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Requested Change to Dunedin City District Plan: "Spectator Events and Education Zone": Assessment of Environmental Effects

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Requested Change to Dunedin City District Plan: "Spectator Events and Education Zone": Assessment of Environmental Effects

Prepared for

Carisbrook Stadium Trust (Client)

By

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Reviewed by	Peter Constantine		
Approved by	Greg Pollock		
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Appendices

Executive Summary

This assessment of environmental effects supports a request for a plan change which seeks to include a new zone called the Spectator Events and Education Zone in the Dunedin City District Plan. This request to rezone land through the plan change process is seen as the most effective and efficient mechanism for providing a framework for the future use of the land (see the attached assessment in terms of section 32 of the Resource Management Act 1991 Appendix 2).

The Carisbrook Stadium Trust (CST) investigated several options for a new facility for spectator events and educational activity including upgrading of the existing Carisbrook stadium in South Dunedin to create an iconic stadium that will serve the community of Otago for the future.

Following consideration of the *Carisbrook Opportunity, Dunedin Master Plan and Feasibility Report, February 2007*, a decision was made that CST proceed with the preferred option for the development of a new facility for spectator events and education on the Awatea Street site in Dunedin North. This option was for the new stadium to be located at Awatea Street with a capacity for 30,000 seated spectators and a covered arena with an attached space for University of Otago activities.

The preferred option delivers the best economic, cultural and social benefits to the City and the Otago Region. It is proposed to establish a large modern stadium with a roof on a site shared by tertiary facilities, potentially including Unipol and the Academy of Sport. The multi-purpose nature of the facility and the link with the University provides financial, operational and economic benefits.

The use of the site by the University of Otago enables day-to-day use of the buildings and facilities rather than this site being an 'event specific facility' which lies disused for the majority of time. This integrates the development with the facilities of the University of Otago and provides the following benefits:

- The precinct is 'live' during the week, becoming a vibrant part of the City; and
- The University can accommodate its space requirements and create a further node at the eastern end of the campus to complement the other parts of the University Campus.

The stadium is anticipated to become an iconic feature of the Dunedin urban environment.

It is considered that rezoning for the Spectator Events and Education Zone will provide a sustainable form of land use for this site and the proposed zone will support the social and economic wellbeing of Dunedin.

The plan change seeks to:

- Rezone land for the Spectator Events and Education Zone.
- Include in the new zone provisions objectives, policies and rules that provide for the facility for spectator events and education to be constructed on the site (as a permitted activity, subject to specific criteria).
- Enable University of Otago activities to be developed within the site as a permitted activity.

- Provide for a number of other related activities (such as conferences) as permitted activities.

The proposed plan provisions provide for the establishment and operation of a multi-purpose facility that has adequate carparking and a significant plaza space. They provide certainty as to the form of development that may occur within the zone, and implement various measures designed to ensure that the environmental effects of the development can be addressed in a manner consistent with the reports attached to this assessment as Volume 2. A potential development scenario has also been provided and this is used as a basis for the assessment of environmental effects. Appropriate sensitivity analyses using other scenarios have also been carried out to ensure a robust assessment.

The site selected for this proposed zone is within Dunedin City and approximately 1.5 km north of the Octagon. The general location of the site is to the south of Logan Park, between the Park and the Water of Leith, and bounded by the main trunk railway, Ravensbourne Road and Anzac Avenue. The site is essentially flat land reclaimed in the 19th century from low lying tidal marshes which were on the mouth of the Water of Leith and located in the vicinity of land currently used for industrial activities and the existing 'Campus' zone. Logan Park provides recreational opportunities and facilities to the wider Dunedin public, for both passive and active recreation. State Highway 88 passes this site, and a notice of requirement to permit the realignment of the harbour arterial will also be lodged with the Dunedin City Council (although it is noted that this does not form a part of the proposed plan provisions). There is a mixture of port related activities to the south of the site and a quarry located on the northern side of Ravensbourne Road. Within other viewing areas of the site there are residential, recreational and education activities.

The characteristics and the existing natural and physical setting for the facility for spectator events and education will allow the proposed facility to be successfully integrated into the wider Dunedin urban area. The design of the facility for spectator events and education has taken account of the following:

- Urban design criteria for the location and design of the facilities.
- Greenspace corridors, stormwater networks and natural topographic features to enhance the appearance of the facility.
- The noise environment anticipated from use of the stadium.
- Traffic and pedestrian movement associated with the facility.
- Landscape development to enhance the entry to the facility which complements and enhances the openness of Logan Park.

The assessment of effects on the environment shows that the effects of the proposed plan change on the environment will be less than minor and assessment is made on the following matters:

- Urban character and amenity values
- Visual and design
- Acoustic effects
- Traffic, access and parking

- Reverse sensitivity effects
- Infrastructure capacity
- Geotechnical matters.

Consultation with the public and key stakeholders and affected parties has taken place over the past year, beginning with an initial debate in public forums on the options for a new stadium for Dunedin. The consultation on the site chosen for the plan change has been focused on the landowners and occupiers of land affected by the plan change. Other affected parties have also been consulted and discussion held on this proposed Spectator Events and Education Zone. The consultation also included two 'Open Day's' where the public were able to attend and view material relating to the proposed plan change.

Given these considerations, the use of a plan change has been identified as the most appropriate method to give effect to the outcomes sought. Specific plan provisions have been prepared for the zone, and these reflect the contributions made by various disciplines in the technical reports that form volume 2 of this assessment. The attached section 32 assessment meets the Council's standard and is in accordance with the provisions of the Resource Management Act 1991. Given this, CST is of the view that the plan change is the most appropriate means to provide the multi-purpose stadium, and should be publicly notified. Dunedin City Council is also invited to adopt this private plan change at any stage of the process, as CST believes it is the most efficient and effective method for progressing the redevelopment of this site, and for delivering a significant facility that will provide for the economic and social wellbeing of Dunedin and Otago residents and visitors.

1 Introduction

1.1 Overview

This report addresses the statutory requirements of an application for a plan change to the Dunedin City District Plan. The plan change will introduce a new zone into the fully operative Dunedin City District Plan.

The new zone will be called the Spectator Events and Education Zone and will enable a proposed project that the community has known as the 'Dunedin Multi-purpose Stadium' to be constructed. This proposed facility for spectator events and education includes opportunities for cultural, entertainment, educational and recreational use. The facility will provide social and economic benefits for the Dunedin community and the Otago Region. The particular importance of this project is the linking of the University of Otago into the project which enhances the role of the University in the City and the subsequent economic benefits for the City and Region.

The site selected for this proposed zone is within the City and approximately 1.5 km north of the Octagon. The general location of the site is to the south of Logan Park, between the Park and the Water of Leith, and bounded by the main trunk railway and Ravensbourne Road and Anzac Avenue.

There is a comprehensive suite of technical reports supporting this plan change, and these form Volume 2 of the Assessment of Environmental Effects. These reports address matters that are relevant in avoiding, remedying or mitigating any adverse effects on the environment from the activities that the plan change will provide for in the Spectator Events and Education Zone.

1.2 Background

Carisbrook Stadium Trust completed the "*Carisbrook Opportunity, Dunedin Masterplan and Feasibility Report*" in February 2007. This report was provided to the Dunedin City Council and Otago Regional Council for their consideration of the options for a new stadium to be developed in Dunedin.

The report investigated options for either a new multi-purpose stadium or an upgraded / redeveloped stadium at Carisbrook. There were two options considered on the Awatea Street site and a further four options for the redevelopment of the existing Carisbrook Stadium. These options are briefly described in section 4 of this report.

The "*Carisbrook Opportunity, Dunedin Masterplan and Feasibility Report*" concludes and recommends that the preferred option for Dunedin is a new multi-purpose roofed stadium on a site at Awatea Street in Dunedin North. The preferred option for a new facility for spectator events and education to be constructed on the Awatea Street site will be a catalyst for growth, community vitality and pride for generations to come.

Figure 1 - Photomontage of the proposed concept of a stadium on the Awatea Street site

1.3 Contents of this Report

This assessment provides a comprehensive evaluation of the proposed development on this site so that all matters related to the proposed Spectator Events and Education Zone and the subsequent development of the facility for spectator events and education can be considered together.

This report is set out in such a way that it addresses the requirements for '*Requests for Changes to Plans of Local Authorities*' stated in Schedule 1, Part 2 of the Resource Management Act 1991 (RMA).

The required information includes:

- All relevant application forms provided as a prologue to the supporting documentation.
- An introduction to the plan change, background to the project and plan change process (Section 1).
- A description of the site of the proposed plan change, the purpose of the plan change and reasons for the plan change (Section 2).
- A description of the alternative methods and locations assessed for this plan change (Section 3).
- An assessment of the effects on the environment of the proposed plan change (Section 4).
- A description of consultation undertaken on the plan change (Section 5).
- Statutory assessment of the proposition in terms of the Resource Management Act 1991 (Section 6).
- Comment on RMA Section 32 evaluation: Consideration of alternatives benefits and costs (Section 7).
- Conclusion (Section 8).

A series of detailed technical reports inform this assessment of environmental effects and are included in Volume 2.

A comprehensive suite of amendments to the Dunedin City District Plan is attached (Appendix 1), as is a separate assessment of the proposed Plan Change against the provisions of section 32 of the Resource Management Act is attached (Appendix 2).

1.4 Plan Change Process

The plan change process is a formal statutory process stated in the Resource Management Act 1991.

The following is a summary of the steps in the plan change process:

1. Prepare a draft of the plan change to show the scope and extent of what is to be amended in the District Plan. This includes:

- Purpose, reasons and content of the plan change detailed, and
- Reference made to previous studies, reports and investigations on this issue so that all options are considered in the proposal.

The *Carisbrook Opportunity, Dunedin Masterplan and Feasibility Report* document prepared by the Carisbrook Stadium Trust was a key document at this stage. While this document is not a draft of the plan change, it outlined the choices for Dunedin and Otago for the development of a new multi-purpose stadium. The report contained a recommendation for the preferred option for the way forward.

Once the decision was made to develop the Awatea Street site as the preferred option, it was necessary to proceed with the preparation of a plan change which would provide the framework in the Dunedin City District Plan to enable the construction of the new facility. This process required other reports to be prepared and written to support the proposed new zone being in this location. These reports addressed issues such as urban design, noise, traffic and parking matters, economic impacts and hazardous substances risk assessments.

2. Consult with people who will be affected by the variation. This includes:

- Tangata whenua, regional council, neighbours, central government organisations; and
- Affected landowners.

Consultation is a mandatory requirement for plan changes. This process enables those affected by the plan change to contribute to the process in a positive way. The consultation process is important in that it engages the community in identifying the issues and trying to resolve them so that the outcomes can satisfy all parties in the process. A summary of the consultation undertaken is included in section 6 of this assessment.

3. Prepare a final plan change and associated Section 32 report to include all details and a summary of the alternatives, benefits and costs. This includes:

- An assessment of the anticipated environmental effects, and any mitigation proposed, and
- Nature of consultation described.

This is the stage where the plan change is completed so that it can be lodged with the Dunedin City Council. The plan change will have several parts to it including an evaluation of its benefits and costs. There are background reports that are also important documents which support the plan change. Upon lodgement of the Plan Change, the Council must also determine whether it is accepted, adopted, or converted to a resource consent application.

4. Notify the plan change to the public and call for submissions. This allows for:

- Public notification for 20 working days, to allow members of the public to make submissions in support or opposition to the plan change, and
- Once notified the plan change has effect.

Once the plan change is assessed by the Dunedin City Council, and all information that it requires, it has to be publicly notified. This is an opportunity for any member of the public to have their say on the proposed new zone.

5. Summarise the submissions and notify this summary to enable further submissions to be lodged on the content of the plan change.

- Notification for 20 working days

A second public notification period so that people can comment on the submissions lodged.

6. Hold a hearing where all submitters to the plan change can present evidence to the Hearings Committee and/or Commissioner(s).

- Presentation of submissions and supporting evidence to committee

This is a formal consideration of the proposed new zone and all parties can present evidence to the hearing on the issues they consider to be important.

7. Make decisions on the submissions made on the plan change.

- Accept submissions in full, or in part, or reject submissions

The Hearings Committee and/or Commissioner(s) issue a decision on the plan change.

8. Notify these decisions to the submitters and make the variation operative (if there are no appeals).

- Advise all submitters of the decisions made, and the variation

The decision on the proposed new zone is released to all those involved in the process. Any person may then appeal the decision to the Environment Court.

The plan change process is described in Parts 1 and 2 of Schedule 1 of the RMA and is considered in detail in Section 7 of this Report.

Pursuant to Schedule 1, Part 2, and Clause 21 of the RMA the Carisbrook Stadium Trust seeks a change to the Dunedin City District Plan as described in this report.

In lodging this privately initiated plan change, the Carisbrook Stadium Trust wishes to request that in accordance with Part 2, Clause 25 (2) of Schedule 1, the plan change is adopted in whole by the Dunedin City Council and notified accordingly as a plan change promoted by the Dunedin City Council.

2 Description of Proposed Zone

2.1 The Planning Context

The proposed Spectator Events and Education Zone when included in the Dunedin City District Plan will not be inconsistent with the existing issues, objectives, policies and methods the District Plan currently contains.

The retention and enhancement of the existing character and amenity is a significant resource management issue addressed in the plan. Other significant resource management issues to be addressed in achieving a sustainable environment also include having appropriate infrastructure, protecting natural and physical resources and avoiding adverse effects in developing and using natural and physical resources.

The objectives of the Dunedin City District Plan support the sustainable management of the district's natural and physical resources. The rules for the proposed zone have been written to enable the amenity values of Dunedin to be maintained and to enable any development on the site to be accommodated within the existing infrastructural base of the city. The proposed zone integrates well with the surrounding zones as it provides for development of the site which will be a coherent fit with the Industrial zone whilst also having rules for open space adjacent to the Residential zone[1].

The development of this site will have effects on traffic movements in and around the City. These effects can be avoided in part by subsequent changes to the traffic network e.g. the relocated state highway and reduced traffic on some roads. Zone rules will be required that control the adverse effects of activities within the proposed zone, thereby maintaining and enhancing the amenity of the City. The possible development of the site with a facility for spectator events and education will also have an effect on the amenity of the surrounding area through events which generate noise at certain times. This is also controlled through rules to ensure that 'noisy events' are held at times when these effects will have the least effect on the environment, and will be managed in an appropriate manner.

The Dunedin City District Plan states that environmental outcomes to be achieved will retain and enhance amenity of the City, sustainably manage natural and physical resources and give people access to natural and physical resources. This proposed Spectator Events and Education Zone will be consistent with these outcomes in that it will provide for the social, economic and cultural well being of the community by:

- Enabling development of this site consistent with urban design principles that make it a coherent and harmonious 'fit' with the urban form;
- Enhancing the amenity of the City and supporting the existing character that has developed as an outcome of 150 years of development of the City by enabling the development of a monumental building with a sense of civic identity;
- Providing the ability to support the University of Otago activities in a positive way whilst providing additional economic support for the community.

[1] It is relevant to note that Logan Park is located within the Residential zone, and that the Dunedin City District Plan does not contain any specific open space zone.

2.2 The Site of The Plan Change

The site of the proposed Spectator Events and Education Zone is generally located on the southern side of Anzac Ave / Union Street East, which forms part of State Highway 88 connecting Dunedin with Port Chalmers. The site is on the north side of the Water of Leith and the main trunk railway line runs adjacent to the southern boundary of the site (see Figure 2).

The site is essentially flat land which has been reclaimed from low lying tidal marshes which were on the mouth of the Leith River in the 19th century. This lengthy process of reclamation created the port area and waterfront as it is today. Current activity on the site is a mix of commercial and industrial activities, in various private ownerships.

Logan Park is located on the northern side of Anzac Ave/Union Street East, and is bounded by Butts Road to the east and north, Harbour Terrace to the west and Union Street East to the south. Logan Park is an area of open space in the City used by many sporting codes for both practice and competitive games. This park also has facilities established to support these activities including grandstands, formed playing areas and training facilities.

To the west, in the block between Albany Street to the south, Cumberland Street to the west and Dundas Street to the north is the University Precinct, including the College of Education and Otago Polytechnic. Unipol is a student gymnasium and recreation centre, and is currently located on the south eastern side of Anzac Ave between Parry Street and Minerva Street. A pedestrian crossing is provided across Anzac Ave to provide a crossing point for pedestrians between the Tertiary Campus area and the Unipol recreation facilities. This crossing generates a high pedestrian flow of students using the Unipol facilities.

The site for this proposed facility was selected as it provides an opportunity to integrate the facility with the future teaching needs of the University of Otago. The proposed buildings and facilities will enable the University to grow and serve a higher number of students with the ability to have additional teaching and learning space.

At present the site to be rezoned consists of industrial buildings which are currently occupied by industrial activities and there is also an area where buildings have been demolished to enable land to be used for vehicle parking. A more detailed description, along with photographs of the existing area, can be found in Assessment of Urban Design Effects of proposal for proposed Spectator Events and Education Zone: Dunedin City District Plan, prepared by Context Urban Design, and attached as a part of Volume 2 of this assessment of environmental effects.

In general the site has an urban backdrop, which will serve to reduce the visual impact of new development on the landscape. The urban design principles adopted for the facility enable the environment to be enhanced in this location within Dunedin. It is noted that a quarry is located to the lower edge of Signal Hill to the north east of the site, this hill being mostly tree clad but is partially an active quarry site and a distinctive feature of this area of Dunedin.

