

## City Rail Link: Assessment of Effects on the Environment – Executive Summary

Prepared by:



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Revision N <sup>o</sup>	Prepared By	Description	Date
A	Fiona Blight	Issue of final document	15/08/2012
B	Fiona Blight	Updated to respond to Council's request for further information and to reflect withdrawing of NoR 7	14/12/2012

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Prepared by	Fiona Blight– Technical Director Planning Beca		14/12/2012
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## Executive Summary – Assessment of Effects on the Environment

This is an Assessment of Environmental Effects (AEE) of the City Rail Link (CRL or the Project). The AEE accompanies Notices of Requirement (NoR), served by Auckland Transport (AT) pursuant to section 168(2) of the Resource Management Act 1991 (RMA), to designate land for the construction, operation and maintenance of the CRL.

The CRL comprises the construction, operation and maintenance of a 3.4km underground passenger railway (including two tracks and three stations underground) running between Britomart Station and the North Auckland Line (NAL) in the vicinity of the existing Mount Eden Station, and an additional 850m of track modifications to the NAL<sup>1</sup>.

Patronage on passenger services on the Auckland rail network has increased significantly in recent years following investment by central, regional and local government in improved services, trains, stations and infrastructure. Growth in patronage is expected to continue over the next decade and beyond as further investment in electrification and electric trains comes on line and the population of Auckland continues to grow. By 2030 Auckland regional rail journeys are expected to increase from their present 10 million to 30 million per year (with 30,000 train travellers each morning and afternoon peak – equivalent to approximately 24,000 fewer car journeys)<sup>2</sup>. There is also an anticipated increase in the percentage of total public transport journeys to 20% (from 10% in 2006)<sup>3</sup>.

In March 2012 Auckland Council's spatial plan (The Auckland Plan) was adopted. The Auckland Plan provides a long-term strategy for growth and development in Auckland and has a strategic vision to make Auckland one of the world's "most liveable" cities. The Auckland Plan sets a strategic direction for Auckland and its communities that integrates social, economic, environmental, and cultural objectives. It identifies future critical infrastructure facilities, including the CRL as the foremost transformation project in the next decade. It recognises the CRL will create significant place shaping opportunities and contribute to creating a well-connected and accessible Auckland. The CRL is seen as critical to Auckland's future growth, focussing on the centre as the employment and economic hub and connecting the centre to the wider network and centres in the Auckland region. The Auckland Plan identifies the CRL as "the top priority transport project for Auckland, with a targeted date to become operational in 2021"<sup>4</sup>.

The CRL will assist to deliver the objectives of the Auckland Plan.

Other key policy documents identify and plan for the CRL, including the Regional Land Transport Strategy (RLTS) and the City Centre Masterplan (CCMP). Both the Auckland Plan and the RLTS have 30 year implementation timeframes.

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<sup>1</sup> For ease of reference in this report, the stations included in the CRL NoR have been temporarily named Aotea Station, Karangahape Station, and Newton Station. The rail interchange is referred to as the Inner West Interchange (INWI). The stations and interchange will be formally named in the future.

<sup>2</sup> ARTA, Rail Development Plan 2006 @ <http://www.aucklandtransport.govt.nz/improving-transport/plans-proposals/Rail/Pages/RailDevelopmentPlan20062016.aspx>

<sup>3</sup> ARTA, Rail Development Plan 2006 @ <http://www.aucklandtransport.govt.nz/improving-transport/plans-proposals/Rail/Pages/RailDevelopmentPlan20062016.aspx>

<sup>4</sup> The Auckland Plan: Chapter 13 Auckland Transport. Refer box 13.2 The City Rail Link

The CRL once constructed and operational will contribute to achieving the following benefits:

- Provide for more train movements on the Auckland rail network through unlocking the capacity constraint of Britomart (by developing Britomart into a through station);
- Support the compact city model of the Auckland Plan and that espoused in the Auckland Regional Policy Statement 1999;
- Provide a catalyst for inner city re-development by creating new major transport hubs around the underground rail stations, stimulating land use intensification and regeneration of central city areas;
- Increase commuter access to the city centre which provides the opportunity to stimulate economic development;
- Provide significant additional capacity to the passenger transport system, in order to meet sustainable mode share targets set by the NZTS and the Auckland RLTS 2010 – 2040;
- Assist in providing additional rail network capacity to support any future extensions of the rail network to the Auckland International Airport and the North Shore, longer term objectives of the Auckland Plan, the RLTS, and the Auckland Transport Plan;
- Assist in building more resilient regional infrastructure, an objective of the Auckland Plan, the RLTS, the AEDS, the Auckland Sustainability Framework, and the Auckland Transport Plan;
- Assist in meeting the environmental and health objectives, notably air quality standards, sought by the Auckland Plan, the RLTS, the Regional Policy Statement and the Regional Air, Land and Water Plan;
- Assist in reducing regional carbon emissions stemming from the transport system, a key component of climate change, and an objective of the NZTS;
- Complement investment in Auckland's strategic road network by freeing up road space for freight and other (e.g. commercial and recreational) trips;
- Enhance access to the heart of Auckland improving the ability for international and domestic tourists alike to travel within Auckland region from the city centre area.

