

Proposed Suburban Rail



LEGEND - KEY INFORMATION

- Existing Train Stations
- Proposed Train Stations
- Rail Corridor
- Park & Ride Station

Future-proofing the ability of Kent Station and its environs to support significantly enhanced multi-modal accessibility

from walking, cycling, BusConnects and light rail will be a critical consideration for the City Council when assessing development proposals in the short to medium term.

Future-proofing the ability of Kent Station and its environs to support significantly enhanced multi-modal accessibility from walking, cycling, BusConnects and light rail will be a critical consideration for Cork City Council when assessing development proposals in the short to medium term.

Outside of Cork City, the Strategy fully supports the strategic direction of Cork County Council's adopted planning frameworks to significantly intensify and consolidate future housing, employment and educational development within the immediate catchment area of Cobh, Midleton, and Carrigtwohill stations. More modest housing growth is anticipated at Glounthane and Little Island, with the latter location likely to experience further employment growth for uses not compatible with high density urban living.

The consolidation of activity within a 1km catchment boundary of existing stations along the railway catchment will create better linkages with the town centres and stations, support the viability of the rail corridor and provide a strong justification for the enhancement of existing services.

The provision of high quality walking, cycling, local bus services and (where appropriate) the enhancement of Park and Rail facilities to support commuters from a much wider catchment area is of paramount importance.

Though outside the scope of CMATS, the Strategy notes a relatively high level of out-commuting from the Mallow area and Cork County Council's intention to consolidate future housing development within the town's development boundary.

This consolidation will further support the viability of the railway corridor as will proposals to potentially include Mallow rail station within a future Metropolitan Cork fare structure. Platform improvements may also be required at Mallow station to mitigate the projected increase in suburban rail services impacting on the Inter-City Services between Cork, Kerry and Dublin.

New Railway Stations

To support sustainable growth along an enhanced railway corridor; new railway stations are proposed at the following locations to align with strategic land use planning objectives of both Cork City Council and Cork County Council:

▪ Midleton / Cobh- Cork Line:

- Tivoli Docks;
- Dunkettle;
- Water Rock;
- Ballynoe; and
- Carrigtwohill West.

▪ Mallow-Cork Line:

- Blackpool / Kilbarry;
- Monard; and
- Blarney / Stoneview.

These stations will support primarily residential-led mixed use development covering both brownfield land within Cork City and Metropolitan towns and identified greenfield sites in UEAs. To ensure that rail becomes an attractive and logical mode of travel for a growing commuter belt, railway stations should be developed in tandem with the first phase of residential development and in place before substantial occupation.

The quality of design and layout of new development will be critical to support access by walking, cycling and public transport. The provision of a new rail station with Park and Rail facilities near Dunkettle should be expedited to support the Glanmire UEA at Ballinglanna where a significant housing development has recently been approved by An Bord Pleanála. This Park and Ride could potentially be supported by bus services to Cork City Centre, Mahon and Little Island, in advance of a rail station. The Strategy also leaves open the possibility of a further station at Carrigtwohill West to support a future significant commercial or hi-tech industrial development.

Rail Freight

The Strategy recognises the potential for rail freight, which will be taken into consideration in investment proposals relating to rail.

Supporting Infrastructure

The enhanced Cork Suburban Rail services will require the following supporting infrastructure:

Station Enhancements and Improvements

Improvements to stations are required as part of the Strategy to enable the efficient and effective operation of the proposed rail services. The quality, appearance, cleanliness and security of stations is important for rail passenger satisfaction. At a minimum, all stations, both new and existing will be fully accessible for those with reduced mobility, wheelchairs or buggies, be equipped with upgraded smart ticketing facilities, have comfortable waiting areas and provide accurate real time information for both trains and supporting buses.

The recent reorientation of Kent Station will **facilitate a more seamless interchange between Rail, Light Rail and BusConnects**, as well as improved pedestrian and cycle access to City Centre and South Docklands.

In line with best practice, secure and sheltered cycling parking will be provided as near as possible to the station entrance without impacting on pedestrian comfort levels. The provision of bicycle sharing schemes to support linked trips is also required.

