

FORM 18

NOTICE OF REQUIREMENT BY REQUIRING AUTHORITY FOR A DESIGNATION

Under section 168 (1), (2) and section 181 and clause 4 of first schedule of the Resource Management Act 1991

To Dunedin City Council
 PO Box 5045
 DUNEDIN

From Otago Regional Council
 Private Bag 1954
 DUNEDIN

1. The Otago Regional Council, a requiring authority pursuant to section 166 of the Resource Management Act 1991, gives notice to the Dunedin City Council of a requirement for a designation for a public work being a Central City Bus Hub of the Otago Regional Council.

The site to which the requirement applies is as follows:

- Great King Street Road Reserve, between Moray Place and St Andrew Street, Dunedin;
- Moray Place Road Reserve;
- 12.4m² (approx.) within 137 St Andrew Street, legally described as Lot 1 DP 486801;
- Two areas within the Countdown car park adjoining Great King Street– one comprising 58.8m² and the second comprising 50.4m² (approx.), legally described as Lots 2 and 3, DP 6552 and Sec 29 Town of Dunedin;
- An area approximately 19.5m² within the Countdown car park adjoining Moray Place, legally described as Sections 27 and 28 Town Survey District;
- 63m² (approx.) within the Community House car park at 301 Moray Place, legally described as Town Section 26, Town of Dunedin; and
- 60.8m² within the Wilsons car park at 30-36 Great King Street, legally described as Lot 2 DP 338932.

Further details regarding the site are included in **Annexure 1: The physical description of the site**; and the designation site is depicted on the **Designation Plans**, attached in Appendix A to the Annexures. The annexures are attached to and forms part of this Notice of Requirement.

2. **The nature of the work:**

The designation shall provide for a Central City Bus Hub (herein “Bus Hub”) for Dunedin’s public transport network, and includes all buildings, structures and associated facilities and activities for the carrying out of the functions of the public transport system by the

requiring authority. With the exception of no public parking, the designation will not prevent the use of Great King Street, between Moray Place and St Andrew Street, being used as a public road. The nature of the works and associated activities are set out more fully in **Annexure 2**. This annexure is attached to and forms part of this Notice of Requirement.

The designation is to provide for the establishment, operation, maintenance and upgrading of the Bus Hub for Dunedin public transport service purposes and will provide public transport services described in the Otago's Regional Council's Public Transport Plan, and to provide any site works, buildings or structures integral and ancillary to the operation of the Dunedin public transport system, including but not limited to:

- Bus shelters and seating;
- Timetable and information displays;
- Bus stops;
- Public amenities, including toilets;
- Landscaping including structures;
- Pedestrian foot paths and accessways;
- Drainage;
- Technology;
- Lighting;
- Security;
- Vehicle priority;
- Signage;
- Passenger comfort initiatives and facilities;
- Passenger information facilities; and
- All other structures and facilities associated with or incidental to a comprehensive facility for the performances of functions of the bus hub and support of the Dunedin Public Transport Network for the requiring authority.

The nature of the functions is that these activities will initially occur from approximately 05:30 hours to 00:30 hours, 7 days a week, year-round.

3. The Nature of the Proposed Conditions:

The designation is proposed to be subject to the conditions contained in **Annexure 3**. This annexure is attached to and forms part of this Notice of Requirement.

4. The effect that the proposed work will have on the environment and the proposed mitigation measures:

The environmental effects that are likely to be generated by establishing, operating, maintaining and upgrading the bus hub for the Otago Regional Council at the subject site have been assessed. During the assessment, mitigation measures have been identified, and where necessary will be incorporated into the development plans for the bus hub.

A full evaluation of the effects that the proposed work will have on the environment and the proposed mitigation measures are included in **Annexure 4: The effect that the proposed work will have on the environment and the proposed mitigation measures**. This annexure is attached to and forms part of this Notice of Requirement.

5. The following alternative sites have been considered:

Section 171 (1)(b) requires consideration of 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;*

The requiring authority does not own the road reserve or private land subject to this Notice of Requirement. However, it will manage the road reserve proposed to be designated, and will enter into agreements with the landowners of the small parcels of land in private ownership adjoining the road reserve to occupy this land.

As detailed in the assessment of effects, no significant adverse effects are expected to arise from the work.

The requiring authority has undertaken an alternative site assessment as part of determining the most appropriate site for the bus hub. A summary of this alternative site assessment is provided in **Annexure 5**, along with an assessment of the alternative methods of undertaking the work.

6. The public work and designation is reasonably necessary for achieving the objectives of the requiring authority because:

The designation is needed to make provision in the Dunedin City District Plan for the Otago Regional Council's bus hub to enable the requiring authority to carry out its statutory land transport functions efficiently and effectively and to achieve the objectives established in the Otago Regional Land Transport Strategy, Otago and Southland Land Transport Plan and the Otago Regional Public Transport Plan.

Further details relating to why the designation is needed are set out in **Annexure 6**. This annexure is attached to and forms part of this Notice of Requirement.

7. The following resource consents will be required in relation to the activity to which the application relates:

Nil

8. **Consultation**

A statement regarding the consultation undertaken with parties likely to be affected by the designation, public work, project, or work is included in **Annexure 7**. This annexure is attached to and forms part of this Notice of Requirement.

9. **Additional Information**

Additional information required by the relevant District Plan is appended to this Notice of Requirement. This information includes:

Appendix A: Designation Plan

Appendix B: Design Concept Report, prepared by Beca

Appendix C: Landscaping Preliminary Design Plan, prepared by Beca

Appendix D: Dunedin Shelters Suite – Preliminary Design Phase, prepared by Beca

Appendix E: Assessment of Transportation Matters, Carriageway Consulting

Appendix F: Relevant Provisions from the Regional Public Transport Plan 2014

Appendix G: Dunedin Bus Hub Network Effects, Traffic Design Group

Appendix H: Community Engagement Feedback Form and Summary of Responses

Appendix I: Consultation Letters with Adjacent Landowner/occupiers

Date: 7/7/17

Signature: _____

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OTAGO REGIONAL COUNCIL

**CENTRAL CITY BUS HUB
GREAT KING STREET, DUNEDIN
NOTICE OF REQUIREMENT
FOR A DESIGNATION**

Annexures 1 – 7

5 July 2017

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ANNEXURE 1: PHYSICAL DESCRIPTION OF THE SITE

THE SITE

The site for the proposed Bus Hub comprises the Great King Street road reserve, within the block bound by Moray Place and St Andrew Street, and a small part of Moray Place road reserve. The site is predominantly land that is vested as ‘road reserve’ and is owned and managed by the Dunedin City Council as road.

Small parcels of privately owned land are also part of the notice of requirement. This land includes:

- 12.4m² (approx.) within 137 St Andrew Street, legally described as Lot 1 DP 486801;
- Two areas within the Countdown car park adjoining Great King Street– one comprising 58.8m² and the second comprising 50.4m² (approx.), legally described as Lots 2 and 3, DP 6552 and Sec 29 Town of Dunedin;
- An area approximately 19.5m² within the Countdown car park adjoining Moray Place, legally described as Sections 27 and 28 Town Survey District;
- 63m² (approx.) within the Community House car park at 301 Moray Place, legally described as Town Section 26, Town of Dunedin; and
- 60.8m² (approx.) within the Wilsons car park at 30-36 Great King Street, legally described as Lot 2 DP 338932.¹

The site is depicted in the Designation Plan, refer **Appendix A** attached.

Under the operative Dunedin City District Plan (“District Plan”) the road that is subject to this Notice of Requirement is “Formed Road Corridor in Road Reserve”, and therefore the rules within Chapter 20 ‘Transportation’ apply to this land. The District Plan states that the zone immediately adjacent to the road reserve also applies (to the centre line of the road if there are different zones). The site is therefore zoned Central Activity Area Zone, as shown on Planning Map 35 of the operative Dunedin City Plan. The land subject to this Notice that is outside of the Road Reserve is also zoned Central Activity Zone in the District Plan. Part of the site is identified as requiring verandas along the road boundary to provide shelter for pedestrians, and is within the Central Parking Area.

The site and surrounding area is typical of the central Dunedin business area, and is a busy and vibrant part of Dunedin. Neighbouring landuses within this block of Great King Street include:

- Retail activities including Farmers Department Store and smaller retail premises, Smiths Sports Shoes, Refined Rig, Payless Party and Lifestyle on Great King Street;
- The Dunedin Central Police Station (designated for Central Police Station purposes, designation number 181);
- Two restaurant/bars (the Break Bar at the corner of Great King Street and Moray Place, and the Stadium Sports Bar at the corner of St Andrew Street and Great King Street);
- Countdown Supermarket;

¹ Should the requiring authority not reach agreement with the owners of the private land then this part of the designation will not be given effect to.

- Dunedin Community House;
- Commercial car parking premises, managed by Wilsons, (30, 36 and 52 Great King Street); and
- Otago Polytechnic training facility at 52 Great King Street (predominantly upper level).

Land adjacent to the site is also partly contained within the Townscape Precinct TH09 (George Street Commercial Heritage Precinct). Two protected heritage buildings are located at opposite ends of the Great King Street site:

- B545: 93 St Andrew Street, Building Façade above verandah; and
- B411: Stephen Inks Building Facade, 301 Moray Place.

CONSIDERATION OF DISTRICT PLAN PROVISIONS THAT APPLY TO THE SITE AND ACTIVITY

Some consideration of the District Plan provisions that apply to bus hub activities is valid to describe what activities can be carried out as of right at the subject site.

Operative District Plan

Under the operative District Plan certain physical works within the legal road reserve are provided for as permitted activities. Permitted activity Rule 20.5.1 provides for:

- (i) maintenance of existing roads, which includes realignment, traffic and parking controls, road signs, lighting and landscaping; and
- (ii) street furniture.

Street furniture is defined in the District Plan as:

Means any structure that is necessary to the functioning of the road or that caters to the needs of road users, and includes but is not limited to structures such as bus shelters, taxi shelters, information fixtures for bus passengers, cycle parking facilities, litter bins, drinking fountains, public seating and public art. Street furniture does not include public toilets.

The relevant performance standards set out the requirements for permitted street furniture:

- shall be a maximum height of 3.5m;
- the maximum area of ground covered by the street furniture shall be 9m²;
- the maximum length of street furniture shall be 6.5m;
- the minimum unobstructed width of footpath shall be 2m.

Therefore, the bus bays, and structures within the road reserve are provided for as permitted activities. It is noted that a footpath width of 2m will be achieved via the re-alignment of the footpath as proposed in the Bus Hub proposal, with the exception of the bus shelter adjacent to Bay 1. The bus shelter adjacent to Bus Bay 1 would require resource consent for restricted discretionary activity under Rule 20.5.4.

Some structures are proposed outside of the road reserve - bus shelters, public toilets and bicycle stands. These structures are located within the Central Activity Area Zone, and partially within the Townscape Precinct TH09. Under the Central Activity Area Zone rules, the proposed structures comply with the bulk and location rules in this zone. Activities such as Community Support Activities and Commercial Activities comprise permitted activities in this zone. Elements of the Bus Hub facilities, such as the bicycle stands, public toilets and coffee kiosk are defined as Community Support and/or Commercial activities. The activity status of the bus shelters on private land is not explicitly provided for, and may default to a non-complying status despite meeting the bulk and location requirements.

Further, all new structures within a Townscape Precinct comprise controlled activities. For the Bus Hub proposal, this would include the structures proposed in the Community House car park and the bus shelter within the Countdown car park which fronts Moray Place.

Proposed Second Generation District Plan

The Proposed Second-Generation District Plan ("Proposed 2GP") was notified in September 2015. Decisions on the Proposed 2GP have not yet been made and accordingly the relevant rules have no effect. However, the proposed rules that would apply to a bus hub (where the site is not designated for the Bus Hub purpose) are set out below to provide an indication of how these activities may be managed under this plan, albeit subject to changes.

The proposed Bus Hub is zoned Central Business District Zone in the Proposed 2GP, and is not within a Heritage Precinct. The Proposed 2GP includes a new definition for Passenger Transportation Hub:

Train stations, bus stations, tram stations or ferry terminals that provide passenger access to public transport services. This definition excludes: In-road bus exchanges of no more than four bus bays, which are included under the definition of operation, repair and maintenance of the roading network. Train, bus, ferry or tram terminals or depots that do not include passenger services, which are included under the definition of Industrial activity.

Under the 2GP the proposed Bus Hub would be classified as a Passenger Transportation Hub, which is a Discretionary Activity in all zones. It is noted that the installation of up to four bus bays in road reserve would be a permitted activity.

'Public amenities' are defined in the Proposed 2GP as "*Structures and facilities established for the convenience, enjoyment, or amenity of the public*", and examples include public seating, public shelters, rubbish bins, bicycle stands, public display boards, public toilets. As such, these rules would be relevant to a proposal for a bus hub (where it is not designated).

Public toilets are provided for as *restricted discretionary* activities in all zones, and are subject to a 3m height limit. All other public amenities comprise permitted activities in all zones, subject to compliance with the following performance standards:

- i. Maximum height – 3m;
- ii. Maximum dimensions: of relevance to the Bus Hub proposal, the maximum area of all public display boards shall be up to 3m², with no single face exceeding 1.5m²; and the maximum diameter for bollards is 1m.

