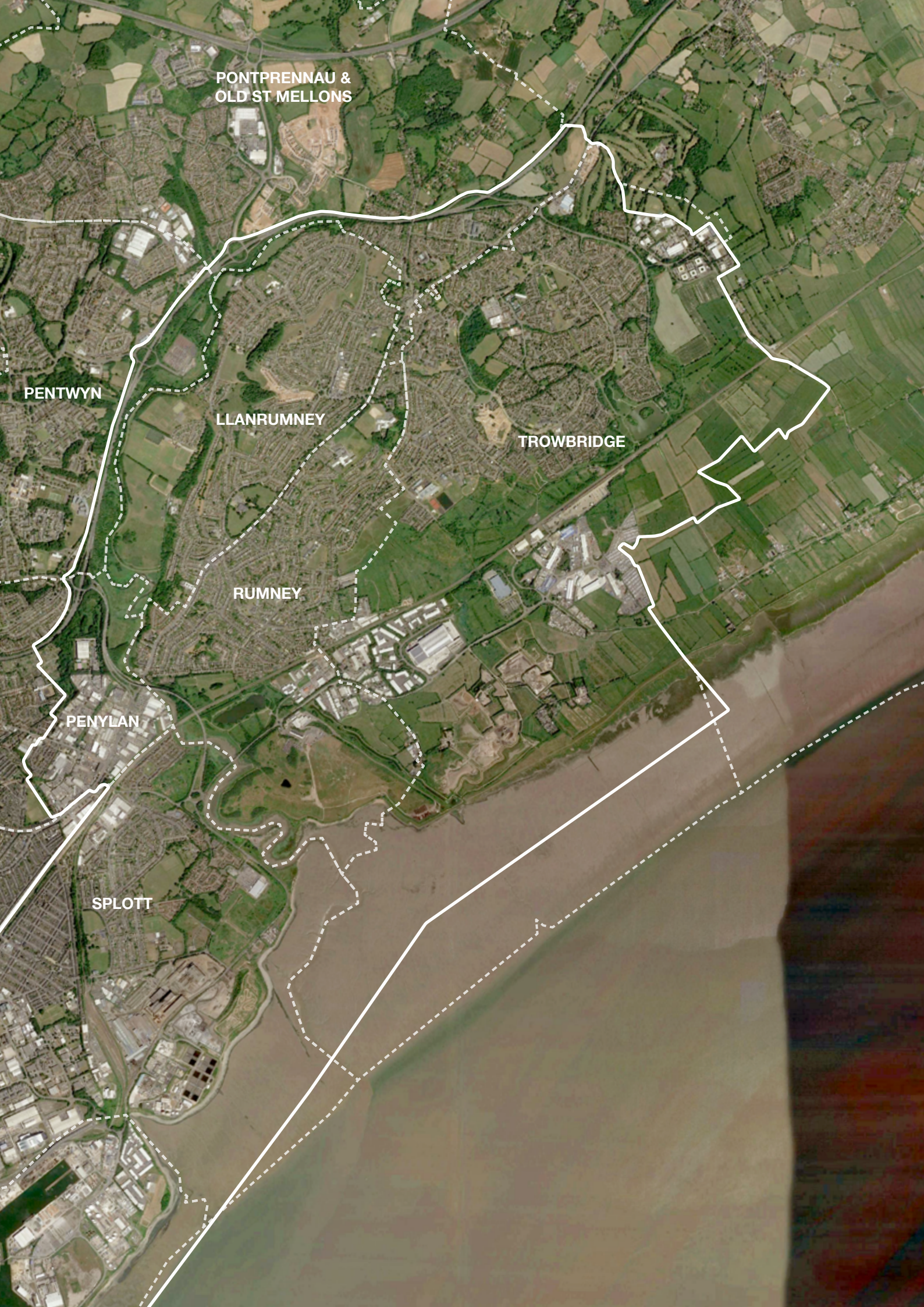
TRANSPORT AND ACCESSIBILITY

- Traffic surveys, pedestrian counts and public transport user data.
- Current proposals for Eastern Link Road.

Right

19. **CARDIFF EAST - AERIAL PHOTO**

© Google



PONTPRENNAU &
OLD ST MELLONS

PENTWYN

LLANRUMNEY

TROWBRIDGE

RUMNEY

PENYLAN

SPLOTT

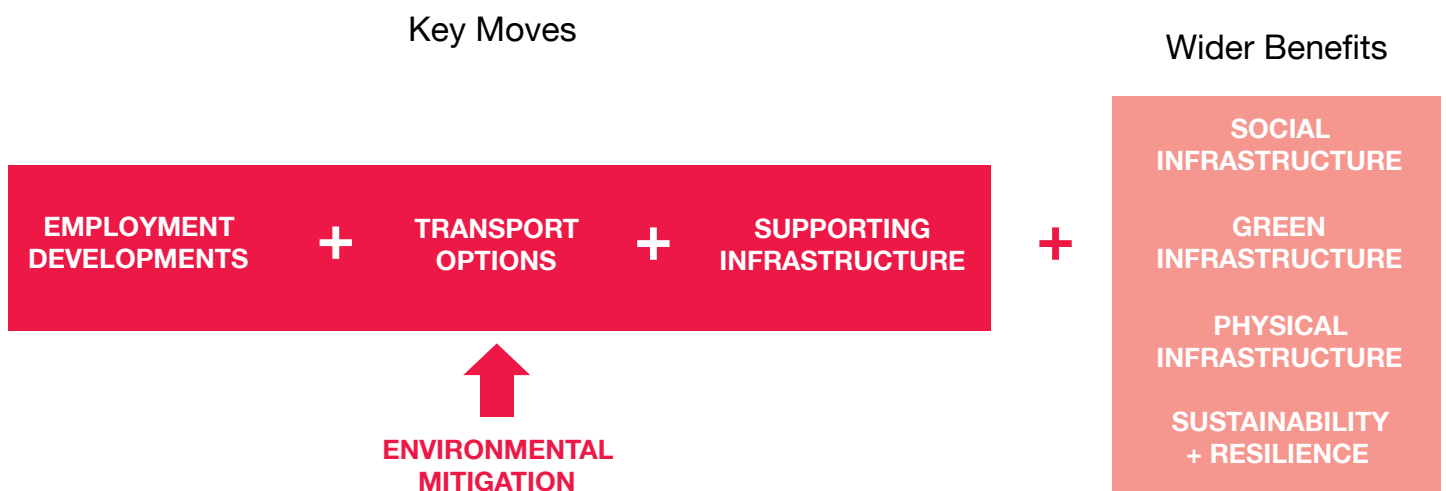
4. TOWARDS A VISION

4.1 Transforming East Cardiff

An integrated and comprehensive approach to all development across the East Cardiff area is essential to ensuring that employment expansion forms a coherent, sustainable and resilient part of the urban and social fabric.

The proposals are expressed as a series of Phases demonstrating a scale of employment growth across East Cardiff. These Phases demonstrate:

- **Key moves**, including:
 - Employment development areas and indicative land uses;
 - Transport and movement improvements; and
 - Essential supporting infrastructure.
- **Wider benefits** (discussed in Section 5), grouped into:
 - Green infrastructure;
 - Wider transport and movement opportunities;
 - Physical infrastructure; and
 - Social-economic infrastructure.





Above

20. **CARDIFF EAST
DEVELOPMENT APPROACH**

4.2 Phases of Growth

The plans in this section show potential Phases for growth of employment development and the required supporting infrastructure.

The Phases focus on key developments and strategic moves required to support employment growth in the area. Wider benefits and inclusive growth are explored in more detail in Section 5.

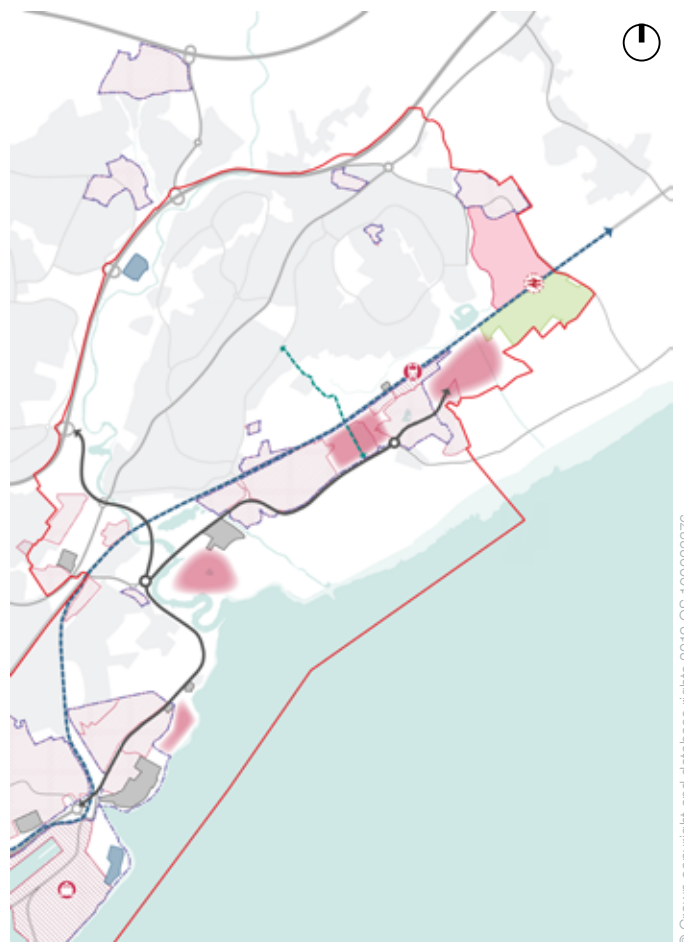
The Phases are presented as high-level concepts and may represent end positions or growth over time. These Phases are subject to feasibility. The Phases are based on the assumption of growth facilitating greater opportunity.

