Lincoln Road Corridor Improvements

Notice of Requirement to Auckland Council from Auckland Transport

Assessment of Effects on the Environment (AEE)

Assessment of Effects on the Environment prepared by:

Hill Young Cooper Ltd for Auckland Transport

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Revision Nº	Prepared By	Description	Date
A	Hill Young Cooper	Issue of Final Document	21 June 2016

Contents

Figures included in this Assessment of Effects on the Environment

Tables included in this Assessment of Effects on the Environment

Abbreviations used in this Assessment of Effects on the Environment

Abbreviation	Full notation
ACDP	Auckland Council District Plan (Waitakere Section)
ACRP:ALW	Auckland Council Regional Plan: Air, Land and Water
ACRP:C	Auckland Council Regional Plan: Coastal
ACRP:SC	Auckland Council Regional Plan: Sediment Control
ACRPS	Auckland Council Regional Policy Statement
AEE	Assessment of Effects on the Environment
AT	Auckland Transport
BPO	Best practicable option
CIA	Cultural Impact Assessment
CMA	Coastal Marine Area
HAIL	Hazardous Activities and Industries List
LGACA	Local Government (Auckland Council) Act 2009
LRCI	Lincoln Road Corridor Improvements
NES-AQ	National Environmental Standard for Air Quality
NES-CS	National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health
NoR	Notice of Requirement
NPS	National Policy Statement
NZCPS	New Zealand Coastal Policy Statement 2010
NZTA	New Zealand Transport Agency
PAUP	Proposed Auckland Unitary Plan
PPFs	Protected Premises and Facilities
RLTP	Auckland Regional Land Transport Programme 2015-2025
RMA	Resource Management Act 1991

1 Summary

1.1 Project Outline and Objectives

This Assessment of Environmental Effects (AEE) has been prepared to support the Notice of Requirement (NoR) issued by Auckland Transport (AT) in respect of the Lincoln Road Corridor Improvements (LRCI).

The LRCI project applies to a 1.3 kilometre length of Lincoln Road, Henderson, between its intersection with Te Pai Place / Pomaria Road to the south and the State Highway 16 on-ramps to the north.

The LRCI project involves the widening of the existing Lincoln Road corridor by between 2 to 3 metres (and up to 11 metres in some places) to provide an additional bus and high occupancy vehicle (or 'transit') lane on each side of the road; installation of a cycleway and wider footpath on both sides of the road; and a raised median. Two general vehicle lanes will be maintained in each direction and existing intersections will be upgraded. A new service lane will be constructed to provide access to properties north of Daytona Avenue.

AT seeks a lapse date for the designation of 10 years. AT's current funding programme anticipates that the detailed design for the project is expected to take place in 2020-2022, with construction of the project in 2023-2025. Commencement dates for construction may vary based on funding reviews.

AT's objectives for the LRCI project are set out in Table 1.1.

Table 1.1 Project Objectives

Objective Number	Objective
1	To accommodate more people travelling to and along Lincoln Road by improving corridor efficiency.
2	To improve public transport reliability within the project area.
3	To improve safety for all road users, including by providing cycling infrastructure.
4	To integrate Auckland Transport's Lincoln Road improvements with the NZTA Western Ring Route upgrade via the Lincoln Road Motorway Interchange.

1.2 Project Benefits

It is anticipated that the LRCI project, once operational, will provide or contribute to achieving the following benefits:

a. Improved corridor performance and network efficiency through greater 'people carrying capacity';

b. Improved reliability and speed for bus journeys;

c. Safer cycling facilities;

d. Improved safety for vehicles, including reduced likelihood of collisions; and

e. Integration with the capacity improvements being made at the State Highway 16 interchange, improving the performance of the interchange.

These positive effects will be experienced by a large number of people, into the foreseeable future.

1.3 Adverse Effects and Their Management

There will be a range of temporary effects associated with the construction of the project. The more significant actual and potential temporary effects are:

a. Transport – congestion and delays from reduction of traffic lanes and temporary speed limits imposed;

b. Trees – potential damage from works in dripline of scheduled trees and other trees that are to be retained;

c. Air – dust generated from construction;

d. Noise and vibration – human annoyance from construction noise and vibration;

e. Temporary effects on residential amenity from works in front, side and rear yards; and

f. Business and community disruption – effects from temporarily reduced access to commercial operations, disruption of normal community activities.

These construction effects have the potential to be felt by a large number of people who use the corridor on a day-to-day basis. Businesses and residents along the corridor and in surrounding areas will also experience these negative effects for an extended period of time.

Some of the most directly affected residential properties have been purchased by AT, and effects on these properties can be disregarded.

Generally, road reconstructions generate a moderate level and scale of effects through disruption to access, noise, dust etc. These effects are to some extent unavoidable given the need to undertake the construction works.

A range of mitigation measures are proposed to mitigate the impacts of the construction phase of the project, principally through the preparation of management plans. These plans will be submitted as Outline Plans to the Council for comment prior to the works occurring. The mitigation measures proposed in this NoR are consistent with those successfully used by AT for other roading projects across the region. A management plan specifically aimed at managing disruption to business and community facilities located along the corridor is proposed.

In terms of permanent effects of the project, three scheduled trees towards the southern end of the project area (one Cedar and two Rimu) represent the most valued natural resource along the corridor. The potential adverse landscape and visual effects from removal of these scheduled trees have been avoided through an amendment to the project design.

The following effects have been identified as the key potential permanent effects:

a. Urban design, landscape and visual effects from the removal of character elements within the road reserve such as trees and grass berms; wider road corridor and reduced front yards;

b. Road Noise – slight increase in average road noise received at 8 sensitive receivers (2 to 5 dB increase);

c. Small loss of open space - small areas of land are required from Te Pai Park and Daytona Reserve.

The effects of the raised median on site accessibility fall under the umbrella of effects that could be expected at any time by a business operating beside a busy main road (for

example from the rearrangement of traffic lanes, signals and medians due to operational issues).

The nature and extent of the permanent negative effects is likely to be, overall, low. The most lasting effect will be the change to the character of the road corridor through the addition of the extra traffic lanes (which widens the visual appearance of the corridor) and the removal of the berm and street trees.

In order to mitigate these potential effects, replacement median planting is proposed. 142 trees will be removed, 51 of which are subject to the tree rules of the operative Auckland Council District Plan (ACDP). The draft landscape concept shows the potential for 96 new street trees, with the possibility of additional trees to be planted in Te Pai Park. These trees will be able to establish to a stature equivalent to or greater to those trees which will be removed that are subject to the general tree rules of the ACDP.

A detailed Urban Design and Landscape Treatment Plan will be prepared and submitted as an Outline Plan prior to construction commencing. This plan will detail replacement planting including options for the consistent replacement of frontage elements such as fencing and landscape strips in front yards, as well as the steps that can be taken to improve the design of the pedestrian environment.

Despite the only small increase in noise as a result of the project, noise attenuation measures are proposed for residential properties that will be exposed to noise from Lincoln Road through removal of houses fronting the road. Actual mitigation measures will be determined through an Operational Noise Management plan that will be submitted as part of the Outline Plan process. That plan will update the assessment undertaken as part of the NoR prior to the commencement of construction and will confirm the properties that require noise mitigation measures, based on the expected operational conditions at the time of construction.

Auckland Council has agreed to the taking of the areas of reserve land and has discussed a mitigation package with AT. The land take at Daytona Reserve will allow for a service lane to be built that will visually open up this reserve to greater interaction with Lincoln Road. The land take at Te Pai Park involves a small area beside the road.

The effects of the wider road corridor on residential amenity are not significant, due to purchase of some properties by AT, the use of some residential properties as businesses and the mitigation proposed. Effects on commercial and business activities are limited to effects on parking and front landscape strips. It is expected that through detailed design with affected landowners, these effects will be mitigated.

2 Introduction

2.1 Purpose of the Assessment of Environmental Effects

This Assessment of Effects on the Environment (AEE) has been prepared by Hill Young Cooper Limited to support the Notice 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 of improvements (including road widening) to Lincoln Road and local road connections, and the ongoing operation and maintenance of the improvements.

The works are known as the Lincoln Road Corridor Improvement (LRCI) project.

This AEE addresses the matters set out in Form 18 of the RMA Regulations[1], expanding on the information contained in the LRCI NoR, as well as those matters that the Council will have to consider when it assess the NoR. The AEE will also be of assistance to submitters in understanding the LRCI project and its impacts on the environment (including impacts on properties) as well as the mitigation of adverse effects proposed by AT.

2.2 Lincoln Road Corridor Improvements Suite of Documents

The LRCI suite of documents is contained in three volumes:

a. NoR Form 18 and the associated Property Schedule and AT Requiring Authority Status are contained in Volume 1.

b. The AEE along with a series of technical reports attached as appendices that identify and assess effects of the project on specific resources and environments are contained in Volumes 1, 2 and 3.

c. Supporting maps and plans to the NoR and AEE are contained within Volume 3.

This AEE should be read in conjunction with Form 18 for the LRCI.

Table 2.1 lists the content of the NoR and AEE suite of documents.

Table 2.1: LRCI NoR Documents and Volumes

Volume	Description of Contents
Volume 1	NoR Form 18 • Attachment 1: Property Schedule • Attachment 2: AT Requiring Authority Status Assessment of Environmental Effects Appendices to the AEE comprising: • Appendix 1: Relevant District Plan Maps • Appendix 2: Consultation Report • Appendix 3: Relevant Objectives and Policies • Appendix 4: Proposed Conditions

[1] Form 18 of the RMA regulations specifies the contents of a Notice of Requirement.

Volume 2	• Appendix 5: Alternatives Assessment • Appendix 6: Property Impacts Assessment **Technical Reports** • Appendix 7: Design Philosophy Statement • Appendix 8: Transport Assessment Report • Appendix 9: Arboricultural Report • Appendix 10: Urban Design, Landscape and Visual Assessment • Appendix 11: Stormwater Assessment • Appendix 12: Air Quality Assessment • Appendix 13: Assessment of Noise and Vibration Effects • Appendix 14: Lighting Assessment Report • Appendix 15: Social Impact Assessment • Appendix 16: Marine Ecological Assessment • Appendix 17: Contaminated Land – Preliminary and Detailed Site Investigation • Appendix 18: Geotechnical Assessment Report
Volume 3	**Maps/Plans** • Appendix 19: Notice of Requirement • Appendix 20: Land Requirement • Appendix 21: Preliminary Design

2.3 Requiring Authority Status

AT is the Requiring Authority for the LRCI project. Attachment 2 to the NoR (Volume 1) contains details of this status.

AT is a Requiring Authority by virtue of being a network utility operator under Section 167 of the RMA in relation to the Auckland transport system. Section 47(1) of the Local Government (Auckland Council) Act 2009[2] (LGACA) confirms this role.

AT is a council-controlled organisation of Auckland Council, responsible for managing and controlling Auckland's transport system under the LGACA. AT's purpose, as set out in section 39 of the LGACA, is "to contribute to an effective and efficient land transport system to support Auckland's social, economic, environmental, and cultural well-being".

Sections 45 and 46 of the LGACA outline AT's functions and powers in respect of the Auckland land transport system and AT's role as the Road Controlling Authority. In addition, AT is responsible for preparing the Regional Land Transport Programme for Auckland in accordance with the Land Transport Management Act 2003 (LTMA).

[2] Section 47(1) of the Local Government (Auckland Council) Act 2009 is contained within Attachment 2 , Volume 1.

2.4 Overview of Lincoln Road Corridor Improvements

The LRCI project applies to a 1.3 kilometre length of Lincoln Road, Henderson, between its intersection with Te Pai Place / Pomaria Road to the south and the State Highway 16 on-ramps to the north. The project area is shown on Figure 2.1 below (which also marks four of the main retail premises along the corridor for orientation purposes).

The LRCI project involves the widening of the existing Lincoln Road corridor by between 2 to 3 metres (and up to 11 metres in some places) to provide an additional bus and high occupancy vehicle (or 'transit') lane on each side of the road; installation of a segregated cycleway/walkway on both sides of the road; and a raised median. Two general vehicle lanes will be maintained in each direction and existing intersections will be upgraded.

The solid raised median will be installed in the centre of the road to improve vehicle and pedestrian safety. U-turns will be enabled at controlled intersections. A new mid-block signalised pedestrian crossing will added between Daytona Road and Paramount Drive. A service lane will be installed between 300 to 312 Lincoln Road to provide vehicle access to properties in this area.

The improvements will be integrated with the New Zealand Transport Agency's (NZTA) State Highway 16 motorway interchange upgrade works.

A fuller description of the project is set out in Section 3.

It is anticipated that the LRCI project, once operational, will provide or contribute to achieving the following benefits:

a. Improved corridor performance and network efficiency;
b. Improved reliability and speed for bus journeys;
c. Safer cycling facilities;
d. Enhanced pedestrian facilities;
e. Improved safety for vehicles, including reduced likelihood of collisions; and
f. Integration with the capacity improvements being made at the State Highway 16 interchange, improving the performance of the interchange.

To achieve these benefits, the LRCI will require the following works:

a. Land acquisition;
b. Earthworks and construction of low retaining walls along some front boundaries;
c. Removal of on-street parking;
d. Construction of additional traffic lanes, footpaths/cycleways, bus stops and raised median;
e. Construction of a new service lane near Daytona Reserve;
f. New and replaced stormwater infrastructure;
g. Relocation and replacement of utility services;
h. Removal of grass berms, trees and vegetation; planting of new street trees;
i. Changes to driveway access and on-site parking arrangements; and
j. Temporary works and ancillary safety and operational services.

AT seeks a lapse date for the designation of 10 years. AT's current funding programme anticipates that the detailed design for the project is expected to take place in 2020-2022,

with the construction of the project in 2023-2025. Commencement dates for construction may vary based on funding reviews. The extended lapse date is discussed further in Section 4.6.

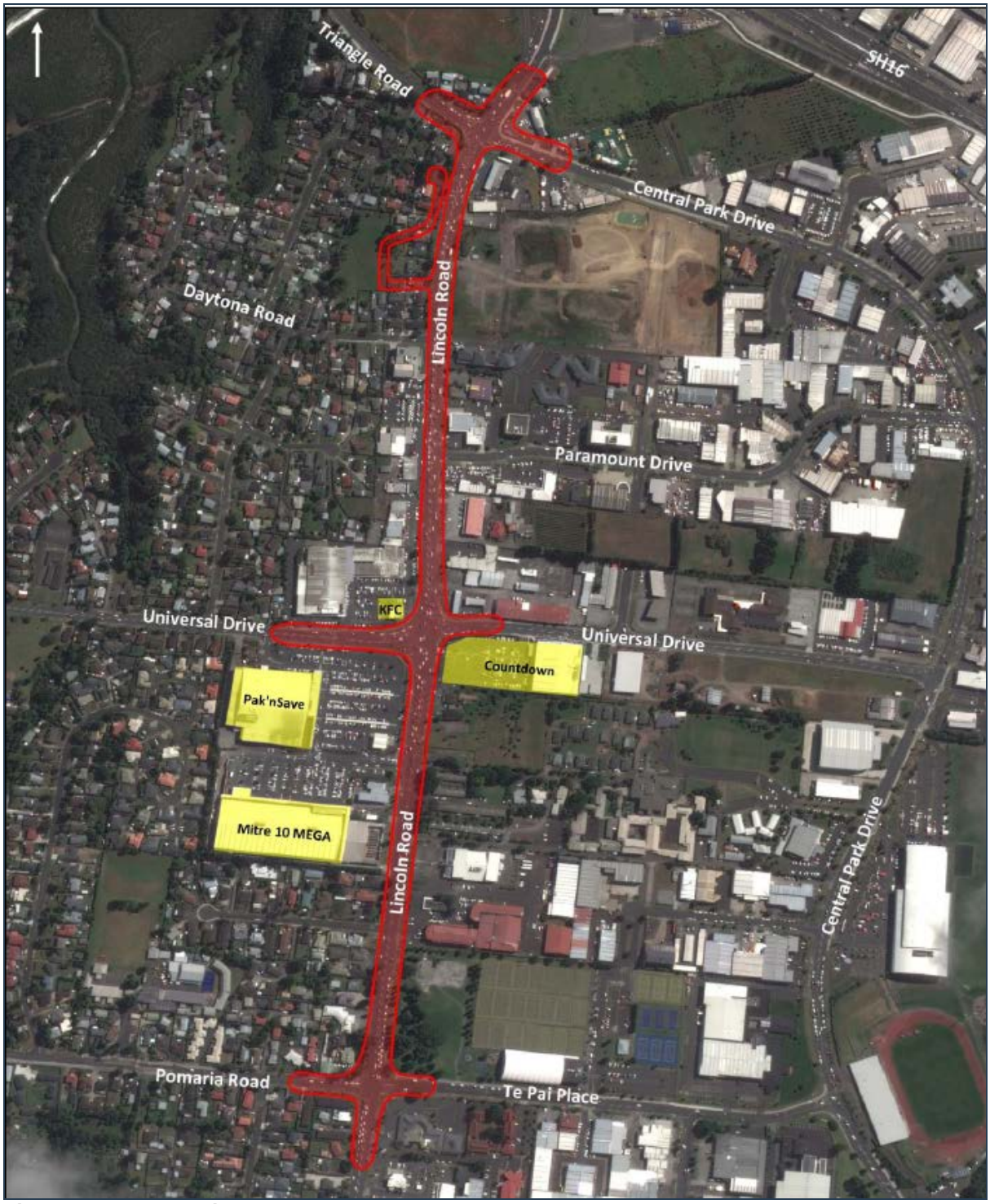


Figure 2.1: LRCI Project Area

2.5 Purpose and Drivers for the LRCI Project

Lincoln Road is classified as a regional arterial route and carries more than 42,000 vehicles per day at its northern end. It is a major link for commuters and freight between the motorway network (State Highway 16) and businesses and residential activities in the

surrounding area (including Henderson, Sturges, Ranui and Swanson). Lincoln Road also provides access to a range of regional-level social infrastructure including Waitakere Hospital, Te Pai Park netball courts and the Trust Stadium, as well as local schools and educational facilities.

Currently the road has two general vehicle lanes in each direction. At most times of the day, it suffers from heavy congestion and is noted as having limited provision for pedestrians, cyclists and public transport.

AT forecasts that the growth in travel demand in the local area between 2008 and 2026 will be 19% for the morning peak and 18% for the evening peak (around 1% per annum). This growth will exacerbate the existing congestion issues. Travel demands will continue to increase post 2026, due to the expected population growth in the wider area.

As a key arterial route, Lincoln Road is part of AT's planned Quality Transit Network. This means it is expected to accommodate frequent, efficient public transport services. Frequency of bus services will increase from around 5 per hour in 2016 to 14 per hour by 2022, and 16 per hour by 2041. Better provision for bus services is considered essential to improve the reliability of public transport services along Lincoln Road and to support the functioning of the Quality Transit Network. This has led to the main feature of the project - an additional lane in each direction of travel for bus use. In the interim, the additional lanes will be identified as T3 transit lanes with the ability to become dedicated bus lanes in the future as frequencies increase.

To improve safety for cyclists and to encourage greater uptake of active modes of transport, a segregated cycleway is proposed on both sides of the road, for the majority of the project length. This cycleway will be beside the footpath, above the level of the road surface but at a slightly lower level to the footpath. Specific treatments of bus stop areas and intersections are proposed to minimise conflicts with pedestrians.

Another feature of the project is a raised solid median, necessary in order to address safety issues. There is a high crash rate for Lincoln Road, predominantly of crossing and turning type collisions (a result of drivers turning into/out of driveways/side roads and failing to give way to oncoming traffic). This current safety issue would be exacerbated by the provision of the two additional transit lanes, unless the solid median is provided.

AT has identified that should the LRCI project not proceed, the following impacts on traffic operations would be expected[3]:

a. Additional delay for buses of around 3-4 minutes during peak periods;
b. Considerable queuing back along Lincoln Road, Triangle Road and Central Park Drive to get on the State Highway 16 interchange;
c. Significant queuing back onto State Highway 16 of vehicles trying to exit at Lincoln Road, also impacting westbound vehicles heading further along State Highway 16;
d. No improvements to current safety issues; and
e. Increasingly unfavourable environment for walkers and cyclists deterring them from using the road corridor.

In addition to these traffic-related issues, the environmental quality of the corridor is likely to deteriorate from the growing congestion and queuing traffic (such as increased air pollution). Land use redevelopment and intensification in Henderson and along the corridor may be held back because of the difficult transport conditions present, including reductions in accessibility and safety.

[3] Forecast through future modelling 2026 (micro-simulation modelling by Aurecon).

2.6 Strategic Policy Documents Supporting the LRCI

The following section provides a summary of the overarching policies in support of which the LRCI project is being proposed. A detailed assessment of the LRCI project against relevant statutory and non-statutory policy documents is contained within Section 9 of this AEE.

2.6.1 New Zealand Land Transport Policy

The New Zealand Transport Strategy 2008 (NZTS) sets five key objectives that the land transport system in New Zealand must contribute to. These are:

a. Ensuring environmental sustainability;

b. Assisting economic development;

c. Assisting safety and personal security;

d. Improving access and mobility

e. Protecting and promoting public health.

These objectives also guide the content of the Auckland Regional Land Transport Strategy 2010 - 2040 (RLTS).The main outcomes of the RLTS are:

a. Improved regional and interregional freight efficiency;

b. Improved transport system safety;

c. Improved public transport accessibility for all;

d. Reduced exposure to the negative impacts of transport pollution on human health;

e. Increased walking and cycling;

f. Reduced greenhouse gas emissions from the transport network;

g. Improved public transport links to and between identified higher density growth centres; and

h. Improved value for money from transport investment.

The LRCI project closely matches these objectives and outcomes with its emphasis on public transport, high occupancy vehicles, walking and cycling infrastructure and safety. The project will assist with access to the Henderson centre (an identified growth centre), while also maintaining access to the business land in the Lincoln Road area. The road widening proposed is aimed at adding people carrying capacity and is not expected to see an increase in transport-related pollution or greenhouse gas emissions compared to if the road was widened for use by general traffic.

The RLTS identifies Lincoln Road (Te Pai Place to SH16 Interchange) as a high priority for the development of a corridor management plan. Such a plan would identify how to manage the growing through-movement and land use role of the corridor. The LRCI project proposes works that will enable improvements to the travel function of Lincoln Road, as well as its role in supporting active modes of transport. Land use development will also be supported through the enhancement and increased efficiency of transport modes.

The LRCI project is also guided by the objectives and policies of the Regional Public Transport Plan (RPTP) through improving access to rapid and frequent bus services and providing supporting infrastructure and bus priority measures on this key corridor.

2.6.2 Auckland Plan

Section 79 of the LGACA requires Auckland Council to prepare a spatial plan. In March 2012 Auckland Council's spatial plan (the "Auckland Plan") was adopted. The Auckland Plan provides a long-term strategy for the growth and development of Auckland and has a strategic vision to make Auckland one of the world's "most liveable" cities.

One of the key outcomes of the Auckland Plan is a well-connected and accessible Auckland, developed within the context of a quality, compact city.

The Auckland Plan signals the need to accommodate most housing growth over the next 30 years (60 to 70% of growth) within the current urban footprint. Under the Auckland Plan, the western urban sector (former Waitakere City and parts of Western Rodney) is expected to take a significant share of future population and dwelling growth, given the relative affordability of land and housing in the sector, but also due to the range of natural and physical resources present that support quality living environments.

Figure 2.2 is an extract from the Auckland Plan - Map D1 Development Strategy (Auckland Wide). Lincoln Road is shown as a connector between Henderson and the State Highway network, with housing growth expected around Henderson centre, as well as in the suburbs to the west and east of Lincoln Road.

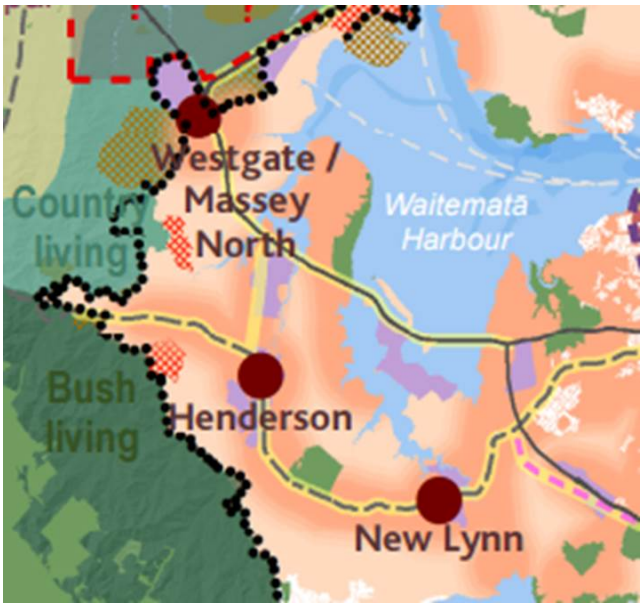


Figure 2.2: Extract from Auckland Plan

The transport system in the western sub-region needs to be able to support the level of growth anticipated by the Auckland Plan. In particular is a strategic need to encourage active modes, public transport and high occupancy vehicles, while supporting business-related traffic.