Other general performance standards that apply to all public amenity activities include:

- i. Buildings and structures on or above a footpath must provide a minimum of 3m width of unobstructed area for pedestrian movement in the Central Business District Zone.
- ii. Public amenities on footpaths must align with other permanent or temporary obstruction present on the footpath, otherwise be located at the kerb edge of the footpath;
- iii. Public amenities on footpaths must not be within 2m of an intersection or pedestrian crossing;
- iv. Public amenities on footpaths must not be located directly adjacent to a bus stop;
- v. Public amenities must comply with the height in relation to boundary applicable in the Central Business District Zone. Note, this only applies at the boundary of a residential zone;
- vi. Lightspill requirements (apply at the boundary of a residential zone, or any site used for residential purposes);
- viii. Noise.

Therefore, while the bus hub is defined as a *passenger transport hub* which is a discretionary activity, many of the amenities proposed as part of the Bus Hub would be permitted activities, except where they encroach into the 3m width of the footpath.

ANNEXURE 2: NATURE OF THE WORK

The following provides a summary of the activities, functions and structures associated with the proposed Bus Hub for the Otago Regional Council. The proposed Bus Hub is a central-city public transport hub which will function as the major transfer point for public transport services within the Dunedin Public Transport Network, allowing passengers to change between bus routes enhancing their ability to access different parts of Dunedin.

A central and easily accessible location for a Bus Hub is considered to be a key component of the city's new public transport system. The site has been selected by the Otago Regional Council as it achieves these objectives. The proposed Bus Hub is part of an overall plan to provide a transport network that will co-ordinate public transport services and use up to date technology efficiently, such as real time on street displays and "tag-on tag-off" ticketing system. The site for the proposed Bus Hub has been selected because of its close proximity to Dunedin's CBD, hospitality activities, hospital, supermarkets and the Octagon. The operation of the proposed central Bus Hub will largely remove public transport buses travelling through sections of George Street, Princes Street and the Octagon, as, instead they would be routed through the Great King Street Bus Hub.

The proposal will fulfil the objectives of the Otago Regional Council set out in the Otago Regional Land Transport Strategy 2011 and, more specifically, the Regional Public Transport Plan 2014. These documents are discussed in **Annexure 3** of the Notice of Requirement.

ACTIVITIES AND FUNCTIONS

The Bus Hub for the Otago Regional Council will include, but is not limited to, the following elements:

- Shelter and seating;
- Timetable and information displays;
- Bus loading bays;
- Signage;
- Loading bays;
- Public amenities, including toilets;
- Landscaping including structures;
- Technology;
- Lighting;
- Security including but not necessarily limited to CCTV;
- Vehicle Priority;
- Kerb realignment, pedestrian crossing points and a centrally located pedestrian crossing;
- Cycling parks;
- Passenger comfort initiatives and facilities;
- Passenger information facilities; and

- All other structures and facilities associated with or incidental to a comprehensive facility for the performances of functions of the Bus Hub and support of the Dunedin Public Transport Network for the requiring authority.

The nature of the functions is that these activities can occur 7 days a week, year-round. While services currently operate between 6am to midnight, services may be extended in the future as demand requires.

A description of the proposed Bus Hub is provided below. It is noted that the concept design for the Bus Hub remains preliminary. Amendments to the design, and the final design of some structures will take place prior to construction. The requiring authority will continue to work with the Dunedin City Council's urban design and transportation officers, and adjacent landowners, in this process.

CHANGES TO THE ROADS

With the exception of parking, and priority for Public Transport Buses the Bus Hub will not preclude the normal functioning of the affected road as a public road which is within the Bus Hub designation footprint.

The Otago Regional Council will be responsible for the maintenance of the carriageway within the proposed designation site while the designation is in effect.

Changes to the intersections with Great King Street and Moray Place and Great King Street and St Andrew Street are proposed to ensure that the buses can safely enter and exit the Bus Hub. The changes will provide for enhanced pedestrian access and vehicle management. The changes proposed, and the rationale behind the design decisions, are described in detail in the Design Concept Report prepared by Beca, refer **Appendix B** attached.²

A variety of facilities are proposed to provide for pedestrian safety within the Bus Hub site. These are depicted on the Preliminary Design Plans (**Appendix C** attached) and include:

- A new pedestrian crossing in a central location of the Bus Hub on Great King Street;
- Improved pedestrian crossing areas at the Moray Place intersections with Great King Street, where there are none currently outside of the designation area;
- Surface treatment on the footpaths to indicate pedestrian crossing locations.

The Design Concept Report prepared by Beca (refer **Appendix B** attached) describes the purpose and functionality of these roading improvements, and the iterative process undertaken with the Dunedin City Council to develop these features. It is noted that the preliminary design phase for the Bus Hub is essentially complete.³

² The intersections are outside of the designation area.

³ The information included at section 5: Stakeholder Feedback outlines the iterative process undertaken in the design up until December 2016. The design process has progressed between December 2016 and the current design, and accordingly most of the matters referred to as matters to be considered in the Stakeholder Feedback section of this report have been addressed and are discussed in sections 2 and 3 of this report.

BUILDINGS, STRUCTURES & LANDSCAPING

A variety of structures will be required for the Bus Hub. These are expected to include (but are not limited to):

- Shelter;
- Passenger comfort initiatives and facilities;
- Seating;
- Timetable displays, for instance totem pole style displays;
- Public toilets;
- Street furniture, for instance rubbish bins, recycling bins;
- Landscaping and graphics on the road, footpaths and structures;
- Signage;
- Security features including but not limited to CCTV
- Technology display screens; and
- Lighting.

The Preliminary Design Plans depicts the street graphics and structures proposed within the Bus Hub designation. The landscaping and structures are intended to enhance the visual amenity values of this area. It is noted that the street graphics element of the landscape design may be removed/changed as a result of the safety audit.

The indicative design for the shelters, seating, display panels, and the colour and materials palette for the structures is depicted in the document entitled Dunedin Shelter Suite – Preliminary Design Phase, prepared by Beca (refer **Appendix D** attached).

Additional street lighting is proposed for the designation area to improve visibility for pedestrians in this area and for security purposes.

In all aspects of the preliminary design process, the principles of Crime Prevention through Environmental Design (“CPTED”) have been considered. Areas considered to be a potential CPTED risk have been mitigated as much as possible. Areas where design outcomes are still being worked through include the area adjacent to the proposed toilet block.

It is noted that the design for the Bus Hub depicted on the Preliminary Design Plans remains preliminary. Changes to the design may occur in the event that agreement to lease the privately-owned land is not reached. An alternative design for the Bus Hub may include the installation of a canopy structure along the footpaths where there are no adjacent buildings. The canopy would provide improved shelter for pedestrians and users of the Bus Hub. The canopy option would result in the bus stop shelters adjacent to bays 1-3 and bays 8, 9 and 10 being replaced with canopy structures. The provision of shelter from the weather was requested by the community during the community liaison phase of the proposal. Designs are being progressed to allow this option should it be required in the future.

CHANGES TO VEHICULAR ACCESS TO ADJOINING PROPERTIES

The proposed Bus Hub will result in changes to the access arrangements for four properties, refer Assessment of Transportation Matters, prepared by Carriageway Consulting (**Appendix E** attached). These changes have been agreed with the affected land owners and include:

- Limiting the Great King Street access to Victoria Hotel to exit only – the car park can be accessed via St Andrew Street and Crawford Street;
- Limiting vehicles exiting from the Wilsons/Farmers car park to left turn only;
- Limiting vehicles accessing the Countdown car park from the Great King Street access to left-in left-out only; and
- Closing the access onto Great King Street from the Community House car park – this car park will be accessed via Moray Place.

The Otago Regional Council has agreed these changes with the affected landowners of these properties, and will implement these changes at its cost.

BUS STOPS, LOADING BAYS AND ON-STREET PUBLIC PARKING

The proposal will provide 11 bus bays within the designation site and two loading bays (please note that the loading bays are for public use, rather than part of the bus hub facilities).⁴ The proposed Bus Hub will result in the removal of all on-street parking currently available at the site. A total of 38 kerbside parking spaces will be removed from the Bus Hub designation site in Great King Street to provide for the establishment of the bus stops and loading bays and to carry out modifications to the intersections.

Additional on-street car parks will be removed in the vicinity of the designation as a result of intersection modifications at the St Andrew Street – Great King Street and Moray Place-Great King Street intersections. These intersection modifications will also provide new areas where kerbside parking can be provided. The total net loss of on-street parking at the two intersections at the ends of the Bus Hub (beyond the designation site with the exception of the Bay 11 site) is 12 (in total 50 on street parks are proposed to be removed within the designation site and in the intersections at either end of the designation site). Further, the changes to the intersection at St Andrew St will free-up kerb-side area that could accommodate four new on-street carparks. However, this area is managed by the Dunedin City Council so the requiring authority cannot determine the ultimate use of this space.

It is noted that the proposed changes to the bus routes associated with the buses accessing the Bus Hub will result in the removal or shortening of several bus stops around the city, which will provide an opportunity for new on-street parking spaces. In total, some 55 new on-street parking spaces could be provided within 350m of the Bus Hub, and an additional 14 further out (refer Carriageway Report, **Appendix E** attached). However, it is noted that the requiring authority does not manage the roads where the additional kerb-side area will be made available. The Dunedin City Council will decide how this land is utilised. Table 1 on page 22 of this Notice sets out the car parking losses and gains in more detail.

⁴ A third new loading bay can be provided outside of the designation site on St Andrew St, subject to Dunedin City Council approval.

SIGNAGE

Signage associated with the Bus Hub will be required at the site. This is expected to be in the form of information displays and screens and directional signage associated with the Bus Hub activities and associated amenities. The signage associated with the Bus Hub is likely to exceed the limits for signage set out in the District Plan, given the intensive use of the designation site.

Any commercial signage within the proposed designation site that is not associated with the designation purpose will need the approval of the requiring authority and will be subject to the relevant District Plan rules.

ANNEXURE 3: PROPOSED CONDITIONS OF DESIGNATION FOR THE BUS HUB OF THE OTAGO REGIONAL COUNCIL

- 1) Activities associated with the Bus Hub shall be carried out to achieve the following:
 - a) Noise during construction activities shall comply with the requirements of NZS 6803:1999 “Acoustics – Construction Noise”.
 - b) Noise generated by activities being undertaken in accordance with the designation shall comply with the applicable limits for the underlying zone at the time the Notice of Requirement is lodged, or the applicable Second Generation District Plan for Dunedin rules if these are more lenient, except that vehicles operating within the designated site (including buses) are exempt from these requirements and shall comply with the Land Transport (Road Users) Rule 2004, clause 7.4.
- 2) If an unidentified archaeological site is located during works, then:
 - a) Work shall cease immediately at that place and within 20m around the site.
 - b) The contractor must shut down all machinery, secure the area, and advise the requiring authority.
 - c) The requiring authority shall secure the site and notify the Heritage New Zealand Regional Archaeologist.
 - d) If the site is of Maori origin, the requiring authority shall notify the Heritage New Zealand Regional Archaeologist and the appropriate iwi groups or kaitiaki representative of the discovery and ensure site access to enable appropriate cultural procedures and tikanga to be undertaken, as long as all statutory requirements under legislation are met (Heritage New Zealand Pouhere Taonga Act, Protected Objects Act).
 - e) If human remains (koiwi tangata) are uncovered the requiring authority shall advise the Heritage New Zealand Regional Archaeologist, NZ Police and the appropriate iwi groups or kaitiaki representative and the above process under 4 shall apply. Remains are not to be moved until such time as iwi and Heritage New Zealand have responded.
 - f) Works affecting the archaeological site and any human remains (koiwi tangata) shall not resume until Heritage New Zealand gives written approval for work to continue.
 - g) Where iwi so request, any information recorded as the result of the find such as a description of location and content, is to be provided for their records.
 - h) Heritage New Zealand will determine if an archaeological authority under the Heritage New Zealand Pouhere Taonga Act 2014 is required for works to continue.
 - i) The requiring authority will carry out any archaeological assessment required by Heritage New Zealand.

Note: It is an offence under S87 of the *Heritage New Zealand Pouhere Taonga Act 2014* to modify or destroy an archaeological site without an authority from Heritage New Zealand irrespective of whether the works are permitted or a consent has been issued under the Resource Management Act.



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- 3) Signage is limited to information associated with the Bus Hub, Dunedin Public Transport Network, associated facilities, including the coffee kiosks. Digital information screens do not comprise signage for the purpose of this condition.
- 4) A maximum of two coffee kiosks may be located, operated under contract to the Otago Regional Council and maintained within the designation site.

ANNEXURE 4: THE EFFECT THAT THE WORK WILL HAVE ON THE ENVIRONMENT AND THE PROPOSED MITIGATION MEASURES

INTRODUCTION

Section 5 of the Resource Management Act 1991 (RMA) sets out the Purpose of the Act:

- 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 wellbeing 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.*

As well as setting out the purpose of the RMA, Part 2 identifies the purposes and principles of the Act. Many of the matters of national importance in section 6 or the other matters in section 7 are not relevant to this site, for instance the protection of outstanding natural features and landscapes from inappropriate subdivision, use, and development and the protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna. Where the principles set out in sections 7 and 8 are relevant they have been discussed later in this Annexure in the evaluation of environmental effects.

Section 7(b) requires the efficient use and development of natural and physical resources. The use of the site for the Bus Hub is considered to be an efficient use of this central city site, particularly given the roads within the site will continue to effectively function as public roads. Locating the Bus Hub predominantly within road reserve will minimise the displacement of established commercial activities.

