



Planning Act 2008

The Network Rail (Ordsall Chord) Order

Section 42 Consultation Pack November 2012

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1.0 Introduction

1.1 The Ordsall Chord

1.1.1 Network Rail will be making a Development Consent Order (DCO) application to the Planning Inspectorate to gain the necessary powers to construct a new piece of railway over the River Irwell in the area of the Museum of Science and Industry and Salford Central Station.

1.1.2 The scheme, known as the Ordsall Chord, will provide a direct rail link between the three main stations in Manchester (Victoria, Oxford Road and Piccadilly). It will allow for the future expansion of Salford Central station and enable trains from the east of England to reach Manchester Airport without crossing the West Coast Main Line to the south of Manchester Piccadilly.

1.1.3 This will help remove a key rail bottleneck in the area. The benefits of the Ordsall Chord are:

- Two new fast trains per hour between Manchester Victoria and Liverpool;
- Six fast trains an hour between Leeds and Manchester (as opposed to four now);
- Faster journeys across the north:
 - Journey times between Leeds and Manchester could be reduced by about 10 minutes
 - Journey times between Liverpool and Manchester could be reduced by 10-15 minutes
- A new direct service through Manchester city centre to Manchester Airport; and
- Faster journey times to Hull, Newcastle and the North East.

1.1.4 As part of the Development Consent Order process, Network Rail is consulting on the Ordsall Chord project. The purpose of this

consultation is to provide stakeholders with information about the emerging plans and gather feedback on:

- A proposed railway alignment which crosses Water Street, Manchester, the River Irwell and Trinity Way in Salford;
- Two bridge and viaduct design options for the new railway; and
- A potential location for a replacement pedestrian and cycle bridge across the River Irwell.

1.1.5 Technical consultation (Section 42 of the Planning Act 2008) and public consultation (Section 47 of the Planning Act 2008) started in October 2011. This round of consultation provided an opportunity to share high level information about the emerging plans with interested parties. Over the past year, Network Rail has continued to engage with consultees to develop the scheme. Network Rail set up a Working Party to engage the two local authorities within the boundary of the application site (Manchester and Salford City Councils), English Heritage and Transport for Greater Manchester. Network Rail prepared a protocol for the Working Party, which set out a remit, roles and responsibilities. The Working Party has been an integrated part of the design development process since January 2012.

1.1.6 This document provides an overview of the latest plans for the proposed Ordsall Chord. The scheme is still being designed and further consultation will be undertaken ahead of submission of the application to the Planning Inspectorate.

2.0 Background to the Ordsall Chord

2.1 The Northern Hub

2.1.1 The last decade has seen a transformation in rail across the North of England. Hundreds more trains now run every day and they are safer and more reliable than ever before.

2.1.2 Commuter passenger numbers are increasing with forecasts showing that demand for peak time rail services into Manchester is expected to grow 37% by 2019. A new railway chord at Ordsall will help to accommodate this demand and support economic growth in the North of England. Fast and reliable links between the North's city regions and international gateways such as Manchester Airport are seen as an essential part of supporting economic growth in jobs and businesses.

2.1.3 Ordsall Chord is a major project in its own right delivering capacity improvements across the region. Set within a wider context, it is the first part of the Northern Hub, a £560million programme of works to stimulate economic growth and transform the rail network in the North of England. The Chancellor of the Exchequer, George Osborne, announced £85m of funding for the Ordsall Chord project in 2011. This was followed by the Government's High Level Output Statement announcement in Summer 2012 to fund the entire Northern Hub project.

2.1.4 The Northern Hub is projected to deliver:

- over £4bn worth of wider economic benefits to the region and potentially 20,000 to 30,000 new jobs;
- an improved rail network that will allow us to double the capacity of trains into the Trafford Park freight terminals; and
- a £4 boost to the economy for every £1 spent.

2.1.5 For further information:

<http://www.networkrail.co.uk/improvements/northern-hub/>

2.2 Proposed Development Site

2.2.1 The site lies within an urban area on the edge of Manchester City Centre and crosses the River Irwell into Salford and centres on Grid Reference SJ 382891 97950. The site is bounded by existing railways to the south, north and west (see Figure 1 below and Appendix A).



Figure 1: Location Plan

2.3 Description of the Development

2.3.1 The new two-track railway, the Ordsall Chord, will connect the Castlefield Junction line with the Deal Street Junction line. It will cross:

- Water Street, Manchester;
- the railway viaduct connection to the Museum of Science and Industry (MoSI);
- the River Irwell, and;
- the Manchester and Salford Inner Relief Road (Trinity Way A6042) in Salford.

2.3.2 It will then run parallel with the existing line between Ordsall Lane Junction and Manchester Victoria, before connecting with it south of Salford Central station.

2.3.3 The new railway will be electrified and have a maximum line speed of 30mph, providing a consistent line speed between Manchester Piccadilly and Manchester Victoria. It will allow trains to run directly between Manchester Victoria, Oxford Road and Piccadilly without needing to reverse.

3.0 Evolution of the Ordsall Chord and how Network Rail arrived at its proposed alignment

3.1 Introduction

3.1.1 The Ordsall Chord has evolved through a consultative design development process. To summarise:

- Network Rail and its industry partners sought to identify and compare high level strategic options at Manchester Victoria and Manchester Piccadilly to deliver the specified project requirements. Network Rail then considered local options for a connection in the Ordsall Lane junction area before assessing each option's suitability and viability. This phase formed the detail of the consultation carried out in October 2011;
- Following consultation, detailed review of potential rail alignment options was carried out, a new alignment was developed in response to key concerns from stakeholders; and
- The development of bridge and viaduct designs and an assessment of all environmental impacts and identification of mitigation measures.