The (State Highway-based) Western Ring Route and upgrade of the rail network are two key transport investments in the Waitakere area. The Western Ring Route will improve vehicle and bus access from Waitakere to regional destinations like the CBD, airport and Albany. The LRCI project will provide for buses from surrounding suburbs to efficiently access the Western Ring Route. The LRCI project will also assist with access to and from Henderson train station by feeder bus services and cycling.

2.6.3 Auckland Transport's Statement of Intent

To achieve AT's legislative purpose, AT works within the strategic approach and priorities outlined in its Statement of Intent (SOI) 2015-2018. The SOI recognises the important partnership between AT and Auckland Council in the delivery of shared outcomes, and presents AT's 'Outcomes Framework' aligned with the Auckland Plan. AT's overarching outcome identified in the SOI is "*Auckland's transport system is effective and efficient, and provides for the region's social, economic, environmental and cultural wellbeing.*"[4]

To deliver such a transport system, AT has identified a number of strategic themes. The following describes the themes that the LRCI project contributes to:

a. Prioritise rapid high frequency public transport: LRCI bus lanes will enhance public transport accessibility;

b. Transform and elevate customer experience: the transit lanes will improve the people moving capacity of the existing network and help free up space for freight and business-related traffic, while the cycleway will considerably improve conditions for cyclists; and

c. Build network optimisation and resilience: network integration will be achieved with the SH16 interchange, along with integration with the wider active transport (walking and cycling) network.

AT also has a number of other statutory and non-statutory strategic plans, documents and policies which it must consider when planning infrastructure. The LRCI is consistent with these plans and policies, as discussed further in Section 9.

2.7 Auckland Transport's Purpose and Objectives for LRCI

The purpose of the NoR is to designate land for the:

> *"construction of improvements (including road widening) to Lincoln Road and local road connections and ongoing operation and maintenance of the improvements"*

This purpose will be stated in the Auckland Council Operative District Plan (Waitakere Section) and will guide implementation of works within the designated area.

AT's LRCI project objectives are provided in Table 2.2 below.

Objectives are important when considering a NoR. Under section 171(1)(c) of the RMA, AT is required to demonstrate that the works enabled by the designation are "reasonably necessary" for achieving the objectives of the project.

Table 2.2 LRCI project objectives

Objective Number	Objective
1	To accommodate more people travelling to and along Lincoln Road by improving corridor efficiency.
2	To improve public transport reliability within the project area.
3	To improve safety for all road users, including by providing cycling infrastructure.
4	To integrate Auckland Transport's Lincoln Road improvements with the NZTA Western Ring Route upgrade via the Lincoln Road Motorway Interchange.

[4] Auckland Transport Statement of Intent: 1 July 2012 – 30 June 2015

Section 7 of this AEE discusses the “reasonable necessity” of the proposed designation and works.

3 Project Description

This section of the AEE describes the works to be enabled by the LRCI designation.

3.1 Overview

Section 2.4 has described the project in general terms.

Preliminary Design Plans are included in Appendix 21 (Volume 3) which illustrate the nature of the completed works and road layout for the project. In summary, the plans show:

a. An additional bus and high occupancy vehicle lane on each side of the road (transit lane) and associated bus stops;

b. The construction of a mix of shared and segregated cycleways and footpaths on both sides of the road; and

c. Upgrades at 7 intersections and installation of a raised median; and

d. The service lane to be constructed at the rear of 300 to 312 Lincoln Road.

Two general vehicle lanes will be maintained in each direction.

The design philosophy statement in Appendix 7 (Volume 2) of this AEE details the standards, design parameters and assumptions used to undertake the design of the LRCI project (both preliminary and the yet to be undertaken detailed design).

A preliminary landscape design concept is included as Appendix 10 (Volume 2). This concept shows the potential areas for planting of new street trees and landscape treatment along the corridor. This concept plan is indicative only.

The Notice of Requirement Maps included as Appendix 19 (Volume 3) illustrate the extent of land required for the permanent designation and land required temporarily for construction purposes.

Construction of the LRCI project will require some temporary works to be undertaken on properties that border Lincoln Road. Where works are required on private property, but land is not required to form the widened road corridor, then the NoR shows a 'temporary designation' boundary. The intention of AT is that this temporary designation will be withdrawn once works are complete.

3.2 Technical Considerations

3.2.1 Road design

A design speed of 60km/h has been adopted for the project. The proposed design will retain the posted speed limit of 50km/h.

Lincoln Road is classified as an over-dimension route, and the design will comply with the relevant specification from the New Zealand Heavy Haulage Association.

No on-street parking is currently permitted on Lincoln Road and, in keeping with the road's regional arterial function, no on-street car parking will be provided along the widened section of Lincoln Road. The exception is an existing slip lane outside 260-282 Lincoln Road, where some car parks are currently available within (an indented) public road reserve. A lesser number of on-street car parks will continue to be provided in this area following the construction of the LRCI project.

Car parking will be provided in the service lane to be created at the rear of 300 to 306 Lincoln Road.

3.2.2 Cross section

Lincoln Road corridor is currently in the order of 25 to 30 metres wide and generally consists of two traffic lanes in each direction, with a flush median. There is a 1.2m footpath on each side, but no formed cycling facilities. The footpath is presently adjacent to the vehicle lanes and is therefore subject to a high degree of vehicle noise and traffic produced turbulence.

The Preliminary Design Maps (Appendix 21, Volume 3) set out the preliminary design of the road layout. The typical cross section of the upgraded road will be (from edge to centre):

a. 2m wide footpath;
a. 1.8m wide 'Copenhagen style' segregated cycle lane (described below)
b. 0.5m wide buffer strip between cycle lane and traffic lane;
c. 3.2m wide kerbside transit lane;
d. 2 x 3.2m wide general vehicle lanes; and
e. Raised median (2.5m typical width).

On the stretch of Lincoln Road between Te Pai Place / Pomaria Road intersection to the south and Poinsettia Place intersection to the north (approximately 200m of the overall 1.3km project extent), the layout of the road has been narrowed to avoid the removal of scheduled trees and minimise land take impact on Te Pai Park. The typical cross section will be (from edge to centre):

a. 2.3 - 3.3m wide shared cycle / footpath;
b. 3.2m wide kerbside transit lane;
c. 2 x 3.2m wide general vehicle lanes; and
d. Raised median (1.2m - 4m width).

Figure 3.1 below schematically shows the proposed cross section for Lincoln Road north of Poinsettia Place.

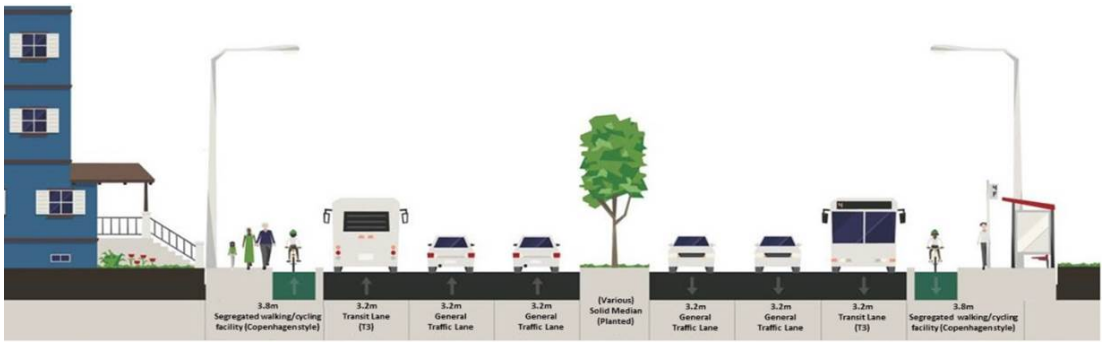


Figure 3.1: Indicative cross section

The project will provide wider footpaths and dedicated cycleways on either side of the road for most of the project extent, and improved cycle facilities in the form of shared paths for the southernmost part. Marked spaces for cyclists to wait are also proposed at the Triangle Road/Central Park Drive, Universal Drive and Pomaria Road/Te Pai Place intersections.

From Poinsettia Place northwards, the cycle facility on both sides of the road will take the form of a 'Copenhagen' cycleway. This will be a dedicated cycleway separated from the traffic lanes and the footpath. The cycle lanes are one-directional, with one cycleway on each side of the street flowing in the same direction as vehicular traffic. Section 4 of the Design Philosophy Statement (Appendix 7, Volume 2) describes this arrangement. In short, the 1.8m wide cycleway is separated from the footpath by a low height kerb. On the road side of the cycleway, there is a 0.5m wide buffer strip beside the road kerb line. Vehicle crossings will take into account the design of the cycleway, as do bus shelters associated with bus stops. The effect of the dedicated cycleway will be to place the footpath adjacent to the property boundary, buffered from the wider road carriageway by the cycleway.

Bus stops have been identified in appropriate locations, predominantly on the downstream side of intersections and, where possible, close to existing stop locations. The bus stops are located within the transit lanes, with the bus shelters located on the 'inside' of the footpath and cycleway (that is, adjacent to the property boundary). Seven bus stops are planned within the project extent; three northbound (towards the motorway interchange) and four southbound.

The vertical alignment of the upgraded road will follow the levels of the existing centreline of the road relatively closely. The crossfall on either side of the centreline will be between 2% and 4%.

3.2.3 Intersections

The design includes the upgrade of the four signalised intersections on Lincoln Road:

a. Lincoln Road / Triangle Road / Central Park Drive intersection;

b. Lincoln Road / Universal Drive / Universal Drive Extension intersection;

c. Lincoln Road / Mitre 10 Mega and Pak’n’Save entrance / Laidlaw College entrance intersection; and

d. Lincoln Road / Pomaria Road / Te Pai Place intersection.

U-turn movements will be enabled at signalised intersections.

Additional / longer turning lanes have been incorporated into the design of the intersections. The turning bays generally provide for the 95th percentile queue length in the 2026 peak period. Overall, the capacity of the signalised intersections will be enhanced.

The LRCI project involves a 100m section of Central Park Drive. This is to enable tie-in works with the new intersection of Central Park Drive with Soljan Drive (see section 2.3 of the Transport Assessment Report in Appendix 8, Volume 2).

Three non-signalised intersections are within the extent of the project:

a. Lincoln Road / Paramount Drive intersection;

b. Lincoln Road / Daytona Road intersection; and

c. Lincoln Road / Poinsettia Place intersection.

These intersections will remain controlled with 'stop' and 'give way' controls, however due to the new raised median, the right turn out of these intersections will be prohibited as part of the design. The preliminary design includes speed tables across the intersections of these minor side roads with Lincoln Road.

To design the intersections, a 18m long semi-trailer was used as the design vehicle for all movements at signalised intersections, except for double right turn movements where the design vehicles are a 18m semi-trailer in the outside lane and a 11.5m rigid truck in the inside lane. At non-signalised intersections the design vehicle is an 11.5m rigid truck.

3.2.4 Raised median

For safety reasons, a raised median will be installed in the centre of the road. This will replace the existing flush median. The typical width of this median is 2.5m, but it will be narrower in areas near intersections where additional space for right turn bays or tracking areas for turning vehicles are required.

The raised median is intended to prevent drivers from turning right into or out of the vehicle crossings of properties adjacent to Lincoln Road. Instead these drivers will be required to make a U-turn manoeuvre at one of the signalised intersections along the route. The signal phasing will be selected to permit this to occur safely, by ensuring that vehicle movements which may conflict with U-turns are not permitted in the same phase.

The raised median is expected to decrease the likelihood of right turning collisions along mid-block sections by 20-30%[5].

3.2.5 Service lane

There are a number of residential properties located on the western side of Lincoln Road between Daytona Road and Triangle Road which currently have vehicle crossings providing access directly onto Lincoln Road (300 - 314 Lincoln Road). The parking areas within these properties are below the level of the surface of Lincoln Road. Once the road is widened to provide extra northbound lanes, it will not be practical to retain or rebuild these vehicle crossings due to the steep grade which would result. Instead, the design provides vehicle access by way of a service lane running behind these properties. The service lane will connect with Lincoln Road at 298 Lincoln Road. It will be partially within Daytona Reserve, to the west of 300-306 Lincoln Road. The remainder of the service lane is located on 306A and 308 to 312 Lincoln Road. These properties will be acquired by AT.

The service lane will provide vehicle access to 296A, 300, 302, 304, 306 and 314 Lincoln Road. Direct pedestrian access from these properties to Lincoln Road will be retained where required by the relevant property owners. See Sheet 16 of the Preliminary Design Maps (Appendix 21, Volume 3) for the preliminary design of the service lane.

A turnaround area will be provided at the end of the service lane. An in-ground stormwater filtration cartridge system to treat stormwater runoff from the widened road is proposed to be located within this turnaround area. The service lane, including turnaround area, is designed to accommodate an 11 m rigid truck.

The service lane will provide space for cars to park, enabling improved access to the reserve.

3.2.6 Pedestrian crossings

Controlled pedestrian crossing facilities will be provided at all signalised intersections, and where left turn slip lanes are provided at these intersections, raised pedestrian crossings will be installed. Raised speed tables will also be installed at the non-signalised intersections (across minor side roads) to improve pedestrian safety.

A new signalised, staggered mid-block crossing will be provided approximately midway between the Daytona Road and Paramount Drive intersections (opposite Kindercare at 283 Lincoln Road and Toyota at 284-286 Lincoln Road). See Sheet 4 of the Preliminary Design Maps (Appendix 21, Volume 3) for the location of the crossing.

[5] See Section 10 of the Transport Assessment.

Safe crossing opportunities will therefore be provided every 120m - 360m, so a pedestrian looking to cross Lincoln Road will be no further than 180m (2 minute walk) from a safe crossing point.

3.2.7 Tie-ins with State Highway 16

NZTA's upgrade of the Lincoln Road / State Highway 16 interchange includes three lanes of traffic turning left off the motorway heading south down Lincoln Road, and four lanes of traffic heading northwards towards the motorway (the left most lane going west bound, and two right most lanes going east bound). These are all general vehicle lanes.

AT's Lincoln Road design provides for a tie-in to this arrangement. Three general vehicle lanes and the transit lane will approach the Triangle Road/Central Park Drive intersection heading northwards, then transition into four general northbound lanes past the intersection, as per NZTA's layout. The three lanes heading southbound from NZTA's layout will transition into a southbound transit lane and two general vehicle lanes, with right and left turning lanes also provided in the southbound lead up to the Triangle Road/Central Park Drive intersection.

3.2.8 Landscape Treatment

The LRCI design provides spaces for planting of street trees and landscape treatment of areas of land to be retained by AT. This includes planting within the raised central median; on land to be acquired by AT at 308, 310 and 312 Lincoln Road; at the corner of Triangle Road and Lincoln Road and in Daytona Reserve, as indicated on the Landscape Plan included in the Urban Design, Landscape and Visual Assessment (Appendix 10, Volume 2). This concept indicates where trees could be planted in these spaces. A total of 96 trees can be accommodated in the designation. There is also the possibility of additional planting on Te Pai Park.

3.3 Modifications to the Environment

3.3.1 Berms / street trees

To accommodate the additional lanes, segregated cycle lane and raised median, the majority of the existing grass berm and street trees in the Lincoln Road corridor will require removal. A continuous grass berm will not be reinstated as part of the road corridor improvements.

The arborist's assessment (see Appendix 9, Volume 2) identified that 83 street trees will need to be removed as part of the LRCI project.

Street trees along the corridor are categorised in the arborist report as either heritage trees; trees subject to the general tree rules of the operative district plan; or other trees, as follows:

a. Heritage (or scheduled) trees are those specifically listed in the ACDP and the Proposed Auckland Unitary Plan (PAUP);

b. Trees subject to the general tree rules of the ACDP (General Natural Area Rule 2). These are trees that would normally require resource consent be obtained for their removal or works to occur within their drip line, due to their size and location; and

c. Other trees, being smaller trees in road reserves and other trees on private property that would not be subject to the tree trees in the ACDP.

The three scheduled (heritage) trees will be retained.

The arborist's report identifies 29 street trees that would be subject to the general tree rules (Rule 2) of the ACDP and 54 other trees, as requiring removal. A further 3 trees within the road reserve subject to general tree rules will require works within their dripline. The project will require removal of several clusters of street trees and stand-alone trees.

The arborist's assessment of which trees are to be removed is based on the preliminary design plans that have been prepared. The affected trees have been identified and mapped using aerial photographs and maps showing the designation footprint. Where the trees were located very close to the designation line, it was difficult to determine on the ground whether the trees were inside or outside the line in some instances. Accordingly, a very conservative approach was been adopted and some trees which appear to be outside the designation have been identified for "possible removal" and treated as needing to be removed.

On this basis, of number of trees to be removed has been calculated on an extremely conservative basis. It is likely that once detailed design is complete, and the designation footprint and physical works are marked on the ground, the number of trees to be removed will be reduced.

Further discussion of trees required for removal and works within the dripline can be found in sections 8.3.3. The exact nature of replacement planting and landscaping will be confirmed at the detailed design stage of the project.

3.3.2 Noise

In general, the LRCI project will result in minimal additional, permanent (operational) noise increases experienced by sensitive receivers within the vicinity of the project. The current noise environment for properties along the LRCI project is highly affected by existing road traffic noise, which is a typical characteristic of receivers near any major road. The additional lane to be constructed will bring the road carriageway closer to buildings, but as the lane will be used for buses and high occupancy vehicles, the effect on the noise environment is not large when the project is compared to the 'do-nothing' scenario; that is the road environment in the future without the project.

The Noise Assessment (Appendix 17, Volume 2) has identified that there are 91 Protected Premises and Facilities (PPFs) along the alignment comprising two childcare centres, Te Wananga o Aotearoa and Laidlaw College and 87 residential units. The largest proportion of the receiving environment comprises retail and business activity.

Under the relevant guidelines (NZS 6806:2010 *Acoustics – Road-traffic noise – New and altered roads* (NZS 6806:2010), the LRCI project does not qualify as an Altered Road, and as such no specific mitigation of the effects of additional road noise on PPFs is required. However, AT is required to consider the Best Practicable Option to manage unreasonable noise.

The Noise Assessment identifies that where existing buildings are removed as part of the project, increased operational noise levels will likely be experienced by properties that are currently shielded from road noise by the buildings, and these properties should be considered for mitigation. Residential properties that may incur increases of between 2 and 4 decibels of noise because of the loss of buildings in front of them include:

a. 383 Triangle Road
b. 31, 33, 35 and 46 Preston Avenue
c. 296A Lincoln Road and 3A Daytona Road
d. 304A Lincoln Road.

Mitigation may be in the form of acoustic fencing on property boundaries, where these boundaries do not involve vehicle and pedestrian access. That is, side or rear boundaries. Appendix C of the Noise Assessment (contained in Appendix 13, Volume 2) sets out the initial assessment of property boundaries where acoustically effective fencing would occur (31 to 35 Preston Avenue, part of 46 Preston Avenue and 383 and 385 Triangle Road).

To take into account the 10 year lapse period, a further noise assessment will be conducted prior to the commencement of construction of the LRCI project, at which point the details of mitigation will be determined. That assessment will be based on estimates of traffic once the project is complete (post 2025) and will ensure that no existing PPFs will experience worse noise conditions than currently anticipated.

Temporary construction noise will occur. Construction works will be carried out in accordance with the relevant New Zealand Standard (NZS 6803:1999). The majority of the noisy works for the project will be carried out between the hours of 07:30 – 18:00. The relevant NZS 6803:1999 noise limits during this time are 70 dB L_{Aeq} and 85 dB L_{Amax}. The majority of construction activities can occur within these limits, subject to the instigation of standard mitigation measures (such as temporary barriers and hoardings). Where the noise limits cannot be maintained, specific mitigation measures will need to be identified.

Construction activity during the night time period will be required at times during the project for works such as the construction of the median barrier and paving. This is to allow lane closures for additional working width so the works can be completed.

Because the noise levels in the existing environment are high (dominated by road traffic noise), it is recommended in the Noise Assessment (Appendix 13, Volume 2) that the night time noise limit for residential receivers be increased from 45 dB L_{Aeq} to 55 dB L_{Aeq} on weekdays and Saturdays for the period between 20:00 and 06:30 the following day. This approach is in accordance with Section 7.2.6 of NZS 6803:1999 and has been adopted for numerous large roading projects in Auckland where raising the noise limit by 10 dB at night does not result in any appreciable increase in noise exposure to the residents along the route, yet will allow for more work to be undertaken at night and will shorten the duration of the project overall.

3.3.3 Business Properties: Vehicle Accessways, Parking, Signage and Landscape Strips

Along business-zoned frontages, the widened road corridor will require removal of some on-street and on-site car parks, as well as landscaping strips in front yards.

Up to 11 on-street car parks will be removed at 260 to 286 Lincoln Road. In this area there is an indented parallel parking area in the form of a 'slip lane'. One side of parking spaces will be removed, leaving 6 on-street car parks. A number of on-street parking areas will also be removed on the minor side streets (Paramount Drive, Daytona Road and Poinsettia Place). At 3 Pomaria Road, there is an area of car parking that is partly within the road corridor and partly in the front yard. It is likely that these car parks will be removed.

The required land take will involve the removal of a number of on-site car parks on properties that border the road. Site analysis indicates that the most significant losses will occur at:

a. 158 Lincoln Road - 2 parking spaces
b. 192 Lincoln Road - up to 3 parking spaces.
c. 255 Lincoln Road - 2 parking spaces
d. 252-256 Lincoln Road - 13 car parking spaces (part of Lincoln Centre)
e. 293-295 Lincoln Road - 4 parking spaces.

In other cases, while the aerial photos show car parks being affected by the final designation boundary, car parking layout on site can be adjusted to accommodate the car parks that may be lost.

In addition, temporary loss of car parking can be expected during construction.

Existing vehicle accessways will be reinstated (except for 300 to 314 Lincoln Road where the service lane will provide alternative vehicular access. In this area, pedestrian access to Lincoln Road will be retained where required by the relevant property owners). Where there is a difference in height between the new road surface and the existing on-site car parking area, then some vehicle accessways may need to be steeper and/or extend further into properties.

Some sites have a landscape strip between the car parking area and the road corridor. These landscape strips may need to be removed (and possibly replaced) or narrowed in some situations, such as the strips beside the Countdown car park; 192 Lincoln Road (Lincoln North); at 283 Lincoln Road (Kindercare); and those frontages between Laidlaw College and 199 Lincoln Road.

Notable clusters of trees that may be affected are at Laidlaw College and the Bird Barn (158 Lincoln Road). Visually prominent stand-alone trees to be removed include Norfolk Island Pines at 288 Lincoln Road and at 159 Lincoln Road. 15 trees that would be subject to the general tree rules of the ACDP may require removal from private property.

Signage will also need to be shifted or replaced so that it sits on the outside of the new road corridor.

3.3.4 Residential Properties

41 residentially-zoned properties are affected by temporary and permanent works. AT has, or will, wholly purchase 12 of the 41 properties. Properties to be purchased by AT are identified in 3.4 below.

28 of the 41 residentially-zoned properties front Lincoln Road. AT has or will purchase six of these, four of which are required to form the new service lane. Of the remaining 22, seven are used for businesses.

In addition to the complete purchases, five residentially zoned properties along Lincoln Road see a land take of between 2-3m from their front yard. This will affect front yard landscaping and fencing, and see houses closer to the new road reserve.

Four properties are partially affected by the new service lane proposed at Daytona Reserve, in terms of land take. They will see their rear yards reduced by approximately 1-5m.

24 residentially-zoned properties will experience temporary works in yards.

Four of these are on Preston Avenue where works in rear and side yards are needed to construct the service lane and install a new stormwater pipe (as described below). One is a rear site off Lincoln Road that will see works associated with the service lane.

Two properties are on Pomaria Road and one on Triangle Road where tie in works will occur that may temporarily affect front yards.

The remaining 16 properties are along Lincoln Road, where temporary effects will be experienced. Works may involve the removal of fences and vegetation within 2m of the front boundaries, and replacement of those features as agreed with the landowners, post construction.

Low retaining walls may be built along the front boundaries of some of these properties, depending upon detailed design and the agreement of the affected landowners. Retaining

walls are likely from 300 to 320 Lincoln Road. Existing retaining walls along the front boundaries of 292 to 296 Lincoln Road are likely to have to be extended.

3.3.5 Stormwater

A stormwater treatment device (structural filtration cartridges) will be located at what is currently 312 Lincoln Road; the natural low point along the project area. All stormwater from the widened Lincoln Road is to drain to this low point, and quality treatment will be provided by the filtration cartridges to a level set by a future stormwater discharge consent application process. The pipe route from the treatment cartridges to the discharge point will pass down an existing walkway to Preston Avenue, through the Preston Avenue road reserve, then to a new outfall structure in Daytona Strand on the border of the Coastal Marine Area (potentially by passing under the driveway of 22 Preston Avenue).