There are two buildings which are identified in the District Plan as having heritage value located immediately adjacent to the site. The design of the structures, graphics and landscaping are not expected to detract from these buildings, and no changes to the buildings are proposed as part of the proposal. Please refer to the Design Concept Report attached as **Appendix B** which describes the design process and the iterative process embarked upon by the Otago Regional Council in developing the design concept for the Bus Hub. Through the design process, Beca and the requiring authority have worked closely with the Dunedin City Council urban design team and the Dunedin City Council heritage advisors to ensure that the design of structures in proximity to this heritage building are appropriately designed. The same process will be undertaken with the design of the public toilets. Should the full canopy design be pursued in the roadway adjacent to this building, the requiring authority will consult with Heritage New Zealand over the design of this structure where it is in proximity to the heritage building.

Visually, the quality of the environment will be enhanced by the proposal. The proposal will include landscaping, attractive and functional bus shelters, with some shelters which include a small retail/café component. This is intended to provide a better level of service for bus passengers and

to facilitate an increase in public transport patronage. The activities that will be undertaken at the site are in keeping with the underlying zoning of the site, being the Central Activity Zone.

RELEVANT POLICY STATEMENT AND PLANS

While the Bus Hub operating under a designation is not required to comply with the rules set out within relevant District Plans the Council must have particular regard to all relevant provisions of any national policy statement, regional policy statement, proposed regional policy statement, regional plan, proposed regional plan, district plan, or proposed district plan when considering the Notice of Requirement (in accordance with section 171(1)(a) RMA). Accordingly, the relevant provisions in the Otago Regional Policy Statement, Proposed Otago Regional Policy Statement, Otago Regional Plans and the Dunedin City District Plans are summarised below.

It is noted that other relevant plans include the Otago Regional Land Transport Strategy 2011, Otago Southland Regional Land Transport Plans 2015-2021 and the Regional Public Transport Plan 2014, all of which have been considered in **Annexure 3**.

Regional Policy Statement for Otago

The Regional Policy Statement for Otago (RPS) provides an overview of the resource management issues for the Otago region. It sets out how natural and physical resources are to be managed in an integrated way to promote sustainable management.

The RPS also promotes the sustainable management of Otago's built environment, and infrastructure, while aiming to avoid, remedy or mitigate the adverse effects of the built environment on Otago's natural and physical resources. The relevant policies:

- Encourage development that maximises the use of existing infrastructure;
- Aim to minimise adverse effects of development on Otago's environment, with reference to:
 - Air, water and land discharges;
 - Noise, vibration and dust;
 - Visual intrusion and reduction of landscape qualities; and
 - Community values, Kai Tahu cultural and spiritual values, natural character of water bodies, habitats of indigenous fauna, heritage and amenity values, intrinsic value of ecosystems and salmon or trout habitat.
- Aim to maintain, and where practicable, enhance the quality of life for people and communities within Otago's built environment, with reference to:
 - Amenity;
 - Community health and safety resulting from the use, development and protection of Otago's natural and physical resources;
 - Subdivision, land use and development on landscape values.
- Recognise and protect Otago regionally significant heritage sites.

These provisions are not explicitly relevant to the Bus Hub proposal. However, given the site of the Bus Hub is on land zoned Central Activity⁵, the underlying zoning aligns well within this activity. Therefore, the proposal is not considered to be inconsistent with these objectives and policies.

Proposed Regional Policy Statement for Otago

The Proposed Regional Policy Statement for Otago (Proposed RPS) was notified on 23rd May 2015. Following the submissions and hearings on this document, a decision version of the Proposed RPS was released on 1 October 2016. The decisions attracted 26 appeals to the Environment Court.

The Proposed RPS seeks to achieve the following five key outcomes:

- Resource management in Otago is integrated;
- Kāi Tahu values and interests are recognised and kaitiakitaka is expressed;
- Otago has high quality natural resources and ecosystems;
- Communities in Otago are resilient, safe and healthy;
- People are able to use and enjoy Otago's natural and built environment.

The objectives and policies of the Proposed RPS that are relevant to the Bus Hub designation seek:

- That good quality infrastructure and services meet community needs;
- To manage infrastructure activities, to:
 - Maintain or enhance the health and safety of the community (Policy 4.3.1(a));
 - Support economic, social and community activities (Policy 4.3.1 (c));
 - Improve efficiency of use of natural resources (Policy 4.3.1(d));
 - Increase the ability of communities to respond and adapt to emergencies, and disruptive or natural hazard events (Policy 4.3.1(f));
 - Protect the functioning of lifeline utilities and essential or emergency services (Policy 4.3.1(g)).
- Enabling energy efficient transport by ensuring transportation infrastructure in urban areas has good connectivity, by (b) placing a high priority on walking, cycling and public transport where appropriate, maximising pedestrian and cycling networks connectivity, and integration with public transport; and (c) enabling the development and upgrading of transport infrastructure and associated facilities that ...foster the uptake of new technologies for more efficient energy uses, and renewable and lower emission fuels (Policy 4.4.6);⁶
- Encourage the use of Schedule 5⁷ good urban design in the subdivision and development of urban areas to provide (Policy 4.5.3).

⁵ Where the road reserve adopts the adjacent zoning.

⁶ The appeal to this policy by Wise Response Ltd. has sought that a new provision is included: "Foster the uptake of public transportation through provision of safe, reliable and well sheltered alternatives to private transport".

⁷ Clause 1 of Schedule 5 is most relevant to the proposal and sets out the following.

A safe and enjoyable environment:

a. Provides lively and pleasant places for people to enjoy

- Designing and maintaining public spaces, including street and public spaces, to meet the reasonable access and mobility needs of all sectors (Policy 4.5.6, which has not been appealed).
- Integrating infrastructure with land use by locating and designing infrastructure to take account of actual and foreseeable change in supply of, and demand for, infrastructure services, and co-dependence with other infrastructure (amongst other matter) (Policy 4.5.7(b)).
- That historic heritage resources are recognised as characteristic or important to the region's historic heritage (Policy 5.2.1).
- Identifying historic heritage places and areas of regional or national significance, using the attributes in Schedule 6 (Policy 5.2.2).
- Protect and enhance places and areas of historic heritage, by recognising the potential for archaeological, wahi tapu or wahi taoki values and applying accidental discovery provisions; avoiding, remedying or mitigating adverse effects on historic heritage values, and encouraging adaptive reuse or upgrade (Policy 5.2.3).

Most notably, Policy 4.4.6 seeks to:

Policy 4.4.6 Energy efficient transport

Enable energy efficient and sustainable transport for Otago's communities, by all of the following:

- a) *Encouraging the development of compact and well integrated urban areas, to reduce travel needs within those areas;*
- b) *Ensuring that transport infrastructure in urban areas has good connectivity, both within new urban areas and between new and existing urban areas, by all of the following:*
 - i. *Placing a high priority on walking, cycling, and public transport, where appropriate;*
 - ii. *Maximising pedestrian and cycling networks connectivity, and integration with public transport;*
 - iii. *Having high design standards for pedestrian and cyclist safety and amenity;*
- c) *Enabling the development or upgrade of transport infrastructure and associated facilities that both:*
 - i. *Increase freight efficiency; and*
 - ii. *Foster the uptake of new technologies for more efficient energy uses, and renewable or lower emission transport fuels.*

The purpose of the Bus Hub is to improve the usability and efficiency of Dunedin's urban public transport system. It is therefore expected to result in improvements to the public transport network thereby improving connectivity in Dunedin's urban areas and enabling the up-take of new technologies for public transport, such as real time timetabling displays. The Bus Hub, along with the

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- b. *Reflects the importance of community spaces*
 - c. *Protects public open space, and improves the quality, quantity and distribution of local open space over the long-term*
 - d. *Creates transport networks that are safer*
 - e. *Creates safe, attractive and secure pathways and links between town centres and landmarks and neighbourhoods*
 - f. *Provides a comfortable and safe urban environment*
 - g. *Considers the impact of design on people's health*
 - h. *Reduce risk from natural and man-made hazards, including avoiding areas of significant risk*

public transport system, provides Dunedin's community with transportation options, and supports economic and social wellbeing of the community.

Increasing public transport patronage, an anticipated outcome of the proposal, and other changes to the public transport system in Dunedin, will result in greater efficiencies in the use of the roading network, and of natural resources (i.e. fossil fuel consumption).

As discussed in the Design Concept Report, consideration of principles of good urban design have been key drivers in the design and layout of the Bus Hub. It is intended to capitalise on Dunedin's evolving culture of street art and the high student population who thrive on vibrancy, life and culture. Beca have stated that the design is both inspired by and personifies that vibrant, rich culture.⁸

In particular, the principles of Crime Prevention through Environmental Design (CPTED) have been considered in the proposed concept design. As the proposal progresses, the CPTED principles will be considered, particularly with the designing of the area adjacent to the proposed toilet block and cycle stands as well as the side alleyway adjacent to the Scott and Wilson Building.

The design features of the proposed Bus Hub are discussed in more detail in **Annexure 2** attached.

The Bus Hub design is cognisant of the protected heritage buildings/facade adjacent to the proposed designation site. There are two protected buildings immediately adjacent to the Bus Hub site:

- B545: 93 St Andrew Street (being the corner of St Andrew Street and Great King Street); and
- B411: Stephen Inks Building, located at 301 Moray Place (being the corner of Moray Place and Great King Street).

As discussed above, the design and location of the buildings and structures has been carefully managed to not detract from the heritage values of these buildings. No changes to these buildings are proposed.

Otago Regional Plan: Air

The Otago Regional Plan: Air assists in managing air quality in the region. The Plan sets out general categories of activities and restricts the effects of activities using performance standards. At the time of writing, no resource consents are required in terms of the air plan provisions.

Otago Regional Plan: Water

The Regional Plan: Water identifies issues relating to Kai Tahu ki Otago's interests. It also sets out issues, objectives and policies relating to natural and human use values, water quantity, water quality, the beds and margins of lakes and rivers, groundwater and wetlands. No resource consents are required in terms of the water plan provisions.

Operative Dunedin City Council District Plan

The proposal has been assessed in terms of the *Significant Resource Management Issues* Objectives and Policies, contained in Chapter 4 of the operative Dunedin City District Plan.

⁸ Page 7 of the Design Concept report prepared by Beca.

Objective 4.2.1 seeks to enhance the amenity values of Dunedin, while ensuring that significant natural and physical resources are appropriately protected (Objective 4.2.4). Policy 4.3.1 seeks to maintain and enhance amenity values, while Policy 4.3.2 seeks to avoid developments that will result in the unsustainable expansion of infrastructure services. Policy 4.3.3 promotes the renovation and redevelopment of those sites within existing urban areas where there is under-utilisation of urban service infrastructure. Policy 4.3.4 seeks to provide for the protection of the natural and physical resources of the City commensurate with their local, regional and national significance, and Policy 4.3.6 seeks to provide access to natural and physical resources. Policy 4.3.8 seeks to avoid the indiscriminate mixing of incompatible uses.

The designation is needed to assist the requiring authority to carry out its statutory functions. This site is well located to make use of the existing infrastructure and to be in keeping with the surrounding central city environment.

The site is zoned Central Activity Zone in the operative Dunedin City Plan, and this zone is included in an area classified as the 'Inner City Area'. The District Plan contains the following description for this zone:

The Central Activity Zone has retained a dominant role over other areas within the City such as South Dunedin, Green Island and Mosgiel because of the full range of activities that take place within it, and as a consequence of policies contained in previous district schemes. While expansion has occurred in these other areas it has not compromised the dominant role of the Central Activity Zone. Because of the importance of the Inner City Area to the economic wellbeing of the City, and in order to provide for the sustainable management of this area, the Council will continue to promote the Inner City Area as the focal point for business, recreational, social, cultural, religious and commercial activities in the City.

Relevant objectives and policies include:

Objective 9.2.1

Provide for business, recreational, social, cultural, religious and commercial activities in the Central Activity Zone and Local Activity Zones and enhance the amenity there to make them pleasant for people.

Objective 9.2.3

Avoid, remedy or mitigate the adverse effects of activities undertaken in the Inner City Area and Local Activity Zones.

Objective 9.2.5

Ensure that the Central Activity and Local Activity Zones continue to develop as 'people places'.

Objective 9.2.6

Avoid conflict between pedestrian and vehicle use in the Activity Zones.

Policy 9.3.1

Provide for a compatible mix of business, social, cultural, religious and commercial activities in Activity Zones.

Policy 9.3.3

Enhance amenity values in the Central Activity Zone.

Policy 9.3.8

Manage commercial use of footpaths and other public open space areas within the Activity Zones.

Policy 9.3.10

Recognise that people living in the Activity Zones cannot expect the same level of amenity encountered in residential zones.

Policy 9.3.12

Ensure compatibility and avoid noise conflict in inner city Activity Zones.

It is considered that the proposed Bus Hub activity aligns well with the objectives and police of the Central Activity Zone. The Bus Hub will assist the Central Activity Zone to develop as a 'people place' by providing a centrally located Bus Hub within the centre of Dunedin and attracting people to the site. The Bus Hub is consistent with Objective 9.2.1 as it will complement businesses in the Central Activity Zone through increasing pedestrian activity at and in the vicinity of the Bus Hub and enhance the amenity values of the designation site area through the carefully designed structures, furniture, landscaping and graphic illustration. It is noted that businesses immediately adjacent to the Bus Hub site have raised concerns about possible loss of patronage associated with the loss of on-street parking.

A successful and well patronised public transport system will contribute to the overall vitality of the central business district, and will assist in providing for the communities social and economic wellbeing.