Kent Station

A new platform is proposed for Kent Station to utilise the existing passing loop to the south. This platform will provide access to three parallel lines through Kent Station and allow cross city services between Mallow and Midleton and Cobh to run efficiently without impacting on the Inter-City service.

The recent reorientation of Kent Station will facilitate a more seamless interchange between Rail, Light Rail and BusConnects, as well as improved pedestrian and cycle access to the City Centre and South Docklands. A significant improvement to the legibility and wayfinding signage around the station is proposed to facilitate visitors alighting at Kent Station.

Cobh Station

A second platform is needed at Cobh Station to cater for the projected increase in train numbers required to provide the enhanced level of service proposed under the Strategy.

Passing Loops

To avoid impacting on the Inter-City rail services between Cork and Dublin, passing loops are likely to be required at all suburban stations on the Mallow Line at:

- Blackpool/Kilbarry;
- Monard station; and
- Blarney/Stoneview.

Bypass loops will enable suburban trains to stop at the new stations without impacting on the efficient operation of the Inter-City rail service.

Double Track to Midleton

To accommodate the increase in rail services to/from Midleton, the existing single track between Glounthaune and Midleton will be required to be upgraded to a double track*. There is currently a 2km long section of double track at Carrigtwohill that can be extended.

Signalling Improvements

Signalling improvements will be required to facilitate the increased services and avoid delays and conflicts on the line interactions. In particular signal improvements will be required at Kent Station, Mallow Station, Glounthane Junction, and proposed bypass loops.

Signal Control Centre

Iarnród Éireann currently operates a Centralised Traffic Control Centre in Connolly Station, which controls much of the rail network in Ireland - including the Cork suburban network. The NDP commits to completing a new National Train Control Centre over the lifetime of the plan. This will be required to cater for immediate and future control requirements of the rail network.

Rail Depot

Given the proposed increase in suburban fleet numbers and the existing constraints in Kent Station, consideration will be given to the requirement for a new rail depot for stabling and maintenance of the fleet.

Electrification or Alternatively Fueling of the Suburban Rail Network

CMATS supports the electrification of rail services that would result in higher performance, lower maintenance costs, lower energy costs and reduced emissions. The lower air and noise emissions are critical to support residential amenity of new development consolidated around the railway corridor. The NDP commits to the electrification of suburban rail lines in Dublin under the DART Expansion Programme by 2027. A similar commitment for the Cork Suburban rail network would be likely to take place over the latter half of the Strategy.

An alternative to the full electrification of the suburban rail network could be to examine the feasibility of a fleet upgrade to hydrogen and/or battery powered trains. While providing similar benefits to a standard electrification network this type of electric train does not require the significant network wide retrofitting of electrification infrastructure such as power supply, bridge alterations etc. that would normally be required.

This has the potential to save significant costs on the electrification of the suburban rail network. Hydrogen powered trains are about to be passenger tested in the Netherlands, Germany and the UK.

* Subject to compliance with EU habitats and/or Birds Directives



EXAMPLE OF MULTI-MODAL INTERCHANGE AT KENT STATION WITH BRIDGE ACCESS TO THE SOUTH DOCKS



LIGHT RAIL

PASSENGERS

Carrying
46million
passengers
per annum

11,400
passengers per
direction per hour at
2 min headway

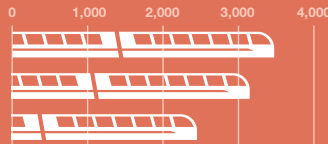
or
4,600
passengers per
direction per hour at
5 min headway

AM Peak Hour Passengers

Cork Light Rail 2040

Dublin Luas Green Line 2012

Dublin Luas Red Line 2012



JOURNEY TIMES AND DISTANCE

27mins
from Ballincollig
to St. Patrick's
Street

20mins
from Mahon Point
to St. Patrick's
Street

47mins
from Ballincollig
to Mahon
Point

BUS NETWORK & VEHICLES

25 stops
along the route.
Similar Light Rail vehicle to Dublin Luas fleet.

**17km Light
Rail Network**
between Ballincollig Cork City
Centre, Kent Station, Cork
Docklands and Mahon Point.

27 trams
required for 5 minute frequency

CONNECTING CITY & SUBURB

Connecting with Cork Suburban
Rail Network at Kent Station, with
Cork Light Rail Network and providing
interchange between radial and
orbital bus services

>3,200
passengers interchange
to/from Light Rail in am
peak hour.

