

**arrow  
connect**

**Nottingham Express Transit Phase Two**  
An introduction to Arrow Connect



**Arrow Connect:  
taking the tram further**

# Nottingham Express Transit Phase Two

## NET Phase Two

Building on the success of NET Line One, NET Phase Two will deliver two new lines: to the west, Chilwell via Queens Medical Centre (QMC) and Beeston, and south to Clifton via Wilford. NET Phase Two is being promoted by Nottingham City Council.

These routes have been chosen for development following considerable levels of public consultation and project development work over a number of years.



The government granted a Transport and Works Act Order (TWAO) for the proposed NET Phase Two routes at the end of March 2009. The TWAO, which came into force in June 2009, gave Nottingham City Council the legal powers to acquire the necessary land and to build, operate and maintain NET Phase Two into which Line One will be incorporated. At the end of July 2009, the Transport Minister Sadiq Khan announced the government funding contribution of around £500 million for NET Phase Two. The government also confirmed the Order enabling Nottingham City Council to introduce its proposals for a workplace parking levy (WPL). The money raised from WPL, estimated to be up to £14 million a year, will help fund the required local contribution for NET Phase Two and other local transport projects.

These approvals paved the way for Nottingham City Council to begin the process of selecting the consortium that will undertake the detailed design, finance, build, operate and maintain NET Phase Two. Two consortia have been shortlisted to submit tenders to build and operate the extended network via a concession contract. It is expected that the winning bidder will close the contract in August 2011 and that construction works will commence later in that year, with a view to NET Phase Two commencing operations in 2014.



# Nottingham Express Transit **Phase Two**

**Arrow Connect** is a Nottingham consortium, with established offices in the heart of the city - a short walk from the NET Line One southern terminus. Acting as the future Concessionaire, and founded on the original Arrow Consortium which designed, built and now operates Line One, Arrow Connect comprises:



## **Nottingham City Transport**

the largest provider of public transport services in Nottingham transporting in excess of 50 million passengers per annum on the bus network, plus a further 10 million journeys via NET Line One (operated in joint venture with Transdev).



## **Transdev**

a leading French public transport operator, with bus and tram companies all over the world, it has recently been heavily involved in the development of the Edinburgh Tram project. Transdev played a leading role in the design and operations of NET Line One.



## **Bombardier**

an international engineering organisation with the world's largest railway systems company and a major manufacturing centre based in Derby – the supplier of NET Line One trams and systems infrastructure.



## **VolkerRail**

the UK arm of the second largest civil engineering company in the Netherlands, with many landmark civil structures to its credit – the detailed designer and installer of NET Line One track work.



## **FCC Construcción SA**

the largest Spanish contractor. Established for over 100 years FCC has an exemplary history in civil engineering, construction management and urban design, with a strong focus in the transport sector. Their rail experience extends to over 90 major projects with 5 tramways including the latest systems in Madrid and Barcelona.



## **CDC Infraestructura**

A 100% owned subsidiary of Caisse des Depots et Consignations, a major public financial institution in France and a sister company of Transdev. It is focused on green infrastructure projects and concessions – including tramways and urban rail projects.

**The core team is supported by a group of experts who will assist in optimising the business case, then developing design solutions that are both robust and cost effective over the life of the concession.**

The combined experience of the individuals within Arrow Connect's team extends to over 30 different urban rail projects and more than 150 years of management experience in the delivery of public transport solutions.

Arrow Connect is developing the Phase Two bid and planning for the safe transfer of Line One. Arrow Connect blends the complementary and outstanding skills of all the Arrow Connect shareholders.