Permitted activities (subject to compliance with the relevant standards) within this zone include:

- Commercial Activity
- Recreational Activity
- Residential Activity
- Community Support Activity
- Large Scale Retail Activity
- Licensed Premises
- Commercial Residential activity.

The use of this site as the proposed Bus Hub will complement these activities by enabling improved public transportation into the Central Activity Zone. The designation is considered to be appropriate at this site.

Relevant objectives and policies from the Transportation chapter of the operative District Plan are set out below:

Objective 20.2.1

Avoid, remedy, or mitigate adverse effects on the environment arising from the establishment, maintenance, improvement and use of the transportation network.

Objective 20.2.4

Maintain and enhance a safe, efficient and effective transportation network.

Policy 20.3.1

Avoid, remedy or mitigate the adverse effects on the environment of establishing, maintaining, improving or using transport infrastructure.

Policy 20.3.3

Provide for activities on roads and footpaths where this:

- a) Is compatible with the function of the road.*
- b) Is safe for road users and pedestrians.*
- c) Has no more than minor adverse effects.*

The use of the road for a Bus Hub is entirely appropriate and necessary. The activity is consistent with the relevant objectives and policies of the Transportation Chapter of the operative District Plan as it enables the efficient and effective use of the road infrastructure to enhance public transportation activities.

The adverse effects of the activity are considered below. No significant adverse effects on the transportation network arising from the Bus Hub activity have been identified in the Transportation Assessments used to inform this Notice of Requirement.

Proposed Dunedin City Council District Plan

The Dunedin City Council notified its proposed District Plan – known as the 2GP on Saturday 26th September 2015. The objectives and policies of the 2GP must be taken into consideration. The 2GP sets out the strategic directions for the District to be achieved via this Plan, and includes a new Transportation Chapter. The Bus Hub proposal has been considered against the relevant objectives and policies of these chapters of the 2GP.

Objective 2.2.2: Energy resilience

Dunedin is well equipped to manage and adapt to any changes that may result from volatile energy markets or diminishing energy sources by having:

- 1) increased local electricity generation;*
- 2) reduced reliance on private motor cars for transportation; and*
- 3) increased capacity for local food production.*

Policy 2.2.2.4 *Support transport mode choices and reduced car dependency through rules that:*

- a) require activities that attract high numbers of users, including, major retail areas, offices, and community facilities, to locate where there are several convenient travel mode options, including private vehicles, public transport, cycling and walking;*
- b) allow the highest development densities in the most accessible locations, being in the central city and suburban centres;*
- c) require most new housing to locate in areas that are currently serviced or likely to be easily serviced by frequent bus services; and*
- d) providing for dairies and registered health practitioners in residential zones to meet day to day needs, in a way that does not undermine Objective 2.3.2.*

Objective 2.3.2: Centres hierarchy

Dunedin has a hierarchy of vibrant centres anchored around one Central Business District (CBD), which provides a focus for economic and employment growth, driven by:

- 1) attraction of businesses to these areas based on the high level of amenity and density of activity in the area;*
- 2) opportunities for social interaction, exchange of ideas and business cooperation;*
- 3) public investment in public amenities and other infrastructure in the CBD; and*
- 4) opportunities for agglomeration benefits from the co-location of activities.*

Objective 2.7.2: Efficient transportation

The transport network operates safely and efficiently for all road users, including freight and passenger vehicles, public transport, motorcycles, cycling, walking, horse riding.

Policy 2.7.2.1 *Support the safe and efficient operation of the transport network through rules that:*

- 1) provide for transportation activities;*
- 2) manage the location, scale and design of high trip generators;*
- 3) manage the location, number and design of vehicle accesses;*
- 4) require on-site vehicle loading where vehicle loading on-street could compromise the safety and efficiency of the transport network;*
- 5) require on-site car parking where required to enable adequate accessibility and/or to avoid or adequately mitigate adverse effects on the safety and efficiency of the transport network; and*
- 6) manage the design of parking, loading and access areas.*

Chapter 6 Transportation

Objective 6.2.1

Transport infrastructure is designed and located to ensure the safety and efficiency of the transport network for all travel methods while:

- 1) minimising, as far as practicable, any adverse effects on the amenity and character of the zone; and*
- 2) meeting the relevant objectives and policies for any overlay zone, scheduled site, or mapped area in which it is located.*

Policy 6.2.1.4 *Only allow passenger transportation hubs⁹ where they are located and designed to:*

- 1) allow for convenient connections with other travel methods;*
- 2) ensure the safety of users;*
- 3) maintain or enhance the safety and efficiency of the overall transport network; and*
- 4) maintain or enhance the amenity of the surrounding environment.*

⁹ Train stations, bus stations, tram stations or ferry terminals that provide passenger access to public transport services. This definition excludes:

- In-road bus exchanges of no more than four bus bays, which are included under the definition of operation, repair and maintenance of the roading network.
- Train, bus, ferry or tram terminals or depots that do not include passenger services, which are included under the definition of Industrial activity.

The proposed Bus Hub achieves this policy. The location for the Bus Hub has been selected due to its central, convenient location. The location and design of the Bus Hub has been carefully considered and designed to be safe for users, with changes to the carriageway to better manage pedestrian movements through and within the site, the use of CCTV cameras to monitor activity, improved street lighting and the proximity to the Central Dunedin Police Station.

The Bus Hub proposal includes various road improvements to ensure that buses can access the site safely and to ensure effects on the road network are minimised. The Bus Hub is expected to enhance the efficiency of the transport network by increasing patronage of the public transport system in Dunedin.

The presence of buses could result in the reduction of the amenity values at the site. Visually, the Bus Hub will enhance the visual amenity values of this site through the development of the comprehensively designed Bus Hub including landscaping, use of colours on the roads and footpaths, attractive bus shelters and totem pole style information kiosks and improved lighting. The buses will only be present at the Bus Hub for dropping off and picking up passengers. They will not be present at the site for extended periods of time, and will not be parked at the Bus Hub overnight.

While the presence of buses on urban streets is not unexpected, it is noted that the bus fleet in Dunedin is in the process of being upgraded to lower emission and provide quieter buses. Once this transition is complete, the noise and emissions arising from the buses will be reduced.

ENVIRONMENTAL EFFECTS ASSESSMENT

The following actual or potential environmental effects are likely to arise from the establishment, operation and maintenance of the proposed Bus Hub at the Great King Street site:

- Effects on the transportation network, including parking
- Environmental noise effects
- Effects on amenity values at the site
- Visual and Amenity effects
- Cultural effects

Each of these actual or potential environment effects is considered below.

EFFECTS ON THE TRANSPORTATION NETWORK

The Bus Hub proposal is a part of a comprehensive suite of changes proposed for Dunedin's urban public transport service, in order to make the service more user friendly and cost effective. It is expected to increase patronage. The Bus Hub development is considered to be a key factor in the improvements being made to this service, and in particular will provide a central terminus and enable bus transfers, where up to date information on bus routes and frequency is provided. The purpose of the Bus Hub is to greatly improve the usability of the bus service.

The effects on the transportation network resulting from the Bus Hub proposal include transportation effects within the immediate designation site, and the wider effects on the transportation network as a result of the changes to the bus routes to incorporate buses passing

through the Bus Hub. To ensure the transportation effects have been comprehensively considered and to inform this Notice of Requirement the following reports have been prepared:

- Traffic Design Group: Dunedin Bus Hub Network Effects - this report assesses the effects of the Bus Hub on the wider transportation network and, in particular, intersection performance in central Dunedin (**Appendix G** attached);
- Carriageway Consulting: Central Dunedin Bus Hub - Assessment of Transportation Matters – this report assesses the transportation effects within the designation site (**Appendix E** attached); and
- Beca: Dunedin Bus Hub – Intersection Concept Design Variation¹⁰ - this report focuses on the design of the Great King Street/Moray Place and Great King Street/St Andrew Street intersections (refer Beca Design Concept Report, **Appendix B** attached).

In addition to the reports attached as appendices to the Notice of Requirement, a series of background reports have been prepared which have informed the summary reports attached. These more technical reports are referred in the attached reports.

Effects on the Wider Road Network

Traffic Design Group has considered the effects of the Bus Hub and the associated changes to the bus routes through the city. This work has involved in-depth transport planning and traffic engineering concept design work to ensure that the new bus routes can be accommodated safely and efficiently within the existing network.

The modelling of intersection performance concluded that the forecast changes in bus volumes are low in comparison to general traffic volumes and that changes in bus volumes will have negligible effects on the efficiency of the road network.

Through this analysis, it was identified that changes to eight intersection layouts are required to improve the efficiency of turning buses on the new route. Changes would generally involve rearrangement of approach lanes and the setting back of limit lanes on opposing approaches, and the removal of some car parking spaces that are closest to the intersections. These changes are not part of the designation process and will be carried out to ensure the safety and efficiency of the network is maintained once the new bus routes are implemented. The changes to the intersection have been agreed in principle with the Dunedin City Council and, a safety audit process for the changes is currently underway prior to the detailed design phase.

With respect to the two intersections at either end of the Bus Hub (again, outside of the proposed designation site), Beca has recommended changes to these intersections to ensure that they can accommodate turning buses. Signalisation is proposed at the Great King Street Moray Place intersection to ensure that the predicted increased number of pedestrian movements forecast can be safely accommodated when the Bus Hub is operational. The Beca report shows that the two Bus Hub intersections will operate efficiently and the Bus Hub will not have adverse effects on the transportation network. The changes proposed to be made to these two intersections have been developed in consultation with DCC staff and have been agreed in principle. An independent safety

¹⁰ Beca have transposed the information contained in this report into the Design Concept Report attached in **Appendix B**.

audit of the design is currently underway, any necessary changes identified within the safety audit will be incorporated within the final design.

In summary, in terms of intersection performance the analyses have concluded that the changes to bus routes, and intersection changes to improve the efficiency of bus movements, will not have a significant effect on the performance of the various key intersections. The changes in intersection performance forecast are minor and it is predicted they will not result in people changing their routes and therefore will not have wider transport network effects.

The changes in intersection performance will not cause additional congestion in the network. The Bus Hub may result in some low levels of traffic being diverted away from Great King Street, however the surrounding network is operating with space capacity and it is concluded that any diverted traffic would not have a significant effect on the road network.¹¹

In terms of the wider network effects, Traffic Design Group have identified that the removal of buses from part of George Street and Princes Street will result in benefits given this area has a high number of pedestrian movements and has a town centre environment with retail and hospitality activities. The amenity is expected to improve and a perceived improvement in safety for pedestrians is anticipated due to the absence of buses.

An improvement in pedestrian level of service at the Great King Street / Moray Place intersection is anticipated with the installation of traffic signals. No significant changes to cyclist safety and convenience in relation to the existing situation is anticipated.

Transportation Effects within the Bus Hub Site

Changes to the road proposed as part of the Bus Hub involves installing 11 bus bays within the designation site,¹² five on each side of Great King Street and one in Moray Place. In addition, two loading bays will be installed, one either side of Great King Street. A pedestrian crossing is proposed near the centre of the Bus Hub site, and the kerb will be realigned along both side of the Great King Street Bus Hub site to assist bus manoeuvring, improve access visibility and improve pedestrian safety.

To accommodate the Bus Hub, the existing 210m of kerbside parking (which presently provides 38 parking spaces) will be removed within the proposed designation site in Great King Street. This is discussed further below.

Traffic and Pedestrian Generation Effects on the Transportation Network

An increase in the number of traffic movements on this part of Great King Street is expected due to the bus services proposed. At the busiest times, which is expected to be a morning period and an afternoon period, approximately 33 buses will travel north via the Bus Hub and 38 will travel south. In terms of increases in pedestrian movements (assuming 20-30 people per bus) during this peak time, a total of well over 1,000 pedestrian movements per hour could be expected.

Effects on the St Andrew Street / Great King Street and Moray Place / St Andrew Street intersection have been discussed earlier in this report.

¹¹ Traffic Design Group – Summary Report, page 5.

¹² An 11th bus bay is proposed in Moray Place, outside of the designation boundary.

In terms of pedestrian safety, Carriageway has noted that pedestrian movements to and from the Bus Hub are facilitated through the inclusion of pedestrian phases on the (signalised) Moray Place / Great King Street intersection, and a mid-block crossing.

Effects of On-Street Car Parking Removal

The Bus Hub will remove 38 kerbside car parks within the designated site area within Great King Street. In addition, Beca has stated that 11 on-street car parks will be removed on Moray Place to accommodate Bay 11, and as a result of the intersection modifications required to accommodate bus movements, and 1 space will be removed on St Andrew Street. However, kerbside space for four new parks will be available on St Andrew Street, meaning the net gain of three parking spaces on St Andrew St.

Further, the intersections modifications required in the wider network to accommodate the new bus routes may require the removal of on-street car parks, refer Traffic Design Group report, **Appendix G** attached. The designs for these intersection modifications will be finalised in conjunction with the Dunedin City Council. Eleven car parks may be required to be removed.

The report prepared by Carriageway Ltd (refer **Appendix E** attached) has calculated that within five-minute walk of the Bus Hub site (or 350m) the bus stops to be removed or shortened elsewhere in the CBD as part of the bus route changes will make approximately 309m of kerbspace available, which could be used for parking. This is a net gain of 99m of kerbspace that could be used for parking. This could result in an increase of 17 parking spaces if all the freed kerbspace was to be made available for parking.

Further than 350m the Bus Hub, another seven bus stops will be removed, making 82m of kerbspace available which could accommodate 14 car park spaces.

