



Department of Conservation
Te Papa Atawhai

Officer's Report to Decision Maker:

Notified Multi Conservancy Application

'DART PASSAGE' TUNNEL FIORDLAND AND MT. ASPIRING NATIONAL PARKS

MILFORD DART LIMITED

FILE: PAC 14 06 185

4 NOVEMBER 2011

The purpose of this report is to provide a thorough analysis of the application within the context of the legislation, the statutory planning framework and actual and potential effects, so the Decision Maker can consider the application; and confirm that it should be notified; and make a decision in principle whether it should be granted or declined, subject to public notification.

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EXECUTIVE SUMMARY

The Department has received an application from Milford Dart Limited (MDL) to construct and operate the 'Dart Passage', a 11.3 km long 5m diameter single lane bus/coach road tunnel through the Humboldt and Ailsa Ranges to link the Routeburn and Hollyford roads in Mt. Aspiring and Fiordland National Parks.

The Road tunnel is intended to be operated by Milford Dart Limited for approved bus/coach use only.

This is a large scale engineering project with a corresponding level of effects. The tunnel would generate 268,000 m³ of spoil, which would be disposed of on the Hollyford Airstrip. Two portal sites and access ways are proposed – one running off the Hollyford Road in Fiordland National park, the other at the Routeburn road end in Mt. Aspiring National Park.

The application as it currently stands (being a revised application) was received in March 2011.

The March 2011 revised application was in response to a preliminary draft first determination report considering a previous application, sent to MDL for comment in April 2010. This report contained analysis recommending that although the concession could be partially granted, on the basis of significant and unmitigated potential adverse environmental effects on long tailed bat and mohua, the previous application be declined in respect of the construction of a 600 m portal access road through forest in the Routeburn Valley.

MDL made a new application to avoid these significant adverse environmental effects, by moving the proposal for the Routeburn portal and portal access road to an area in the open grassy flat near the existing Routeburn Shelter, where no forest vegetation removal would be required. This change in location results in an increase in tunnel length from the originally assessed 10.4 km, to 11.3 km, and an increase in volume of spoil for disposal at the Hollyford Airstrip from 256,000 m³ to 268,000 m³.

This report considers the application in accordance with the relevant legislation to recommend whether the application should be approved in principle, or declined. Readers of any application material and assessments related to this application need to be mindful that the documents comprising the concession application span many years, and various amendments to the proposal. As such some aspects of this material are out of date, or superseded by subsequent information.

This report has been vigilant to ensure that only matters of relevance to the Minister of Conservation pursuant to the Conservation Act and National Parks Act have been considered.

The discussions in this report conclude that a number of potential effects of the proposed activities, while potentially significant and adverse, could be remedied, avoided or mitigated to the point where they would be minor, subject to effective mitigation by MDL and concession conditions.

This is a large scale engineering proposal. By MDL's own admission, they would need to commission and refine final Construction Specifications and Plans and Construction Management Plans, to give effect to any concession granted.

This report recommends that as a condition of grant of any concession, final Construction Specifications and Plans and Construction Management Plans be provided to the Grantor for final audit and approval, prior to construction works commencing. While there have been various discussions with MDL regarding commercial terms agreements reached in respect of commercial terms to avoid, remedy and mitigate potential effects of the proposed activities (that is, acceptance of

bond conditions) no agreements have been reached in regards to concession fee or rental at this point in time. Should the concession be granted, discussions around concession fee will be resumed, and concession fees set.

This report recommends that the concession application to construct and operate the Dart Passage in Mt. Aspiring and Fiordland National parks could be granted, subject to the draft concession conditions outlined in this document, the Department's standard concession conditions, and the outcome of the public notification process.

In June 2011 a preliminary draft version of this Officers Report was sent to MDL for comment. Comment was received on 8 August 2011, and is taken into account in this report.

REPORT STRUCTURE:

This report contains the following sections:

- Part 1: Introduction.
- Part 2: Contents of Application, including description of the activity, information available for consideration, status of the area under application, and detail on the proposed type and duration of concession applied for.
- Part 3: Natural, Recreational, Cultural and Historic Resources of the area under application.
- Part 4: Analysis of the application, including consideration of effects and proposed methods to avoid, remedy and mitigate effects.
- Part 5: Consideration of the proposal against relevant statutory planning instruments.
- Part 6: Other information for Consideration, including comment from Papatipu Rūnanga, Te Rūnanga o Ngāi Tahu, and Otago and Southland Conservation Boards.
- Part 7: Conclusions.
- Part 8: Proposed Concession Conditions.
- Part 9: Recommendations

Appendices

- Appendix 1 Proposed Special Conditions
- Appendix A List of documents comprising the Concession Application.
- Appendix B Maps and Drawings provided by MDL and referred to in this report.
- Appendix C Draft Concession Conditions proposed by MDL.
- Appendix D Draft Environmental Management Plans submitted by MDL.
- Appendix E Standard Concession Conditions (Easement)

Addendum 'Tunnel Design and Tunnel Safety Considerations' (29 Oct 2011)

1.0 INTRODUCTION

1.1 Summary of Proposal

The application from Milford Dart Limited (MDL) is to construct and operate the 'Dart Passage', a 11.3 km long 5 m diameter single lane bus/coach road tunnel through the Humboldt and Ailsa Ranges linking the Routeburn and Hollyford roads in Mt. Aspiring and Fiordland National Parks.

The proposed tunnel would facilitate coach transport from Queenstown to Milford Sound/Piopiotahi. Use of the tunnel would be controlled by MDL.

MDL have applied for a range of different types of concession, a lease, licence and easement, for a term of 49 years and 360 days.¹

The original application was lodged on 28 November 2005. Various revisions and amendments were made to the application between August 2007 and February 2010. A preliminary draft determination report was completed and sent to MDL for comment in April 2010. In response to that report (DOCDM-744561), MDL amended the location proposed for the Routeburn portal and access road. This amendment was received on 25 March 2011. On 17 June 2011 MDL were sent a preliminary draft Officers Report for comment, to which they responded on 8 August 2011.

This report considers the application in its current form.

1.2 The Law

The proposed activities would require authorisation pursuant to sections 5, 49 and 55 of the National Parks Act 1980.

National Parks Act 1980

The area under application is part Fiordland and Mt. Aspiring National Parks, and managed pursuant to the National Parks Act 1980.

Section 5 of the National Parks Act 'Indigenous plants and animals to be preserved' states;

'(1) No person shall, without the prior written consent of the Minister, cut, destroy, or take, or purport to authorise any person to cut, destroy, or take, any plant or part of a plant that is indigenous to New Zealand and growing in a national park.

(2) No person shall, without the prior written consent of the Minister, disturb, trap, take, hunt, or kill, or purport to authorise any person to disturb, trap, take, hunt, or kill any animal that is indigenous to New Zealand and found within a national park.

(3) The Minister shall not give his consent under subsection (1) or subsection (2) of this section unless the act consented to is consistent with the management plan for the park'

Section 49 of the National Parks Act states;

'(1) The Minister may, in accordance with Part 3B of the Conservation Act 1987, grant a concession in respect of any park; and the said Part 3B shall apply as if references in that Part to a conservation area were references to a park and with any other necessary modifications.

¹ See section 2.5 of this report

(2) Before granting any concession over a park, the Minister shall satisfy himself or herself that a concession-
(a) can be granted without a permanently affecting the rights of the public in respect of the park; and
(b) is not inconsistent with section 4 of this Act.'
...'

Section 55 of the National Parks Act 'Roads within park' states;

'(1) This Act shall not confer on the Minister or the Department any jurisdiction or authority with respect to any public road that is within the boundaries of the park.
(2) Except with the consent of the Minister given in accordance with the management plan for a park, no roads may be made over or through the park''

Conservation Act 1987

Section 49(1) of the National Parks Act 1980 refers to Part 3B of the Conservation Act 1987 as the process for considering concessions in national parks. These include:

- *Section 17S 'Contents of the application'*. This is discussed in section 2 of this report.
- *Section 17T 'Process for a complete application'*. This requires the Minister to decline an application within 20 working days of it being deemed complete, if the *'...application does not comply with or is inconsistent with the provisions of this Act or any other relevant conservation management strategy or conservation management plan...'* This is discussed in section 2.7 of this report.
- *Section 17U 'Matters to be considered by the Minister'* - This includes but is not limited to the consideration of the effects of the activity, structure or facility [s17U(1)(b)]; measures that can be taken to avoid remedy or mitigate any adverse effects of the activity [s17U(1)(c)]; and the purpose for which the land is held under the relevant legislation [s17U(3)]. These matters are discussed more comprehensively in section 4 of this report.
- *Section 17W 'Relationship between concessions and conservation management strategies and plans'*. This is discussed in section 5 of this report.

2.0 CONTENTS OF THE APPLICATION - Section 17S Conservation Act 1987

2.1 The Applicant

The Applicant² is Milford Dart Limited (MDL). MDL is a wholly owned subsidiary of Southern Hemisphere Proving Grounds Limited which currently owns the winter car testing facility at Waiorau Snow Farm on the Pisa Range.

The Directors of the company are Timothy Paul Allan, Thomas George Elworthy, George Arthur Churchill Gould, Tipene Gerard O'Regan, Michael James Sleigh and Richard John Somerville. Profiles of these directors are provided in section 2.2 of the concession application³.

2.2 Information Available for Consideration

Section 17S of the Conservation Act 1987 describes the information which is to comprise the concession application. Information submitted directly by MDL to the Department, reports commissioned by the Department in response to that information, and other relevant information (not directly submitted by MDL) collectively comprise the application pursuant to section 17S.

- **From MDL;**

Milford Dart Limited contracted a suite of third party technical experts to develop their proposal and application for concession. Background of the expertise of these consultants is included in the concession application⁴.

In particular, MDL highlights that they have contracted URS to prepare the technical design aspects of their proposal, and highlight that URS have considerable expertise in large scale engineering construction projects, including having worked on the Second Manapouri Tailrace Tunnel (a 9km 10m diameter tunnel also built with a tunnel boring machine in Fiordland National Park from West Arm on Lake Manapouri to Doubtful Sound).

The documents submitted by MDL which comprise the application are listed in Appendix A.

- **From external consultants contracted by the Department;**

The Department, on behalf of the Minister of Conservation (the Minister), commissioned external and internal technical review of the application pursuant to section 17S(4) of Conservation Act 1987. These reports form part of the application material to be considered by the Minister.

² Milford Dart Limited is a registered company – 1722382. For the avoidance of doubt, all references in this report to 'the Applicant' and/or MDL includes any material and statements prepared by their contractors and submitted by MDL in support of their concession application.

³ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006* Section 2.3 pg. 2-9.

⁴ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006* Section 2.3 pg. 2-9.

They comprise reviews carried out by Wildland Consultants Limited, Becca Infrastructure Limited, and MWH Limited, as listed in Appendix A.

- **From DOC staff;**

The application has been commented on by Technical Support (Southland and Otago Conservancies) and Te Anau and Wakatipu Area Offices, as listed in Appendix A⁵. This report has been internally peer reviewed (legal, technical support and concession advisors) and resulting comment incorporated into this report. An Assessment of Environmental Effects prepared by the Department for the construction of the Routeburn Visitor Shelter (constructed by the Department in the same area where MDL propose to construct their Routeburn Portal) is also relevant.⁶

- **From Iwi;**

Otago: A summary of the application was sent to the Otago Papatipu Rūnanga on 26 February 2010, no response was received.

Southland: The application discussed by Kaitiaki Roopu at their meeting on 24 March 2010. No issues were raised.

Te Rūnanga o Ngāi Tahu (TRONT):

The application was sent to TRONT for comment in April 2010. TRONT commented on various draft conditions proposed by MDL relating to ongoing consultation with iwi during the construction phase of the proposed activities. These have been taken into account in the body of this report.

- **From Conservation Board;**

The Southland and Otago Conservation Boards commented on the application at meetings on the 15th and 16th of April 2010 respectively. Updated information was sent to the Conservation Boards for comment in May 2011, and comment received from the Boards on 13th May 2011 (Otago) and 16th June (Southland).

Updated advice was received from the Otago Conservation Board on 20th July 2011 in respect of the provisions of the new Mt Aspiring National Park Management Plan 2011, which came into effect on 23rd July 2011.

Comment from the Conservation Boards are detailed in section 6 of this report, and taken into account in the body of this report.

2.3 Overview of the Activity

MDL propose to construct a 11.3 km tunnel linking the existing Hollyford and Routeburn Roads. The tunnel would be constructed with a tunnel boring machine (TBM) from the Hollyford Valley towards the Routeburn Road, and result in an estimated 268,000 cubic metres of spoil disposed of on the Hollyford Airstrip.

⁵ Note advice from the Wakatipu Area Office dated 2 March 2010 is now largely out of date as the location it refers to is no longer the area under application.

⁶ Referenced in Appendix A

The tunnel would be available for use by buses only, and not available for general public vehicle traffic. The bored diameter of the tunnel would be 5m and the tunnel would be one way, with the direction switched from time to time.

MDL state the purpose of the tunnel would be to provide infrastructure to connect Queenstown and Milford Sound/Piopiotaahi by a shorter (coach) road journey than the current route from Queenstown via Lumsden/Te Anau (State Highway 94). Milford Dart Limited state this would reduce the driving distance from Queenstown to Milford by some 60% (240 kms rather than 600 kms) and reduce the driving time by 55% from 9 hours return to around 4 hours return (if buses use the tunnel in both directions).

MDL anticipate an average of 23 buses per day would use the tunnel, peaking at 40 per day in the summer months and 8 per day in the winter months.⁷ The potential number of vehicle movements through the Routeburn and Hollyford Valleys resulting from the tunnel is uncertain, as some proportion of coaches would travel only one way through the tunnel.

MDL anticipate it would take approximately 4.5 - 5 years for the tunnel to be fully operational, with the first 18 months taken up by final geotechnical survey, design and 'mobilisation' for construction works, and the remainder by construction and rehabilitation works.

Components of the Dart Passage Project

For ease of discussion, this report separates the various activities proposed by MDL into 4 geographically based components;

1. Hollyford Portal/ Staging Area
2. Hollyford Airstrip Construction Area/ Spoil Disposal Area
3. Tunnel
4. Routeburn Portal and Routeburn Portal Access Road.

The potential effects of each of these components are described and discussed in section 4.2 of this report.

A list of all the documents comprising the concession application is attached as Appendix A. Selected Maps and drawings provided by MDL and referred to this report are attached as Appendix B. Appendix C of this report contains Draft Concession Conditions proposed by MDL, and Appendix D contains draft Environmental Management plans submitted by MDL.

2.3.1 Hollyford Portal/ Staging Area

See map /drawing C011 attached in Appendix B.

The Hollyford Portal site is the western entrance to the Dart Passage Tunnel in the Hollyford Valley. The site proposed is at approx S44⁰44.499 / E 168⁰08.354⁸ approximately 140 masl on the eastern side of the Hollyford Road, and 100 m from the active channel of the Hollyford River. The portal site is

⁷ Brown and Pemberton Planning Group Milford *Dart Limited Application to the Department of Conservation for Concession to Construct and Operate The Dart Passage – Concession Application Overview*. MDL Concession Application 2007 document 1. p 21.

⁸ GPS and distances measured C. Visser for DOC 19 August 2009 – GPS co-ordinates accurate to 10 m. Best 'on the ground' reference for the portal site is bridge No. 10, and 70 m south along the road back towards Gunn's Camp.

immediately alongside a bridge across a dry stream on the Hollyford Road ('Bridge No 10') located 2.1 km north of Gunn's Camp, and approx 5 km south of the Hollyford end (and start of the Hollyford Track).



Hollyford Portal site Hollyford Road.

Car marks northern boundary of site (Bridge no. 10), person marks southern boundary.

C. Visser DOC 19 August 2009.

The Hollyford Portal / Staging Area is proposed as a *'small, relatively flat area in the main except for the toe of the slope where the portal structure will be constructed as a cut and cover construction. Relatively minor works are required to strip the vegetation and grade the area to allow portal construction to proceed. Vegetation is to be mulched and stockpiled on the airstrip spoil area for future rehabilitation work. All excavated material to be carted to the spoil area⁹.'*

Approximately 36,000 m³ of spoil would be excavated from the portal and staging area, with 10000 m³ returned to the site as backfill around the finished portal structure, and the balance disposed of at the Hollyford Airstrip.

The majority of the construction work required for the tunnel construction would be carried out from the Hollyford Portal/ Staging Area and nearby Hollyford Airstrip.

The scope of proposed activities at the Hollyford Portal/Staging Area comprise:

- Clearance and formation of approximately 8500 m² to provide a staging area for construction activities (70 m by 120 m);
- Excavation of the initial section (100 m – 200 m) of tunnel into hard rock using drill and blast techniques;
- Construction of the portal structure;

⁹ Email T. Allan (MDL) 27 July 2009

- Construction of the Tunnel Boring Machine (TBM) and commencement of drilling towards the Routeburn Portal;
- Establishment of facilities necessary to support the TBM and tunnel construction, including diesel generators, substation, compressors and tunnel fans; and
- Controlling and discharging groundwater from the tunnel.

MDL state that with the exception of the tunnel portal structure and housing of tunnel services (described below), all structures and facilities would be removed upon completion of the construction phase. The final area would be reduced in size and re-vegetated to a permanent clearance area (including the portal structure) of approximately 2900 m² (20 m wide along the Hollyford Road, 116 m 'deep' towards the hillside). The surface of this permanently cleared area would be chip sealed.