Phases may be developed out in whole or in part, with individual elements borrowed from other Phases. Sites shown are areas of search; plots may include areas of parking, sustainable drainage, flood protection and landscape/public realm and are not intended to represent full plot coverage. Some sites may be required for environmental mitigation; this will be determined following further technical studies. Site development should allow links through to adjacent land to facilitate future growth and redevelopment.

The identified sites have potential for a range of employment and related land uses. Indicative uses have been identified, based on neighbouring activities and prominence within the landscape, positioning smaller B2 uses on the periphery to hide larger B2 and B8 uses, avoiding 'big box' development dominating the new urban edge.

All Phases show development at Cardiff Parkway, the construction of a new mainline railway station and allow for a rapid transit corridor from Cardiff Bay to East Cardiff. This site will act as a major catalyst for regeneration and will form part of a 'dumbbell' approach to regeneration that will see major anchors in Cardiff Bay and Cardiff Parkway bookend the East Cardiff Industrial Strategy.

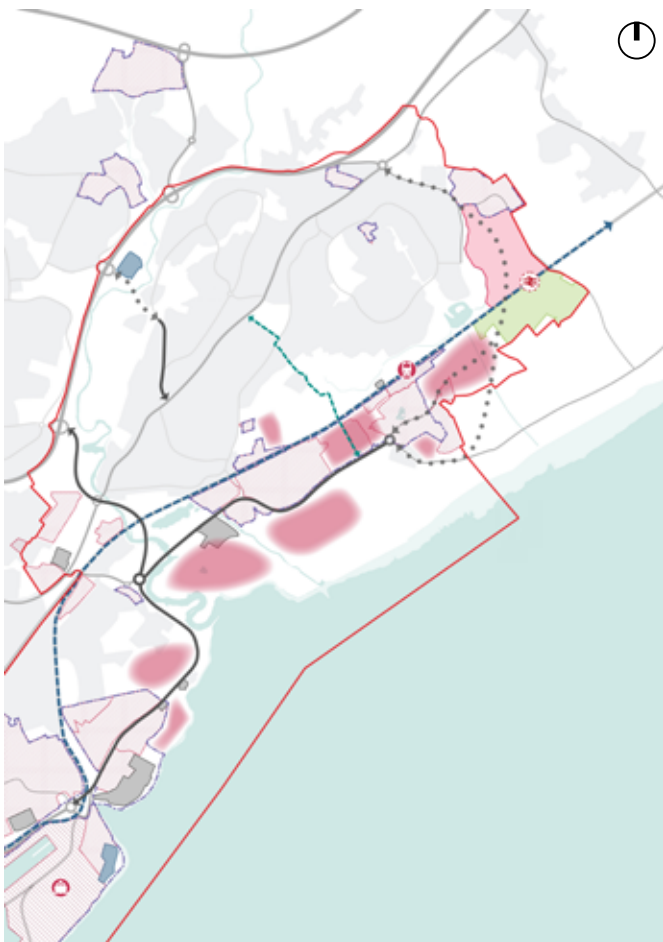
21. PHASE 1 - FILLING IN THE GAPS



© Crown copyright and database rights 2019 OS 100023376.

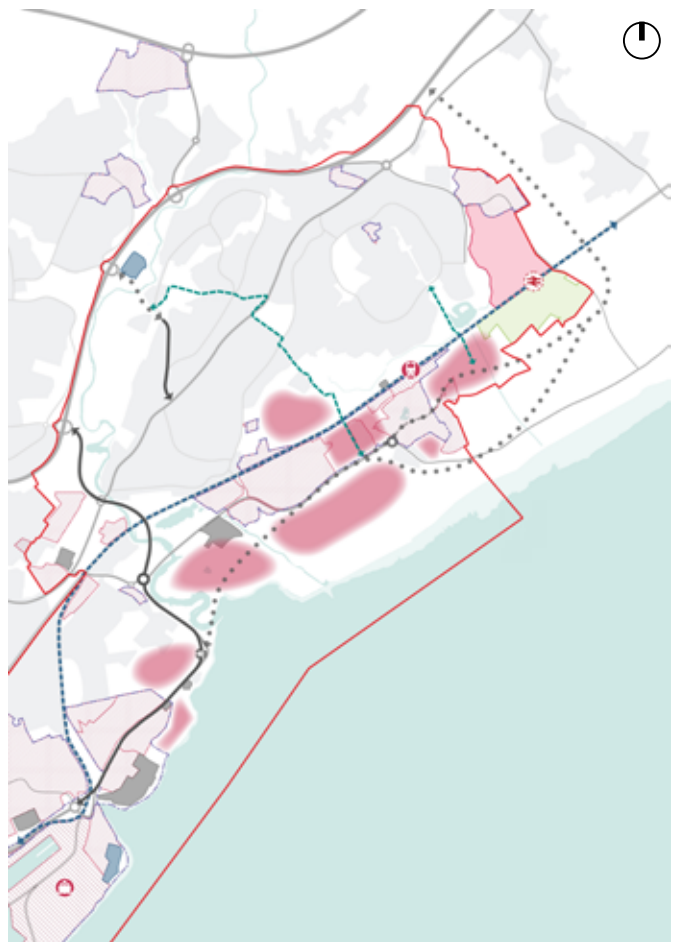
- Low scale of development: infill between existing employment land and remediation of landfill sites.
- Enhancement of existing highway network.

22. PHASE 2 - EXPANDING TO THE SOUTH



- Increased scale of development including land to the south of Wentloog Avenue, land at Pengam Moor and minor development at Trowbridge Mawr.
- Development of new highway links between Rover Way and A48M/A48.

23. PHASE 3 - OPTIMISING THE OPPORTUNITY



- Development across all available land south of the railway and with land reconfiguration at Trowbridge Mawr.
- Major new highway link between Rover Way and A48M/A48.

Note: These Phases have no status and would be subject to all the necessary approvals and appropriate decisions.

4.3 Phase 1

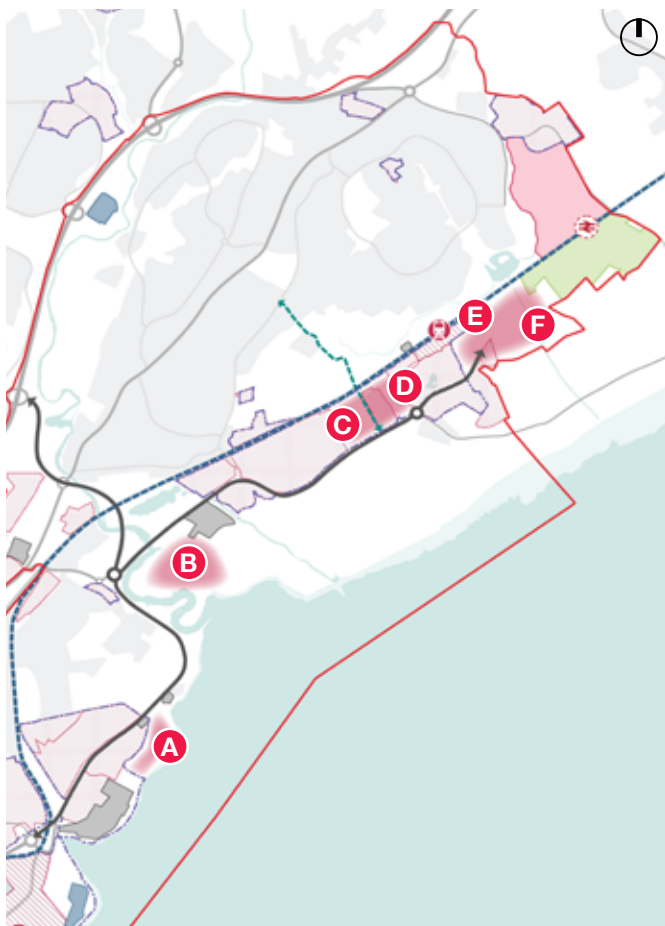
Filling in the gaps - Expanding from Lamby Way to the east

OVERVIEW

Phase 1 builds from the existing development context without releasing large areas of currently open or undeveloped land. The associated improvements to movement and accessibility are restricted to existing corridors. It also opens up opportunities to begin the development of east Cardiff from Lamby Way moving eastwards.