The table below summarises the changes in on-street parking expected to result from the Bus Hub and wider changes to the road network and bus routes:

Table 1: Summary of car parking losses and gains

On-Street car park losses/gains	Losses	Potential Gains
Bus designation site	38	
Intersection modifications: Great King St-Moray Place and St Andrew St-Great King Street	12	4 (approx.)
Intersection modifications in wider network required to improve bus manoeuvres through intersections (approximate)	11	

Removal / shortening of bus stops in wider network within 350m of Bus Hub		55
Removal / shortening of bus stops in wider network beyond 350m of Bus Hub (still in city area)		14
Total	61	73

It is noted that the use of the available kerbside resulting from the removal of shortening of bus stops is a matter for the Dunedin City Council rather than the Otago Regional Council and so the eventual use of this kerbside cannot be pre-empted in this effects assessment.

The Otago Regional Council has consulted with Refined Rig, Smith's Sports Shoes and Payless Party and Lifestyle business owners, and the land owners and occupiers as part of developing the design concept for the Bus Hub. All have expressed concerns about the loss of on-street car parking in front of and in close proximity to their stores, and the limited ability to drive up and stop on-street to shop at these stores. NZ Police, Farmers and the owners of Bransons Bar (located at the corner of Great King Street and St Andrew Street) and Countdown have also raised concerns about the removal of on-street parking on Great King St.

A key effect of the loss of on-street parking is a possible reduction in patronage to the retail shops located on Great King Street immediately adjacent to the designation area. There are three shops that may experience a change in patronage – Refined Rig, Smiths Sports Shoes and Payless Party and Lifestyle. Also, Countdown and Farmers have raised concerns about the loss of kerbside parking.

The development of a Bus Hub is expected to significantly increase footfall in the area, with the potential for in excess of 1000 people being accommodated on the buses during peak periods should the buses be operating with 20-30 people per bus.¹³ Information on current pedestrian movements in the vicinity of the designation site is set out in the table below:¹⁴

¹³ Refer Assessment of Transportation Matters prepared by Carriageway Consulting, page 17.

¹⁴ The information provided in the Table 2 has been provided by Dunedin property valuers who conduct pedestrian counts throughout Dunedin annually. This information is used by the property valuers to calculate value of commercial property based (in part) on pedestrian activity. The pedestrian count information includes all pedestrians passing the identified location, excluding persons under 15 years or persons in school uniforms. These people have been excluded as they are not considered to represent retail/service industry customers.

Table 2: Pedestrian Count information for locations in vicinity of the Bus Hub designation site

Location	2016: 22 June AM (10.15-10.45)	2016: 22 June PM (2.15-2.45)	2015: 17 June AM (10.15-10.45)	2015: 17 June PM (2.15-2.45)
OfficeMax 89 Great King St	38	59	51	64
Dunedin Rock Shop 67 St Andrew St	44	83	69	101
Krazy\$Dealz 279 Moray Place	74	105	71	82

While the closest locations represented in the pedestrian count information are not within the proposed designation site, they provide an indication of pedestrian movements nearby. This information suggests that an increase in pedestrian movements is expected at the Bus Hub site from customers using the bus services. This increase in footfall within the designation area is expected to offset, to some extent, the potential loss of patronage to businesses resulting from the removal of on-street car parks within the designation area.

Further, off-street parking within the Wilsons car park at Farmers and the Wilsons car parking building at 132 Great King Street will be available for patrons to these shops, as well as the on-street parking on nearby streets.

Effects on Adjacent Property Accesses

Some changes to accesses onto Great King Street are proposed to ensure the Bus Hub can operate safely and efficiently. The proposed changes to existing accesses within the designation site include:

- Countdown's access onto Great King Street will be changed from unrestricted movements to left-in, left-out only;
- Wilson car park access onto Great King Street will be changed from unrestricted movements to unrestricted entry, and left-out only;
- The Victoria Hotel access to Great King Street will be changed to exit only and single lane; and
- The Community House Car Park access to Great King Street will be closed, and the access to this car park on Moray Place will be reinstated.

No changes are proposed to the Police Station access. Care has been taken to locate the bus stops so as not to affect sight lines from the existing accesses, in particular for the Police Station access. At the Police Station access, kerb build-outs are proposed to ensure that visibility is maintained when the adjoining bus parks are in use. Further, the Otago Regional Council has undertaken to ensure that bus drivers are cognisant of the Police Station access and its frequent use by vehicles attending emergency situations.



As discussed earlier in this report, the Otago Regional Council has been working closely with the adjacent landowners and occupiers to ensure that adverse effects on these parties are appropriately managed.

Regarding the private land sought to be part of the designation, with the exception of the area of land with the Wilsons's car park, the affected landowners and occupiers have agreed in principle to these changes. The Otago Regional Council is continuing to liaise with Wilsons's car park owner in relation to the designation of this 60.8m² parcel of land.

ENVIRONMENTAL NOISE EFFECTS

There may be an increase in noise resulting from the designation activity at this site. Increases in noise emissions will result primarily from the buses frequenting the site, however it should be noted that the site is currently a highly trafficked area which experiences some heavy vehicle movements therefore existing noise levels are relatively high.

The Dunedin City District Plan includes noise standards which all activities must comply with. For the subject area, the noise standard is the most lenient in the District Plan, reflecting the underlying zoning at this site. The relevant noise limits are:

- 60dBA, Day time;
- 60dBA Night time; and
- Between 9.00pm on any night and 7.00am the following day no noise shall exceed an Lmax of 75dBA measured at the boundary of the site it is within or in any other site.

Further, Section 16 of the RMA also requires that every occupier of land shall adopt the best practicable option to ensure that the emission of noise from that land does not exceed a reasonable level.

Vehicle noise for vehicles on public roads is managed via the Land Transport (Road User) Rule 2004, that applies to vehicles on public roads:

7.4 Noise

- (1) *A driver must not operate a vehicle that creates noise that, having regard to all the circumstances, is excessive.*
- (2) *A person must not create by any means (for example, a car stereo) within or on a vehicle any noise that, having regard to all the circumstances, is excessive.*
- (3) *In determining whether any noise is excessive, regard may be had, in addition to all other relevant matters, to—*
 - (a) *the manner of operation of the vehicle:*
 - (b) *the condition of the vehicle:*
 - (c) *the time of the day when the noise is created:*
 - (d) *the locality where the noise is created:*
 - (e) *the likelihood of annoyance to any person:*
 - (f) *any relevant standard or specification that applies under the Act.*

While the proposed Bus Hub is expected to result in an increase in the ambient noise levels at the site, the adverse effects arising from the noise are considered to be acceptable in this location for the reasons discussed below.

Commercial Environment

The site is predominantly road reserve and the established land uses surrounding the site are commercial activities, and is a busy inner-city street. The existing environment can be expected to have a high ambient noise level relative to, for example, residential areas. This is acknowledged in the District Plan at Policy 9.3.10 which recognises that people living in the Activity Zones cannot expect the same level of amenity encountered in residential zones.

Noise Sensitive Activities

As set out in the site description (refer **Annexure 1**), neighbouring land uses include predominantly commercial retail and car parking activities, as well as the Dunedin Central Police Station. Aside from the Police Station, the typical hours of operation for the retail activities adjacent to the site are 9am to 5.30pm Monday through Sunday, and Countdown supermarkets operating hours of 6am-11pm Monday-Sunday.

One exception is the radio broadcasting studio within Community House. The Otago Regional Council has undertaken to mitigate noise effects arising from the buses using the Bus Hub should the noise impact on the operation of the broadcasting studio, and will continue to work directly with Community House on this matter.

There are no established residential activities immediately adjacent to the proposed Bus Hub designation site. Residential activities and commercial residential activities are provided for as permitted activities in the Central Activity Zone. In order to manage reverse sensitivity effects of locating residential uses in this zone, Rule 9.5.2(x) requires noise insulation and associated ventilation to be provided for residential and commercial residential activities within this zone.

It is also noted that the Bus Hub will result in the removal of bus stops and termini on George St between the Octagon and St Andrew Street. There are established residential activities along George Street that will benefit from the change in bus routes that avoid this location.

Updated Bus Fleet

The Otago Regional Council is transitioning to a more modern fleet of buses which are quieter and discharge less emissions. The main purpose of this transition is to update the bus fleet to provide a better level of service for passengers. By September 2018 all buses on the Dunedin Network will be less than 7 years old.

Overall, it is considered that the use of the site for a Bus Hub is appropriate, and that the anticipated noise generated by the increase in bus movements to and from the site is acceptable in this receiving environment and is an anticipated use of the road network.

HEALTH AND SAFETY EFFECTS

The Bus Hub layout and design has incorporated health and safety considerations. The design has been developed in collaboration with the Dunedin City Council's urban design team and transportation team, as described in the Design Concept Report. Care has been taken to address



existing safety issues at the site through the design, and to ensure that any potential health and safety issues that may arise as a result of the Bus Hub activity are managed through careful design and the provision of security features and adequate lighting. One key example is to provide a pedestrian crossing central to the Bus Hub and to ensure pedestrian are well catered for at the intersections.

A considerable amount of modelling has been carried out to ensure that buses can manoeuvre safely within the Bus Hub. This involved setting up an at scale trial Bus Hub and manoeuvring full size buses through the trial hub.

As noted, the Otago Regional Council is in the process of transitioning the bus fleet to a more modern fleet, which will result in fewer emissions and are quieter than the existing fleet.

ODOUR AND OTHER EMISSIONS

The site is currently used by diesel vehicles ranging from private cars to vans, trucks and larger heavy vehicles. The introduction of frequent bus movements will increase diesel emissions at the site, however the updated fleet that will be in operation will have reduced emissions in comparison to the existing bus fleet operating in the city centre. Modern bus standards limit nitrogen oxides and particulate matter emissions.

EFFECTS ON AMENITY VALUES AND VISUAL EFFECTS

Changes in amenity values and positive visual effects are expected to result from the proposed Bus Hub. The site for the Bus Hub is located within a well-established commercial area of Dunedin's CBD. Adjoining the site are two protected heritage buildings/facade and the site is partially adjacent to the Townscape Precinct.

The proposed Bus Hub will see the development of street furniture, shelter, information and timetable displays and public toilets at the site, along with landscaping. As discussed earlier, the requiring authority has undertaken to provide well designed structures and landscaping that will not detract from the heritage buildings and will visually enhance the site. The Design Concept Report, attached in **Appendix B** describes the iterative design process undertaken by the requiring authority in developing the indicative design for the Bus Hub.

Non-commercial signage will be a feature of the Bus Hub. Well-lit real time displays are proposed that inform customers exactly when buses are due at the hub. Other signage will comprise 'bus stop' signage to direct bus drivers and customers to the correct bus stops for the various routes and wayfinding signage to assist passengers. All signage will therefore be 'directional' or 'instructional' signs, or 'road signage'. This type of signage is appropriate for a Bus Hub and will not be out of place in the receiving environment.

The Bus Hub will be maintained in a clean and tidy order by the requiring authority. There will be an ongoing budget for maintenance and cleaning of the bus stops and associated infrastructure to ensure it remains clean and tidy.

The Bus Hub is expected to increase pedestrian activity at the site. This is expected to be positive for the surrounding area, provided security is maintained. Through the consultation process several parties raised concerns about the potential for increases in unlawful behaviour resulting from the



Bus Hub attracting additional people to the site. Security is proposed with the use of CCTV cameras, with footage to be made public (if practicable) and available to the police, and enhanced street lighting to be installed. Also, the presence of the Central Dunedin Police Station immediately adjacent to this site is likely to discourage unlawful behaviour at the Bus Hub.

The noise resulting from buses frequenting the Bus Hub maybe considered a reduction in amenity values for some. The transition to a more modern bus fleet will assist in managing noise effects on amenity values.

EVALUATION OF CULTURAL EFFECTS

Sections 6 and 7 of the Resource Management Act 1991 provides that the relationship Maori have with their ancestral lands (and other taonga including water) is a matter of national importance, and that those exercising functions over natural and physical resources shall have particular regard to Kaitiakitanga.

Section 8 of the RMA requires that those exercising powers under the Act shall take into account the principles of the Treaty of Waitangi.

The subject site has not been identified as being of importance to tangata whenua. The subject site is fit for the purpose of a Bus Hub given that it is located predominantly within formed road reserve in the Central City Activity Zone. No adverse effects on tangata whenua values are anticipated to result from the designating of this site.

Kai Tahu Ki Oatgo (“KTKO”) has been consulted in relation to the Bus Hub proposal. It has identified that a disturbed midden is located near the corner of Albany and Great King Street, indicating that the area has been used by Maori. It has therefore requested that the Heritage New Zealand Pouhere Taonga Archaeological Discovery Protocol be adhered to for works associated with the Bus Hub. This condition is recommended as a condition of the designation. It is expected that consultation with KTKO will continue through the detailed design phase of the Bus Hub.

KTKO also requested that the landscaping includes native plants, and provided a Maori design/narrative that could be used in the Bus Hub design. The landscape design for the Bus Hub will use native plant species, and the Maori design / narrative is intended to be incorporated in the design. The requiring authority will continue to work with KTKO as the design for the Bus Hub progresses.

CONTAMINATED LAND

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (“**the NES**”) came into effect on 1 January 2012. The NES applies if an activity or industry described in the *Hazardous Activities and Industries List* (“**HAIL**”) is undertaken, has been undertaken, or more likely than not, is being or has been undertaken on the land.