Figure 2 - Aerial photograph of the site and surrounding activities

2.3 Legal Description

The legal description of the land involved in the plan change is as follows:

Certificate of Title reference	Legal Description	Area
17455	Lot 1 and Lot 2 DP 18243 Lot 2 DP 11150 Lots 63, 65, 67, 69, 71, 73, 75, 77, 79 and 81 DP 8016 Lots 62, 64, 66, 68, 70, 72, 74, 76, 78 80, 82 and 97 DP 6277	1.8982ha
15D/305	Lot 1 DP 21260	0.2627 ha
11903	Lot 1 DP 303016	0.5174 ha
22379	Lot 2 DP 22510	0.1365ha
14C/983	Lot DP 122510	0.3114ha
391802	Sec 99-100 Blk 76 Tn of Dunedin Sec 101 Blk 76 Tn of Dunedin Lots 1, 3 DP 10880	0.2369ha
18179	Lot 1 5045	0.6539ha
261478	Lot 9 DP 7957	0.5331ha
7C/47	Lot 1 DP 15878	0.5939 ha
7C/48	Lot 2 DP 15878	1.1022ha

It should also be noted that there is a right-of-way easement used by the Otago Regional Council parallel to and adjoining the Water of Leith. This easement is for the purposes of maintenance of and access to this water body.

In addition to the above land, parts or all of the following streets are to be closed and rezoned to be within the Spectator Events and Education Zone.

- Awatea Street,
- Leander Street,
- Parry Street,
- Magnet Street

It is also relevant to note that the Council is presently considering a Notice of Requirement to alter the alignment of the Harbour arterial, so that it follows the railway line past the stadium and into Ravensbourne Road. That Notice of Requirement does not form a part of this application for a private plan change.

2.4 The Proposed Zone

A new zone will provide for the educational and recreational activities proposed for spectator events and education facilities to be constructed on this site. This zone will include new objectives, policies and rules to manage the effects on the environment of the

activities proposed, and to manage any reverse sensitivity issues to legitimate activities establishing in the adjacent Industrial and Port zones.

The Spectator Events and Education Zone will enable the construction, use and maintenance of a multi-purpose 30,000 seat facility for spectator events and education facilities (with a capacity of 35,000 persons standing for concerts). The rules proposed for the Spectator Events and Education Zone are included in this application so that a comprehensive and holistic understanding of the proposed redevelopment of the site is able to be made.

This proposed facility for spectator events and education will be developed with shared facilities with the University of Otago. The proposed building on the site will consist of many components which will make the facility one which will serve the recreational and university/educational needs of Dunedin and the Otago Region for the long term as a resource that creates social and economic benefits to the City and Region.

A specific zone is the most effective and efficient method by which the development of a facility for spectator events and education facilities can be provided for, through which its environmental effects can be managed, and sustainability objectives of the Dunedin City District Plan can be best promoted and implemented. None of the other methods considered achieves the level of integration with the District Plan that can be achieved by a specific new zone which specifically addresses the effects on the environment of development of this site (refer Section 32 Report).

The provisions of the proposed zone seek to manage the effects on the environment which are principally those relating to:

- Built form and Urban Design
- Acoustic Effects
- Traffic Effects
- Cultural and Archaeological Effects
- Servicing and Infrastructure
- Natural Hazards
- Hazardous Facilities
- Economic
- Effects on existing industrial zone
- Land Contamination
- Air Quality
- Reverse Sensitivity Effects

The Carisbrook Stadium Trust has prepared this private plan change to implement its proposed stadium/educational development.

In summary the proposed Spectator Events and Education Zone will provide for separate and distinct components of the facility for spectator events and education facilities including:

- A 30,000 seat stadium with a playing field having a NW-SE orientation, and the stadium parallel with the adjoining Water of Leith.

- Learning, teaching and recreation spaces for the students and staff of the University of Otago.
- A carpark located on the eastern side of the site with a parking capacity for 335 vehicles.
- A plaza area located on the western end of the site adjoining Anzac Avenue providing the main entry to the stadium and university areas.
- Offices and ancillary retail spaces within the stadium and university area
- Conference and meeting activity
- Community support activity.

2.5 Purpose of Plan Change

A request to rezone the land via a plan change is seen as the most effective and efficient mechanism for providing a framework for the future use of the land. A plan change may allow for more comprehensive design and development outcomes for the subject land as opposed to piecemeal or *ad-hoc* applications for development by way of individual resource consent applications. It will also provide greater certainty for the community and applicant.

The plan change seeks to:

- Rezone land for the Spectator Events and Education Zone
- Enable the new zone to have objectives, policies and rules that enables the facility for spectator events and education to be built.
- Enable University of Otago activities to be extended to the facility for spectator events and education.

The standards that apply to the proposed Spectator Events and Education Zone in the Dunedin City District Plan, (for example, the bulk and location controls, noise and lighting levels, car parking and access standards), aim to provide a greater degree of certainty to the existing and future community that the land will be developed and maintained as an active, coherent and vibrant living environment and that appropriate levels of amenity will be achieved and maintained.

A plan change is seen as the most appropriate method to enable neighbouring landowners and the wider community to be involved in the resource management process in that it provides opportunity make submissions and further submissions if required on the rezoning proposal. All submitters are able to attend the hearing and provide evidence and verbal presentations on their submissions for consideration by the hearing panel. Although a resource consent also allows such a process to be followed, it does not allow the flexibility of design that is necessary at this point in planning for the zone.

The decision on the plan change can be challenged to the Environment Court if any party in the proceedings is not satisfied with the decision.

2.5.1 Reasons for the Plan Change

Sustainable Development

The characteristics and the existing natural and physical setting for the facility have been identified and evaluated and applied during the master planning so that the proposed development may be successfully integrated into the wider Dunedin urban area. The design of the facility for spectator events and education has incorporated:

- Urban design criteria for the location and design of the facilities.
- Greenspace corridors, stormwater networks and natural topographic features to enhance the appearance of the facility.
- A prediction of the noise environment anticipated from use of the stadium.
- Have regard to traffic and pedestrian movement in using the facility.
- Landscape development that enhances the entry to the facility for sporting and educational events which complements and enhances the openness of Logan Park.

Social and Economic Development

It is considered that rezoning for the Spectator Events and Education Zone will provide a sustainable form of land use for this site and the proposed zone will support the social and economic wellbeing of Dunedin.

The Dunedin City Council Annual Plan 2007/08 summarises the community outcomes that are influenced by, and the integration that results from, the preferred option for the development of a facility for spectator events and education proposed for the Awatea Street site in Dunedin.

The following extract from the Long Term Council Community Plan for 2006/07 – 2015/16 place the proposal in its widest community context.

Community outcome	Impact of a new stadium
Wealthy Community	Net economic impact over the life of the stadium (50 year) of $268.0 million (the optimistic figure is $310.0 million). The reasons for this impact include: ■ Increased visitors to the Dunedin and the Otago Region. ■ Additional or maintained tertiary student numbers. ■ Retained local expenditure. ■ Spending relating to initial construction and on-going maintenance of the stadium. The 'showcasing' effect of high profile events will provide Dunedin and the Region with important opportunities to market its potential for economic development and lifestyle. The link between the University and high performance sport is strengthened.
Accessible City	The combination of a plaza area, realignment of State Highway 88, and a design that focuses on pedestrians and public transport supports the City's vision for safe and easy access.
Safe and Healthy	The multi-functional design of the stadium creates a hub of activity

People	promoting a safer environment.
Sustainable City and Environment	The new stadium improves the existing environment and potentially provides a catalyst for further private development. The stadium itself will be an iconic example of a development consistent with environmental design principles. In relative terms the stadium has a large capital cost that increases the Council's indebtedness over the long term. It is possible that the Dunedin City Council's peak debt projections may limit its ability to deal with unforeseen issues that require significant capital contributions in the future. In this situation Dunedin would be more reliant on Central Government for assistance.
Culture and Learning	The association between the University of Otago and the stadium creates opportunities to improve teaching and research facilities, and improve the scope for and quality of research. Major cultural events could be held in the stadium at any time of the year.
Supportive Community	The stadium offers a unique opportunity for a large number of Dunedin's residents to come together in one place and share a sense of pride in our place, our community. A negative aspect of this outcome will be the possible financial and service impacts that funding the stadium will have on low or fixed income ratepayers.
Active City	It is assumed that the stadium will provide opportunities for wider community use thereby encouraging a broader range of sporting, recreational and leisure activities.

Educational Objectives

The integration of the facility with the objectives of the University of Otago is a key component in the proposed rezoning of land.

The use of the buildings and facilities by the University enables day-to-day use of the facility to be made rather than it being an 'event specific facility'. This integrates the development with the University of Otago campus and provides the following benefits:

- The precinct is 'live' during the week, becoming a vibrant part of the City,
- The University can extend its growing requirements and a further node is created at the eastern end of the campus to complement the other parts of the University Campus.

The stadium can accommodate general academic space, Unipol activities and student support activities.

2.6 Principles of Development

The proposed plan change and resultant development should be complementary to the current environment and amenity values of this Dunedin North location. This location is close to the Harbour and to public viewing areas along the harbourside. This has the potential for adverse effects on the environment which will need to be mitigated through a stadium design that respects its location and fits appropriately into the existing fabric of this urban landscape.

The area in the vicinity of the site of the plan change is principally used for industrial activities. These activities are located on Parry Street and Ravensbourne Road and in the

Wickliffe Street and Fryatt Street area. They are a mixture of port related activities and a quarry located on the northern side of Ravensbourne Road. Within other viewing areas of the site there are residential, recreational and university activities. To the west of the site is the existing 'Campus' zone containing the Unipol buildings and the Hocken library building.

The key elements or characteristics of the proposed Spectator Events and Education Zone that complement this mix of activities in the Dunedin North location are:

- Activating all edges of the Spectator Events and Education Zone precinct with activity so that the facility supports surrounding regeneration(provided for by proposed rule 27.5.2 (vii) and (viii)).
- Provision of a major urban pedestrian plaza to the east end of the Spectator Events and Education Zone as a City and University focal point for the eastern edge of the Central City (provided for by proposed definition and rule 27.5.2 (vii)).
- Realignment of SH 88 which will consequently reduce traffic flows on the northern end of the Anzac Ave.
- Provision of clear linkages for all modes of transport, including pedestrian and bus transport into the site.

3 Alternative Methods or Locations

Schedule 4 of the Resource Management Act 1991 (Assessment of Effects on the Environment) requires that, where it is likely that an activity (in this case an application for a plan change which will provide for a number of activities) will have any significant effects on the environment, the assessment should include a description of alternative locations or methods for undertaking that activity.

The proposed Spectator Events and Education Zone results from consideration of options for the development of a new facility for spectator events and education for Dunedin or the redevelopment of the existing Carisbrook stadium.

The Carisbrook Stadium Trust has investigated several options for a new facility for spectator events and a facility for educational activity or the upgrading the existing Carisbrook stadium to create an iconic stadium that will serve the community of Otago for the future.

Following consideration by the Dunedin City Council and Otago Regional Council of the *Carisbrook Opportunity, Dunedin Master Plan and Feasibility Report, February 2007* report, a decision was made that the Carisbrook Stadium Trust proceed with the option for the development of a new facility for spectator events and education on the Awatea Street site. This option was for the new stadium to be located at Awatea Street with a capacity of 30,000 spectators and have a roofed arena with attached space for University of Otago activities (full capacity will be 35,000 spectators standing – this will not occur for sporting events).

From this decision the appropriate planning process to be followed was determined to be the lodging of an application for a plan change with the Dunedin City Council. This application was to be made to change the Dunedin City District Plan to enable a facility for spectator events and education to be developed on the site.

3.1 Awatea Street Development

The Awatea Street site was selected as the preferred new site due to the opportunity to link the development with the University of Otago's requirement for additional space. The development of a new stadium at Awatea Street looks at a mixture of permanent and temporary seating solutions and builds on the reputation of the existing Carisbrook Stadium.

This site has been chosen as it is able to be integrated into the facilities of the University of Otago and its student population. It also has links with an existing major recreation facility – Logan Park. The development options investigated for the new stadium include various stadia configurations and roofing options.

The Awatea Street site option was further developed into two stadium options:

- Option 1a – New 25,000 – 30,000 seat stadium with a fixed roof over the stands and pitch;
- Option 1b - New 25,000 – 30,000 seat stadium with a fixed roof over the stands only.

3.2 Carisbrook Stadium Redevelopment

Development options were investigated for the existing Carisbrook Stadium site with reference to previous redevelopment studies that the Otago Rugby Football Union has undertaken. The development options for Carisbrook included:

- Option 2a – Increasing the number of premium seats at Carisbrook by providing a new roof over existing corporate suite structure to the North Stand and adding seats to the terraces. Limited internal refurbishment of Neville Street Stand and completion of deferred maintenance. The spectator capacity would be 30,000;
- Option 2b – Demolition of the existing Burns Street stand and development of a new South Stand. The spectator capacity would be 30,900;
- Option 2c – Development of a new 25,000 – 30,000 seat stadium with a fixed roof over the stands and pitch based on the proposals developed for the Awatea Street site, but without university or commercial integration; or
- Option 2d – development of a new 25,000 seat stadium with a fixed roof over the stands only based on the proposals developed for the Awatea Street site, but without university or commercial integration.

3.3 Comparison of Options

The options offer a range of different facilities which are able to be compared on a qualitative basis, including attributes such as seating capacity, corporate boxes, and lounge size. Consequently the costs attributed to each development option are different and range from $29m up to $188m.

The community benefits are subjective and also differ greatly between options for the seven key community outcomes identified in the Dunedin City Council's LTCCP identified in section 3 of this assessment.

The preferred option from the feasibility report is Option 1a at Awatea Street with a new roofed multi-purpose stadium. This option is considered to deliver the best economic, cultural and social impact to the City and Otago. The multi-purpose nature of the facility and the link with the University provides strength to financial operation and economic benefits.

3.3.1 Do-nothing option

The *Carisbrook Opportunity, Dunedin Master Plan and Feasibility Report, February 2007* outlined six options for the development of a stadium in Dunedin. It did not include an option of doing nothing.

The do-nothing option is one that retains the status quo. Carisbrook Stadium in South Dunedin would remain as a sporting venue for the City and Region with ongoing maintenance carried out as required. The ability for this stadium in its current state to maintain and hold events that it has attracted in the past would no longer occur.

The existing facilities for both spectators and participants at Carisbrook are of a standard that is no longer acceptable to high level sporting events such as Super 14 and test rugby matches. Other sporting codes currently use the stadium (such as national level soccer

matches) as a venue that caters for their current requirements, but other sports may also require upgrading in the future. The feasibility report also notes that Carisbrook Stadium is in need of deferred maintenance.

4 Assessment of Environmental Effects

4.1 Potential Nature of Development under the Plan Change

As part of the plan change process, CST has developed some preliminary and conceptual designs for the site. This is to check that the zone provisions "work" for the type of development proposed. A fuller description of that development scenario is included in the Architects reports in Volume 2, however the key matters are set out below.

The Awatea Street site for the Spectator Events and Education Zone was the preferred site as it provided the opportunity to link with the future needs of the University of Otago to create a facility for spectator events and education. The facility for spectator events and education is a catalyst for growth, community vitality and a source of pride for the Dunedin community and the wider Otago Region.

The design of the proposed facility for spectator events and education will aim to achieve two unique goals for sporting facilities in New Zealand:

- It is integrated with the University of Otago to provide a range of teaching, learning and research facilities for the University; and
- There is a fixed roof provided over the playing field which provides for turf growth and maintenance, and makes a positive contribution to the design of the facility itself.

The following provides a summary of what the development could look like under the proposed Plan provisions.

4.1.1 Likely Form of Development

At this time there can be no certainty as to the final form of development provided for by the proposed Spectator Events and Education Zone. CST has, however, been undertaking a master planning and building design exercise which has resulted in a form of development that achieves the Zone objectives and that has informed the drafting of the proposed Zone rules. The output of this master planning and building design exercise is described below. This description of the likely development and the nature and scale of proposed activities forms the basis of the various technical reports (Volume 2) and this assessment of environmental effects.

The overall form of development provided for by the Zone has been organised into three precincts:

- University Area, including plaza
- Stadium Area
- Car Parking and Vehicle Area.

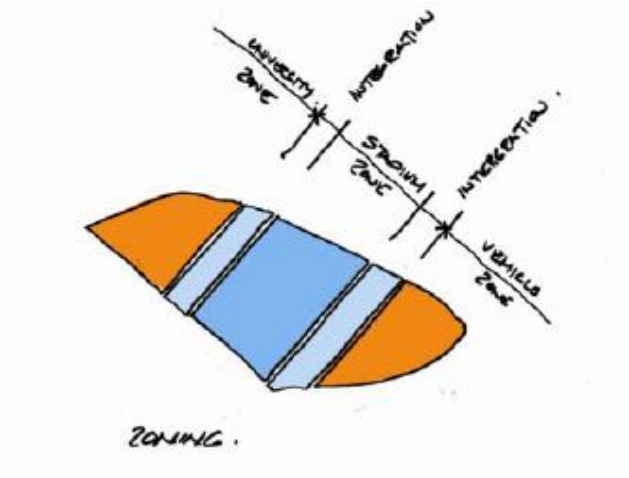

Figure 3 - Indicative site layout

The teaching space for the University of Otago will likely be located on the western portion of the site and would comprise up to 13,500 m² of useable floor space (any such building will be likely to be multi-level, and will have a maximum footprint of 6,000 m² at ground level). The remainder of this precinct at the western end of the Zone will be occupied by a public plaza. The Plan provisions provide for an area of 20,000m², thereby enabling circulation areas, and plant areas for the activities, resulting in 13,500m² of useable space.

The stadium precinct will be situated in the centre of the site, it will be dominated by a stadium building that will have capacity to hold a maximum of 35,000 people. The stadium is likely to be aligned in NW-SE orientation and comprise four spectator stands. The south stand is the main stand and will be approximately 55 m high. The north, east and west stands are significantly shorter than the south stand. The roof will slope down from the higher south stand to the lower north stand. The footprint of the stadium building will be approximately 190m x 170m.