3.1.2. The Ordsall Chord proposal currently consists of a preferred railway alignment and two potential bridge/viaduct design options that could be built. Following this round of consultation, a preferred design will be chosen and this will be followed by a final round of consultation then a Development Consent Order application. This is expected to be submitted to the Planning Inspectorate in Summer 2013.

3.2 Option Assessment: Strategic Options

3.2.1 Two main strategic options were identified and assessed. One was the Piccadilly option and the other was the Victoria Option.

3.2.2 The Piccadilly Option proposed a flyover which would extend over the existing rail line connections at Ardwick to the east of Piccadilly Station.

3.2.3 The Victoria option proposed the Ordsall Chord which would balance rail services between Victoria and Piccadilly Stations by allowing trains approaching from the east to be diverted to the north towards Victoria Station.

3.2.4 A number of different interventions make up each strategic option but the key driver was how to deal with the conflicting train movements at Piccadilly Station which significantly affect capacity on the rail network.

3.2.5 The criteria used to assess the strategic options were:

- performance against the conditional outputs;
- train performance;
- disruption during construction and after commissioning;
- opportunities for timing of their implementation;
- impact of New Lines/High Speed 2;
- value for money; and
- affordability.

3.2.6 How well the options delivered against the criteria was assessed by a combination of a qualitative assessment, achievement against the conditional outputs and an economic appraisal.

3.2.7 The assessment concluded that of these two strategic options, the Victoria option performed significantly better than the Piccadilly option. Further information about these strategic options and the assessment

of them can be read in full by using the following link to page 56 of the *Manchester Hub Rail Study* (see: <http://www.networkrail.co.uk/aspx/6474.aspx>)

3.3 Local Options

3.3.1 Once Network Rail and its industry partners made the decision to progress the Victoria strategic option, the second stage of work commenced which explored different local options. These included long and short flyover options, tunnel options and an option for a new section of track at the same height as the current railway lines.

3.3.2 An assessment of the options was then undertaken. The option to build a new section of track at the same height as the current railway lines at Ordsall Chord was chosen to proceed to the next stage of design development. This would provide a direct rail link between the existing Middlewood and Castlefield Railway Viaducts in the Ordsall Lane junction area, crossing over the Museum of Science and Industry mainline connection.

3.3.3 The remaining options were appraised and dismissed for various reasons. Plans of the three options summarised below are shown in Appendix B.

- **Short Chord Flyover Option** - it was not possible to accommodate this option between the Altrincham Metrolink line and connect it into the Middlewood Railway Viaduct without resulting in significant modifications to the existing railway lines and the adjacent highway infrastructure. These modifications would require the closure of the rail network for a significant period during construction, resulting in disruption to the existing public transport system.

A second short chord option was considered which extends over Trinity Way and the Middlewood Viaduct. However, this alignment would have a significant impact on several large regeneration sites identified for development, would not represent value for money and would not provide gradients for any freight/engineering activities required.

- **Long Chord Flyover Option** – this option differs from the short chord flyover as it proposes to go over the existing Altrincham Metrolink (Cornbrook Viaduct) line. Again, due to the shallow gradients and the height required to clear existing Metrolink structures, this option would extend across the city centre between Victoria and Piccadilly Stations and comprise a series of significant viaducts and bridges which would be visible across the Manchester skyline.

This option was considered to have a significant environmental impact, require compulsory purchase of a substantial amount of land, and, when compared to the other options, would not represent value for money.

- **Tunnel Option** – a tunnel option would have only a minimal impact on the area around the application site when compared with all other options. However, because of the shallow gradients required for a railway, the majority of the structure would remain above ground along its length. One tunnel alignment considered involved the stopping up of approximately eight major roads serving the city centre, including Oxford Road and would necessitate the diversion of the River Medlock. These tunnel options were considered to have a significant environmental impact, require compulsory purchase of a substantial amount of land, and when compared to the other options would not represent value for money

3.4 Railway Alignment Options

- 3.4.1 The next part of design development comprised a detailed review of all potential alignment options for Ordsall Chord. Each alignment would need to be of a suitable length to allow for a six car passenger train to stop between the two new railway junctions that would be formed by the new railway. The route would also need to be designed as to not preclude any future freight traffic.
- 3.4.2 In total, 14 alignment options were developed, each with different connection points and radii. The three shortlisted alignment options are shown in Appendix C. In all of these three options, the proposed chord would be at a similar height to the existing elevated railway viaducts. It would be supported on modified existing structures or new structures crossing over the River Irwell, Manchester Bolton & Bury Canal, Prince's Bridge and Trinity Way.
- 3.4.3 The development will extend through an area which has significant heritage value with a collection of Grade I and II listed structures, including the Grade I listed Stephenson's Bridge which extends across the River Irwell (see Appendix D). The relationship of the Ordsall Chord to these heritage structures was a key consideration in the development of these alignment options, as was the potential impact on local residents and businesses.
- 3.4.4 The analysis of options and consultation with the key consultees resulted in Network Rail choosing to proceed with an option which would avoid any direct impact on the Grade I listed Stephenson's sandstone bridge. While the proposal will still have a direct impact on several Grade II listed structures no engineering solutions have been identified which overcome these impacts. It is this alignment which is currently being consulted upon (see Appendix C).