It is noted that the first stages of creating an efficient and effective rapid transit system in Auckland have already begun. Central Government and the Auckland region have spent or committed over \$2 billion since 2001 developing the Auckland rail network. The commitment to electrify the Auckland suburban rail network is underway, including the building and delivery of the new electric powered rolling stock (Electric Multiple Units or EMU's) to run on this network. The CRL will enhance the benefits of the existing resources already committed to electrification.

AT is responsible for delivering the CRL project as the council-controlled organisation of Auckland Council responsible for managing and controlling Auckland's transport system under the Local Government (Auckland Council) Amendment Act 2009. AT's purpose<sup>5</sup> is "to contribute to an effective and efficient land transport system to support Auckland's social, economic, environmental, and cultural well-being".

AT is a Requiring Authority (network utility operator under Section 167 of the RMA) in relation to the Auckland transport system via Section 47(1) of the Local Government (Auckland Council) Act

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<sup>5</sup> As set out in section 39 of the Local Government Auckland Council Amendment Act 2009

2009<sup>6</sup>, and has the ability to designate for the CRL. As such AT can serve NoR to designate land required for the CRL<sup>7</sup>.

AT has served six (6) NoR on Auckland Council to designate the CRL in the Auckland Council District Plan. The CRL is acknowledged to be an integrated project and as such the NoR are expected to be addressed together under the RMA. The CRL NoR relate to:

- Surface (designation) – means designation of the ground surface (including air space above and land below to the centre of the earth);
- Strata (designation) – means designation of land layer starting 5 metres below the ground surface and the sub-strata designation. This starts at a nominated distance below the surface and extends down to meet the sub-strata designation (the tunnel envelope);
- Sub-strata (designation) – means designation of land starting below the strata designation to the centre of the earth (provides for the rail tunnels).

The different types of designation mean that some people may be affected by surface designation at ground surface, while others may only be affected by designation at a strata and sub-strata level. The designation identifies the land required to undertake and/or protect the works authorised by the designation.

A suite of documents have been prepared to support the CRL NoR. These are:

*Volume 1 - NoR*

- NoR Overview document
- NoR Forms for NoR One (1) through to Six (6)
- Land Requirement Plans and Scheduled of Affected Properties attached to each NoR Form

*Volume 2 – Assessment of Effects on the Environment (AEE) (this Volume)*

- AEE Executive Summary (this document)
- AEE

*Volume 3 – Technical Reports*

- Option Evaluation reports (2010 and 2012)
- Concept Design Report and plans
- Technical Environmental Assessments
- Environmental Management Framework
- Urban Design Framework
- Cultural Values Assessment

The CRL designation is sought to strategically plan for and enable the construction, operation and maintenance of the CRL in the future. The serving of the NoR by AT (as the Requiring Authority) is the first part of the statutory planning process for securing the necessary planning approvals required to construct and operate the CRL.

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<sup>6</sup> Section 47(1) of the Local Government (Auckland Council) Act 2009 is contained within Appendix 2: Volume 2 CRL NoR suite of documents

<sup>7</sup> The legislative provisions confirming AT's status is contained in Appendix 2: Volume 2 of the CRL NoR suite of documents

If confirmed the NoR will designate the CRL in the relevant district plan and provide a broad authorisation or consent for the land use activities described in the NoR. This provides certainty to directly affected landowners and occupiers, those in proximity, iwi, stakeholders (including network utility operators) and the community as to the extent and location of the CRL (for construction and operation) and the nature of any restrictions. Serving the NoR protects the CRL from other development which would hinder or prevent it being constructed or operated.

Once a designation is confirmed the next part of the process is the "Outline Plan". AT as the Requiring Authority provides an Outline Plan (in accordance with section 176A (3)(a)-(f) of the RMA) to the Auckland Council, before construction commences, that includes details of the works authorised under the designation. The Section 176A RMA process provides the Council with the mechanism to review the works (shown in the Outline Plan) that are proposed, and to request any changes before construction is commenced. This enables the Council to manage the adverse effects by checking the detailed information and plans to see they are in accordance with the confirmed designation (and any conditions). The Council can then request the requiring authority to make any changes to manage effects in accordance with the designation and conditions. Commonly on large projects environmental management plan(s) will be submitted at this stage outlining the processes and methods for managing adverse effects and this is proposed for the CRL.