While the portion of the pipe route under the walkway is within the proposed LRCI designation extent, the remainder of the pipe route is not included within this NoR and is subject to confirmation during the later detailed design stage.

Stormwater discharge consents will be applied for at a later date.

3.4 AT Property Purchases

At the time of lodgement of this NoR, AT has completed purchase of the following properties;

a. 1/370 Triangle Rd (full); and
b. 2/370 Triangle Rd (full).

Negotiations are underway in various acquisition stages, with the following properties:

a. 306 Lincoln Rd (full);
b. 322 Lincoln Rd (full);
c. 324 Lincoln Rd (full);
d. 326 Lincoln Rd (RNZ site) (partial);
e. 327 Lincoln Rd (partial);
f. 368 Triangle Rd (full); and
g. 366 Triangle Rd (full).

In addition to these properties, full acquisition of 298 Lincoln Road, 306A Lincoln Road and 308 - 312 Lincoln Road will be required to implement the project.

Purchase of front yard strips will also occur.

AT's current budget makes provision for all acquisitions between 2020 and 2023.

3.5 Project Sequencing

The project's staging proposal for construction is covered under Appendix O of the Transport Assessment Report (Appendix 8, Volume 2).

The indicative construction period is 2 years starting from April 2023. Construction is expected to commence in the north and extend south in stages (such as between major intersections).

Typical construction impacts on individual properties would be over four periods of time, varying from 1 - 8 week each, as follows:

a. Boundary relocation and construction of supporting structures (retaining walls and boundary fences) - approximately 2 weeks;

b. Works within private property (mitigation works) – up to 4 weeks;

c. Utility relocation - up to 8 weeks (including new services testing and commissioning); and

d. Road pavement and markings - up to 6 weeks.

In most cases, simultaneous activities can occur on most sites which reduces the overall time required, but increases the intensity of those works and associated effects.

A construction yard will be required during the construction phase of the project to store machinery and material. Construction-related vehicles entering and exiting the yard will predominantly be during the mornings and evenings. AT's current plan is to locate this yard at the northern corner of Triangle Road and Lincoln Road, where AT is in the process of purchasing land. This yard will need to laid out and managed to reduce effects on residential activities on the southern side of the road, potentially including the erection of temporary hoardings around the exterior of the site. The construction yard will only be used for the storage of materials and equipment. No construction activities will occur within the construction yard site.

4 Project Approach and Statutory Context

This section of the AEE sets out, in summary form, the statutory planning context that the NoR has been prepared within.

It also provides an overview as to how AT proposes delivering the LRCI project, in particular the RMA methods that will be used to manage adverse effects arising from the designation, including associated resource consent requirements.

The lapse date of the designation and the effect of existing designations are also discussed.

4.1 Project Approach

Delivery of the LRCI project involves a number of phases, with the NoR being one of these phases. The following diagram (Figure 4.1) sets out the main steps that have been and will be taken by AT. The NoR is step 4.

Figure 4.1 LRCI project stages

Phase (and timing)	Action	Purpose
1. (2003)	Investigation	Former Waitakere City Council undertook a Strategic Corridor Study and Scheme Assessment Report
2. (2012)	Preliminary design and consultation	AT investigates options, develops concept design, consults stakeholders, identifies works required to implement the project
3. (2015)	Identify effects and mitigation	Technical assessment of the effects of the proposed works on the environment and proposed methods of mitigation. Adjustments to the design where necessary
4. (2016)	Notice of Requirement issued for designation	Designation of land to authorise required works, subject to conditions and to protect land required
6. (2020)	Detailed design and land acquisition	AT prepares detailed plans for the project. AT purchases land ahead of construction (2020 onwards)
6. (2022)	Outline Plans and resource consents	AT seeks resource consents for aspects of the works (such as stormwater discharges and earthworks). AT submits details of final works to Auckland Council for comment (Outline Plans prepared in accordance with designation conditions).

Phase (and timing)	Action	Purpose
7. (2023)	Construction	Construction is currently programmed for 2023 to 2026. Works are undertaken in accordance with the conditions attached to the designation and the details set out in the Outline Plans

4.2 Overview of Designations

Designations are a tool specifically provided in the RMA for the planning and construction of public works.

Under Section 168 (2) of the RMA, a requiring authority may at any time give notice in the prescribed form to a territorial authority of its requirement for a designation:

> *(a) for a project or work; or*
>
> *(b) in respect of any land, water, subsoil, or airspace where a restriction is reasonably necessary for the safe or efficient functioning or operation of such a project or work.*

A designation is essentially a "spot zoning" in the District Plan authorising the public work. The LRCI designation will be identified in the operative and proposed district plans showing the location and extent of the designation and the proposed use of the land within the designation, providing certainty to landowners and the community of the intent of AT to undertake the project.

Once the designation is confirmed, specific land use consent is not required to undertake the works enabled by the designation (although an Outline Plan process will apply to those works, as is discussed further below).

The works enabled by the designation are subject to conditions which are incorporated into the district plan. The designated works are also still subject to any restrictions on land use under s9 (excluding subsection (3)) and in relation to discharges to air and water, and the coastal marine area as contained in Sections 12 – 15 of the RMA. Relevant regional council resource consents will be needed in relation to the works. The resource consents likely to be required to construct and operate the LRCI are further described in section 4.5 below.

Activities to be undertaken within the designated area that fall outside the purpose of the designation will still need to comply with the provisions of the relevant district plan.

A designation restricts anyone other than the requiring authority from carrying out work on the designated land that will prevent or hinder the project or work to which the designation relates, without first obtaining the requiring authority's permission (refer s176(b)).

Designations therefore provide:

a. The ability for AT to safeguard the land required for the LRCI project from plan changes that seek to change any provisions of the zones within which the project is located and which may affect the achievement of the project (a land protection mechanism);

b. The ability for AT to review developments (such as new buildings and infrastructure) on the land affected by the designation which may hinder or prevent the public work or project, prior to construction (a project protection mechanism); and

c. Supports the process for land acquisition through the Public Works Act (a land acquisition mechanism).

Under Section 185 of the RMA, an owner of land (including a leasehold estate or interest) that is subject to a designation or requirement may apply at any time to the Environment Court for an order obliging the requiring authority responsible for the designation to acquire or lease all or part of the owner's estate or interest in the land under the Public Works Act 1981.

The designation provisions of the RMA also include the ability for AT to draw back the designation footprint (as desired) to match operational requirements, following construction via a relatively simple RMA process under section 182.

4.3 Preparation and Assessment of Notices of Requirement (Part 8 of RMA)

4.3.1 Preparation

AT has prepared the NoR in accordance with Part 8 of the RMA.

The prescribed content of a NoR is set out in Form 18 of the Resource Management (Forms, Fees, and Procedure) Regulations 2003. The NoR (contained in Volume 1 LRCI NoR suite of documents) has been prepared in accordance with these regulations.

Form 18 does not require an AEE (prepared in accordance with the Fourth Schedule of the RMA) to be provided, but it is common practice for notice of requirements to provide a similar type of assessment to assist with the matters set out in From 18, as well as those matters that Auckland Council must consider.

Also of note, although Form 18 requires the inclusion of details of any consultation undertaken, the requiring authority has no duty to consult under the RMA. However AT has undertaken extensive consultation during the preparation of the LRCI NoR.

The NoR will be considered by Auckland Council under section 171 (1A) and (1) of the RMA, as follows:

> *(1A) When considering a requirement and any submissions received, a territorial authority must not have regard to trade competition or the effects of trade competition.*
>
> *(1) When considering a requirement and any submissions received, a territorial authority must, subject to Part 2, consider the effects on the environment of allowing the requirement, having particular regard to -*
>
> *(a) any relevant provisions of -*
>
> *(i) a national policy statement:*
>
> *(ii) a New Zealand coastal policy statement:*
>
> *(iii) a regional policy statement or proposed regional policy statement:*
>
> *(iv) a plan or proposed plan; and*
>
> *(b) whether adequate consideration has been given to alternative sites, routes, or methods of undertaking the work if -*
>
> *(i) the requiring authority does not have an interest in the land sufficient for undertaking the work; or*
>
> *(ii) it is likely that the work will have a significant adverse effect on the environment; and*
>
> *(c) whether the work and designation are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and*

(d) any other matter the territorial authority considers reasonably necessary in order to make a recommendation on the requirement

This AEE addresses the key aspects of Section 171, as follows*:*

Effects on the Environment

An assessment of the effects (positive and adverse) of the LRCI is contained in Section 8 of this AEE and is supported by the technical reports in Appendices' 7 – 18 (Volume 2)

Part 2 and Policy Provisions

An assessment of the LRCI NoR against the matters set out in Part 2 and relevant policy statements and plans is contained in Section 9 of this AEE and in Appendix 3 (Volume 1).

Alternative sites, routes and methods

The assessment of alternative sites, routes and methods is set out in Section 7 of this AEE. This is supported by the Assessment of Alternatives Appendix 5 (Volume 2).

Reasonable Necessity for the Designation

The assessment of necessity is set out in Section 7 of this AEE.

4.3.2 Requiring Authority Decision

After considering the LRCI NoR (and any submissions received) against the above provisions of the RMA, Auckland Council will make a recommendation under section 171 (2) to AT as Requiring Authority to:

a. Confirm the requirement;
b. Modify the requirement;
c. Impose conditions; or
d. Withdraw the requirement.

Upon receipt of Auckland Council's recommendation, AT will, under section 172 of the RMA, advise Auckland Council whether it accepts or rejects the recommendation in whole or in part. Following this decision an appeal process to the Environment Court (and higher courts on points of law) is available to the Council or to any submitters to the LRCI NoR.

4.4 Outline Plans

Once a designation is confirmed and incorporated into the District Plan, Section 176A of the RMA requires Outline Plans to be submitted to the Council, prior to construction.

Section 176A (3) (a)-(f) of the RMA requires an Outline Plan to show:

a. Height, shape and bulk of the works;
b. Location of the works on the site;
c. Likely finished contours of the site;
d. Vehicular access, circulation, and the provision for parking;
e. Proposed landscaping; and

f. Any other matters to avoid remedy or mitigate adverse effects on the environment.

The Council can request that the requiring authority amend the Outline Plan make any changes to better manage effects in accordance with the designation and conditions. The requiring authority may accept or reject the requested changes.

There is no provision in the RMA for the Council to call for public submissions on the Outline Plan submitted to it. However, conditions of the designation may require that AT seek the input of specified parties when it prepares the Outline Plans. Once confirmed by AT, the Outline Plans will be made available to interested parties.

Under section 176A (2) the submission of an Outline Plan may not be required if:

a. The proposed public work, project, or work has been otherwise approved under the RMA; or

b. The details of the proposed public work, project, or work, as referred to in subsection (3) above, are incorporated into the designation; or

c. The territorial authority waives the requirement for an outline plan.

In the case of the LRCI project, the NoR is not seeking a waiver of the Outline Plan requirements under Section 176A (2)(c). Nor does the LRCI NoR contain sufficient detail that an Outline Plan is not required under 176(A)(2) (b).

In summary, prior to construction of the LRCI, an Outline Plan (or Plans) will be submitted to the Council for comment. The current timeline suggests that the Outline Plans will be prepared after 2022. At that stage, the detailed design for the LRCI project will be complete, and the specific measures to manage effects will be determined.

4.5 Future Resource Consents Required

At the same time as preparing the Outline Plans, AT will lodge applications for the regional and land use resource consents required to undertake the project.

As an indication, at the time of this NoR being served on the Council, the project would trigger consent requirements under the following plans and standards in relation to discharges to air, land and water:

a. Auckland Council Regional Plan: Sediment Control (ACRP:SC);

b. Auckland Council Regional Plan: Air, Land and Water (ACRP:ALW);

c. Auckland Council Regional Plan: Coastal (ACRP:C);

d. Proposed Auckland Unitary Plan (PAUP); and

e. National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NES-CS).

While land use consent under the district plan would not be required for works inside the designation boundary, land use consent would be required for certain LRCI works outside the designation boundary; for example laying the proposed stormwater discharge pipe through Daytona Strand and construction of an outfall.

It should be noted that, given the required resource consents will not be sought until detailed design has been completed, a different set of regional and local plans will be in force at that time, and as a result the list above is for information purposes. In particular, it is likely that the PAUP will be the operative regional and district level plan.

Table 4.1 and 4.2 outline the likely resource consents required for the project under the statutory framework at the time of the NoR being lodged.

Table 4.1 Land Use Consents

Consent	Plan Ref	Comments
Land use (regional)	Auckland Council Regional Plan: Sediment Control	Earthworks for the road construction
Land use (regional)	Proposed Auckland Unitary Plan	Earthworks for the road construction
Land use (regional)	Proposed Auckland Unitary Plan	Stormwater flow from the road
Land use (regional)	Proposed Auckland Unitary Plan	Stormwater quality from the road
Land use	Auckland Council District Plan (Waitakere Section)	Infrastructure and earthworks within floodplain and Public Open Space (stormwater pipe and outfall - outside designation boundary)
Land use	Proposed Auckland Unitary Plan	Infrastructure and earthworks within floodplain and Public Open Space (stormwater pipe and outfall - outside designation boundary)
Land use	National Environmental Standard for Assessing and Managing Contaminants in Soils to Protect Human Health	Disturbance of contaminated land for the road construction

Table 4.2 Discharge Consents

Consent	Plan Ref	Comments
Discharge	Auckland Council Regional Plan: Air, Land and Water	Stormwater discharge from the road
Discharge	Proposed Auckland Unitary Plan	Stormwater discharge from the road
Discharge	Auckland Council Regional Plan: Air, Land and Water	Discharge from contaminated land for the road construction
Discharge	National Environmental Standard for Assessing and Managing Contaminants in	Disturbance of contaminated land for the road construction

Consent	Plan Ref	Comments
	Soils to Protect Human Health	

4.6 Lapsing Period Sought for LRCI Designation

Pursuant to section 184 RMA, the NoR seeks a lapse period of 10 years. The lapse period defines the timeframe within which the project must be commenced. If the project is not underway within this timeframe, the designation lapses (i.e. no longer has effect). The default lapse period under the RMA is 5 years.

A requiring authority can request that a lapse period be extended where it can demonstrate that substantial progress or effort has been made towards giving effect to the designation and is continuing to be made.

AT is seeking a 10 year lapse period, rather than relying upon the ability to request extensions to the default 5 year period. This longer lapse period sought for the LRCI project is to allow sufficient time to undertake the following:

a. Land purchase negotiations;
b. Detailed design;
c. Required resource consenting;
d. Tendering; and
e. Construction of the project (timed for 2023 to 2025).

A five lapse period is not feasible, given AT's current funding timetable.

The designation will affect the extent to which the land covered by the designation can be used, prior to the land being purchased by AT. In the case of LRCI project, AT is seeking to purchase the land affected by the permanent designation from 2020 onwards. The temporary designation will remain over land until the works are complete (2025).

In the interim, the effect of the NoR on development intentions is not likely to be large given the relatively small width of frontages affected. The temporary and permanent designations do not directly affect any commercial buildings. Where residential sites are substantially affected by the designation, then AT has or will purchase these sites. In most cases, the sites along the corridor are larger business sites where redeveloped buildings and car parking areas can be accommodated outside of the designation boundary. Residential sites are smaller and existing development on them means that redevelopment opportunities are less feasible, unless sites are amalgamated. The longer lapse period is therefore not seen to be a significant 'break' on redevelopment opportunities and trends.

Specific provision is to be made for the maintenance of network utilities within the designation footprint through a condition of the NoR. That condition will state that AT's approval under Section 176 of the RMA will not be required for minor works.

4.7 Interplay of the Public Works Act 1981 with Designations under the RMA

Where works need to be located on private land (and are included within the designation footprint), AT is required to obtain a property right so it can go onto or use that land. Property rights could mean acquiring a freehold title (i.e. AT purchases the land), or a lease, or an easement. Acquiring the relevant property rights is a separate process to the designation process, but as the designation identifies the land required or any restrictions

that may apply to the land it is usually the first step towards acquisition of land or the rights to encumber land for a public work, including temporary access for construction purposes.

4.8 Existing Designations

The proposed LRCI designation will overlay existing designations in the operative district plan and the proposed district plan. Consequently it will be a secondary designation, subservient to the primary or pre-existing ones. These are:

a. Telecommunication and radio communication facilities (Radio NZ) at northern end of Lincoln Road; and

b. Road widening (former Waitakere City Council - transferred to AT).

Section 6.9 of this AEE sets out further details of these existing designations. It also contains a list in Table 6.3 of designations that are in close proximity to the LRCI designation. The relevant planning maps showing these designation locations are contained in Appendix 1.

Once the LRCI designation is confirmed, then the road widening designation of the former Waitakere City Council will be withdrawn. The LRCI project will not hinder the designation held by Radio New Zealand.

The northern extent of the LRCI designation will abut NZTA's designation for State Highway 16.

4.9 Use of Reserve Land

The designation is placed over two areas of open space owned and managed by the Council under the Reserves Act, being Daytona Reserve and Te Pai Park. To acquire the reserve land for road (438m^2 from Te Pai Reserve and 458m^2 from Daytona Reserve) AT has to implement section 114 of the Public Works Act (Declaring Land to be Road). Approval will then be sought from the Auckland Council's Parks, Sport and Recreation Committee who have the delegation for the acquisition and disposal of reserve land.

The Henderson Massey Local Board has been consulted as to the use of the reserve land for road purposes and agree to this outcome occurring.

5 Consultation Undertaken to Date

This section of the AEE outlines the consultation on the LRCI project that has been undertaken to date by AT, and the key issues raised. A Consultation Report has been prepared, and this is included as Appendix 2 to this AEE. This section summarises the content of that report.

5.1 Approach to Consultation

Consultation prior to serving a NoR is not required under the RMA. However, consultation is "best practice" for completing a robust AEE, particularly in relation to Iwi and directly affected landowners.

AT identified a range of stakeholders for the LRCI project, and a range of consultation and information techniques have been used to suit the people AT has communicated with. These techniques have included display boards; roll out plans, flyers, letters, emails, website, digital flythrough, personal meetings, open days, newspaper advertisements, telephone contact and postal / electronic feedback forms. AT attempted to meet in person with all landowners who are directly affected by the preliminary design.

5.2 Consultation Process

Consultation on the project commenced in 2013, based on the preliminary design for the LRCI project prepared by GHD. Further consultation occurred in 2015 and 2016 based on the updated MWH preliminary design.

The following groups have been consulted:

a. Directly affected landowners - commercial/business and residential;

b. Mana Whenua;

c. Special interest groups - Cycle Action, Auckland Freight;

d. Service providers - Watercare, Vector, Chorus; and

e. General public.

Since December 2013 information on the LRCI project has been available on the AT website including project benefits, description of project features and consultation outcomes.

Letters and flyers have been sent to affected landowners. Two open days were held in December 2013 and were attended by over 80 people.

A further round of consultation occurred during 2015 and 2016, including a series of one-on-one meeting with landowners.

5.3 Key Issues Raised

Businesses: Key feedback from businesses included:

a. Concern that the raised median would reduce access to businesses and would result in loss of business;

b. Concerns about changes to driveways and access;

c. Concerns about loss of business signage and parking spaces;

d. Concerns about loss of land and impacts on land values; and

e. Concerns about reduced access to businesses, noise and use of properties during the construction period.

A number of businesses provided detailed feedback on the implications of the raised median.

Residents: Feedback from residents included:

a. Concerns about loss of land and compensation;

b. Concerns about loss of parking spaces; and

c. Mix of support and opposition to the raised median.

General Public: The feedback received is generally supportive of the project. The majority favoured the solid median and including a form of transit lane, although opinion was split on whether it should be a T2, T3 or bus only lane.

The public also supported specific provision for cyclists and favoured segregated cycleways over shared path arrangements. As a result the design was subsequently modified to provide segregated cycleways for the majority of the project's length.

Iwi: A CIA was received from Te Kawerau a Maki in August 2014. Te Kawerau a Maki and Ngāti Whātua o Ōrākei have indicated that areas of interest include stormwater management, biodiversity, planting types, accidental discovery protocol, cultural design and / or public art.

Utilities: Watercare Services Limited, Vector Limited and Chorus New Zealand Limited were provided with the preliminary design for comment in late 2013. There were no concerns raised with the preliminary design and further liaison will occur at the detailed design stage.

Auckland Council: The Henderson-Massey Local Board was consulted during 2015 regarding use of land currently within Daytona Reserve for the new service lane and in 2016 for the land take at Te Pai Park. Endorsement was received from the Local Board for both of these proposals.

The Auckland Council Stormwater Unit was contacted for comment on the preferred stormwater option for the project. The Stormwater Unit agreed that stormwater treatment via a structural filtration device was the most practicable option under the circumstances. These discussions informed the decision of AT to secure land for future a treatment facility.

Auckland Council Parks department was consulted with regarding mitigation for the tree removal required for the project and the taking of open space areas. Parks were also interested in ensuring there was enough space to carry out safe maintenance of new planting and that new planting would be able to thrive. Parks sought to minimise land take from Daytona and Te Pai Park. Replacement planting strategies for Daytona Reserve and Te Pai Park were identified.

6 Existing Environment

This section of the AEE describes the existing environment affected by the LRCI NoR, and is relevant for the assessment of actual and potential effects set out in Section 8.

6.1 Overview

For the purposes of the RMA and the assessment of effects of the project on the environment, the existing environment includes sites within the designation footprint which are currently known to have approved resource consents for development which are yet to be given effect to and which are likely to be implemented.

The existing environment also includes existing designations which the LRCI designation either crosses or is adjacent to.

An aerial plan showing the project area and key orientating features is included as Figure 6.1 below.

Figure 6.1 Project overview aerial plan (Auckland Council GIS)

The LRCI project area is focused on the northern section of Lincoln Road, Henderson. From the Lincoln Road interchange with State Highway 16 to the north, going south to Te Pai Place and Pomaria Road, the project area includes:

a. The intersection with Triangle Road and Central Park Drive;

b. Part of Daytona Reserve to the west of Lincoln Road;

c. The intersection with Universal Drive;

d. A signalised intersection with the entrance to Pak N Save and Mitre 10 Mega to the west and Laidlaw College to the east;

e. Part of Te Pai Park to the east of Lincoln Road; and

f. The intersection with Pomaria Road and Te Pai Place.

South of Pomaria Road and Te Pai Place, Lincoln Road will continue as a four lane arterial. In this section of the road, traffic volumes are much less than the northern sections.

6.1.1 Topography

Lincoln Road travels along a ridgeline with a relatively flat vertical alignment, generally sloping from south to north. Land falls away on either side of Lincoln Road, generally with a gentle slope. There are some short, steeper slopes on the western side of the road at the northern end of Lincoln Road (296-314 Lincoln Road).

To the west, land falls towards the Lincoln Stream and the coastal marine environment. To the east of the road the land falls towards Henderson Creek.

6.1.2 Geology

As set out in the Geotechnical Assessment Report (Appendix 18, Volume2), the project area is predominantly underlain by the Puketona Formation Alluvium, comprising soft peat and sands. Ground investigations undertaken by GHD in 2011 showed that the natural ground conditions generally consist of stiff to very stiff clay/silt. The soils immediately below the existing carriageway granular sub-base comprise sand and clay fill.

6.2 Transport Network

The existing transport environment is described in the Transport Assessment Report attached as Appendix 8 (Volume 2) and is summarised below.

(a) Network role

Lincoln Road is a Regional Arterial Road providing a primary connection between State Highway 16 and Henderson and other western suburbs. Along with Great North Road, the corridor forms part of a wider strategic east-west route which links the suburbs of New Lynn, Kelston and Henderson. Lincoln Road also provides an alternative route to Te Atatu Road for journeys between State Highway 16 and Great North Road. Lincoln Road forms part of AT's Quality Transit Network and Regional Freight Network.

(b) Road layout / function

Currently, Lincoln Road is a four lane arterial road that includes a flush median and a number of right turn bays which facilitate turning movements into a number of minor side roads. The posted speed of the road is 50km/h. The corridor functions not only as a commuter route but as a main thoroughfare and destination. The corridor therefore observes a relatively sustained volume of traffic throughout the day, with the total volume of traffic on a Saturday equivalent to a weekday.

In the project area, there is no on-street parking on Lincoln Road apart from one area of indented parallel parking outside 260-282 Lincoln Road. This area provides for approximately 16 car parks. On-street parking is available on the side streets.

(c) Road users

Lincoln Road's average daily traffic (between Universal Drive and Central Park Drive) is over 40,000 vehicles. Travel time surveys in 2015 found the speed of travel along Lincoln Road averages 24 kph (Level of Service C). Level of Service E and F conditions are experienced during peak periods, particularly northbound in the morning peak - it can take up to 13 minutes to travel the 1.7km between Te Pai Place and The Concourse (the average travel time is 5.2 minutes).