3.4.5 The alignment options for the Ordsall Chord have placed a serious constraint on the Museum of Science and Industry's (MoSI) current railway operations. Discussions with the Museum remain ongoing to determine the optimum solution.

3.5 Integration and Coordination

3.5.1 To develop the proposals there is a need to bring together the functional needs and aspirations of a wide range of stakeholders:

- These include individuals and groups outside of the rail industry including local government planning and highways authorities and regeneration teams, statutory bodies (such as English Heritage and the Environment Agency), those developing masterplans and development proposals in and around the site and important neighbouring bodies (Museum of Science & Industry, the Canal & River Trust (formerly British Waterways Board));
- The technical requirements of railway operations also must be incorporated, including (amongst others) network service provision, civil engineering, roads design, track design, overhead line equipment (electrical supplies), signalling, maintenance, utilities and plant equipment; and
- These diverse needs must be integrated together with urban planning, architectural, property, environment and heritage issues, underpinned with a strong sustainability agenda.

4.0 Achieving High Quality Design

4.1 Ordsall Chord Design Principles

4.1.1 Network Rail has appointed an architectural team to lead the design of the Ordsall Chord alignment and structural form options. Through dialogue and consideration of the urban context, the team has developed a manifesto of ten principles that underpin the design approach to the Ordsall Chord. These are:

- Within the Northern Hub, no other infrastructure intervention has a similar functional, aesthetic or aspirational importance
- The historic location on is one of the most sensitive sites in the global evolution of the railway
- The values of the site and structures should inform and enrich the design process
- Understandable concerns how new structures will impact on old
- This location is ideal for the insertion of new rail infrastructure, with the next layer of rail use overlaid on the history of the site
- An agenda for the holistic design quality of the new structures is critical to the success of the project
- Statutory approvals process is important in the immediate future
- Equally so is the long-term legacy of the rail connections and the urban realm around
- The new structures will be emblematic of the Northern Hub project and the long-term aspirations of Network Rail
- The two designs which form part of this consultation process.

4.2 Design Panel

4.2.1 Network Rail is also looking at opportunities to further inform the design process. One proactive approach, alongside ongoing consultation with Design Council CABE (the Government's design agency), is the

introduction of a design panel of national and local experts who will review and comment on the development proposals, from design development through procurement to construction. The panel includes a structural engineer, urban designer, architect and city historian.

4.2.2 The City Mayor of Salford and the Leader of Manchester City Council are also part of the Panel. The Ordsall Chord design panel will meet regularly to analyse, critique and provide an additional creative input to the design process. It is intended that the Panel will be involved throughout the project from design development, procurement to construction. Network Rail has worked closely with the Royal Institute of British Architects (RIBA) to identify suitable candidates and establish a suitable and effective process.

4.3 Structural Design Options

4.3.1 Network Rail has appointed specialist architects to work with the engineering team and lead the design work for the Ordsall Chord structural forms.

4.3.2 At the start of the design process, a total of seven possible structural combinations were identified for the proposed railway. Each comprised a combination of bridge designs and viaducts given the constraints of a rail structure and in consultation with Manchester City Council, Salford City Council, English Heritage, Transport for Greater Manchester and other consultees. Two of these seven combinations have been identified for further design development and consultation. The key considerations that influenced the selection process included:

- the relationship of each structural form to listed structures and their setting;
- the townscape and visual quality created at long and short distances;
- ongoing maintenance requirements; and

- minimising disruption during construction, particularly for traffic using the Trinity Way dual carriageway

4.3.3 Visuals of the two options are provided below and feedback is sought on these as part of this consultation.

4.3.4 The architectural team is working with each of the technical rail disciplines to ensure that a tightly controlled and fully integrated design is taken forward. It is proposed that weathered steel is used for all structures at rail level and these would be supported by sculpted, creased concrete piers, unified by a common geometry. Whilst the broad architectural concepts have been developed, at this stage the finer detail is still being developed alongside maintenance considerations and costs.

4.4 Historic Context

4.4.1 The rail network expresses itself through the centre of Manchester and Salford by the physical arrangement of the tracks; the historically elevated viaducts and bridges that carry the railway above street level around and through the two cities and sometimes divide and define specific areas. The materials and forms of the structures give character to the spaces between and next to the viaducts and bridges. Adding major new structures into this context requires careful thought and consideration.

4.4.2 The approach to designing the structural form is aimed at developing a scheme which acknowledges the significance of overlaying the next layer of railway on the history of this important site. The intention is to express the new structures in a language that acknowledges the forms of the historic railway viaducts, but does not aim to copy or replicate these. This approach is intended to ensure that the historic structures remain visible and prominent and that the new Ordsall Chord adds positively to the landscape.

4.5 Option 1: 'Half Through' Bridge Design

4.5.1 One approach to this would be to pursue a light touch of simple architectural and engineering elements. This design approach integrates an elegant structural method with a minimalist aesthetic of smoothly uncluttered or perforated/punctured surfaces.

4.5.2 Figures 2, 3, 4 and 5 indicate the manner how this might be developed; a curved metal surface could express the slow sweep of the Chord as it passes from north-east to south-east. If this were considered overly minimal it could be a laser-cut surface decorated with a pattern or imagery developed in collaboration with an artist or sculptor.