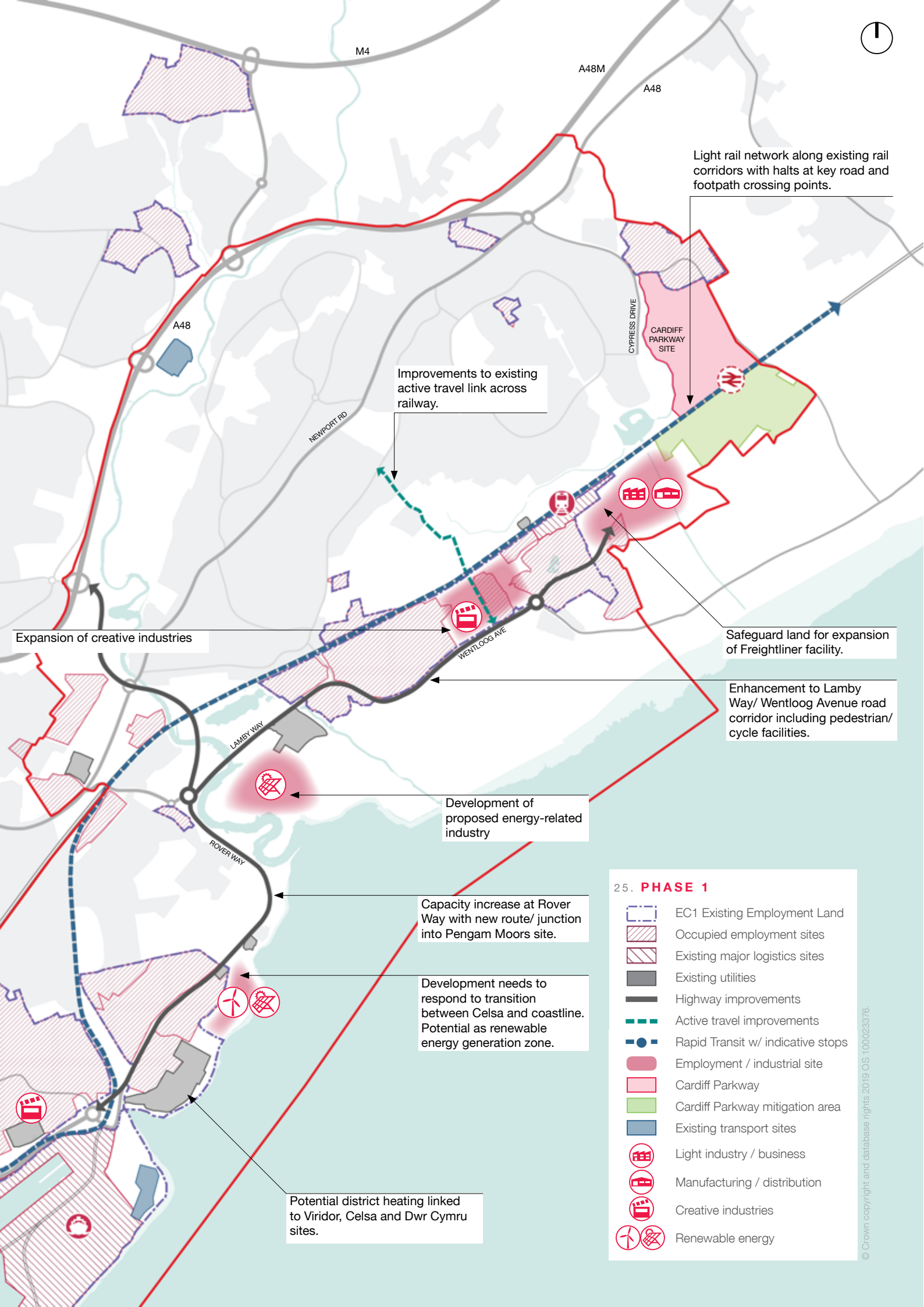
KEY MOVES

- Infill gaps within existing EC1 Existing Employment Land designated areas, notably at Wentloog Avenue/ Lamby Way. Potential for a mix of employment uses including expansion of creative industries, building on Badwolf Studios.
- Opportunities for renewable energy generation on the historic landfill and frag tip sites, in line with the recently approved planning application for 32,000 panels at Lamby Way.
- Scope for remodelling existing employment areas with consideration of potential for remodelled/replacement units, parking areas and localised public realm/landscape enhancements, including consideration of sustainable drainage and biodiversity enhancements.
- Enhancements to existing highway corridors including increased road capacity and flow, improved pedestrian and cycle facilities (where appropriate), and public realm and wayfinding enhancements. Enhancements to the Rover Way route have potential to take traffic off the western end of Newport Road and reduce rat-running in the Splott and Tremorfa residential areas.
- New and enhanced pedestrian and cycle links between residential and employment areas, including alignment, route width, surfaces, lighting and wayfinding. The key route is the Trowbridge Road/ railway overbridge route which requires enhancement, promotion and realignment south of the railway.



Plot	Area (Hectares)
A	15 ha
B	29 ha
C	12 ha
D	8 ha
E	9 ha
F	36 ha

Sites shown are areas of search and approximate areas. Plots may include areas of parking, sustainable drainage, flood protection and landscape/public realm and are not intended to represent full plot coverage.



Light rail network along existing rail corridors with halts at key road and footpath crossing points.

Improvements to existing active travel link across railway.

Expansion of creative industries

Safeguard land for expansion of Freightliner facility.

Enhancement to Lambby Way/ Wentloog Avenue road corridor including pedestrian/ cycle facilities.

Development of proposed energy-related industry

Capacity increase at Rover Way with new route/ junction into Pengam Moors site.

Development needs to respond to transition between Celsa and coastline. Potential as renewable energy generation zone.

Potential district heating linked to Viridor, Celsa and Dwr Cymru sites.

25. PHASE 1

- EC1 Existing Employment Land
- Occupied employment sites
- Existing major logistics sites
- Existing utilities
- Highway improvements
- Active travel improvements
- Rapid Transit w/ indicative stops
- Employment / industrial site
- Cardiff Parkway
- Cardiff Parkway mitigation area
- Existing transport sites
- Light industry / business
- Manufacturing / distribution
- Creative industries
- Renewable energy

4.4 Phase 2

Expanding to the south

OVERVIEW

Phase 2 sees expansion into undeveloped land adjacent to existing employment areas. This expansion is supported by new highway links that improve access to work while improving potential of the land for B8 uses and expansion of operations at Freightliner.

KEY MOVES

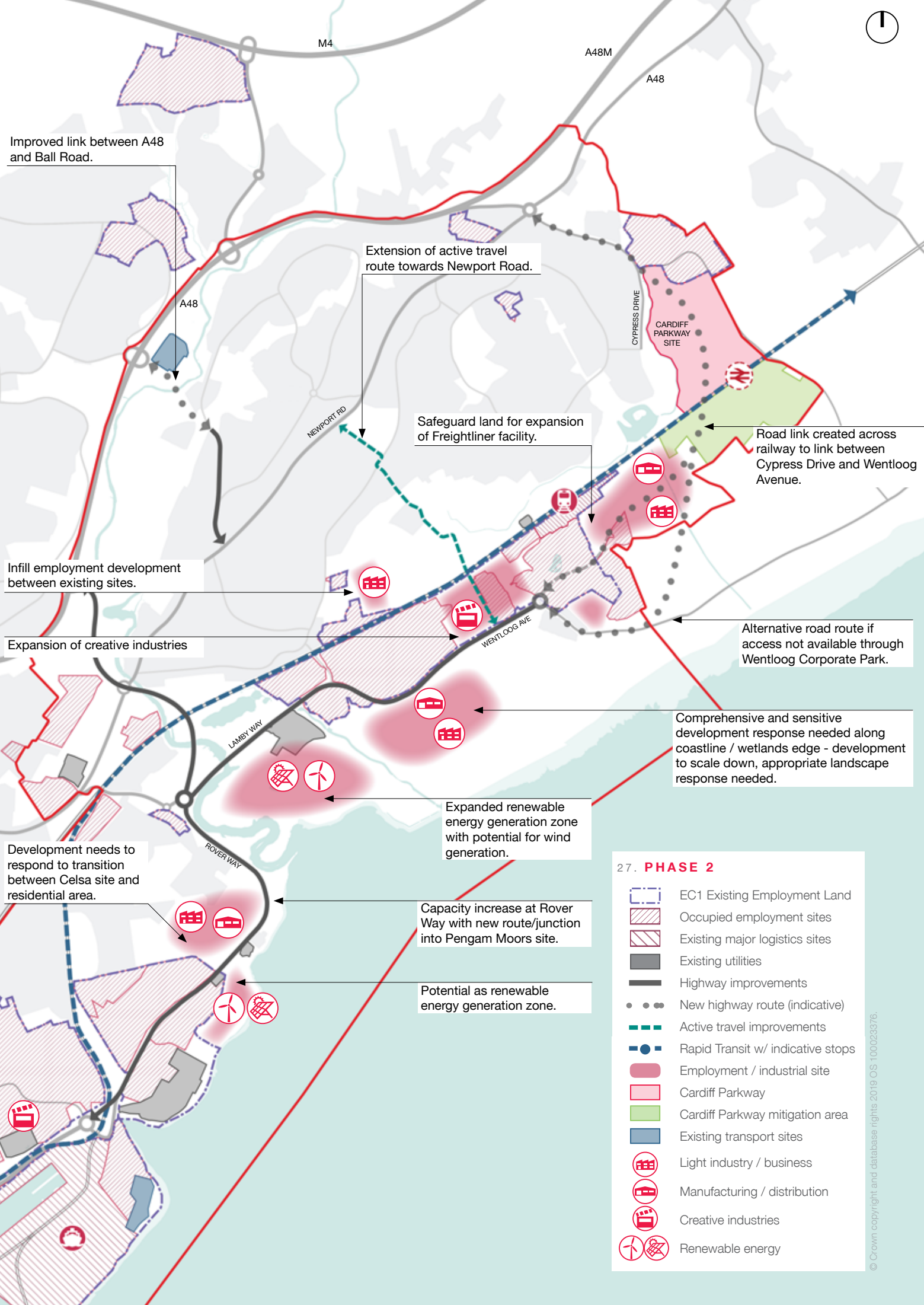
As Phase 1, plus:

- Development parcels opened up to the south of Lamby Way/Wentloog Avenue, extending (to a maximum) as far south as the existing overhead powerlines.
- Minor development at Trowbridge Mawr between existing employment sites. Development at Pengam Moor, transitioning from the Celsa site and existing employment edge towards existing residential areas.
- Creation of new highway link with the potential to relieve pressure on Newport Road and reduce rat-running in residential areas. Alignment and junctions will be subject to further feasibility and dependent on proposals for Cardiff Parkway.
- New highway link from A48 to Ball Road, improving regional connectivity to Cardiff East and local routes to Cardiff Gate and residential areas.
- Continuation of Trowbridge Road active travel corridor towards Newport Road.



Plot	Area (Hectares)
A	15 ha
B	29 ha
C	12 ha
D	8 ha
E	9 ha
F	36 ha
G	8 ha
H	7 ha
I	40 ha
J	16 ha
K	24 ha
L	7 ha
M	17 ha

Sites shown are areas of search and approximate areas. Plots may include areas of parking, sustainable drainage, flood protection and landscape/public realm and are not intended to represent full plot coverage.



Improved link between A48 and Ball Road.

Extension of active travel route towards Newport Road.

Safeguard land for expansion of Freightliner facility.

Road link created across railway to link between Cypress Drive and Wentloog Avenue.

Infill employment development between existing sites.

Alternative road route if access not available through Wentloog Corporate Park.

Expansion of creative industries

Comprehensive and sensitive development response needed along coastline / wetlands edge - development to scale down, appropriate landscape response needed.

Expanded renewable energy generation zone with potential for wind generation.

Development needs to respond to transition between Celsa site and residential area.

Capacity increase at Rover Way with new route/junction into Pengam Moors site.

Potential as renewable energy generation zone.

27. PHASE 2

- EC1 Existing Employment Land
- Occupied employment sites
- Existing major logistics sites
- Existing utilities
- Highway improvements
- New highway route (indicative)
- Active travel improvements
- Rapid Transit w/ indicative stops
- Employment / industrial site
- Cardiff Parkway
- Cardiff Parkway mitigation area
- Existing transport sites
- Light industry / business
- Manufacturing / distribution
- Creative industries
- Renewable energy

4.5 Phase 3

Optimising the opportunity

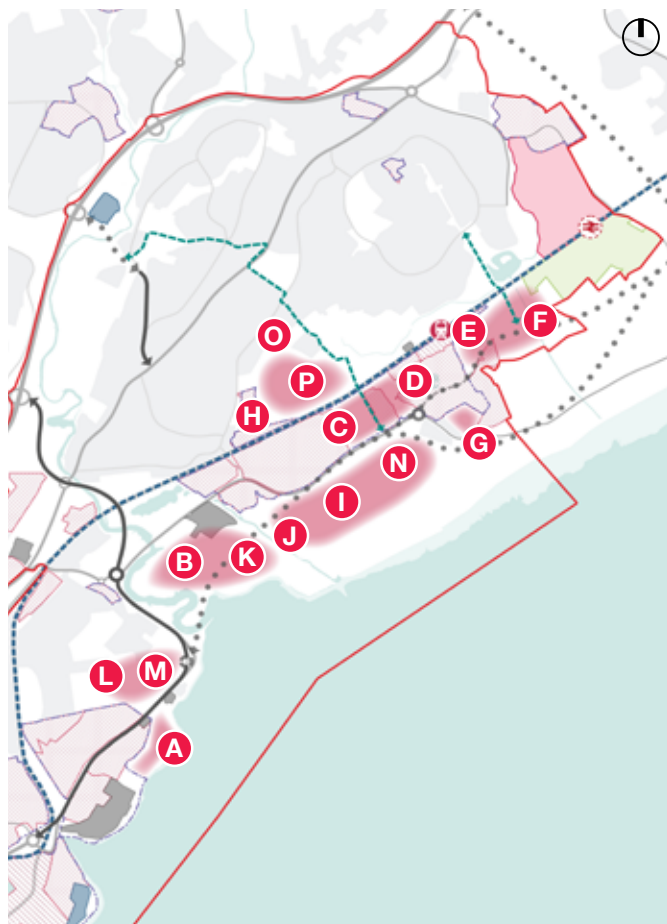
OVERVIEW

Phase 3 maximises the development opportunity at Cardiff East, balanced against the sensitive ecological and landscape context and residential amenity.

KEY MOVES

As Phase 1 and 2, plus:

- Additional development parcels opened up to the south of Lamby Way / Wentloog Avenue, extending (to a maximum) as far south as the existing overhead powerlines.
- Significant infill development at western Trowbridge Mawr on undeveloped land with wider potential for comprehensive development including relocation/ redesign of the existing recreation space (11ha).
- Major road link created between A48M/A48 and Rover Way with the potential for increased highway capacity with greater benefits along existing highway corridors.
- Continuation of Trowbridge Road active travel corridor towards Ball Road and Rhymney River corridor. New active travel link across the railway at Hendre Park Lake.



Plot	Area (Hectares)
A	15 ha
B	29 ha
C	12 ha
D	8 ha
E	9 ha
F	36 ha
G	8 ha
H	7 ha
I	40 ha
J	16 ha
K	24 ha
L	7 ha
M	17 ha
N	29 ha
O	11 ha
P	29 ha

Sites shown are areas of search and approximate areas. Plots may include areas of parking, sustainable drainage, flood protection and landscape/public realm and are not intended to represent full plot coverage.



Improved link between A48 and Ball Road.

Major road link east of Cardiff Parkway linking from A48M/A48 to Wentloog Avenue - alignment and connection TBC.

Complete active travel route from Wentloog Avenue to Ball Road.

Comprehensive development across Trowbridge Mawr - sensitive response needed to adjacent housing and school and recreation space.

New active travel link across railway to Hendre Park Lake.

Alternative road routes - dependent on availability of access through Wentloog Corporate Park.

Comprehensive and sensitive development response needed along coastline / wetlands edge - development to scale down, appropriate landscape response needed.

Expanded renewable energy generation zone with potential for wind generation.

Development needs to respond to transition between Celsa site and residential area.

Direct highway link between Rover Way and Wentloog Avenue to bypass Lamby Way and existing junctions and improve pedestrian/cycle connectivity.

Capacity increase at Rover Way with new junction into Pengam Moors site.

Potential as renewable energy generation zone.