The site of the Bus Hub is predominantly formed road, and this use is long established. Roads are not listed as HAIL sites. Some investigation into the land use history of the smaller parcels of private land that is part of the designation site (adjacent to Great King St) is required. In any case, the



earthworks required on the land outside of the road reserve will be minimal and will achieve the permitted activities thresholds for land disturbance provided for in the NES.¹⁵

¹⁵ Clause 8(3) of the NES provides for 25m³ of soil disturbance per 500m², and that the earthworks activities are no longer than 2 months duration.

ANNEXURE 5: SITE SELECTION/ALTERNATIVE ROUTES AND METHODS

CONSIDERATION OF ALTERNATIVE SITES

The Regional Public Transport Plan 2014 includes the Bus Hub as one of the improvements programmed for the Public Transport Network in Dunedin. The Regional Public Transport Plan identified a need for various different improvements to the public transport network, which had various different solutions. The ones pertinent to the Bus Hub include: *Access to bus information, GoCard top ups, connections with the central city and bus routes will enable passengers to maximise their access to the whole city. The ability to transfer bus in a single zone will enhance this ability.*

The key criteria for suitable site for the Bus Hub a was:

- For a central city location, suitable to achieve the objectives of the Bus Hub/interchange which bus routes can pass through without requiring significant changes to the bus routes;
- For a central city location, close to key pedestrian and retail activities in the city, for convenience of use for customers;
- Minimal retail/business premises with shop frontages facing the street was preferred to minimise effects on businesses;
- Consideration of the possibility of covered shelters at the site, either via existing verandas or new shelters;
- An adequate road width to enable bus manoeuvres and to maintain through traffic functionality;
- Practical opportunities to utilise land beyond the road reserve for amenities, such as public toilets.

Given these constraints, there are very few possible sites for the Bus Hub in the central city. The sites considered by the Otago Regional Council for the Bus Hub are set out below:

- Moray Place (between Lower Stuart Street and George Street).
- Great King Street (between Moray Place and St Andrews Street).
- Intersection of St Andrew Street and George Street (a ‘+’ style intersection hub).
- Moray Place car park (opposite the Town Hall on Filleul Street).
- Filleul Street (behind the Meridian Mall).
- Albany Street (outside the University Library).

The Great King Street site was identified as the preferred site because:

- The road width is sufficient to accommodate the bus stops, and maintain the functionality of the road for through traffic.
- The site is in close proximity to the central business and George Street shopping area in the city.

- Effects of road closures for events are minimal. Currently, road closures for events usually close the Octagon, meaning all the bus services have to divert to avoid the closed road. Road closures do not routinely affect Great King Street so the bus services can be maintained.
- Minimal changes to the central city bus routes is necessary for bus services to access the Bus Hub.
- The site is in close proximity to the Dunedin Public Hospital, enabling a service connection with the hospital.
- A relatively large proportion of land immediately adjacent to the road reserve is not occupied with buildings, rather public and private car parking areas occupy much of the adjacent land. This is beneficial as these activities are less likely to be adversely affected by the Bus Hub. The site is therefore considered to have minimal impact on businesses when compared with the alternative sites considered.
- Given the absence of buildings built to the road boundary within a large proportion of this site, the site presents the possibility of the Otago Regional Council utilising some of this adjacent land (with agreement of the landowners) for Bus Hub amenities and opportunities for future facility development.
- The site is considered to have a higher level of security to other sites considered because of the proximity to the Central Police Station.

CONSIDERATION OF ALTERNATIVE METHODS

Alternative methods for providing the services facilitated by the Bus Hub have been considered. The two options include retaining the status quo, that is not implementing any changes to the existing bus service in Dunedin; and developing an off-street bus hub facility.

Option 1, retaining the status quo has been dismissed as this option would not achieve the objectives and outcomes of the Otago Regional Council's Public Transport Plan, in particular, the objectives of the new Dunedin network. In this plan, the Otago Regional Council sets out significant changes to be implemented to public transport services in the Dunedin network. These changes include a new route structure with simple, direct routes, coupled with regular frequencies to provide Dunedin residents and visitors with an improved public transport service. The development of a central city Bus Hub is proposed as part of this suite of changes to assist in the coordination of bus services from a central city location, the provision of bus route and timing information and ticketing, and the ability to transfer buses with ease.

Option 2, establishing an off-street bus hub, has been dismissed as it is not considered to be a viable option. The business case developed for NZTA funding of the overall network changes would not support the funding required to develop and operate an off-street facility in Dunedin.

ANNEXURE 6: REASONS WHY THE DESIGNATION IS NEEDED

NEED FOR THE DESIGNATION

The Objectives of the Requiring Authority

The requiring authority is required to show that the public work and the designation will meet its objectives. Accordingly, it is first necessary to set out the objectives of the requiring authority, and then demonstrate that the proposed works to be carried out in terms of the designation will meet these objectives.

The Otago Regional Council seeks to ensure that the variety of functions, as outlined below and earlier in this Notice of Requirement, can be carried out efficiently and effectively. The operative Dunedin City District Plan and the proposed 2GP do not provide for Bus Hub activities as a permitted activity in any zone. The Otago Regional Council requires the designation in the Dunedin City District Plan for the Bus Hub site to ensure the efficient and effective development, operation, maintenance and future upgrading of the central city Bus Hub. A designation is an appropriate planning method to ensure that the Otago Regional Council can provide the works and services at the proposed site in a timely and efficient manner whilst appropriately managing effects on the environment.

The proposed Bus Hub will assist the requiring authority in achieving its objectives as the authority responsible for managing land transport for the Otago region. To manage land transport in the Otago region, the Otago Regional Council prepares and implements the following high-level documents:

- Otago Regional Land Transport Strategy 2011;
- Otago Southland Regional Land Transport Plans 2015-2021; and
- Regional Public Transport Plan 2014.

Otago Regional Land Transport Strategy

The Otago Regional Land Transport Strategy 2011 – 2041 sets the direction for Otago's land transport system for the next thirty years. This strategy covers both road and rail. The Strategy is prepared in accordance with the Land Transport Management Amendment Act 2008. The strategy will guide the production of the next two regional land transport programmes for Otago (the 2012-15 and 2015-2018 programmes) and the new long-term plans 2012-2022 by Otago Regional Council and each of Otago's territorial local authorities. The strategy will also guide development of a new regional public transport plan (2011/12) and the transport section of a new regional policy statement.

The goal of the Otago Regional Land Transport Strategy is to provide a *“safe transport system that provides connections between communities, leading to regional prosperity, the creation of wealth and employment, social inclusion and the minimisation of adverse environmental effects.”*

There are two transport outcomes identified as being important in reaching this goal:

- 1.1 *Sustainable, demographically appropriate transport infrastructure and services that serves and links resilient communities.*
- 1.2 *The ability of individuals, families, households and businesses to undertake necessary travel and carriage of freight in safe, healthy, convenient and affordable ways, with travel constrained*



only by the choices that people make (i.e. the realities of residential and business locations)

Most specific to this Bus Hub Notice of Requirement, the objective for public transport (and those agencies expected to implement the objective) include:

- Public transport planning; contracting of bus services, where required; funding of bus shelters in integrated public transport networks, when not funded by a territorial local authority. To be undertaken by the Otago Regional Council.

Output 5.2 of the Otago Regional Land Transport Strategy relates to public transport services, and seeks to achieve: “Viable public transport services meeting the needs of Otago's communities”.

Specific outputs sought to achieve this include:

- Public transport networks operating within major centres (Dunedin, Wakatipu Basin) (Output 5.2.1).
- Viable public transport services in Otago (Output 5.2.3):
 - support community well-being through mobility, building social integration and participation and assisting economic development;
 - help to ensure community resilience when external events (such as a rapid rise in the price of oil, or a shortage of fuel) disrupt normal travel patterns;
 - provide an alternative to car travel in urban areas and along key corridors, which benefits as a whole the communities in which those services operate;
 - offer those in urban areas personal choice in travel mode, assisting the transport disadvantaged and people with disabilities, and catering to those studying/working at the tertiary campuses; and
 - through their existence, serve to encourage intensive residential development in areas where growth can be adequately supported, providing opportunity for people to be less car-dependent if they so choose.

The Otago Regional Land Transport Strategy includes the expected delivery mechanism for Output 5.2, which is one strategy proposed to achieve Output 5.2, that states that the region will “invest in two new Bus Hubs in Dunedin, within the campus area and near the Exchange, as long-lasting public transport infrastructure needed for resilience. Maintain a watching brief on alternative public transport vehicle technologies”.¹⁶ As discussed earlier in this Notice of Requirement, the Bus Hub will improve the connectivity of the bus routes by providing a central transfer area to change to different routes thereby improving the usability and efficiency of the public transport service. It is necessary for to achieve the objectives of the requirement authority.

The proposed Bus Hub is needed to achieve the public transport related outcomes established in the Otago Regional Land Transport Strategy, which specifically identifies the centrally located Bus Hub as an outcome to be achieved. It is noted that the location of the Bus Hub was refined through the Otago Southland Regional Land Transport Plan, as discussed below.

¹⁶ Page 44 of the Otago Regional Land Transport Strategy,

As noted above, the Dunedin City District Plan does not provide for Bus Hub activities as a permitted activity in any zone. The Otago Regional Council requires the designation in the Dunedin City District Plan for the Bus Hub site to ensure the efficient and effective development, operation, maintenance and future upgrading of the central city Bus Hub.

Otago Southland Regional Land Transport Plan 2015-2021

The Otago Southland Regional Land Transport Plan sets out the objectives, policies and projects for Otago and Southland in order to establish the vision of transport in the future, and how the 10 local authorities in these two regions, and the NZ Transport Agency, intend to achieve this by funding and providing transport services and infrastructure.

The development of the Dunedin Bus Hub is identified as a priority project for Dunedin. The proposed Bus Hub is discussed as follows:

The ORC are planning a Central City Bus Hub. This project is to enhance the Bus Hub to provide centralised facilities for other transport modes such as walking, cycling, taxis and intercity buses / coaches.¹⁷

Relevant objectives of the Otago Southland Regional Land Transport Plan that will be achieved by the development of the proposed Bus Hub include:

Objective 4.5: Public passenger transport is provided in urban areas and on main routes;

Objective 4.6: Public transport use and infrastructure in Dunedin and the Wakatipu Basin grows steadily - providing a fully accessible public transport service, easing congestion where needed, reducing car dependency in urban areas, and ensuring resilience.

As with the Otago Regional Land Transport Strategy, the Otago Southland Regional Land Transport Plan continues with the objectives to provide public passenger transport services in Dunedin and has identified the central Dunedin Bus Hub as an important project to deliver an efficient and effective passenger service to encourage the reducing of car dependency through providing a well-connected and functional public transport service.

Regional Public Transport Plan 2014

The foundation of the Regional Public Transport Plan 2014 is the Land Transport Management Act 2003 (LTMA). In this plan, the Otago Regional Council sets out significant changes to public transport services in the Dunedin network. The relevant provisions from the Regional Public Transport Plan 2014 is attached in **Appendix F**.

These changes include a new route structure with simple, direct routes without variation, coupled with regular frequencies to provide Dunedin residents and visitors with an improved public transport service. The development of a central city Bus Hub is proposed to assist in the coordination of bus services from a central city location, the provision of bus route and timing information and ticketing, and the ability to transfer buses with ease.

¹⁷ Refer Appendix B of the Otago Southland Regional Land Transport Plan 2015, page 96,

Section 4 of the Regional Public Transport Plan describes what the Otago Regional Council seeks to achieve. The goal is to provide “Viable passenger transport meeting the needs of Otago’s communities. Objectives include:¹⁸

Passenger transport that:

- supports community wellbeing through mobility, building social integration and participation, and assisting economic development;
- provides an alternative to car travel in urban areas and along key corridors to benefit as a whole the communities in which those services operate;
- offers those in urban areas personal choice in travel mode, assisting the transport disadvantaged and people with disabilities and catering to those studying/working on the tertiary campuses;
- helps to ensure community resilience when external events (such as a rapid rise in the price of oil or a shortage of fuel) disrupt normal travel patterns;
- serves (through its existence) to encourage intensive residential development in areas where growth can be adequately supported, by providing opportunity for people to be less car-dependant if they choose;
- provide fully accessible public transport in urban areas and along key corridors;
- ensures that space is available for public transport;
- ensures that idling of buses does not pose unnecessary health risks to the community;
- realistic levels and quality of service; and
- public transport users are willing to pay an adequate proportion of costs needed to operate services viably.

To achieve these goals, the Regional Public Transport Plan sets out the framework for a new public transport service in Dunedin. This new service provides a structure whereby new bus routes are centralised at the centre city Bus Hub.¹⁹ Section 5 sets out the objective for the new network structure as follows:

The objective of improving the Dunedin public network is to create an affordable network that:²⁰

- grows patronage with less reliance on public investment by meeting customer needs;
- is simple to understand, and easy to use and communicate;
- gets people generally where they want to go, when they want to go, comfortably, conveniently, and safely; and
- is based on a design that recognises that people walk or cycle to/from bus stops.

¹⁸ Page 44 of the Regional Public Transport Plan 2014,

¹⁹ Refer Section 5 of the Regional Public Transport Plan 2014,

²⁰ Page 47 of the Regional Public Transport Plan 2014,

The Otago Regional Council proposes to implement the following actions to establish this new network that relate to the proposed Bus Hub:²¹

- coordinating timetables in the central city;
- simplifying routes;
- simplifying and standardising frequencies;
- developing a central city Bus Hub;
- continued improvements to the timetable book and on-street information;
- pricing of fare products to encourage modal shift while ensuring the long term financial viability of the network;
- bike racks on all buses and explore the opportunity for bike lockers at the Bus Hub; and
- make the entire bus journey accessible.