Figure 4 - View of proposed development from Logan Park

The building will likely be constructed of a steel framework. The southern elevation and southern end of the roof are intended to be clad in grey coloured steel. The Trust has been investigating the use of translucent Ethylene Tetrafluroethylene (ETFE) polymer for the roof of the stadium facility. While this decision has not yet been taken, in the event that ETFE is utilised, this material may also extend down the north, east and west elevations to first floor level (5m above ground level). It is intended that the stadium have its name signage on each elevation.

A landscaped vehicle and car parking precinct, accessed from Ravensbourne Road, occupies the eastern end of the site and creates part of the buffer between the stadium, the realigned SH88 and the harbour edge.

The plan provisions have been designed in such a manner that any permitted activity establishing within the zone will be required to provide carparking and a plaza space.

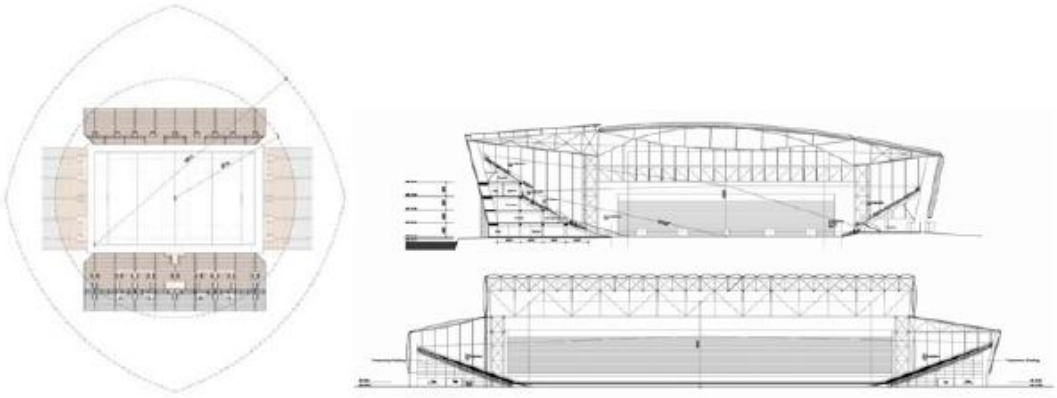

Figure 5 - Possible footprint of the proposed stadium development

The capacity of the stadium and the expected frequency of these spectator events (if no restrictions were to be placed on the operation of the stadium) is as follows:

- A maximum stadium capacity will be 35,000
- A maximum of 10 sporting events per year attracting 35,000 people , with a more likely scenario being:
    - (i) 35,000 people once per year
    - (ii) 20,000 people 6 times per year
    - (iii) 10,000 people 5 times per year
    - (iv) 5,000 people once per year
    - (v) 1,000 people 10 times per year
- A maximum of 6 non-sporting events per year attracting 35,000 people, with a more likely scenario being:
    - (i) 35,000 people every second year
    - (ii) 16,000 people 3 times per year
    - (iii) 12,000 people 2 times per year
    - (iv) Less than 8,000 people 5 times per year.

Finally, vehicular access to the stadium will be primarily derived from the proposed realigned harbour arterial. Although not a part of this proposal, it is relevant to note that a notice of requirement will be lodged for the work associated with this realignment also.

4.2 Economic

4.2.1 Purpose and Approach

An economic assessment has been undertaken by Howarth HTL in conjunction with Market Economics. A full copy of the report is attached as part of Volume 2.

The following paragraphs provide a summary of the economic impact results attributable to the proposed stadium and University development at Awatea Street, North Dunedin as taken from the Executive Summary of the report.

The assessment focuses on the direct and total impacts in net present value terms over the 50 year life of the Stadium, net of a "no new stadium" scenario which assumes the existing Carisbrook Stadium continues operating in its current form.

Two activity scenarios have been considered in relation to the new Stadium – a realistic base scenario and a conservative scenario. The assumptions underlying these scenarios are detailed in the report.

The economic impact assessment was undertaken in relation to both the Dunedin City and the Otago Region economies and adopts the same broad approach to the economic impact assessment by BERL for Dunedin City Council in 2003. Both analyses adopt a relatively narrow view of costs and benefits and do not, for example, consider social and environmental costs and benefits.

There are five key components to the economic impact analysis:

1. Estimating the total direct expenditure arising from incremental activity at the Stadium (ie: excluding activity that would have occurred at the existing Carisbrook Stadium and other event venues in Dunedin / Otago without the new Stadium). This direct expenditure relates to event organisers, spectators / attendees and media, and also includes the retention of local resident expenditure in the local economy as a result of not having to travel out of the region to attend events. The direct expenditure analysis also allows for the loss of local expenditure from the local economy as a result of spending on event tickets sold by non-local organisers
2. Estimating the total direct expenditure attributable to University of Otago students that are attracted to Dunedin due to the presence of the campus Stadium and associated University facilities to be built adjacent to the Stadium
3. Estimating the net additional expenditure into Dunedin City and the Otago Region economies by only including the spending of visitors from outside the region who are visiting the area with the key purpose of attending the event
4. Identifying maintenance and capital expenditure and operating cash flow associated with the Stadium and assessing the opportunity costs of the maintenance and capital expenditures. Opportunity costs relate to the need to divert household and business expenditure to fund the initial capital costs and on-going capital maintenance

5. Analysing the net additional direct expenditure by each spending group through an Input-Output model of Dunedin City and the Otago Region economies to assess the economic impacts in terms of direct and total output, value added (or contribution to Gross domestic Product), and employment.

4.2.2 Key Findings

The economic impact assessment shows that the Stadium development results in:

- an annual average increase in visitors to Otago of 25,680 under the base case and 15,980 under the conservative case
- an annual average increase in visitors to Dunedin of 54,770 (including visitors from elsewhere in Otago) under the base case and 34,520 under the conservative case
- an average of 8,400 fewer trips per annum by Dunedin residents outside Dunedin to attend events under the base case and 2,110 under the conservative case
- an average of 10,440 fewer trips per annum by Otago residents outside Otago to attend events under the base case and 3,040 under the conservative case
- an average annual increase of 34,400 Dunedin residents attending events organised by non-Dunedin organisers under the base case and 15,250 under the conservative case
- an average annual increase of 42,540 Otago residents attending events organised by non-Otago organisers under the base case and 20,020 under the conservative case
- an annual average increase in sport media to Dunedin of 38 under the base case and 21 under the conservative scenario
- an annual average increase in events organised by non-local organisers of five under the base case and two under the conservative case.

In addition, the University of Otago has estimated that the new Stadium being on campus could assist it in attracting approximately 500 more students than it otherwise might. Under the conservative scenario, the estimated additional number of students is 350.

Based on these incremental visitor assumptions and using average visitor spend assumptions derived from previous research undertaken by BERL, Covec, University of Otago, Ernst & Young and HHTL, HHTL and Market Economics have developed the following present value estimates of incremental visitor expenditure over the assumed 50 year life of the Stadium.

Table 1: Overall Net Increase in Visitor Expenditure ($m)

	Base		Conservative	
	Dunedin	**Otago**	**Dunedin**	**Otago**
Spectator Expenditure	150.4	109.5	95.8	70.4
Retained Resident Expenditure	36.0	50.2	11.3	16.8
Resident Ticket Expenditure Outflows	-20.4	-31.2	-8.4	-11.8
Visiting Media Expenditure	1.8	1.8	1.6	1.6
Visiting Organiser Expenditure	22.2	22.2	11.2	11.2
Additional Student Expenditure	88.7	95.2	62.1	66.6
Net Incremental Expenditure	**278.7**	**247.7**	**173.6**	**154.8**

(Source: HHTL)

In addition to visitor expenditure, there is also expenditure in relation to future capital maintenance and the initial capital cost that provide a positive impact.

The assessment shows that the new stadium's future capital maintenance requirements equate to a present value of $3.5m more than the "do nothing" scenario. The total capital cost of the project is $188m, excluding the University's new buildings which are not included because the University's space shortage means this capital expenditure would occur in Dunedin irrespective of the Stadium development. $138m of the project cost is assumed to occur within the region with the balance flowing out to external contractors.

The analysis has also taken into consideration the opportunity costs that arise through the diverting of household and business expenditure to fund the initial capital costs and on-going capital maintenance.

The table below summarises these expenditures and opportunity costs to illustrate the net direct expenditure associated with the Stadium development.

Table 2: Overall Net Increase in Direct Expenditure ($m)

	Base		Conservative	
	Dunedin	**Otago**	**Dunedin**	**Otago**
Positive Impacts				
Visitor Expenditure[2]	269.5	239.4	167.8	149.6
Future Capital Maintenance	3.5	3.5	3.5	3.5
Capital Expenditure	138.0	138.0	138.0	138.0
Total Positive Impacts	411.0	380.9	309.3	291.1
Negative Impacts				
Opportunity Cost	145.2	156.1	150.2	161.3
Net Direct Expenditure	265.8	224.7	159.0	129.9

(Source: MEL, HHTL)

4.2.3 Economic Impact

To estimate the economic impacts of the new Stadium, the direct expenditure figures above have been applied to Market Economics Ltd's Input-Output model. This analysis shows that under the base case scenario, the Stadium will result in total value added (or contribution to GDP) of $260m for Dunedin City and $221m for the Otago Region. This compares to $156 million and $129 million respectively under the conservative scenario.

The principal reason for the greater economic impact in Dunedin City is that the City will receive incremental expenditure from visitors who live elsewhere within the Otago region (outside of Dunedin) but this expenditure is not incremental at the regional level.

[2] As per the total of Table 1 with an adjustment for retail goods sold in Dunedin / Otago stores that have been imported. The value of these goods does not increase the Dunedin / Otago economy other than through the retail margin applied.

Table 3: Economic Impact – Total Value Added ($m)

	Base		Conservative	
	Dunedin	**Otago**	**Dunedin**	**Otago**
Positive Impacts				
Visitor Expenditure	264.5	235.3	164.9	147.2
Future Capital Maintenance	3.4	3.4	3.4	3.4
Capital Expenditure	120.7	120.7	120.7	120.7
Total Positive Impacts (A)	**388.6**	**359.4**	**289.0**	**271.3**
Negative Impacts				
Opportunity Cost (B)	128.4	138.0	132.8	142.3
Net Economic Impact	**260.2**	**221.4**	**156.2**	**128.9**

(Source: MEL)

As detailed in the report, the economic impact has netted off opportunity costs and has been undertaken using present values in 2011 dollars. Therefore, at the Dunedin City level, the $260 million contribution to GDP is net of opportunity costs associated with the initial development and on-going capital maintenance of the Stadium. The present value approach adopted in our analysis means the economic impact of the Stadium over its assumed 50 year life is equivalent to a $260 million contribution to GDP all in 2011 (the year in which the Stadium opens).

Under the base case, the economic impact equates to 4,800 additional FTEs in Dunedin City and 4,100 additional FTEs in the Otago Region. This compares to 3,000 additional FTEs in Dunedin City and 2,500 in Otago under the conservative scenario.

The economic impact can also be considered in terms of the ratio between the total value added generated within the local economy as a result of the stadium development and the opportunity cost in terms of the total value added associated with the principal alternative. The assessment shows that for every dollar of opportunity cost (B) associated with the Stadium there are $3.00 of contribution to GDP (A) for Dunedin and $2.60 for Otago. Under the conservative scenario this reduces to $2.20 and $1.90 respectively3.

4.3 Built Form and Urban Design

Two reports have been prepared in respect of built form and urban design issues arising from development provided for by the proposed zone provisions. HOK Sport Architecture and Jasmax have prepared a report entitled *"Proposed Spectator Events and Education Zone Architect's Design Statement to Accompany Plan Change"*. This report describes the architecture and master planning that has been undertaken to date. The second report, *"Assessment of Urban Design Effects of Proposal for Proposed Spectator Events and Education*

[3] **Disclaimer**

Howarth HTL note that this summary report is extracted from a detailed report subject to disclaimers. In particular, some assumptions in the economic impact assessment will not materialise and unanticipated events and circumstances will occur. Actual results achieved may vary from those described in our report and the variations may be material.

Zone: Dunedin City District Plan", was prepared by Context Urban Design Limited. The findings and key conclusions of these two interrelated reports are summarised below. Both reports are included in Volume 2 of this AEE.

Before embarking on the preparation of plan change documents the applicant (Carisbrook Stadium Trust) undertook a preliminary design and master planning exercise of the facilities and form for development within the land to be rezoned. This has concentrated on space for the University of Otago and a multi purpose stadium facility.

The following information from the Jasmax/HOK report outlines the thinking and assumptions which underpin the design.

Master planning of the land within the proposed zone has five principal objectives:

- Connection with the immediate natural context – Logan Park, Water of Leith and the Otago Harbour
- Reinforcing connections with the University Campus
- Integration of the likely spectator events and education facilities
- Establishment of clear linkages for all transport modes to the site and facilities
- Overseeing the physical regeneration of the site.

The fundamental layout of the built elements provided for by the proposed zone and its urban design has been configured around two main public spaces – an inward focused Stadium Quadrangle contained on all sides and an outward opening University Quadrangle.

The overall form of development provided for by the proposed zone has been organised into three principal areas:

- University Area
- Stadium Area
- Car parking and Vehicle Area

The university facilities define the plaza and occupy the western end continuing the University Campus across Anzac Avenue. These facilities generate student activity throughout the week and provide definition and a gateway to the eastern end of the University of Otago Campus. The stadium occupies the main body of the precinct. The size and scale of the structure and its enclosing roof re-defines the north western corner of Dunedin City, becoming a gateway as one approaches from the north east either by land or sea. A landscaped vehicle and car parking area accessed from Ravensbourne Road occupies the eastern end of the site and creates part of the buffer between the stadium, the realigned SH 88 and the harbour edge.

On the western side of the site a major plaza is proposed. This space will function as the major pedestrian connection and arrival gateway to the Precinct from the centre of Dunedin. Main access to the buildings are located off this plaza. This plaza will be the principal landscaped space within the zone. There will, however, be other significant areas of landscaping around the zone, including within the plaza space area, and on the periphery of the carpark area.

Key objectives of the landscape design undertaken to date include the following:

- The provision of a link between the City, Logan Park and the New Stadium
- Provide a human scale to the stadium project
- Definition of the external spaces around the stadium and university and guide its users
- Creatively interpret the quite different external spatial requirements of the stadium and the University into a single design.

The architecture of the proposed multi purpose stadium has been organised to provide an all weather facility with a maximum capacity for 35,000 people. This is distinct from the seating bowl, which is noted in the design brief to provide for a capacity of 30,000 people.

The development has sought to provide a multi-purpose public assembly facility configured around a rectangular playing field and capable of hosting a range of events.

The stadium massing is defined by the site constraints, the seating bowl requirements and minimum clearances above the playing field. The seating bowl is organised into four stands: the north, south and east stands having permanent capacity for 25,000 people; and the west stand having temporary capacity for 5,000 people. Stadium facilities such as changing rooms, corporate facilities, lounges and the like are contained within the larger south stand structure.

The design of the new stands incorporates all sports lighting for the stadium underneath the roof plane on the north and south side of the pitch. Locating the lights within the enclosure reduces the potential for light spill resulting from the use of lighting towers.

Glare nuisance can arise when direct sunlight is reflected off a surface rather than transmitted through or absorbed by that surface.

The roof is designed with a shallow pitch that angles away from the City to the south and west and towards Logan Park and the quarry to the north and as such is unlikely to present a significant glare issue for the surrounding elevated neighbourhoods overlooking the stadium.

The façade around the perimeter of the stadium is generally set at an inclined angle. Direct sunlight incident on these surfaces will be reflected down towards the ground avoiding the potential for significant issues.

Where the façade runs vertically it is anticipated that light incident on the convex shaped ethylene tetrafluroethylene (ETFE) pillows will be dispersed thus avoiding a concentration of reflected sunlight.

The proposed zone will also enable the establishment of new university facilities. While design detail is not as developed as for the stadium, the following explains the current thinking on design matters.

Three key objectives have been identified for the University Area:

- Creation of a focal node at the eastern end of the campus to complement the centre of the Campus towards the west
- A design that has a scale and character that is recognisable as a university building and distinct from the stadium

- Provision for approximately 13,400 m² of usable university space that could be made up of general academic space, university student support activity spaces and recreational space for Unipol Services. (Unipol Services provides recreational opportunities for Otago University Student Association and Otago Polytechnic Students Association members.)

The height and scale of the building forms containing the University are designed to relate to the existing built fabric as it exists along Anzac Avenue. They also act as mediating masses reducing the perceived scale of the much larger stadium mass as approached from Anzac Avenue and Union Street East.

The plaza is an important outdoor space for the University. It is intended that this space be a 'hub of activity' during the university week. Entry to the University will be directly off the plaza and be available all year round. The University facilities will overlook the plaza reinforcing the principles of crime prevention through environmental design (CPTED).

The urban character of the area and amenity effects is a key to the rezoning of this site. The built form of development within the zone and its scale and intensity may have an effect on the surrounding area and possibly a wider audience as well. The RMA includes amenity values and the quality of the environment as matters to have regard to in sustainable management of natural and physical resources.

This rezoning proposal will change the character and appearance of the site. However, it is considered that this will still be in keeping with the mixed-use nature of the adjacent industrial and recreation area.

Whilst the appearance of the site will change from an area containing industrial activities to one with a facility for spectator events and education with associated parking area and open space, it will be possible to design the layout and scale of buildings, together with the open areas around them, to create an attractive urban form that integrates with the surrounding environment and creates a distinctive and iconic place.