The structures and facilities which would be required at the Hollyford Portal Staging Area include¹⁰:

- The permanent concrete portal structure (tunnel entrance), which would also eventually house permanent facilities such as the emergency response vehicle, the permanent generator, electrical equipment, control equipment and the tunnel emergency ventilation system;
- Sufficient area to assemble the TBM;
- Diesel powered generators (three megawatt), substation, compressors and tunnel fans necessary for the construction work;
- An ablutions block and other miscellaneous buildings such as first aid and small tools may be located at the portal. Limited vehicle parking space will be necessary;
- Workshop to service tunnel plant such as locomotives and rolling stock (construction;
- A rail siding system to allow the loading of the various tunnel construction materials;
- A tunnel spoil stockpile;
- Perimeter buffer zone, catch drain, stormwater silt traps and fencing; and
- Water supply – initially transported by tank onto the site, or the contractor may choose to run a pipe from the Hollyford Airstrip. (MDL notes that once tunnel construction is underway, if a reliable source of water is found this may be tapped into – and that this water would need to be tested).

2.2.2. Hollyford Airstrip Construction Area/Spoil Disposal Area

The Hollyford Airstrip Staging Area is intended as the disposal site for tunnel spoil, and the site of all construction activities and facilities that would not need to be located at the more confined Hollyford Portal Staging Area. These activities and facilities include the source of aggregate supply for the tunnel construction; the main staging area for constructor's offices, workshop, concrete batching plant, water treatment and discharge, fuel storage, and disposal of 268,000 m³ of tunnel spoil.

Disposal of 268,000 m³ of tunnel spoil would raise the Hollyford Airstrip area by approximately 7- 7.5m.

¹⁰ Drawing C011.

The Department has advised MDL that part of the area where they intend to dispose of spoil has particularly sensitive ecological values, and for this reason must be avoided. MDL have accepted this restriction.

Buildings, Structures and Facilities

The proposed activities at the Hollyford Airstrip Construction Area/Spoil Disposal Area comprise:

- Disposal of 268,000 m³ of tunnel spoil (see below);
- Processing of aggregate for concrete supply, including a screening and crushing plant. MDL note that there is an existing source of roading aggregate for Transit New Zealand at the Hollyford airstrip. They state they would need to hold discussions with Transit and DOC to check the availability of this material. Alternatively, MDL notes that tunnel spoil would be suitable for crushing to produce aggregate once it became available. A small mobile aggregate screening and crushing plant, similar to that shown in Figure 1 below, would be required to produce concrete aggregates during tunnel construction;



Figure 1; Example of mobile aggregate screening and crushing plant
(photo supplied by MDL)

- A concrete batching plant and testing laboratory would be required to produce concrete and shotcrete for the tunnel construction. A typical example of the type of batching plant with adjacent testing laboratory is shown in Figure 2 below;



Figure 2: Example of concrete batching plant

(photo supplied by MDL)

- Water treatment facilities to treat tunnel discharge water and batching plant water, using a settling pond and water treatment plant similar (but smaller) than the Manapouri plant to treat dirty water from the tunnel and from the batching plant;
- A temporary storage area for tunnel materials and plant;
- A steel framed workshop for repairs/servicing of tunnel plant;
- Office accommodation for constructor's and engineer's personnel, lunch room, meeting room, showers, toilets and drying room. Sewage retention tanks to be located at the building;
- Fuel storage and re-fuelling facilities contained within retention bunds (Applicant notes these may be located at the Hollyford portal area – URS Draft Construction Environmental Management Plan s 3.2.2); and
- Potable water supply from a shallow borehole within the staging area.

Milford Dart Limited state that on completion of construction, all construction-related buildings, structures, foundations, tanks, fences and all other construction facilities or debris would be removed from the National Park.

Disposal of Tunnel Spoil – Hollyford Airstrip.

Milford Dart Limited summarise the construction approach to works at the Hollyford Airstrip as follows¹¹;

'The Airstrip Staging Area needs to be made operational prior to excavation and construction at the Hollyford Portal. The following summarises the construction approach at the Airstrip Staging Area:

1. *Construct stormwater silt trap and stormwater retention.*
2. *Initial clearance and mulching of vegetation, progressively forming stormwater swales and stormwater runoff sediment traps.*
3. *Relocate the Airstrip closer to the Hollyford River, to provide a larger area for spoil disposal.*
4. *Formation of the construction facilities area (where the buildings are to be located) to final grade using existing gravel material from the area.*
5. *Establishment of water supply and primary and secondary water treatment facilities. The water treatment facilities will be completed prior to the Hollyford Portal construction commencing to provide for the dirty water produced.*
6. *Establishment of all construction facilities and buildings*

¹¹ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006*. pg 3C-11.

7. Produce concrete aggregate from existing river gravels or from tunnel spoil once it becomes available.
8. Deposit tunnel spoil progressively filled from the north end, brought up to final grade, contoured and revegetated in sections.
9. Following completion of the above and subject to the wishes of the airstrip operators, the airstrip will be relocated onto the top of the spoil disposal area. This would remove the risk of flooding and will provide the opportunity to widen the runway and increase the runway length by ~100 metres.
10. All construction facilities and construction debris will be removed from the National Park.
11. Full restoration and rehabilitation will occur.’

The application is not clear in regards to whether the Hollyford Airstrip would need to be closed during construction activities. MDL have stated they seek to close the Hollyford Airstrip for up to 2 years during tunnel construction operations¹², as it would not be possible to provide both a functional airstrip for fixed wing aircraft and dispose of material on the airstrip at the same time. It could be possible for helicopters to operate at the airstrip. On the other hand, the construction methodology set out by URS on behalf of MDL suggests that the airstrip would be ‘relocated’ during construction.

For the purpose of this report, it is assumed that the airstrip would have to be closed at times. Effects on other users (i.e. concessionaires who hold concessions to operate at the airstrip) are discussed in section 4.2.2(iii) of this report.

2.2.3. Tunnel

The Dart Passage Tunnel would be 11.3 km long, which is a straight line distance between the proposed Hollyford and Routeburn portals.

The first 100 m of tunnel from the Hollyford Valley¹³, and estimated 468 m from the Routeburn Valley¹⁴ would be excavated via ‘drill and blast’ methods. The balance of the tunnel would be constructed using a Tunnel Boring Machine similar to that used for construction of the second Manapouri tunnel, operating from the Hollyford Portal/Staging Area, and working towards the Routeburn.

Tunnel construction work would be based predominantly at the Hollyford portal site and Hollyford Airstrip.

Once the TBM excavation commences, the application states ‘a 24 hour, 7 day shift system is probable, with approximately 25 people per shift required, or a total shift personnel of about 75-80 people. These would be supported by about 15 - 20 people on dayshift including construction plant maintenance personnel and office staff. The peak workforce at the Hollyford end would be approximately 90-100 people for the 18 months tunnelling duration’¹⁵

Tunnel spoil would be transported from the TBM by a conveyor attached to the side of the tunnel, loaded onto regular road trucks and transported to the Hollyford airstrip for disposal. An estimated ~600 - 700 m³ (loose) of spoil would be transported each day, resulting in 30- 35 truck movements per day each way to the Hollyford Airstrip.

¹² MDL email - document attached 17 /9/09 Michael Sleight

¹³ Hereafter referred to as ‘the Hollyford’

¹⁴ Hereafter referred to as ‘the Routeburn’

¹⁵ Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006 p.3C-34

The majority of the tunnel would be stabilised with rock bolts, and lined to various degrees with steel mesh and shotcrete¹⁶.

For concrete supply at the Hollyford end, aggregate (gravel) is proposed to be excavated from the existing gravel pit at the airstrip staging area¹⁷, processed into concrete at the airstrip staging area, transported to the tunnel by agitator trucks and then into the tunnel by the construction train (running into the tunnel).

Approximately 268,000 m³ of spoil would be generated and disposed of on the Hollyford airstrip as described above.

2.2.4 Routeburn Portal and Portal Access Road.

The Routeburn Tunnel Portal and Portal Access Road is proposed approximately 150 m to the east of the existing Routeburn Shelter and car park, as shown below. The proposed portal would be of 'cut and cover' construction, with the tunnel portal being below ground level.

The portal access road would be 150m long and 7 m wide, with bus parking as shown on the drawing below.

¹⁶ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3 section 4.4.1.

¹⁷ Applicant notes that if Transit are unable to supply the volume of aggregate required for concrete for the portal structure, they would seek to extract up to 1,000m³ of aggregate from the area within which they intend to dispose of tunnel spoil (i.e. the Hollyford Airstrip), and then re-fill the area with tunnel spoil as it becomes available. Email – document attached M. Sleigh (MDL) 17 Sept 2009.



Milford Dart Routeburn Landscape Master Plan MDL March 2011.

The details of the proposal are as follows;¹⁸

- *'The majority of construction facilities, materials storage and spoil disposal areas for spoil will be located outside the National Park. Construction facilities will be the minimum required on site and will comprise temporary portable "Portacom" type buildings for toilets, lunchroom, supervisor offices, small tools store etc; a bunded diesel storage tank facility; tunnel ventilation fan; a water treatment plant and settling tanks for tunnel discharge and construction area runoff; portable generator and compressors; water supply for the tunnel operations; and a spoil surge pile for storage of tunnel spoil awaiting removal from the Park.*
- *The site will be cleared, excavation carried out and the concrete portal structure constructed before the tunnel facilities are established. It is proposed to use secant piles at least on the upslope side of the structure to form a vertical wall and reduce the excavation footprint required. Initial stormwater runoff and sediment control measures will be constructed prior to any excavation commencing on the site. As the site is developed, and prior to tunnelling commencing, the full construction facilities shown on Drawing C202 will be installed, including the water treatment plant. Tunnelling will not be permitted to commence until these facilities are in place.*
- *Tunnelling to be undertaken from this portal is only expected to be through as far as the interface between alluvial material and hard rock, estimated to be approximately 468 m. The*

¹⁸ URS, *Milford Dart Tunnel Amendment to Concession Application to Adopt the Final Routeburn Portal Location*, 24 January 2011

hard rock tunnelling will be undertaken by the TBM from the Hollyford end, with all TBM spoil being removed to the Hollyford spoil disposal area.

- *Once tunnelling has been completed from the Routeburn portal, the permanent facilities will be completed. The site will then be made secure and most of the temporary facilities will be removed while awaiting the TBM “hole through” from Hollyford. No further work will be undertaken on the site until after hole through.*
- *Following TBM hole through, the TBM will be dismantled outside the Routeburn Portal and transported outside the National Park. The construction area will need sufficient space to accommodate a large mobile crane and transporter for this work, but other facilities required at that stage will be minimal, comprising a toilet and lunch room, portable generator and compressor.*
- *On completion of TBM removal, the portal area will be restored to the minimum footprint required for the permanent tunnel operation, as shown on Drawing C203. Permanent maintenance access including car parking will be required to the tunnel facilities located in the portal structure and bus queuing space has been allowed for.*
- *The tunnel road will be formed on a grade of 1 in 150 from the intersection with the existing Routeburn Road, upslope to the tunnel portal. This will provide drainage for stormwater towards the river from the portal. This grade will also result in most of the road and tunnel portal being 4 - 5 m lower than the surrounding area on the river side, which will provide some screening from any potential visual or noise effects. The maximum height of the coaches able to use the tunnel is about 4 m and as a result they will be largely below the surrounding area when entering and exiting the Portal. Additional screening can be provided by utilising the site clearing strippings and some of the tunnel spoil as a bund between the portal and the Routeburn Shelter, which on completion would be graded to match the existing landform and grassed.*
- *On completion, all remaining exposed areas will be landscaped and planted with appropriate native species in consultation with DoC.’*

Road widening activities.

Milford Dart Limited identify that both the Hollyford and Routeburn roads would need to be widened to accommodate buses accessing the tunnel.

During the process of considering this concession application, it has become apparent that the statuses of these roads are complex, as the formed carriageways deviate from the surveyed plans.

The formed carriageways are currently under the control and management of the relevant district councils, and in practice are public roads. Not all the formed carriageway is located on the surveyed legal road however.

Although these ‘deviations’ from the legally surveyed road would be on land administered by the Department (Mt. Aspiring and Fiordland National Parks), in practice these sections of the formed roads have not been managed or maintained by the Department¹⁹ and are managed by territorial local authorities (Southland District Council in respect of the Hollyford Road, and Queenstown Lakes District in respect of the Routeburn Road).

At this point in time, the potential effects of the activities proposed by MDL which would manifest on the existing formed Hollyford and Routeburn Roads are not considered as ‘matters of relevance’ in

¹⁹ For example – the Department has not placed limits / set policies and objectives for use of these roads via the relevant National park Management Plans, nor have concessions been required for commercial use of those roads (i.e. those parts of the road which deviate from the formal survey)

determining this concession application, on the basis that despite the legal situation where apparently some sections of these roads are technically on land managed by the Department, to all intents and purposes these roads are public roads and not 'park roads'.²⁰

Resource consent will be required for any road widening activities.

2.3 Status of Area under Application - Section 17S (1) (b)

The public conservation lands affected by the proposed activities are part Fiordland and Mt. Aspiring National Parks.

2.4 Effects of the Proposed Activities - Section 17S (1) (c)

This report has been vigilant to ensure that only matters of relevance to the Minister of Conservation pursuant to the Conservation Act have been considered. These matters are limited to effects of the activity on public conservation land.

MDL has identified a number of effects. Where these are relevant to the Minister of Conservation, these and the appropriate avoidance and mitigation measures proposed are discussed in Section 4.2 of this report.

2.5 Proposed Type of Concession and Duration - Section 17S (1) (d) & (e)

Milford Dart Limited have applied for a suite of different concessions as follows:

		<i>Concession Type</i>	<i>Term Sought</i>
1	<i>To investigate and construct an underground tunnel of approximately 11.3 kilometres long and of approximately 4.65 metres finished internal diameter, from the Hollyford valley south of the existing airstrip (grid reference at or about NZMS 260 D40:253-961) to the Routeburn valley, and associated infrastructure and facilities.</i>	<i>Lease or Licence</i>	<i>15 years</i>
2	<i>To operate and maintain the tunnel in (1) above, and associated infrastructure and facilities.</i>	<i>Easement for tunnel route, lease for portal areas</i>	<i>49 years and 360 days</i>
4	<i>To construct, operate and maintain a new road ('Routeburn Portal Access Road') of approximately</i>	<i>Section 55 National Parks Act approval /</i>	<i>49 years and 360 days</i>

²⁰ Section 5.5.2 of the Fiordland National Park Management Plan states; 'The Milford Road (including the Hollyford Road) is the most important access route in Fiordland National Park. The road is part of the State Highway network.....'

	150 m of single lane road 7 m wide.	Easement	
5	To permit both coaches and any ancillary vehicles operated and/or authorised by MDL, in the underground tunnel and on any road or part of a road, where that road or part of that road is on land administered by the Department of Conservation.	Licence	49 years and 360 days

Section 17(S)(1)(e) requires MDL to supply a statement of the proposed duration of the concession, and reasons for the proposed duration;

'While we would prefer a longer term, a term 49 years 360 days was requested as we understand that a longer term would result in a deemed disposal which triggers a first right of refusal to the Ngai Tahu under the tribes settlement with the Crown.'

*As you will see from Section 0d of the application we can operate under an easement for most of the tunnel and Routeburn access road, however for public safety reasons a temporary lease / licence (sic) is appropriate during construction for all areas and a long-term lease for both portal locations is required to ensure public safety and to enable the ongoing operation and maintenance of the tunnel and the structures and facilities at these portals.'*²¹

For discussion regarding the appropriate term of the concessions applied for, see section 4.3 'Term' of this report.

It would not be necessary to authorise use of the tunnel via a concession licence given that operation of buses in the tunnel could be authorised via an easement. Public access into the tunnel could be constrained via a lease (see also discussion in section 4.9 and 4.10 of this report regarding interest in land and exclusive possession – essentially that a lease would likely be an appropriate concession type for the portal structures).

Particular considerations regarding easements.

Section 17Q(2) of the Conservation Act 1987 states:

'The Minister shall not grant an easement in respect of an activity if a lease, licence, or permit may be granted in respect of the activity and the Minister considers that a lease, licence or permit is more appropriate in that case.'

Section 17Q of the Conservation Act 1987 establishes that notwithstanding whether an easement could be granted, the legislation directs that an easement not be granted if a lease, licence or permit may be granted and it is considered by the Minister to be more appropriate in the case in question.

Of relevance to the Minister is whether or not MDL would require exclusive land use for any components of their activity. A concession granting exclusive land use (in the form of a lease) would enable the concessionaire to restrict public access as of right.

In some situations, the Minister may also require the concessionaire to restrict public access from the area used by the concessionaire in the interests of public safety.

²¹ email T. Allan MDL 30 June 2009.

MDL have stated they would need to restrict public access to the portal structures (so they can control who is in the tunnel and when). in the interests of public safety. This report considers it reasonable and desirable that tunnel access can be controlled, given that the tunnel would only be wide enough for vehicles to travel one way , and that it would not be designed for non- vehicle traffic.

In respect of the easement applied for the tunnel, as the tunnel is in essence an access way or 'right of way', an easement would be appropriate.

A lease of the portal structures and entrance to the tunnel would permit the concessionaire to restrict access into the tunnel itself which would ensure public safety.