The development of a centrally located, modern, efficiency managed, user friendly Bus Hub in central Dunedin is considered to be key to the success of the changes being made to the public transport service to achieve these key objectives of the Regional Public Transport Plan.

In summary, the designation is considered to be an appropriate mechanism to provide for the Bus Hub, which is required to achieve the Otago Regional Council's objectives, as set out in the above-mentioned plans, for public transport in Dunedin. A designation will ensure that the Bus Hub can be managed efficiently and effectively by the requiring authority. A designation is an appropriate planning method to ensure that the Otago Regional Council can provide the works and services at the proposed site in a timely and efficient manner whilst appropriately managing effects on the environment.

²¹ Page 56 of the Regional Public Transport Plan 2014,

ANNEXURE 7: CONSULTATION

Public Consultation

Public consultation on the Bus Hub proposal has been ongoing from the proposals inception in 2014 through to the final preferred site selection. The following sets out a timeline of the development of the Bus Hub proposal and the public involvement in that process:

- The need for a centrally located Bus Hub was identified by the Otago Regional Council in a media release in 2014.
- The Central Dunedin Bus Hub was included in the Regional Public Transport Plan 2014, that was made operative on 23 December 2014, after a consultation process.
- The Central Dunedin Bus Hub proposal was included in the Otago Southland Regional Land Transport Plans 2015, which was notified for public submissions on 4 February 2015. Two submissions were lodged in support of the Bus Hub. No submissions opposing the Bus Hub were lodged.
- An article featured in the Otago Daily Times on 16 March 2016 which identified the Otago Regional Council's preferred site for the Bus Hub.
- A joint briefing for Otago Regional Council and Dunedin City Council councillors, media and key stakeholders in late November 2016.
- The Otago Regional Council held open days during which the public were invited to view static displays, including two concept plans for the Bus Hub, and were invited to provide feedback on the Bus Hub design. The open days were held between 6-12 December 2016.

The outcomes of the open days and wider community engagement, ie via social media, website advertising etc, included consideration comments from the public on the design of the Bus Hub. A total of 245 written responses were received and Council staff spoke to 293 individuals; A schedule summarising the feedback responses is attached as **Appendix I**, along with a copy of the feedback form. The Council's web-page for the Bus Hub community engagement experienced 1,454 views;

Key feedback included:

- Elements of most important to people were:
 - the ability to purchase Go-card and top-up Go-cards at the site;
 - provision of rubbish bins, provision of sheltered walkways;
 - wifi;
 - clocks,
 - a heated waiting area;
 - an ATM;
 - help-points and security;
 - bicycle storage;
 - community art; and



- coffee kiosk and water fountains.

Stakeholder Consultation

Heritage New Zealand considered the proposed bus shelter adjacent to Community House to be inconsistent with the intent of the District Plan protection (Category 2 historic place). Where it is necessary for a bus stop to be sited in close proximity to a heritage building, a more bespoke approach should be taken which either eliminates the bus shelter; or through design and repositioning significantly reduces its visual aesthetic and economic impacts.

Through the design process, Beca and the requiring authority have worked closely with the Dunedin City Council urban design team and the Dunedin City Council heritage advisors to ensure that the design of structures in proximity to this heritage building are appropriately designed. The same process will be undertaken with the design of the public toilets. Should the full canopy design be pursued in the roadway adjacent to this building, the requiring authority will consult with Heritage New Zealand over the design of this structure where it is in proximity to the heritage building.

Input of the Dunedin City Council's urban design team has been instrumental in the development of the Preliminary Design for the Bus Hub, and this iterative process will continue through the detailed design phase.

Consultation with KTKO was undertaken by Beca. KTKO has advised that there is a recorded Maori archaeological site near the corner of Albany and Great King Street, being a disturbed midden, indicated that the area has been utilised in the past by Maori. KTKO requested that a condition be imposed requiring that the Heritage New Zealand Pouhere Taonga Archaeological Protocol be adhered to during any construction works. KTKO has also requested that native plants are used for the landscaping, and have provided information regarding Maori design/narrative which could be incorporated in the design of the Bus Hub. KTKO requested that, if the information they provided is used, then KTKO have the opportunity to view the narrative prior to the development of the project.

Consultation with Adjacent Landowners/Occupiers

The requiring authority undertook consultation directly with the land owners and occupiers immediately adjacent to the subject site, and those whose land is proposed to be within the proposed designation site. This consultation informed these parties of the selected site for the Bus Hub and the requiring authority's intention to develop the Bus Hub at the subject site. The consultation also informed neighbouring land owners and occupiers of the requiring authority's intention to designate this Bus Hub site in the Dunedin City District Plan.

A common concern raised amongst many adjacent landowners and occupiers was the loss of on-street parking within the designation area.

Also, most adjacent landowners were concerned about construction activities, and the possible disruption this may cause to business. Otago Regional Council outlined its intention to undertake construction in two phases; footway construction first, followed by carriageway construction in the summer. Otago Regional Council is exploring the cost implications of constructing the footway at night but cannot commit to this at this stage. The roadway will be constructed at night during the summer months to reduce the risk of frost and ensure that the materials used will set properly. Otago Regional Council will not undertake construction activity during the busy Christmas retailing period.

The Otago Regional Council has made undertakings with some adjacent land owners or business operators to mitigate potential adverse effects arising from the designation. These are summarised below, and are detailed in the correspondence to adjacent landowners/occupiers contained in **Appendix I** attached:²²

Break Bar and Café (Great King Street Properties)

- Allowing temporary use of Bay 10 for loading for the Break Bar and Café, during pre-agreed times,²³ given the on-street parking on Great King Street outside of this building will not be available.
- Security will be installed (CCTV cameras) to manage the increase in patronage in this area, and possible unlawful behaviour;
- In response to concerns raised about the fumes and noise associated with increased bus movements, it is confirmed that a new fleet of buses, being introduced to the network, will discharge lower emissions and be less noisy than the majority of the existing fleet currently operating in the city centre.

Bransons Bar

- A loading bay (between Bay 4 and 5) will be provided for use by nearby businesses, including Bransons Bar. It is noted that the kerb buildouts on St Andrew Street will also free up additional space for loading/parking. However, the ultimate use of this area is under the mandate of the Dunedin City Council.

Community House

- The closure of the Community House carpark entrance onto Great King Street is supported by Community House as it considers there to be safety issues arising from pedestrians using this carpark as a shortcut between Moray Place and Great King Street.
- The Otago Regional Council has undertaken to work with Community House on the upgraded design of the Moray Place entrance to the Community House carpark.
- In response to Community House's concerns about noise from the buses affecting the broadcasting studios in this building, the Otago Regional Council has agreed to fund appropriate and reasonable improvements to the sound proofing, if this is an issue.
- In response to Community House's concerns about bus fumes entering the existing air intakes on Great King Street, the Otago Regional Council has advised that the new buses will discharge less emissions. The Otago Regional Council has undertaken to commission an independent investigation into the air intakes and potential impact of bus emissions. In the event that this investigation identifies an issue, Otago Regional Council has undertaken to fund the mitigation works identified by Community House;

²² It is noted that contact details have been removed from these letters for privacy reasons.

²³ Loading within Bay 10 will be available between services at weekends, or at certain times between services on weekdays during the off-peak period (between 9.30am and 3.00pm).

Countdown

- No changes to the access onto Moray Place are proposed. The access onto Great King Street will be changed to left-in, left-out.

Farmers /Wilsons Car Park

- No changes to the width of the entrance to the carpark is proposed;
- Vehicles exiting the carpark will be left-turn only, inward vehicles will remain left and right turn-in;
- Bays 4 and 5 have been relocated further from the Great King Street entrance to Farmers;
- Operational hours for the Bus Hub are currently expected to be approximately 06:00am to 12:00am (midnight), and buses will not be permitted to park in the Bus Hub for long periods of time.

Refined Rig (H E Thomas Ltd)

- The existing issue of high-sided vehicles hitting the veranda of Refined Rig will be mitigated by building out the corner of the subject intersection and changing the camber of the road in this location.

The owners of Refined Rig have responded to the letter from the Otago Regional Council. They have reiterated that they remain concerned about the reduction of available parking and that the construction works could result in loss of revenue for their business. The Otago Regional Council is seeking to ensure that the majority of the construction works occur outside of normal business hours. Also, the construction works will be carried out in a staged manner.

NZ Police and Ngai Tahu Justice Holding Ltd (part owners of the Police Station site)

- In response to concerns raised about congestion and pedestrian safety, and in order to ensure the Bus Hub will be functional, extensive modelling has been undertaken. The changes to the road network in the Bus Hub site to manage traffic flows include removing the right-turn option from Great King Street into Moray Place and providing a pedestrian crossing on Moray Place and providing a pedestrian crossing in the centre of the Great King Street;
- The pedestrian desire line through Community House car park will be closed.
- Vehicle access to the Police Station will be maintained and kerb build-outs will be provided to ensure adequate visibility for cars exiting the police station. The Otago Regional Council will ensure bus drivers are aware of the potential for police emergency access / exit movements.
- The bus shelter proposed to be located in front of the Police Station will not have front panels in order to reduce the footprint.

The NZ Police responded to the letter from the Otago Regional Council. NZ Police have requested that consideration be given to installing lights on the Cumberland Street access to the police station, similar to the lights installed at the Dunedin Central Fire Station. The requiring authority has advised NZ Police that it is willing to support in approaching NZTA on this matter.

Otago Polytechnic

- A shared loading bay will be provided on Great King St, between Bays 6 and 7 which can be used for servicing to support the Otago Polytechnic operation within the Scott and Wilson building at the corner of St Andrew Street and Great King St.

Pan Shen Holdings Ltd (own former \$2 Shop and land used for Victoria Hotel car parking)

- Concern for its Tenants
- The vehicle access to Great King Street to become exit only and adjacent land is to be leased by the Otago Regional Council (subject to separate agreement with both parties). A bus shelter is proposed to be located at this site.

Payless Party and Lifestyle

- In response to concerns raised about loading activities, a shared loading bay is proposed between Bays 6 and 7, which is in close proximity to Payless Party and Lifestyle. If this is not sufficient for their activities, the Otago Regional Council advised that it may be possible to accommodate a limited number of larger vehicles during pre-agreed off-peak periods.
- No bus shelters are proposed in front of this shop frontage.
- Improved lighting and CCTV will be used to enhance security in the area.

Smiths Sports Shoes

- Concerns raised about loading bays will be addressed via the shared loading bay to be provided between Bays 6 and 7. The Otago Regional Council will also work with Smiths Sports Shoes to accommodate special events loading at pre-agreed dates and times by temporarily relocating services from Bay 7.
- In response to concerns about unlawful behaviour (loitering, graffiti) CCTV will be included in the design.
- In order to minimise obstruction to the shop profile and visibility, no street furniture will be located in front of the shop, and timetabling of bus will be managed to minimise idling time in front of the shop.

Wilson Car Parking

- The access to the Wilsons car park will not change in width, however, exiting vehicles will be permitted to turn left only.

The requiring authority is committed to working closely with adjacent to land owners/occupiers throughout the development of the Bus Hub.





A



APPENDIX A

Designation Plan



FOR INFORMATION
NOT FOR CONSTRUCTION

PRELIMINARY
NOT FOR CONSTRUCTION

B		DRAWING UPDATED	JK	GM	28.04.17
A		FOR INFORMATION	JK	GM	12.04.17
No.	Revision	By	Chk.	Appd.	Date

Drawing Originator:

Beca **DESIGN BRAND**

Original Scale (A1)	1:250	Design Drawn	AJS	30.03.17	Approved For Construction*
Reduced Scale (A3)	1:500	Design Check			Date
*Refer to Revision 1 for Original Signature					

Client:

Otago Regional Council

Project:

**DUNEDIN BUS HUB
GREAT KING STREET**

Title:

**PROPOSED DESIGNATION
PLAN
SHEET 2 OF 2**

Discipline	CIVIL ENGINEERING
Drawing No.	3810322-CE-K011
Rev.	B



FOR INFORMATION
NOT FOR CONSTRUCTION

PRELIMINARY
NOT FOR CONSTRUCTION

C	DRAWING UPDATED	AJS	GM	22.06.17
B	DRAWING UPDATED	JK	GM	28.04.17
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Drawing Originator:

Beca **DESIGN BRAND**

Original Scale (A1)	1:250	Design Drawn	AJS	30.03.17	Approved For Construction*
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Title:

**PROPOSED DESIGNATION
PLAN
SHEET 1 OF 2**

Discipline	CIVIL ENGINEERING
Drawing No.	3810322-CE-K010
Rev.	C



APPENDIX B

Design Concept Report,
prepared by Beca

Report

Dunedin Bus Hub - Updated Concept Design Report for Designation

Prepared for Otago Regional Council

By Beca Limited (Beca)

1 June 2017

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This report has been prepared by Beca on the specific instructions of our Client. It is solely for our Client's use for the purpose for which it is intended in accordance with the agreed scope of work. Any use or reliance by any person contrary to the above, to which Beca has not given its prior written consent, is at that person's own risk.