The primary user of Lincoln Road is currently the motorist. Vehicle occupancy surveys in 2011 found that 3.8% of vehicles have three or more occupants in the morning peak (both directions) and during the afternoon peak, 8.4% and 4.5% of vehicles have three or more occupants for the northbound and southbound directions respectively.

8.4% of the average daily traffic on Lincoln Road is heavy commercial vehicles.

Lincoln Road is on several bus routes connecting to the CBD, Henderson interchange, New Lynn, Swanson, Westgate and Takapuna. The frequency of buses varies for each route. There are no bus priority measures currently in place on Lincoln Road. There are currently four northbound and four southbound fully indented bus stops within the project area - these are located close to the Daytona Road, Universal Drive, Pak'n Save and Triangle Road intersections.

There are no existing formal cycling facilities along Lincoln Road. During a cyclist survey in 2015, 28 cyclists were recorded on a weekday and 142 on a Saturday.

There are continuous footpaths on both sides of Lincoln Road. No pedestrian count information has been gathered.

(d) Accident rates

The Transport Assessment identified that for the five year period from 2008 to 2012 there were a total of 466 crashes along Lincoln Road between Te Pai Place and the SH16 Interchange.

One of the most predominant crash-related movements during the five year period involved 159 crossing and turning type collisions (36% of all crashes). Of the 159 crashes, 107 were right-turn manoeuvres. The Transport Assessment notes that the most likely reason for this can be attributed to the current design of Lincoln Road, as the presence of two lanes in each direction with a central flush median results in a large number of turning vehicles which have to give way to oncoming traffic across up to four lanes.

6.3 Community Profile

The community profile and social baseline for the project area is described in the Social Impact Assessment in Appendix 15 (Volume 2) and summarised below.

The Henderson-Massey Local Board area comprised 107,685 residents at the 2013 census, with the most recent population estimate (2015) being 117,300 people. The population has been growing rapidly, at over 1.5% per annum between 2013 and 2015. At the 2013 census, the median age in Henderson-Massey was 33.5 years, compared to 35.1 years in Auckland as a whole.

The percentage of Māori (15.9%) and Pacific peoples (19.5%) were higher in Henderson-Massey than they were in Auckland as a whole.

The proportion of adults who are employed was 58.9% in 2013, which was slightly lower than Auckland as a whole, but had increased since 2006. The median household income in Henderson-Massey was $66,900 per annum in 2013, compared to $76,500 for Auckland as a whole.

69% of people drove a private vehicle to work on census day 2013, 12.9% drove a company vehicle and 5.8% were passengers in a private or company vehicle.

The Kingdale Area Unit (covering the project area) accommodated 4,810 jobs in 2015, up from 3,870 in 2000. Important employment categories include manufacturing, retail and health care and social assistance.

The local Lincoln Road area is used by the community for a variety of activities including homes, workplaces, access to goods and services, relaxation, education and assistance from medical or social services. The Local Board described the people living in the local area as having a strong attachment to their community and area, with schools and churches used as community hubs.

6.4 Land Use

Land uses along the corridor in the project area are a mixture of residential, small business, retail/commercial and light industrial. There is also Te Pai Park, Laidlaw College, Te Wananga Aotearoa and two kindergartens. The eastern side of the road is predominantly business in nature, while the western side contains a mix of uses.

Land uses along the corridor have been in a state of transition for many years as vineyards and horticulture has given way to residential and business activities. A strong theme over the past 10 years has been the expansion of retail premises, both larger stores and groups of smaller convenience type stores. 'Fast food' type operations are common.

The retail and business activities along the corridor generally rely upon extensive areas of on-site car parking in the front of buildings, given the absence of parking on the street, as well as the commercial desire to attract patronage through ample, convenient car parking. On-site parking provision often exceeds District Plan minimums.

Most sites display an 'open' frontage to the street to enable easy visual interaction between the street, parking and the activities, and there is a strong theme of signage and billboards. For business and retail premises, there is generally limited landscape treatment of front yards.

Residential areas on the western side present a mix of residual residential uses and small businesses occupying former dwellings. These small businesses also rely upon on-site parking, but their front yards do contain trees and other vegetation that help to soften the visual qualities of the corridor. Of the 28 residentially zoned properties between Pomaria Rd and the State Highway that front Lincoln Road, eight are used for small businesses.

6.4.1 Existing Zoning Provisions

The Auckland Council Operative District Plan (Waitakere Section) has two types of zoning; Human Environments and Natural Areas.

The LRCI project area is all within the General Natural Area, which applies to areas outside the 'green network', such as urbanised areas like Lincoln Road. This indicates that the area does not form part of any special natural character area or ecosystems.

In terms of Human Environments, Lincoln Road itself is zoned Transport Environment. This zone provides for roading and associated infrastructure activities, including changes to road alignments and designs (such as installation of a raised median).

The land on either side of the project area has a range of Human Environment zonings, shown on Figure 6.2 below.

Land on the western side of Lincoln Road to the north of Daytona Road and fronting Poinsettia Place to Pomaria Road is Living Environment (yellow colour). This zone is primarily residential in character. Permitted density in the Living Environment is one dwelling per 450m² net, or down to 350m² with a resource consent. Medium density housing is possible on larger sites, subject to resource consent. Small home occupations are permitted, and other non-residential activities require a resource consent

The land on the western side to the south of Daytona and north of Universal Drive is Community Environment (light purple colour). This zone applies to retail centres and other areas that have shopping, service, recreational and communal activities. The Community Environment on Lincoln Road includes Lincoln North Shopping Centre and a range of commercial activities including restaurants / takeaways, car sales, banks and cafés. To the south of Universal Drive is the Lincoln Park Special Area. This provides for the Mitre 10 and Pak n' Save operations.

Working (Lincoln) Environment (pink colour) is applied to most of the east side of Lincoln Road in the LRCI project area. This zone applies to areas that are industrial in character. The Lincoln Working Environment has some more stringent requirements over noxious activities than other Working Environments, due to the mix of activities in the area. Along Lincoln Road, the activities within the Working Environment are primarily commercial rather than industrial in nature, and include large format retail, other retail, restaurants / takeaways, petrol stations and professional services.

Also on the eastern side of Lincoln Road is the (Laidlaw) College Special Area. This special area largely applies the Working Environment rules, but also allows for ongoing 'College activities', including residential activity that is associated with the College.

Te Pai Park is located on the eastern corner of Te Pai Place and Lincoln Road. It is zoned as Open Space (green colour). The large park has netball courts, green space, a playground and a skate park. Daytona Reserve to the west of Lincoln Road is also zoned Open Space and is a passive recreational park which residential properties back onto (the park has no frontage to any street).

Figure 6.2 ACDP Human Environments Map

Full Natural Areas and Human Environments maps and legends for the project area are included in Appendix 1 (Volume 1) to this AEE.

6.4.2 Future Land Use and Zoning Provisions

At the time of lodgement, the PAUP has been notified and submissions heard. The plan is not yet operative, and the zoning in the PAUP does not yet have legal effect. However the proposed zoning does indicate a potential change to the character of the corridor, especially the western side.

The zoning of land in the project area under the notified version of the PAUP is shown on Figure 6.3 below. Of note, a Mixed Use zone (mauve colour) is applied to most of the existing residential sites adjoining the western side of Lincoln Road.

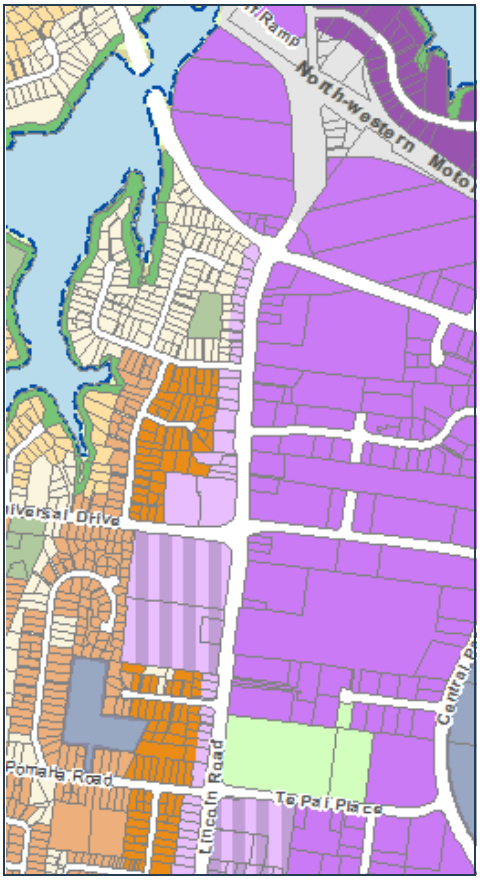


Figure 6.3: Notified PAUP zoning map

The Mixed Use zone would replace the Living Environment zoning. It enables both business and residential activities, with a 4 to 5 storey height limit. Table 6.1 below identifies key differences between the operative Living Environment zoning and the Mixed Use zone of the PAUP.

Table 6.1: Elements of ACDP Living Environment Zoning vs PAUP Mixed Use Zoning

Element	ACDP Living Environment	PAUP Mixed Use Zone
Residential Density	Medium density possible on larger sites (2000m^2) fronting Lincoln Road, otherwise 1 unit per 350m^2	No density control
Building Height	8m (11m possible as part of Medium Density development)	18m (16m occupiable and 2m for roof form)
Front Yard	3.0m	No yard, but where car parks are in the front yard, then a 2m wide landscape strip must be provided
Building coverage	35%	No coverage limit

Behind part of the Mixed Use strip is Terraced House and Apartment Building zone (orange colour), which would enable greater residential intensity than the operative Living Environment, with provision for low rise apartments.

The Mixed Use zone is also applied to the Lincoln North shopping centre, a change from the current commercial zoning under the Operative District Plan. The effect of this change on the amenity and character of this section of Lincoln Road will not be large. The Mixed Use zone does provide more scope over building placement and design than the current Community Environment zoning and lessens the emphasis on maintaining a pedestrian-orientated environment along street frontages.

To the north of the project area, on the northern corner of the intersection of Triangle Road and Lincoln Road, the existing area of housing is proposed to be rezoned from Living Environment to Light Industry. This signals that this pocket of housing will no longer be maintained as a residential environment.

Land on the eastern side of Lincoln Road is largely shown as Light Industry (purple colour). The notified rules of the PAUP are restrictive over the types of activities that could locate here. Large format retail, offices and retail are not permitted in the Light Industry zone. However, the PAUP also applies an 'Identified Growth Corridor' policy overlay to the entire length of Lincoln Road. This would provide opportunity for the establishment of commercial (predominately retail) activities on sites fronting the road, even if the zone is light industrial.

In terms of the 'road frontage' development controls that apply to the industrial area, the controls under the Operative District Plan and the proposed Auckland Unitary Plan are not dissimilar, as set out in the following table (table 6.2).

Table 6.2: Elements of ACDP Working Environment Zoning vs PAUP Light Industry

Element	ACDP Working Environment	PAUP Light Industry
Front yard	No yard applies	3 metres
Landscaping	For any site less than 2000m^2 in area incorporates planting to at least 30% of a 6.0 metre depth from a road boundary For any site less than 2000m^2 in area with car parking, driveway, or manoeuvring areas between the building and the road boundary, incorporates a minimum 2.0 metre planted strip (excluding driveways) inside the road boundary of the site. For sites over 2,000m^2, 10% of the site must involve landscape treatment, assessed as a controlled activity	Front yards (excluding access points) must be planted with trees, shrubs and ground cover plants within and along the full extent of the yard

Public Open Space - Sport and Active Recreation zone is applied to Te Pai Park, and Daytona Reserve is zoned Public Open Space - Informal Recreation.

Lincoln Sub Precincts A and B have also been applied to the Laidlaw College site and the land surrounding this site, and contain some customised provisions. Lincoln sub-precinct A applies to the Laidlaw College site. This sub-precinct would enable a range of Laidlaw

College activities to cater for the unique and diverse requirements of the student population, employees and visitors. Lincoln sub-precinct B would apply to sites adjoining Laidlaw College (sub-precinct A).

It is noted from Figure 6.3 that the proposed PAUP Mixed Use zoning appears to cover only the front part of some sites, with the rear part zoned Terrace Housing and Apartment or Single House. This appears to be an anomaly. The most recent zoning recommendations prepared by the Council and submitted to the Independent Hearings Panel address this in respect of sites between Dayton Reserve and Lincoln Road, but to the south of this, some sites retain a 'split zoning'.

Also of note in the most recent set of recommendations, sites around the southern, western northern sides of Daytona Reserve are identified as Mixed Housing Urban, allowing for three storey terrace and town house type development.

Full PAUP zoning maps for the project area are included in Appendix 1 (Volume 1) to this AEE, including the notified version and latest zoning recommendations.

6.4.3 Built Heritage and Scheduled Sites / Archaeology

There are no built heritage features or archaeological sites noted along the corridor in either the Operative or Proposed District Plans.

There are no sites of significance or sites of value to Mana Whenua along the corridor.

6.4.4 Built Form / Urban Design

The existing urban design environment is described in the Urban Design, Landscape and Visual Assessment Report in Appendix 10 (Volume 2) and summarised below.

Figure 6.4 below is from Council's GIS viewer. It highlights the fundamental nature of the built environment along the corridor, with a preponderance of mid-sized buildings on the western side, and more of a mix of building typologies on the eastern side, interrupted by the large building forms of Lincoln North shopping centre.

Figure 6.4: Building Footprints: Lincoln Road (source Auckland Council GIS)

The existing built environment on Lincoln Road presents a moderate level of amenity, particularly for pedestrians, cyclists, and public transport users. Along the commercial sections of the corridor, large areas of car parking dominate the street frontage. The newer commercial buildings attempt to engage with the street environment, even when set back, through glazing, design and materials.

However, there are few buildings of architectural merit or interest, or built features that would create a landmark or build on a sense of place or local identity. The corridor is dominated by business signage.

Te Pai Park provides open space and visual relief from the built environment, which combined with the trees on the western side of the road, creates a green node at the southern end of the project area.

The Lincoln Road entrance to Laidlaw College, while low-key, provides an area of moderately higher quality amenity amongst the large-format retail environment through the use of a low brick wall and entrance alcove combined with a line of large, established trees. The trees in particular provide a highly visible landmark due to their verticality.

Benches and street trees located around a bus shelter and at the front of retail businesses provide a small feature outside 226-250 Lincoln Road.

6.5 Maori Cultural Values

Te Kawerau Iwi Tribal Authority has prepared a Cultural Impact Assessment (CIA). This describes Te Kawerau a Maki's association with the project area, which is within their core rohe. Cultural values of the project area that are identified in the CIA include the mauri of the native vegetation and bodies of water.

During consultation, Te Kawerau a Maki and Ngāti Whātua o Ōrākei identified that areas of interest for the project and area include stormwater neutrality, biodiversity, eco-sourcing of vegetation and recognition of cultural heritage.

6.7 Natural Environment

6.7.1 Trees

There are a total of 154 trees within or bordering the LRCI project area that have been listed in the Arboricultural Report. The existing vegetation within the project area is described in the Arboricultural Report in Appendix 9 (Volume 2) and is summarised below.

Scheduled Trees: There are three scheduled trees along the project route. These are a Rimu in the road reserve outside 172 Lincoln Road (ACDP reference 177); a Rimu at 170 Lincoln Road (ACDP reference 178); and a Himalayan Cedar in the road reserve outside 1-3 Pomaria Road / 158 Lincoln Road (ACDP reference 221). No information is included in the ACDP on the values of these trees and the reasons why they are scheduled. They are all in reasonable health and prominent species within the landscape (although are not the only prominent trees along Lincoln Road).

Trees within Road Reserve: Other than the two scheduled trees (in road reserve), there are 86 existing trees within the road reserve in the LRCI project extent. The predominant species is Tulip trees, with a variance in age and size. Other visually prominent trees within the road reserve include a Cedar, Pohutukawa, Norfolk Island Pines and Gum. The condition of the trees is generally very good, with considerable future growth potential.

32 of these trees fall under the general tree controls of the ACDP (General Natural Area tree controls). There are also 54 smaller tree species found within the road reserve, as well as trees classed as 'weeds' including Phoenix Palm, Wattle and Acmena.

Trees within Open Space: There are a number of significant trees within Te Pai Park adjacent to Lincoln Road (Oak, Gum and Kahikatea) which are visually prominent. There are also a number of lower value trees located on Daytona Reserve within the area of the new service lane. 10 trees in open spaces are either within or bordering the project area that are likely to subject to removal or works in driplines. All of the trees to be removed would be subject to the general tree removal rules of the ACDP.

Trees within Private Property: 56 trees of a range of different species and sizes are located on private property and within the proposed designation boundary, 15 of which are larger trees on sites over 4,000m^2, and therefore their removal would normally be subject to the general tree rules of the ACDP.

All urban trees generally have some habitat value, help reduce stormwater runoff and help soften the appearance of the urban setting. The project requires removal of 51 trees that would normally be subject to the general tree rules of the ACDP. AT does not need resource consent to remove these trees under the ACDP, as that activity will be authorised by the designation. The categorisation of the subject trees as those that are subject to the general tree rules of the ACDP provides an indication as to possible effects on the amenity of the environment from their removal, reflecting the value that the community have placed on these trees.

The relevant general tree rule in the ACDP is Rule 2 of the General Natural Area Rules. On a strict interpretation, Rule 2 does not apply to trees within the road reserve. This is because Rule 2 only applies to activities on a ‘site’ that is “not an urban environment allotment”. The term ‘site’ is defined and does not include roads. Therefore, there is an argument that Rule 2 does not apply to trees within the road reserve. However, Auckland Council has advised that this is an error. Accordingly, for the purpose of this AEE, it has been assumed that Rule 2 would apply to trees within the road reserve.

6.7.2 Landscape

The existing landscape environment is described in the Urban Design, Landscape and Visual Assessment Report in Appendix 10 (Volume 2) and summarised below.

The Lincoln Road corridor exhibits typical urban arterial road characteristics for a road that passes through a highly developed landscape. Landforms are already modified by the existing road and other human activity. There are few natural features of note in the vicinity, being the individual native or large trees, and exotic Norfolk Pines dotted down the corridor. Street trees and trees along the street frontage on private properties contribute some amenity to the Lincoln Road corridor environment.

Aesthetically the area has the ordinary urban character of a typical arterial road in a suburban area with mixed land uses and environments, with little pervious surfaces or areas of natural ecology. There are views out from the corridor, especially at the junctions - west to the rolling green Massey hills and east towards the Sky Tower. The Waitakere Ranges in the south are also a characteristic that places Lincoln Road firmly in Auckland.

6.7.3 Air Quality

As per the Air Quality Assessment Appendix 12 (Volume 2), the predominant wind directions at the nearest monitoring site to the project area (4.2km away in Avondale) are from the south-west, west-south-west, south-south-east and west. The majority of wind speeds are low to moderate.

Ambient air quality has been monitored in the vicinity of the project for a number of years. The nitrogen dioxide and particulate (PM_{10}) concentrations are well below national standards for air quality.

The Air Quality Assessment identifies that there are multiple receptor locations that are considered sensitive to baseline air quality in the vicinity of the project area, including residential properties, open space, child care and a primary school.

The PAUP shows an Air Quality Transport Corridor Separation overlay along the length of Lincoln Road. This overlay seeks to avoid or minimise adverse effects from motor vehicle emissions on activities sensitive to air discharges by separating these activities from significant motor vehicle emission sources. While the plan defines activities sensitive to reduced air quality as including residential, healthcare, educational, child care and the like, the associated rule focuses on new and expanded child care facilities.

6.7.4 Noise and Vibration

The existing ambient noise environment at Lincoln Road is described in the Noise and Vibration Report in Appendix 13 (Volume 2) and summarised below.

Noise was monitored at two locations over several days and recorded between 63 - 69 dB L_{Aeq} (24 hour) at the road boundaries of the properties (not inside the buildings). This is a relatively loud existing noise environment dominated by transport noise. No existing vibration measurements from the current operation of the road were taken - vibration has only been assessed in relation to construction activities.

Under both the ACDP and the PAUP, new residential activities that locate adjacent to the road are required to provide acoustic insulation of living and bedrooms. The PAUP (as notified) requires that any new bedroom, sleeping area, habitable room, or classroom within any new or altered activity sensitive to noise be designed, insulated or screened to achieve an internal noise limit of 40dB L_{Aeq}(24 hour) at all times.

6.7.5 Contaminated Land

A preliminary site investigation has been undertaken for the properties affected by the project. A Detailed Site Investigation was then undertaken for 25 locations where there were potential sources of contamination from current and historic land uses (Hazardous Activities and Industries List - HAIL - sites). The Detailed Site Investigation is attached in Appendix 17 (Volume 2).

Soil samples were compared to the assessment criteria in the ACRP: ALW, PAUP and NES-CS. The results indicated that the ACRP: ALW permitted activity criteria (discharge) were exceeded for DDT only, and there were no exceedances of the NES-CS standards or the PAUP permitted activity criterion.

DDT is a persistent organochlorine pesticide that was commonly used on horticultural sites throughout New Zealand prior to the 1970s. Due to the levels of DDT present, consent would be required for disturbance of soil under the ACRP: ALW before the project could commence construction (under the current planning framework). Consent would also be required under the NES-CS due to the volume and duration of the works.

6.7.6 Stormwater

Stormwater runoff from Lincoln Road currently drains to eight different discharge points. Most discharges are directly to an estuarine environment, either at Henderson Creek to the west, or the estuarine areas to the east of Lincoln Road. Two small sub-catchment areas currently discharge to freshwater streams that flow into the Coastal Marine Area. Only two small sub-catchments currently receive any form of stormwater treatment - the majority of stormwater runoff from Lincoln Road is not treated for quality.

The existing piped reticulation is likely designed for flow from a 1 in 5 storm event, at best, and therefore undersized by current design standards (1 in 10 storm event including climate change). This may result in localised overland flow issues.

There are areas of flood plain on either side of Lincoln Road, but the only floodplain within the project area is on Te Pai park.

Sections 2 and 3 of the Stormwater Assessment Report Appendix 11 (Volume 2) provide more detail on the stormwater existing environment.

6.8 Utilities

The following utility operators are understood to have services located along Lincoln Road:

a. Auckland Council stormwater (as described in the Stormwater Assessment);
b. Watercare Services (water main in the centre of the road);
c. Vector - Communications (fibre optic cable, mostly along eastern side of road);
d. Chorus Telecom (both sides of the road);
e. TelstraClear (both sides of the road);
f. Vector - Electricity (underground power lines both sides of the road); and
g. Vector - Gas distribution (both sides of road, between Universal Drive and Paramount Drive).

A number of road side cabinets are located along the corridor these will need to be accommodated at the detailed design stage of the project.

6.8.1 Lighting

The existing lighting environment is described in the Lighting Assessment Report in Appendix 14 (Volume 2) and summarised below.

The existing lighting along Lincoln Road, the side roads and intersections is made up of a mixture of Sylvania Roadster, Sylvania B2222, Sylvania B3000, Sylvania Urban, Betacom GL600 and GEC Optispan High Pressure Sodium luminaires. Most of the luminaires are mounted on stand-alone road lighting columns and joint use signal poles. However, there are some that are mounted on Vector power poles along Triangle Road and Pomaria Road. Nearly all of the stand-alone road lighting poles are octagonal steel columns, although there are a small number of concrete lighting poles at the State Highway 16 Interchange and along Poinsettia Place.

The existing High Pressure Sodium lighting is generating significant levels of spill light, especially to the rear. Property boundaries within about 7.6m-9.7m distance from a lighting pole will likely be experiencing more than 10 lux of spill light.

6.9 Existing Designations

There are existing designations in the vicinity of and overlapping with the proposed LRCI designation, as listed in Table 6.3. The relevant planning maps showing these designation locations are contained in Appendix 1 (Volume 1).

Table 6.3 Existing Designations in the Auckland Council District Plan: Waitakere Section

Reference	Requiring Authority	Purpose of Designation	Relationship to NoR
NZTA5 (6742 in PAUP)	NZTA	State Highway 16	One of the project objectives is for the improved Lincoln Road to be integrated with the upgrades that are taking place at State Highway 16 Lincoln Road interchange. The proposed LRCI designation adjoins the NZTA designation.
RNZ2 (7300 in PAUP)	Radio NZ	Telecommunication and radio communication facilities	Affects land at the northern extent of the project, western side of Lincoln Road. Radio NZ holds the primary designation - s176 approval will be required from Radio NZ.
WCCRW5 (1450 in PAUP)	Originally Waitakere City Council - now Auckland Transport	Road widening	Most of the designated land has already been taken and is now road. The section along the frontage of 211 Lincoln Road (Laidlaw College) has not been taken. This land is required as part of the LRCI project. Further sections of the road widening designation on a number of sites to the south, outside of the project area, are not affected by this NoR
MD1 (4311 in PAUP)	Minister of Defence	Defence purposes - protection of Whenuapai Air Base approach and	Overlaps with northern most project extent - intersection of Lincoln Road and Triangle Road. Airspace designation -

Reference	Requiring Authority	Purpose of Designation	Relationship to NoR
		departure paths	does not affect project

Of particular note is designation WCC RW5. The designation schedule in the ACDP states that this designation extends into 211 Lincoln Road (Laidlaw College) by 4.88m. There are no conditions attached to this designation. The designation would authorise removal of existing vegetation and associated earthworks within the designated foot print, to form a wider road. As a result the low wall and some of the trees presently along this frontage could be removed. The LRCI project designation extends into 211 Lincoln Road by 5m, rather than the existing 4.88m.