The proposed rezoning will also have the potential to affect the amenity of the area due to a change in the nature of activity occurring, and noise generated by spectator events. However, as the site lies adjacent to the State Highway, an existing industrial zone and other commercial uses there is already a considerable level of activity and noise within the area.

Constructing a new stadium and university building in this location raises a number of urban design issues as follows:

- The appearance of the development: What will it look like from close quarters, within the wider townscape and from across the Harbour?
- Linkages: How will the site be connected visually and physically with the central city, with the University, with the waterfront?
- Interfaces: How will the development interface with its surroundings?
- Safety and Comfort: Will the users of the site feel safe and comfortable at all times?
- Positive Impact of the Proposal: What will be the benefit of this proposal to the immediate environment and the wider townscape?

Each of these key assessment issues is addressed in the Context Urban Design Report and outlined in the following paragraphs.

4.3.1 The appearance of the development

In terms of short range view, the site and its environs are somewhat run down, but there is considerable potential for improvement. Logan Park, the most attractive existing feature, provides extensive open green space, which can be capitalised on as a setting for large scale building. The Water of Leith, the existing under utilised industrial areas and the boat harbour all provide scope for upgrading the visual and physical character of this section of the harbourside. The area has a large scale grain with wide streets, sizable buildings and extensive outdoor spaces.

The stadium will be by far the largest building in the vicinity and will provide a dramatic change to the existing outlook from surrounding streets and spaces. Although the scale of the stadium will be monumental it will be located in an area of predominantly large scale uses. The building will be seen across a spacious foreground, that is Logan Park, the new plaza, the Water of Leith or the car park, so that although the contrast in scale will be dramatic, it will not be overbearing.

In the more distant view the stadium building will be a large mass and due to its location will be a significant feature in the Dunedin townscape. It will be visible from many vantage points around the City. The degree of visibility from any given location will vary according to the distance from the site, the angle of the view, intervening buildings and vegetation and weather conditions.

The stadium will be clearly visible as a distinctive element in the townscape. It will be the largest building around the harbour's edge and will become a landmark feature. Its position at the northern end of the central city at the foot of Signal Hill means that it will be seen as an end stop to the waterfront, rather than a central focal point. It will be seen, from a distance, against the backdrop of the water and the hillside.

The overall composition of the stadium building will be shades of grey. This will harmonise with the surrounding townscape and the water and hillsides beyond (see proposed Rule 27.5.2(viii)(a)).

At night time, when matches or events are in progress the stadium will be internally lit and the light will be diffused by the ETFE roof. It is anticipated that the stadium will appear as an area of glowing rather than bright light. It will be clearly visible from many points around the City and so will be a major, but occasional, feature in the 'nightscape'.

4.3.2 Linkages

With regard to linkages, the proposed zone is within walking distance of the Octagon (20 minutes) and the University (10 minutes) and there is a variety of routes that can be followed. All of these routes will reach the frontage of the site at Anzac Avenue where the entrances to the University buildings and the principal entrance to the stadium will be reached across the proposed public plaza.

The Water of Leith and the railway line form barriers to movement along the south west and southern boundaries of the zone. They do however, afford clear visual links. The

realignment of SH88 will further segregate the site from the waterfront. New physical linkages will need to be formed to connect to its surroundings.

4.3.3 Interfaces

Interfaces with the surrounding area are very important if the proposed zone, and the development it will provide for, are to be successfully integrated. The way in which the edges of any development within the zone are treated will be vitally important. Sensitive interfaces will create a human scale at the local level and knit the complex into the wider urban fabric. This is achievable in a variety of ways.

The plaza will be located at the north western end of the zone. This will provide a foreground for the University buildings which are intended to 'sleeve' the west elevation of the stadium and integrate future development with Anzac Avenue and Union Street East.

The Water of Leith elevation of the stadium is long (190) and high (up to 55m). Its bulk will need to be broken up with windows/openings or other architectural features. Those parts of the plaza and/or the buildings which are adjacent to the water, will need to be designed to address the water and not turn their back to it.

The realigned SH88 will run to the south east of the stadium adjacent to the proposed public car parking area. The east elevation of the stadium is a secondary elevation, but the level of visual variety and ground level activity is sufficient to integrate the built form with its surroundings, i.e. it does not turn its back on the road or the waterfront.

The space adjacent to Union Street East and Logan Park provides the opportunity to enhance the visual and physical experience of this stretch of Ravensbourne Road. Landscaping and tree planning along the north eastern boundary of the proposed zone will be necessary to provide a good quality edge and to compliment the Logan Park frontage.

4.3.4 Safety and Comfort

The new stadium and university complex will need to feel safe and comfortable both on match/event days and on a day-to-day basis. On match/event days there will be a sense of occasion, crowds of people will be moving towards the building and milling around on the plazas and car park. On non-match days the complex will take on a different feel, with fewer people around. The design of the ground floor edges of the stadium, the university buildings and the surrounding outdoor space is to be more intimate in scale than the monumental scale of the stadium. This is given effect to by rule 27.5.2 (viii)(c) of the proposed Plan provisions.

It is possible, but unlikely, that the buildings envisaged and assessed in this AEE and provided for by the proposed zone will not be constructed as currently planned. Therefore the situation needs to be considered whereby the Plan Change is approved and becomes operative, but the proposal does not proceed as currently intended.

In the absence of any specific controls, the content, layout, form and appearance of the development could be markedly different from that currently intended and that situation has the potential to result in adverse effects of some significance. The worst case would be a stadium surrounded by car parking where the materials, textures and colours of the

building were not recessive. These concerns are addressed by rule 27.5.2 (viii) of the proposed Plan provisions, which seeks to remedy this potential by including rules on:

- Colour
- Structural spacing
- Changes in texture
- Pattern
- Windows or openings and voids
- An active edge

4.3.5 Positive Impact of the Proposal

On a positive note, a development that provided only educational facilities would likely have a positive effect on the existing environment.

Overall, from both a built form and urban design context, this location of the proposed zone is appropriate for the stadium and university buildings. The urban fabric and existing environment is such that a complex of this monumental nature can be physically absorbed. The proposal is likely to have a positive effect on the existing environment and its surrounds.

4.4 Acoustic Effects

Acoustic Engineering Services has prepared a report entitled *"Proposed Spectator Events and Education Zone, Dunedin: Assessment of Noise Effects"*. A full copy of this report is included in Volume 2 of this AEE. This report concerns acoustic engineering advice relating to the proposed zone with particular emphasis on the form of development described in Section 2 of this AEE. Its purpose is to provide an assessment of the environmental noise effects that may be associated with activities in the proposed zone.

4.4.1 Basis of Assessment

The acoustic effects assessment is founded on an understanding that activities likely to take place within the proposed Spectator Events and Education Zone are:

- Education-based activities including general university activities, meetings, conferences and exhibitions and community support activities such as student health, office based activities, and retail (including ticket sales).
- The construction and operation of a multipurpose stadium which may host the following nature of events:
  - National and international sporting events and training
  - Concerts and other non-sporting events with amplified music
  - One off events, such as the Edinburgh Tattoo.
  - Functions within buildings associated with the stadium such as weddings and corporate meetings.

Noise sources expected to be associated with the education based activities include:

- Mechanical plant associated with educational buildings
- Maintenance noise
- Rubbish collection and recycling
- Vehicles and pedestrians moving about on the site
- Break out noise from activities within buildings.

The day to day operation of the stadium is expected to involve the following noise sources:

- Mechanical plant associated with the buildings adjoining the stadium
- Mechanical plant associated with the stadium
- Maintenance noise
- Rubbish collection and recycling
- Vehicles and pedestrians moving about on the site
- Break-out noise from activities within stadium buildings.

Sporting events associated with the stadium may involve the following additional noise sources:

- Crowd noise from within the stadium
- Public address system broadcasting speech and music
- Activity external to the stadium including those involved with activities at the stadium ("the crowd") arriving and departing on foot, cars and buses.

Non-sporting events associated with the stadium may involve the following additional noise sources:

- Sound systems within the stadium.

4.4.2 Existing Environment

Under the Dunedin City District Plan, the site of the proposed zone is currently zoned Industrial 1 (In1). Areas to the north and west of the site on the opposite side of Anzac Avenue are zoned Campus and Residential 3 (R3). To the south of the site is a Port 2 Zone.

In the general locality there are a number of noise-sensitive activities in the areas surrounding the proposed Spectator Events and Education Zone. These include residential activities, university, polytechnic, and college of education facilities.

The site of the proposed zone is presently located within the 60Dt/NtdBA Noise Area. The majority of the Industrial and Port 2 land use zones to the south and east of the proposed site fall within the 60 Dt/Nt dBA Noise Area. The Campus, Residential 3 and Industrial zones to the west of the proposed site fall within the 50 Dt/40 Nt dBA Noise Area, whilst Logan Park to the north of the proposed site (which is also zoned Residential 3) falls within the more restrictive 50 Dt/40Nt/45 SP dBA Noise Area.

The existing noise environment within the Industrial and Port Zones was studied through objective measurement and subjective observation. Ambient (L_{10}) and background (L_{95}) noise levels during this time were seen to vary between 50 and 55 dBA L_{10}/45 and 50 L_{95} at one monitoring position, and between 50 and 65 dBA L_{10}/50 and 55 L_{95} at a second

monitoring position. The difference observed between the two monitoring positions was due to the different natures of immediately adjacent industrial activities, and the relative proximities of each monitoring position to busy roads.

Outside normal work hours ambient noise levels were observed to be below 50 dBA L_{10}/35 dBA L_{95}. This makes them some of the lowest noise levels observed anywhere in the area surrounding the proposed Spectator Events and Education Zone, at any time.

The existing noise environment in the vicinity of Ravensbourne Road and Anzac Avenue was seen to be dominated by traffic on these two roads.

Existing noise environment in the vicinity of residential dwellings closest to the proposed Spectator Events and Education Zone indicate that the noise level in the area in the absence of traffic was always in excess of 45dBA. The average noise level in the area (including traffic) was seen to be typically in excess off 55 dBA from 0900 through to 2300 hours.

Within the vicinity of Forth Street/Union Street the background noise level was always in excess of 40 dBA, even exceeding 50 dBA on occasion. The average noise level in this area was typically in excess of 55 dBA from 0900 to 2300 hours.

When considering the existing acoustic amenity experienced by the noise sensitive receivers these results indicate that residences in the general locality of the proposed zone typically experience external noise levels in excess of 55 dBA L_{10} between 9000 and 2300 hours, and that educational facilities in the area currently function in external noise levels of between 55 and 70 dBA L_{10} from 0900 to 2300 hours.

4.4.3 Acoustic Assessment

Activities within the proposed Spectator Events and Education Zone will differ from those which have taken place on the site to date. The existing noise standards may therefore not be appropriate for the proposed Spectator Events and Education Zone.

The most significant generator of noise within the proposed Spectator Events and Education Zone is expected to be the possible stadium. When considering a stadium, noise sources may generally fall into three general categories:

- Noise associated with the day to day operation of the stadium facility
- Noise associated with sporting events at the stadium
- Noise associated with non-sporting events at the stadium.

The computational modelling software SoundPLAN© has been used to calculate the propagation of noise from a stadium which may be constructed within the proposed zone. This computational modelling method is standard practice worldwide for assessing complete environmental noise phenomena.

A significant assumption associated with the model was that the ETFE roof which may completely enclose a stadium within the proposed zone will have no effect on the noise environment within the stadium, or on the noise transmitted from the stadium. Further, neutral meteorological conditions were assumed in all calculations. This is standard practice where the occurrence of an activity has no correlation with weather conditions.

Modelling was also undertaken with a 25m/s northwest wind during Type E Pasquill Stability Conditions. While the meteorological conditions do increase the noise level received on the west side of the Harbour by 4 dB, the noise level received at the closest residential area to the north west of the proposed zone during 'zero-met' conditions remains the worst-case.

For a wind in the opposite direction, the worst effected dwellings would be expected to remain those to the north west of the proposed Spectator Events and Education Zone.

What this means is that the noise levels assessed at dwellings to the north west of the proposed Spectator Events and Education Zone during 'zero-met' conditions remains a good approximation of a worst-case scenario.

From an acoustic point of view, 'day-to-day' operation includes all activities with the exception of:

(v) Sporting events which may use public address systems at greater than background levels and/or attract crowds of over 1000 people.

(vi) Non-sporting events which involve amplified music within the stadium bowl area at greater than background levels and/or attract crowds in the stadium bowl or other outdoor areas of over 1000 people.

4.4.3 (a) Maintenance Noise

Externally mounted mechanical plant associated with any buildings adjoining a stadium within the proposed zone may generate noise. In general compliance with the proposed noise rules by any type, number and configuration of mechanical plant items within the proposed zone is expected to ensure noise emissions have no more than a minor adverse effect.

The majority of maintenance noise associated with a stadium within the proposed Spectator Events and Education Zone will be in keeping with the existing noise in the area. It is further concluded that the additional noise due to mowing and maintenance of the turf within a stadium will have a de minimis adverse effect on the surrounding environment .

With regard to rubbish and recycling collections, provided such activities are restricted to daytime hours (particularly the pick up of glass recycling) noise effects from these activities are expected to be minor in the context of the existing noise in the area.

4.4.3 (b) Vehicle Noise

Noise generated by motor vehicles moving about on the site has also been assessed. Based on less than 250 vehicle trips per hour being associated with the day-to-day operation of the stadium, noise associated with vehicles travelling about on the site is expected to reach 47 dBA l\L_{10} (1hour), 75 dBA L_{max} at the proposed zone boundary during the worst-case one hour period. Adverse effects associated with this noise area expected to be minor in the context of the existing noise in the area.

4.4.3 (c) Crowd and Event Noise

There is potential for 'noisy' activities to take place within buildings associated with a stadium within the proposed zone during night time hours. It is realistic to expect that the

buildings which host such activities can be designed to ensure break-out noise emissions comply with the proposed noise controls at the boundary of the proposed zone, even during night time hours. Provided that such activities are undertaken in full compliance with the proposed noise controls, the effects of such noise will be less than minor.

Rules are proposed to ensure noise from sporting events hosted at a stadium within the proposed zone has no more than a minor adverse effect, and is not unreasonable over the course of any calendar year (see Rule 21.5.3 (iii)).

The Spectator Events and Education Zone Noise Assessment Boundary has been placed to ensure noise received at any existing dwelling does not exceed the levels stated. The use of this technique is crucial to the successful operation of a stadium within the zone because residential activities are permitted within the Campus Zone.

The proposed rule affords all existing residences within the Residential and Campus Zones the same level of daytime noise protection as many other residences within the City, with the one exception: on a limited number of occasions per year noise is permitted at 'daytime' levels up until 2300 hours. This is seen to be justified as the noise surveys undertaken show that in general the existing ambient noise in these areas exceeds 55 dBA L_{10}, up until at least 2300 hours.

The level of noise generated by a crowd within a stadium is highly variable and is generally only sustained at significant levels for a few seconds. Typically, these high noise events occur in the form of a short duration cheer during a significant incident at a sporting event. The crowd noise has been modelled using a sound power based on 35,000 voices simultaneously shouting loudly (88 dBA per person).

The results illustrate that there will be significant noise break-out due to the elevated and densely populated southern stand, however. The highest levels of crowd break-out noise are directed away from current residential areas.

When assessing the potential adverse effect of this noise during the evening, the most relevant assessment positions are those adjacent to residential dwellings which will be occupied during these hours. At these locations the expected crowd noise levels are expected to range from 47 dBA for talking and up to 64 dBA for shouting.

The existing noise levels in the vicinity of residential properties closest to the proposed Spectator Events and Education Zone have been measured at 55 to 65 dBA L_{10}/45 to 55 dBA L_{95}. The analysis suggests that crowd noise from a typical capacity sporting event may be 47 dBA L_{10}/64 dBA L_{max}. In the presence of the existing noise in the receiving environment, this crowd noise will be inaudible for the majority of the time. It is therefore concluded that the crowd noise levels likely to be generated at worst-affected residential dwellings are reasonable.

As the number and duration of events which are likely to generate crowd noise are to be limited by the proposed noise rules, crowd noise received at educational facilities within the Spectator Events and Education Zone Noise Assessment Boundary is unlikely to be considered unreasonable, and is not expected to cause a more than minor loss of amenity.

Noise from announcements and music through a public address system either permanently installed in the stadium within the proposed zone, or set up to provide entertainment

before, during and after a specific sporting event may spill into the surrounding area, having an adverse effect.

The potential for this noise to adversely affect residential activities is greatest during the evening, in particular with regard to sleep disruption. There is also potential for this noise to adversely affect activities in the Campus Zone, and within Logan Park during the daytime.

The noise controls proposed seek to limit the noise level produced by such public address systems to 55 dBA L_{10} at residences within the Residential Zones, and existing residences within the Campus Zone outside the proposed Spectator Events and Education Zone Noise Assessment Boundary.

When also taking into account the existing ambient noise in the area and the proposed limitations to the frequency, duration and finishing time of events using such public address systems, noise levels of 55 dBA L10 received at the Spectator Events and Education Zone Noise Assessment Boundary are expected to have a less than minor adverse effect on both residential activities and educational facilities at and beyond that Assessment Boundary.

The level of noise due to the operation of a public address system within a stadium located in the proposed zone, received at educational facilities within the Spectator Events and Education Zone Noise Assessment Boundary is considered reasonable. The effects of this noise will be further reduced as events necessitating the use of the permanent public address system at these levels will not occur frequently, will be of limited duration, and have a set finishing time.

4.4.3 (d) Concert Noise

A wide range of concerts and special events may be hosted at a stadium within the proposed zone. Many of the noise sources associated with such non-sporting events are expected to be similar to those associated with sporting events. The major difference is expected to be that for "high noise" non-sporting events the dominant noise source will be amplified music played through sound systems especially installed for the event.