Figure 2: Half through bridge option looking towards Salford from Liverpool Road, Manchester

- 4.5.3 To focus the attention on the simple form of this 'ribbon' surface, all other elements of the rail bridge would need to be very carefully coordinated to ensure a visually acceptable aesthetic is created. The technical needs of all railway engineering disciplines would have to be tightly controlled in a fully integrated design system. For this design option, it is proposed to develop a structural form that integrates various technical constraints into simple approach with a repeating motif.
- 4.5.4 The design begins and ends with a slender piece of smooth steel, close to (but not touching) the existing viaducts to the north and south ends of the Chord. Between these two points the steel gradually increases, then decreases in depth according to the structural loads within. The surface is proposed as pre-weathered ('Corten') steel to provide a visual reference to the historic massive brick masonry of the viaducts. This delicate steel ribbon is simply supported on a series of circular concrete columns.
- 4.5.7 At the Salford end, the structure is finer in terms of both its horizontal and vertical depth and width. In this location the east-west access through to the Middlewood Locks area is important and this new structure will act in conjunction with the original Victorian viaduct to form a gateway to this site (Figure 3). It is proposed to remove and encase the existing concrete structures.



Figure 3: Looking South down Trinity Way towards Hampson Street, Salford

4.5.8 As the structure heads southwards towards Manchester, it crosses Trinity Way (which was designed to allow a railway line to be built over it) supported by circular columns sat on either side and in the central reservation of the dual carriageway. A similar support detail would be used between the road and the river where an important area of public space sits next to the Manchester Bury & Bolton Canal entrance.

4.5.9 For this option, the canal opening would need to be modified to accommodate canal boats turning in and out of the Canal. These changes result from a structural support as the bridge crosses the river, which takes the form of a new concrete column and pier sat in the centre of the waterway. Placing a new structure in the river has onerous maintenance and operability issues which need to be considered.



Figure 4: looking south towards Stephenson's Bridge from Irwell River Park, Salford

4.5.10 Beyond this point the bridge approaches the 'zig-zag' viaduct which would have some existing elements removed to accommodate a major vertical support adjacent to Stephenson's Bridge and the 1830 viaduct (Figure 4).

4.5.11 A similar elegant ribbon face to the bridge crosses the junction of Water Street and Liverpool Road, and also forms the horizontal definition to the Water Street 'gateway' when approached by road from the south.

4.5.12 To accommodate the alignment of the proposed railway, the existing Castlefield viaduct is required to be widened on its southern elevation, which in this design option would take the form of a sloping concrete form extruded from the existing masonry (Figure 6). This cantilevered

concrete form would be topped with a steel parapet of a similar appearance to the ribbon elsewhere.



Figure 5: Looking west from Water Street, Manchester across to Salford



Figure 6: Proposed widening of Castlefield Viaduct, looking north from Water Street towards Liverpool Road

4.5.13 In terms of various design criteria this option can be considered to provide the following benefits:

- The form and scale does not attempt to compete with the various existing Victorian structures
- It uses materials that are honest and reference the tone of neighbouring buildings
- It provides an opportunity for the subtle integration of surface application or decoration of an artist or sculptor

4.6 Option 2: Bowstring Bridge Design

- 4.6.1 As a new railway link between Piccadilly and Victoria, Manchester and Salford, the Ordsall Chord has an historic and aesthetic role to play in this area of the two cities.
- 4.6.2 Walking at street level between Piccadilly, Salford Central and Victoria gives an insight into the design strategies originally employed during the construction of the railways. There is a stark difference between the utilitarian design of repetitive viaducts and the relative celebration of bridges that cross roads and rivers. No two bridges are the same, and design responses have been tailored to the individual requirements of each location.
- 4.6.3 Different aesthetic approaches have been used including skew arches, trusses and other structural forms with painted decoration span between the relatively mundane viaducts. This isn't to say that the viaducts aren't impressive in their own way; thousands of bricks went into each span, sometimes twisting to alignments influenced by their context. The workmanship and skill involved in the viaducts was considerable, far ahead of contemporary bricklaying skills or material quality.
- 4.6.4 For this option the design team has explored a relatively expressive design form to celebrate the river crossing in a similar way to the historic methodology described above (see Figures 7, 8, 9 and 10). Another 'truss' design solution, but with a more expressive form, is a bowstring truss design. Crossing the Irwell with support positions on each bank, it is structurally efficient combined with opportunities for variations in scale and material.



Figure 7: Bowstring bridge option looking towards Salford from Liverpool Road, Manchester



Figure 8: Looking South down Trinity Way towards Hampson Street, Salford

4.6.5 The curved forms also offer visual references to the two arches of Stephenson's Bridge across the Irwell, a similarity which would be particularly clear when viewed along the river from the north. This option could improve the setting of Stephenson's Bridge from the north and would reveal views from the Irwell River Park to the listed building (see Figure 9).



Figure 9: Looking south towards Stephenson's Bridge from Irwell River Park, Salford

4.6.6 This design could utilise the 'earthy' tones of pre-weathered steel but is also well suited to a more 'sleek' aesthetic. This infers smooth, minimally expressed details, and potentially a clean, white paint finish. This would align with the existing design context of bridge vs. viaduct structures along the railway between Victoria and Piccadilly.