29. PHASE 3

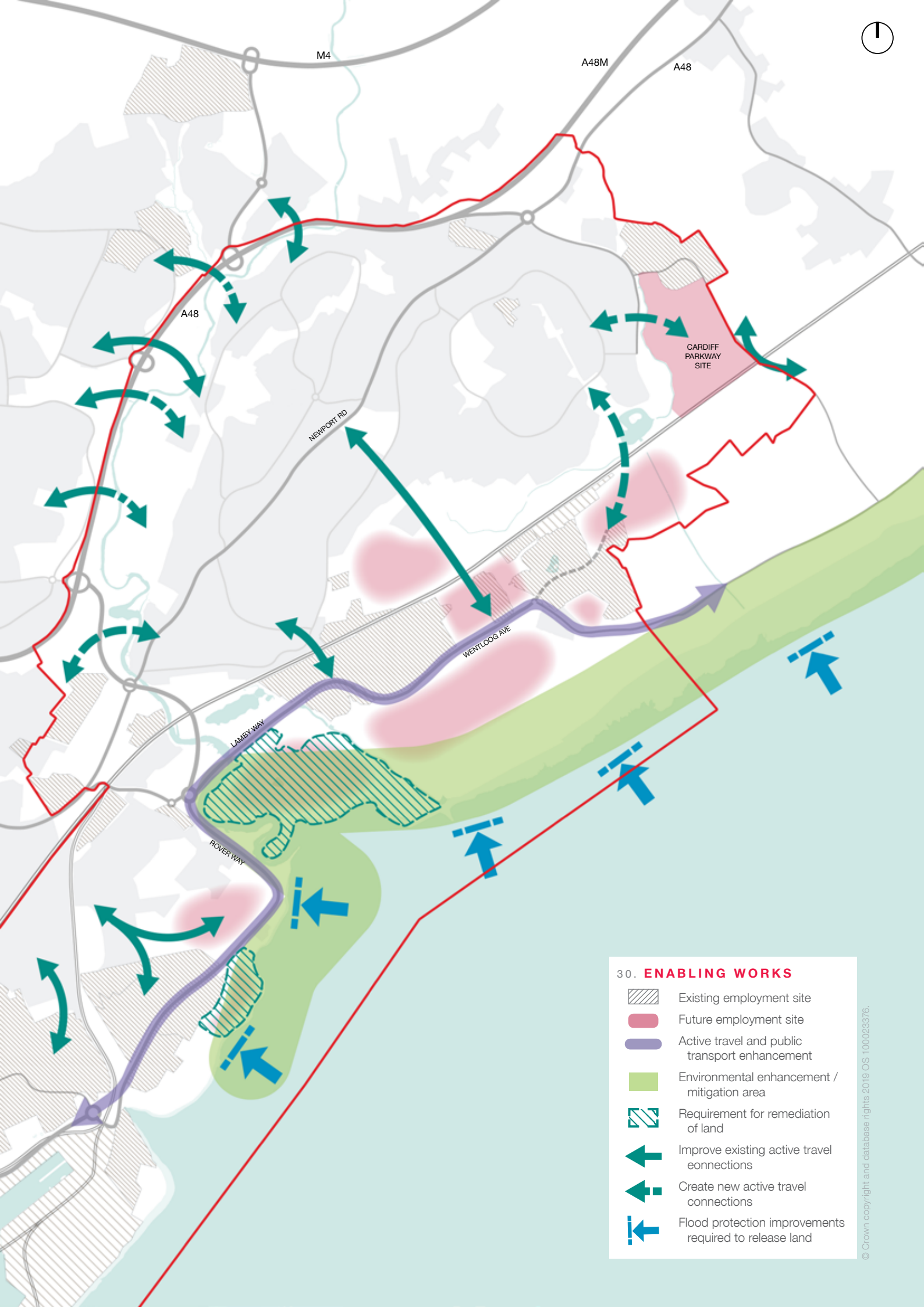
- EC1 Existing Employment Land
- Occupied employment sites
- Existing major logistics sites
- Existing utilities
- Highway improvements
- New highway route (indicative)
- Active travel improvements
- Rapid Transit w/ indicative stops
- Employment / industrial site
- Cardiff Parkway
- Cardiff Parkway mitigation area
- Existing transport sites
- Light industry / business
- Manufacturing / distribution
- Creative industries
- Renewable energy

4.6 Supporting infrastructure

OVERVIEW

Expansion of employment development at Cardiff East requires enhancements to existing road and utility infrastructure balanced against preservation of the area's valuable natural landscape.

- Environmental enhancement, habitat creation and biodiversity mitigation areas required to offset any loss of habitat and water retention areas caused by development. These could be further enhanced beyond minimum requirements, to provide leisure and recreation benefits and a net gain in biodiversity (discussed in section 5.1).
- Flood protection works are required to protect existing developed areas and release more land for development. Cardiff Council have commissioned a detailed design and full business case study of coastal and fluvial defences in the Rover Way and Lamby Way area.
- Active travel and public transport improvements required along the Rover Way/Lamby Way/Wentloog Avenue corridor to provide safe and sustainable access (current NAT bus route 10 weekday peak times only). This should be considered as an inherent part of the identified highway improvements and potential for environmental enhancement.
- Enhanced active travel links are required to facilitate inter- and intra-area travel, particularly facilitating commuting. Improvements are needed to the legibility and quality of existing routes and there may be a need for additional routes across the railway and River Rhymney. A new wayfinding system is required to support recreational and more purposeful active travel journeys.
- Remediation works may be required to facilitate development on the Lamby Way historic landfill site and the Rover Way frag tip. Extent and form of works will be dependent on the proposed land uses.
- Amendment and capacity increase to the existing utilities network, including provision of high-speed broadband to all existing and proposed employment areas.

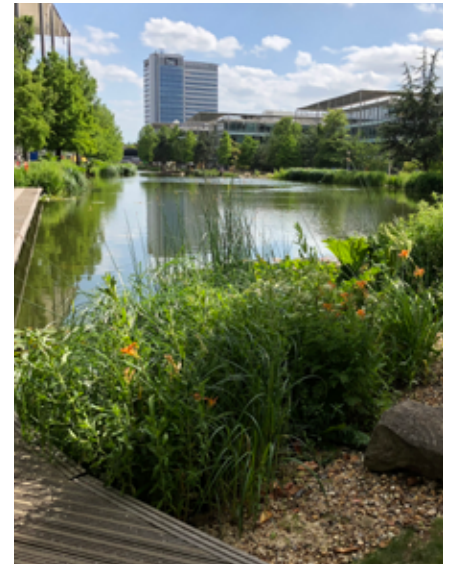


30. ENABLING WORKS

-  Existing employment site
-  Future employment site
-  Active travel and public transport enhancement
-  Environmental enhancement / mitigation area
-  Requirement for remediation of land
-  Improve existing active travel connections
-  Create new active travel connections
-  Flood protection improvements required to release land

5. DELIVERING WIDER CITY BENEFITS

31. POTENTIAL WIDER ENHANCEMENTS



Employment development in a strong landscape setting (left: Blythe Valley Park; right: Chiswick Park)



© Hufton+Crow

left: Chiswick Park; right: Express Park, Bridgwater



Photo by Austin Distel on Unsplash

Sustainable and contemporary workplace construction

Green corridors with recreation and biodiversity enhancements

© Stig Nygaard via Flickr



Recreation and tourism potential along the river and coast (Forest Tower, Denmark)



Renewable energy generation

© Juwi Renewable Energies Limited



Energy generation - stand-alone and linked to employment development (right: Baglan Solar Energy Centre)

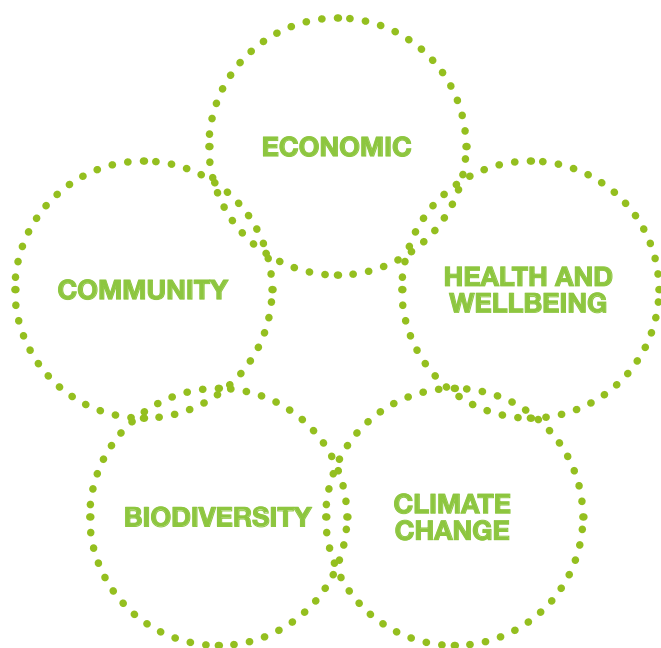
5.1 Green infrastructure

Enhanced green infrastructure has significant potential to bring widespread benefits to Cardiff East, in line with both the Wellbeing of Future Generations Act and the Cardiff Well-Being Plan. This includes direct and indirect economic benefits, supporting the aims of the Cardiff Economic Strategy.

There is an opportunity for a significant enhancement to green infrastructure in the Cardiff East area, linking from the estuary coastline to the man-made Wentloog Levels through to Rumney hill, the River Rhymney valley and the wooded ridgeline of hills behind the city.

The existing urban edge is of a limited quality and could be significantly enhanced in how it interfaces between residential, industrial and employment areas and the wider landscape. There are few green corridors that link across north-south or east-west through the Llanrumney/Rumney/Trowbridge/St Mellons residential area.

Access to the characteristic Wentloog Levels landscape is limited by a lack of public rights of way. The reenscape could be used as a structuring element for future development and movement networks.