There is no need to separately authorise other buses to use the tunnel by way of a licence. Such use of the tunnel by buses is consistent with a right of way easement. The operators of the buses would be the "invitees" of the Concessionaire. Accordingly a licence or lease of the tunnel is not required. All the issues can be addressed through the easement. As a licence or lease is not required then it is considered a licence or lease is not *more appropriate* than an easement, as per s 17Q(2) of the Conservation Act 1987.

2.6 Relevant Information relating To Applicant's Ability to carry Out the Activity – Section 17S(1)(f)

Tunnel safety (operational phase)

The ability of MDL to carry out the activity safely is relevant to the Minister of Conservation in so far that the Minister must ensure that all reasonable steps have been taken by any concessionaire, to ensure the safety of their clients, staff and other visitors to the site occupied by the concession.

Provision of an independently audited safety plan for both the construction and operational phases of the proposed activities would be a condition of any intent to grant a concession to MDL.

See Also Addendum to this report 'Tunnel Design and Tunnel Safety Considerations' (29 Oct 2011)

Commercial Terms of Potential Concession

Engineering projects of this scale have the potential to create severe adverse effects should the works not be completed. For example, a 'half built' tunnel, or other works left in the National Parks should the project fail would require extensive and expensive rehabilitation. To this end, the Department has considered potential 'in principle' agreements regarding commercial arrangements such as bond/guarantors to provide for appropriate financial resources to remedy any adverse effects on public conservation land should this project fail for any reason.

These conditions are described in section 4.2 of this report 'Effects of Activity and any measures to avoid, remedy or mitigate effects' and section 8 of this report 'Proposed Concession Conditions'.

2.7 Process for a Complete Application

An application is deemed complete once all information required under section 17S of the Conservation Act 1987 'Contents of application' has been received.

Section 17S(4)(a) states that: *'The Minister may, at the expense of the Applicant- (a) commission a report or seek advice from any person (including the Director-General) on any matters raised in relation to the application, including a review of any information provided by the Applicant.'*

This 'Officer's Report' is a report commissioned by the Minister of Conservation pursuant to section 17S(4)(a) of the Conservation Act 1987.

Section 17S(5) provides that the Minister shall supply any information obtained under section 17S(4) to the Applicant, who may comment on it.

Section 17S(6) states: *'An application is incomplete where the Minister- (a) has advised the Applicant that the Applicant has not supplied any specified information required by or under this section, which information has not been received by the Minister; or (b) has not received any report commissioned or advice sought under subsection (4) of this section; or (c) has supplied information to the Applicant under subsection (5) of this section and the time limits specified under that section has not expired.'*

Section 17T(2) requires the Minister to decline a complete application within 20 working days of its receipt if the *'...application does not comply with or is inconsistent with the provisions of this Act or any relevant conservation management strategy or conservation management plan...'*²²

Comment

This is a complex application which has required considerable investigation. Accordingly there has been insufficient information available to warrant the exercise of this jurisdictional strike-out within the required time period. Inconsistency with the Act, Conservation Management Plans and Conservation Management Strategies have been considered and are addressed later in this report.

²² Section 17T(2) Conservation Act 1987

3.0 NATURAL, RECREATIONAL, CULTURAL, & HISTORIC VALUES

This section provides an overview of the key natural, historic and conservation values and resources of the public conservation land under application, to provide context for the consideration of the application.

Te Wāhipounamu -South West New Zealand World Heritage Area:

Fiordland National and Mt. Aspiring National Parks are in the Te Wāhipounamu (*South West New Zealand*) World Heritage Area. This World Heritage Area is one of the worlds 400 or so special natural and cultural sites, as recognised by UNESCO. The World Heritage Area consists of 2.6 million hectares of protected lands on the West Coast, Canterbury, Otago and Southland.

World Heritage Areas are designated under the World Heritage Convention because of their '*outstanding universal value*'. World Heritage status does not affect the underlying protected status for which the land is held under New Zealand law; rather it places an obligation on the host nation to '*take appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, preservation and rehabilitation of this heritage*'.²³

The Department of Conservation is obliged to manage the World Heritage Area in such a way that its integrity is preserved. Although this World Heritage Area contains internationally popular tourist destinations like Milford Sound, Mt. Cook and the glaciers of Westland National Park, its overwhelming landscape character is wild and unpopulated, and IUCN have recognised it as one of the world's great areas of wilderness.²⁴

Hollyford Valley;



Hollyford Valley from Pops View (Milford Road) DOC / C.Visser 18 August 2009

The Hollyford Valley is a typically U-shaped glacial valley with steep sides and a flat valley floor.

²³ World Heritage Convention 1972

²⁴ Mainland Southland-West Otago Conservation Management Strategy 1998 – 2008 s. 6.1

The valley has some evidence of human modification and disturbance in the form of the Hollyford airstrip, the Hollyford road and Gunn's camp. Generally the vegetation in the area is natural, with the exception of the modified environment of the Hollyford airstrip which has been cleared at some point in time in the past (around 50 years ago). Despite evidence of human modification and disturbance, the scenic and habitat values of the Hollyford valley are highly natural.

On the western side of the Hollyford road and airstrip there is a large wetland containing nationally rare and distinct vegetation associations and habitat type.

The vegetation along the roadside (that is, the proposed portal structure construction site) is predominately mature mixed podocarp hardwood forest, with some evidence of deer and possum browsing.

The Hollyford Valley runs approximately north – south, with 50 km of warm temperate forest below 250 masl. It is contiguous with the Pike valley system with over 30 km of valley floor below 250 masl. Many birds and bats range widely throughout the area to use seasonal food resources. The Hollyford Catchment stands out in the region as a productive food resource and habitat area for birds such as Kereru (not threatened), Kakariki yellow crowned parakeet (not threatened), kea (nationally endangered), Kaka (nationally endangered), Long-tailed bats (nationally endangered) and possibly Short-tailed bats (nationally endangered).

Ground nesting birds such as Weka and Kiwi are unlikely to be in the area, and although their presence cannot be ruled out, if they are present their distribution would be sparse. Kaka are monitored routinely breeding in Eglinton Valley and seasonally feed in the Hollyford Valley.

The nearby Eglinton Valley is recognised and managed by the Department as a key habitat for nationally endangered bats.

The abundant fruit resources and productive vegetation of the 1 ha Portal Site and 8 ha airstrip site represent a resource for birds and bats using the region at a large landscape scale.

The freshwater environments in the vicinity of the Hollyford Airstrip are an important sequence of alluvial fans, wetland, surface water bodies and river floodplain.

The Hollyford River is a fast moving, clean, clear natural waterway with high water quality containing a range of native and introduced fish species. Natural levels of sediment input into the catchment are generally low, but from time to time flood events flush high levels of sediment through the catchment (as indicated by existing flood debris in the area).

These waterways are representative of the nature of Fiordland National Park waters.



Deadman's creek on left, swamp in foreground,
Hollyford road, Hollyford Airstrip and Hollyford River.
Photo from concession application (photo undated but assuming around 2005.)

The Hollyford Valley is visited by people en-route to and from the Hollyford track, other short walks running off the Hollyford road, jet boaters, rafters, kayakers and anglers using the Hollyford River, and visitors to Gunn's camp and Museum.²⁵

Gunn's camp and Museum has significant historical values as an example of a depression era works camp. This camp now provides accommodation to visitors to the Hollyford Valley.

There are no listed archaeological sites directly affected by the proposed concession works in the Hollyford, however the presence of listed archaeological sites in the wider area indicates the existence of both prehistoric and European historical activity. It is possible that there are sites in the area which have not, to date, been discovered or identified.

The general area has a history of use by Māori as a source of Ponamu/greenstone, and the routes of various tramping tracks in the area (including the Routeburn and Hollyford tracks) would have been used by Maori prior to European settlement.

Routeburn Valley;

The Routeburn Valley is a relatively wide and open valley surrounded by mountains.

The site of the portal is located at the Routeburn Track road end. The site comprises grassland with a scattering of mataogouri shrubs within a larger landscape of an 'enclosing amphitheatre' of mountainous elements, from exposed steep rock faces, hanging valleys and alpine grasslands, to waterfalls and immediate enclosing beech forest.

²⁵ Gunn's camp and Museum is subject to lease PAC 14-06-32.(DOCDM 60537)

The surrounding forest is predominately well established thick native beech forest which is habitat for a wide range of native flora and fauna, including nationally endangered Long-tailed bat, Mohua and South Island Kaka.

The Department of Conservation provides a visitor shelter at road end as shown below.

The Routeburn track is walked by approximately 16,300 guided and independent travellers each season and starts from the end of the Routeburn road. Up to 14,850 day walkers visit the Routeburn road end over the summer months, walking the first section of the Routeburn track and/or the new nature walk on the true left of the Routeburn River (which was completed in July 2009).²⁶



Routeburn Shelter
DOC/ C. Visser 19 August 2009

No listed archaeological sites are known in the area, but the Routeburn would have been used by Māori as a route to the Hollyford.

The Routeburn Valley has significant ecological values and is identified as a priority place for threatened animal species programmes in the park. Particular values include;

- threatened wildlife including Kaka, mohua, bats, kea, rock wren, New Zealand Falcon, kakariki, blue duck, kereru and South Island robin
- red Beech forest
- high quality waterways with important ecological and scenic values.²⁷

Milford road and Milford Sound / Piopiotahi;

The Department of Conservation administers the land at Milford Sound as Fiordland National Park. Milford Sound is recognised as an 'icon tourist destination' of New Zealand²⁸ and receives approximately 450,000 - 480,000 visitors per year.²⁹

²⁶ M Harbrow M Harbrow Technical Support Officer (Recreation Planner) Southland Conservancy and F Hall Technical Support Officer (Recreation Planner) Otago Conservancy *pers comm*.

²⁷ Mt Aspiring National Park Management Plan June 2011

²⁸ Fiordland National Park Management Plan 2007

²⁹ Department of Conservation Internal Report June 2011 – visitor numbers MDA facility.

The Milford road (State Highway 94) runs from Te Anau to Milford Sound. This road is a visitor destination in its own right, with spectacular views and numerous scenic stopping points.

Approximately 62% of all visitors to Milford arrive by bus or coach, with the remainder arriving predominately by private vehicle and a small number by aircraft and landing at the Milford Sound Aerodrome.

4.0 ANALYSIS OF APPLICATION - MATTERS FOR CONSIDERATION

Section 17U(1) of the Conservation Act 1987 requires the Minister to have regard to the following matters:

4.1 Nature of Activity - Section 17U(1)(a)

See section 2.2 of this report for a description of the activity.

4.2 Effects of Activity - Section 17U(1)(b) and any Measures to Avoid, Remedy or Mitigate Effects - Section 17U(1)(c)

Section 17 S and 17 U of the Conservation Act 1987 provides for information regarding effects to be provided by concession applicants and for effects to be considered by the Minister of Conservation.

Section 17 S (1) (c) states that every application for a concession shall include;

'a description of the potential effects of the proposed activity, and any actions which the applicant proposes to take to avoid, remedy, or mitigate any adverse effects'.

Section 17 U (1) (b) and (c) of the Conservation Act (matters to be considered by the Minister) states that the Minister shall have regard to various matters including:

'the effects of the activity, structure, or facility' and 'any measures that can reasonably and practicably be undertaken to avoid, remedy, or mitigate any adverse effects of the activity'.

Section 17 U (2) of the Conservation Act furthermore states:

'The Minister may decline any application if the Minister considers that –

(a) the information available is insufficient or inadequate to enable him or her to assess the effects (including the effects of any proposed methods to avoid, remedy, or mitigate the adverse effects) of any activity, structure, or facility; or

(b) there are no adequate methods or no reasonable methods for remedying, avoiding, or mitigating the adverse effects of the activity, structure or facility.³⁰

Only effects on conservation values which are matters of relevance to the Minister of Conservation have been considered.

Components of the Dart Passage Project

For the sake of discussion, effects are discussed under the 4 geographical headings below.

1. Hollyford Portal/ Staging Area
2. Hollyford Airstrip Construction Area
3. Tunnel
4. Routeburn Portal and Routeburn Portal Access Road

Readers of this report must note that despite geographical boundaries, the effects arising from the proposed activities in these areas are interrelated, and cumulative.

This is particularly the case with works at the Hollyford Portal / Tunnel construction works, and effects at the Hollyford Airstrip Construction Area.

³⁰ See also discussion at section 4.6 of this report regarding Decline of Application s 17U(2)

Effects discussed and considered

For each component of the proposal, short-term and long-term potential biophysical and social effects of the proposed activities on land administered by the Department of Conservation are summarised and discussed. 'Short-term' effects are those effects associated with the initial construction and development only and as such would last up to [the initial] 2 – 5 years [of the project].

'Long-term' effects are those lasting beyond the construction and development phase of the proposed activity, in which case those effects would occur for more than five years. In some cases, these effects may last in perpetuity.

Effects considered comprise effects on landform/freshwater values, effects on flora and fauna, effects on other users, and effects on historical and cultural values.

Assessment of 'significance' of effects

This report assesses effects as either 'temporary', 'minor', 'potential significant adverse unmitigated effects' or 'positive' effects.

- **'Temporary' Effects**

For the purpose of this report – a 'temporary' effect is a short term effect. In the context of this application, a temporary effect would manifest only during the construction phase of the project. Temporary effects can be either 'minor' or 'potentially significant adverse unmitigated effects'. Temporary effects are effects which can be remedied.

- **'Minor' Effects**

'Minor' effects are determined to be those which **can** be reasonably and practicably avoided, remedied or mitigated to the point where effects on natural, recreational, historic and cultural resources of the land would not be inconsistent with (or contrary to) the preservation or protection of those resources. Minor effects therefore, are effects which have been avoided, remedied or mitigated to an acceptable level. Minor effects can still be, to some degree, adverse effects. They are **not** 'so adverse' however that on balance they would likely warrant a decline of the application, having regard to the matters set out in part 3B of the Conservation Act 1987.

- **'Potentially Significant Adverse Unmitigated' Effects**

'Potentially Significant Adverse Unmitigated' Effects are determined to be those which **cannot** be reasonably and practicably avoided, remedied or mitigated. These effects on natural, recreational, historic and cultural resources of the land would likely be contrary to the preservation or protection of those resources. 'Potentially Significant Adverse Unmitigated' Effects therefore, are effects which have **not** (or cannot adequately or sufficiently) been avoided, remedied or mitigated to an acceptable level. These effects are 'so adverse' that on balance they **may** warrant a decline of the application, pursuant to s 17U(2)(b) of the Conservation Act 1987 that *'the Minister may (emphasis added) decline any application if the Minister considers that ...there are no adequate or no reasonable methods for remedying, avoiding or mitigating the adverse effects of the activity, structure or facility'*.

- **'Positive' Effects**

'Positive' effects are those which result in an improvement in the natural, recreational, historic and cultural values of the public conservation land subject of the application.

Overview of mitigation measures proposed by Milford Dart Limited

MDL have identified various methods in their application to avoid/remedy/mitigate potential adverse effects. They propose the use of Environmental Management Plans and adherence to proposed (concession) conditions which are detailed in their application (and attached as Appendix C and D to this report).

The draft management plans provided by MDL comprise;

- Draft Construction Environmental Management Plan (URS);
- Draft Operation Environmental Management Plan (URS);
- Draft Pest Plant Management Plan (Conservation Consultancy); and
- Draft Routeburn Road End Predator Control Plan (L. Hardy)

The application states that other plans will be developed as part of the Construction Environmental Management Plan (CEMP);

'The CEMP will also be used as the template for the contractor(s) of the project to develop detailed and specific supplementary environmental management plans and procedures, including but not limited to:

- *Erosion and Sediment Control Plan*
- *Dust Management Plan*
- *Stormwater Management Plan*
- *Construction Noise Management Plan*
- *Traffic Management Plan*
- *Spill Contingency Plan*
- *Rehabilitation Plan*
- *Stakeholder Communication Plan*
- *Accidental Discovery Protocol.'*³¹

Once the project reaches implementation stage, MDL state *'the principal contractor will be required, through the contract specifications, to submit a Construction Management Plan and Construction Execution Procedures prior to construction commencing. These subsequent documents will be submitted to the relevant regulatory authorities for review.'*

³¹ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3 / Appendix A; *Draft Construction Environmental Management Plan*.

DISCUSSION OF EFFECTS

4.2.1 Effects Hollyford Portal/Staging Area

Construction works at the Hollyford portal comprise clearance of 8,500 m² of vegetation and excavation of 36,000 m³ of spoil to form the staging area and excavate the initial 200 m of tunnel. Various construction buildings would be situated at the site, which would be removed on completion of tunnelling operations.

Spoil from tunnelling operation using a tunnel boring machine would come out of the hillside through this area, and would be transported through this area to the Hollyford Airstrip for disposal.

Water treatment systems are proposed at the portal site, however, the greater volume of wastewater/runoff generated by tunnelling operations would be piped from the portal area to the Hollyford airstrip for treatment /discharge.

During construction of the staging area (estimated by Applicant at 9 months) and for the further duration of tunnelling operations (estimated by Applicant at 18 months) machinery would be operating at the site, including trucks moving spoil through the site to the Hollyford Airstrip.

Once the tunnel is constructed and operational, MDL anticipate an average 23 buses per day would use the tunnel, peaking at 40 per day in the summer months and 8 per day in the winter months.³²

(i) Landform and Freshwater Effects Hollyford Portal /Staging Area

Landform and Freshwater effects are discussed together in recognition that excavation of landform at the portal site, and potential impacts on freshwater aquatic values are intrinsically linked in this situation.