Of the non-sporting events which may be hosted at a stadium within the proposed Spectator Events and Education Zone, the highest emissions are expected to be from 'rock' concerts. Such events may involve noise levels of over 110 dBA within the stadium. High levels of break-out noise are expected during such events, including considerable noise propagation towards residential dwellings to the north west of the Spectator Events and Education Zone.

However, the analysis undertaken indicates that it is realistic to undertake a concert within a stadium located in the proposed Spectator Events and Education Zone, where noise levels of up to 115 dBA are sustained within the stadium whilst the 75 dBA noise limit at the Spectator Events and Education Zone Noise Assessment Boundary is not exceeded.

Noise levels in excess of 80 dBA may be expected in some areas within the Spectator Events and Education Zone Noise Assessment Boundary, however, mitigation measures are proposed such as the limitation in the frequency of occurrence of such events to ensure noise effects within the Spectator Events and Education Zone Noise Assessment Boundary are no more than minor over any calendar year (see Rule 21.5.3 (iii)).

4.4.3 (e) Educational Facilities

The noise associated with the education based activities within the proposed Spectator Events and Education Zone is expected to be very similar in nature to that associated with the day to day operation of the stadium within the zone.

It is realistic to expect that noise from these activities will comply with the proposed noise standards, and therefore have a less than minor adverse effect on the environment. It is also noted that the educational facilities within the neighbouring Campus Zone operate successfully under similar noise standards.

4.4.3 (f) Possible Noise Impacts from Adjacent Activities

As the proposed zone is to be located within an area which is partially industrial in nature, the possibility exists for activities within the proposed Spectator Events and Education Zone to be disrupted by noise already present in the surrounding area. Analysis indicates that, with the exception of short periods during which trains pass the site, noise levels in the majority of buildings within the proposed Spectator Events and Education Zone are expected to remain at a reasonable level without specialist acoustic treatment.

It is therefore concluded that reverse sensitivity effects are expected to be minor.

4.4.4 Summary

Overall it is concluded that some restrictions to activities within the proposed Spectator Events and Education Zone will be required to ensure noise emissions from activities associated with the proposed Spectator Events and Education Zone do not exceed a reasonable level. These restrictions are reflected in the proposed zone rules.

4.5 Traffic Effects

A comprehensive Traffic Impact Assessment (TIA) has been undertaken by Beca Infrastructure Limited, and is included in Volume 2. A summary of that report is outlined below.

The TIA for the development of the Spectator Events and Education Zone has been assessed for *likely* and *maximum* scenarios in three sections:

1. Day-to-day use of the activities that are provided for in the zone;
2. Conferences / Exhibitions / Trade Shows within the zone; and
3. Sport and non-sport events at the stadium.

Each is discussed in detail in the TIA attached as part of Volume 2. An assessment of the combined effects if the Logan Park Redevelopment proceeds has also been undertaken.

4.5.1 Existing Network

Sections 2.1 to 2.6 of the TIA show that currently the surrounding road network is generally operating satisfactorily without any major problems. The key points raised under the existing network are summarised below:

1. All the existing intersections modelled are operating satisfactorily except the SH 88 / Frederick Street intersection;

2. There is currently a high pedestrian flow across SH 88 at the zebra crossing outside the Unipol facility;
3. There are minimal cycling facilities in the area around the proposed zone;
4. The area is well serviced by public transport especially with the introduction of the loop bus service in January 2008; and
5. The reported crashes in the area are generally spread out. However there has been a high number of JA type crashes (right turn, right side) at the SH 88 / Albany Street intersection.

4.5.2 Assessment of Effects and Proposed mitigation

The assessment of transportation effects as a result of the proposed zone development is complex. The proposed zone will have a range of day to day uses that must be considered, whilst sporting and other events that could potentially take place at the stadium must also be considered alongside potential concurrent activities in neighbouring Logan Park. The effects assessment has been divided into three sections for ease of understanding:

- Section 4 – Day to Day Use Effects Assessment
- Section 5 – Conferences and Exhibitions / Trade Shows
- Section 6 0 - Sporting and Non Sporting Events (focus on Stadium itself).

Section 7.0 also assesses the cumulative effects of Logan Park being redeveloped along with the proposed zone development.

Day to Day Use

The methodology for assessing the day to day uses on the site has taken the approach of assessing both the likely level of effects from the proposed zone, based on the CST's best estimate of the likely land use of the site on a day to day basis, and also assesses the maximum potential level of effects, based on the potential maximum day to day land use on the site.

Modelling of the traffic network including all surrounding intersections has been undertaken and while the report contains a number of recommendations on intersection upgrades and the like, it is generally concluded that provided these mitigation measures are undertaken, effects on the network are not more than minor. The proposed plan provisions make use of the stadium a discretionary activity with performance standards relating to intersection upgrades (see Rule 27.5.4 (iv)).

The largest potential effect for the proposed zone during day to day use is parking particularly for the maximum scenario where a total of some 535 parks is required to be provided (on or off the site). The impact on the surrounding road network if this parking was to spill onto the surrounding road network i.e. the mitigation measures are not undertaken, is that the existing on street parking area limits will extend further out into other areas. This will impact the land use and surrounding residents / businesses in these areas. This is addressed by Rule 27.5.2 (iii).

Overall, if the key mitigation measures outlined above and fully detailed in Section 8 of the TIA, are completed the effects on the surrounding road network, adjacent land uses and all

road users, from the proposed day-to-day use of the proposed zone for the likely and maximum scenario (and if the redevelopment of Logan Park occurs), have been shown to be less than minor and road user safety will not be compromised.

Conferences and Exhibitions / Trade Shows

The methodology for assessing the conference / trade shows / exhibitions on the site has taken the approach of assessing both the likely level of effects from the proposed zone, based on the Carisbrook Stadium Trust's best estimate of the likely size and frequency of conferences and trade shows / exhibitions, and also assesses the maximum potential level of effects, based on the potential maximum size and frequency of conferences and trade shows / exhibitions.

Again, the major issue with exhibitions / trade shows is in relation to parking for events. The two key mitigation measures available to reduce the impact of exhibition / trade show parking during the weekday (which is where the biggest impact is expected to occur on the surrounding road network) are either:

1. Exhibitions / trade shows are restricted to weekend events, held separately on site to any other events; or
2. Another off site parking area is provided for these events in the vicinity of the site. CST has accepted this recommendation and the Plan provisions require adequate parking to be provided (see rule 27.5.2 (iii)).

Overall, if the key mitigation measures detailed in Section 8 of the TIA are completed the effects on the surrounding road network, adjacent land uses and all road users, from the proposed conferences and exhibition / trade show events, have been shown to be less than minor and road user safety will not be compromised.

Sporting and Non Sporting Events

The assessment of transportation effects as a result of stadium events is also complex. Uncertainty in relation to sporting and non-sporting events at the stadium presents further complexity to the assessment. The nature, frequency and size of such activities can only be informed estimates of what may occur. Accordingly, the assessment completed in the TIA takes a pragmatic approach to the results of five traffic scenarios to represent the full range of event sizes possible at the stadium. The evaluation of these results takes into account the 'likely' and 'maximum' frequency of such events in order to assess whether the cumulative effects are more or less than minor.

In this respect the range of event effects that the assessment anticipates should be considered within an appropriate context, taking into account scale, character, frequency, intensity and duration and with regard to impacts upon the safety, efficiency and effectiveness of the transport system.

The availability of on-street and off-street publicly available free and paid parking in the central city is anticipated to be sufficient to meet the likely demands of the various event scenarios. In general the effects of this parking demand are therefore considered to be minor, as whilst the scale of this demand is large for large events, it is spread over a wide area, occurs over a short duration and is relatively infrequent. Parking in residential streets

is more of a concern as this can impact upon safety and create adverse effects of noise, vibration and pollution for residents. Again however, the spread of parking effects into residential areas will be infrequent and of short duration.

The impacts upon traffic as a result of the additional traffic generation to and from the stadium were evaluated using the Dunedin City Tracks model. In general the network performed well under each scenario, reflecting the high standard of infrastructure already in place and the availability of capacity to cope with extreme events. Adverse effects on traffic could be improved by identifying separate routes for stadium traffic and other traffic and signing these to drivers as such.

Impacts on safety will generally relate to conflicts between vehicles and pedestrians. Such risks will be highest for the capacity rugby and concert events, when many thousands of people will be making their way to the stadium from the central city as well as from their cars in the surrounding parking zones. These extreme volumes of pedestrians will crowd footways and potentially lead to overspill onto roads, particularly at crossing points where hold ups to the flow of pedestrians may lead to excessive concentrations of pedestrians. Congested local roads with incompatible traffic volumes searching for parking spaces may also give rise to safety issues.

It is proposed that two event management plans (EMP's) be adopted to maintain the safety, efficiency and effectiveness of the road network and users and reduce the adverse effects on adjacent land uses. These plans should include objectives and principles to guide the development of the plans. They should incorporate road closures to protect convergent and high pedestrian flows, parking restrictions to protect sensitive land uses and maintain emergency vehicle access to them, provide dedicated bus and taxi pick up, drop off and parking zones to promote alternative mode, as well as the integration of permanent design features such as new footbridges and walkways.

The responsibility for the completion, agreement and implementation of event management plans will not fall to one organisation alone. Transit NZ and Dunedin City Council will be responsible for completing the statutory processes to close roads for each event, whilst the stadium itself may have some role in EMP implementation, such as consultation with its neighbours and other affected land owners. The Police will also have a responsibility for maintaining public safety and so should be closely involved in the development of final event management plans. (see proposed Rules 27.5.3(i) and 27.5.4 (ii) and (iv)).

Overall, the effects of the range of events anticipated in the zone can be safely and relatively efficiently accommodated. The range of event frequencies relative to sizes of events means that for the most part, with respect to their character, nature, scale intensity, frequency and duration, the effects on the transportation network and adjacent land uses can be maintained to a level less than minor.

4.6 Cultural and Archaeological Effects

Kai Tahu Ki Otago Limited has prepared a report for the Dunedin City Council entitled *Cultural Evaluation Logan Park and Dunedin Harbourside.*

This report provides technical advice in the form of a cultural assessment of the potential issues for Te Runanga o Otakou in regard to the stadium project (amongst others), outlines

the association of Kai Tahu with the area, outlines values of importance to Kai Tahu and provides advice on any possible policy implications. The report is particularly concerned with the proposed treatment of the Water of Leith (Owheo). It is also relevant to note here that this report represents a start point to the dialogue that is necessary with Te Runanga o Otakou, but should not be seen as all the necessary consultation required.

The following table from the Report is reproduced below:

Cultural Impacts	Mitigation
1. Further degradation of the Owheo during clearance of the site and construction.	■ Management of run-off during all stages of site disturbance and construction to avoid silt and other contaminants entering the Owheo. ■ Best Practice management of storm-water from buildings and areas of hard standing that maximises on-site retention and reduces contaminants entering the Owheo, including the use of rain gardens, stormwater planters, swales and wetlands.
2. Accidental discovery of taonga or koiwi tangata.	■ Adopt an accidental discovery protocol.
3. Loss of association.	■ Further discussion is required with Te Runanga o Otakou regarding appropriate acknowledgement of the association of Kai Tahu Whanui with the site through a variety of medium. Options may include (without limitation) a Waharoa (a carved entrance, the carved Whatanoa Gateway at the entrance to Waikato Stadium is an example), or Pou, within either the University Quadrangle or the Stadium. ■ Interpretation Panels that document the history and cultural use of the site.
4. Loss of access.	■ Work with all the Logan Park/Harbourside stakeholders to reconnect Logan Park and Signal Hill with the Harbourside, for example through the establishment of an urban walkway or greenway.
5. Loss of biodiversity.	■ Promote the use of locally sourced genetic plants and fruiting species for landscaping and garden areas.
6. Recognition of the loss of wetlands (Repo raupo) of cultural significance.	■ Interpretation panels that document the history and cultural use of the Owheo tidal estuary.

In general, it is noted that these requested amendments are more appropriate at detailed design stage.

It is also noted that the site for the proposed Spectator Events and Education Zone is not identified in the Dunedin City District Plan as being of particular cultural significance and

that there are no archaeological sites noted in the District Plan on the land subject to the Plan Change.

4.7 Servicing/Infrastructure

The site for the proposed zone is serviced for telecommunications, electricity, stormwater, wastewater and water supply as it is within the urban Dunedin area. The services to the site will be provided underground where possible as this will assist in achieving an improved amenity in the area. The capacity of all utility services has been confirmed in a letter from the Dunedin City Council titled *Infrastructure Capacities for Multi Purpose Stadium Buildings – Awatea Street, Dunedin*. A copy of this letter is included in Volume 2 of this AEE. There has been no impediment identified to the plan change proceeding.

4.8 Natural Hazards

The proposed zone and any development of land within it has the potential to affect or be affected by two natural hazards, flooding and ground stability. Both of these potential effects are influenced, to varying degrees, by the anticipated effects of climate change and sea level rise.

4.8.1 Flooding and Stormwater

This potential effect is assessed in the report entitled *Flooding and Stormwater Issues Proposed Spectator Events and Education Zone Awatea Street Site* prepared by David Hamilton and Associates Limited. This report is included in Volume 2 to this AEE.

4.8.1 (a) Existing Environment

The proposed zone site is situated close to the Otago Harbour and has the Water of Leith on its south western side. It is noteworthy that the Water of Leith has a catchment area of 45km^2. The site itself is land reclaimed from the upper harbour.

The Opoho Creek catchment extends from sea level up to an altitude of about 403 m asl. The creek has a total catchment area of 271 ha, and crosses the site in a double barrelled box culvert. The culvert is of sufficient capacity for the 1% AEP event.

In addition to Opoho Creek there are stormwater mains running along Union Street East that collect from the Otago Polytechnic campus and residential areas as well as part of the land subject to the proposed zone and Logan Park. These feed into the Opoho Creek culvert downstream of the double culvert entrance.

Highest astronomical tide level in Otago Harbour corresponds to a level of 101.36m (Otago datum). This corresponds to 1.36m above mean sea levels (MSL) Dunedin.

Existing stormwater from the zone is discharged either into the Opoho Creek culvert or to the Water of Leith.

4.8.1 (b) Assumptions for Development

It is assumed that the nature of developments in the zone could lead to a high proportion of the site being developed as buildings and carparking. Stormwater generated from within the zone can be discharged by gravity into the Water of Leith without requiring additional

Dunedin City Council stormwater mains. Should basements for carparking or other uses be developed then such basements may require pumped discharge of drainage and stormwater.

Buildings to be developed within the Zone will be required to meet surface water design standards in the Building Code.

The "Approved Document for New Zealand Building Code Surface Water" issued by the Building Industry Authority at Clause E1, has requirements relating to performance:

"***E1.3.1*** *Except as otherwise required under the Resource Management Act 1991 for the protection of other property, surface water, resulting from an event having a 10% probability of occurring annually, and which is collected or concentrated by buildings or site work, shall be disposed of in a way that avoids the likelihood of damage or nuisance to other property."*

"***E1.3.2*** *Surface water, resulting from an event having a 2% probability of occurring annually, shall not enter buildings."*

[This clause applies to Housing, Communal Residential and Communal Nonresidential buildings. The proposed zoning falls into the latter category – refer BIA Clause A1 Classified Uses paragraph 4.0.2 and 4.0.3]

Although Dunedin City Council building requirements for a commercial building normally would not require the 2% standard to be applied as above, the Building Industry Association definitions do apply for a communal non-residential building (which is what university buildings and sports facilities such as a stadium are classified as).

The Otago Regional Council recommends a standard of an annual exceedance probability (AEP) of 1% for buildings on floodplains.

4.8.1 (c) Changes Arising from Zone

The existing site is utilised for industrial type buildings that are relatively impervious, and the proposed developments are not expected to increase the stormwater runoff from the site.

The site is adjacent to the Water of Leith with a large waterway connecting directly to the Otago Harbour.

As a result of the site's location immediately adjacent to the Water of Leith it would be possible for all stormwater from the site to be discharged directly to that channel without utilizing existing stormwater drains.

A spectator events and education zone is expected to have fewer water quality discharge issues for stormwater to the Water of Leith and Harbour than an industrial zoning. Until the exact nature and extent of buildings, carparking and open space is known this is difficult to quantify.

Impacts from the development on other properties in relation to surface water from the Water of Leith and Opoho Creek are not expected as the original design capacities of the channels are adequate. Local Logan Park area stormwater outlets will not be compromised by the proposed zone.

The opportunity with a redevelopment is to ensure that surface water flooding issues, storm surge and tsunami impacts from the sea and local stormwater issues are appropriately addressed.

4.8.1 (d) Mitigation

In order to ensure that new development takes into account the current knowledge on coastal impacts and climate change it is recommended that minimum floor levels be established for new buildings that are required to meet the Building Code Surface Water standard.

The following table summarises the information for surface water flooding threats identified above.

Hazard	Design WL RLm (Otago Datum)	Recommended freeboard m	Recommended Minimum Floor level based on threat (RL m (Otago Datum)
Water of Leith Q100 level at Anzac Ave	102.0	0.6	102.6
Opoho Creek Culvert inlet design flow Q100	102.0	0.6	102.6
Potential surcharge in Logan Park if Leith water exits left bank upstream, Opoho Creek culvert surcharges, or local stormwater pipes surcharge in super design event	103.1	0.6	103.7
Otago Harbour Storm surge incl 0.5m climate change	102.4	1.0	103.4
Otago Harbour Tsunami incl 0.5m climate change	102.0	1.0	103.0

Existing floor levels for sporting facilities at Logan Park are shown below for comparative purposes.