Resource consents from the Auckland Council for works pursuant to sections 9, 14, and 15 of the RMA which are not covered by the designation provisions (i.e. consents under regional plans) are not being sought in conjunction with the CRL NoR. These will be applied for at a future date. It is acknowledged that construction may not commence until these consents are sought and obtained.

AT has proposed a designation lapse period of 20 years for each designation<sup>8</sup>. This extended period is to:

- Protect the CRL (tunnels, stations, and construction areas), both above and below ground, for this long term strategic transport project, so that there is certainty that the CRL can be constructed and operated;
- Provide certainty to affected landowners and the community as to the nature and location of the CRL through inclusion in the appropriate district plans;
- Provide sufficient time to give effect to construction of the CRL including undertaking property and access negotiations, further site investigations and design (preliminary, detailed and construction), and construction of the Project:
  - It is estimated that the construction period alone is approximately 5 to 6 years in length and therefore to provide certainty once the CRL is under construction that the designation has been given effect to, a longer period than the default period of 5 years is necessary;
  - It will also provide an appropriate period to obtain the necessary resource consents, building consents, and to undertake tendering / procurement, and other processes associated with the project construction.

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<sup>8</sup> Pursuant to Section 184 of the RMA

An overall evaluation of the CRL as it relates to the NoR has been carried out, including:

- Consideration of the nature and likely timeframe for the construction period;
- Alternative sites, routes and methods;
- The benefits of the project;
- Any actual or potential effects and measures to avoid, remedy and mitigate any adverse effects.

The Concept Design Report (CDR)<sup>9</sup> contains a description of the concept design developed for the CRL project including an indicative construction methodology and programme. The concept design has been developed to a level that demonstrates construction and operational feasibility of the CRL, including the proposed alignment, stations and interchange, and to enable an understanding of the effects of construction and operation sufficient to inform the AEE.

AT has carried out a detailed and robust consideration of alternatives, and has confirmed a preferred alignment and station locations for the CRL. In relation to the NoR, in accordance with section 171(1)(b) of the RMA, there has been robust consideration of alternative sites, routes and methods, taking into account a range of relevant matters including environmental effects and engineering constraints. The consideration of alternatives includes a review of key previous investigations of the sites, routes and methods (including the 2009/2010 option evaluation work undertaken by KiwiRail and the then Auckland Regional Transport Authority (ARTA))<sup>10</sup>, as well as further options, iterations or variations (considered in 2012<sup>11</sup>).

A prudent or conservative “envelope approach” to identifying and assessing the actual and potential effects of the CRL project in relation to the NoR has been adopted. This approach is commonly used to identify and assess the effects of a project based on an assessment of the engineering and architectural concept design, as well as taking into consideration potential conditions for the designation. Sufficient investigations and assessments have been undertaken to understand and evaluate the actual and potential effects of the designation and CRL while providing flexibility to enable innovations to be developed in later stages of design (preliminary, detailed and construction) and efficiencies to be optimised at the time of construction.

The actual and potential adverse effects of the project will predominantly arise from construction and will be temporary, mainly occurring where surface works are proposed. However, it is acknowledged that these effects are likely to be significant given the scale and duration of the project and consequently measures are proposed to manage and mitigate adverse effects. Once constructed and operating the CRL is largely underground. The employment of a TBM to construct the majority of the 3.4km underground tunnels is a significant method to mitigate a number of effects that would otherwise be generated if other construction methods were used (including a greater level of effects at the surface on private and public property, and on the road transport network). The surface construction areas identified in the proposed designation are quite localised and specific to the connection of the CRL to the rail network at Britomart and the NAL and the construction of the stations (Aotea, Karangahape and Newton). The construction of the CRL is anticipated to occur over 5 to 6 years. While construction may take place at a number of areas simultaneously, it is not anticipated that construction over the whole length of the project will be undertaken at the same time for the full duration.

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<sup>9</sup> Appendix 13: Volume 3 of the CRL NoR suite of documents

<sup>10</sup> 2010 Option Evaluation Report Appendix 11: Volume 3 CRL NoR suite of documents

<sup>11</sup> 2012 Option Evaluation Report Appendix 12: Volume 3 CRL NoR suite of documents

The construction of the different stages and sections of the CRL is similar to the construction of other infrastructure projects in Auckland. The localised nature of the surface works in separate areas along the CRL is also comparable to the construction and effects that would result from new commercial office and residential buildings built in the city centre area. While the construction of an underground passenger rail tunnel may not be common in New Zealand, other significant tunnels have been consented and constructed, including the Vector tunnel in Auckland which runs between Hobson Street in the city centre area to Newmarket and further south, the Victoria Park tunnel, and the Waterview Connection (currently under construction).