3.2. GREEN INFRASTRUCTURE BENEFITS

Green infrastructure enhancement of this area could include:

- Enhancements to the coastal regions to create a ‘Cardiff Coastal Greenway’; a major new amenity and habitat resource for the city with increased public access to the Wales Coastal Path and improvements to amenity, alongside ecological enhancements and historic interpretation for the Rumney Great Wharf.
- Habitat creation and habitat connectivity, linking across urban areas and increasing biodiversity.
- Enhanced provision of publicly accessible spaces and routes, including formal and informal spaces, all linked into an improved Wales Coastal Path and Rhymney Trail and connections across the railway to residential areas.
- New public park at Trowbridge Mawr including biodiversity and amenity enhancements, and linking to Hendre Lake..
- Improved vegetation buffers around existing and new employment areas to reduce visual impact and improve the working environment for employees.
- Improvements to the urban edge to improve transition to green and rural spaces - could include sustainable drainage works, wildflower corridors, reinstatement of hedgerows or woodland, and waterspaces with public amenity.
- Enhancement of existing monoculture greenspaces to improve amenity, biodiversity and water management.
- Sensitive ‘green’ use of roofscape to introduce new habitat.
- Facilitation of water-based activities on the Rhymney River including access improvements and provision of moorings and pontoons. Allowance made for continued operation at Rhymney River Club.



Enhancements to the Rhymney River Corridor: improved access along and across the river, improved drainage of playing fields.

Opportunity for new public park at Trowbridge Mawr.

Improvements to the urban edge including screening planting, boundary treatment improvements, sustainable drainage features.

Enhancements to existing reën corridors with aligned active travel routes.

Major new public space 'greenway' along the Wentlog Levels coastline.

Continued operation and potential expansion of Rhymney River Club and facilitation of other water-based activities, including provision of pontoons.

Enhancement to Splott Beach area with increased public access and amenity alongside ecological enhancements.

Enhancement to Port of Cardiff coastal edge to strengthen habitat corridor.

33. GREEN INFRASTRUCTURE

-  Existing employment site
-  Future employment site
-  Green corridors
-  Urban edge enhancements
-  Habitat creation / restoration
-  Leisure & recreation opportunities
-  Coastal access
-  New/improved active travel routes
-  Heritage interpretation
-  Water-based activity

5.2 Transport and movement

OVERVIEW

While basic multi-modal enhancements are required to support expanded economic development at Cardiff East, there is substantial scope to expand on this to widen the social and environmental benefits and deliver an inclusive 21st Century approach to movement and accessibility. This should emphasise active travel (walking and cycling) as a priority to support healthy and sustainable lifestyles and allow low-cost travel.

HIGHWAY IMPROVEMENTS

A combination of highway network improvements and Metro connectivity allows a decrease of rat-running traffic in heavily-populated areas and along Newport Road. This frees up space in the existing road corridor for a number of aesthetic and functional interventions including:

- Increase of walking and cycle provision, including Cycle Superhighway connectivity and increased provision of crossing facilities;
- Improved bus network including potential Bus Rapid Transit;
- Public realm enhancements, including SUDS provision and street greening alongside street reconfiguration and traffic management measurements.

In some areas, enhancements may be focused along primary road corridors. In areas such as Splott and Tremorfa where there is a wider spread of through-traffic there is potential for more widespread area enhancements.

Traffic management measures should be implemented concurrently with the highway improvements to take full advantage of habit-forming opportunities.

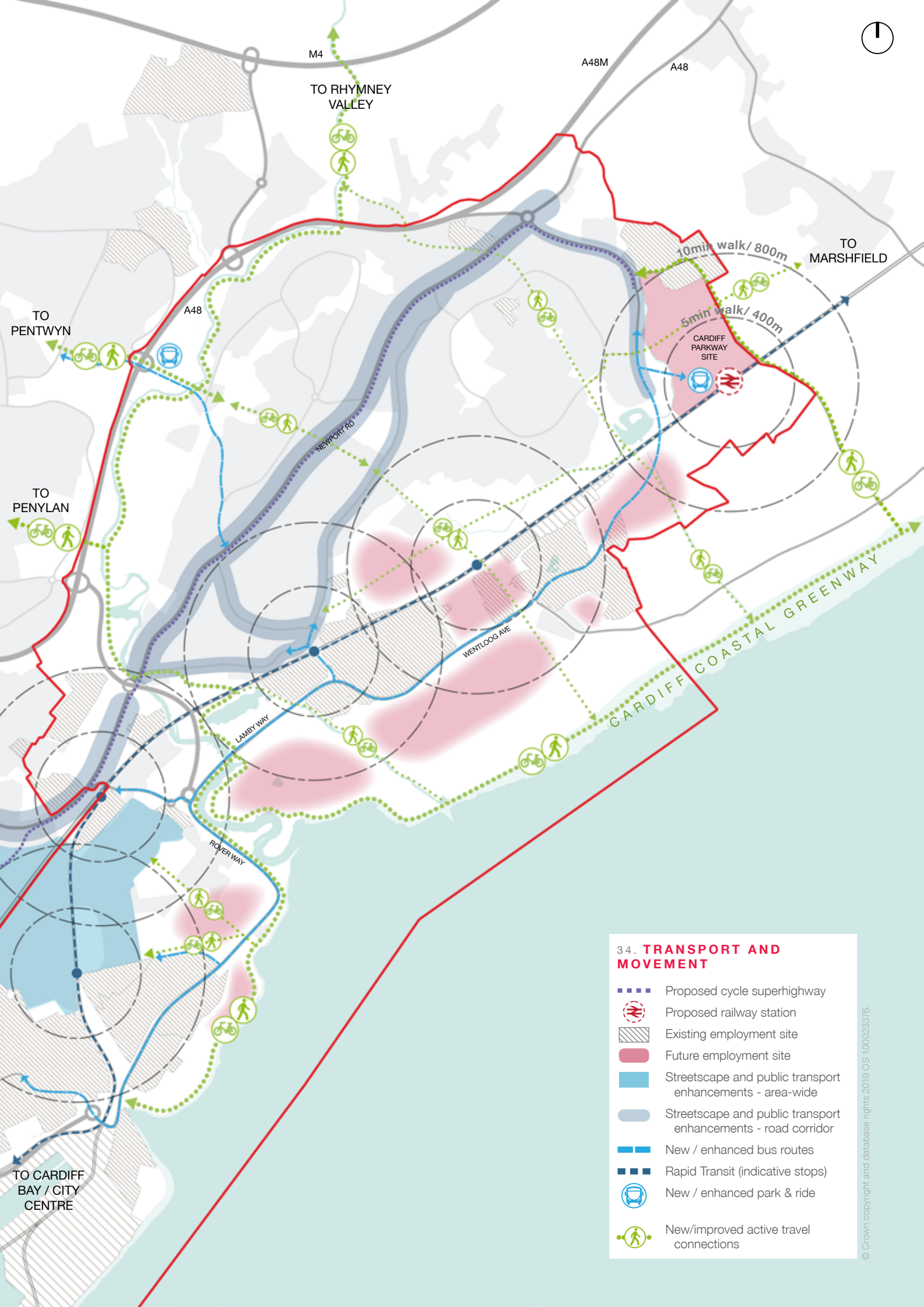
Parking standards should be reviewed to ensure sufficient but sustainable levels are provided. Charging infrastructure for electric vehicles may also be included within new and refurbished sites, facilitating use of electric private vehicles, fleets and logistics.

ACTIVE TRAVEL

- Improvements to the Wales Coastal Path, particularly resurfacing to improve route accessibility for all users.
- Construction of the proposed Cycle Superhighway C2 from the City Centre to St Mellons Business Park, with improvements to linking routes. Support for further roll-out of NextBike cycle hire.
- Enhanced active travel connections between the Lamby Way/Wentloog Avenue industrial estates, the Wales Coastal Path and residential areas, particularly existing connections across the railway from New Road, Trowbridge Road and Heol Las.
- Improved continuity of routes along and across the River Rhymney valley linking to Penylan, Llanedeyrn, Pentwyn and Pontprennau, forming recreation loops and commuter links.
- Enhanced routes and legibility across the existing urban area, particularly towards Lamby Way/Wentloog Avenue and Rover Way, the proposed Cardiff Parkway station and any future Metro stops.
- Area-wide wayfinding system linking homes, employment and local services, directing towards public transport and encouraging access to the coastal and river corridors.

PUBLIC TRANSPORT

- Development of public transport hubs connecting into any Rapid Transit links along the railway (stops shown are indicative only).
- New or re-routed bus services to Rover Way, Lamby Way and Wentloog Avenue areas, potentially connecting towards Cardiff Parkway station. Re-routing of existing St Mellons bus services towards Cardiff Parkway station.
- New or re-routed bus services between Llanedeyrn/Pentwyn and Llanrumney, using proposed Ball Road/A48 connection and connecting to Cardiff East Park and Ride.



34. TRANSPORT AND MOVEMENT

- Proposed cycle superhighway
- Proposed railway station
- Existing employment site
- Future employment site
- Streetscape and public transport enhancements - area-wide
- Streetscape and public transport enhancements - road corridor
- New / enhanced bus routes
- Rapid Transit (indicative stops)
- New / enhanced park & ride
- New/improved active travel connections

5.3 Socio-economic

Given the current high levels of deprivation and socio-economic issues across eastern Cardiff, there is significant need to widen the influence of the economic strategy and bring wider societal changes. Investment can benefit those living in and visiting the area as well as those employed there, supporting a circular economy and bringing greater long-term resilience.