4.6.7 This design option has been proposed with a bowstring arch over the Irwell which shifts smoothly into a horizontal form as it crosses Trinity Way (Figures 8 and 10). This variation might be combined with variations in height or section profile to create a flowing appearance. Sculpted, creased concrete piers would support steel structure above, unified by a common geometry.



Figure 10: Looking west from Water Street, Manchester across to Salford

5.0 The Importance of the Built Heritage

5.1 Introduction

5.1.1 As outlined above, the Ordsall Chord extends through an extremely historic area of Manchester and Salford and will impact on several listed structures, their setting and designated conservation areas. Please refer to Appendix D: Constraints Plans for more information.

5.1.2 The feedback received during the phase 1 consultation (October 2011) highlighted the importance of the built heritage and the potential impact of the Ordsall Chord.

5.1.3 Network Rail, in seeking to address these concerns, appointed a heritage architect and an archaeologist to advise on these issues and assist with the preparation of a detailed heritage assessment and archaeological desk based assessment. Both specialists have worked closely with the design team and heritage bodies to ensure that heritage is considered at each stage of this design development. The approach follows best practice, as identified in the Government's National Planning Policy Framework and associated guidance prepared by English Heritage.

5.2 The Heritage Assessment and Archaeological Desk Based Assessment

5.2.1 The heritage assessment and archaeological desk based assessment will be available as part of the next stage of consultation expected in Spring 2013. However, a significant amount of work towards these statements has already been completed to inform the design development. This includes a Character Appraisal and a detailed assessment of the key heritage assets.

- 5.2.2 The purpose of the archaeological desk based assessment is to identify statutory and non-statutory sites and features or structures of archaeological interest within the site boundary. This has been used to assess any likely affects of the development on those sites, features or structures.
- 5.2.3 The purpose of the heritage assessment is to set out the heritage approach required for the design development of Ordsall Chord. It describes the heritage significance of the wider area and establishes the key heritage assets (buildings, bridges etc.) which are to be considered in detail as the proposal develops.
- 5.2.4 This includes heritage assets which may be physically affected by the proposals and those whose setting may be affected. It considers the capacity that the historic environment in the site area has for change, analyses the emerging options in heritage terms and will ultimately provide an assessment of impact of the proposals.
- 5.2.5 The heritage assessment starts by establishing an understanding of the heritage context of the area. It draws on the information collated within the desk based assessment and provides a character appraisal of the area. The methodology follows English Heritage guidance and sub-divides the wider area into smaller character areas, each of which varies in terms of its urban form, heritage and townscape values.
- 5.2.6 Each character area has been assessed against a list of set criteria as recommended by English Heritage and includes,
- identification and assessment of key heritage assets within the character area;
 - the origins and development of the area;
 - the archaeological significance and potential of the area;

- the architectural and historic qualities of the buildings and the contribution they make to the special interest of the area;
- the character and relationship of spaces within the area; and
- the prevalent and traditional building materials, textures and colours in the area.

5.3 Summary of the Assessments

5.3.1 The assessment of the heritage context considers the conservation areas in and around the proposed development. The proposals are sited within the Castlefield Conservation Area (in Manchester), adjacent to the Flat Iron Conservation Area (in Salford) and in proximity to the Salford Cathedral Conservation Area (in Salford) (see Appendix D). As such, the proposed development proposed will primarily impact on the Castlefield Conservation Area.

5.3.2 Both the heritage assessment and the archaeological desk based assessment consider the historic development of the area. The heritage assessment focuses on the development of the area from the establishment of the roman fort and settlement, through to the next principal phase of development from the twelfth century onwards and then describes the dramatic development of this area in the eighteenth and nineteenth centuries.

5.3.3. The Castlefield area has been highlighted as being of significant importance for the development of Manchester in the eighteenth and nineteenth centuries and is also of significance in relation to that period because of Manchester's key role in the Industrial Revolution. There are a number of sites in this area which have been highlighted for their national importance as industrial designated heritage sites. This includes:

- the Bridgewater Canal and the associated basin at Castlefield;

- the Liverpool and Manchester Railway inclusive of Stephenson's Bridge and;
- the Liverpool Road station buildings.

5.3.4 The success of the Bridgewater Canal encouraged further development in the area including the opening of the world's first railway station on Liverpool Road in 1830. The construction of the Liverpool Road station is considered to have been a pioneering railway development of international significance. Other railway development followed, but Liverpool Road station is considered to be the most significant structure of this early period.

5.3.5 The second phase of railway development from the 1840s to the 1850s saw a massive expansion in new railways. Many structures associated with this phase of development are still in use, some of which are located within the area of the proposed development.

5.3.6 There are also structures dating back to the third phase of rail expansion (from the 1850s to the 1870s and a later period ending around 1915).

5.3.7 As well as establishing an understanding of these key heritage assets of exceptional significance, the heritage documents have established all designated and non-designated heritage assets which will need to be considered by the emerging proposals. Considerations relating to the any potential physical impacts alongside those of the setting of these heritage assets have been analysed as part of the design options and will continue to inform the proposed development.

6.0 Safeguarding our Environment

6.1 Environmental Impact Assessment

6.1.1. Because of the size and nature of the development, the proposed Ordsall Chord is deemed to be an Environmental Impact Assessment (EIA) Development. As such, a comprehensive EIA will be undertaken and the application to PINS will be accompanied by an Environmental Statement under the Infrastructure Planning (Environmental Impact Assessment) Regulations 2009.