COST ESTIMATE

Strategy cost estimate
is approximately
€1bn



10 LIGHT RAIL

Key future growth enablers for Cork include: The development of a much **enhanced Citywide public transport system** to incorporate subject to further analysis, proposals for an east-west corridor from Mahon, through the City Centre to Ballincollig.

National Planning Framework 2040

LRT Development Process



LRT and Advance Bus Route Alignment Study



Safeguarding of Route



Running of high-frequency East West Bus Route



Realisation of LRT

The development of an east-west mass transit, rapid transport corridor has been a long-term objective for the CMA articulated by the joint Cork Area Strategic Plan (CASP) and a number of statutory development plans and local area plans of both local authorities.

The commitment to examining the feasibility of such a route is confirmed by the publication of both the National Planning Framework (NPF) 2040 and the National Development Plan 2018-2027 and a recent upsurge in planning developments and interest in key sites along the corridor has provided further momentum to to determine the feasibility of such a route.

Following detailed analysis of projected travel demand within the CMA, this Strategy has determined that the East-West Transit Corridor is best served through the provision of a new Light Rail Transit (LRT) tram system. This analysis marks a departure from previous proposals for a lower capacity Bus Rapid transport (BRT) system to reflect the more ambitious growth targets of the NPF and the requirement to future-proof such a route up to and beyond, the 2040 horizon year.

The LRT will be preceded by a high-frequency bus service between Mahon and Ballincollig. This will be delivered in the short-term to underpin higher development densities along the corridor including the regeneration of the Cork City Docks.

Achieving Compact Growth

The provision of LRT system will be a focal point to enable the growth of population, employment health and education uses as envisaged by the NPF 2040. The LRT system is a key enabler in CMATS. The LRT is required to:

- Unlock strategic development areas in its catchment area including the Cork City Docks, Curraheen, Ballincollig and Mahon;
- Maximise the development potential of windfall sites;
- Provide greater certainty for future planning and development, to pursue higher densities required to meet NPF population and employment targets for Cork City;
- Underpin the planned expansion of University College Cork (UCC), Cork Institute of Technology (CIT) and Cork University Hospital (CUH).
- Enable car-free and low car development within its catchment in line with recent changes to government policy outlined in the NPF and Sustainable Apartment guidelines;
- Reduce reliance on the N40 in particular, for short trips within the Metropolitan Area;

The LRT route will serve a wide range of existing and future destinations including employment, institutional and retail uses, facilitate modal shift away from the private car for short trips and free up capacity on arterial roads for bus services.

The LRT will link with a strategic Park and Ride station near Ballincollig to reduce cross-city trips. The LRT will also facilitate greater levels of walking and cycling as part of linked trips with public transport and reduce transport related noise and emissions.

Proposed Route

The topography and distribution of existing trip generators and attractors, combined with the proposed development opportunity areas within Cork City and its suburbs, indicate the desirability for a linear route from Ballincollig in the west to Mahon in the east, via Cork City Centre. The following locations are required to be within the catchment area of the future light-rail system:

- Ballincollig;
- The proposed Cork Science and Innovation Park (CSIP);
- Cork Institute of Technology (CIT);
- Cork University Hospital (CUH);
- University College Cork (UCC);
- Cork City Centre;
- Kent Station / Cork North Docklands;
- Cork South Docklands; and
- Mahon.

Measures will not be introduced in isolation but only after due consideration of the impacts on access and movement across the City and suburbs and in parallel with the introduction of necessary appropriate alternatives to service affected traffic movements.



EXAMPLE OF LIGHT RAIL SHARING SPACE
WITH GREENWAY AT BLACKROCK BRIDGE

Light Rail Route Alignment

Proposed Light Rail - Washington Street



Kent Station Interchange

- Interchange with inter-urban and suburban rail
- New bridge from Kent Station to South Docklands

Provide access to City Centre

Support Future Development of Cork Docklands

Support Development and Expansion of tertiary education corridor

Support Future Development

Ballincollig

P&R

Support Future Development

Park & Ride

to accommodate traffic from N22 on Light Rail

Cork Science & Innovation Park

Cork Institute of Technology

Cork University Hospital

University College Cork

Patrick Street

Docklands

Mahon Point

Proposed Light Rail sharing with Greenway



LEGEND - KEY INFORMATION

Light Rail Transit (LRT)

LRT Stop

Park & Ride Station

Train Station

All routes and alignments are indicative and subject to change through the statutory scheme appraisal process.