Revision History

Revision N°	Prepared By	Description	Date
C	Graham McIlroy	For Notice of Requirement	1/6/2017

Document Acceptance


Action	Name	Signed	Date
Prepared by	Matt Turner		
Reviewed by	Andy Lightowler		
Approved by	Andy Lightowler		1/06/2017
on behalf of			

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Appendices

Proposed Bus Hub Design Plans

3810322-CE-K010 Rev C

3810322-CE-K011 Rev B

1 Introduction

This report has been produced by Beca Limited (Beca) for Otago Regional Council (ORC). It summarises the concept design and has been updated to reflect progress during the preliminary design stage.

The Concept Design has been developed by Beca to accommodate a minimum of ten bus stops on Great King Street and one stop on Moray Place (the 'Hub'). It is a requirement that buses can access the Hub from Moray Place to the south of the Hub and St Andrew Street to the north.

The report provides commentary on the main design deliverables listed below:

- Transportation / Civil Concept Layout
- Land Acquisition Plan
- Bus Shelter Preliminary Design
- Landscape Design Report, including:
 - General Arrangement
 - Materiality Details
 - Street Furniture Details
 - Planting Details
 - Pedestrian accessibility / desire line plan

2 Transportation / Civil Design

2.1 Bus Hub Layout Design Process

The development of the layout for the Bus Hub on Great King Street and the intersections with Moray Place and St Andrew Street, including the alternative options considered, is documented in the Beca Report 'Dunedin Bus Hub – Further Concept Development', dated 16 December 2016. The development process included the following stages:

- Concept layout development
- Vehicle swept path analysis
- Full scale layout trials to test bus movements
- Intersection traffic modelling and concept design.

2.2 Bus Hub Layout

2.2.1 Bus Bay Layout

The angle of the majority of the bus bays has been set at five degrees from the existing street edge, optimising the balance between length of street edge required by each bay, ease of bus movements (dynamic capacity), footway and road width and bus accessibility for pedestrians.

Two bays are located parallel to the street edge for the reasons explained below:

- Bay 1: vehicle tracking has determined that buses turning right from Moray Place into Great King Street can adequately enter Bay 1 straight on. This arrangement offers improved clearance to vehicles passing Bay 1.
- Bay 11 (Moray Place): In order to integrate this bay into the streetscape, aligned with the on-street parking, it is necessary for it to remain parallel to the existing kerb alignment.

The kerb alignment will guide bus drivers manoeuvring into the bays and provide opportunities to differentiate queuing and movement zones along the footpath. The kerb alignment has been smoothed to minimise the risk of wheels striking exposed corners, as well as to minimise drainage issues and maximise aesthetic appeal.

The bus bays are spaced at minimum 24m centres along the street edge, based on swept path analysis of 14.5m long buses, and the outcome of the bus layout trials. This provides appropriate spacing for effective bus movements in and out of the bays.

The rear of Bay 4 is located 3m from the Farmers entrance door to reduce the potential for bus exhaust fumes to be drawn into the shop.

All proposed bus movements have been tested by a combination of swept path analysis and full scale layout trials that verify that all buses can enter and leave each bay simultaneously without any movement conflicts.

2.2.2 Operational Constraints

A number of operational constraints exist with the proposed layout:

- The design is not intended to cater for buses turning left off Moray Place into Great King Street. ORC have confirmed that this turning movement is not required for the Dunedin Public Transportation Network.
- In order to maximise the available space for other bays along Great King Street, Bay 1 is located as close to Moray Place as possible. The positioning of Bay 1 will enable vehicles turning left and right from Moray Place to pass a stationary bus in Bay 1.

2.2.3 Bus Hub Road Markings

A wide flush median is proposed on Great King Street through the Hub. All necessary bus movements can be performed within the respective lanes up to the centreline of the median. The median will minimise the risk of any minor overrun encroaching into the path of oncoming traffic. The median also provides additional turning room for buses turning left from St Andrew Street into Great King Street.

2.2.4 Moray Place Bus Bay

For inter-regional services Bay 11 on Moray Place is located as close as practicable to the Bus Hub, on the north-east side of Moray Place and to the south of the Moray Place Countdown access, while maintaining adequate visibility for vehicles turning left and right from the access.

2.2.5 Mid-Block Pedestrian Crossing of Great King Street

A mid-block pedestrian crossing is proposed to be provided on Great King Street. Its position has been determined through consideration of the anticipated future pedestrian desire lines through the Hub area, as well as its integration into the preferred bus bay and private access locations.

The kerb build-outs have been refined to maximise visibility for both pedestrians and vehicles, as well as increasing pedestrian waiting areas. The width of the pedestrian crossing is 3m, and will be flush with the road surface as requested by ORC's operators.

The introduction of traffic signal control to the mid-block pedestrian crossing may delay both pedestrians and general traffic, and would not be in keeping with the general public realm 'look and feel' that the Design Team are trying to achieve along Great King Street. Furthermore, the introduction of traffic signals would have greater installation and maintenance costs. Hence the crossing is not recommended to be signalised.

The road surface will not be raised at the pedestrian crossing point. The main purpose of a raised table is to encourage low vehicle speeds, however the Bus Hub layout is anticipated to promote sufficiently low speeds without the requirement of further traffic calming. A raised table would increase passenger discomfort, as well as increasing construction costs. Hence it is proposed that the road level is not raised at the crossing point.

2.3 Private Access Impacts

2.3.1 Access Design

As part of the refinement of the concept layout design, the geometric design of the private accesses on Great King Street was reviewed. Access locations and widths have been retained as existing, with the exception of the \$2 Shop and Community House accesses discussed below. Kerb build-outs have been provided to improve visibility for vehicles exiting the accesses.

Accesses are to be designed to provide priority to pedestrians. The kerbing will be finalised at the detailed design stage.

2.3.2 Farmers Car Park

Swept path analysis undertaken at the access indicates that a standard 11.5m length rigid delivery truck can enter and exit the access in both directions.

2.3.3 Community House

The access point to Community House is proposed to be closed in order to provide sufficient room for five bays along the northbound carriageway of Great King Street. An alternative access point is proposed on Moray Place.

2.3.4 \$2 Shop

Following discussion with ORC, a 3m wide access is to be retained under the canopy of the \$2 shop to allow one-way left turn only from the Victoria Hotel.

2.4 Intersection Design

2.4.1 Design Constraints / Objectives

The modifications to the intersections are intended to:

- Cater for the forecast increase in bus volumes
- Improve accessibility and safety for pedestrians in the vicinity of the Hub, and cater for the anticipated increase in pedestrian traffic
- Minimise impact to local and wider network.

2.4.2 Great King Street / Moray Place Intersection

The proposed signalised intersection option has been recommended as the best balance of safety, performance, minimisation of disruption and cost:

- Signalising provides the opportunity for greater control over vehicle movements, including priority for right turning buses
- The right turn from Great King Street onto Moray Place will be banned. This will provide a minor improvement in intersection performance, reduce vehicle movements through the Hub and simplify the intersection design.
- Partially protected pedestrian crossings are provided
- Following instruction from Dunedin City Council (DCC) and ORC, a single lane is proposed for the south-east approach from Moray Place. This minimises on-street parking removed under the new layout.
- Revised kerbline with a larger 6m radius to guide vehicles turning left from the Moray Place north-west approach into Great King Street, to provide sufficient turning room for buses turning right from Moray Place into Great King Street and to provide additional waiting area for pedestrians. The build-out of the kerb on Moray Place also provides an improved location for the primary signals and improved visibility for crossing pedestrians, which allows provision of on-street parking closer to the intersection.
- A kerbed build-out on the south-east pedestrian crossing on Moray Place provides pedestrian / vehicle intervisibility, as well as forming a gateway into the Hub. The build-out will be designed to be deconstructable to allow future layout changes.
- Kerbed pedestrian island on the Moray Place north-west approach will aid in slowing speeds of southbound traffic, as well as providing a location to position signals and forming a gateway into the Hub area
- Revised kerbed pedestrian island on Great King Street to optimise clearance for buses. This island guides vehicle turning movements and segregates opposing traffic on Great King Street (particularly preventing vehicles turning right off Moray Place into Great King Street from cutting the corner). It also provides a central refuge for the pedestrian crossing and a location to place signals.

2.4.3 St Andrew Street / Great King Street Intersection

The proposed upgrade to the signalised intersection has been recommended as the best balance of safety, performance, minimisation of disruption and cost:

- The Great King Street south approach is reduced to one lane to allow effective bus movements
- The lane designation on St Andrew Street east approach is revised to provide a dedicated left turn lane into Great King Street. The width of the exit and through / right turn lanes on St Andrew Street are reduced to the desirable minimum 3.5m and the left lane moved as far right as possible to allow effective bus movements. A number of additional on-street parking spaces are provided.
- Great King Street north approach lane designation is as existing
- St Andrew Street west approach is reduced to two lanes (including a dedicated right turn lane with its limit line set back to accommodate buses turning left from Great King Street onto St Andrew Street)
- Modified kerblines to reduce risk of large vehicles hitting the Refined Rig canopy, to help guide buses turning left and right from St Andrew Street into Great King Street, and help buses turning left from Great King Street into St Andrew Street, as well as providing a larger waiting area for pedestrians at the intersection. Furthermore, the existing signals under the Refined Rig canopy

can be relocated to the kerb build-out. This will allow signal aspects to be mounted at the correct height, improving visibility and access for maintenance.

- Option to provide dedicated phase for buses turning right from St Andrew Street onto Great King Street during peak bus times.

There is evidence that the Refined Rig canopy, located on the south-east corner of the intersection, has been struck by vehicles in the past. The canopy does not extend past the kerblines, hence it appears that any previous impact is a result of vehicles cutting the corner or overhang of the vehicle body. The refined concept design has been subject to swept path analysis, and this demonstrated that all bus movements can be undertaken without buses conflicting with the canopy.

2.5 Parking

2.5.1 On-Street Parking

The minimisation of the loss of on-street parking has been considered throughout the design process. A number of new on-street parking spaces are provided on St Andrew Street. The net parking spaces removed will be approximately 46 spaces on Moray Place, Great King Street and St Andrew Street.

There is an existing 12m 'P5' loading bay located on the northbound carriageway of Great King Street outside Farmers / the Stadium Sports Bar. Although it is not possible to provide a 12m bay, three 6m loading bays have been incorporated into the refined concept design.

Swept path analysis has confirmed that the surrounding bus bays can be fully operational when the loading bays are occupied. However, to reduce congestion, it is recommended that a timed restriction is implemented to restrict usage during peak hours.

2.5.2 Private Parking

A total of 2 parking spaces in the Community House car park will be removed to make way for the shelters, bike storage and toilet facilities.

2.6 Detailed Design

2.6.1 Kerbing Types

Bus operators expressed their concerns relating to the types of kerbs that were proposed to be used to construct kerbed build outs, as they felt that buses, as well as other vehicles, will inadvertently strike these build outs, resulting in tyre or wheel damage. To mitigate these potential issues, it is envisaged that appropriate kerbing with rounded edges will be incorporated into the design at the Detailed Design stage of the project.

It is envisaged that Kassel type kerbing with a 180mm upstand will be used at each bus bay. The use of this type of kerb will ensure that:

- Bus drivers can ensure the vehicle is completely parallel with the kerb
- Bus wheels are not damaged upon entry to the bay
- Buses are not required to 'kneel' to enable boarding and alighting.

Consideration in the developed design has been given to ensuring that rainwater is not directed towards existing properties. Since kerbs are proposed to be higher than existing kerbs, this has required a mono slope carriageway design surface from west to east to enable both footpaths to continue to drain towards the carriageway. The current carriageway design has crossfall in both

directions from the centreline. The western side, i.e. upslope, will be a kerb only as it does not require a channel.

2.6.2 Concrete Planters

Bus operators expressed their concerns relating to the proposed placement of concrete planters throughout the Hub, as these could pose a significant risk to errant buses. No concrete planters are proposed, as all available footpath space needs to be used to facilitate safe passenger waiting and pedestrian movements between stops.

2.6.3 Kneeling Buses

Buses will not be required to 'kneel' in order to facilitate boarding and lighting activity. It is proposed that each bus stop will be raised to a sufficient level to avoid the need for buses to 'kneel' at stops, however, this is considered a detailed design issue that will be addressed appropriately at a later stage.

3 Urban Design

3.1 Design Statement

The proposed design gives the opportunity to turn Great King Street into a vibrant Dunedin streetscape. We can capitalise on Dunedin's evolving culture of street art and the high student population who thrive on vibrancy, life and culture. Our design is both inspired by and personifies that vibrant, rich culture. We have an opportunity to make a real statement.

This concept design includes options such as the following:

- Street Art: this will take street art to a new level by transforming the pavement into a canvas
- Vibrancy: injects vibrancy into the street with bright playful colours
- Landmark: creates a new landmark for central Dunedin
- Bold statement: makes a bold statement and illustrates confidence in the public bus system
- Cost effective: a solution that is not only bold and different but also cost effective
- Branding opportunity: Extend the patterns onto structures, furniture and buses. Create a brand for Dunedin's public bus service

These options are under consideration and may or may not be included in the detailed design stage.

3.1.1 Design Features

The following design features are proposed:

- Colours are Otago colours and connect with the central city precinct colour coding for extra contrast and vibrancy. The colours and patterns within the pavement and bus shelters represent the journey Dunedin has taken through the years – from the humble historic beginnings to a vibrant art loving city
- Bus stops will be more clearly defined by coloured surfaces
- The coloured surfacing will extend across pedestrian crossings and vehicle entrances to enforce pedestrian priority
- Planting adjacent to bus shelters

These options are under consideration and may or may not be included in the detailed design stage.