6.1.2 The Environmental Statement will also cover any potential heritage or environmental impacts (including the chord's impact on cycle and pedestrian connectivity) that may occur as part of the scheme. Network Rail will consult on its draft Environmental Statement at the final stage of consultation. In the meantime, an update on the preliminary environmental information is included in this pack in Appendix E.

6.1.3 In February 2012, Network Rail and its consultant submitted a Scoping Report to the Government's Infrastructure Planning Commission (the agency responsible for Development Consent Orders before being wound up at the end of March 2012 and responsibilities transferred to the Planning Inspectorate). The Scoping Report is a high level assessment of the potential environmental impact of the scheme in construction and operation.

6.1.4 The Commission circulated the Scoping Report to an extensive list of statutory stakeholders and invited comment and feedback. The feedback and further opinion of the Commission are contained in the Scoping Response issued in March 2012. Both reports can be found on the Planning Inspectorate website at:

<http://infrastructure.planningportal.gov.uk/projects/north-west/ordsall-chord-manchester/?ipcsection=folder>

6.1.5 The scoping response, in addition to the first phase of formal consultation required under Section 42 of the Planning Act 2008, has formed the basis of continued consultation with statutory and non statutory organisations since Autumn 2011. The project team has continued to seek opinion from stakeholders in a series of meetings with environmental specialists. Appendix E includes a synopsis of the meetings held in relation to each environmental issue and an explanation of how the consultation has influenced the design at this stage.

6.1.6 The project team has drawn on the initial consultation held in October 2011 for any further information that can be incorporated into the overall assessment of potential environmental impact and proposed mitigation.

7.0 Connecting Salford and Manchester

7.1 Pedestrian/Cycle Connections

- 7.1.1 Where the Ordsall Chord extends over the River Irwell, its alignment requires the removal of Prince's Bridge (see Appendix A). Prior to the construction of the Inner Ring Road in 2004, this bridge provided vehicular access between Manchester and Salford along the alignment of Hampson Street. It is now closed to vehicles, but is still used as a pedestrian and cycle link. Cycling charity Sustrans has designated the bridge as part of the National Cycle Route 6 (from London to Cumbria).
- 7.1.2 Feedback received during the phase 1 consultation (October 2011) included the importance of providing a temporary and permanent link across the River in this location for the cyclists and pedestrians who use this bridge, should Prince's Bridge need to be removed.
- 7.1.3 Network Rail continues to hold discussions with key stakeholders to progress options for permanent and temporary bridges to retain this existing connection between Manchester and Salford. This work is being informed by pedestrian and cycle surveys (see Appendix E). These surveys have helped find out how the bridge is used and where people cycle or walk after crossing the bridge.
- 7.1.4 Appendix F identifies a hatched area where options for a permanent and a temporary bridge crossing are being considered with the city councils, landowners and other key consultees.
- 7.1.5 At present it is assumed that connections to the public highway from this bridge will extend along both sides of the river via a towpath before they connect with Water Street in Manchester and Trinity Way in

Salford. Further consideration will be given to the suitable connection routes once the location of the bridge has been determined.

7.2 Utility Diversions

7.2.2 Six known utilities currently use Prince's Bridge to cross the River Irwell. These utilities include water, gas, electricity and telecoms. The bridge is a strategic crossing that connects the utility networks of Manchester and Salford. As Prince's Bridge is proposed to be removed, Network Rail is considering options for the diversion of the six utilities.

7.2.3 In total, 14 different options have been identified which comprise various routes, locations and engineering solutions. Some options propose to utilise existing and proposed infrastructure, such as Trinity Way, Irwell Street, Stephenson's Bridge, and the proposed pedestrian/cycle bridge.

7.2.4 Other options propose independent underground solutions. Each option has been carefully assessed with consideration given to the potential disruption during construction, cost and timing of diversions, suitability for utilities, potential impact on heritage assets and other environmental impacts, and impact on private landholdings.

7.2.5 Three preferred alignments and two preferred engineering solutions have now been identified for further feasibility work:

Preferred alignments:

- Alignment adjacent to Castlefield Bridge (on north side);
- Alignment south of the Castlefield Railway Viaduct; and
- Alignment south of the Castlefield Railway Viaduct, next to the river and then crossing under the arches of this viaduct towards Water Street.

Engineering solutions:

- Over the river via a bespoke pipe bridge design; and
- Under the river using a suitable method

7.2.6 A plan identifying the utility diversion options is provided at Appendix G. Each of these options will be discussed in detail with landowners affected and Statutory Authorities over the coming months.

8.0 Constructing the Ordsall Chord

8.1. Construction Compounds

8.1.1 Site compounds are required to store the materials and plant / machinery necessary for the construction of the Ordsall Chord. These compounds will also provide daily welfare facilities for personnel and provide sufficient areas to construct the new bridge structures and modify the existing railway viaducts.

8.1.2 The compounds will bring the following principal benefits:

- Secure, self contained areas for storage of construction materials and plant and for carrying out fabrication and construction works;
- Reduced likelihood of plant and materials obstructing the public highway, or plant performing dangerous manoeuvres on public highways.