Sporting building at Logan Park	Ground floor level (RL m Otago datum)
Hockey	102.57
Rugby changing sheds	102.74
Bowling Club	102.87
Cricket grandstand	102.86
Recreational Services	102.83

A minimum floor level of RL 103.7m = 3.7m above MSL Dunedin is recommended for communal non-residential buildings in the proposed zone. This is considered sufficient to provide a freeboard of at least 0.6m for floods of an annual exceedance probability of 1% from all the various sources. Such a floor level would also permit gravity drainage to the Water of Leith for local stormwater. This is reflected in proposed rule 27.5.2 (viii)(d).

This level is below some of the existing ground at the site and assumes that if this minimum level is used that site work will provide adequate site drainage for on-site stormwater. A higher floor level can of course be used.

4.8.1 (e) Conclusion

The proposed spectator events and education zone is on land that was reclaimed about eighty years ago. Provisions for stormwater from Opoho Creek and the Logan Park area made at the time are still satisfactory. The Water of Leith channel adjacent to the site has a large capacity over this section and a sufficiently high concrete wall to contain flood flows and predicted realistic storm surges or tsunami effects. Proposed developments will produce similar site stormwater runoff to that existing and this can be channelled directly through existing outlets or through new outlets directly to the Water of Leith.

The creation of a new zoning for spectator events and education purposes does not increase the potential flooding threat to other properties.

A minimum floor level is recommended at 3.7m above mean sea level, for buildings that are required to meet the Building Code surface water criteria.

4.8.2 Ground Stability

The potential ground stability effects are assessed in detail in the Tonkin & Taylor Limited report entitled *Proposed Spectator Events and Education Zone Preliminary Geotechnical Investigations*. This report is included in Volume 2 to this AEE.

4.8.2 (a) Background

The geology of the Dunedin area is dominated by volcanic rock of basaltic to andesitic composition that were intruded through marine sediments during Miocene times.

Watercourses and tidal embayments such as Otago Harbour have locally deposited alluvial, estuarine and marine deposits and generally modified the volcanic landscape by deep incision and sedimentation.

Reclamation of land around the upper part of Otago Harbour has been undertaken since European settlement began and areas of such fill include the site of the proposed zone and the wider Logan Park area in general. Harbour dredgings (marine muds) were the predominant source of reclamation fill.

Dunedin has lower than average seismic activity compared with other areas in New Zealand, however, strong shaking is certain to provide the potential for liquefaction and settlement where land is reclaimed or contains natural alluvial or marine infill (e.g. the land of the proposed zone).

The earthquake hazard in Dunedin is dominated by relatively infrequent moderate to large earthquakes in eastern Otago, and large to very large earthquakes in the much more seismically active Fiordland and Westland regions. Average return periods for shaking intensity are : MM 7=100years, MM 8= 450 years and MM 9=>2,500 years. Reclaimed land around the upper harbour basin is likely to experience shaking of up to one intensity unit higher for the City than the average; therefore shaking to MM 8 intensity can be expected every 100 years.

The site stratigraphy is straightforward comprising a veneer of near-surface hardfill forming road pavements and yard areas between buildings underlain by about 6 to 9 metres of reclaimed material – very soft to soft hydraulic fill. This is underlain by in-situ harbour mud, inter-fingered with alluvial sand and gravel brought down by the Water of Leith.

Hard volcanic bedrock outcrops a short distance on the north-eastern side of Ravensbourne Road. The rock deepens gradually across the site towards the south-west, probably reaching depths of about 40 metres.

Groundwater at this site is likely above sea level (typically about 2 to 3 m depth) rising closer to ground level during sustained wet periods.

4.8.3 (b) Ground Stability Effects

The report finds that settlement will be a major consideration for any structures in the proposed Spectator Events and Education Zone. Consolidation parameters were been obtained from other reclamation fills around the Harbour, indicating relatively compressible materials that consolidate moderately slowly. The time for 90% primary consolidation is likely to be in the order of 20 to 30 years, if any long term distributed loading is applied. Because the reclamation fill has been in place for more like 100 years, primary consolidation will be effectively complete. Therefore, if no additional loading is applied, minimal settlement would be expected. Bearing capacity and settlement analysis and the poor response under dynamic loads suggest that piling to the good bearing strata at depth is likely to be the most effective means of supporting substantial structures constructed within the Zone and this is recommended in the Report.

All of the proposed Spectator Events and Education Zone, in common with much of the Dunedin Harbour reclamation corresponds to "Ground Class D – deep or soft soils" in terms of NZS 1170.5:2004 (but bordering on Class E – very soft soil).

Probe test (CPT) has confirmed that much of the hydraulic fill contains plastic clayey silt strata that are resistant to liquefaction. However, the fill is highly variable and at various depths there may be loose saturated cohesionless sand lenses, particularly at about 4 to 6 m depth, that are highly susceptible to seismic shaking. This presents two issues; settlement resulting from seismic liquefaction, and lateral spreading (or flow liquefaction). Liquefaction of level ground may lead to total loss of support for shallow foundations; hence deep piling is recommended. Lateral spreading results from full or partial loss of strength on ground that is not level.

Analysis suggests that while liquefaction settlement is not a major issue for the zone, provided all structures are piled and supported on the more competent strata at depth, lateral spreading/flow liquefaction is a significant design consideration.

While the zone is relatively flat, there is a 4 metre vertical wall located immediately to the south west of the proposed zone where the Water of Leith is channelled. This drop off establishes the potential for lateral spreading of the hydraulic fill, should the retaining wall fail, with consequent very large lateral load on piles supporting adjacent structures.

In view of this potential issue, all lateral loads from structures in the vicinity of the Leith wall are recommended to be carried by pile groups and ground anchors, rather than assuming any significant ground restraint in the upper 8-10 metres.

With regard to ground water control, any excavations approaching sea level (3-5m depth) are likely to generate slight to moderate inflows in the long term. Lesser excavations may provide moderate flows for a few days then minimal inflows may be expected. The maximum water table after sustained rainfall is expected to be within 0.5m if the ground surface.

In respect of neighbouring structures and hazards, it is noted that the zone is relatively isolated from neighbours. However, buildings on adjacent sites are also on soft hydraulic fill, therefore vibration effects during piling works will need to be monitored and limited accordingly.

There are numerous underground services, many still operative, that will also require consideration, in terms of both settlement and clashes with piles or ground anchors.

Longer term settlement is a significant issue for the proposed zone where any additional fill is to be placed. Filling should therefore be minimised throughout. Structures that require floor levels higher than existing ground level should be suspended, or the fill placed on a raft which is piled to the dense alluvial gravels. Alternatively pre-loading (with or without wick drains to accelerate consolidation of the hydraulic fill) is recommended to be considered.

4.8.4 Conclusion

Overall, the implications of natural hazards for the proposed zone and any developments within that zone are assessed as being not greater than minor. Specific design may be required but in no instance do the presence of natural hazards make the areas unsuitable for the proposed zone.

4.9 Hazardous Facilities

Within the general vicinity of the proposed zone there are a number of hazardous facility operations. The proposed zone has the potential to result in a significantly increased number of people in the locality; this has the potential to increase the risks to the public posed by these facilities and to increase the risk posed by the public to the continued safe and efficient operation of these facilities.

Envirocom (NZ) Limited has prepared a report entitled *Impact Assessment Overview of Risks from Proposed Spectator Events and Education Zone*. This report is included in Volume 2 to this AEE. This report addresses the interface between the proposed zone (including the proposed multi-purpose stadium) and the hazardous facility operations in the locality.

With the exception of Palmers Quarry which stores and uses explosives on a limited and intermittent basis, the other neighbouring hazardous facilities store and/or distribute petroleum based products. All depots other than the two bitumen plants are 24 hour per day 7 day per week operations.

Under normal operating conditions, that is the day-to-day occupancy of the proposed zone and at other times when limited additional numbers of people are present (such as small events such as seminars and exhibitions) the report finds that there is no impact from the proposed zone on the operations of any of the major hazard facilities within the locality.

During times of major events with high patronage it is considered that there is the potential for adverse effects on neighbouring facilities unless these mattes are appropriately managed. Envirocom state that the new road layout and proposed traffic management plans are considered adequate to address these issues.

Traffic and pedestrians will be required to be managed in the area of the Liquigas Depot and other critical facilities with parking prohibitions in a number of areas and the plan provisions provide for this by requiring a traffic management plan (see Rule 27.5.4 (iii))..

In terms of reverse sensitivities, under normal operation conditions the Report finds that it is difficult to envisage any situation where the day-to-day operations of the various hazardous facilities would impact on the proposed zone, given adequate traffic and event management.

In addition to normal operating conditions emergency situations were considered as part of the reverse sensitivities evaluation. The concern here was particularly focussed on the Liquigas Depot. The Report finds that the potential for fire to impact on the proposed zone is negligible.

Given the extensive safeguards required for LPG facilities a major gas or liquid leak scenario is also unlikely to be an issue. Not only are the protections in place and operate automatically, but they can also be manipulated through the Control Room computerised system. They are regularly and professionally maintained to a standard no less than the specifications when new; in most cases offering a far greater degree of control than the original specifications.

In the unlikely event that such an event did occur, it could only happen as a result of the catastrophic failure of one or more of the pressure vessels. In such an event, the planned evacuation (or at least consideration area) radius for a major leak is one kilometre. Should such an untoward event take place it would be usual to consider "evacuation in place." That is any patrons in the Zone would be asked to remain – with suitable entertainment provided – for the duration of the emergency.

It is considered by Envirocom that the potential effects on the proposed zone from a serious fire or spillage at either the NZOSL Depot or the Chevron/Shell complex would be minimal. The effects would be limited to a smoke plume. This is however not to downplay the seriousness of smoke on a large crowd but the situation is manageable through normal NZ Fire Service Standard Operation Procedures and any approved Evacuation Scheme for buildings in the proposed zone.

Overall, and from a hazardous facilities perspective the Report finds that the proposed zone to allow the placement of a stadium and educational facilities within the locality currently occupied by a range of these facilities is not inappropriate considering the activities being proposed and the surrounding land use.

4.10 Land Contamination

A report entitled *Spectator Events and Education Zone – Dunedin: Ground Contamination* has been prepared by Tonkin & Taylor Limited. This report assesses the presence and nature of contaminants in the soils, the potential effects of any contaminants for proposed activities

provided for within the zone and includes recommendations for further investigation and remediation works. The report is included in Volume 2 of this AEE.

There are two main sources of potential contamination on the site, the fill material used to reclaim the land and the activities that have been carried out post reclamation. Land uses of concern include a landfill, wool scour, tannery, a fumigation facility, and other industrial activities and processes.

The investigations revealed that the reclamation soil primarily consists of hydraulic marine fill (muds and sands dredged form the harbour) overlain by general hardfill consisting of various soils, basalt boulders and some demolition rubble (concrete etc). The reclamation fill which was used to infill the former Lake Logan also intersects the north-western portion of the site. This fill was found to contain waste materials such as bottles, ceramics and metal.

The number and distribution of samples taken thus far has broadly characterised the hydraulic fill materials on the site. Laboratory results reveal that fill generally contains low levels of contaminants, although some elevated metals concentrations were recorded.

A minor exceedance of guidelines was found from a small patch of oil stained ground on surface soils. The area affected was very small and it is expected that such the contamination would be remediated during the course of general site works.

The main exceedances of the relevant guidelines were found in the fill materials used to reclaim Lake Logan early last century. This fill is a different material than used on the rest of the site, and was found at depths greater than 2m in the north western portion of the site. Lead levels in this fill material were over ten times greater than the guidelines in one sample, and 3-5 times in two other samples. The soils above these samples were significantly below the human health guidelines.

Overall, the site has been broadly characterised and due to the small number of exceedances, and the depth at which they were found, the preliminary results suggest the concentration of contamination within the site would not preclude the use of the site for the proposed activity (Spectator Events and Education Zone). A suitably prepared Site Management Plan could be prepared to ensure that contaminants in the soil did not affect worker health during the construction phase, or get transported off site in an unplanned manner. Depending on the construction required, some targeted remediation may be required. It is expected that this would be relatively small scale and could be undertaken using well established and simple techniques.

4.11 Air Quality

Tonkin & Taylor Limited has prepared a report entitled *Air Quality Assessment of the Proposed Spectator Events and Education Zone.* This report is included in Volume 2 of this AEE. In this report the implications for the proposed zone, and any development that might occur within it, along with any environmental effects of that development, are identified and assessed.

The site of the proposed zone is currently zoned Industrial 1. It is surrounded by Residential 3 zone to the north, Industrial and Port zones to the east and south and Campus to the west.

The predominant wind direction recorded at Dunedin Airport is from the south west, and from the recording point at Musselburgh, is from the west and north-east directions. Calm days have been recorded at Musselburgh for 18% of the time during which records were taken. These readings are influenced by the topography of Dunedin and particularly the orientation and proximity of the Harbour and hills.

Measured PM_{10} levels in the vicinity of the proposed zone have typically exceeded the Ambient Air Quality Standards (AAQS) for only one or two days each year. The National Environmental Standard (NES) allows for one exceedance of the AAQS each year. Successful implementation of Plan Change 2 of the Regional Plan: Air is aimed at ensuring the air shed which covers the zone (Airshed 3) meets the AAQS by 2013, as required by the NES.

Monitoring of NO_2, SO_2 and CO at the Albany Street monitoring site between 1997 and 2004, shows that the levels of these contaminants were generally low, and were well below the relevant guideline levels for the averaging time of the sampling method. It is expected that ambient concentrations of these contaminants will comply with the AAQS.

4.11.1 Air Quality Effects on the Zone

There are existing boilers and industrial activities in the vicinity of the proposed zone that generate discharges to air. These activities hold resource consents issued by the ORC that limit discharges to air to prevent offensive and objectionable discharges beyond the boundary of their site. The resource consents include conditions to ensure that there are no significant adverse effects on air quality.

The closest activity visible to the site is a concrete batching plant operated by Allied Concrete on the edge of the quarry. Effects of this activity on the proposed zone are considered no more than minor.

The proposed zone should be treated as sensitive to air quality because there may be people of all ages and health status present. However, students and staff at the educational facilities and people using the stadium are likely to be present for only part of the day. Similarly, major sporting events and other activities at the stadium are likely to take place during the weekends or after working hours.

The most sensitive activities in relation to air quality will be people undertaking physical activities, such as playing sport, in the stadium and recreational activities in the plaza area. It is noted that there are other sporting facilities in the vicinity including Logan Park to the immediate north which has tennis courts, netball courts and cricket pitches.

The proposed zone will not increase the sensitivity of the receiving environment as it is consistent with existing educational facilities and sports fields in the vicinity.

4.11.2 Air Quality Effects of the Zone

Potential effects on air quality associated with the proposed zone have been identified as dust effects during construction of buildings and effects of any increase in local traffic as a result of activities within the Zone.

Dust is likely to be generated at the site temporarily when construction works are carried out and during roading works for the realignment of SH88. The environmental effects of

dust are primarily associated with nuisance and can include unwanted deposition of dust on property, reduced visibility and diminished amenity values.

Users of the sports fields and the College of Education and Otago Polytechnic near the site would be sensitive to dust generated during construction works. Good management practices adopted for the site during construction works should prevent any offensive or objectionable offsite discharge of dust.

With respect to the effects of motor vehicles associated with developments in the proposed zone, the Ministry for the Environment has produced a draft good practice guide to assess discharges to air from land transport. It prescribes three levels of assessment. Tier 1, which is appropriate in the circumstances of this assessment, is a screening assessment of basic traffic and land use information to determine whether changes in air discharges are likely to have a significant effect and require further assessment.

The site and surrounds is relatively flat with wide open spaces in the immediate vicinity and is subject to sea breezes being close to the Harbour. The topography of the site is unlikely to accumulate traffic emissions that will lead to adverse environmental effects.

The conclusions of the Tier 1 assessment are as follows:

- There is not expected to be any significant increase in traffic in the area during the day-to-day use of the University Building.
- An increase in emissions from motor vehicles is expected during a major event at the stadium. The increase in traffic is not considered significant based on a Tier 1 assessment.
- Based on the findings of the Tier 1 assessment, a more detailed (Tier 2) assessment is not considered necessary.

4.11.3 Summary

The overall conclusion of the air quality assessment, based on air quality monitoring data and a review of local sources of air pollution, indicates that the only existing air quality issue in the proposed zone is fine particle (PM_{10}) pollution, which is primarily due to domestic heating emissions in winter. This issue is being addressed by the ORC through proposed changes to the Regional Plan: Air which will introduce, amongst other things, more stringent requirements for domestic heating appliances.

Developments provided for in the proposed zone are consistent with existing activities in the area and will have similar sensitivity to air quality effects. There are not expected to be any significant adverse effects from air quality on activities that would be provided for in the proposed zone.

The effects on air quality associated with the proposed zone have been identified as dust effects during construction, and effects of any increase in local traffic. Provided they are appropriately managed, the effects of dust during construction will be no more than minor. The effects of changes to local traffic on air quality will be negligible.

4.12 Effects on the Existing Industrial Zone

The creation of the Spectator Events and Education Zone on this site within Dunedin City inevitably leads to the reduction of the land resource that is able to be used for industrial purposes. This has an immediate effect in reducing the availability of land with an 'Industrial zone' within Dunedin.

The effect of the reduction in land in the 'Industrial zone' is that other industrial land will in the short term become more valuable as a resource for industrial activities. Initially there may be a reduction of industrially zoned land, but further studies will enable an assessment to be made of this resource and the use made of industrial land by industrial activities.

It is also noted that with the relocation of Carisbrook away from its existing site, that land will become available for industrial activity.

Industrial land is valuable as a part of the economic base for Dunedin. However all land is under some degree of change as new industry is attracted to a region or industries grow. A plan change for Dunedin Airport has included provision for industries as a permitted activity across the wider airport zone, which has accordingly increased the amount of land available within the City for industrial activities.