Specific socio-economic improvements could include:

- Stronger links between education providers, community hubs/learning centres and employers to build skills in the future workforce, building on the Cardiff Commitment.
- New and improved cross-area active travel links allowing access to work and skills development and linking staff to social infrastructure, open space and local retail facilities, supporting the local economy. Links may double as recreational routes and safe routes to schools.
- Strong public transport hubs created on key routes towards employment and city centre destinations.
- Development of a strong green infrastructure network that provides a strong setting for employment sites and supports employee wellbeing.

Other non-spatial enhancements may include:

- Addressing barriers to employment including support for on-site and locally-based childcare services, allowing greater access to work and flexible working options.
- Diversification of housing type and tenure with continued minor infill development, supporting a more mixed and balanced community.

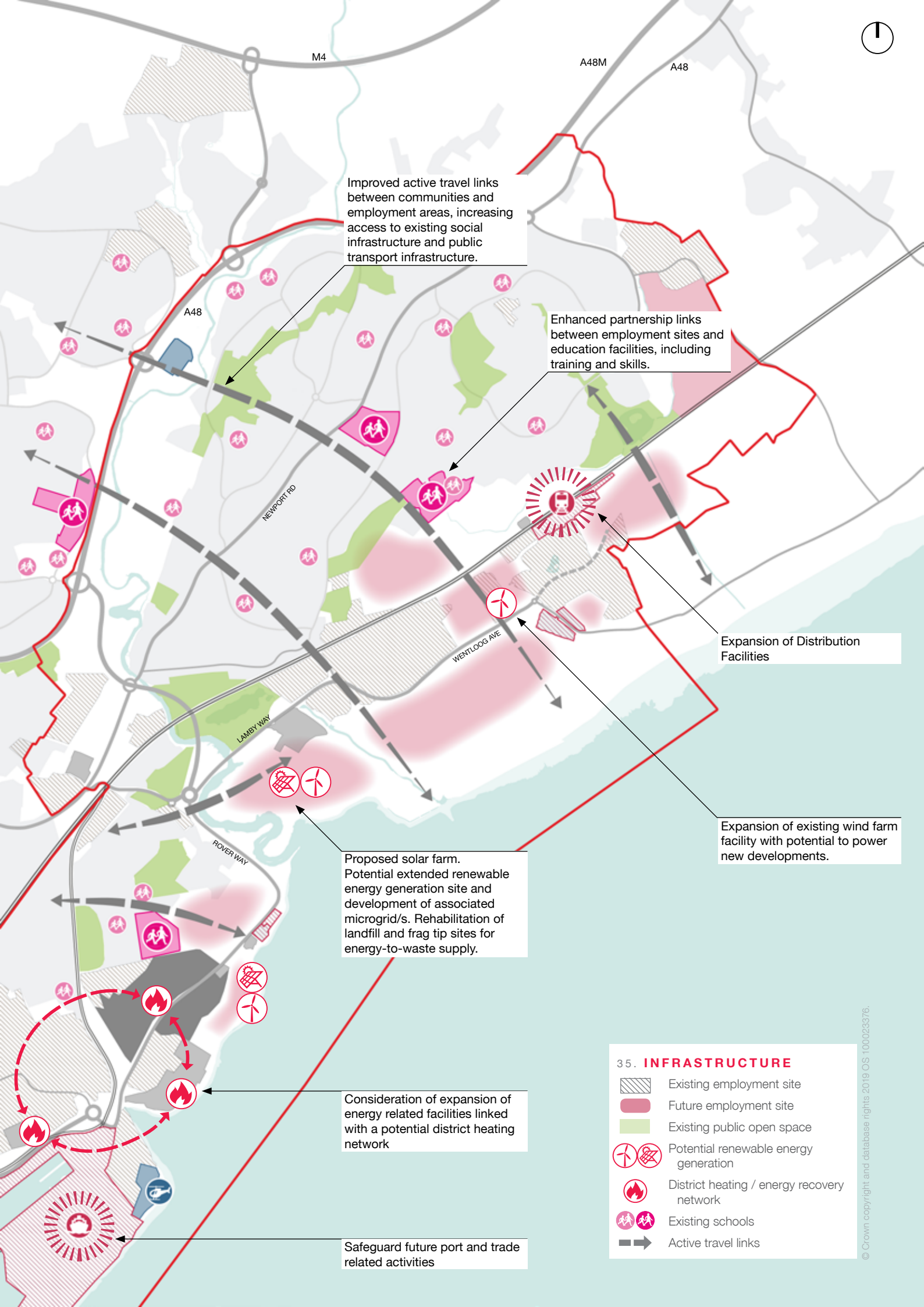
5.4 Physical infrastructure

There is significant scope to work with existing and future developments to support and supply the city's infrastructure networks, beyond its immediate needs.

The proposed solar farm at Lamby Way has potential to generate an average of 8.99 megawatts a year, powering around 2,900 homes.

Improvements could include:

- Potential district heating network to recover heat from existing and proposed industrial sites including Viridor, Celsa and Dwr Cymru sites.
- Development of a 'microgrid' linked to renewable energy installations, including potential expansion of the existing wind turbine operations at Pinewood Wales.



Improved active travel links between communities and employment areas, increasing access to existing social infrastructure and public transport infrastructure.

Enhanced partnership links between employment sites and education facilities, including training and skills.

Expansion of Distribution Facilities

Expansion of existing wind farm facility with potential to power new developments.

Proposed solar farm. Potential extended renewable energy generation site and development of associated microgrid/s. Rehabilitation of landfill and frag tip sites for energy-to-waste supply.

Consideration of expansion of energy related facilities linked with a potential district heating network

Safeguard future port and trade related activities

35. INFRASTRUCTURE

- Existing employment site
- Future employment site
- Existing public open space
- Potential renewable energy generation
- District heating / energy recovery network
- Existing schools
- Active travel links

6. KEY CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

The opportunity exists to shape and deliver a new vision and Area Action Plan for East Cardiff. This vision should reflect an integrated approach that not only delivers the objectives of the council's economic strategy but wider community and environmental benefits as well. It is a fact that the communities of south Cardiff have the highest levels of deprivation in the city. It is recognised that estate renewal projects are underway and that the housing stock is being gradually improved and that investment has been made in new schools and leisure facilities. There is still work to be done. The approach advocated would help to accelerate and expand delivery of such projects, identify and link different sources of funding and crucially deliver different benefits on the ground.

The vision should be anchored by a co-ordinating spatial plan that communicates the scale and extent of potential growth areas, the need for improved connectivity (both East – West to the Bay and city centre and North – South to the waterside) and investment in transport and green infrastructure.

Linking community areas with the Severn Estuary foreshore and a new Cardiff Coastal Greenway will improve access to employment, support active travel and deliver health and wellbeing benefits. It would also create a city-scale resource and attraction for visitors. The Gwent Levels are a sensitive landscape but also represent a major opportunity to link Cardiff with its wider waterfront.

KEY MOVES

1. A coordinated approach to development is required to develop a balanced and sustainable community and maximise benefits, both for business and for other stakeholders.
2. Significant multi-modal improvements are needed to the movement infrastructure to facilitate access to work, access to services and movement of goods.
3. Previously developed land has potential for sustainable reuse, particularly for renewable energy generation.
4. The natural setting of Cardiff East is a vastly underused resource which could bring major benefits to the area and wider city region. Improving access to the coastline should be a priority move, creating a Cardiff Coastal Greenway.
5. Non-spatial policies should be developed to support the physical growth and change, including further coordination of workplaces with education and skills providers.
6. In developing an Area Action Plan, early engagement should take place with key partners, stakeholders and statutory bodies.

36. POTENTIAL WIDER ENHANCEMENTS - GREEN INFRASTRUCTURE AND ENVIRONMENT



Improvements to the streetscape and urban edge to increase biodiversity and resilience (left: Greener Grangetown).



Improved public access to open spaces with opportunity for new parks and Coastal Greenway.

Green walls and facade treatments

© tjabbejan via Flickr

6.2 Potential policy levers

Given the potential for the area to support economic, social and environmental improvements consideration should also be given to exploring potential policy levers to support the development of the area.

TAX INCREMENT FINANCE

Much of the area covered would provide a ‘blank canvas’ for development that is ideally suited to the use of Tax Increment Finance. This is particularly pertinent given the need for infrastructure investment to unlock the full potential of the area. Consideration should be given to the use of Tax Increment Finance to unlock the potential of the area.

SPECIAL ECONOMIC ZONES

There is also the scope to explore potential post-Brexit trade levers, including the development of clearly defined free-trade zones that focus on adding value to products rather than simply acting as a tax free zone. Such an approach may be useful for sectors where there are opportunities to become part of a global supply chain, and especially in those areas where Cardiff and South East Wales have competitive strengths. Given the relatively blank canvas of the area there are opportunities to explore innovative policy solutions to mitigate both the impact of Brexit as well as exploit any potential means of exploiting trade flexibilities.