8.1.3 A single construction compound extending the length of the Ordsall Chord is not a viable option due to constraints adjacent to the proposed alignment, including Water Street, River Irwell, Trinity Way and the existing railway viaduct structures. Therefore in order to provide an effective area for construction and to minimise potential local disruption, the Ordsall Chord has been split into a series of working areas with separate compounds. The proposed compounds are identified in Figure 11 below and shown in plans in Appendix I.

Compound reference	Location	Purpose / use
Compound 1:	South of Water Street, South of existing Castlefield Railway Viaduct	Material storage and construction working area during the widening of the existing Castlefield Railway Viaduct.
Compound 2	North of Water Street, West of Stephenson's Bridge	<p>Local site manager's offices and welfare facilities.</p> <p>Main assembly area for the replacement Water Street bridges and material deliveries for the abutment works.</p>
Compound 3:	North of Water Street, East of Prince's Bridge.	<p>Local site manager's offices and welfare facilities.</p> <p>Dismantling of Prince's Bridge and removal from site.</p> <p>Main assembly area for the River Irwell bridge section along with materials deliveries for the south and mid section portion of the substructure / superstructure works.</p>
Compound 4	North of the River Irwell utilising Stanley Street.	<p>Local site manager's offices and welfare facilities.</p> <p>Dismantling of Prince's Bridge and removal from site.</p> <p>Main assembly area for the Trinity Way bridge section along with material deliveries for the south and mid section portion of the substructure / superstructure works.</p> <p>Material deliveries for the north section of the Irwell River Bridge substructure /</p>

		superstructure works.
Compound 5:	North of Trinity Way and Middlewood viaduct	<p>Main Project office and administrative complex including welfare facilities, car park for both staff and site operatives. Secondary material storage for other site compounds and secure small plant storage</p> <p>Access to Middlewood Viaduct widening and strengthening works including new installation of rail systems.</p> <p>Access to and material deliveries for Trinity Way bridge north section sub and super structure works.</p>
Compound 6	Existing Network Rail maintenance compound, south of the existing railway viaduct with access from Chapel Street	This area will be used primarily for material storage and to provide an access for personnel and plant to the railway
Compound 7:	South of Salford Central Station with access from New Bailey Street	<p>Local site manager's offices and welfare facilities.</p> <p>Material deliveries for works associated with arch strengthening works.</p>

Figure 11: Ordsall Chord Proposed Construction Compounds

8.1.4 Adequate room will be provided at entrances to these compounds to ensure waiting vehicles do not result in queuing onto the highways.

8.1.5 A traffic management plan will also be developed, which identifies measures to minimise the impact on the local highway network during

construction. Further information will be available during the next stage of consultation in spring 2013.

8.2 Construction Deliveries

8.2.1 Materials required for the proposed bridge and viaduct structures will be delivered by road to the compounds. The design will make sure, wherever possible, components are fabricated to enable deliveries on articulated lorries and subsequently assembled on site. However, where this is not possible and would result in an abnormal load, these would be delivered during the night to minimise the impact on local peak traffic times. Any abnormal loads will be discussed with the highways authority.

8.2.2 A number of strategic construction traffic routes have been identified which access the site compounds from the west via the M602 (see Appendix J). From the M602, it is proposed that the main construction traffic will be directed via the A57 Regent Road and onto A6042 Trinity Way. The strategic construction traffic routes are shown on drawing 'Strategic Construction Traffic Routes and Haul Roads' at Appendix H.

8.2.3 The potential impact of construction traffic on the highway is currently being assessed as part of the ongoing Environmental Impact Assessment. The assessment may introduce the need to provide alternative or replacement construction traffic routes, which will be included in the next stage of consultation.

8.2.4 Railway system components will be delivered to the point of installation by rail wherever practicable; particularly those new rail systems which run at the side of existing rail infrastructure.

8.2.5 Consideration has been given to delivery of construction materials by river but for the following reasons this option is not considered feasible because:

- Construction and removal of a jetty will disturb the river bed unnecessarily and the location could affect the construction of the new section of river-spanning bridge.
- The river draft is very shallow and it is unlikely that delivery barges will get access to bank side jetties without extensive river bed dredging.
- The materials will need to be off loaded from lorries onto barges at a remote canal basin. The Motorway and inner city ring road are close by and there is little advantage gained by double handling materials.
- Increase likelihood of a dangerous river related event occurring whilst operatives are handling river vessels and unloading materials

8.3 Construction Activities

8.3.1 All the compounds identified above would be required for the duration of the construction programme and will be used simultaneously. The main construction activities would be undertaken during daylight hours only. However, there will be periods of construction located on or adjacent to the existing railway viaducts that need to be undertaken at night when trains are not running. The impact of potential construction operations outside of daylight hours is currently being assessed as part of the Environmental Impact Assessment.

8.3.2 Network Rail is considering the best way to plan and programme the construction of the proposed new railway and is committed to building considerately with minimum disruption to local residents and businesses.

8.3.3 The compound sites, where possible, will be restored to their original state upon completion of the project. There will be areas, however, that are permanently impacted by the proposed scheme, particularly along the alignment of the Ordsall Chord.

8.3.4 A plan showing the proposed construction compounds and vehicle routes are provided on the 'Temporary Affected Land' drawing at Appendix H.