Notwithstanding this proposed plan change and the Dunedin Airport plan change there is the necessity to monitor the industrial land resource of the City and to rezone land appropriately if the need is evident. Alternatively the existing resource of industrial land could be used more efficiently particularly if rules in the Dunedin City District Plan enable this to occur.

Economic advantages will occur through this plan change where the linkages to the University are maximised. The development of the land is envisaged to include areas for university specific activities. These additional teaching/learning/research spaces will allow the University to increase the numbers of students at this institution and this will have a subsequent positive effect on the Dunedin economy.

4.13 Reverse Sensitivity Effects

The proposed Spectator Events and Education Zone has the potential to give rise to reverse sensitivity effects, particularly in respect of the quarry activity to the north east, but these are considered to be minor.

The operation of the site for some major sporting events may have some effect on quarry operations. The use of explosives and noise from explosive detonation in the quarry could be heard by spectators and users of the proposed development on the site. It is likely that quarry activities and the activities on the site of the plan change which involve large numbers of spectators are generally at mutually exclusive times. These activities are in all likelihood to be held during late afternoon or early evening times when normal quarry operations do not take place.

Quarry operations also include traffic movements into the quarry from Ravensbourne Road and then vehicles exiting the quarry. The realignment of the state highway will not affect traffic movements into or out of the quarry and the location of the carpark area on the site of the Spectator Events and Education Zone will have no more than minor effects on the

quarry operations. The traffic report suggests that traffic levels may reduce on Ravensbourne Road once the State highway network is realigned thereby making easier access to and egress from the quarry.

Dust from the quarry activity carrying onto the site of the Spectator Events and Education Zone will be minor as the quarry is sited across Ravensbourne Road (SH88) to the north-east of the stadium. The prevailing wind in this part of Dunedin is generally from the west or the northeast (Musselburgh wind station). The distance and nature of the quarry activities can mitigate the effects of dust on the proposed Spectator Events and Education Zone site or if the wind is from the north-east the topography can mitigate any effects of dust from the quarry.

When university activities are being carried out on the site of the proposed zone the quarry activities will be able to continue to operate without any reverse sensitivity effects. The development of the plan change site will mitigate any noise effects from the quarry by developing the University activities in a location where the effects of quarry activities are avoided. This situation may change if the stadium component of the likely development within the zone does not proceed. Should that happen then the education building may need to take account of the activity within the quarry. The present plan rules provide the benchmark for both activities.

4.14 Summary as to effects

An assessment has been made as to the effects arising from the establishment of the proposed zone. Those effects considered have included:

- Built form and urban design
- Acoustic effects
- Traffic effects
- Cultural and archaeological effects
- Servicing/infrastructure
- Natural hazards
- Hazardous facilities
- Land contamination
- Air quality
- Effects on the existing industrial zone
- Reverse sensitivity effects

None of these effects has been considered to be potentially greater than minor, and where possible the considerations detailed both above and in the technical reports that form part of Volume 2 of this documentation have been included in the proposed Plan provisions to enable the development of the zone.

In addition the positive effects on the social and economic well-being of the people and communities of Dunedin and Otago has been assessed.

5 Consultation

5.1 Overview

The proposal has been the subject of significant public discussion and debate. The media has taken a keen interest and consequently has provided a significant amount of information to members of the public.

Consultation has occurred via annual plan hearings, various media releases, and targeted meetings, along with open nights held in November. All parties taking part in this consultation have been advised of the scope of the plan change and provided with details of the area of land within Dunedin North that is proposed to be included within the new Spectator Events and Education Zone.

The parties with whom consultation has been undertaken can be broken into a number of constituent groups. Comment on the outcomes from each group consulted is set out in the following sections.

5.2 Landowners of the subject site

The Carisbrook Stadium Trust has talked to landowners of sites where the Spectator Events and Education Zone is proposed to be sited. This consultation has focused on both the plan change process and details and also the various legal matters relating to the purchase of the land required for the new zone.

These landowners occupy the various industrial buildings existing on the Awatea Street site and surrounding streets. The scale and size of the industrial activities carried out on this plan change site varies greatly from large buildings such as the one occupied by Fonterra to much smaller specialised workshops and associated offices.

The details of the land required for the proposed plan change have been included in a letter posted to the landowners. The issue or comment raised and responses are as follows:

5.2.1 Comments

Comments on the proposal through the consultation process. The table below lists the comments and response provided.			
Comment No.	***Issue/Comment***	***Response***	***Number of responses***
1	*Who can apply for a plan change?*	Emailed reply advised that anyone can apply for a plan change and provided website reference.	1
2	*When will the stadium be constructed?*	Site clearance will start when the planning process has been completed and the Dunedin City District Plan enables construction to begin.	1
3	*How are our businesses protected through plan change?*	RMA has existing rights to allow activities to continue on when they do not meet the rules in a District Plan	2

4	*Will the stadium plan change proceed when development relies on funding from local authorities?*	Separate process for funding to be approved but this process is a public one on the plan change to the Dunedin City District Plan.	1
5	*Relocation of industrial premises*	None required – comment was that if agreement to the relocation of the industrial activity can be achieved then no objection to plan change, but oppose plan change until agreement is achieved.	1

Landowners were also advised of the two Open Days which were held in November 2007.

The landowner's feedback on the aspects of the plan change proposal has generally been positive in that this is a facility that will provide economic, educational and social benefits to Dunedin and Otago.

However, there were aspects of the plan change proposal that the local landowners had concerns about, mainly relating to the proposed development of the land subject to the plan change. These included matters relating to the continued use of buildings on the Awatea Street site following the completion of the plan change process and allowing for industrial activities to continue in the interim until site development takes place. Where possible, these considerations have been taken on board, and have been incorporated into the proposed Plan provisions.

5.3 Landowners in the vicinity of the subject site

There are landowners of sites in the vicinity of the plan change site who have also been consulted with on the proposed plan change.

Consultation has been undertaken by Envirocom in respect of all of the hazardous substance installations in the proximity of the site. One major activity is the Liquigas site where LNG is imported into the southern part of the South Island. The effects on the environment of the plan change are considered by Liquigas to have a significant impact on the risk profile of its LNG business operations. The Liquigas response has been the promotion of additional safety systems for Liquigas to operate within acceptable international safety standards.

An impact assessment of the risks from this site on the LNG site has been made following consultation with the CEO of Liquigas. This assessment has concluded that traffic management and vehicle parking are the specific issues that need to be considered carefully in the development of the site, and that while a qualitative assessment in respect of the matter has been undertaken, a quantitative assessment still needs to be undertaken.

The Director of Property Services at the University of Otago has been consulted on the proposed plan change. The University of Otago is supportive of the proposed plan change. The development of the site will allow for the expansion of university activities to enable a larger campus to be accommodated that supports the University activity and also Dunedin's economic development. The University of Otago's support, in principle, for the plan change will enable the University to provide for teaching space on the proposed site with the details to be worked through by the University and the Trust as the project progresses. The

University of Otago is comfortable with the provision of the teaching and learning space within the proposed rules.

The General Manager of Blackhead Quarries Limited has commented on the possible reverse sensitivity issues with university activities located on the site. The company is concerned to ensure that noise and dust sensitive activities such as university activities are not the exclusive occupants of the site, as this may mean that there is greater potential for reverse sensitivity effects to arise than would be the case for a mixed use development such as that proposed by the Plan provisions. The quarry activity is not able to relocate so it must work with neighbours to achieve a desirable working environment and as such an Industrial zone adjacent to the quarry is preferred if a stadium is not constructed on the site.

5.4 Other potentially affected stakeholders

Transit New Zealand, as the body with responsibility for the state highways, has been consulted on this proposed plan change by the applicant. They are aware of the implications for the relocation of SH 88 following the plan change.

A Notice of Requirement for an alteration to the designation for SH 88 is being prepared and is to be lodged at the same time as the plan change request. It is hoped that these two interrelated applications will be processed in tandem.

The Otago Rugby Football Union has been consulted by the applicant. The Union has been briefed with a project update by the applicant to enable them to be aware of the progress of this plan change.

Consultation has also included the Otago Polytechnic, who has been advised of project updates, along with the Otago Badminton Association.

The plan change is in the vicinity of Logan Park. The Logan Park Working Group has been advised of project updates so that they are aware of the plan change and the subsequent development of the site.

5.5 Tangata Whenua

The consultation with tangata whenua on the proposed plan change has been undertaken by the Dunedin City Council in conjunction with other adjacent projects. Initial feedback has not raised any issues with the proposed zone for this site, and while a final cultural assessment is under preparation, it appears unlikely that any significant issues will be raised.

Tangata whenua will be able to make submissions on the plan change through the statutory process.

5.6 Statutory Authorities

The proposal for the development of a new spectator and events facility in Dunedin has been the subject of several reports made to formal meetings of the Dunedin City Council and Otago Regional Council. These meetings have been open to the public and various reports on the possible development of the site have been published in the media and posted on the Dunedin City Council website.

The options available for a proposed new spectator events and educational facility and the benefits and costs of each option have been considered by the statutory authorities. The preferred option is the subject of this plan change following consideration of options by relevant councils and surveying of the community.

The Otago Regional Council (ORC) website has provided information to the public on the "New Stadium Proposal". This includes media releases and the ratepayers survey results.

The ORC in April 2007 carried out an Otago-wide survey to gauge community support for a proposal that the ORC contribute financially towards a proposed new stadium. It also agreed to seek authorisation from other Otago councils.

In April of 2007, two surveys were commissioned to better understand the attitudes of Dunedin and Otago ratepayers and residents towards the opportunity to develop a new stadium. These surveys were:

- A mail survey of all ratepayers in the Otago Region (which had a 39% response); and
- A telephone survey of 2,200 Dunedin City Residents

The survey has produced the following key results:

- For the whole region there is a clear – albeit small – preference for a new stadium to be built in Awatea Street (52.5% support);
- Support for, and opposition to, ORC's involvement with funding the stadium was almost equal.

5.7 General Public

Open Days were held at the Otago Polytechnic on Union Street East on 14th and 15th November 2007. The Open days were advertised via the print and radio media, and provided an opportunity for the wider public to view information on the proposed plan change, seek responses to any queries, and provide comment.

Information regarding the proposed plan change was made available at the Open Days. The project team working on preparation of the plan change were available to answer questions on specific aspects of the proposal. There were feedback forms provided for the public to suggest comments in writing on the plan change.

The feedback generally from the public was positive about the proposed plan change. The main issues of identified were:

- The need to provide for amalgamating sports related facilities within the site (e.g. Sport Otago, Unipol and NZ Academy of Sport).
- The importance of good public transport access (bus/train) with cycle/pedestrian integration.
- Provision of replacement industrial zoned land elsewhere in the City.
- Access to the Yacht Club (a matter for separate consideration under the Notice of Requirement process for the proposed Harbour arterial).

5.8 Consultation Conclusion

The combined consultation drew various responses, and provided an insight into the public viewpoint. It provided useful commentary that, where appropriate, has been included in the Plan Change documentation. For example, provision has now been included for continued use and development of industrial activities within the zone, as a discretionary (unrestricted) activity (Rule 27.5.5(i)). On the whole however, there was little response to the consultation which was undertaken for the Plan Change process, with the community seemingly concentrating instead on the funding decisions which the Council is presently working through.

6 Statutory Assessment

6.1 Resource Management Act 1991 (RMA) – Requirements for plan changes to District Plans

Section 73(2) and Clause 21(1) of Schedule 1, Part 2 of the RMA state that any person may request a change to a District Plan.

The process involved to prepare and assess the change is set out in Schedule 1 of the RMA. In the Table below the overall public participation process is summarised.

Relevant Clause, Part I, Schedule 1, RMA 1991	Description	Statutory Timeframes
Clause 3	Consult with Ministry for the Environment, Minister of the Crown, local authorities affected, tangata whenua of the area, any one else affected by the change.	
Clause 5	Public notification – calling for submissions	Closing date 20 working days after public notification
Clause 6	Any person can make a submission – prescribed form	
Clause 7	The local authority shall publicly notify a summary of submissions – calling for further submissions.	Closing date for further submissions 20 working days after public notification
Clause 8	Further submissions in support or opposition to submissions made under Clause 6	
Clause 8A	Copy of further submission served to person made submission under Clause 6	5 working days
Clause 8B	Notification of Hearings of submissions	10 working days notice
Clause 8C	When Hearing is not needed	
Clause 8D	Withdrawal of change	
Clause 10	Decision - reasons for accepting or rejecting submissions. Public notification of decisions.	
Clause 11	Public notification of decisions and notification of appeal rights	3 working days send copy of decision.
Clause 14	Appeals to the Environment Court	30 working days on receipt of decision on submissions

The following table sets out, in summary form, the documentation requirements for, and the matters for Council consideration in the processing of, a privately requested plan change.

Relevant Clause, Part 2, Schedule 1, RMA 1991	Description	Statutory Timeframes
Clause 21	Any person may request a change to a District Plan	
Clause 22	A request shall be in writing to the appropriate local	

Relevant Clause, Part 2, Schedule 1, RMA 1991	Description	Statutory Timeframes
	authority and include an: ■ Explanation of the purpose and reasons for the change; ■ Evaluation under section 32 for any objectives, policies, rules or other methods proposed; and ■ Assessment of environmental effects anticipated from the implementation of the change to the plan (taking into account Schedule 4).	
Clause 23	The local authority considering the request may require further information or commission a report.	20 working days upon receipt of Change. 15 working days upon receipt of further information
Clause 24	The local authority may, with the agreement of the person who made the request, modify the request.	
Clause 25	The local authority shall within 30 working days of either receiving the request, receiving all additional information or reports needed to consider the request or modify the request decide how the request should be dealt with. The local authority may either: ■ adopt the request in whole or in part as its own ■ accept the request in whole or in part ■ decide to deal with the request as if it were an application for a resource consent ■ reject the request The request can be rejected if it is frivolous or vexatious, not in accordance with sound resource management practices, would make a policy statement or plan inconsistent with Part 5 of the Act, the request has been given effect to or rejected by the local authority or Environment Court in past 2 years, or the plan has been operative for less than 2 years. The local authority shall notify the person making the request of its decision.	30 working days of receiving the request or all additional information 10 working days
Clause 26	Where the local authority accepts the request as a change it shall publicly notify the change within 4 months of agreeing to accept the request.	4 months
Clause 27	Where the local authority agrees to the request only in part or refuses the request, or decides to treat the request as an application for resource consent, the person who made the request can lodge an appeal with the Environment Court.	15 working days after receipt of local authority's decision
Clause 28	Withdrawal of requests	
Clause 29	Subclause of (2) – (9) of Part I of Schedule 1 apply.	
Clause 29 (2)	Local authority to send copies of all submission on Plan Change to the person who made the request.	
Clause 29 (3)	The person who made the request has the right to appear before the local authority at a Hearing	
Clause 29 (4)	Local authority (or Environment Court) may decline, approve or approve with modification the change and give reasons for its decision	

Relevant Clause, Part 2, Schedule 1, RMA 1991	Description	Statutory Timeframes
Clause 29 (5)	Local authority to send copy of decision on person who made the request.	
Clause 29 (6)	The person who made the request or any person who made submissions on the Plan Change can appeal the decision of the local authority to the Environment Court.	
Clause 29 (7)	Clause 14 and 15 of Part 1 apply.	
Clause 29 (8)	Where the decision has been appealed, the person who made request has the right to appear before the Environment Court.	
Clause 29 (9)	With the agreement of the person who made the request, the local authority may at any time before its decision on the change, initiate a variation under Clause 16A.	

This request is for a change to the Dunedin City District Plan and is prepared in accordance with the provisions summarised above and stated in the Resource Management 1991.

6.2 Private plan change process

6.2.1 Clauses 21 and 22, Part II, First Schedule RMA

This change to the Dunedin City District Plan is requested pursuant to Clause 21(1), Part 2 of the First Schedule of the Resource Management Act 1991 (RMA).

In accordance with Clause 22 this request is made to the Dunedin City Council and this report and associated documentation explains the purpose of, and reason for, the change proposed which is:

- A change of zoning from Industrial to Spectator Events and Education Zone'.

It is anticipated that the proposed change will result in environmental effects and this request describes those effects, taking into account the provisions of Schedule 4 of the RMA, in detail corresponding to the scale and significance of the effects.

It is not appropriate to consider the proposed plan change as a resource consent, or, in effect, to consider the associated development proposal as a non-complying activity in the Industrial Zone, because the proposed plan change and proposed spectator events and education facility will fully adopt the provisions of the Spectator Events and Education Zone in the Dunedin City District Plan.

In considering the future development of this site and the immediate area including Logan Park the provision of an integrated, comprehensive and consistent planning and development regime would not be possible through the piecemeal approach inevitable if this proposal was to be considered as an application for resource consent.

It is not appropriate for the Dunedin City Council to reject the request as provided for in Clause 25, Part 2, Schedule 1, for the following reasons:

(a) The request is not frivolous or vexatious;

(b) The substance of the request has not been considered by the local authority or the Environment Court within the last 2 years;

(c) This report fully demonstrates that the proposed change is in accordance with sound resource management practice;

(d) The proposed change is not inconsistent with Part V of the Act including National Policy Statements, the Regional Policy Statement (RPS), Regional Plans or District Plans in effect and as they may be relevant to the proposed change.

The Dunedin City District Plan has been operative for less than two years and this can be a reason for declining a plan change. This plan change is for a defined resource management purpose which was not considered in this form in a previous plan review. For this reason it is appropriate that the 'two year' discretion is not invoked and not used as a reason to decline this plan change application.