7 Consideration of Alternatives and Reasonable Necessity

7.1 Summary of Alternatives Considered

Section 171 of the RMA requires a consideration of alternative routes, sites and methods where AT does not have an interest in the land to be acquired and/or effects on the environment are likely to be significant.

An Alternatives Assessment report is included as Appendix 5 (Volume 2).

That report notes that in the case of the LRCI project, alternative routes are not available nor realistic. Lincoln Road is an existing arterial road corridor and expansion of this corridor and improvements to its efficiency and safety will generate much fewer effects and greater benefits than upgrading other corridors.

The various phases of the assessment of alternatives are as follows:

a. The Lincoln Road Corridor Scheme Assessment Report dated April 2008 (SAR) prepared by MWH examined 15 options for Lincoln Road for their merits relative to the 'do-minimum' situation. From these options, four options were developed for further assessment. The preferred option involved construction of a new shared bus/cycle lane from Te Pai Place / Pomaria Road north to State Highway 16 on both sides of the road.

b. The Lincoln Road Corridor Preliminary Design, Volume 1: Preliminary Design Report, Addendum to Scheme Assessment Report prepared by GHD in 2013 contained an assessment of alternatives for four aspects of the preferred design – the special vehicle lane, the raised median, intersection operation and integration with the NZTA interchange.

c. Further assessment of the options in relation to four 'hot spots' in 2015/106 – the Daytona service lane, scheduled trees, Laidlaw College frontage and the stormwater treatment site. This process included a comprehensive MCA analysis.

The Alternatives Assessment considers whether the proposed works could be authorised by different planning methods, such as resource consents or plan changes. The Assessment concludes than an NoR for a designation is an appropriate method.

7.2 Alternative Sites

In terms of alternative sites, the Alternatives Assessment report details the main elements of the road design that were considered before arriving at the preliminary design upon which the designation footprint is based. These include:

a. Type of transit lane - T2, T3 or bus only;

b. Nature of cycling facilities - on road, shared foot path or segregated;

c. Median - raised or flush; and

d. Intersections and transitions - various layouts were assessed for operational efficiency and performance before preferred layouts were selected.

The LRCI projects implements these elements through additional width, enabled by land purchase on both sides of Lincoln Road. The Alternatives Assessment reviews whether the desired elements could have been achieved within the current road corridor (by for example replacing one traffic lane with the transit lane); or by concentrating land purchase and widening on one side only.

Accommodating the desired roading elements in the current road corridor is not realistic or feasible, given the strategic nature of the road corridor. Reducing vehicle capacity below

current levels would significantly affect the ability of the corridor to support the business land uses along the corridor, and in the vicinity.

Concentrating road widening on one side only (such as the eastern side) is also not a realistic option. This option would involve considerable additional work to re grade the road profile, while greater land take will have more significant impacts on business operations. It is likely that a number of buildings would be affected by the wider road corridor and as a result full purchase of sites may be required with attendant effects on business operations.

7.3 Alternatives: Hot spots

The Alternatives Assessment sets out detailed consideration of options for three specific locations where analysis highlighted a range of amenity and safety issues were present. These were:

a. 296-314 Lincoln Road. The project will result in these properties no longer being able to be safely accessed directly from Lincoln Road (due to new gradients). A rear access lane is required, and several different possible alignments for this lane were considered, all of which require existing houses to be removed.

b. 158 - 172 Lincoln Road. Three scheduled trees are located at the southern extent of the project area (opposite Te Pai Park). Two of these trees, a Himalayan Cedar and a Rimu, are within the current road reserve and potentially affected by the project.

c. 211-221 Lincoln Road (Laidlaw College). The frontage to this site contains a stand of large mature trees that are a notable feature along the corridor.

Multi-criteria assessments (MCA) were carried out for a range of design options for the first two of these locations. There was no specific design options for the Laidlaw College frontage as the key issue was whether it was feasible to retain the trees through purchase of additional land by AT.

Criteria that the options were assessed against related to the achievement of the project objectives, effects on the environment, social effects, economic effects and RMA / compliance costs.

7.3.1 296-314 Lincoln Road

Four options were considered and ranked by the MCA process. The preferred option is 'Option 4', which is a service lane starting at 298 Lincoln Road and passing to the rear of existing properties, along the edge of Daytona Reserve. It then passes across 306A Lincoln Road and to the rear of 308 and 310 Lincoln Road, ending in a cul-de-sac at 312 Lincoln Road. The existing houses at 298, 298A, 306A, 308, 310 and 312 Lincoln Road need to be removed, and the residual land at 308 and 310 Lincoln Road is to be retained in AT's control for the long term, as mitigation land.

The preferred route of the service lane is shown on Figure 7.1 below. Its key benefits are the improved access to and surveillance of Daytona Reserve, and the use of 308 and 310 Lincoln Road for landscape and possibly stormwater mitigation purposes. The design retains a larger area of land that could be redeveloped comprehensively (300 to 304A).

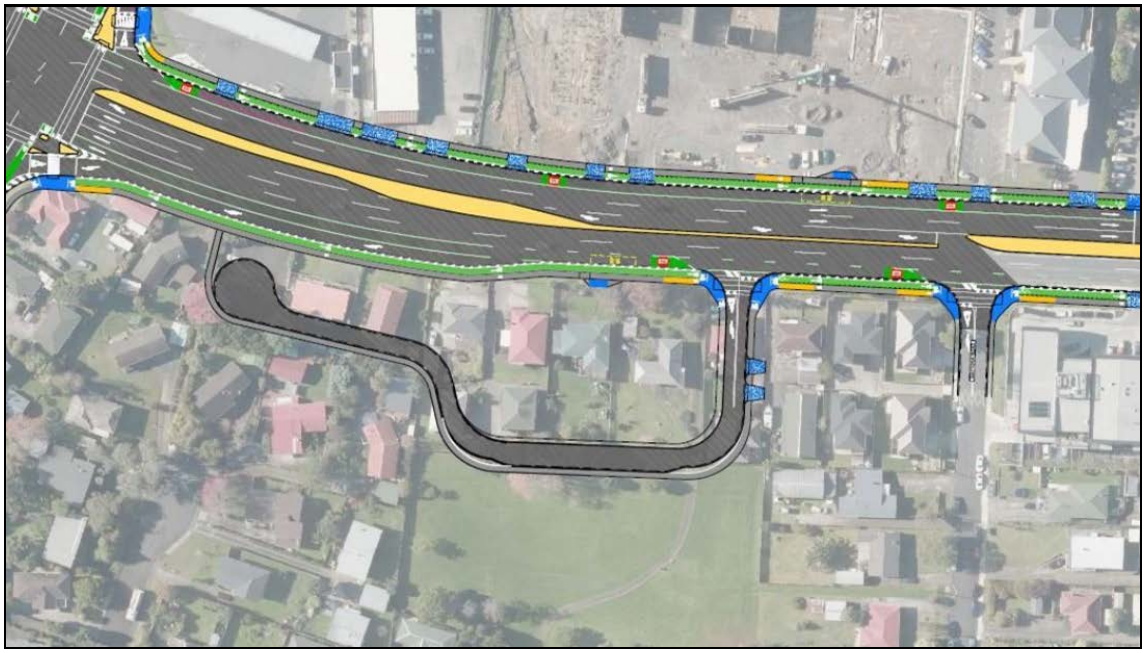


Figure 7.1 - Selected design for service lane

7.3.2 158 - 172 Lincoln Road and Te Pai Park

Seven alternative road layouts were assessed, some of which avoided the removal of one or both scheduled trees, and some of which did not. In order to avoid the removal of the trees, other compromises needed to be made - for example, loss of a section of the transit lane, or extra land required from Te Pai Park.

The preferred option involves avoiding the removal of the scheduled trees, but also minimising the land take from Te Pai Park on the opposite side of the road. Continuous transit lanes and two general vehicle lanes are retained in either direction, with the median reduced. The segregated cycleway and footpath along the rest of the project extent is replaced with a 3.3 metre wide shared path along each side of this section of Lincoln Road. The preferred option is shown in Figure 7.2 below.

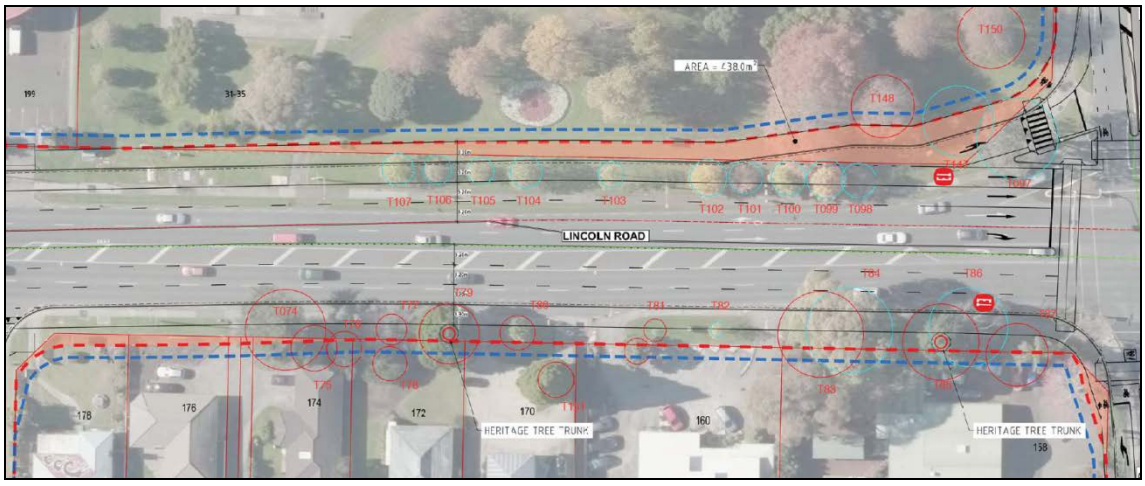


Figure 7.2 - Selected design for Te Pai Park & scheduled trees area

7.3.3 211-221 Lincoln Road (Laidlaw College)

The frontage to this site contains a stand of large mature trees that the Urban Design and Landscape assessment noted provided a degree of amenity to the road corridor. The preferred alignment requires the removal of some of the trees along the frontage (as well as an existing low wall). Detailed design will determine which trees need to be removed and which can be retained. The arborist's report shows the extent of the trees to be removed on a worst case scenario.

The potential to avoid the removal of the trees was considered, but the preferred road alignment requiring the removal of some of the trees was the most logical from a transport perspective. The alternative option of taking more land in this area to provide space for replacement planting (such as wider berm area) is difficult to justify from a land acquisition perspective. In addition, the landscaping proposed within the median, adjacent to the lane beside Daytona Reserve and 308 and 310 Lincoln Road and on the street outside 322 and 324 Lincoln Road would appropriately mitigate the loss of these trees. It is noted that the frontage of the Laidlaw College site is subject to an existing Auckland Transport designation for road widening (4.88 metres deep) which already serves to authorise the removal of some of these features. The site's zoning (industrial) facilities extensive redevelopment, and once subdivided into smaller lots, the trees in the frontage will no longer be subject to the general tree rules of the district plan.

As land take is needed in this area, negotiation over compensation may involve replacement planting and wall treatments.

7.4 Alternative Methods: Stormwater

The Alternatives Assessment report also outlines the options that have been considered in relation to stormwater treatment and disposal, from the point of view of ensuring that the NoR identifies enough land to accommodate required stormwater and treatment devices. Consent for stormwater diversion from the new impervious surfaces will be sought at a later stage, prior to construction.

Several options were considered for the treatment and disposal of stormwater generated from the new impervious surfaces to be created by project, as well as stormwater from the existing road corridor, including consideration of various discharge locations and treatment methods. The preferred option is to consolidate all stormwater from the road to a single new discharge point at Daytona Strand, although the required discharge consent is not being applied for at this time.

The stormwater will be collected at 312 Lincoln Road, the low point of the route, where quality treatment will be provided in the form of in-ground structural filtration devices. The amount of stormwater that is to be treated will be determined at the resource consent stage.

Conveying the stormwater to the discharge point will involve a stormwater pipe being laid along the existing pedestrian walkway that runs beside 35 and 46 Preston Avenue. Construction of this pipe will likely involve some temporary works on these properties and consequently the designation shows a temporary works designation either side of this walkway. There are no other feasible routes for the stormwater pipe. There is an existing drainage easement to the south that runs from Lincoln Road to Daytona Strand, along the northern boundary of Daytona Reserve. This easement is not appropriately located to take all of the flows from the reconfigured stormwater network.

The amended road design is not expected to change overland flows during storm events that exceed the capacity of the piped network, and if anything will likely reduce some effects through enhanced infrastructure.

Alternative methods

In the preparation of the LRCI NoR, AT considered whether an NoR for a designation was the most appropriate method of authorising the land use aspects of the project. Other potential methods include:

a. Obtaining land use consents for the project;
b. A plan change; or
c. A building line restriction in the district plan.

A NoR is the preferred option because:

a. The land required for the LRCI Project is within multiple zones within the Operative Plan and PAUP;
b. Building line restrictions and other similar tools do not provide the same level of certainty to landowners and AT as to the form of the corridor, and can only be implemented as sites redevelop;
c. A designation provides a comprehensive way to authorise the LCRI Project; and
d. A designation assists with supporting the land acquisition required for the Project.

7.5 Reasonable Necessity

Section 2.7 of this AEE set out AT's objectives for the project. They are as follows:

Table 7.1: LRCI Objectives

Objective Number	Provision
1	To accommodate more people travelling to and along Lincoln Road by improving corridor efficiency.
2	To improve public transport reliability within the Project area.
3	To improve safety for all road users, including by providing cycling infrastructure.
4	To integrate Auckland Transport's Lincoln Road improvements with the NZTA Western Ring Route upgrade via the Lincoln Road Motorway Interchange.

These objectives were prepared by AT early in the process of developing the NoR. They reflect AT's key drivers, as well as the responsibilities set out in the legislation that AT works within.

Key features of the project (in terms of permanent changes to the existing environment resulting from the works authorised) link to the objectives as follows (Table 7.2):

Table 7.2: Objectives and Changes to the Environment

Change to the Environment	Objective Link
Transit lane added	Objectives 1, 2 and 4
Segregated/ shared cycleway provided, new mid-block pedestrian crossing	Objectives 1 and 3
Raised median, restrictions on uncontrolled U turns and resulting longer travel times	Objective 3
Widened intersections	Objectives 1, 2 and 4
Removal of berm and trees	Objective 1, 2 and 3
Changes to front yards	Objective 1 to 4
Use of reserve land for roading purposes	Objective 1 to 3
Service Lane at 298 to 312 Lincoln Road	Objective 1 and 3 (facilitates safe access to these properties)

In terms of the reasonable necessity to use a designation to achieve AT's objectives, the Alternatives Assessment (Appendix 5, Volume 1) outlines the issues associated with using other planning techniques such as resource consents or zone changes.

While these other methods could also achieve AT's objectives, they are likely to be more costly to prepare and administer, both for AT and landowner and occupiers along the route. The designation crosses multiple sites and four different land use zones. Importantly, given that works will occur in 2023, resource consents and plan changes do not signal to future landowners interested in purchasing property along the corridor that the works are planned to occur.

In addition, there is potential for sites to redevelop in a way that may hinder the implementation of the project, such as new buildings close to current road edges. The designation process under the RMA provides the main means by which AT can control interim changes that would undermine the implementation of the works or significantly increase the public costs of the project.

8 Effects and Mitigation

This section of the AEE contains the assessment of actual and potential effects on the environment in relation to the works which will be authorised by the LRCI designation.

a. Section 8.1 provides a summary of anticipated effects;

b. Section 8.2 sets out the approach undertaken in identifying the effects for the LRCI NoR;

c. Section 8.3 sets out a series of effects tables that list each identified effect and proposed mitigation, where warranted;

d. Section 8.4 provides a discussion of effects to residential and business properties;

e. Section 8.5 provides an analysis of the extent of the effects; and

f. Section 8.6 concludes with an outline of the management approach to be used to implement the necessary mitigation.

8.1 Actual and Potential Effects: Summary

Actual and potential effects can be categorised as temporary effects (experienced during construction) and permanent effects (arising from the operation of the project - for example cars, buses and people using the new road).

The actual and potential effects on the environment during **construction** can be summarised as follows:

a. Transport – congestion and delays from reduction of traffic lanes and temporary speed limits imposed;

b. Cultural – potential effects on unrecorded archaeological sites, vegetation and water quality;

c. Trees – removal of vegetation, potential damage from works in dripline of scheduled trees and other trees that are to be retained;

d. Urban design, landscape and visual – effects from temporary alternative accesses and changes to bus stop locations; privacy and amenity effects from construction and earthworks;

e. Stormwater – impacts of construction sediment on infrastructure and receiving environments;

f. Air – dust generated from construction;

g. Noise and vibration – human annoyance from construction noise and vibration; and

h. Business and community disruption – effects from temporarily reduced access to commercial operations, private properties and public transport, possible increase in construction employment opportunities, effects from presence of construction workforce.

The mitigation proposed for these construction-related effects include, in summary:

a. Development and implementation of a Communication and Consultation Plan;

b. Ongoing engagement with Mana Whenua over detailed design;

c. Development and implementation of a Construction Environmental Management Plan, including noise and vibration, dust and sediment control;

d. Development and implementation of a Construction Traffic Management Plan, covering access to properties, pedestrian safety and emergency vehicle access;

e. Implementation of an Accidental Discovery Protocol;

f. Development and implementation of a tree protection methodology for works around trees being retained; and

g. Development and implementation of a Community Facilities and Local Business management plan that will detail actions to be taken to minimise disruption to businesses and community facilities.

The actual and potential effects on the environment from the **operation** of the road following construction are anticipated to be:

a. Transport – improved corridor performance and capacity, improved reliability and speed for bus journeys, increased safety for road users, improved cycling facilities;

b. Transport – increased travel distance for some movements and increased number of vehicles passing through intersections;

c. Cultural – potential effects on cultural landscape, mauri of soil and water caused by increased impervious surfaces;

d. Urban Design, Landscape and Visual – potential adverse effects associated with the wider road corridor; removal of existing amenity features within the road reserve and private property such as trees and grass berms; streetscape effects from the new service lane; visual effects from batters, retaining walls;

e. Stormwater – greater runoff from additional impervious surfaces, although overall likely decrease in flooding elsewhere in the catchment;

f. Air – slight to negligible increase in particulate and nitrogen dioxide ambient air quality; less pollutive alternative modes of transport provided for (i.e. public transport, walking and cycling);

g. Noise and Vibration – slight increase in average road noise received at 11 residential properties;

h. Lighting – potential for increased spill light into some residential properties; but an overall reduction in spill light and improved lighting quality;

i. Land Take – permanent loss of land from individual properties, Daytona Reserve and Te Pai Park, and.

j. Social / Business Impact – less congestion but limited right turn opportunities compared to present.

The mitigation proposed for these post-construction, **permanent** effects include, in summary:

a. Development of an Urban Design and Landscape Plan which will include consideration of specific design elements at detailed design stage - regard to be had to safety, accessibility, incorporation of identity and heritage;

b. Replacement street tree planting within the median and at locations along the route;

c. Replacement planting within Te Pai Park and Daytona Reserve;

d. Installation of mitigation measures (e.g. acoustic insulation, fences) for residential properties receiving perceptible increase in noise, where desired by property owners; and

e. Compliance with relevant lighting standards and minimisation of spill light at detailed design stage.

In addition to the above, stormwater discharges from the new impervious surfaces and earthworks will require resource consents to be obtained. Specific conditions will be attached to these consents, in particular standards relating to stormwater treatment and sediment controls.

AT's compensation arrangements with landowners affected by proposed land take may also include replacement of removed elements (e.g. trees, landscaping, driveways, parking and fences) on private property, through separate landowner agreements made at the time of land acquisition under the Public Works Act 1981.

8.2 Identifying Effects

The RMA provides a definition of 'effect' that is wide ranging. The term includes positive or negative effects, effects that are temporary or permanent as well as cumulative effects. Effects can be at either a local or regional scale, and relate to the social, economic, cultural and environmental aspects of the environment. This AEE has not sought to take a narrow view of what constitutes an 'effect', although any assessment needs to acknowledge the range of matters that are, or are not, identified in relevant RMA plans and documents.

The assessment of actual and potential effects on the environment has taken into account the following:

a. Section 3 of the RMA;
b. The relevant matters included in Form 18 (Resource Management (Forms, Fees, and Procedure) Regulations 2003);
c. Those works which will be authorised under the Lincoln Road Corridor Improvements designation;
d. A number of walkovers of the LRCI alignment and project areas;
e. Consideration of the existing environment as set out in section 6 of this AEE and as contained within the technical environmental assessments contained in Appendix 8 – 18 (Volume 2);
f. A review and understanding of the preliminary design contained in Appendix 21 (Volume 3), which has been developed to determine a prudent footprint and "effects envelope" required for the LRCI NoR; and
g. A review and weighing up of the technical environmental assessments contained in Appendix 8 – 18 (Volume 2).

A prudent or conservative "envelope approach" to identifying and assessing the actual and potential effects of the project has been adopted by AT. This approach is commonly used to identify and assess the effects of a project that is based on a concept or preliminary design. The concept design helps to set the envelope of effects that is appropriate, taking into account possible mitigation. Once detailed design has been undertaken, then Outline Plans will be prepared and submitted to the Council, to detail works and actual mitigation measures within the terms of the envelope.

In the absence of detailed design, sufficient investigations and assessments have been undertaken to understand and evaluate the actual and potential effects of the construction and operation of the LRCI project, while providing flexibility to enable innovations to be developed in later stages of design (detailed and construction-level) including efficiencies to be optimised at the time of construction. As noted, AT is not seeking waiver of the Outline Plan process as part of this NoR

8.3 Effects Tables

The following tables provide a summary of the positive and negative effects of the LRCI project, as identified from the technical reports attached as Appendix 8 – 18 and which are relevant to the assessment of the effects of the NoR under the RMA. Where adverse effects have been identified, then the table identifies possible mitigation measures. These include design considerations that have been incorporated into the preliminary design or which are proposed as a condition of the LRCI NoR. Proposed conditions are attached as Appendix 4 (Volume 1).

8.3.1 Transport

MWH has prepared a Transport Assessment, Appendix 8 (Volume 2). Table 8.1 below outlines the transport effects of the project set out in this report. There are significant benefits in terms of corridor performance and capacity, safety and provision for public transport and cycling.

Table 8.1 Transport effects

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Improved corridor performance through significantly increased person carrying capacity	•			•		Transport Assessment Report (Appendix 8), section 10.1	N/A
2	Improved reliability and reduced times for bus journeys (3-4 minutes)	•			•		Transport Assessment Report (Appendix 8), section 10.1	N/A
3	Improved, safer cycling facilities, connecting with existing on-road cycle lanes along side	•			•		Transport Assessment Report (Appendix 8),	N/A

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
	roads, encouraging modal shift						section 10.1	
4	Improved safety from the solid raised median installation, including: reduced likelihood of vehicle turning collisions; reduction in delays and queuing from side roads resulting in less driver frustration; elimination of mid-block U turns; and may help prevent collisions from vehicles crossing the centreline	●			●		Transport Assessment Report (Appendix 8), section 10.1	N/A
5	Improved network efficiency, most significantly in the PM peak period	●			●		Transport Assessment Report (Appendix 8), section 10.1	N/A
6	Improved capacity to accommodate the increase in vehicles enabled by the upgrade of State Highway 16, which without the project is predicted to result in considerable queuing to get on and off State Highway 16	●			●		Transport Assessment Report (Appendix 8), section 10.1	N/A
7	Increased travel distance for some movements resulting from the installation of the raised median		●		●		Transport Assessment Report (Appendix 8), section 10.2	Right turn bays have been provided at main intersections. No other mitigation proposed as the safety benefits of the median offset the additional travel time.
8	Increased number of vehicles passing through intersections as a result of diversions required		●		●		Transport Assessment Report	No mitigation proposed. All intersections are expected to

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
	from the installation of the raised median						(Appendix 8), section 10.2	operate with acceptable levels of performance at 2026.
9	Raised median may encourage pedestrians to cross away from the formalised crossings at the signalised intersections		•		•		Transport Assessment Report (Appendix 8), section 10.2	Pedestrian crossings are included for all approaches to each of the signalised intersections and a new signalised mid-block crossing is planned between the Daytona Road and Paramount Drive intersections in order to provide safe crossing opportunities every 120-360m.
10	Some existing on-street parking spaces at 260 Lincoln Road and along side roads near the intersections with Lincoln Road will be lost		•		•		Transport Assessment Report (Appendix 8), section 10.2	No mitigation proposed. The amount of car parking to be removed is small in comparison to the overall pool of car parking available on sites in the area.
11	Construction may require reduction of traffic down to one lane in each direction for short periods, and temporary speed limits to be imposed, which will cause congestion and delays		•			•	Transport Assessment Report (Appendix 8), section 9	Careful management of construction impacts to ensure congestion is kept at acceptable levels, to be addressed through Construction Traffic Management Plan.