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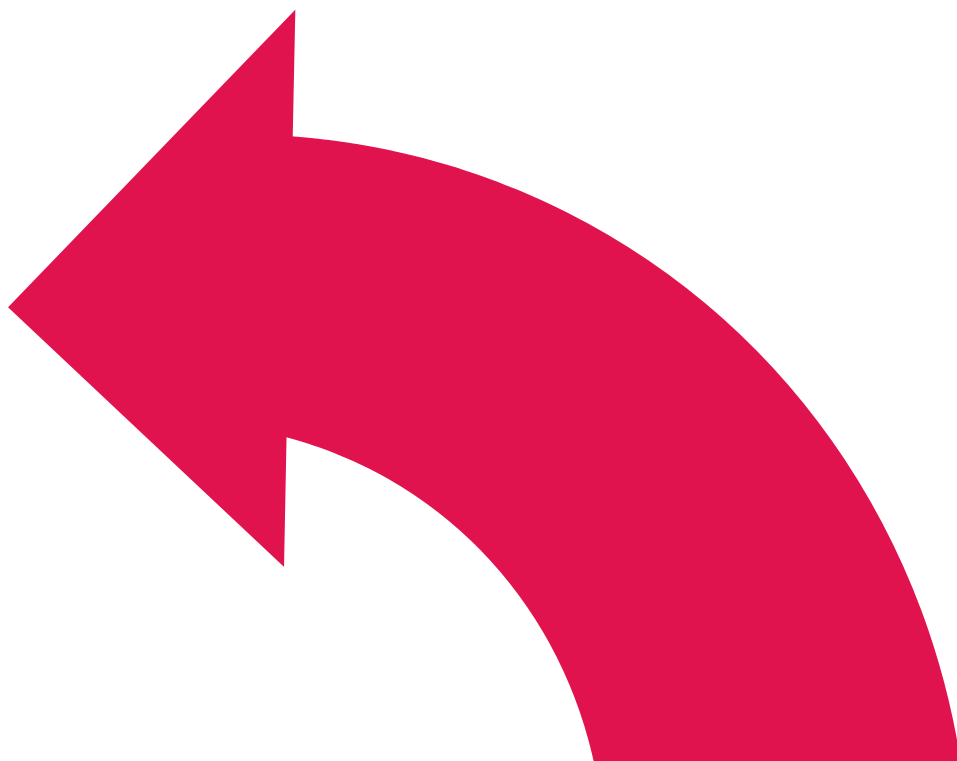
## **Operator Led**

**The first priority is to ensure that the success of Line One continues.**

**Transdev and Nottingham City Transport in joint venture have successfully operated NET Line One since its opening in 2004, winning praise and awards for Nottingham due to exemplary practices and proven performance history.**

Wherever possible, the existing Line One operation and its passengers must not be inconvenienced by the introduction of Phase Two. Operator focused planning and logistics will therefore be at the forefront of Arrow Connect's implementation strategies. The operating business will also drive the capital plan. A well designed system will offer best value and be simple to operate. It will also have strong and popular appeal to passengers.

Transdev and its sister company Transamo bring a wealth of relevant experience, particularly in development and expansion of existing systems - including benchmark schemes such as Strasbourg, Metro do Porto and Nantes.



## Design Focus

**Arrow Connect believes in outstanding design.**

All the partners are credited with involvement in projects that are well designed, unique or iconic.



Arrow Connect's civils partner VolkerRail built the Gateshead Millennium Bridge, the world's first tilting bridge, over the Tyne in Newcastle.

FCC's construction prowess has led to several awards for construction innovation and environmental achievements including the impressive Las Delicias Station (Zaragoza, Spain) the largest pillar-free structure in Spain.

Bombardier supplied the Eurotrams to Strasbourg, widely acknowledged to be the most appealing vehicle design in recent urban transport history.



CDC Infrastructure is the concessionaire for the award winning Millau Viaduct, a massive 2.5km suspension bridge some 300m above the Tarn Valley in France, designed by Sir Norman Foster.

Transdev and Transamo have played pivotal roles in several leading edge European tram schemes, including the development of Metro do Porto (architect, Eduardo Souto de Moura) – another archetypal system, with some five lines introduced over seven years – all launched and operated by Transdev, with Eurotrams built by Bombardier.



**Arrow Connect's aim will be to extend and develop the strong and recognisable brand of Line One across the new network.**

**It is committed to construction excellence and will create elegant new design concepts for the infrastructure of Phase Two, working closely with the City and district planners.**

# Nottingham Express Transit **Phase Two**

## **Financial Strength**

**All of Arrow Connect partners have participated in large PPPs (Public Private Partnerships) and concession projects, and stand ready to invest in Phase Two.**

Focused on the transport sector, the partners of Arrow Connect have over 40 PPP projects to their credit, each with its own level of business risk. The consortium is confident that it is well placed to ensure competitive funding arrangements are in place, providing value for money and flexibility, both in the run up to financial close and for the duration of the concession, enabling the systematic expansion of the network beyond Phase Two.