6.3 Part II of the RMA – Purpose and Principles

6.3.1 Section 5, RMA – Purpose

Section 5 of the RMA states:

"(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) Safe-guarding the life-supporting capacity of air, water, soil and ecosystems; and

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

Comment

The proposed plan change establishes a regime that enables and requires comprehensive planning of this subject area of land and will enable a facility for spectator events and education as a fully integrated part of the Dunedin environment. This proposed zone avoids, remedies or mitigates the adverse effects on the environment and the proposed development is in complete accord with the purpose and principles of the RMA. The design of the proposed facility for spectator events and education is such that it becomes a development catering for the various needs and characteristics of the Dunedin community in a way that encourages educational and social development and sustainable management.

6.3.2 Section 6, RMA – Matters of National Importance

Section 6 of the RMA states:

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

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

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

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

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

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

(f) The protection of historic heritage from inappropriate subdivision, use, and development.

(g) The protection of recognised customary activities"

Comment

The proposed plan change is not seen to adversely impact on any Matters of National Importance as set out in Section 6.

The maintenance of public access to the Water of Leith is available on the southern side of this river. The public are able to access the Water of Leith from Anzac Avenue and go through an underpass and across the harbourside pedestrian/cycle path to the marina and yacht club area.

Whilst the Dunedin City District Plan has a rule requiring an esplanade reserve be created along specific rivers (including the Water of Leith), proposal seeks the suspension, in respect of the proposed zone, of the requirement for a 20 metres esplanade reserve on the basis that such a reserve is not necessary to ensure public access on the northern side of the Water of Leith. The public have all year access on the southern side of the Water of Leith.

The site of this plan change does not have any adverse effects on the coastal marine area which is located on the seaward side of the rail bridge across the Water of Leith.

Signal Hill is a prominent feature of the natural landscape in Dunedin and lies to the northwest of this site. This landscape feature is not identified as being an 'Outstanding Landscape Area' in the Dunedin City District Plan although part of the northern area of Signal Hill includes the 'Flagstaff Mt Cargill Landscape Conservation Area'. This conservation area is north of the quarry site and not in the visual catchment of the site subject to the plan change.

6.3.3 Section 7, RMA – Other Matters

Section 7 of the RMA states:

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

(a) Kaitiakitanga:

(aa) The ethic of stewardship:

(b) The efficient use and development of natural and physical resources:

(c) The maintenance and enhancement of amenity values:

(d) Intrinsic values of ecosystems:

(e) Repealed.

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

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

(h) The protection of the habitat of trout and salmon.

Comment

Of these important resource management principles, those relating to the quality of the environment and requiring that the amenity values of this urban area are not diminished by the plan change are of most importance. Indeed the quality of the environment will be enhanced through the change from an industrial area with an eclectic arrangement of buildings to an area in which a coherent built form, with planned car parking and open space.

The plan change utilises the natural and physical resources of this urban landscape to ensure that the facility will make effective use of the location close to the University of Otago and the Harbourside, to enable its integration into the landscape and to be a linkage between the combined campus, Logan Park and the harbourside.

6.3.4 Section 8, RMA – Treaty of Waitangi

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

Comment

The principles of the Treaty of Waitangi are well established and have been taken into account in the establishment of the operative Dunedin City District Plan.

The proposed plan change is in accordance with the fundamental objectives and policies of the Dunedin City District Plan. The change to the plan to include this plan change will ensure that those objectives and policies remain relevant to the Spectator Events and Education Zone.

Consultation with iwi will be undertaken as part of the preparation of this plan change.

6.4 Regional Policy Statement

The following issue and objective in the Regional Policy Statement for Otago (operative 1 October 1998) are applicable to the proposed plan change.

- Built Environment – 9.3.1 "*The adverse effects of urban development and settlement can impact upon the quality of the built environment and on the use of natural and physical resources.*"
- Objective 9.4.1 states "*To promote the sustainable management of Otago's built environment in order to:*

  (a) Meet the present and reasonable foreseeable needs of Otago's people and communities"

The proposed plan change is consistent with the above matters in the Regional Policy Statement for Otago. The inclusion of the Spectator Events and Education Zone in the Dunedin City District Plan with the provisions it contains will support the above objective in meeting the needs of the Otago community.

6.5 Regional Plans

The following Regional Plans are operative in the Otago Region:

- Regional Plan: Air
- Regional Plan: Water
- Regional Plan: Coast

Any development in the Spectator Events and Education Zone will need to address matters in the regional plans as appropriate. The necessary resource consents from the Regional Council will be obtained where required in order to address any areas of non-compliance with the performance standards stated in those plans. The need for such consents can only be determined when the scope of the facility for spectator events and education has been accurately defined to enable the appropriate assessment to be made of the regional plans. It is not possible or appropriate to apply for these consents at this early stage of development.

6.6 LTCCP

The Dunedin City Council's Long Term Council Community Plan (LTCCP) includes the following statement:

> "*The Council has always consistently worked to improve the welfare of the residents of Dunedin City. This has been achieved through providing infrastructure, facilities and services that enhance the quality of life in Dunedin. The Local Government Act 2002 now requires all councils to think about their contribution to the community in terms of economic, environmental, social and cultural well-being.*
>
> *To develop our thinking about community well-being the Council implemented the '2002 Choices for the Future' community consultation. This resulted in the seven community outcomes as outlined below. Consultation with the community since 2002 has confirmed the appropriateness of these community outcomes.*"
>
> *Economic Well-being*

1 Wealthy community

2 Accessible city

Environmental Well-being

3 Safe and healthy people

4 Sustainable city and environment

Social and Cultural Well-being

5 Supportive community

6 Culture and learning

7 Active city

The vision for the 'Active city' outcome is:

> *"A City that provides and encourages participation in a broad range of sporting, recreational and leisure activities."*

The LTCCP further states:

> *It is generally understood that an active lifestyle is advantageous to our health and well-being. From swimming pools to bush tracks, Dunedin has a wealth of recreation and leisure facilities enabling its people to lead active lives in an enormous variety of ways. Council is dedicated to promoting the use of these facilities while maintaining and enhancing their quality and variety, recognising they are a major attraction for visitors and residents alike.*
>
> *The importance of activity to the City's young people, their health and development is also recognised. As such, Council invests in dedicated sport and leisure services, encouraging children and families to be active together.*
>
> *The Council provides these activities to sustain the quality of life in respect to an 'Active City'. Dunedin residents and visitors expect opportunities that range from relaxing outdoors appreciating the quality of Dunedin's land/city-scape (including the town belt and conservation areas) and attending events, through to more 'active' pursuits like play, exercise, and casual and organised sport. Encouraging these activities improves health and mental well-being. Consultation with Dunedin residents indicates continued support for the Council to be involved in these activities. The Council also has responsibilities to manage specific reserves as set aside under the Reserves Act 1977.*
>
> *In this Community Plan the Council in partnership with others is proposing an extensive redevelopment of Logan Park. This redevelopment included:*
>
> - *Construction of a multi-purpose facility incorporating the tertiary institutions indoor recreation facilities, and possibly the Academy of Sport South and the Otago Highlanders.*
> - *Elimination of through traffic, relocation of state highway 88, traffic calming and additional car parking.*

To facilitate the attainment of the objectives and outcomes stated in the LTCCP it is appropriate that a plan change is promulgated to include the Spectator Events and Education Zone in the Dunedin City District Plan.

This plan change will facilitate economic and social growth in Dunedin and the Otago Region through the development of a proposed stadium and educational facility. This site will be used by the University of Otago as well as catering for major sporting, recreational and cultural events.

The inclusion of appropriate statutory provisions in the Dunedin City District Plan will enable the development of the site in keeping with its location on the periphery of the CBD, close to the harbourside, university and port industrial areas.

6.7 Summary

The proposed Plan Change is consistent with the provisions of Part II of the Resource Management Act and the Regional Policy Statement, and does not offend the provisions of the relevant Regional Plans (although it is noted that resource consents may be required as detailed design of the development progresses). The facility will also provide for the outcomes articulated through the Dunedin City Council's Long Term Council Community Plan. As such, the outcomes articulated and directed via these documents cannot be considered an impediment to the Council's consideration of this Plan Change.

7 RMA Section 32 – Consideration of alternatives, benefits, and costs

An evaluation of this plan change has been made pursuant to Section 32 of the RMA. The evaluation provides an assessment of the benefits and costs of the proposed Spectator Events and Education Zone, and comments on the appropriateness, effectiveness and efficiency of the proposed change to the Dunedin City District Plan as a whole.

The Section 32 analysis looks at the reasons for, the benefits, costs, appropriateness, effectiveness and efficiencies gained in the comprehensive and integrated planning for the Spectator Events and Education Zone.

The Section 32 evaluation is supported by the descriptions of the proposed zone and the environment and the assessment of effects on the environment contained in this report. From this analysis the need for particular objectives, policies or rules are derived in an integrated and holistic manner.

The evaluation concludes that the proposed plan change provides for the efficient and effective use of the land resource in an appropriate way that achieves the purpose of the Resource Management Act.

8 Conclusion

8.1 Conclusion

Carisbrook Stadium Trust believe that there is significant potential for a well-designed and integrated stadium and education facility development to occur on this area of land which is adjacent to the University of Otago precinct and located within a short walk (1.5 km) from the centre of Dunedin.

The site has a number of strategic advantages in that it integrates well with the existing urban area and provides an opportunity for the extension of the University of Otago. The site is able to connect to the existing urban infrastructural services such as water, wastewater, stormwater disposal, power, and communication lines, and is well suited for this form of development given its flat topography and absence of any notable natural, cultural or landscape features.

The subject land is in a location close to urban facilities and services and has access to an existing road network and the realigned state highway which is able to accommodate the future development of the site without generating any adverse traffic impacts that cannot be avoided, remedied or mitigated. The overall landscape and visual impact, as a consequence of the rezoning proposal, is able to be mitigated through appropriate measures.

With respect to noise, the Plan Change establishes noise standards in the proposed Spectator Events and Education Zone that reflect the unique qualities of the activities that are able to be carried out in this zone and the receiving environment.

This rezoning proposal is primarily in land holdings which enables a comprehensive treatment of the site in terms of design and development plans. The overall benefits of the plan change enable Dunedin to enhance its sporting and educational reputation.

Carisbrook Stadium Trust is therefore seeking a change to zone in the Dunedin City District Plan in order to rezone land located in and around Awatea Street in Dunedin North to the Spectator Events and Education Zone. The plan change has been prepared and submitted in accordance with the statutory requirements within the RMA.

The assessment supporting this plan change has shown that it is consistent with the RMA, Regional Policy Statement and Regional Plans as well as the Dunedin City District Plan. Consideration has also been given to the Dunedin Long Term Council Community Plan prepared under the Local Government Act 2002, and the plan change has been found to be actively promoting the outcomes sought in this document.

Consultation with local community groups and stakeholders including some port land occupiers, iwi and statutory bodies has been undertaken as part of the preparation of the plan change.

Some concerns have been raised, from affected persons, particularly in respect of the right to carry out industrial activity if the plan change is approved and traffic safety concerns. The provision of industrial land in the City is a matter already addressed through other reports and there is the provision for existing use rights to be protected in the RMA. However it is considered that the effects on the road network (inclusive of the realigned SH88) will only

be minor and the road network is well-constructed to easily and safely cope with the additional demand that could build up over time from future development of the site.

Support has been provided for the plan change in relation to the potential social, educational and economic benefits for Dunedin and comprehensive approach to development that it creates. The development of the site as an entity has been supported by people consulted.

Evaluation of alternatives to the plan change has been undertaken in accordance with Section 32 of the RMA. The plan change is considered the most effective and efficient mechanism for providing a framework for the future use of the land, as it will allow for more comprehensive management of design and development options for proposal within the zone.

The effects assessment for this Plan Change has included a consideration of the following impacts. The list below also provides a cross reference to specific performance standards included in the proposed Plan Change provisions, relative to each specific topic:

a. Built form and Urban Design

While the character of the site will necessarily be altered as a result of any development that occurs due to the proposed Plan Change, this effect is not necessarily adverse. The basis for this is that the existing environment is urban in character, and because appropriate provisions are proposed so as to ensure that any other impacts that may affect character and amenity will be no greater than minor. Very specific Plan provisions are proposed in respect of the urban design effects of development within the zone, and as a result it is considered that these effects will be no greater than minor. Due to its size, the development will be highly visible from areas around the City, however mitigation measures are proposed that will mitigate this visual impact. Urban design and design and appearance provisions are proposed to be included in the Plan Change, and as such it is considered that the visual effects of development occurring within the zone will be no greater than minor.

Implemented via proposed Rules 27.5.2 (ii), (vi), (vii), (viii), and changes to chapters 3 and 23 of the Plan.

b. Acoustic Effects

Appropriate noise provisions are proposed to ensure the avoidance of unreasonable noise from land use activities occurring within the zone.

Implemented via changes to chapter 21 and the noise maps of the Plan.

c. Traffic Effects

The use of the site for a range of events and activities will affect the need for car parking. The likely use of the site will have minor effects as the car parking on site will be sufficient for these activities. A maximum use scenario is expected to be held on a yearly basis but will have more than minor effects on the surrounding road network for only a short

duration while the event is held. The road network between the site of the plan change and the City Centre has several routes that traffic can use to access and leave the site where the effects on the road network of the wider Dunedin will be minor.

Implemented via proposed Rules 27.5.2 (iii), (iv) and (v), 27.5.3 (i), and 27.5.4 (ii), (iii) and (iv).

d. Cultural and Archaeological Effects

At the time of preparing this assessment, the cultural and archaeological assessment has not been completed. Initial indications, however, are that it is unlikely that this matter will represent an impediment to the proposed plan change.

Although not specifically implemented through the provisions of the Plan Change, other legislation includes specific requirements that will address this issue.

e. Servicing and Infrastructure

There is sufficient capacity in all infrastructure to provide for development within the zone.

Implemented via the changes proposed to Rule 18.5.6 of the Plan.

f. Natural Hazards

There has not been any significant natural hazard identified that will have an effect upon the zone, other than the issue of flooding and sea level rise. To remedy this issue, a minimum floor level is specified in the proposed Plan provisions.

Implemented via proposed Rule 27.5.2 (viii).

g. Hazardous Substance Facilities

Provided that appropriate management techniques are employed, it is likely that the effects of the Zone on adjoining hazardous substance facilities will be no greater than minor.

Implemented via proposed Rules 27.5.3(i).

h. Economic

The proposed establishment of the Spectator Events and Education Zone will, on balance, have a positive economic impact on the local and regional economy.

Implemented by providing the Spectator Event and Education Zone.

i. Land Contamination

Although there appear to be a number of potentially contaminated sites within the area proposed for rezoning, as would be anticipated within an urban industrial zone, none of

these contaminants are at such levels as to pose a threat to the health of humans or the ecosystem as a whole.

Implemented via the provisions of the Regional Plan: Waste for Otago.

j. Air Quality

The effects on air quality associated with the proposed zone have been identified as dust effects during construction, and effects of any increase in local traffic. Provided they are appropriately managed, the effects of dust during construction will be no more than minor. The effects of changes to local traffic on air quality will be negligible.

The effects of discharges to air are managed via the Regional Plan: Air for Otago.

k. Reverse Sensitivity Effects

Reverse sensitivity impacts may result from the development of a zone that is almost wholly surrounded by industrial activities. In this instance it is noted that the reverse sensitivity impacts that may arise as a result of proximity to the quarry will be mitigated by the activities proposed to occur within the zone, and the landform in the area itself. Appropriate plan provisions are also proposed to address this, and any potential impacts that may arise from the proximity of hazardous substances facilities in the area.

Implemented via proposed Rules 27.5.2 (ii), (vi), (vii), (viii), and changes to chapters 3 and 23 of the Plan.

l. Effects on the existing industrial zone

Although the proposed Zone will reduce the amount of industrial land available throughout the City, it is noted that the decommissioning of the existing Carisbrook will return this industrially zoned land to the pool of available land. Additionally, it is noted that the Council has recently rezoned Dunedin Airport to provide for the establishment of industrial activities with a new zoning. As such, it is considered that the establishment of the zone on existing industrial land will not have a significant or lasting effect in terms of the availability of land within this zone.

Zone rules make express provision for continued industrial activities in the event that construction works are delayed, at Rule 27.5.5 (i).

8.2 Summary

Given these considerations, the use of a plan change has been identified as the most appropriate method to give effect to the outcomes sought. Specific plan provisions have been prepared for the zone, and these reflect the contributions made by various disciplines in the technical reports that form Volume 2 of this assessment. The attached section 32 assessment meets the Council's standard and is in accordance with the provisions of the Resource Management Act 1991.

The proposed Plan Change has been assessed against the provisions of Part II of the Resource Management Act, and is considered to give effect to the purpose and principles of the Act. Similarly, it has been assessed against the provisions of the Regional Policy Statement for Otago and the relevant Regional Plans. Additionally, the Plan Change gives effect to the outcomes indicated in the Long Term Council Community Plan. As such, the proposed Plan Change must be considered to be consistent with the applicable statutory framework.

Consultation in respect of the Plan Change has also been robust, and while there was little community response to the broader consultation on the proposed Plan provisions, there was a significant response to the Council's consultation during the Annual Plan drafting process.

In summary, given the actual and potential environmental effects of this proposed zone, the process that has been followed to date in respect of it's development, and the consistency of the Plan Change against the relevant statutory documents, it is considered that the permitted activity status that has been identified in the Plan Change can be supported, and that it is the appropriate mechanism for the management of the effects of this development. With this in mind, the rules as they have been prepared will ensure the sustainable management of activities within the zone, and will allow activities where their effects are no more than minor, assuming that the performance standards attaching to permitted activities are met. As such, the Carisbrook Stadium Trust is of the view that the plan change can and should be adopted by the Dunedin City Council, and should therefore be publicly notified.

- Appendix 1

Proposed Plan Provisions

- Appendix 2

Section 32 Assessment