EXAMPLE OF LIGHT RAIL ON WASHINGTON STREET

The Cork Transport Strategy will evaluate **the potential of a Bus Rapid Transit or Light Rail corridor to serve the increased population growth** as envisaged by the National Planning Framework.

National Development Plan 2018-2027

Determination of the final LRT route alignment and depot location at the earliest possible stage is required to inform the review of the current Cork City Development Plan in early 2019. The final alignment is needed to maximise the ability to provide appropriate densities for development sites along the route and to avoid conflict with emerging development proposals.

In the absence of an alternative route, an alignment immediately adjacent to the existing Old Passage West Line greenway is proposed by CMATS to overcome the steep topographical constraint created by the escarpment. This should not preclude the development of alternative alignment options through a required feasibility study. Should the feasibility study confirm this route, the LRT alignment should take all necessary measures to ensure that the greenway retains its current attractiveness for pedestrians and cyclists, including consideration of widening the existing pathway to maintain comfortable passing widths.

Application of appropriate safeguards to the agreed final route and the application of appropriate development densities to ensure the long-term feasibility of the route by the relevant local authority will be required.

Stations and Frequency

Approximately 25 stations will be required to serve this high level route between Ballincollig and Mahon Point, providing an estimated total journey time of 47 minutes. These stations will serve a catchment area of all existing and proposed key adjoining development areas and provide interchange with InterCity and suburban rail services at Kent station plus proposed Bus Connects services.

A station to serve a dedicated strategic Park and Ride facility to the west of Ballincollig town centre and UAE is proposed to facilitate commuters arriving from the N22.

To serve predicted level of passenger demand to 2040, a total of 27 tram vehicles providing an initial frequency of light rail trains running at a headway of every 5 minutes is proposed, with an hourly capacity of 4,600pax/hr/dir. This level of service provides medium to long term capacity resilience and can be revised upwards (or downwards) depending on the stage of the development cycle.

LRT Design and Other Considerations

The following outlines some of the infrastructural key challenges to be addressed in the design of the LRT system. The following list is not intended to be exhaustive but provides some high-level considerations for the LRT:

- Maximising connectivity to existing centres of activity and future growth areas through a clear and legible local walking, cycling and bus network. Providing safe pedestrian links to proposed Park and Ride stations;
- Maximising opportunities to provide higher densities along the final route alignment;
- Provision of a dedicated bridge crossing of the River Lee to provide access between Kent Station and Cork South Docklands;
- Maximising opportunities to provide car-free and low-car development within 1km catchment of the corridor;
- Consideration of the impact on the streetscape and public realm of Cork City from power supply cables and feeder pillars at the earliest design of the LRT route and alignment;

- Consideration of constraints offered by potential relocation of underground services, impact of waterways and basements under the city centre streets;
- Consideration of tram turning radii within the constrained Cork City street network; and
- Provision of depot(s) for housing, and on-going management and maintenance of the LRT trams.

Delivery of the LRT

This light rail scheme is planned for delivery, subject to the necessary development consolidation, to support the appraisal, planning and design for provision of such a high capacity corridor in the latter period of the period of the Strategy as envisaged by the NDP.

However, the LRT should be delivered earlier should it become apparent that the appropriate development densities will be achieved sooner than anticipated. A potentially early delivery time frame underlines the importance of undertaking the route feasibility process to be undertaking the route feasibility process at the earliest possible stage.

Advance Bus Provision

In advance of the development of the LRT, and to allow the development consolidation to support its delivery, this route will be served with a high frequency bus service with bus priority measures to enable a high level of performance in advance of its transition to light rail. During the early period of the Strategy, it is intended to identify and protect an alignment for the light rail scheme, allowing development consolidation along the corridor.



EXAMPLE OF BUS CORRIDOR PROVISION ON WASHINGTON STREET, IN ADVANCE OF LIGHT RAIL