The adverse effects generated during the construction period can be managed through the methods proposed under the NoR. An Environmental Management Framework (EMF)<sup>12</sup> is the primary mechanism for managing any adverse effects at the time of construction and operation of the CRL. The development of this framework for the CRL NoR is important in determining the process of how these effects will be managed in the future given that the timing of construction has not yet been confirmed. Under the EMF an Environmental Management Plan (EMP) will be developed and implemented. Under the EMP a Construction Environmental Management Plan (CEMP) will be developed at construction time and will contain (for the construction activity) the specific measures for managing and mitigating the adverse effects for the duration of construction. The CEMP will be submitted to Council as part of the Outline Plan process as it will, along with plans and other information, address those matters as required under section 176A(3)(a)-(f) of the RMA. As is typical with the implementation of a construction project, a number of delivery work plans (i.e. mini management plans) will be developed and implemented by the contractor throughout the construction period to deal specifically with localised effects as works are physically occurring (i.e. localised traffic management plans to address the temporary closing of a traffic lane for a short time period). These delivery work plans will be developed in accordance with the measures contained within the CEMP. Another key plan to be implemented under the EMP is the Communications Plan for the project. This plan will provide the methods and mechanisms for communicating, liaising, and consulting with Iwi, directly affected parties, key stakeholder organisations, people affected in proximity, and the wider public.

AT proposes conditions on its CRL designation to avoid, remedy or mitigate the adverse effects of the project as appropriate. AT will provide a proposed draft suite conditions for consideration in due course.

Technical assessments<sup>13</sup> to support the AEE have been undertaken to assess the actual and potential effects of the project. The technical assessments have identified the key effects and methods to manage and / or avoid, remedy or mitigate the adverse effects. These technical assessments have been considered in the overall assessment of environmental effects for the project. These technical assessments have identified potential adverse effects such as:

- *Road Transport Network*: temporary adverse effects on public and private transport, pedestrians and cyclists as a result of the cut and cover / top down construction of the two tunnels along Albert Street (between Customs and Mayoral Drive) and Aotea Station.
- *Noise*: temporary adverse effects in terms of disturbance on people from surface construction works.

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<sup>12</sup> Appendix 1: Volume 3 CRL NoR suite of Documents

<sup>13</sup> Technical assessment reports are contained in Volume 3 NoR CRL suite of documents

- *Vibration*: temporary adverse effects in terms of disturbance on people from construction works.
- *Built Heritage*: the demolition (in order to construct the CRL) of the scheduled historic men's toilets located under Albert Street (at the end of Durham Street west – note the scheduled Blue Stone Wall remains).
- *Archaeology*: there is potential for archaeological remains to be discovered where surface construction works are occurring within the reclamation area at the north end of the CRL (i.e. between Britomart and the Albert Street / Customs Street intersection). It is unlikely that archaeological remains will be discovered where tunnel boring is proposed due to the depth well below where any remains are anticipated to be found.
- *Contamination*: temporary adverse effects on human health where surface construction works are occurring and the disturbance of contaminated soil is possible from excavations.
- *Air Quality*: temporary adverse effects on human health from dust from excavations during surface construction works, and odour / hazardous air pollutants arising from the disturbance of contaminated soil excavations during surface construction works.
- *Trees*: the removal or relocation of 42 trees or groups of trees (the only ones identified to be within the designation footprint) where surface construction works are proposed. No scheduled trees are located within the surface designation footprint.

Overall there will be a number of positive long term effects and benefits generated from the CRL. Actual and potential adverse effects have been identified including directly affected property impacts (however most effects are related to construction). While these are typical of large infrastructure projects undertaken in both Auckland and internationally, it is acknowledged the effects of construction are likely to be significant. Methods and practices are available (and have successfully been used on other projects) and will be implemented via conditions on the designation to avoid, remedy or mitigate these adverse effects. Some proposed effects will be unable to be avoided; however these are generally associated with construction and are temporary in duration or can be managed and mitigated such that overall the project meets the purpose and principles of the RMA.

In accordance with section 171 of the RMA, the assessment of the Project against relevant policy statements and plans has concluded that the Project is consistent with these documents, in particular the Auckland Plan and the RLTS.

The CRL will assist to deliver the objectives of the Auckland Plan, including that it will create significant place shaping opportunities and contribute to creating a well-connected and accessible Auckland. The CRL is seen as critical to Auckland's future growth, focussing on the centre as the employment and economic hub and connecting the centre to the wider network and centres in the Auckland region. Overall the CRL will promote the sustainable management purpose and principles of the RMA.