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
12	The project will generate construction traffic to bring and remove material and equipment.		•			•	Transport Assessment Report (Appendix 8), section 9	Detailed traffic modelling will be undertaken once the design is developed. If required staging of the project will be implemented along with a temporary traffic management plan.

8.3.2 Effects on Māori Cultural Values

The cultural effects identified during consultation and from the CIA received are included in Table 8.2 below. Consultation and engagement with Iwi is ongoing. Potential effects on as yet undiscovered kōiwi and taonga need to be considered and discovery protocols are proposed.

Table 8.2 Effects on Māori cultural values

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Potential adverse and cumulative effect on cultural landscape		•		•		Te Kawerau Iwi Tribal Authority CIA	Conditions of NoR requiring communication and consultation with Mana Whenua, providing

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
								cultural mitigation proposals for consideration
2	Potential adverse effect on unrecorded archaeological sites		●		●		Te Kawerau Iwi Tribal Authority CIA	Accidental Discovery Protocol to be in place and implemented
3	Adverse effect on amenity planting within road corridor, private property and reserves		●		●		Te Kawerau Iwi Tribal Authority CIA	Mitigation planting, preferably eco sourced, to be detailed in the Urban Design and Landscape Plan
4	Potential adverse effects to water, land, flora and fauna through physical impediment of structures and contaminants associated with construction and building materials		●			●	Te Kawerau Iwi Tribal Authority CIA	Construction discharges to be appropriately managed under future regional consents
5	Potential positive effect of cultural interpretation through incorporation of place names and cultural art and design elements, and public education through creation of a gateway to the west with Maori art	●			●		Te Kawerau Iwi Tribal Authority CIA	Conditions of NoR requiring communication and consultation with Mana Whenua, providing cultural mitigation proposals for consideration
6	Potential positive effect of greater connectivity of the public walking, cycling, bus and commuter networks	●			●		Te Kawerau Iwi Tribal Authority CIA	N/A
7	Potential adverse effect caused by increased impermeable surfaces resulting in increased stormwater, risk from contamination and effects on mauri of soil and water		●		●		Te Kawerau Iwi Tribal Authority CIA	Space available for treatment of all stormwater from increased impermeable surfaces at 312 Lincoln Road. Rain garden feasibility at 308 and 310 Lincoln

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
								Road to be considered through detailed design. Stormwater discharges will be the subject of future resource consent applications.

8.3.3 Effects on Trees

The Arboricultural Report, Appendix 9 (Volume 2) identified effects of the project on existing trees. These are contained in Table 8.3 below. In total, up to 142 trees need to be removed and of these 51 would normally be subject to the general tree protection rules under the ACDP. 96 replacement street tree plantings are proposed.

Table 8.3 Effects on trees

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Removal of 83 street trees - 29 trees would normally be subject to the tree rules of the ACDP, 54 not subject to the tree rules		●		●		Arboricultural Report (Appendix 9)	Mitigation planting - potentially within raised median and selected locations along route e.g. 308, 310

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
								Lincoln Road
2	Works in dripline of scheduled trees - Rimu and Himalayan Cedar		●			●	Arboricultural Report (Appendix 9)	Implement tree protection methodology, including individual tree management plans
3	Removal of 7 trees within Open Space - Te Pai Park, Daytona Reserve that would normally subject to tree removal rules under the ACDP		●		●		Arboricultural Report (Appendix 9)	Potential relocation of Kahikatea elsewhere in Te Pai Park; mitigation / replacement planting including at least 3 Totara trees at Daytona Reserve
4	Removal of 15 trees on private property that would normally be subject to the general tree rules of the ACDP		●		●		Arboricultural Report (Appendix 9)	Mitigation planting - potentially within raised median and selected locations along route e.g. 308, 310 Lincoln Road.
5	Removal of 37 trees on private property that are not subject to the general tree rules of the ACDP		●		●		Arboricultural Report (Appendix 9)	Mitigation to be discussed under separate landowner negotiations
6	Works within driplines of 9 trees - potential damage to roots and soil structures		●			●	Arboricultural Report (Appendix 9)	Implement tree protection methodology to be used for works in the vicinity of trees that can be retained

8.3.4 Urban Design, Landscape and Visual Effects

Urbanism+ and MWH have prepared a combined Urban Design, Landscape and Visual Effects report which is attached as Appendix 10 (Volume 2). The key urban design, landscape and visual effects set out in this report are summarised in Table 8.4 below. The scale of the urban design effects on the public realm is considered to be generally low and it is expected that the widened corridor will have a character very similar to the current one. There will be incremental adverse effects on urban character and residential amenity because of the increased scale of the road corridor and the removal of roadside vegetation. These effects are of a low to moderate scale, and can be effectively mitigated

Table 8.4 Urban design, landscape and visual effects

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Design will provide for clear and legible movement functions; enhance existing environment for pedestrians, cyclists and public transport users	●			●		Urban Design, Landscape and Visual Assessment (Appendix 10), section 5	N/A
2	Design of streetscape will potentially have an effect on road user experience; impact local identity		●		●		Urban Design, Landscape and Visual Assessment (Appendix 10), section 6	Improved conditions for pedestrians and cyclists How local identity can be incorporated will be considered at detailed design stage through consideration of design and placement of street furniture, lighting, pavement details etc.

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
								Need to integrate landscape treatment with State Highway
3	Detailed design of road, intersections and crossing points may have impacts on pedestrian accessibility and safety		•		•		Urban Design, Landscape and Visual Assessment (Appendix 10), section 5	Consider specific safety, mobility and accessibility issues at detailed design stage Design of driveways, raised tables at minor side roads and pedestrian crossing points at main intersections to prioritise pedestrians, to be addressed at detailed design stage
4	Small change in at least the perceived ability to easily cross the corridor due to increased width		•		•		Urban Design, Landscape and Visual Assessment (Appendix 10), section 5	Signalised pedestrian crossings retained and new mid-block crossing promote connectivity / accessibility across Lincoln Road
5	Loss of space at the front of private properties (generally landscaping for residential properties, and landscaping or parking areas for commercial properties)		•		•		Urban Design, Landscape and Visual Assessment (Appendix 10)	Reinstatement of frontage elements to the extent practicable, to be confirmed through detailed design stage and individual landowner negotiations. Consistent treatment of replacement frontages will help to maintain amenity of the corridor

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
6	Amenity and character changes from loss of street trees and grass berm		●		●		Urban Design, Landscape and Visual Assessment (Appendix10), section 6	Mitigation planting - central median and other locations along route to be confirmed at detailed design stage
7	Amenity and character changes from removal of low brick wall, entrance alcove, and trees at Laidlaw College entrance; and removal of seating and street trees at 226-250 Lincoln Road bus shelter		●		●		Urban Design, Landscape and Visual Assessment (Appendix 10), section 8	No specific mitigation proposed. Laidlaw College frontage already subject to road widening designation. PWA process will address replacement frontage elements Bus shelter at 226-250 Lincoln Road will be replaced
8	New structures e.g. retaining walls will have a visual impact		●		●		Urban Design, Landscape and Visual Assessment (Appendix 10), section 6	Mitigation of negative impacts of retaining walls addressed through detailed design stage
9	Effects on amenity (outlook) from residential properties where street trees and berms are removed and road carriageways are closer		●		●		Urban Design, Landscape and Visual Assessment (Appendix 10), section 7	Planting of median Replacement front fencing and landscape treatment as part of negotiations with landowners
10	Possible redevelopment opportunities from		●		●		Urban Design,	Sites at Triangle Road to be

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
	removal of houses, for example by Triangle Road / Central Park Drive intersection (322, 324 Lincoln Road)						Landscape and Visual Assessment (Appendix 10), section 5	rezoned Light Industry. Potential for redevelopment of residual land as mixed use / small business development Potential for redevelopment of other residential sites, eg around Daytona Reserve, facilitated by service lane and new amenity area at 308 / 310 Lincoln Road
11	New publicly owned space at 308 - 310 Lincoln Road can be used as a public space, for planting or a rain garden which will soften the edge of the road corridor	•			•		Urban Design, Landscape and Visual Assessment (Appendix 10), section 5	Landscape treatment of new space to be considered in the Urban Design and Landscape Plan, including consideration of safety / CPTED
12	New service lane to provide access for 300-314 Lincoln Road means 31, 33 and 35 Preston Ave will back onto road, with possible negative safety and amenity effects		•		•		Urban Design, Landscape and Visual Assessment (Appendix 10), section, section 5 and 7	Boundary fences will be reinstalled. Opportunities for redevelopment of 31 to 35 Preston Avenue with access from new service lane
13	Service lane to provide access for 300-314 Lincoln Road improves access to Daytona Reserve, promotes greater visual and physical connection between the road and reserve and	•			•		Urban Design, Landscape and Visual Assessment (Appendix 10),	N/A

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
	allows passive surveillance of the reserve						section 6 and 7	
14	Service lane to provide access for 300-314 Lincoln Road reduces number of accessways crossing Lincoln Road footpath, which will have a positive impact on pedestrian safety	●			●		Urban Design, Landscape and Visual Assessment (Appendix 10), section 5	N/A
15	Effects on Te Pai Park and Daytona Reserve from loss of land and removal of trees		●		●		Urban Design, Landscape and Visual Assessment (Appendix 10), section 5 and 6	Replacement trees proposed for Daytona Reserve. Possibility of additional planting in Te Pai Park, to be determined in consultation with Auckland Council's parks, along with edge treatment
16	Temporary alternative pedestrian access, private property access and bus stop locations during construction		●			●	Urban Design, Landscape and Visual Assessment (Appendix10)	Construction Management Plan to provide appropriate temporary access to private properties, bus stops
16	Negative visual appearance of construction activity, machinery, storage of materials and raw earthworks		●			●	Urban Design, Landscape and Visual Assessment (Appendix 10)	Temporary effect only; any major issues with construction yard can be considered at detailed design stage once construction management plan is prepared

8.3.5 Overland Flow and Flooding Effects

MWH has prepared an assessment of the stormwater and flooding (overland flow) effects of the project, Appendix 11 (Volume 2). The effects on overland flow are summarised in Table 8.5 below, as this is a matter that the NoR needs to address. Stormwater consents are not being applied for at this time, and as a result issues relating to stormwater treatment and disposal are not covered. The NoR provides space for the installation of appropriate stormwater management devices.

Table 8.5 Overland flow and flooding effects

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Potential for flooding of road corridor or adjacent properties during construction if no temporary stormwater management in place		●			●	Stormwater Assessment (Appendix 11)	Ensure that a primary stormwater system is in place at all times during construction. New stormwater discharge pipe and outfall structure to be constructed in advance.
2	Potential for erosion and transportation of sediment during construction to impact infrastructure capacity		●			●	Stormwater Assessment (Appendix11)	Erosion and Sediment Control Plan / Implementation of erosion and sediment control measures
3	Potential for altered overland flows from road surfaces, post construction affecting near-by properties		●			●	Stormwater Assessment (Appendix 11)	Detailed design to ensure that overland flows are assessed and managed.

8.3.6 Air Quality Effects

MWH has prepared an Air Quality Assessment, attached as Appendix 12 (Volume 2). The report identifies the earthworks and construction materials for the project potentially generating temporary dust nuisance effects; however, this can be managed through appropriate construction practices. The report also discusses long term (operational) air quality effects of the project. Multiple sensitive receptors within the vicinity of the project area where identified, and while concentrations of some air pollutants are predicted to slightly increase at some receptors between 2015 and 2026, this is not as a result of the LRCI project which is assessed to have no discernible effect on ambient air quality. Air quality is not predicted to exceed any of the relevant standards and guidelines. The project supports air quality objectives related to transport networks, as it increases provision for 'less polluting' modes of transport. Effects are summarised in Table 8.6 below.

Table 8.6 Air quality effects

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Dust generated from construction - vehicle movements, stockpiled materials, earthworks - particularly in dry and/or windy conditions		•			•	Air quality assessment (Appendix 12)	A Dust Management Plan (as part of the Construction Management Plan) will apply a range of mitigation measures identified in the air quality report aimed at managing dust generation.
2	No discernible difference in the particulate (PM_{10}) and nitrogen dioxide ambient air quality concentrations as a result of the project			•	•		Air quality assessment (Appendix 12)	No mitigation required. Ambient air quality concentrations will remain below air quality standards.
3	Potential reduction in car emissions due to other modes of transport being better provided for by improved road (buses, cycling, walking) -	•			•		Air quality assessment	N/A

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
	not quantified						(Appendix 12)	

8.3.7 Noise and Vibration Effects

Styles Group has prepared an Assessment of Noise and Vibration Effects for the project, Appendix 13 (Volume 2). The assessment is in two sections, construction (temporary) and operational (permanent) effects. The operational assessment sets out the expected operational noise levels for PPFs along the route following the completion of the works, based on current conditions. A small increase in operational noise conditions is anticipated, compared to the situation without the project. Mitigation is not required, but is appropriate where feasible. In particular are properties that will be subject to additional road noise due to the removal of buildings in front of them. The construction assessment discusses construction noise and vibration effects and appropriate management requirements for these effects. Noise and vibration effects are summarised in Table 8.7 below.

Table 8.7 Noise and vibration effects

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Small increase in road operation noise levels for 8 houses - between 2 to 4 decibels (long term ambient average) when the do nothing situation in 2026 is compared to the environment with the project, and not taking		•		•		Assessment of Noise and Vibration Effects (Appendix 13) page 29:	The increase in noise is below the level where mitigation is mandatory under the relevant standards, although the best practicable option to mitigate noise should be

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
	into account potential mitigation						Preferred Design	considered. Where houses are exposed to noise from Lincoln Road due to purchase and removal of houses between them and the road, then mitigation of some effects through 1.8m high acoustic fencing of boundaries is proposed.
2	Small decrease in road operation noise levels for some sites	•			•		Assessment of Noise and Vibration Effects (Appendix13) Appendix D Table of Predicted Noise Levels	N/A
3	Construction noise (majority between 0730 am - 6.00 pm)		•			•	Assessment of Noise and Vibration Effects (Appendix 13) page 7, Construction noise and page 15 noise and vibration management plan	Construction Noise and Vibration Management Plan to be produced to show how compliance with NZS 6803:1999 will be achieved.
4	Construction noise limits in NZS 6803:1999 may be exceeded, particularly for night time		•			•	Assessment of Noise and Vibration	Increase in night time noise limit is proposed, reflecting the existing

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
	work and work in close to residential properties						Effects (Appendix 13) page 10, recommended construction noise limit and page 15 noise and vibration management plan	noisy environment. Site Specific Noise Management Plan to be prepared and submitted for approval demonstrating the best practicable option being adopted where day time limits are likely to be exceeded.
5	Construction vibration from heavy tracked plant, breaking of concrete with excavators, ground improvements and compaction		•			•	Assessment of Noise and Vibration Effects (Appendix 13) page 11 Construction vibration	Construction Noise and Vibration Management Plan to show how compliance with German Standard DIN 4150-3:1999 will be achieved.
6	Unlikely possibility that construction vibration limits in German Standard DIN 4150-3:1999 will be exceeded, presenting risks to structures' integrity		•			•	Assessment of Noise and Vibration Effects (Appendix 13) page 11 Construction vibration	Procedures in Construction Noise and Vibration Management Plan. Cease activity until assessment has occurred and deemed safe to continue.
7	Human annoyance from construction vibration received within occupied buildings		•			•	Assessment of Noise and Vibration Effects (Appendix 13) page 13 Construction	Compliance with recommended vibration limits; notification of receivers when limits expected to be exceeded during daytime; relocation offered when limits expected to be exceeded during

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
							vibration	night time; complaints procedure.

8.3.8 Lighting Effects

MWH has prepared a Lighting Assessment Report, Appendix 14 (Volume 2), which identifies lighting effects of the project at a high level, summarised in Table 8.8 below. Effects on individual properties will be assessed through the detailed design process when the locations and types of lighting poles will be established. Street lighting will comply with the relevant standards, and mitigation will be considered for individual properties where necessary.

Table 8.8 Lighting effects

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Spill light from new street lights into residential properties		•		•		Lighting Assessment Report (Appendix 14)	Compliance with AS/NZS 1158 and ATCoP Chapter 19 Lighting for Roads and Public Spaces. Detailed design to control spill light to no more than 10 lux at residential properties wherever

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
								possible. Where not possible, a mitigation plan is to be developed.
2	Overall reduction in spill light and improvement in quality of lighting compared to existing lighting	●			●			N/A

8.3.9 Social Impact

Just Add Lime prepared a Social Impact assessment for the LRCI project, attached as Appendix 15 (Volume 2). The potential impacts identified are summarised in Table 8.9 below. These were based on literature review, a review of consultations undertaken in 2013 and 2014, other technical studies for the project, as well as feedback from the Henderson-Massey Local Board. These impacts are high level, as detailed consultation on social impacts is not warranted, given the nature of the project (widening an existing arterial road corridor).

Table 8.9 Social impacts

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Residents may choose to relocate because of the project, leading to a change in connections		●		●		Social Impact Assessment	Development of a Communications Plan - help people to understand

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
	within the community						(Appendix 15)	the project
2	Change in personal attitudes towards the project, including fears and hopes / expectations - during planning, operational and construction phases			●	●	●	Social Impact Assessment (Appendix 15)	Communications and Consultation Plan to keep people up to date and provide information
3	Tenants of commercial properties may choose not to renew leases, and customers may choose to find other suppliers due to uncertainty (planning stage)		●			●	Social Impact Assessment (Appendix 15)	Communications and Consultation Plan to keep people up to date and provide information
4	People may choose to use shops and services outside the project area, due to reduced / changed access to commercial operations (construction stage)		●			●	Social Impact Assessment (Appendix 15)	Construction Traffic Management Plan Development of a Community Facilities and Local Business Management Plan
5	Potential increase in employment opportunities associated with the construction of the project	●				●	Social Impact Assessment (Appendix 15)	N/A
6	Presence of construction workforce may increase business for some businesses	●				●	Social Impact Assessment (Appendix 15)	N/A
7	Increased demand for parking during construction may impact residents, customers and staff		●			●	Social Impact Assessment (Appendix 15)	Construction Management Plan - to address workforce parking management

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
8	Physical access to properties and public transport services will be impacted during construction; residents may alter daily movement patterns and social habits to minimise exposure to project related activity		●			●	Social Impact Assessment (Appendix15)	Construction Management Plan and Construction Traffic Management Plan to minimise disruption to access
9	May be an increase in community connectedness when project is operational due to decreased congestion and increased access to public transport	●			●		Social Impact Assessment (Appendix 15)	N/A
10	Operational project could attract more people to use the corridor. This could provide increased business opportunities for commercial operations	●			●		Social Impact Assessment (Appendix 15)	N/A
11	Increased access to public transport when project is operational due to transit lane	●			●		Social Impact Assessment (Appendix 15)	N/A
12	Change in visual amenity once construction is completed will impact on people's attachment to place		●		●		Social Impact Assessment (Appendix 15)	Urban Design and Landscape management plan as part of Outline Plan of Works to address amenity matters
13	Potential increase in community severance between one side of the road and the other following completion of project		●		●		Social Impact Assessment (Appendix 15)	Design includes additional mid block pedestrian crossing point and maintains existing crossing facilities

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
14	Following solid median installation and changes to property access, drivers may no longer use businesses due to further travel required		•		•		Social Impact Assessment (Appendix 15)	Design facilitates U turns at intersections Safer environment provided than would otherwise be the case
15	Possible increase in number of people working or studying in the area following completion	•			•		Social Impact Assessment (Appendix 15)	N/A
16	Improved pedestrian and vehicular safety (operational phase)	•			•		Social Impact Assessment (Appendix 15)	N/A
17	Reduction in on and off-street parking for some businesses - construction and operational phases		•		•	•	Social Impact Assessment (Appendix 15)	Construction Management Plan - to address parking management during construction On-site parking shortfalls following construction to be addressed through compensation agreements with property owners. May include resource consenting any shortfalls. AT's general policy is not to retain on-street parking on arterial roads so as to promote travel efficiency.

8.3.10 Ecological Effects

A Marine Ecological Assessment has been prepared by Boffa Miskell, attached as Appendix 16 (Volume 20). The effects on marine ecology that have been assessed relate to the discharge of stormwater from the road, which will be authorised by later regional consents and is not part of this NoR. The report has been included to demonstrate that a feasible stormwater discharge option is available which will have less than minor ecological effects, and is considered to be consentable.

8.3.11 Contaminated Land Effects

A Detailed Site Investigation into the presence of contaminated land has been prepared by MWH and is attached as Appendix 17 (Volume 2). Before construction of the project, any required regional consents for the disturbance of contaminated land will be obtained. The report has been included for information purposes only.

8.3.12 Geotechnical Effects

A Geotechnical Assessment has been prepared by MWH, and is attached as Appendix 18 (Volume 2). This identified the effects summarised in Table 8.10 below.

Table 8.10 Geotechnical effects

	Identified Actual and Potential Effect and Commentary	Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
1	Temporary instability of excavations during construction		•			•	Geotechnical Assessment Report (Appendix 18)	Carry out earthworks in summer, with trenches shored or laid back to safe angles. Manage groundwater during construction

Identified Actual and Potential Effect and Commentary		Positive Effect	Adverse Effect	Neutral Effect	Permanent Effect	Temporary Effect	Cross References [to technical report]	Methods to Manage Adverse Effects
2	Settlement induced drainage issues and unintended runoff		●			●	Geotechnical Assessment Report (Appendix 18)	Remove soft organic silt, saturated silt and uncontrolled fill to expose more competent material prior to placement of new fill or during construction of retaining walls
3	Improper drainage of fill or retaining structures causes flooding, sediment transport or impacts infrastructure		●			●	Geotechnical Assessment Report (Appendix 18)	Design stormwater drainage so no water ponds at top and base of slopes. Erosion and sediment control measures
4	Damage to existing services during construction of retaining walls		●			●	Geotechnical Assessment Report (Appendix 18)	Complete services check and mark out prior to works and take measures to protect services

8.4 Property Impacts

88 individual properties are directly affected by the designation. Directly affected properties include all those with temporary or permanent land designations. The physical extent of the designation on individual properties is shown on the plans in Appendix 20 (Volume 3), and these properties are listed in the Schedule of Affected Properties in Attachment 2 to the NoR.

Appendix 6 sets out a list of the impacts on individual properties from the proposed designation.

In order to simplify the following summary, the current zoning of the properties is utilised to group properties along Lincoln Road. However, it should be noted that the zoning does not necessarily reflect the actual activities occurring on a property. In particular, there are a number of small businesses established in residentially zoned houses along Lincoln Road.

Many properties (particularity commercial and industrial sites) have more than one business operating on the site, particularly on larger sites where retail/office centres have been established. There are also instances where there is more than one residence located on a single residential site. For the purposes of this summary, these properties have been counted as one property.

The following provides a summary of the main property effects anticipated.

8.4.1 Residential-Zoned Properties

41 residentially-zoned properties are directly affected by the LRCI project.

The most significant impacts on residential properties are those located on the north-western corner of Lincoln Road and Triangle Road, at the proposed construction yard area, along with properties on land required for the service lane at Daytona Reserve (from 298 to 312 Lincoln Road).

Large temporary and permanent land takes are required in these areas, and in order to address the significant temporary and permanent impacts, AT has either acquired these properties or the intent is to acquire them. 10 properties in this area have been or will be acquired by AT, and as a result impacts on these properties can be disregarded and are not considered further.

Five residentially zoned properties require a permanent land take of varying degrees along their Lincoln Road frontages (320, 314, 184, 182, 180 Lincoln Road). Four properties see permanent land takes from rear yards to form the service lane (306, 304A, 302, 300 Lincoln Road).

Potential impacts from this land take include loss of lawns/vegetation/trees and fences, loss/reduction in private parking spaces, changes in driveway access and installation of retaining walls. These effects will be addressed through PWA processes and replacement landscaping, parking and fencing agreed with landowners. The Noise assessment indicates that these properties will not experience a significantly increased noise environment, compared to a future without the project.