37. POTENTIAL WIDER ENHANCEMENTS - ACCESS AND MOVEMENT

© Satyajith J via Flickr



Enhanced active travel network aligned to green corridors



Wayfinding improvements.



Active travel enhancements with additional bridge links (right: Smart Way bridge)



6.3 Recommendations and Next Steps

APPROACH

The next stage of work should be shaped by cross-disciplinary working to ensure that it takes into account the extensive development context and optimises the wider benefits. It is recommended that a Cardiff Council officer working party is established across disciplines to create the brief for the next stage of work.

A masterplanning framework could be developed which draws from technical studies and informs a suite of strategies. This should be reviewed on a regular basis as part of a multi-disciplinary feedback process. The status of the document should be considered, with potential to formalise this through the planning process.

The framework should be accompanied by a delivery strategy and programme which considers land assembly and acquisitions, Phased delivery, funding, and develops a business case for public sector investment (including public transport, highway and infrastructure improvements).

Stakeholder engagement should be embedded in the process, beginning with identification of an engagement strategy. This should include representatives from land owners, operators and developers, transportation and infrastructure, as well as community representatives.

FURTHER STUDIES AND STRATEGIES

A series of technical studies and supporting strategies are required to support future development:

- **Employment strategy:** Work required to identify the scale and nature of employment space demand across the city and at Cardiff East. This should consider inclusive growth, related to the Wellbeing of Future Generations Act, and identify how to attract a mix of higher-value jobs and skills. It may also include the nature of existing employment and the evolution of this, including potential for change within existing employment areas and challenge the assumed scale of growth. The strategy should identify barriers to growth and essential interventions.
- **Digital strategy:** Providing information through the design, build, operate and maintain stages, with potential to develop a 'digital twin' for Cardiff East. The strategy should identify digital infrastructure requirements including fibre optic broadband and 5G connectivity. Other aspects may include digital economies, skills and open data sharing.
- **Transport and movement strategy:** Linked to the Transport White Paper, an area-focused study is required to identify multi-modal improvements to the existing movement network. This should include connectivity modelling and aim to optimise frequency and quality of cross-area active travel and enhancing public transport services, bearing in mind the Transport and Clean Air White Paper, the proposed Cardiff Parkway railway station and interchange, and the emerging proposals for the South Wales Metro. Detailed feasibility work is required to confirm the suitability of the proposals identified in this report. The work should address parking standards.
- **Landscape capacity assessment:** Assessment required to identify scope for new development within the existing landscape, with particular focus on location, scale and extent of larger employment developments and renewable energy sites. Assessment should also take into account potential to enhance existing developed areas.

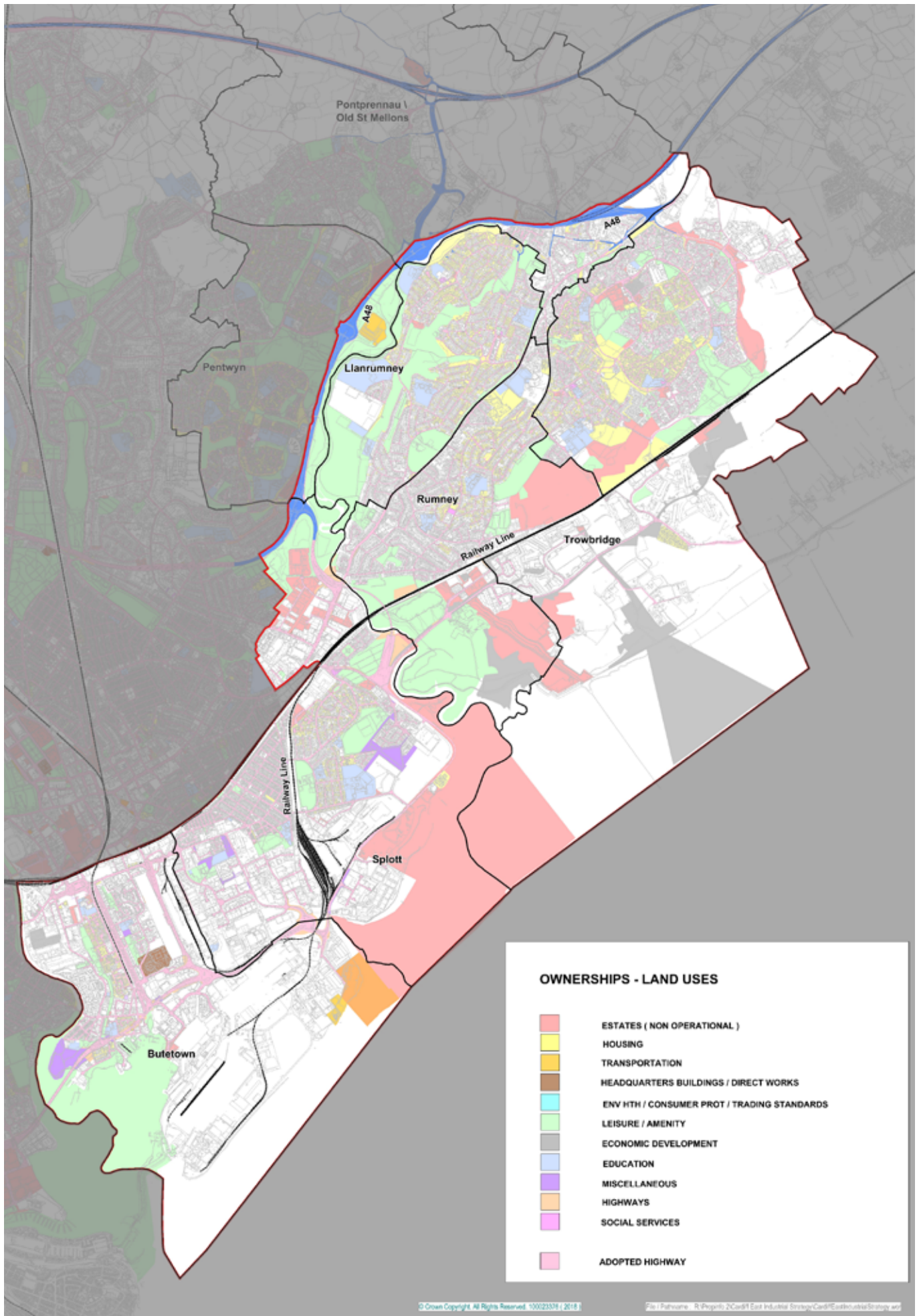
- **Green and blue infrastructure strategy:** Development required to address the special landscape and ecological context of the Wentloog Levels and look for opportunities to enhance ecological and recreational amenity. A combined approach is required taking into account ecology and biodiversity, surface water management, roofscapes, flood protection, landscape enhancement and visual mitigation, looking at existing and proposed development areas and open space areas. Work to require close liaison and collaboration with Natural Resources Wales and scoping for an Environment Statement.
- **Energy and infrastructure strategy:** Including proposed solar farm at Lamby Way, scope for expansion of the existing Viridor Energy Recovery Facility and new area-wide heat and/or energy networks, further renewable energy generation (particularly related to former landfill and frag tip sites, subject to environmental studies), links to existing heat sources, and identifying existing network capacity and service locations.
- **Design guide:** Providing area-specific design criteria for new and renovated developments including sustainable and resilient construction, visually-appropriate architecture, site layout, parking and cycle storage, access requirements and landscape approach.
- **Public realm strategy:** Opportunity to identify public realm and streetscape enhancements across employment and residential areas, linked to the transport and movement study to focus improvements on key corridors. The study could consider temporary and short-term works and consider how investment can be optimised to bring the greatest social, environmental and economic benefits to the area. The aim is to develop a suite of proposals from area-specific plans to proposals that can be implemented area-wide as part of a rolling programme.
- **Cardiff Freightliner Terminal:** More research needs to be undertaken into how Cardiff Freightliner Terminal facility can better support existing businesses in the area and help to attract new ones. For example the latter may have a logistics focus or be linked to smart manufacturing and require main freight line access for the importation of materials and the export of finished products. This research should consider the viability of expanding the site north of the railway line to enhance operational capacity.
- **Cardiff Parkway development:** Action will be required over the short, medium and long terms. The Phases set out in this report are the start of a process to investigate the potential of change in the area over time. In fact they can be conceptualised as increments of change over the short, medium and long terms. Going forward, it will be important to understand the specific land use mix proposed to ensure that a complimentary rather than competing approach is adopted in the wider East Cardiff area. There maybe some merit in approaching the Cardiff Parkway developers to see if opportunities exist to jointly shape key messages about the sites relationship with the wider East Cardiff area to mutual benefit.

Appendix A: Cardiff Council Land

There is also significant opportunity for the Council to use its own land assets to promote the development of the East Cardiff Area. The consideration of this land is outside of the scope of this study, but the Council should consider how it can maximise the impact of the use of its assets in East Cardiff to deliver this strategy.

Council land in the East Cardiff area covers a significant range of uses, from non-operational estates land (i.e. investment) to parkland and general amenities.

There is significant overlap in terms of the areas of consideration in this strategy and the overall Phases presented.



ARUP