Excavation to form Staging Area:

The Hollyford portal staging area would be a relatively flat cleared area of 8,500 m². To form this area, MDL states that 36,000 m³ of spoil would need to be excavated from the site, with 10,000m³ returned back to the site as 'backfill' to the tunnel portal structure.

The construction activities required to form the staging area, and to install the first 100 m - 200 m of tunnel would require considerable ground disturbance, and careful management of waste water from the site during construction would be necessary to minimise the amount of sedimentation flowing into waterways in the vicinity (and hence into the Hollyford River).

The Hollyford Valley receives 4000 mm – 4500 mm of rainfall per year. As a result, during the construction phase in particular, there would be high runoff from the portal site which would increase sedimentation and the requirement for stringent controls and

³² The potential number of vehicle movements across the staging area on public conservation land resulting from the tunnel is uncertain, as some proportion of coaches would travel only one way through the tunnel.

mitigation.

Mitigation of Sediment arising from portal staging area:

To manage run-off from the staging area (including that arising from tunnel construction activities) MDL states that drains would be constructed and dirty water diverted into a silt pond;

'As part of the portal area construction diversion drains will be constructed to direct any clean water around the portal area to prevent contamination. Stormwater generated in the area subject to disturbance will be directed to a silt pond constructed within the area. Once construction is complete and the area rehabilitated this pond will be the location for a silt and oil trap to serve the operational stage of the project.'

Drawing CO11 (attached in Appendix B) shows swales diverting storm water from the area into the surrounding bush.

Water coming out of the tunnel will be diverted to the Hollyford Airstrip, where it would be treated and discharged into Deadman's creek (see section 4.2.2 below regarding freshwater effects at the Hollyford Airstrip Construction Area/Spoil Disposal Area).

Portal Structure Stability:

The site of the proposed Hollyford portal is an area with rock fall debris overlying alluvial terrace gravels. Milford Dart Limited state that this debris is likely to consist of a mixture of large boulders, gravel, sands and fines. The exact nature of the materials underlying the debris is not known and would be determined during portal site investigation drilling³³.

MDL acknowledge that there are a number of specific issues that would need to be addressed in the design and construction of the portal structure, and first 100 m of tunnel, regarding slope instability.

The initial open cut excavation required at the portal site (to accommodate the tunnel portal structure prior to tunnelling commencing) could potentially destabilise the slope above by removing a proportion of the toe of the slope, cause potential bank collapse or slippage in other temporary cut slopes, and create a risk of collapse during initial tunnelling through the rock fall debris materials.

These scenarios could result in tree slide or landslide occurring, which could cause potential loss of significant forest habitat due to root disturbance.

³³ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3.

Mitigation proposed:

To avoid/mitigate potential adverse effects resulting from excavation and installation of the initial tunnel portal, MDL propose a staged construction approach, as detailed in section 4.3.1. of the URS technical report and (drawing C006).

Milford Dart Limited note that the dimensions of the concrete portal structure shown in this Drawing C006 are conceptual only. They state *'If slope conditions are less favourable than expected, this (the portal) structure may be extended longitudinally away from the slope to provide a more robust structure and greater support to the cut slope....'*

The rock fall material is expected to overlie alluvial fan or river alluvial material, hence provision for excavation and stabilization of both rock and gravels will be made in the portal and tunnel design. Based on the site walkovers and a preliminary geological and topographical assessment, it is anticipated that the portal excavation and approximately 100 m of tunnel at each location (Routeburn and Hollyford Portal sites) will be through this rock fall or alluvial material. Some of the rock fall boulders will be several metres in dimension, requiring blasting to remove.

The concept design approach for the portals is shown on Drawing C006 and comprises:

Minimizing disturbance of the steep bush covered slope by locating the portal structure away from the steep slope as much as practicable in the available space, leaving the steeper slope undisturbed.

Site clearance of vegetation to the minimum footprint required for the portal staging area, avoiding any upslope clearance where practicable. (...)

Excavating temporary batters around the portal structure and tunnel entrance to an over-steep batter slope, to minimize the upslope disturbance and the dimensions of the open cut into the toe of the slope as described above.

Excavating/backfilling all permanent batters to an appropriate slope to ensure long-term stability. The final batter slope will be chosen during detailed design once the material characteristics are understood.

Stormwater drainage channels will be formed between the bush margin and the excavation to divert and channel runoff away from cut batters to avoid erosion.

Once the portal face has been excavated and stabilised as described above, an 'umbrella' or fan of drilled in 32 mm or 40 mm reinforcing bar spiles will be installed around the tunnel crown perimeter in the rock fall material...

Should the portal face be in alluvial material, or a mixed face of alluvial or rock, the approach would be similar...'

On completion of the open-cut excavation and stabilisation, and prior to tunnelling commencing, the permanent concrete portal structure would be constructed. The structure is proposed as a reinforced concrete structure designed to withstand future rock falls, scree slides, and tree slides from the slope above. The structure would include a retaining wall at the top and sides to protect the sealed staging area.

The portal structure excavation would be back-filled on completion. The portal structure would be buried to provide further protection from rock falls above, and the site re-vegetated to (what MDL refers to as) 'national park' standard and subject to rehabilitation plans prepared in consultation with the Department. Storm water collection systems would be constructed around the perimeter and around the level areas, including the road, to control runoff and direct it to ground via silt traps³⁴.

**Discussion and
Conclusions
Landform and
Freshwater Effects
Hollyford Portal Site:**

Clearance of 8,500 m² of vegetation and excavation of 36,000 m³ of spoil to form the portal staging area, tunnel portal and initial 200 m of tunnel has the potential to adversely affect natural waterways in the area, should sediment/runoff enter into the waterways flowing into the Hollyford River.

Potential adverse effects would be increased sedimentation/turbidity affecting the freshwater habitat of tributary waterways and the Hollyford River itself. This could result in degradation of freshwater habitat and adverse visual effects.

MDL identify various methods to manage the effects of water runoff at the Hollyford Portal/ Staging Area site, however the application suggests that these diversion drains and silt ponds would be established once initial bush clearance and excavation of the portal area footprint has been carried out.

Short-term effects

It is acknowledged that it is difficult to contain all dirt/mud when doing initial clearances, however it is important to contain this material to avoid sediment entering the Hollyford River as far as possible. It is accepted that mud / dirt arising from initial clearances would be a short-term effect (and that the volumes likely to be generated would be less than levels of naturally occurring mud that occasionally enters the Hollyford River from time to time through naturally occurring slips). It is noted that MDL intend to construct silt

³⁴ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3 section 4.3.1.

traps and diversion drains which would be operational by the time the major construction activities occur at the site. In order to mitigate effects of sediment arising during initial vegetation clearance, MDLs final construction methodology would need to demonstrate how this mud and sediment would be contained. There are suitable methods for this (for example use of bales – which would need to be checked to ensure they did not introduce seeds into the park).

Silt and oil traps would need to be engineered to filter and contain large volumes and high flows of water during high rainfall events.

Ongoing effects

On an ongoing basis, potential contaminated water would be diverted in a silt and oil trap at the site, and discharged via that pond into the existing streambed (un-named stream bridge no.10). Clean bush margin storm water from the Hollyford Portal site would be diverted into the bush.

Subject to adequate design of these silt and oil traps, ongoing monitoring to ensure they work effectively, and appropriate remedial action taken if they are not, the potential effects on freshwater values arising from the Hollyford Portal site would be minor.

On the side of the Hollyford Road (opposite the Hollyford Airstrip) is a wetland area of high conservation value (see photo in section 3 of this report). Any change in the hydrology of the wetland resulting from changes or hardening of the Hollyford Road would have potentially severe and adverse environmental effects in this area.

The Hollyford road itself is not on land administered by the Department, however, in the interests of avoiding potential significant adverse effect, a condition is proposed that would require the concessionaire to maintain the existing hydrological processes of this wetland in the event of any works being carried out on this road. (This is probably more appropriate as a condition of any resource consent but for completeness is noted in this report – note the MDL have not objected to this condition).

Proposed concession conditions to mitigate adverse effects on landform and freshwater values (MDL)

- 1.1 Construction Environmental Management Plan
- 1.4 Earthworks and Leachate
- 1.5 Water Quality and Quantity

Conditions include requirement for monitoring and adaptation of work practices / infrastructure to respond to any adverse effect.

Proposed concession conditions to mitigate adverse effects on landform and freshwater values (Department)

- The Concessionaire shall fund the role of Project Liaison Officer to act as a liaison contact between the Concessionaire and the Grantor prior to and during the term of construction of the concession activities.
- Prior to construction, the Concessionaire shall prepare for the approval of the Grantor Construction Specifications and Plans and Environmental Management Plans for all components of the Activity.
- The Grantor will audit these Specifications and Plans to ensure that final 'on the ground' design and construction specifications do not differ in location, or substantially in scale or level of effect to the concession application lodged by the Concessionaire.
- Once audited and approved by the Grantor, the Specifications and Plans shall form part of the Concession, and the Concessionaire shall not deviate from these Specifications and Plans without prior written approval of the Grantor.
- Bond / guarantor requirements.
- Road between portal and airstrip to retain present wetland hydrology (high water table).
- NOTE – water quality standards are still to be determined and finalised, taking into account the considerations made via the Resource Consent process, and will be included in the concession.

Conclusion

The effects of the Hollyford Portal and Staging area on landform and freshwater values are assessed as **minor**, subject to mitigation.

(ii) Effects on Flora and Fauna Hollyford Portal/ Staging Area

The flora and fauna values at the Hollyford Portal / Staging Area are described in section 3 (and Appendix E) of this report.

Vegetation Clearance : Construction of the portal and associated staging area would require clearance of 8,500 m² of predominately mature mixed broadleaf/beechn forest.

MDL state *'an area about 120m x 80m is to be cleared containing a number of very large canopy trees, mainly kamahi with a few emergent conifers'*³⁵.

The Department considers that these large trees may have habitat value as preferred nesting or roosting habitat for bats and native birds, as discussed below.

MDL propose to re-vegetate the site, leaving a permanently cleared area of 2,900 m².

MDL note that opening up the forest in this way, could allow the wind to cause some further damage to the surrounding forest, and that removal of vegetation for the construction of the tunnel and related facilities is unavoidable.

To mitigate the effects of the proposed works they propose:³⁶

- *Limit the extent of works and therefore minimise the area of bush to be cleared;*
- *Minimise the clearance of established forest;*
- *Minimise the clearance of very large old trees which provide habitat for a wide range of species;*
- *Replant areas with eco-sourced native plants that are representative of the pre-existing environment and surrounding area;*
- *Monitor for weeds to ensure that they are not introduced to the area;*
- *Conduct or contribute to pest control in the surrounding area to improve the condition of vegetation and habitat for birds and other species.*

MDL acknowledge that a lead-in time of at least two years would likely be required to eco-source the plant material required for rehabilitation at all sites to be re-vegetated, i.e., collecting seed and cutting material from each site to be propagated at plant nurseries.

Weed Invasion:

MDL propose to undertake a full survey of weeds at all sites prior to mobilisation of contractors, to evaluate the weeds likely to invade any disturbed sites, and to refine methods to prevent, control and monitor weeds.³⁷ A *'Draft Plant Pest Management Plan'* has been

³⁵ Conservation Consultancy Limited, *The Natural Value of the Routeburn Road End Area and Part of the Hollyford Valley and the Impact of the Proposed Milford Dart Tunnel*, August 2006, MDL Concession Application 2007 Document 7.

³⁶ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006*. Section 5.3.2 p.5-9.

³⁷ Ryder Consulting, *Milford Dart, Overview of Ecological Assessments*, Milford Dart Concession Application August 2007 Document 4 p.49

provided in the application³⁸ (the intent being to finalise this plan in consultation with the Department, should the concession be granted).

MDL propose other measures to minimise weed introduction into sites in the National Park; either to develop a steam wash down facility outside of the National Park to remove any dirt, vegetation or organic matter from machinery prior to its entry into the park, or alternatively, to establish a wash down area in the park and actively manage that area for weed control.³⁹

Fauna Values:

MDL has addressed the potential effects on fauna of proposed activities at the Hollyford Portal in general terms only. Assessment (on behalf of MDL) of the natural values of the Hollyford Valley and impact of the proposed Milford – Dart Tunnel⁴⁰ states that although bats are thought to be present in the Hollyford Valley, no particular survey at the portal site has been carried out to ascertain if they roost in the area potentially affected by the proposed clearance.

MDL's assessment notes that there are no large red beech trees in the area proposed for clearance, and concludes accordingly that it is unlikely that bats roost within the area. However, bats (and birds) are not limited to nesting in large beech trees, but are known to use any suitable tree with suitable holes and cavities for nesting.⁴¹

Effects of Vegetation removal on fauna:

If trees are used by bats for roosting, removal of those trees would need to be carried out when bats were not present to avoid crushing those animals.

The only way to be sure that bats would not be roosting in trees proposed for removal would be to survey any likely large trees. If bats were found, they would need to be removed and relocated.

Whether or not bats would find alternative suitable trees in the area, or if they could be successfully relocated, is uncertain.

However, if bats are present in large trees within the 8,500 m² that would be cleared, they are likely to be present only sparsely (if at all) and as such the risk that bats would be adversely affected would be low.⁴²

³⁸ Conservation Consultancy Ltd (for Milford Dart LTD. 2007) *Draft Plant Pest Management Plan*, MDL Concession Application 2007 document 6.

³⁹ Conservation Consultancy Ltd (for Milford Dart LTD. 2007) *Draft Plant Pest Management Plan*, MDL Concession Application 2007 document 6. page 61.

⁴⁰ Conservation Consultancy Limited, *The Natural Value of the Routeburn Road End Area and Part of the Hollyford Valley and the Impact of the Proposed Milford Dart Tunnel*, August 2006, MDL Concession Application 2007 Document 7.

⁴¹ Wilson, L Te Anau Area Office *pers comm*.

⁴² Wilson, L Te Anau Area Office *pers comm*.

MDL note that removal of vegetation would be timed to avoid, *'to the greatest extent practicable, impacts on avifauna'* and *'the removal of mature trees shall be avoided as far as practicable at all construction areas and road upgrades associated with the project. Any trees to be removed will be identified in consultation with DoC.'*⁴³

Traffic Effects on fauna at Hollyford portal :

Spoil generated from the portal staging area and tunnel construction (268,000 m³ in total) would be transported through the Hollyford portal site on public conservation land, along the Hollyford road to the Hollyford Airstrip. 30 – 35 truck movements per day would be required to move the spoil.

Potential adverse effects on wildlife at the portal site associated with traffic are the risk of being run over by vehicles and adverse effects of noise from the site.

Risks of Wildlife being run over:

The only wildlife at risk of being run over by vehicles transiting through the portal area would be Kiwi, lizards and Weka. Although Kiwi, lizards and Weka are potentially present in the area, they would be present at the portal site in very low numbers, if at all.

Kiwi are nocturnal, and given MDL proposes to run a 24 hour a day construction activity, any Kiwi in the portal area at night would be at risk of being run over by trucks transporting spoil. The likelihood of this happening is low, and could be mitigated by all drivers being advised that Kiwi could be present in the area.

The potential for introduced animals such as possums, deer, cats, etc being run over, are not considered relevant for this assessment.

Noise Effects on Wildlife:

MDL has provided comment on the potential effects of noise on wildlife ⁴⁴. Mr. Hegley (for MDL) points to research indicating that birds are known to become habituated to noise at orchards and airfields, and that after a period of exposure to noise they no longer react to noise.

Mr. Hegley states that he will continue to undertake research on the impacts of noise on wildlife, and that if adverse effects are found, construction activities would be modified. He has not however described what sort of research would be undertaken, how adverse effects would be monitored, or how construction activities would be modified should adverse effects occur. To be fair, the Department accepts that the issue of noise impacts on wildlife, and New Zealand

⁴³ Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions. 1.2

⁴⁴ Hegley Acoustic Consultants, *Letter Dated 7 December 2006 Re: Assessment of Noise Levels*, MDL Concession Application 2007 Document 14.

native wildlife in particular, is one where there is a lack of research and information.

It is possible that birds/bats may be displaced by noise in the environs of construction areas for the duration of the construction activities. The extent or severity of this potential displacement is unknown.

To minimise noise effects, MDL states they would take all practicable steps to limit noise, comply with noise standards, and would monitor noise levels arising from all activities⁴⁵.

Light

MDL intend to run a 24 hour a day shift system to construct the tunnel. This suggests the need for lighting at both the Hollyford Airstrip and the portal site during the construction phase.

The application does not discuss night time lighting or potential for light pollution. The Hollyford Valley currently has no artificial night time light sources apart from Gunn's Camp which are shut off in the early evening. There is the potential for construction activities to use strong and exposed lighting at Hollyford Airstrip and Hollyford Portal sites.

Potential adverse environmental effects of artificial night lighting can include disruption of insect activity, confusion of birds in flight, and focus of bird and bat activity. Both the airstrip and portal site in the Hollyford Valley could be expected to encounter abundant mass emerging aquatic insects after dusk on many evenings. These are particularly sensitive to ultraviolet light. While not mentioned in the AEE, glow worms can be expected to be common at the portal site and swamp forest adjoining the airstrip. Light pollution would likely affect their ecology.

Potential adverse effects of light could be mitigated by controlling light so that it is directed only to where it is needed. For example, industrial sites commonly use pole mounted lights that are 'full cut-off' downward pointing. In this situation only reflected light travels beyond the site.

Discussion and Conclusions effects on Flora and Fauna:

Construction phase

Potential effects of construction works at the Hollyford portal site on flora and fauna comprise vegetation removal and damage, potential habitat loss, dust and noise.