Three properties see smaller land take over the start of driveway to a back lot section; for a bus stop; or to ease a corner (300, 170, 158 Lincoln Road)

Four properties off Preston Avenue will see works associated with the construction of the service lane and stormwater pipe that will see rear fences removed along with vegetation, then replaced after the pipe has been installed.

Post the works, three of these properties will 'face' Lincoln Road and will be subject to additional road noise, but will also have outlook over the landscaped area to be retained by AT (as well as potential access to the service lane).

15 residentially zoned properties see temporary works in their front/side yard and driveways, as well as the road side berm and street trees removed. General amenity is therefore affected through the removal of the grassed verge and the encroachment of the road and pedestrian/cycle paths towards residences. Low retaining walls will also be required in some instances. Eight of these properties are currently used for small businesses. Reinstatement of frontage elements (fences, landscaping) will occur in consultation with landowners.

Temporary construction related impacts will be experienced by all properties including noise, altered property access and parking and general nuisance.

8.4.2 Commercial-Zoned Properties

16 commercially-zoned properties are directly affected (including those four properties in the Lincoln Park Special Area).

Ten of these properties will experience a small permanent land take from their front yard, of generally up to 2m in width. For four properties located on road/intersection corners, land take is greater on the corners.

This land take will affect on-site car parking and in some cases, landscape strips. On-street parking opposite 260 Lincoln Road will be reduced by about 11 spaces. The largest loss of on-site parking is from 252 to 256 Lincoln Road (estimated at 13 spaces). This site is part of the larger Lincoln North shopping centre where there is a substantial amount of on-site car parking.

Removal of street amenity planting, trees and signage will occur along many business frontages, with the former resulting in potential impacts to local amenity.

Construction will see temporary changes to access arrangements, while the raised median will stop uncontrolled right hand turns into the commercial sites.

8.4.3 Industrial-Zoned Properties.

All of the properties zoned industrial on the eastern side of the road will see their front yards reduced by way of permanent land take, generally in the order of 2 to 4m, except for 207-209 and 199 Lincoln Road where only temporary construction is required. Five properties require permanent takes of more than 4m in depth, either to ease corners or accommodate bus shelters.

This permanent land take may result in the removal of on-site car parking areas, as well as changes to driveways and truck loading areas and/or manoeuvring areas. Front yard landscape strips will also be affected in some cases, as well as signage.

Temporary construction effects will be experienced, including reduced access, manoeuvring areas and car parking space on the sites. Permanent effects relate to the changed transport environment such as that relating to the removal of the right-turn access.

8.4.4 Open Space Zoned Properties

The following land area is required from public open spaces:

a. Te Pai Park: 434m^2; and

b. Daytona Reserve: 474m^2.

Effects involve the removal/loss of open space area, trees vegetation and new or altered road conditions adjacent to the reserve areas. There will also be temporary effects during construction with reduced public access and use of open spaces.

8.4.5 Other Properties Affected

There are a number of properties that have neither a temporary or permanent designation on their land, but do have the designation boundary directly abutting the property boundary. These properties are not included in the Property Schedule (Attachment 1 to the NoR) nor are they discussed in the Property Impacts Assessment in Appendix 6 (Volume 2).

In these instances, while no land take is required and no activities will occur on the property, potential temporary effects from construction activities occurring in the road area outside these properties are possible. Activities may include upgrades to driveways (in the road reserve only), footpaths, and changes to kerblines, with temporary effects to access and the generation of noise and dust. These activities are not unlike what could currently occur in the road environment and along with the appropriate construction management plans, impacts are anticipated to be minimal.

8.5 Analysis of Effects

Having identified individual effects (positive and negative) it is necessary to look at the combined picture, taking into account the nature and extent of the effects identified, for example:

a. Whether they are temporary or permanent;

b. The value of the resources that they effect;

c. The area that they effect, including the number of people and whether effects are cumulative;

d. The size of the effect, compared to the existing environment and anticipated changes to that environment; and

e. The extent of mitigation possible.

8.5.1 Positive effects

The project is anticipated to generate a number of positive effects that will be enjoyed by the local community and businesses. A regional level benefit is also expected, although of a smaller magnitude to the local benefit. These benefits include:

a. Improved reliability and speed for bus journeys;

b. Safer cycling facilities and improved safety for vehicles;

c. Integration with the capacity improvements being made at the State Highway 16 interchange, improving the performance of the interchange;

d. The pedestrian environment will be improved through the wider footpath and buffering role of the segregated cycleway.

These benefits will be experienced by over 40,000 people per day.

In addition to these transport benefits, there are also benefits arising from the new service lane proposed at Daytona Reserve. This service lane will help to open up this reserve and as a result its amenity benefits will be experienced by a wider range of people. In conjunction with the landscape treatment of 308 and 310 Lincoln Road, a new amenity area will be

created that will help to support greater use and enjoyment of this reserve. Land use redevelopment and intensification around this amenity could be expected as a consequence.

These benefits will be long lasting. Without the project a range of progressively more negative consequences will be experienced by the local community and businesses, when future conditions are compared to the existing environment. These negative effects include:

a. Additional delay for buses;
b. Considerable queuing back along Lincoln Road, Triangle Road and Central Park Drive to get on the State Highway interchange;
c. Significant queuing back onto State Highway 16 of vehicles trying to exit at Lincoln Road, also impacting westbound vehicles heading further along State Highway 16;
d. No improvements to current safety issues; and
e. Increasingly unfavourable environment for walkers and cyclists deterring them using the road corridor.

To avoid the above negative consequences and to achieve the positive outcomes listed, the works proposed by the NoR will generate a number of adverse effects.

8.5.2 Temporary adverse effects

As identified in section 8.3, there will be a range of temporary effects associated with the construction of the project. The more significant potential effects are considered to be:

a. Transport – congestion and delays from reduction of traffic lanes and temporary speed limits imposed;
b. Trees – tree removal, potential damage from works in dripline of scheduled trees and other trees that are to be retained;
c. Air – dust generated from construction;
d. Noise and vibration – human annoyance from construction noise and vibration;
e. Temporary effects on residential amenity from works in front, side and rear yards; and
f. Business and community disruption – effects from temporarily reduced access to commercial operations, disruption of normal community activities.

These construction effects will be felt by a large number of people who use the corridor on a day-to-day basis. Businesses and residents along the corridor and in surrounding areas will also experience these negative effects for an extended period of time. It is noted that some of the most directly affected residential properties have been purchased by AT, and effects on these properties can be disregarded.

Generally, road reconstructions generate a moderate level and scale of effects through disruption to access, noise, dust etc. These effects are unavoidable given the need to undertake the construction works.

The works required to form the new service lane and install the stormwater pipe that will discharge to Daytona Strand will create temporary effects for residential properties off Preston Avenue. These effects will be temporary and relatively brief.

A range of mitigation measures, predominantly through proposed conditions and management plans (attached as Appendix 4) are proposed to ameliorate the impacts of the construction phase of the project, and principally provided through the preparation of management plans. As with any construction project there is a choice between prolonging construction to reduce some effects versus some more effects over a shorter period of time.

The mitigation measures proposed in this NoR are consistent with those used by AT for other roading projects across the region.

8.5.3 Permanent adverse effects

In making an assessment of permanent adverse effects in relation to the LRCI project, it is noted that:

a. Effects arising from the land take and associated changes to site accessibility and parking will be addressed through the PWA process;

b. Effects of the raised median and removal of on-street parking fall under the umbrella of effects that could be expected at any time by a business operating beside a busy main road (for example from the rearrangement of traffic lanes, signals and medians); and

c. Effects on water quality from increased stormwater run-off will be addressed at the resource consent stage. The NoR provides space for the necessary treatment and disposal.

Urban design, landscape and visual effects as well as noise and vibration have been identified as being the main permanent effects as a consequence of the LRCI project.

The key urban design, landscape and visual effects include removal of character elements within the road reserve such as trees and grass berms; wider road corridor; reduced front and rear yards and removal of trees and vegetation and loss of open space land. These effects are of a low scale, given the current environment.

The most lasting effect will be the change to character of the road corridor through the addition of the extra traffic lane (which widens the visual appearance of the corridor) and the removal of the berm and street trees and replacement median planting

In total, 142 trees will be removed (51 of which are subject to the general tree protection rules of the ACDP). The landscape concept shows space for 96 new trees. These trees will be able establish to a stature equivalent or greater to those generally protected trees that will be removed.

Landscape mitigation will consist of:

a. Retention of three scheduled trees;

b. New planting – median;

c. Replacement planting - Triangle Road frontage/berm;

d. New open space 308-312 Lincoln Road - trees and other landscape treatment (e.g. possible bio retention);

e. New planting along service lane - Daytona Reserve; and

f. Replacement planting - Daytona and Te Pai Park.

In addition, at detailed design stage there is the ability to:

a. Undertake specific design of intersections - pavement surfaces, design of fences/barriers, placement of poles etc.

b. Develop a consistent treatment of frontages to be replaced post works in agreement with landowners - fences, driveways landscape treatment etc.

The LRCI project will result in a slight increase in average road noise received at 8 sensitive receiver locations. In particular, three properties off Preston Avenue will be exposed to additional noise from Lincoln Road through the removal of the houses in front of them, while

they will have a service lane on their eastern boundary. New acoustic fencing will be provided along this boundary. It is feasible that the service lane will assist with redevelopment of these sites in the future. Two houses on Triangle Road will also potentially see the removal of a house in front of them and the Noise Assessment proposes acoustic barriers on this boundary

Other impacts to residential activities on the corridor include the amenity effects from removal of trees and berm within the road corridor outside the properties, along with increased proximity to a wider road corridor and in some cases, reduced front yards. These effects are of a moderate scale of effect at most. The number of properties affected is relatively small (due to AT purchase and the trend towards small business use of former dwellings). Of the 25 residentially zoned properties between Pomaria Rd and the State Highway along Lincoln Road, eight are presently used for small businesses. AT will, or has, purchased eight properties, leaving nine remaining residentially zoned sites that are currently used as residences. Of these nine, five require a land take that reduces their front yard. The other six do experience a modified road corridor.

Given the shift towards a Mixed Use environment along the corridor (as signalled in the Proposed Auckland Unitary Plan), and the resulting change to the built environment from three to four storey development, potentially built closer to the road corridor, the changes to the road environment are not inimical to the future amenity of the area.

A number of the remaining residential properties could be amalgamated into redevelopment sites (for example 300 to 306 Lincoln Road and 314 and 320 Lincoln Road) and through this redevelopment, more effective use made of residential sites. The effects of the land take and the wider road corridor are not such that the residential (or mixed commercial-residential development in the future) use of the properties will be obviated.

For business activities along the corridor, the effects of changes to the character of the road are at the low end of the scale, given the nature of the current environment.

Users of the corridor would represent the largest body of people potentially affected by the permanent negative consequences. Generally, these people will experience somewhat better conditions than they might otherwise experience should the project not proceed and so it is expected that the benefits of the project will outweigh any residual effects on character and amenity. In particular, pedestrians and cyclists will benefit substantially from the improved facilities to be provided (wider footpath, additional signalised crossing, segregated cycleway).

8.6 Environmental Management Framework

The above sections have identified a number of adverse effects that require mitigation, and a variety of mitigation measures are proposed.

Section 171 of the RMA does not require that all the effects of the works included in a NoR are avoided or mitigated to the extent that they become minor or less than minor. The extent of effects, whether they should be mitigated and the nature of that mitigation are matters to be addressed through the development and assessment of the NoR (and associated outline plans).

It is feasible that a NoR will generate some effects that are not readily mitigated, but which are necessary to allow the project to proceed. Some adverse effects, like the raised median restricting right turn movements, are a consequence of the project, but effects that can arise at any point of time from the operation of a busy arterial road.

Having said that, appropriate steps have been taken to avoid and mitigate effects on the environment as far as practicable, and in the case of LRCI, the effects of the project are not considered to be significant, particularly given the benefits of the project.

As discussed in the section on alternatives (section 7), the design of the LRCI project has been adjusted to avoid adverse effects on two scheduled trees, as well as to better manage future effects on amenity of a section of the road where vehicle access to properties will be affected (new service land near Daytona Reserve)

Unavoidable adverse effects generated by the project will be appropriately managed via a combination of:

a. Suitable conditions applied to the NoR;

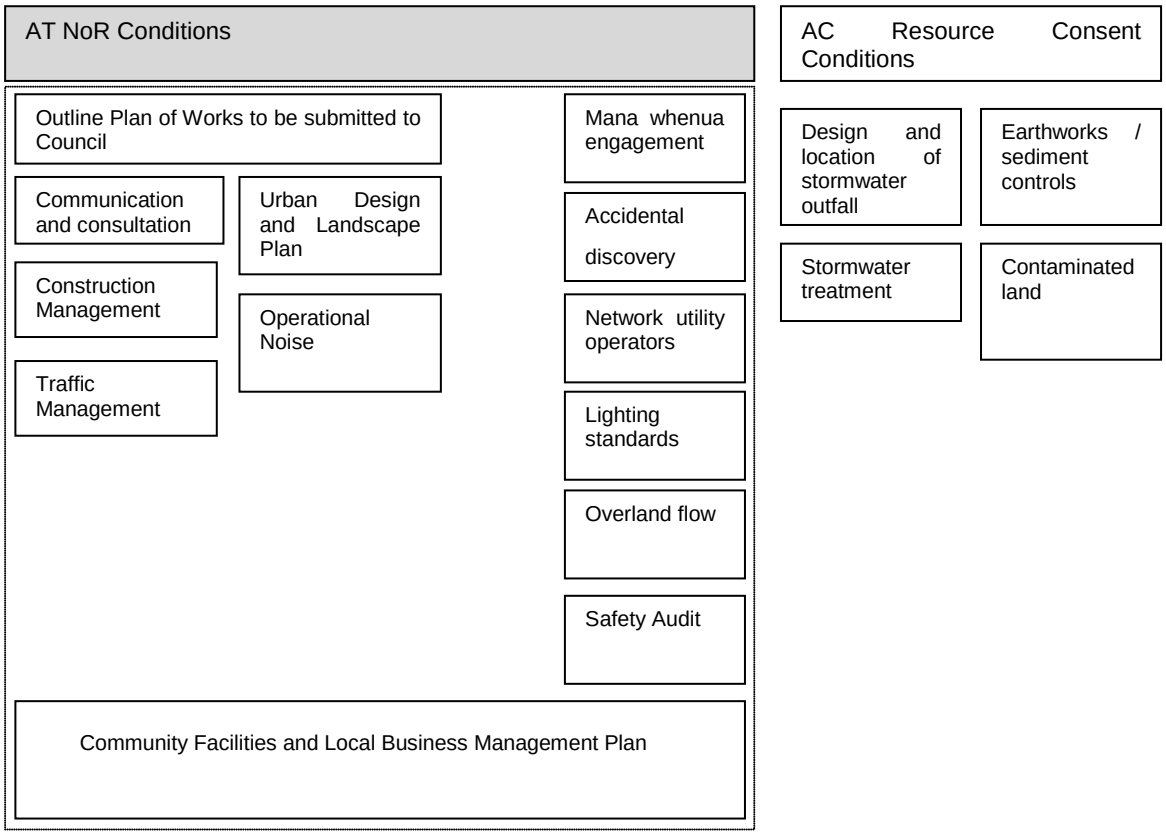
b. Management plans (such as an Construction Environmental Management Plan) which will be required - by appropriate designation conditions - to be submitted as part of the Outline Plans applications before works commence; and

c. The conditions of required resource consents (which will be the subject of separate applications to Auckland Council).

The proposed conditions attached to this AEE take forward these matters and present an integrated package of conditions and management plans to manage effects, while noting that some effects will be managed through resource consents.

The relationship between and within the NoR conditions, management plans and future resource consents can be described as follows (Figure 8.1):

Figure 8.1: Effects Management



The following comments are relevant to the required mitigation and proposed conditions:

8.6.1 Outline Plans and Management Plans

The conditions require AT to prepare a number of Outline Plans before works commence. A waiver of Outline Plan requirements is not sought as part of this NoR. As detailed in section 3.5, these Outline Plans will need to be prepared within the context of the NoR conditions; that is the standards and criteria set out in those conditions.

The Outline Plans will contain a number of management plans. These management plans will detail a range measures to manage effects, such as construction noise and property access. The conditions specify an objective for the management plan and their contents. This means that when assessing the management plans, council has a framework within which to consider the adequacy or not of the management plans.

The conditions do not require that the management plans be submitted to the council for their approval or certification. Instead they will be submitted as part of the OP process for comment. AT will work collaboratively with the Council over the content of the plans.

Condition 5 (within the proposed conditions, Appendix 4, Volume 1) requires the management plans to include a process for amendment of those plans to take into account unexpected events and better or more effective construction methods. The management plans will need to set out the process for updating these plans, including when stakeholders should be informed of changes and whether Council should certify any changes (for example substantial changes that may affect other parties).

8.6.2 Prior to Works Commencing

Prior to works commencing, the conditions require AT to maintain engagement with Iwi (as they request) in relation to detailed design. This condition can be implemented through AT's regular contact with Iwi groups who have identified an interest in the project.

A condition also sets out the circumstances in which AT will not withhold its consent to minor infrastructure renewal and maintenance work undertaken by network utility operators in the land designated for the project.

8.6.3 Construction Effects

The management plans required to be submitted as part of the OP are the main means by which construction effects will be managed. The following management plans are proposed:

a. A Communication and Consultation Plan (CCP);

b. A Construction Environmental Management Plan (CEMP); and

c. A Construction Traffic Management Plan (CTMP).

Included in the management plan requirements are the need for AT to communicate with stakeholders as to works schedules, contact details and complaints procedures. Once funding is secured for the detailed design and implementation is underway, then the Communication and Consultation Plan required as a condition (see Appendix 4) will be prepared and submitted to the Council.

For construction noise and vibration, standards are set out in the conditions and these will be included in the CEMP. AT and its contractor will have to use their best endeavours to work within these standards. However some construction activities may generate additional noise or vibration that cannot be avoided, or if it was to be avoided would substantially prolong the construction process. The Construction Management Plan provides scope for noise and vibration standards to be exceeded provided site specific management plans are prepared.

The CTMP will cover issues such as:

a. Proposed operating speeds and traffic layouts during construction;

b. Provision for controlling construction access to the site, traffic control adjacent to the site, and the protection of the public;

c. How access for pedestrians to properties will be maintained;

d. How vehicle access to properties will be managed;

e. How construction workforce parking will be managed; and

f. How provision will be made for access of emergency vehicles at all times.

An accidental discovery protocol is included to address any potential discovery of archaeological material. This condition has been attached to the NoR even though this is likely to be a condition of the required regional earthworks consent, as it is feasible that some initial works authorised by the designation will not trigger regional consent requirements.

8.6.4 Community Facilities and Local Business Management Plan

The conditions require that a Community Facilities and Local Business Management Plan be prepared by AT and a copy provided to the Council, 3 months prior to works commencing. Condition 26 (within the proposed conditions, Appendix 4, Volume 1) specifies the minimum requirements for the Plan.

The requirement of a Community Facilities and Business Management Plan has grown out of the Social Impact Assessment (see Appendix 15). That assessment suggested that a plan be prepared with reference to temporary disruption to businesses, residential and community facilities and services. That plan was to consider how construction related effects like changes in access, parking, signage and pedestrian access would be managed in relation to businesses, residents and community facilities along the corridor. It also sought that advance communication was given of the project works so that businesses and residents could adjust their daily routines, if needed.

In considering the need for such a plan, AT is mindful that many of the matters raised in the social impact assessment would be addressed in the required management plans, such as the Communication and Consultation Plan, the Construction Management Plan and the Construction Traffic Management Plan. As such there was no point in submitting two, similar plans for comment.

AT was also aware that the dominant activity along the corridor was a number of larger retail (national) business activities which would likely have the resources to understand the contents of the management plans and who will likely benefit in the long term from the upgrade of the road, but there are also a number of smaller businesses and community facilities that rely upon the road to provide access.

As a result of these factors, AT has decided that it is useful to prepare a specific management plan for local businesses and community facilities that would draw upon the management plans that will be submitted to the Council as part of the Outline Plan process. The Community Facilities and Local Business Management Plan will effectively 'package up' the actions set out in the Outline Plan management plans in a format that is accessible to local businesses and community facilities, and mean that these activities can consult one document, rather than a number of technical documents. The requirement to submit the plan to Council 3 months prior to construction means that businesses and community facilities will have advance warning of the measures that will be taken to address disruption and will be able to adjust their own operations and planning to suit.

8.6.5 Operational Conditions

Condition 27 (within the proposed conditions, Appendix 4, Volume 1) requires the preparation of an Operational Noise Management Plan to be included in the OP that confirms which properties require mitigation in terms of NZS6806:2010 Acoustic Road Traffic Noise and details of the best practicable option for acoustic mitigation in accordance with that standard, as agreed with the landowners. That assessment will be based on the noise environment existing at the time of the assessment, which may be higher or lower than at present, as well as the traffic predicated volumes at that time (which may be higher or lower than present predictions). The assessment will identify what measures are required to mitigate noise for sensitive receivers that are currently located along the corridor. New receivers that establish on the corridor once the designation is in place are required by district plan rules to provide their own mitigation.

The noise management plan will identify the best practicable option (BPO) to mitigate road noise, where this is required. Factors include the nature of the activity, the extent to which noise limits are exceeded, value for money, opportunities to mitigate effects at a boundary, (e.g. fences) as opposed to the building, views of affected individuals.

9 Statutory Assessment

This section of the AEE provides the statutory planning assessment undertaken for the LRCI NoR, in accordance with Section 171 of the RMA.

9.1 Statutory Framework

The statutory framework relevant to this assessment includes:

RMA

a. Resource Management Act 1991;
b. National Environmental Standard for Assessing and Managing Contaminants in Soil;
c. National Environmental Standards for Air Quality;
d. Auckland Council Regional Policy Statement;
e. Auckland Council Regional Plan: Air, Land and Water;
f. Auckland Council District Plan: Waitakere Section
g. The Hauraki Gulf Marine Park Act 2000
h. Proposed Auckland Unitary Plan.

Non RMA

a. Local Government (Auckland Council) Act 2009;
b. Auckland Plan;
c. Auckland Long-Term Plan 2012-2022;
d. Auckland Regional Land Transport Strategy 2010-2040;
e. Auckland Regional Land Transport Programme 2012-2022;
f. Auckland Regional Public Transport Plan 2010;
g. Henderson-Massey Local Board Plan.

9.2 Assessment of Notices of Requirement

Section 171(1) sets out the matters to which territorial authorities must have regard to when considering NORs and related submissions. It provides that, subject to Part 2, consideration must be given to "the effects on the environment of allowing the requirement, having particular regard to" the following matters in paragraphs (a) to (d):

a. Any relevant provisions of specified planning instruments, including an operative or proposed regional policy statement or district plan;
b. Whether adequate consideration has been given to alternative sites, routes, or methods;
c. Whether the work and designations are reasonably necessary for achieving the objectives of the requiring authority for which the designation is sought; and
d. Any other matter considered necessary in order to make a recommendation on the requirement.

Following the order of Section 171, the sections below address the above key clauses, as follows:

a. Section 9.3 is the assessment of the Project against the provisions of Part 2 RMA;
b. Section 9.4 provides the assessment of the Project against the relevant RMA environmental standards, policies, and plans;
c. Section 9.5 provides the summary assessment of the Project in relation to alternatives and reasonable necessity; and
d. Section 9.6 provides an overview of other relevant documents.

9.3 Part 2 RMA

Part 2 sets out the purpose and principles that guide the RMA. Section 5 states the purpose of the RMA and sections 6, 7 and 8 provide additional guidance as to the way in which the purpose is to be achieved.

Generally, assessment of proposals against Part 2 of the RMA is taken to mean that an overall broad judgement is required as to whether a project will promote the sustainable management and natural and physical resources. This judgement should look at both the benefits and costs of a project, within the context of the specific matters specified in the Act and relevant planning documents.

9.3.1 Section 5

Section 5 states that:

1) *The purpose of this Act is to promote the sustainable management of natural and physical resources.*
2) *In this Act, sustainable management means managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural well-being and for their health and safety*

while –

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and

(c) avoiding, remedying, or mitigating any adverse effects of activities on the environment.

In terms of Section 5, the LRCI project will:

a. Enable people and communities social and economic wellbeing by improving access to a range of local and regional services and facilities;
b. Increase the safety for road users, including cyclists, pedestrians and vehicles;
c. Improve the choice in transport modes (including active modes) and the reliability and speed of bus journeys;
d. Increase the efficiency of the road corridor;
e. Protect the life-supporting capacity of air, water, soil and ecosystems by the mitigation proposed during the construction phase; and

f. Avoid and mitigate adverse effects on the environment both during construction and operation, through the project's design and through identification of specific mitigation measures which are recommended as designation conditions.