Arrow Connect's financial advisers, Investec, have experience of financing over 30 projects through a variety of funding structures, including many innovative transport projects and PPP schemes, both in the UK and overseas. Investec's portfolio includes NET Line One, where it was the lead adviser.

In preparation for the bid, Arrow Connect has evaluated the appetite of many UK and international banks, focusing on those with a good track record on projects in the transportation sector. The response was strongly positive, with high levels of interest, enhanced by the favourable perception of the existing NET Line One project and the reputation of Arrow Connect consortium members for successful project delivery.





## Delivering an integrated network

Integration is the keystone to success for Phase Two.

**Arrow Connect benefits from Bombardier as its vehicle and systems provider. Bombardier is the global market leader in urban transport systems with over 100,000 vehicles in operation around the world and many turnkey systems to its credit.**

Arrow Connect has total confidence that Phase Two will be well engineered and integrated to work with Line One's signalling, control and communications systems. Importantly, it will be as reliable and dependable as Line One, which routinely achieves over 99.5% system availability levels.

Construction integration on Phase Two will be largely focused on a few structures, notably the station, the river and A52 bridges. VolkerRail and FCC bring vast experience, including proven construction methodologies from their European projects such as Barcelona, Dublin Luas and Manchester Metrolink, as well as extensive experience with Network Rail. This expertise places Arrow Connect in a prime position to provide the best solutions available in the market to deliver these important structures.



Integration begins with systems engineering and design, dealing with, for example, stray currents and electromagnetic interference risks where the railway is in close proximity to the Queen's Medical Centre (QMC) and the Nottingham Railway Station; it will include noise and vibration mitigation, and very importantly it will include strategic integration with the City's bus, rail and road network.

Modal integration plans will underpin Arrow Connect's business case, by maximising feeder bus opportunities, rail interchanges and park and ride sites through Nottingham City Transport's involvement, including its expert planning and commercial skills. Arrow Connect will benefit from integration opportunities across the tram and bus networks covering Greater Nottingham with slick transfers and interchangeable smart ticketing systems via the well established Easyrider Citycard held and used by over 45% of city residents.

# Nottingham Express Transit **Phase Two**

## **Phase Two Delivery**

Arrow Connect's first priority will be to prepare the alignment design seeking to minimise the need for utility diversions, then to deliver all the construction works in such a way that Nottingham people can continue to go about their business with the minimum of inconvenience.



Arrow Connect is currently engaging with the city's Phase Two team at Lawrence House and other key stakeholders to prepare its bid with a view to eventually becoming the Preferred Bidder.

Ultimately, when Financial Close is reached, Arrow Connect will quietly and smoothly assume management and control of Line One. The Line One business will continue as usual; and then grow successfully as Arrow Connect firstly designs, then constructs, then seamlessly commissions the Phase Two Lines.



The result will be a safe, integrated, and high quality tram network that will deliver better public transport. It will continue to receive praise and acclaim, and bring even more success to Nottingham, providing benefits to all residents and visitors, whilst regenerating parts of the city.

## **Arrow Connect will build on the success of Line One.**

- taking **the tram** further
- taking **the people** further
- taking **Nottingham** further

## Contact Arrow Connect

Arrow Connect is fully committed to working with the local community, businesses and institutions throughout the design and construction phase of NET Phase Two and beyond. We will be engaging with all interested parties during this process and look forward to an increasing dialogue once the preferred bidder has been selected.

In the meantime we welcome your thoughts and views as we finalise our proposals for our Phase Two bid, if you wish to speak with Arrow Connect we can be contacted as follows:

**Arrow Connect**

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**Web:** [www.arrowconnect.net](http://www.arrowconnect.net)

Alternatively, further information about this project is available from the Promoter – Nottingham City Council:

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