⁴⁵ Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions 1.7.

Formation of the portal staging area would remove 8,500 m² of vegetation. MDL intend to re-vegetate the portal clearance area, from the initial 8,500 m² cleared area, to a final cleared area and permanent vegetation loss of 2,900 m² (0.29ha).

The Department has noted at least 6 trees in the proposed clearance area, which (by their size) would be potential nesting/roosting trees for bats, and birds such as kaka and rifleman.

Although re-vegetation of the site would mitigate visual effects and effects on vegetation to the extent that vegetation would be replaced, it would not mitigate for the loss of individual large trees within the clearance area, which are potential habitat and roosting trees for birds and bats.

The consultant reports prepared for MDL⁴⁶ recommend that a predator control programme (along the lines of that proposed at the Routeburn) be carried out at the Hollyford. There is no detail in the application regarding what would be proposed for the Hollyford. Effective predator control in the Hollyford Valley would be a positive effect (including positive effects of survival of threatened mistletoe spp).

It is accepted that there is unlikely to be rare or endangered bird species in the area proposed for clearance, with the exception of Kaka, which are likely, and nationally endangered. Two species of endangered bats may be in the area.

Should individual large trees in the area be used by bats for roosting, loss of those individual trees would be a significant adverse effect on those particular bats. The potential of adverse effect on bats in resulting from potential habitat loss in this large valley habitat is considered to be minor. Potential effects of crushing and killing bats as vegetation is cleared, although of low probability, could be mitigated via concession conditions requiring marking all trees to be felled, and removal and relocation of all tree nesting birds and bats prior to trees being felled (nb – the Department would need to be consulted and approval sought on the methodology and timing of this work).

It is accepted that it is unlikely that there are particularly significant or endangered plant species in the area proposed for clearance. Native Tree nettle has been observed in the proposed clearance area by DOC staff and this plant is a host plant for Red Admiral butterfly. This plant could be successfully re-established in the area, and additional planting would enhance the habitat for both red and yellow

⁴⁶ In particular Ryder Consulting, *Milford Dart, Overview of Ecological Assessments*, Milford Dart Concession Application August 2007 Document 4

admiral butterfly.

Construction works at the portal site would result in dust and noise. MDL state they would minimise dust as far as is practicable by washing down vegetation around the site should it become covered with dust. Realistically, the likelihood that dust would be generated at this site, and if it did, that it would remain for long on vegetation around the site, is low, given the rainfall in the area.

Industrial lighting may be present at the portal site during construction, which could adversely affect birds and insects in the area. Night lighting would need to be minimised and controlled.

There would be substantial truck movements between the portal site and airstrip as spoil is moved to the airstrip for disposal. Traffic along the Hollyford Road is not on the National Park, however, as noted above, the Department would consider it appropriate for MDL to minimise risk to kiwi or weka present on the road by alerting drivers to their potential presence.

Ongoing effects.

On an ongoing basis, once construction is complete, the site rehabilitated, and the tunnel operational, there would be traffic through the portal area (in the National Park). Potential adverse effects of buses crossing this area of park on wildlife are noise, and potential 'running over' of wildlife.

Bus noise would be intermittent, and of minor effect on wildlife in the national park. The risk of buses running over wildlife (particularly kiwi and weka) is extremely low, and likely of no effect.

Should buses stop at the portal site and visitors be allowed to disembark the buses, there is a small chance that Kea may become attracted to the site and that people will feed them. This effect could be avoided via concession conditions and enforcement of those conditions by the concessionaire.

Proposed conditions to mitigate effects on flora and fauna (MDL):

- 1.1 Construction Environmental Management Plan
- 1.2 Vegetation and Habitat
- 1.7 Noise
- 1.9 Roads and Traffic
- 1.12 Refuse and Waste
- 1.13 Personnel Behaviour

- 2.1 Operations Environmental Management Plan
- 2.6 Vegetation and Habitat
- 2.7 Bio Security
- 2.15 Refuse and Waste
- 2.11 Noise

These conditions include;

- Re-vegetation within certain timeframe,
- Mark site before clearance for DOC final approval,
- Minimise removal of any trees greater than 60cm dbh as far as practicable
- No feeding of any wildlife (e.g. Kea), and
- Consultation with the Department regarding timing of vegetation clearances.

Proposed conditions to mitigate effects on flora and fauna (Department);

- Survey for bats prior to clearance, using methodology approved by the Department, and if appropriate (subject to discussion with the Department) relocate bats if any found;
- Works to avoid nesting periods for birds;
- Carry out monitoring program on the effects of noise on wildlife and the immediate vicinity of the construction works (Mr Hegley stated that this would be work that he would undertake). DOC to approve the methodology of this monitoring programme;
- New buildings to incorporate energy conservation within their design and be designed to eliminate all forms of uncontrolled waste, noise pollution or light spill to the surrounding Park;
- All lighting required to shed light downwards and minimise light spill into the wider National Park; to avoid affecting people's night vision and to minimise any detracting from the natural dark values of the Park;
- Re-vegetation to include nettle to enhance habitat for red and yellow admiral butterfly;
- Concessionaire to conduct pest plant control in Hollyford (methodology subject to further discussion and approval by the Department – but generally as outlined in the concession application particularly Conservation Consultancy Ltd (for Milford Dart LTD. 2007) *Draft Plant Pest Management Plan*, MDL Concession Application 2007 document 6.
- Concessionaire to carry out or contribute to pest / predator control in Hollyford (methodology subject to further discussion and approval by the Department).

Conclusion

The effects on flora / fauna of the Hollyford Portal /Staging Area are assessed as **minor**, subject to mitigation.

iii) Effects on Other Park Users Hollyford Portal/ Staging Area

Potential effects on other park users of the Hollyford Portal / Staging Area would be visual effects, noise effects and potential 'visitor conflict'.

While construction activities and ongoing use of the tunnel would result in increased traffic movements along both the Hollyford and Routeburn roads - these roads are to all extent and purpose legal roads administered by local district councils and are not public conservation land. Accordingly, effects of traffic on those roads on other Park users are not a relevant matter for consideration for the Minister of Conservation pursuant to the Conservation Act 1987.

Visibility of proposed activities:

The Department assesses that the portal site would not be seen from the Routeburn track, Key Summit (off the Routeburn Track) or Lake Marion. MDL notes that the portal site would be seen from the air (by aircraft en-route to/from Milford Sound and Queenstown) and potentially by visitors in the mountains surrounding the Hollyford Valley. From the air, and from surrounding mountain sides, the modifications would appear small, if noticeable at all, from a distance⁴⁷

The portal site would be seen from the Hollyford Road immediately adjoining the portal site.

Vegetation Clearance and excavation:

Construction of the Hollyford tunnel portal and staging area would require the initial clearance of 8,500 m² of mixed vegetation and the excavation of 36,000 m³ of spoil to construct a flat area.

MDL propose to rehabilitate the site to a permanently cleared and sealed area of 2,900 m², with 10,000 m³ of spoil returned back to the site as backfill around the portal structure.

Short-term Visual Effects Arising from Construction Activities:

MDL assess the visual effects of the works at the Hollyford portal site as follows⁴⁸;

'The proposed works will have a temporary effect on the Hollyford Valley landscape and scenic qualities. The potential effects on the landscape will change over time, from those of a temporary and

⁴⁷ See photo in section 4.2.2 (iii) of this report ' View of the Hollyford Airstrip from the Orchard on the Routeburn Track'

⁴⁸ Concession Application and Environmental Impact Assessment Milford Dart Limited 2005/2006

more moderate degree during construction, to a minor but permanent degree once works have been finished and the replanting of the site has become established. The effects on the character of the landscape, which in this case is the overwhelming naturalness of the valley, will be dependent on the degree of visibility of the proposed development to users of the Lower Hollyford Road and surrounding landscape, and the perception of the amount of modification to the naturalness of that landscape. The perception of the modification will be dependent, to a large degree on how visible the modification is, and the level of expectation of modification.

The effect during the construction period, whilst establishing the portal and associated infrastructure will be moderate, as the area to be cleared of vegetation will be of a relatively minor size in an area that is currently natural. The portal site works will only be visible for a distance of approximately 200m when travelling in either direction'

In addition to vegetation clearance and earthworks at the portal site associated with initial construction of the staging area, there would be machinery operating at the site for the duration of tunnelling operations, with structures including a tunnel workshop, conveyer, spoil dump, toilet facilities and generators.

In the short-term, the construction of the portal structure would be seen from the Hollyford Road, from the air, and mountains surrounding the Hollyford Valley (but not from the Routeburn Track/ Key Summit).

Arguably, evidence of any construction activities would be incongruous with the natural scenic values of the Hollyford Valley.

However, these visual effects of construction of the portal would be temporary, and given they would be located off the side of the existing Hollyford road, would be relatively minor in that context. In the longer term, these effects would be remedied as construction ceases.

Long-term visual effects of portal structure:

Post construction and site rehabilitation, MDL indicate the permanent cleared road frontage would be 15 m wide. Tunnel 'operation' facilities (toilet, switchgear, control room, washroom for tunnel operator) would be contained within the tunnel. The tunnel portal itself would be finished in a natural stone finish.

MDL state:

'The effect of the permanent works, once the remedial planting has established (a time period of approximately 5 years) on the

*naturalness of the valley will be minor on completion....*⁴⁹

Noise Effects at Portal: Construction Phase

The application notes that initial drill and blast construction works would be noisy, but once the initial tunnel was established, ongoing tunnel construction works would be underground. There would be noise at the site from machinery excavating the site, a three megawatt power station providing power to run the tunnel boring machine, the tunnel boring machine conveyor belt, and traffic moving spoil from the site. Given the nature of the valley, it is possible that this noise would be heard in the surrounding area, including the Hollyford Road, Gunn's Camp, the Hollyford track 'road end' and the Routeburn Track.

The degree to which construction noise would be noticeable to other visitors in the park would be influenced by surrounding topography and vegetation. Gunn's Camp, and the start of the Hollyford Track, located 2 km and 5 km from the portal site respectively, would be screened to an extent from noise generated at the portal site by landform and vegetation between the Camp and road end and the portal site. Park users at the 'Orchard' on the Routeburn track, although more distant from the portal site, may well hear machinery operating at the portal (and also at the Airstrip – discussed in section 4.4.2 below), in particular on clear calm days where the sound would carry.

MDL state that work at the portal locations would be carried out 'during periods when the use of that part of the national park by other users would be minimal (i.e. the shoulder and winter seasons)⁵⁰. They also state they would comply with noise standards, would take all practicable steps to reduce noise and would monitor noise levels arising from all activities. With all respect to MDL's intentions to carry out this work in the winter and shoulder seasons, given many other considerations that would surround an engineering project of this size, works at the Hollyford would likely need to be carried out during the summer season.

MDL estimate that initial construction works at the portal would take nine months, and tunnel excavation (using the TBM) would take a further 18 months⁵¹.

⁴⁹ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006* .

⁵⁰ Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions 1.7(5).

⁵¹ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006* table 3C-4.

MDL has provided a report on the levels of noise arising from their proposed activities. In respect of the Hollyford Portal works, this assessment states that the noise expected to be generated would be 23dBA(L) which it is *stated 'is well below the background sound in the general area'*.⁵² This is a very low level of noise and below the typical level of background noise at these sites. It is important to note however that the estimates of Gunn's camp are expressed as an Leq, which is an average figure typically taken over a period of eight hours. This average would almost certainly include periods of loud noise that would be more noticeable.

Ongoing operation

Ventilation fans would operate in the tunnel, but MDL state that these would be muffled and would not create noise effects. Between 23-40 buses per day would transit across the site.

The assessment of the effects of noise on people is complex, as whether or not noise adversely affects visitors is not simply a matter of how loud it is, but what sort of noise it is, and whether that sound is perceived by that particular visitor to be in keeping with that natural environment. Different visitors in different places have different tolerances to noise. For example, people on the Hollyford Road, as they are on a formed road, would likely expect some level of traffic and traffic noise, and may have higher 'tolerance' to noise (and other physical evidence of construction activities) than visitors on the Routeburn Track. Whether or not people are 'annoyed' by noise or not also depends on the associations they make with that noise. For example, monitoring carried out by the Department on the effects of aircraft on visitors suggests that visitors who use aircraft are less likely to be annoyed by aircraft than those who do not, presumably because aircraft users have positive associations with aircraft.⁵³ In respect of the potential noise and visual effects arising from the activities proposed by MDL, park visitors who are fundamentally opposed to construction of a tunnel through a National Park (for whatever reason) would likely be adversely affected by any evidence of construction activity. Visitors who are positive or neutral to the construction of a tunnel through the National Park are far less likely to be adversely affected by hearing or seeing construction activities.

In recognition of the subjective nature of visitor experience, the Department of Conservation manages the recreational aspects of public conservation land via a system of Visitor Settings.

⁵² Hegley Acoustic Consultants, *Letter Dated 7 December 2006 Re: Assessment of Noise Levels*, MDL Concession Application 2007 Document 14 – pg 25.

⁵³ M Harbrow Technical Support Officer (Recreation Planner) Southland Conservancy *pers comm* (results of Hollyford Track Visitor Survey)

These settings are developed via public consultation processes surrounding the preparation of Conservation Management Plans (National Park Management Plans). The relevant provisions of the National Park Management Plans are set out in section 5.2 of this report.

Natural quiet is an important natural park value that the Department is required to protect, although, during the day at least, the natural quiet value of this part of the Hollyford Valley is relatively low. The area in question is already quite modified and the soundscape is degraded by the presence of the road corridor. The airstrip is also mentioned in this regard by MDL but it is seldom used so its effect on natural quiet values is minimal. Once regular vehicle activity has ceased for the day, the natural soundscape is more apparent and this is likely to be valued by visitors staying overnight at Gunn's Camp. Obviously any noise that is likely to cause sleep disturbance to visitors at Gunn's Camp would be unacceptable, but any regular non natural noise, even at low decibel levels, has the potential to cause annoyance also. Visitors walking the Routeburn Track would also have an expectation of experiencing natural peace and quiet throughout their visit. It is important therefore that the amount of noise emitted at night and the potential for noise to carry to the Routeburn Track is minimised.

There is little guidance on the level of noise that is acceptable in protected areas and there are no specific noise limits in the Fiordland National Park Management Plan that would apply to the proposed activity. Noise standards are set for the front country setting at Milford Sound (a busier and noisier place than the Hollyford) and these could be used to guide limits for this project. For all areas at Milford, except for the aerodrome, noise produced within the zone should not exceed 50dBA (Leq) between the hours of 8:30 am and 6 pm. At all other times the limit is 40 dBA (L10) and 70dBA (Lmax). Standards are also provided in the plan for boats on water bodies within the park including the Hollyford River. Under these standards boats are not permitted to exceed 77 dBA (Lmax).

New Zealand Standards for General Environmental Noise and for Construction Noise are also available although there are some issues with using them in a National Park setting. These standards are devised mainly to protect people from ongoing sleep deprivation and the health effects of chronic exposure to noise, neither of which tend to be significant issues in natural settings. In national parks, ambient noise levels are often lower than in other settings and this means that noises are audible over a greater distance than they would be elsewhere. The level of sound is only one factor that contributes to annoyance and this makes reliance

on decibel levels problematic.

Construction of the portal staging area is likely to be noisier than construction of the tunnel itself. MDL notes that once the tunnel boring machine is underground, there would be little noise generated by that activity at the portal site (although at that point in time there would be an estimated 30 truck movements per day through the site.) MDL also note that there would be some blasting to make the initial opening of the tunnel, which would be a significant noise effect on any visitors in the area, but would of short duration.

A three megawatt diesel powered power station is proposed at the Hollyford portal site, which would power the tunnel boring machine for the duration of tunnel excavation (approximately 18 months). A conveyor belt would run from face of the tunnel excavation to the portal site (this conveyor belt would be situated largely within the tunnel).

MDL state they would mitigate the noise effects of their activity as far as practical (for example through design and muffling of noise generating machinery), however there are no reasonable or practicable methods to totally eliminate the generation of all noise in this area during construction activities.

Construction noise effects would be temporary. Although the sound of machinery operating at the portal would be largely muffled by surrounding vegetation, any noise would likely be heard by visitors at Gunn's Camp. This noise would be present only for the duration of construction activities, which MDL estimates would take nine months (to construct the portal) and 18 months⁵⁴ to excavate the tunnel.

It is noted that MDL state they have been in discussion with Gunn's Camp regarding housing the construction workforce for the duration of the tunnel project. While this is not of relevance to the Department – if the users of Gunn's Camp during the construction phase were associated with the tunnel construction works, those people would have a greater tolerance for any noise arising from those works and the effects on those visitors would be minor.

Ongoing Effects

Once the tunnel is operational, there would be few noise effects

⁵⁴ Table 3C -4 Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006* .

arising from the portal site. The various machinery (generators and switching room) required to operate the tunnel on an ongoing basis would be situated within the tunnel portal. MDL state potential noise effects would be mitigated with appropriate design.

The estimated ongoing bus movements of an average of 23 per day, peaking at 40 per day in the summer months through the portal site on public conservation land would generate a degree of noise in the area. It is considered however that this noise would be largely absorbed by the surrounding landform and vegetation to the point where those effects would be minor.

***Discussion and
Conclusions – effects on
other park users:***

Construction Phase

During the construction phase, the proposed works at the Hollyford Portal site would be visible from the Hollyford Road, although not from the Routeburn Track. From time to time there would be audible noise generated from the portal site.