In making the above points, it is acknowledged that the project will affect vehicle access to businesses through the installation of a raised median. However, the elimination of turns across lanes will have a significant safety benefit. It is also noted that AT could install a median within the existing corridor as a permitted activity.

9.3.2 Matters of National Importance (Section 6)

Section 6 of the RMA sets out 'Matters of National Importance' that are to be recognised and provided for in managing the use, development and protection of natural and physical resources.

Matters of national importance are as follows:

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall recognise and provide for the following matters of national importance:

(a) the preservation of the natural character of the coastal environment (including the coastal marine area), wetlands, and lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use, and development:

(b) the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development:

(c) the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

(d) the maintenance and enhancement of public access to and along the coastal marine area, lakes, and rivers:

(e) the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga:

(f) the protection of historic heritage from inappropriate subdivision, use, and development:

(g) the protection of recognised customary activities.

The LRCI project recognises and provides for the relevant matters of national importance in Section 6 as follows:

- Any potential effects on natural watercourses and wetlands (such as from increased impervious surfaces) will be addressed during the resource consent process (section 6(a));
- The relationship of Mana Whenua with the project area will be recognised through AT's Mana Whenua liaison and collaboration procedures before, during and after the project (section 6(e));
- There are no impacts on any habitats of indigenous fauna (section 6(c));
- There are no outstanding natural features / landscapes or areas of significant native vegetation / habitats in the project area (section 6(b)); and
- There are no identified historic heritage sites in the project area (section 6(f)).

9.3.3 Section 7

Section 7 of the RMA sets out other matters that are to be given particular regard in managing the use of natural and physical resources, as follow:

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall have particular regard to –

(a) kaitiakitanga:

(aa) the ethic of stewardship:

(c) the efficient use and development of natural and physical resources:

(ba) the efficiency of the end use of energy:

(c) the maintenance and enhancement of amenity values:

(d) intrinsic values of ecosystems:

(e) [Repealed]

(f) maintenance and enhancement of the quality of the environment:

(g) any finite characteristics of natural and physical resources:

(h) the protection of the habitat of trout and salmon:

(i) the effects of climate change:

(j) the benefits to be derived from the use and development of renewable energy.

With regard to this section, the following comments are made:

a. The kaitiakitanga of tangata whenua has been recognised in the preparation of a cultural impact assessment and a requirement in the conditions for AT to continue consultation and engagement with iwi (sections 7(a) and (aa));
b. The project will improve the efficient use of Lincoln Road as a physical resource and improve the use and function of the wider road network (including the SH 16 / Lincoln Road Interchange) (section 7(b));
c. Mitigation planting, in the form of replacement planting and landscaped areas, will ensure the amenity of the road corridor is maintained (section 7(c));
d. The project ensures the on-going retention of three scheduled trees.

9.3.4 RMA Part 2 Treaty of Waitangi (Section 8)

Section 8 of the RMA requires those exercising powers or functions under the RMA to take into account the principles of the Treaty of Waitangi. A core principle of the Treaty is partnership.

Section 8 directs that:

In achieving the purpose of this Act, all persons exercising functions and powers under it, in relation to managing the use, development, and protection of natural and physical resources, shall take into account the principles of the Treaty of Waitangi (Te Tiriti o Waitangi).

AT has established a collaborative working relationship with mana whenua at this stage of the project and this engagement will continue.

9.4 RMA Environmental Standards, Policies, and Plans

Relevant RMA plans that have been assessed are:

a. NES for Assessing and Managing Contaminants in Soil
b. NES for Air Quality;
c. Auckland Council Regional Policy Statement (ARPS);
d. Auckland Regional Plan: Air Land Water;
e. Auckland Council District Plan: Waitakere Section
f. Proposed Auckland Unitary Plan.

For conciseness, full excerpts of selected planning documents noted below are not reproduced in this chapter. Appendix 3 (Volume 1) sets out the relevant objectives and policies.

9.4.1 National Policy Statements and Environmental Standards

The LRCI project must have particular regard to National Policy Statements and must not contravene National Environmental Standards unless resource consent is obtained.

National Environmental Standard for Assessing and Managing Contaminants in Soil (NES-CS)

The NES-CS relates to the assessment and management of health effects from exposure to contaminants in soil. The NES-CS applies a framework for assessing contaminants in soil and provides a national set of planning controls and soil contaminant values. The NES-CS enables use to be made of affected land but ensures that:

a. District planning controls are appropriate and nationally consistent;
b. Councils gather and apply the information needed for efficient decision making on contaminated or potentially contaminated land; and
c. The soil guideline values are appropriate and applied consistently.

Some minor contamination has been identified along the project route. The project will comply with the NES-CS, and the NES-CS will ensure effects are appropriately mitigated through consistent and effective management of contaminated material.

National Environmental Standard for Air Quality (NES-AQ)

The NES-AQ is made up of 14 separate but interlinked standards. The 14 standards in the NES include: five standards for ambient (outdoor) air quality.

The results of air quality monitoring indicate that the discharge of air pollutants associated with vehicle emissions are unlikely to exceed air discharge assessment criteria at nearby sensitive receivers and will therefore meet NES AQ air quality standards. No specific consents are required under the NES AQ.

9.4.2 Auckland Council Regional Policy Statement (ARPS)

The ARPS became operative on 31 August 1999. The focus of the ARPS is the management, use, development, and protection of natural resources of the Auckland Region. The aim of the ARPS is to achieve certainty through integrated, consistent and coordinated management of the Auckland Region's resources.

The key relevant objectives and policies in the ACRPS are summarised in Table 9.1 below, and comments are made as to how the project is consistent with these provisions.

Table 9.1 Auckland Council Regional Policy Statement Provisions

Summary	Comment
Chapter 2 Regional Overview and Strategic Direction This chapter describes strategic outcomes sought for urban form, including a compact urban form, quality urban design and the integration of land use and transport. Lincoln Road is identified as an intensive growth corridor where intensification of land uses is to occur. The transport and land use environments in the corridor are to be integrated.	On a strategic level the LRCI project is an important part of the region's transport system, supporting compact urban development anticipated in the wider Waitakere area. The road will cater for a multimodal transport system with separated and shared pedestrian and cycle ways, bus lanes and T3/T2 opportunities. The LRCI project provides for increased efficiency and accessibility to an existing urban area. The improved road is compatible with, and will support the land use environment anticipated for Lincoln Road.
Chapter 3 Matters of Significance to Iwi This chapter outlines how values held by iwi will be provided for and the Treaty of Waitangi taken into account	Iwi consultation for this project has been ongoing, and concerns raised have been considered during the design and application process. A CIA has been completed by one iwi group for the LRCI Project. AT representatives will continue to work with Mana Whenua throughout the project to ensure any recommendations they make are incorporated where appropriate.
Chapter 4 Transport This chapter describes how transport networks should be developed and the principles which should be applied. Policy 4.4.7.2. recognises that the efficiency of congested transport corridors should be increased by: (i) encouraging increases in person-carrying capacity (i.e., by supporting public transport, car pooling and high occupancy vehicles); (iii) encouraging walking and cycling. Policy 4.4.7.3 sets out the circumstances when roading upgrades that accommodate more road vehicles should be enabled: (i) congested transport Corridors are no longer able to be effectively managed by Policy 4.4.7.2; (ii) the social, cultural, economic and environmental benefits outweigh	Multiple transportation modes are provided for within the design of the road, allowing for increased / improved transportation efficiency and options compared to what is currently available. The project widening aims to improve conditions for passenger transport, walking and cycling, as well as improve safety. These outcomes could not be achieved within the current road corridor. Taking a lane for buses and high occupancy vehicles would generate substantial dis-benefits in terms of access to businesses along the corridor, while the effects of the wider road corridor on the environment are not significant.

investment in alternative transport infrastructure or services.	
Chapter 7 Coastal Environment	Stormwater from the project will be discharged to the coast. The required outfall structure will be in the coastal environment, but is likely to be outside the Coastal Marine Area. A number of existing outfalls may be consolidated into one outfall. The details of required stormwater treatment and outfall structure will be determined by way of resource consent conditions.
Chapter 8 Water Quality This chapter seeks to maintain water quality in water bodies and coastal waters and enhance degraded water	Water quality will be maintained throughout the construction process through the implementation of best practice sediment and erosion control measures. Following completion of the LRCI project, the stormwater collected from the new road will be treated so as to maintain water quality into receiving environments. These matters will be dealt with through future resource consents.
Chapter 10 Air Quality This chapter seeks to maintain air quality in the Region and deal with effects from discharges to air	Air quality effects during construction will be minimised by dust suppression measures as set out in the proposed Environmental Management Plans. The air discharge from motor vehicles using the road will not cause significant adverse effects on air quality compared to the future without the project, as assessed in the Air Quality report.
Chapter 11 Natural Hazards This chapter is concerned with risks from natural hazards and development causing the exacerbation of natural hazards	Two small floodplain areas are within the project area at Te Pai Place and at Daytona Strand. The project is not anticipated to have any impacts on flood risks, and mitigation measures are not necessary.
Chapter 17 Contaminated Sites This chapter requires remediation or mitigation of adverse effects from contaminated sites	Some minor contamination has been identified along the project route. Any contamination consents required for construction of the project will be applied for at a future date.

9.4.3 Auckland Council Regional Plan: Air, Land and Water (ARP:ALW)

The ARP: ALW provides for the management of air, land and water resources in the region including: air, soil, rivers and streams, lakes, groundwater, wetlands and geothermal water.

Specific matters under this plan will be dealt with by future resource consents for the project. For the NoR, the assessment of stormwater, contamination and air quality effects has referred where relevant to the provisions of this plan and no issues of inconsistency have been identified

9.4.4 Auckland Council District Plan: Waitakere Section

The LRCI project is covered by the Waitakere Section of the Operative Auckland District Plan.

The Operative Auckland Council District Plan: Waitakere Section sets out the City's resource management strategy including the mechanisms to be used to control the effects of activities and development within the city. Key aspects of the strategy and their relationship with the LRCI are set out in Table 9.2.

Table 9.2 Auckland Council District Plan: Waitakere Section Provisions

Summary	Comment
Managing City Growth (section 5.0) discusses the key issues related to the management of growth and the need for growth to be integrated with transportation options (including walking, cycling, public transport) , along with retaining and enhancing streetscape amenity, providing employment opportunities and appropriate community and business services	The LRCI project will support urban growth along and in the vicinity of the Lincoln Road corridor. The road will cater for a multimodal transport system with separated and shared pedestrian and cycle ways, bus lanes and T3 opportunities. It is designed to be safe, sustainable, attractive and efficient and will ultimately contribute to the growth of businesses and community services in the area. While there will be some impacts to amenity from the increase in road width and removal of street trees, this will be mitigated through landscape design and mitigation planting. Section 8.3 discuss these issues in further detail.
Effects on Water Quality and Quantity (section 5.1) discuss the key issues associated with waterways and the potential impacts and design opportunities to reduce stormwater effects on water quality,	The LRCI project will provide for the treatment of stormwater so that effects on the coastal receiving waters are appropriately mitigated. Details of treatment will be determined through a stormwater consent process, however preliminary design options have been proposed that demonstrate that a viable and consentable stormwater management option is available. In addition, an Erosion and Sediment Control Plan (as part of the Construction Environmental Management Plan) will ensure that erosion and sediment control measures are implemented during the construction phase of the project. This is discussed further in section 8.3 above.
Effects on Native Vegetation and Fauna Habitat (section 5.2) discusses the management of urban trees, and the potential effects of tree removal and impacts to root systems from disturbance and coverage with impermeable services. Policy 2.4 states that activities should be managed in a way that avoids the clearance of or damage to trees and vegetation,	The LRCI requires the removal of street trees, trees in reserves and private property, and works within the drip line of scheduled trees. Where possible design and layout modifications have avoided trees. Detailed design may see some further trees retained. Existing trees along the corridor are a mixture of species and occur as stand-alone trees, or smaller clusters. Mitigation planting will occur at various locations within the NoR including in the raised medians and in the new open space area created beside Daytona

Summary	Comment
to extent that the following characteristics are adversely affected: • the visual dominance of trees on private property within the neighbourhoods of the Living Environment; • the lines of trees along road edges within the Transport Environment; • the amenity value associated with native vegetation and its relative significance in all parts of the City; • the historic and cultural value of trees associated with the above characteristics; provided that nothing in this policy should prevent the removal of species identified in the Environmentally Damaging Plants List.	Reserve. The planting in the raised median will present a coherent replacement street scene. Implementation of tree protection methodologies, including individual tree management plans will ensure protection of scheduled trees where construction occurs within close proximity. This is discussed further in section 8.3 above.
Effects on Air Quality/Atmospheric Quality (section 5.4) discusses the need to maintain air quality, including contributing to the maintenance of the atmosphere at a local, national and global level. Specifically related to LRCI is the need for provision of cycling and walking as a transport option, as well as the designing and construction of roads to minimise adverse effects of motor vehicles on air.	The air discharges from motor vehicles using the road will not cause significant adverse effects on existing air quality, as assessed in the Air Quality report and discussed in section 8.3 above. A Dust Management Plan (as part of the Construction Management Plan) will apply a range of mitigation measures identified in the air quality report, aimed at managing dust generation during construction. In addition the LRCI provides for alternative lower emission generating transport options of walking and cycling, as well as provision for public transport.
Effects on the Spiritual Dimension (Mauri) (section 5.8) discusses the adverse effects development and change has on Mauri.	Iwi consultation for this project has been ongoing, and concerns raised have been considered during the design and application process. A CIA has been completed by one iwi group for the LRCI project. AT representatives will continue to work with Mana Whenua throughout the project to ensure any recommendations they make are incorporated where appropriate.
Effects on Amenity Values: Health and Safety and Landscapes, Local Areas and Neighbourhood Character (section 5.10 and 5.11). These sections discuss factors such as noise, vibration, odour, artificial	The LRCI project will have varying impacts on amenity values along Lincoln Road. However, it is anticipated that through management plans (noise and vibration, air quality), as well as the final design and layout of the project (mitigation planting, noise barriers, lighting design, pedestrian crossings) impacts to amenity will

Summary	Comment
light, pedestrian access, physical layout of buildings and streets within the urban environment and how these can impact on the health and safety of residents and workers and the overall local amenity of an area.	be minimised. Mitigation of loss to amenity values are discussed further in section 8.3.
Effects on Heritage (section 5.12) relates to the management of effects on heritage places, buildings and trees.	The LRCI project contains no heritage places or buildings. Three 'heritage' trees are located within the NoR, all of which will be retained and will have management plans implemented to ensure their protection throughout the construction works.

9.4.5 Proposed Auckland Unitary Plan

At the time of lodgement of this NoR, the PAUP was still part way through the formulation process. Submissions had been heard by an Independent Hearings Panel, but its recommendations had not yet been provided to the Council.

Some aspects of the PAUP have immediate legal effect (such as those relating to water and air quality) but those matters relate to the regional resource consents that will be sought in the future. The district (or land use) components of the PAUP do not have immediate legal effect.

The objectives and policies of the PAUP, as notified, have relevance to the assessment of the NoR, but limited weight given the current status of the PAUP and the very wide ranging nature of the submissions lodged.

The description of the environment in section 6 has taken into account likely changes to the environment signalled by the PAUP, including the concept of the growth corridor along Lincoln Road enabling further retail / commercial development and the shift to a mixed use approach in the residential areas on the western side of the corridor.

In terms of the transport network, the PAUP recognises the need for some road corridors to be improved. Policy B3.3.8 (Transport) refers to:

8. *Provide for the development of additional road capacity along those corridors where:*
    a. *the management of travel demand alone is not able to provide for increased movement*
    b. *the effective, efficient and safe movement of public transport services and/or freight is required*
    c. *there is a need to provide priority to cyclists and pedestrians.*

Lincoln Road falls into this category, with the widening aimed at improving the people carrying capacity of the corridor.

In terms of management of effects of the transport system, the following policies are relevant:

10. *Avoid, remedy or mitigate the potential adverse effects associated with the use or operation of transport infrastructure on community health by:*
    a. *developing an urban form which supports more energy efficient and active modes of transport, such as buses, walking and cycling, and provides opportunities to reduce both the number and length of vehicle trips*

b. *requiring new roads to incorporate noise mitigation to protect sensitive activities from adverse noise effects.*

12. *Avoid, remedy or mitigate the potential adverse effects of transport infrastructure on amenity values and ensure that transport infrastructure is designed, located and managed to:*

    a. *integrate with adjoining land uses taking into account their planned use, intensity, scale, character and amenity*

    b. *effectively provide pedestrian and cycle connections.*

The enabling of a mixed use environment along the western side of the corridor and continuation of the commercial activities on the eastern side means that the improvements authorised by the LRCI NoR are compatible with, and support the planned character and amenity of the corridor.

In terms of effects associated with the project, such as tree removal, changes to front yards and on-site car parking arrangements and construction and operational noise, the objectives and policies of the PAUP do not alter the issues, effects and mitigation identified in this assessment.

In conclusion, section 8 of the AEE outlines the potential and actual effects of the project on the environment. Based on the above assessment of regional and local policies (and taking into account the proposed mitigation measures), the project is considered to be consistent with the relevant provisions of the ARPS, ARP: ALW, the ACDP the PAUP.

9.5 Alternatives and Reasonable Necessity

9.5.1 Alternatives

As required by Section 171 (1) (b) of the RMA, when considering the NoR the council must have regard to whether adequate consideration has been given to alternative routes, sites or methods where AT:

a. Does not have an interest in the land affected by the designation; or

b. The effects of works are likely to be significant.

Section 7 of this AEE has discussed the alternatives that were considered by AT in the development of the NoR. Further detailed assessment of alternatives is set out in Appendix 5, Volume 2. These assessments note that as Lincoln Road is an existing corridor, any assessment of alternatives concentrated on alternative sites and methods, rather than routes.

The summary assessment in section 8 of this AEE demonstrates that, given the scale of effects anticipated (which are in the minor to moderate category) and the mitigation proposed, an appropriate level of consideration of alternatives has been undertaken. In particular no significant effects are anticipated in terms of the values and resources set out in Section 6 of the RMA (matters of national importance), while the section above on policies and plans has not identified any significant transgression of objectives and policies.

Where potential effects on amenity values have been identified, such as potential removal of scheduled trees, street trees and groups of trees, then a detailed assessment of options has been completed. This assessment of options has led to design changes.

In terms of property impacts, AT has already purchased a number of properties most affected by the works. For other properties, the designation affects front yards and associated landscaping strips and parking areas. The Alternatives Assessment details the options that were considered in relation to the proposed road cross section. Widening one

side of the road only to a greater degree, rather than both sides, would not result in appreciable benefits and will generate additional costs.

9.5.2 Reasonable Necessity

Section 171 of the RMA requires consideration of whether the works and designation are reasonably necessary to achieve AT's objectives. This matter is addressed in Section 7 of this AEE. That assessment noted the strong links between the key features of the project and the project's objectives.

9.6 Other Relevant Planning Documents

Section 2.6 has provided an overview of how the LRCI project links to regional level policy documents such as the Auckland Plan and the Regional Land Transport Strategy. The following are a range of subsidiary planning documents that have an influence on the timing and design of the LRCI project. Also included is a short reference to the Henderson-Massey Local Board Plan.

Table 9.3 Relevant Planning Documents

Summary	Comment
Integrated Transport Programme 2012-2041	
30 year investment programme across all modes covering all the responsibilities of all transport agencies. Includes corridor and network management.	Within the key challenges for network arterial routes noted in the Programme, Lincoln Road is projected to experience high levels of traffic, increasing potential congestion. Lincoln Road has been listed for infrastructure investment accompanying the Western Ring Route, being SH1 Puhoi - Warkworth extension, SH20A widening, SH16 widening from Lincoln Road to Royal Rd/Westgate.
Auckland Regional Land Transport Programme 2015-2025 (RLTP)	
Sets out the funding plan for Auckland's Transport projects for the next 10 years. *The Regional Land Transport Plan (RLTP) forms part of the National Land Transport Programme and represents the combined intentions of the NZ Transport Agency, Auckland Transport and KiwiRail to respond to growth and other challenges facing Auckland in the next 10 years (Page 6).* This funding document is reviewed every three years.	Lincoln Road is included within the RLTP under 'road infrastructure improvements'. The Plan states that these types of projects are funded as roading projects although they contribute to public transport, walking and cycling goals. Funding is also provided for investigation, design and property acquisition for projects that will not be constructed in the first three years of the programme (such as Lincoln Road). <u>Lincoln Road Capital Expenditure</u> 2015/16: $1.8million 2016/17: $2.1million 2018/19-2024/25: $50.7million

Summary	Comment
	Lincoln Road is listed as Priority 6 out of 61 ranked capex projects.
Auckland Regional Public Transport Plan 2013 (replaces the Auckland Passenger Transport Network Plan 2006-2016).	
Outlines the public transport services and policies and procedures that apply to those services that Auckland Transport proposes for the region over the 10 years to achieve the transformative approach set within the Auckland Plan.	The LRCI project is not explicitly mentioned within the Regional Public Transport Plan. The Lincoln Road project is guided by the objectives and policies to achieve the vision as stated in the plan such as improving access to rapid and frequent services (policy 1.2) and improving infrastructure and providing bus priority measures on key corridors (policy 3.4).
Regional Arterial Road Plan 2009	
Sets out the role and strategic direction for regional arterial roads.	The strategic direction for Lincoln Road is to increase passenger transport and cycling infrastructure and to increase integration with State Highway 16. The short-term actions are to finalise policies and plans for development of the route and adjacent land uses, incorporating bus/High Occupancy Vehicle priority measures integrating management with Lincoln Road interchange, and requiring/encouraging travel plans for major land uses.
Auckland Transport Parking Strategy - May 2015	
Policy 4A: Parking on Arterial Roads Objectives: Maximise the number of people (and goods) that can be moved along the corridor, improve the speed and reliability of public transport along the Frequent Transit Network and support the development of the Auckland Cycle Network.	The strategy highlights that AT will manage parking on arterial roads (such as on Lincoln Road) by extending clearways or removing parking where it: • Inhibits the capacity of the road to carry more people (& goods) particularly in the peak periods, and/or • Causes significant delays to the speed and reliability of public transport on the Frequent Transit Network, and/or • Causes safety risks for cyclists or impedes quality improvements on the Auckland Cycle Network.
Summary	**Comment**
Henderson- Massey Local Board Plan	
Identified the transport priorities as increasing investment in walking and cycling infrastructure, improving public transport and reducing reliance on roads and cars.	The Plan notes that every morning and evening Lincoln and Te Atatu roads are 'crammed with cars crawling along to try and get on and off the motorway'. It further notes both roads have a poor safety record and

Summary	Comment
	Auckland Transport along with the New Zealand Transport Agency (NZTA) is delivering major upgrades at Te Atatu and Lincoln roads. The Board plan also advocates for dedicated cycle/walking paths and lanes to be incorporated in the Lincoln Road project.

10 Conclusion

The LRCI NoR will authorise the construction, operation and maintenance of improvements to Lincoln Road. These improvements will benefit road users, including bus passengers, walkers and cyclists. Safety will be improved and overall the 'people-carrying' efficiency of the corridor will be improved.

Once confirmed, the LRCI designation will identify the LRCI project to existing and future landowners and building occupiers along the corridor, signalling AT's intention to undertake the related works in the future.

The construction effects of the project are potentially of a moderate scale, but similar to those that would be experienced in the reconstruction of any busy road corridor. A range of conditions and management plans will ensure that these effects are appropriately mitigated.

The permanent effects of the project once the road was been upgraded mainly relate to a visual effects of the wider road corridor, where areas of existing reserve land, street trees and grass berms are replaced by new traffic lanes and pedestrian/cycle facilities. Planting of street trees in the median is proposed, along with landscape treatment of land to be acquired by AT at the northern end of the corridor. Replacement planting on reserve land also will occur.

Some front yards of land zoned residential and occupied for residential purposes will be reduced, with consequent affects on amenity. Replacement fencing and landscape treatment will be negotiated with these landowners as part of the PWA process. Noise mitigation will be required for some sites, and this will be determined by a specific management plan at the time of construction.

Frontages on some business properties will be reduced, with effects on parking and landscape strips. It is expected that through detailed design with affected landowners, these effects will be mitigated. The solid, raised median will restrict turning movements, but the median is required for safety purposes. Right hand turns will be facilitated at main intersections.

The assessment of the project against relevant policy statements and plans shows that the project is consistent with these documents, in particular the Operative Regional Policy Statement and ACDP. The project is also consistent with the Auckland Plan and the RLTS.

AT's assessment of alternatives demonstrates that, in developing the project, AT has given adequate consideration of alternative sites and methods. This assessment of alternatives has also taken into account Part 2 matters. The proposed designation and work is necessary to achieve the project's objectives.

Overall, the project will promote the sustainable management of the natural and physical resources of the Lincoln Road corridor and is consistent with the purposes and principles of the RMA.