8.4 Highway and Public Right of Way Diversions

8.4.1 Construction of the Ordsall Chord will necessitate partial or full road and public right of way closures and traffic/pedestrian management measures. A traffic assessment has been prepared which examines the impacts on general traffic due to these proposed road closures and identifies potential traffic management options:

- **Trinity Way (A6042):** both structural form options include a proposed two span viaduct across Trinity Way. Alterations to the existing layout will be required while the piers in the central reservation and the abutments on either side of the carriageways are built. The design team is developing options that seek to retain two lanes of traffic in either direction and minimise the impact on the traffic movements in this location.
- **Water Street (B5225):** it is proposed to construct a new single span bridge across Water Street for the new Ordsall Chord. The main construction works would be undertaken during an extended blockade of the existing railway line and during this period, a complete road closure of Water Street would be required. In advance of this blockade, there would be a requirement to undertake preparatory works on the existing abutments, either side

of Water Street, which would require temporary single lane closures during construction.

- **Potato Wharf:** The temporary road closure of Potato Wharf is required in order to facilitate widening of the existing railway bridge across Potato Wharf.
- **River Irwell Towpath:** During construction, access to the towpath along part of the north bank of the River Irwell and the footpath along the east side of the Manchester, Bolton & Bury Canal will be temporarily closed. Pedestrian diversions will be agreed with the local authority and put in place whilst these routes are closed.

8.4.2 The development will result in the permanent closure of a private access road from Water Street which extends along the north side of Castlefield Viaduct linking Water Street with Woollam Place. The permanent closure of this road will affect access to the Network Rail arches but will not affect access for residents of Woollam Place as they will be able to continue to access from Woollam Place off Liverpool Road.

8.4.3 As outlined above, the development will also result in the permanent closure and diversion of the public right of way across Prince's Bridge.

8.4.4 Further details are provided at Appendix I.

8.5 Construction Programme

8.5.1 The main construction phase for Ordsall Chord is likely to be undertaken between January 2015 and December 2016. The general construction sequence will firstly involve setting up all site compounds and undertaking site clearance and demolition works as required (enabling works). Following this, the main construction sequence will

be to construct the new viaduct and bridge structures with works on various sections of the Ordsall Chord at the same time.

- 8.5.2 The final stage will be to install the new railway infrastructure and the commissioning phase. Multiple work fronts are envisaged through the construction period in order to maximise the construction productivity and ensure that the proposed project completion date of December 2016 is achieved.

8.6 Temporary Affected Land

- 8.6.1 During the construction of Ordsall Chord, temporary land will be required for the purpose of providing site compounds and construction working areas. Please refer to drawing entitled 'Temporary Affected Land' at Appendix I for further information

8.7 Permanent Affected Land

- 8.7.1 Please refer to drawing entitled 'Permanent Affected Land' at Appendix I. This land will be required to construct the new railway.

9.0 Programme and Next Steps

9.1 Phase 2 Consultation

- 9.1.1. Phase 2 consultation is taking place under section 42 (statutory consultees, local authorities and landowners or anyone with an interest in land which is potentially affected) and section 47 (public consultation) of the Planning Act 2008.

9.2 Technical Consultation (Statutory Consultees)

- 9.2.1 The deadline for responses to this consultation pack is ?? December 2012. Who and where to send the feedback to is included in the covering letter which was sent with this pack.

9.3 Public Consultation

- 9.3.1 In accordance with its Statement of Community Consultation, which is available to view at the website below, Network Rail will seek to consult with the local community and interested stakeholders through a multi-stage consultation process. Consultation with people living in the vicinity, and interested parties outside of the land proposed for the infrastructure works is being done in three stages.
- 9.3.2 This phase of public consultation will take place from 20 November 2012 for a period of four weeks until 21 December 2012.
- 9.3.3 This consultation period includes a range of public events across Manchester and Salford where those affected, members of the public and statutory consultees can obtain more information about the development proposals. Further information is also available at <http://www.networkrail.co.uk/north/Ordsall-Chord.aspx> .

- 9.3.4 Any responses received will then be considered and will be used to inform the ongoing design development and application document preparation.

9.4 Phase 3 Consultation

- 9.4.1 The final stages of statutory and public consultation are planned for spring 2013. This will include an information round and consultation on the draft application documents.

- 9.4.2 The timescales for stage 3 of the consultation will be published on Network Rail's website in advance of any activity. Details will also be made available in the press and through Network Rail's promotional activity relating to the scheme. Network Rail is committed to ongoing consultation and engagement with interested parties after the application has been submitted to the Planning Inspectorate. This will continue through to determination of the proposal and beyond to completion of the scheme.

9.5 Submission of the Development Consent Order application

- 9.5.1 Any issues raised during the third phase of consultation will be considered and the draft application documents and drawings amended where appropriate before the application is formally submitted to the Planning Inspectorate in summer 2013.

- 9.5.2 Once the application has been accepted by the Planning Inspectorate, they will hold an examination to consider all relevant issues before making a formal recommendation.

- 9.5.3 Subject to receiving recommendation from the Planning Inspectorate and an Order made by the Secretary of State, construction of the chord is expected to commence in January 2015 with completion and operation by December 2016.

Appendices

Appendix A: Location Plan

Appendix B: Initial Alignment Options

Appendix C: Preferred Alignment

Appendix D: Constraints Plan

Appendix E: Update on Preliminary Environmental Information

Appendix F: Replacement Pedestrian and Cycle Bridge Location

Appendix G: Options to Divert Utilities

Appendix H: Compound Locations and Strategic Construction Routes

Appendix I: Temporary and Permanent Land Plans