The scale of the proposed engineering activities, and associated effects would be incongruous in the otherwise largely natural setting of Fiordland National Park.

In the short-term, there is no effective method to totally avoid potential visual and noise effects from the portal site during construction. Noise and light effects could be minimised via concession conditions.

Adverse visual effects associated with construction of the Hollyford Portal and Staging Area would be temporary, and localised to the immediate vicinity of those works. In the longer term, these construction effects will be remedied (in that construction works will cease)

MDL has noted they would attempt to time works so as to avoid peak visitor periods in the park, however this is not considered to be particularly realistic, given the scale of the overall project.

Ongoing Effects

Once construction works are complete and tunnel construction infrastructure has been removed from the portal site, the visual effects of the Hollyford Portal would be minor, subject to mitigation in the form of effective replanting and rehabilitation of the site to minimise the final clearance footprint, and to provide screening from the Hollyford road.

Noise generated from the site would be limited to the noise of buses exiting the tunnel, and the sound of ventilation fans which would be designed to be as quiet as possible. On an ongoing basis

there would be no power station at the portal, as power for the tunnel would be supplied via a mains supply running from Glenorchy (via the tunnel). MDL note that there would be emergency diesel generators located inside the tunnel should the mains power fail – the sound of these generators would be largely muffled as they are in the tunnel – in any case, they are intended for use only as a backup.

Any noise associated with buses once they are no longer in the park (that is – they are on the legal road) cannot be considered by the Minister of Conservation.

The degree to which visitors are annoyed (by noise and other visitor behaviour) to a large extent is influenced by what they expect to encounter.⁵⁵ Provision of information about potential disturbances, by both MDL and by the Department, would reduce the potential for visitors to be annoyed by noise. This information could include information about the construction project and information about periods when visitors are likely to experience high levels of noise (for example, from blasting). This would reduce annoyance as visitors would be able to make an informed choice about whether to visit the area or an alternative location, and visitors who are expecting to encounter noise are less likely to be annoyed by it. MDL should be required to monitor sound levels at Gunn's camp and potentially on the Routeburn track and to modify their activity if the noise is excessive.

Proposed conditions to mitigate effects on other Park users (MDL)

- 1.1 Construction Environmental Management Plan
- 1.7 Noise
- 1.9 Roads and Traffic
- 2.1 Operations Environmental Management Plan
- 2.13 Roads and Traffic⁵⁶
- 2.11 Noise
- 1.2 , 2.6 Vegetation and Habitat
- 1.10 Buildings /Structures/Signage,
- 1.15 Restoration and rehabilitation
- 2.8 Earthworks

These conditions include:

- Applicant to take all practicable measures to reduce noise, comply with noise standards;

⁵⁵. Michael Harbrow Technical Support Officer (Recreation Planner) Southland Conservancy *pers comm*

⁵⁶ clause 2.13 Roads and traffic is mainly to do with passenger safety and comfort in tunnel, although it does note that coaches would not enter Mt. Aspiring National Park before 7 am.

- Monitoring of noise levels;
- Work at portal locations to be conducted during shoulder and winter seasons;
- Minimise clearances;
- Rehabilitate site as quickly as possible;
- Rehabilitation plan to be finalised in consultation with the Department;
- Use of appropriate species for re-vegetation (locally sourced);
- Portal structure to be finished in natural colours /textures;
- No signage (advertising) on site (although hazard signage would be necessary during construction).

Proposed conditions to mitigate effects on other Park users (Department).

- Monitoring of noise impacts on visitors in the park in the vicinity of works (concessionaire to conduct monitoring approved by the Department or pay for the Department to conduct monitoring);
- MDL to provide information to the public, the Department, Routeburn Track and Hollyford Track Guided walks and Gunn's Camp (in a manner approved by the Department) regarding timing of works generating noise (in particular – blasting);
- Application of noise standards as per those at Milford Sound (Fiordland National Park Management Plan - not to exceed 50dBA (Leq) between the hours of 8:30 am and 6 pm. At all other times the limit is 40 dBA (L10) and 70dBA (Lmax). Noise to be measured at the boundary of the site (the Hollyford Portal and Staging Area).

Conclusions

The short-term effects of the Hollyford Portal and Staging Area on visual landscape values are assessed as **potentially significant adverse unmitigated effects** which would be **temporary, and remedied in the long- term.**

The long-term effects of the Hollyford Portal and Staging Area on visual landscape values are assessed as **minor, subject to mitigation.**

The short-term noise effects of the Hollyford Portal and Staging Area on other Park users are assessed as **potentially significant adverse unmitigated effects** which would be **temporary and remedied in the long- term.**

The long-term noise effects of the Hollyford portal and staging area on other Park users are assessed as **minor, subject to mitigation.**

(iv) **Effects on Historical and Cultural Values Hollyford Portal / Staging Area**

There are no known historical sites at the Hollyford Portal / Staging Area.

MDL state that should any archaeological material be discovered during construction, all works with the potential to damage any such materials would cease and the appropriate authorities (the Department, Historic Places Trust and Te Ao Marama) would be advised.⁵⁷

The Department agrees that it would be unlikely that historical artefacts would be discovered at this site.

The Cultural Impact Assessment prepared for MDL by Awarua Research and Development⁵⁸ notes that although there are no documented significant sites in the area pertaining to Ngāi Tahu, the developments proposed by MDL have the potential to impact significantly on Ngāi Tahu values if not carefully managed; *'The adverse impacts are associated with effects on the spiritual value of water, effects on mahinga kai, effects on taonga species, ngahere and awa'*.

MDL has undertaken to carry out further consultation with Runanga closer to the construction stage and operational stage of the project:

*'Prior to any construction commencing the Concessionaire shall consult with Te Runanga o Ngai Tahu, and Te Ao Marama in accordance with the Cultural Impact Report (August 2006) (Document 16 of the **Concession Application**)'* and;

*'Should any archaeological material be discovered during the course of any works, all works with the potential to damage or disturb those materials shall be ceased immediately and DoC, New Zealand Historic Places Trust and Te Ao Marama advised immediately.'*⁵⁹

**Discussion and
Conclusions Effects
on Historical / Cultural
values:**

Mitigation proposed by MDL, to cease work should any historical artefacts be discovered during the works and notify appropriate authorities would be appropriate.

Potential impacts on cultural values are largely associated with environmental effect, and should environmental effects be mitigated to the point where they are minor, any 'flow on' effects on cultural values

⁵⁷ Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions 1.11

⁵⁸ Awarua Research and Development, *Cultural Impact Report for Milford Dart Limited August 2006*, MDL Concession Application 2007 Document 16.

⁵⁹ Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions. 1.11.

should also be minor.

In the discussions above, the potential environmental effects on freshwater, landform, flora and fauna in the Hollyford Portal / Staging Area are assessed as potentially significant, but able to be mitigated to the point where they would be minor.

Proposed conditions to mitigate effects on other historical and cultural values (MDL)

1.11 Cultural and Historical

This condition includes notification of appropriate parties should any archaeological material be discovered during the course of any works, and that MDLs would consult with Iwi prior to any construction commencing.

Proposed conditions to mitigate effects on other historical and cultural values (Department)

- Consultation with Iwi on any interpretation of cultural values occurring on public conservation lands;
- MDL to comply with DOC and Ngāi Tahu Accidental Discovery Protocols;
- MDL to provide adequate time for a find to be recorded and managed;
- Historic Places Act 1993 to be complied with;
- Pounamu is property of Ngāi Tahu (pursuant to Ngāi Tahu (Pounamu Vesting) Act 1997);
- Iwi to be consulted prior to construction, (Applicant's proposed condition (above) to cover all relevant Papatipu Rūnanga.)

Conclusion

The effects of the Hollyford portal and staging area on historic and cultural values are assessed as **minor**, subject to mitigation.

4.2.2 Effects Hollyford Airstrip Construction Area /Spoil Disposal Area

(i) **Geological / Geotechnical and Freshwater Effects Hollyford Airstrip Construction Area/Spoil Disposal Area**

Geotechnical and freshwater effects arising from the proposed works at the Hollyford airstrip construction area/spoil disposal area are discussed together in recognition that they are linked.

Spoil from the tunnel and Hollyford portal would be disposed of on the Hollyford airstrip.

Volume of Spoil: MDL estimates 268,000 m³ of spoil will be generated at at the Hollyford Valley from the tunnel excavation, assuming a 5 m excavated tunnel diameter (with allocation of aggregate for roading, concrete aggregates and bulking allowed for).⁶⁰

Description of Spoil Disposal Works: Drawings of the different stages of proposed spoil disposal works (drawing CO15) are provided in the application and are attached as Appendix B to this report.

In summary – MDL intends to;

- remove vegetation from the airstrip area;
- construct raised platforms for the construction compound (6 m high – to match the final height of the entire raised area once all spoil has been placed in the airstrip area);
- construct sedimentation ponds for treatment of water coming out of the tunnel;
- construct flood protection at the southern (upstream) end of the airstrip area (to protect the southern end of the airstrip area including sedimentation ponds) and around the construction buildings; and then
- to start disposing of tunnel spoil at the northern (downstream) end of the airstrip area, compacting and re-vegetating as work progresses.

Potential Adverse Effects related to Spoil Disposal: In 2006 the Department sought independent audit of the initial application, which identified a number of key issues/effects associated with respect to spoil disposal at the Hollyford Airstrip⁶¹, in

⁶⁰ URS, *Milford Dart Tunnel Amendment to Concession Application to Adopt the Final Routeburn Portal Location*, 24 January 2011

⁶¹ Becca Infrastructure LTD, *Milford Dart Concession Application Audit – Geotechnical/Engineering/Roading/Recreation* prepared for Southland Conservancy Sept 2006 and

particular leachate/adverse spoil monitoring and treatment, spoil area design, flood levels and water treatment systems. These are discussed below.

Acid leachate:

Acid leachate is potentially toxic, and if it enters waterways could potentially adversely affect water quality and aquatic biota.

The issue of whether the tunnel would encounter rock capable of generating acid leachate or to penetrate rock containing asbestos material was raised by external audit commissioned by the Department⁶². URS (for MDL) state that there is no evidence of pyrite or other sulphides in the rock types along the proposed tunnel corridor, however they acknowledge that these factors do not preclude the presence of such rock along the tunnel route⁶³. URS state that existing knowledge of the geology of the area would indicate that if pyrite and sulphides are present in rock along the tunnel route, they would be present as a small percentage of tunnel spoil. URS consider it therefore appropriate to allow for 1% of tunnel spoil to contain sulphide rich rocks that would need to be separated and managed in the spoil dump to prevent any possibility of acid leachate.⁶⁴

As URS have identified a low probability of intercepting acid generating rock in the tunnel, (or if present, likely only to be in small quantities from localised sections of tunnel), MDL proposes at this stage (and until additional investigations have been carried out), to make provision for monitoring, treatment and/or safe disposal of such material within the spoil disposal area in the event that it is found.

Proposed Methods for Managing Acid Leachate:

The application states:

'If sulphides are present in sufficient quantity to have the potential to generate acid leachate, they will be visible by eye to an experienced engineering geologist and probe drilling ahead of the TBM will

Wildland Consultants Ltd, *Milford Dart Concession Application Audit Sewage/Waste water/Solid waste/Hydrology/Hydraulics* (MWH New Zealand Ltd) March 2007.

⁶² Becca Infrastructure LTD, *Milford Dart Concession Application Audit* prepared for Southland Conservancy January 2007.

⁶³ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3. pg 3-11.

⁶⁴ Nb – Audit on behalf of the Department by Becca suggested that 50% of the tunnel needed to be anticipated as being sulphide rich – URS don't agree that 50% of spoil material is likely to be acid or sulphide generating. Risk is if URS are incorrect, and more than the % they design their treatment systems for is encountered; spoil will be coming out of the tunnel that can't be treated. If spoil is consistently monitored, and if more rock requiring special treatment is encountered that URS anticipate and the system can't cope – concession conditions could ensure work ceases until this is sorted This is an area of risk to MDL.

enable the sulphide-rich rock to be identified from drill cuttings⁶⁵. In addition, material being excavated from the tunnel will be sampled on the conveyor at the TBM at least daily and tested where necessary to confirm that the spoil is not potentially acid generating. This involves determining the maximum potential acidity (based on the sulphide content) and the acid neutralising capacity of the rock and confirming the waste is within acceptable criteria. Water discharges will be similarly sampled and tested.

Spoil that is identified as potentially acid generating will be handled based on one or a combination of the following strategies, which are all accepted practice for handling these materials:-

Oxidation Control – controlling the oxygen flux to reactive sulphides, by means such as placing below the water table or within high moisture content fine grained (silt or finer) material

Geochemical Control – blending rock types or addition of neutralising materials to control pH and oxidation rates

Hydrological Control – placement of low permeability layers which control the release rate through the potentially acid generating material

Options that incorporate the above strategies include:

Place potentially acid generating spoil at the south end of the spoil dump where there is an existing high point, well above predicted 1% AEP flood levels. Material will be mixed with lime or spoil with high acid neutralising capacity and encapsulated within a low permeability material. This would limit the oxygen flux to the waste and provide acid neutralising capacity for any acid generation.

Place this material low in the stockpile so that the groundwater mound that will form under the pile keeps the potentially acid generating spoil close to saturation. This will also limit oxygen flux thereby preventing acid generation... The adjacent waste rock will have acid neutralising capacity to provide a natural buffering effect, thus providing additional protection.

Place the material in a hole excavated beneath the stockpile (e.g. to recover coarse gravels and cobbles for use as armour material) so that it will be below the water table and therefore unable to oxidise to the degree necessary to generate acid rock drainage.

While in the long-term parts of the spoil disposal area could erode under high flood events, the intended reconstruction of the airstrip on the top of the spoil area will require that maintenance be carried

⁶⁵ *It is assumed that a suitably qualified or trained person would be supervising the drilling.* URS, Milford Dart Tunnel Project Concession Application - Technical description update, Milford Dart Ltd Concession Application August 2007 Document 3. Section 5.4.2 p.5-7.

out after such events, restoring any damaged areas. It is therefore expected that any risk associated with potentially acid generating rock being exposed would not differ from the natural exposures of these lithologies in the wider area.'

Asbestos:

The tunnel route would possibly intersect an area which contains rock (serpentine) which may contain minerals containing asbestos.⁶⁶ URS, on behalf of MDL, state that based on descriptions of the geology in the area, there would be *'little likelihood of encountering asbestiform minerals within the tunnel except if it encounters the Greenstone Melange at or close to the Routeburn portal.*

If this occurs, minor amounts of the least hazardous asbestos mineral (chrysotile) may be encountered. The spoil will be actively monitored to ensure that if this mineral is encountered it will be detected and appropriate risk management steps will be implemented in the tunnel and in the spoil dump in accordance with the Health and Safety Management Plan and the Spoil Disposal Management Plan to be approved under the Environment Protection Plan. The simplest way of managing this risk is to keep the face and the tunnel spoil wet.

*A hard rock TBM relies on water sprays around the cutter head to keep the cutters cool, and hence the cuttings being removed by the conveyor are always moist. It is also a simple requirement to maintain sprinklers on the spoil disposal area to achieve this purpose should any asbestos mineral be encountered.'*⁶⁷

Water Treatment Systems at the Airstrip:

The Airstrip disposal area would contain the sedimentation ponds to treat water coming from the tunnel and a silt pond to manage wastewater runoff from the spoil disposal area and works.

MDL state: *'The need to prevent release of any contaminants to the Hollyford River / Whakatipu Ka Tuka is recognised as a key objective for the project. The river is classified as 'Natural State Waters' under the Proposed Regional Fresh Water Plan for Southland and to this end there is an expectation that there will be no alteration to water quality beyond a reasonable mixing zone.*

During construction sediment is the key contaminant of concern associated with groundwater and stormwater and there is also potential for release of oils and greases associated with construction

⁶⁶ Becca Infrastructure LTD, *Milford Dart Concession Application Audit* prepared for Southland Conservancy January 2007 p.5

⁶⁷ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3. p 3-11

and drilling machinery’

On the above basis a number of mitigation measures are proposed;

“As far as is practicable clean surface water will be diverted around all disturbed areas in diversion drains.

A staged approach to construction is proposed and mitigation measures will be applied to each stage to ensure no contaminants are released from active areas. Measures proposed are summarised below and reference should be made to Drawing C014 for locations of the key features described.

Spoil disposal – *To mitigate against the release of sediments from earthworks during the initial clearing of this area and during ongoing spoil disposal, a silt pond will be constructed at the north end of the spoil disposal area. Ongoing rehabilitation of the spoil dump is proposed to minimise as far as practicable the potential for sediment runoff. The pond will be sized to treat the maximum area of exposure anticipated during the tunnelling program (in the order of 200m³ of storage per exposed ha).*

Airstrip Staging Area construction facilities – *The pond proposed as a primary treatment measure for groundwater (see below) during tunnelling will be constructed before this area is cleared and will be used as a silt pond while the construction facilities area is being developed.*⁶⁸

Tunnel discharge water. *The tunnel will be driven upgrade from Hollyford and therefore any ground water encountered will flow out of the Hollyford portal under gravity. Groundwater entering active tunnelling areas will entrain sediment and other material from the tunnel boring. The intent is that ‘dirty’ water will be kept separate from clean groundwater, the latter of which can be discharged directly to Deadmans Creek. Clean water will be directed to a small sump prior to discharge so that in the event of contamination the water can be diverted to the dirty water system. For the dirty water a similar treatment system to the Manapouri tunnel is envisaged, only on a smaller scale. Primary treatment will include sedimentation in the pond constructed in the Airstrip Staging Area. Secondary treatment through a small package treatment plant may be needed in the event that colloidal material, which is too fine to naturally settle, is encountered, requiring approved flocculants to remove suspended sediments before discharge back to the Hollyford River / Whakatipu Ka Tuka.*

⁶⁸ Runoff from the site will be directed into this silt pond and it would be removed once re-vegetation was sufficiently established to contain run-off from the site. Letter MDL to DOC 18/12/2006 re MWH Report Sewerage/Wastewater/Solid Waste/Hydrology/Hydraulics.

Discharge water from aggregate screening plant and concrete batching plant – Both operations use water and the discharge will contain sediments and other material. These discharges will be discharged into the settlement pond and if necessary treated further through the package plant to achieve a required water quality. Both ponds proposed in the Airstrip Staging Area would discharge to Deadman's Creek.

Wastewater and Grey water

The construction phase of the project will see up to 80 – 100 people on the site. It is proposed that temporary portable facilities (toilets, showers, and washroom) will be used with all wastewater being collected in tanks which would be monitored and periodically pumped out to trucks for removal to an appropriate wastewater treatment facility outside the National Park. The constructor (sic) will be required to monitor and maintain the ablutions and toilet facilities, and ensure that odour and pests are suitably controlled.⁶⁹

Drawing CO14 attached as Appendix B to this report shows the location of silt trap, and primary and secondary water treatment facilities.

Water Volumes Requiring Treatment:

There is uncertainty as to the volumes of tunnel water requiring treatment (as the volumes of water will be influenced by the geology of the area, and detailed geological assessment would not be carried out until the final design phase of the proposed project). MDL is confident that the volumes of water would be less than that encountered at Manapouri during construction of the 2nd Manapouri Tailrace Tunnel (which peaked at 1100 l/s and had cumulative long-term flow of 700 l/s)⁷⁰.

Separation of dirty water inflows from the tunnel face (front 150 m of tunnel) from the relatively clean groundwater in the completed tunnel further back is proposed by MDL to reduce volumes of water requiring treatment.⁷¹

⁶⁹Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006* p.3C14 – 15.

⁷⁰URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3 section 3.5 pg 3-9.

⁷¹URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3 section 3.5 pg 3-10

Detailed design of proposed water treatment systems have not been provided by MDL at this point in time. MDL note that once there is more certainty in regards to the volumes that would likely be encountered (which will become apparent once detailed geological survey has been carried out, including Helicopter Electromagnetic Imaging) design of the treatment plant will be carried out by a Chartered Professional Engineer. MDL's Draft Construction Management Plan (attached as Appendix D) sets out a number of conditions and standards that the water treatment plant would need to meet⁷².

These include ability for water treatment systems to add capacity should volumes increase beyond initial design volumes, and monitoring and water quality standards that need to be met.

It should be noted that MDL would require (in addition to a concession) Resource Consent from Environment Southland, and this process would comprehensively deal with water quality standards. This concession process cannot predetermine the outcome of the process to be run by Environment Southland, nor pre-determine potential conditions of any Resource Consent. It is noted that MDL states the conditions they propose are based on ES Resource Consent Conditions.

**Flood Protection/ Rip
Rap:**

MDL/URS propose to design flood protection to survive a 1% AEP⁷³ (that is, a one in one hundred year flood event). Initially it was proposed to construct flood protection that would survive any flood in perpetuity. MDL now propose, on the basis that the Hollyford River is a dynamic feature of the Fiordland landscape, to construct the disposal area in such a way that it could, over time, revert back into the natural landscape as a result of major (1 in 100 year) flood events.

As it is possible (although of low probability) that the entire spoil disposal could at some time be flooded, MDL has indentified the need to ensure that any potential leachate producing materials are treated/contained using a combination of strategies as detailed in section 5.4.2 (Leachate Monitoring and Treatment) of the Project

⁷² URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3. *Appendix A, Draft Construction Environmental Management Plan* section 5.5.

⁷³ AEP – 'Annual Exceedence Probability'

Technical Description⁷⁴ and discussed in this report. These strategies include neutralising and storing any potential leachate producing material in an area of the spoil disposal area that is above the 1% AEP level. MDL has identified an area at the south end of the airstrip area which would be above this level.

It is possible that ongoing monitoring, maintenance and repair of the flood protection works / rip rap will be required. This is not a responsibility nor a cost that the Department would be willing to take on, given that these works would be constructed by MDL. It is noted that currently there are minimal flood protection works between the Hollyford Airstrip and the Hollyford River, in the form of a low (partial) 'stop bank' type structure. It is not known when this was formed or by whom, but it was most likely put in by Ministry of Works, and prior to 1987. It is not maintained by anyone as far as can be determined.

Ongoing monitoring and any necessary maintenance and repair of the rip rap / flood protection constructed by MDL would need to be the responsibility of MDL

***Traffic through
Deadman's Creek:***

The existing access road to the northern end of the Hollyford airstrip area crosses Deadman's Creek. This road would be subject to truck and traffic movement during the construction phase. Mud and silt entering the stream would have significant adverse effects on water quality of the creek from that point downstream. Accordingly, this stream should be culverted to avoid any adverse effects into that stream. Culverts would need to provide for fish passage.

Effects in Perpetuity:

If this tunnel was to be built, it would remain a modification in the Humboldt Mountains in perpetuity.

MDL has been asked to comment on how they would intend to decommission the tunnel, and if there would be potential adverse effects in respect of groundwater which would continue to seep out of the tunnel in perpetuity.

MDL state that if required, the tunnel would be decommissioned by plugging each portal entrance with concrete, and groundwater in the tunnel would return to its natural level. Given that this groundwater

⁷⁴ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3, section 5.4.2 p 5-7.

would then have to filter through rock to get out of the tunnel (as it currently filters through the Mountains), URS (on behalf of MDL) states that any potential leachate in this water would have a pH '*very close to the natural pH of groundwater, there simply won't be sufficient alkalinity in the seepage to result in an elevated pH*'⁷⁵. This comment doesn't take into account the fact that parts of the tunnel will be lined with shotcrete. If the tunnel is decommissioned this material should be removed, or alternatively – monitored and passively treatment as required, on an ongoing basis.

Should this concession be granted, the Concessionaire would be required to enter into commercial arrangements which would satisfy the Minister of Conservation that there were suitable and appropriate financial arrangements to cover mitigation of adverse effects and rehabilitation of the site should the project fail for any reason.

***Discussion and
Conclusions Effects of
Landform/Freshwater:***

Disturbance of landform and disposal of spoil at the airstrip would require careful management to ensure no adverse effects (such as sedimentation, increased turbidity, or changes to chemical composition of water inflows) into the Hollyford River and other natural waterways would occur.

There are two key aspects in regards to potentially adverse effects on water quality. Firstly, how spoil is disposed of (in particular 'adverse rock materials' such as leachate generating materials and asbestos) and secondly, the proposed water treatment systems.

MDL propose to monitor and detect the presence of 'adverse rock materials' and have outlined various strategies to either treat those materials or dispose of them in such a way that they pose no risk in respect of leachate into the surrounding environment. These strategies would appear to be appropriate and are accepted management strategies for these types of materials, and they have been proposed by an engineering firm (URS – on behalf of MDL) with considerable experience in hard rock tunnelling. Final (independent) engineering audit of final construction plans would ensure this the case.

Final design of water treatment systems have not been provided at this point in time by MDL, as the volumes of water requiring treatment could not be confirmed until final geotechnical investigations have been completed. MDL have acknowledged the need to ensure the systems are appropriately sized and designed to deal with peak volumes of water requiring treatment. The 'indicative'

⁷⁵ Email M. Sleigh MDL 22/09/09.

water treatment systems proposed by MDL, and the measures they propose regarding water quality monitoring, treatment and ongoing adaptation of systems as required would be effective to avoid/mitigate potential adverse effects on freshwater values. Dust (particularly dust from potential adverse rock material) would be avoided by keeping spoil moist as noted above.

Proposed concession conditions to mitigate effects on landform and freshwater (Applicant)

- 1.1 Construction Environmental Management Plan
- 1.2 Vegetation and Habitat
- 1.4 Earthworks and Leachate
- 1.5 Water Quality and Quantity
- 2.1 Operations Environmental Management Plan
- 2.6 Vegetation and Habitat
- 2.8 Earthworks
- 2.9 Water Quality and Quantity
- 2.16 Monitoring and Reporting

Proposed concession conditions to mitigate effects on landform and freshwater (Department)

- The Concessionaire shall be responsible for monitoring the condition of the Flood protection works constructed by the Concessionaire alongside the Hollyford River and shall maintain and repair this structure as directed by the Grantor.
- The Concessionaire shall fund the role of Project Liaison Officer to act as a liaison contact between the Concessionaire and the Grantor prior to and during the term of construction of the concession activities authorised by this concession.
- Prior to construction, the Concessionaire shall prepare for the approval of the Grantor Construction Specifications and Plans and Environmental Management Plans for all components of the Activity
- The Grantor will audit these Specifications and Plans to ensure that final 'on the ground' design and construction specifications do not differ in location, or substantially in scale or level of effect to the concession application lodged by the Concessionaire
- Once audited and approved by the Grantor, the Specifications and Plans shall form part of the Concession, and the Concessionaire shall not deviate from these Specifications and Plans without prior written approval of the Grantor.
- Deadman's Creek to be culverted and fish passage

- provided.
- Bond conditions for construction and ongoing operation.
 - Monitoring to water quality and 'adverse rock material' standards (standards to be defined by MDL and approved by Department during preparation and approval of final Construction Specifications and Plans and Construction Environmental Management Plans. Work to cease if standards exceeded (remedial work to be undertaken prior to work re-commencing).
 - NOTE – water quality standards still to be determined and finalised taking into account the considerations made via the Resource Consent process, and will be included in the concession.

Conclusions

The effects of the Airstrip Construction Area/Spoil Disposal Area on landform and freshwater values are assessed as **minor, subject to mitigation**.

(ii) Effects on Flora and Fauna Hollyford Airstrip Construction Area/Spoil Disposal Area

Vegetation at the Hollyford Airstrip:

As noted in section 3 of this report, the vegetation at the airstrip comprises (predominantly) scrubby regenerating vegetation and tutu. The vegetation assessment provided by MDL omits description/assessment of the vegetation growing on river shingle alongside the Hollyford Airstrip, which has been identified by the Department's auditors as a habitat utilised by red admiral butterflies.⁷⁶

Intact conifer/broadleaf forest with silver beech is found at the south end of the airstrip.⁷⁷

A site visit by Department staff identified an area of sensitive natural values and the northern end of the airstrip including swampy ground, stream junctions and stream – river junction.⁷⁸ At the Departments recommendation, this site has been avoided by the MDL to avoid impacts in this area.

Vegetation removal:

All vegetation would be removed from the airstrip area. MDL identify that '*the temporary and localised loss of biodiversity*' associated with works at the Hollyford portal and Hollyford Airstrip Construction

⁷⁶ Wildland Consultants Ltd, *Milford Dart Tunnel concession application; audit of ecological information, report prepared for the Department of Conservation Southland Conservancy* February 2007. Section 5.3.2.

⁷⁷ Ryder Consulting, *Milford Dart, Overview of Ecological Assessments*, Milford Dart Concession Application August 2007 Document 4, p.31

⁷⁸ Edwards, E, DOC Internal Report Oct 2009

Staging Area (combined) would amount to ~7 ha.⁷⁹

The application states that spoil would be progressively placed on the disposal area (starting at the northern end of the area) and re-vegetation would take place progressively as spoil is placed. The area would be re-vegetated using appropriate species, the seed stock of which would be obtained in the local area. Draft concession conditions suggested by MDL states;

'All areas disturbed by spoil disposal, vegetation clearance, and soil disturbance shall be rehabilitated with the end aim of achieving 'National Park' standard of vegetation revegetation and rehabilitation. All rehabilitation and restoration activities will be undertaken in close consultation with DoC.

Final plans of revegetation and rehabilitation, with species list, planting locations and maintenance programme, will be prepared by a suitably qualified botanist or landscape architect and submitted to DOC for final approval prior to any commencement of works at the relevant portal.

*Opportunities for vegetation enhancement shall be undertaken.'*⁸⁰

Weed invasion:

MDL propose to undertake a full survey of weeds at the site prior to mobilisation of contractors to evaluate the weeds likely to invade any disturbed sites, and refine methods to prevent, control and monitor weeds. A 'Draft Plant Pest Management Plan'⁸¹ has been provided by MDL, with the intent being to finalise this plan in consultation with the Department should any concession be granted.

As noted elsewhere in this report MDL proposes to develop a steam wash down facility either inside or outside the park to remove any dirt, vegetation or organic matter from machinery, and to actively manage that area for weed control. This would minimise the risk of weed spread associated with construction activities.

Disposal of vegetation:

MDL propose to mulch all vegetation (including that from the Hollyford Portal clearance site) and place it along with topsoil from the site over the rock excavated from the tunnel.⁸²

⁷⁹ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006* s. 5.3.2 pg 5-10.

⁸⁰ Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions 1.15.

⁸¹ See Appendix D of this report.

⁸² Ryder Consulting, *Milford Dart, Overview of Ecological Assessments*, Milford Dart Concession Application August 2007 Document 4 pg.48.

Effects on fauna: Key potential effects on fauna of the proposed activities at the Hollyford Airstrip Construction Area/Spoil Disposal Area would be effects associated with vegetation removal and effects of noise/dust/traffic arising from construction activities.

Birds and Bats: As the airstrip area generally is a modified environment, the bird species present around the airstrip are limited to shrubland and forest river margin birds and a variety of introduced species which inhabit the grasslands and cleared areas around the airstrip. Paradise ducks have been observed on the airstrip itself.

Invertebrates: Indigenous insect communities are present in the airstrip construction area/spoil disposal area. The presence of Red Admiral butterfly has also been noted by DOC staff.

Effects of vegetation removal on fauna: The value of the vegetation habitat at the Hollyford airstrip is relatively low as it is a largely modified and disturbed site in comparison to the surrounding National Park.

In the short-term, this vegetation would be entirely removed (prior to spoil being disposed of on-site). This removal of vegetation would displace any wildlife in the area. The species anticipated in this area are relatively mobile and would likely remove themselves from the area into the surrounding river flats and forest. It is unlikely that bats would be present in the area, as there does not appear to be any large trees suitable for roosting in the airstrip area. As part of the monitoring required at the Hollyford portal clearance site for bats prior to removal of vegetation in that area, survey of any likely roosting trees at the airstrip is suggested.

In the longer term, once rehabilitation of the site has been carried out, MDL states that the vegetation values (and resulting habitat values) would be enhanced as a result of replanting the site with native species.

Traffic effects: During the construction phase, there would be high volumes of traffic on public conservation land comprising the airstrip/spoil disposal area. MDL identifies up to 30 truck movements per day each way to and from the portal site to move spoil from the tunnel during the construction period (estimated at about 18 months).⁸³ In addition, there would be earthmoving machinery working on the site spreading spoil.

Risks of wildlife being run over: As noted above, in relation to the Hollyford portal site, the risk of wildlife kill on the road is low. The only wildlife at risk of being run

⁸³ table 3C-4 Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006*

over by vehicles is likely to be Kiwi and weka. Kiwi and weka are unlikely to be resident or present on the airstrip area in any numbers, however it is noted that the tunnel construction activity is proposed as a 24 hour a day activity. As such there would be traffic entering the airstrip area at night when kiwi could potentially be present, and it would be prudent for drivers of vehicles to be aware of the potential for both weka and Kiwi to be in the area.

Noise effects on wildlife:

Substantial levels of noise would be generated at the airstrip resulting from construction activities. In addition to the noise associated with traffic and machinery, the site would house the mobile aggregate screening and crushing plant, and concrete batching plant to produce concrete required to line the tunnel.

MDL has not provided any detail on the levels of noise that would be generated by this machinery, however, it is not unreasonable to presume that this machinery would generate significant levels of noise in keeping with the scale of engineering works proposed.

To mitigate the effects of noise on the environment MDL propose to comply with requirements of various New Zealand Standards in relation to the assessment of noise in the Environment and measurement and assessment of noise from construction, maintenance and demolition work.⁸⁴

It is unlikely that there would be any particularly rare, endangered or at-risk species in the Hollyford airstrip spoil disposal area which would be adversely or permanently affected by noise.

Dust:

Processing of aggregate to make concrete would create dust. MDL acknowledge that dust left on vegetation could cause adverse effects, and suggest that if required, vegetation surrounding the aggregate processing plant would be hosed off as required. (Given the rainfall in the Hollyford Valley it is unlikely that this would become a problem very often).

Night Time Lighting:

MDL intend to run a 24 hour a day shift system to construct the tunnel. This suggests the need for lighting at both the Hollyford Airstrip and the portal site during the construction phase.

The application does not discuss night time lighting or potential for light pollution. The Hollyford Valley currently has no artificial night time light sources apart from Gunn's Camp which are shut off in the early evening. There is the potential for construction activities to use

⁸⁴ NZS 6802: 1991 'assessment of noise and the environment' and NZS 6803P: 1984 'the measurement and assessment of noise from construction, maintenance and demolition work'.

strong and exposed lighting at the Hollyford Airstrip.

Potential adverse environmental effects of artificial night lighting can include disruption of insect activity, confusion of birds in flight and focus of bird and bat activity. There is anecdotal evidence of seabirds being attracted to works at the Clyde dam. Both the airstrip and portal site in the Hollyford Valley could be expected to encounter abundant mass emerging aquatic insects after dusk on many evenings. These are particularly sensitive to ultraviolet light.⁸⁵

Potential adverse effects of light should be mitigated by controlling light so that it is directed only to where it is needed.

***Discussion and
Conclusions, Effects on
Flora and Fauna
(Airstrip Site):***

All vegetation would be removed from the Hollyford airstrip area in order for construction facilities to be developed and for spoil to be disposed of on the airstrip area.

In general, the flora and habitat values of this vegetation are not relatively significant, as the area is largely modified in relation to the surrounding National Park. A site of particular significance identified by the Department in the airstrip construction area has been subsequently avoided by the proposal.

No particularly rare or endangered bird, bat or invertebrate species are known to be present in this area. Although no mistletoe *spp* have been noted at the airstrip, if it was present its removal would be an adverse effect. This would be mitigated by MDLs proposed possum control in the general area, which would enhance survival rates of other plants in the area.

Mitigation proposed by MDL is to rehabilitate the site progressively as spoil is disposed of, thereby minimising the amount of time the area is devoid of vegetation. MDL propose to replant the area with appropriate native plant species, which they suggest would enhance the natural habitat values of the airstrip area.

Proposed concession conditions to mitigate effects on flora and fauna (MDL)

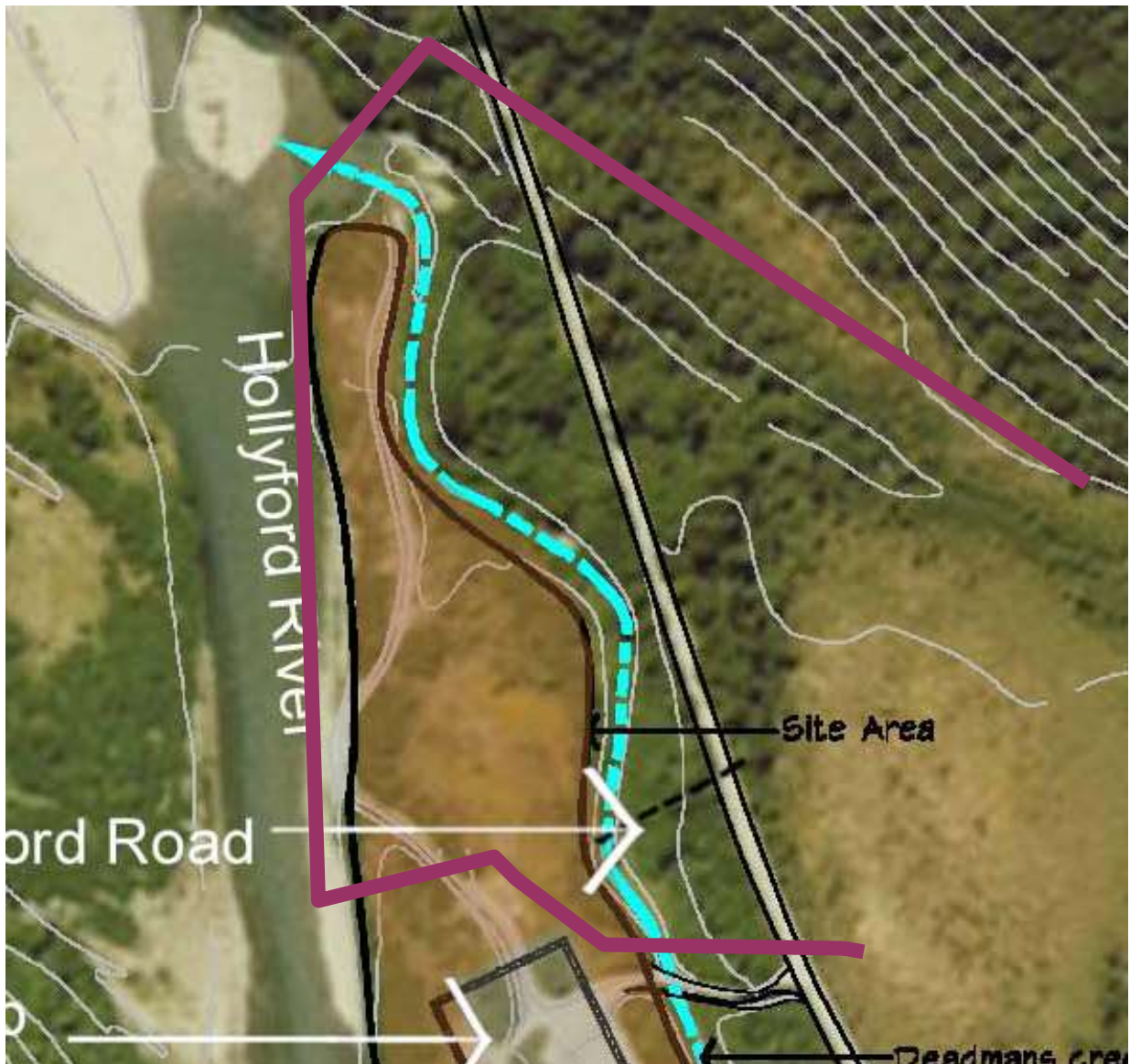
- 1.1 Construction Environmental Management Plan
- 1.2 Vegetation and Habitat
- 2.1 Operations Environmental Management Plan
- 2.6 Vegetation and Habitat

Proposed conditions to mitigate effects on flora and fauna

⁸⁵ E Edwards TSO Biodiversity *pers comm*.

(Department);

- No disposal of soil or modification of site indicated (inside the area marked in pink) on following map;



- Survey for bats prior to clearance;
- Avoid nesting periods for birds;
- Carry out monitoring program on the effects of noise on wildlife and the immediate vicinity of the construction works (Mr Hegley for MDL stated that this would be work that would be undertaken);
- New buildings to incorporate energy conservation within their design and be designed to eliminate all forms of uncontrolled waste, noise pollution or light spill to the surrounding park;

- All lighting required to shed light downwards and minimise light spill into the wider national park; to avoid affecting people's night vision and to minimise any detracting from the natural dark values of the park;
- re-vegetation to include;
 - i. nettle to enhance habitat for Red and Yellow Admiral Butterfly
 - ii. *meuhelbeckia axillaris* to enhance habitat for copper butterfly and grasshoppers; and
 - iii. open stony substrates for crusting lichens, mosses and *Raoulia spp* mat daisy suitable for day active moths, butterflies and black cicada *maoricicada campelli*;
- Concessionaire to conduct pest plant control in Hollyford (methodology subject to further discussion and approval by the Department – but generally as outlined in the concession application particularly Conservation Consultancy Ltd for Milford Dart LTD. 2007 *Draft Plant Pest Management Plan*, MDL Concession Application 2007 document 6);
- Concessionaire to carry out or contribute to pest / predator control in Hollyford (methodology subject to further discussion and approval by the Department)

Conclusion

The effects of the Airstrip Construction Area/Spoil Disposal Area on flora and fauna values are assessed as **minor, subject to mitigation.**

(iii) Effects on other Park Users

Visual effects of construction:

MDL assess the visual effects at the Hollyford airstrip as follows: ⁸⁶

⁸⁶ *Milford Dart Limited Hollyford Portal Landscape Assessment Report prepared by Baxter Design Group LTD, Milford Dart Limited Concession Application August 2007 Document 20.*

The airstrip is proposed to be the construction staging area for the Milford Dart project during the lifetime of the construction phase of the project. The temporary changes to the existing airstrip during this construction phase are the removal of vegetation, the stockpiling of material from the tunnel drilling, the construction of a settling pond and concrete batching plant, car park and storage areas as required. The location of the airstrip will move across the length of the site, but will remain operable at all times.

The key permanent change to the existing airstrip, once construction of the tunnel is complete is the raising of the existing airstrip level by an average of 8m (from average RL of 122m existing level to final level of RL 130m). This finished level is approximately the same as the Hollyford Road at this section. This will effectively raise it above the Hollyford River flood levels¹ with the result that it will be a more stable landscape, which will allow for the establishment of a greater range of native vegetation with a greater potential maturity than exists presently. The visual effect of this change from a dynamic to more stable landscape will be positive. The increase in vegetative cover and variety will screen the existing airstrip to a greater degree, minimise the area of human modification and present a contiguous vegetative appearance with the larger area. Given the anticipated increase in naturalness post construction, the visual effect will not be adverse.

Noise effects :

Construction Activities

Construction activities at the airstrip would last for an estimated 18 to 20 months. During this period, buildings and facilities would be constructed on the airstrip, spoil would be disposed of on the airstrip, and concrete batching and aggregate processing plants would operate manufacturing concrete for the tunnel.

As discussed above, MDL has stated that they would comply with relevant New Zealand standards related to construction noise.⁸⁷

Noise assessment on behalf of MDL states '*noise at the airfield is not expected to cause any concerns, as even the maximum noise from any construction work will be below the level of an aircraft taking off*'⁸⁸. This comment fails to recognise that use of the Hollyford airstrip by aircraft is relatively low, whereas the noise potentially generated from construction activities could be near continuous during the construction of the tunnel.

MDLs noise assessment expects the noise of construction equipment at the airstrip to vary between 60-70dBA.

Gunn's camp is just over 2 km from the airstrip, in the Hollyford road end (and start of the Hollyford track) is approximately 5 km from the airstrip. To an extent noise generated from the airstrip site would be screened by topography and vegetation between those two sites.

⁸⁷ Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions. 1.7

⁸⁸ Hegley Acoustic Consultants, *Assessment of Noise Levels*, MDL Concession Application 2007 Document 14, p. 25

It is possible, as would be the situation with the Hollyford Portal, that noise from the airstrip would be heard from time to time by trampers at the 'Orchard' on the Routeburn Track, in particular on calm sunny days when sound is likely to carry.

Whether or not construction noise would have an adverse effect on those visitors would be influenced by those visitors' personal opinions of the construction works, and as such, is difficult to quantify.

In the long-term (post construction) there would be no noise effect arising from the Hollyford Airstrip as a result of MDLs proposed activities, as such these temporary adverse effects are remedied in the long term.

***Closure of airstrip
/aircraft landings:***

Construction effects

The application is inconsistent in regards to whether or not the airstrip would need to be closed as spoil is disposed of. It seems likely, however, that the airstrip would require closure for periods as spoil is disposed of.

There are a number of commercial aircraft operators with concessions (licences) to land at the Hollyford Airstrip. The Minister could not grant any concession for activities on the airstrip which would constrain the existing concessionaires from exercising their concessions without those concessionaires' consent.

MDL state they have consulted with the major commercial user of the Hollyford Airstrip (Air Fiordland) and it appears that some commercial arrangement has been made between those two parties regarding compensation should the airstrip be closed for any period of time to fixed wing aircraft. Any such arrangements made are not of concern to the Department.⁸⁹ However, the airstrip could not be closed (for MDL to carry out modifications to the area) without the consent of existing concessionaires. The Minister would require MDL to obtain the written consent of existing concessionaires for any closure of the airstrip.

In addition to 'long-term' aircraft landing concessions, the Hollyford airstrip also receives recreational/private use, in particular during the roar and the white baiting season. In order to avoid any adverse effects on these potential users (closure of the airstrip), the airstrip would need to remain open in March/April of each year.

MDL note that the area should be available for helicopter landings throughout duration of the proposed construction works.

Ongoing effects

⁸⁹ NOTE – DOC has not consulted with airstrip users over this proposal.

On an ongoing basis, once spoil has been disposed of, the site rehabilitated, and the airstrip re-formed on top of the area, the new airstrip would be an improvement on the existing airstrip. The new airstrip would be 6 – 8 m above the Hollyford River, as such it would be less prone to flooding.

Although potentially an 'improved' airstrip may result in increased demand for aircraft landings on the Hollyford airstrip, this is not relevant to this particular concession application. Aircraft landings at the Hollyford airstrip are managed by the Department via concessions with aircraft operators.

***Discussion and
conclusions Effects on
Other Park Users:***

Visual Effects

Currently the Hollyford Airstrip cannot be seen from the Hollyford road, as it is largely screened by mature kahikatea forest adjacent to the road. MDL states that this screening will remain. The airstrip can be seen from parts of the Routeburn Track as shown below, although not from Key Summit or Lake Marion. The airstrip (obviously) can be seen from the air, and also from the mountains surrounding the Hollyford Valley.



View of Hollyford Airstrip from 'the Orchard' on the Routeburn Track
Grid Ref NZMS260 D40&PtC40 274916
DOC / R. Kerr

The proposed works at the airstrip construction area/spoil disposal area would be seen from the road immediately adjoining the airstrip, from the air, and distantly from the Routeburn track.

These works are estimated to take 18 – 20 months.

These effects would be relatively significant, as they would be largely industrial in nature and out of keeping with the natural values of the Hollyford Valley. The severity would be mitigated by retention of a bush buffer between the Hollyford road and the airstrip, and the fact that the airstrip is visually distant from the Routeburn track. There are no reasonable methods that would avoid all visual effect of the construction works. The visual impact of construction buildings and facilities (in particular, the visibility from a distance) could be mitigated by painting buildings in a non reflective/dark colour. In the longer term, once construction has ceased and the site rehabilitated, these effects will be remedied.

Ongoing visual effects

Once the tunnel has been completed, spoil disposed of, and the airstrip rehabilitated, the long-term visual effects of the modifications made to the area would be minor. MDL state: *'Existing man made landforms such as the gravel heaps will be replaced by an integrated, designed landform with a full vegetative cover. Given the anticipated increase in naturalness, the visual effect will not be adverse.'*⁹⁰

The airstrip area would be 6 - 8 m higher than it is currently, but subject to effective rehabilitation and replanting of the site the area's natural values may well be enhanced. The long-term visual impact may, in fact, be a positive improvement.

Noise

During the 18 – 20 month construction period there would be noise generated at the airstrip resulting from operation of the concrete batching and aggregate processing plants, the operation of the earthmoving machinery placing spoil up on the site, and vehicle movements onto the site.

The report by Hegley Acoustic Consultants provides indicative decibel levels for some of these noise sources, but the exact type of equipment used would not be clear until the work is successfully tendered out. No information has been provided on the level of noise that is likely to be generated from the concrete batching and aggregate crushing plants located at the airstrip. There is likely to be significant noise from blasting in the early stages of the project but the extent of this on the Hollyford side is not clear. It has been estimated at 3 times per day for 4 months for the Routeburn Portal with a noise level of 95 dbC at the Routeburn carpark. This may be indicative of what to expect on the Hollyford side.

The extent to which these noise effects would be adverse on other users

⁹⁰ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006*

in the National Park is difficult to quantify, as whether or not noise causes 'annoyance' or 'disturbance' to people is highly subjective. It is a fact, however, that the type of noise generated by these activities would be incongruous in the natural setting of the National Park, which is otherwise largely dominated by ambient noise such as wind/weather and water. MDL suggests that the noise generated from the airstrip area would not be particularly 'loud'. It certainly would be absorbed to a degree by surrounding landform and vegetation from park users on the Hollyford track, at Gunn's camp, and on the Routeburn track. From time to time, however, it is likely that noise would be heard from the airstrip construction area.

Users of the Routeburn Track are predominantly from overseas and they may be comfortable with a higher degree of human modification, even in a National Park setting. Most are relatively inexperienced trampers undertaking a short 3 day 2 night trip and probably seeking a quick immersion in a natural setting rather than wilderness users seeking complete removal from the sights and sounds of human activity.⁹¹ Most visitors walk the track from East to West and will be on the final day of their trip expecting to 'get back to civilisation.' The Hollyford Valley is only visible for a small part of the walk and in the context of their overall trip the effects would be relatively minor.

Gunn's camp is just over 2 km from the airstrip. The Hollyford road end (and start of the Hollyford track) is approximately 5 km from the airstrip. To an extent, noise generated from the airstrip site would be screened by topography and vegetation between those two sites. As noted previously in this report, it is possible that the construction workforce would be housed at Gunn's Camp, and these people would likely have a greater tolerance to any noise generated from the construction site than other visitors.

MDL has identified that they would mitigate the noise effects of the activity as far as practical (for example, design and muffling the noise generating machinery) however there are no reasonable or feasible methods to totally avoid the generation of any noise in this area during the construction phase.

To certain users, in particular in certain climatic conditions in which sound would carry, any noise generated from construction activities that could be heard would be an adverse effect.

Potential noise effects of construction would be temporary. MDL estimates that tunnel excavation would take approximately 18 months and a further two months to disestablish and rehabilitate the construction site.

⁹¹ Michael Harbrow | Technical Support Officer (Recreation Planner) Southland Conservancy comment on concession application 30 Oct 2009.

Ongoing effects

In the long-term, there would be no noise generated at the airstrip resulting from the activities proposed by MDL.

Proposed conditions to mitigate effects on other Park users (MDL)

1.1 Construction Environmental Management Plan

1.7 Noise

1.9 Roads and Traffic

2.1 Operations Environmental Management Plan

2.11 Noise

1.2 , 2.6 Vegetation and Habitat

1.10 Buildings /Structures/Signage,

1.15 Restoration and rehabilitation

2.8 Earthworks

These conditions include;

- Applicant to take all practicable measures to reduce noise, comply with noise standards;
- monitoring of noise levels;
- work at portal locations to be conducted during shoulder and winter seasons;
- Minimise clearances;
- Rehabilitate site as quickly as possible;
- Rehabilitation plan to be finalised in consultation with the Department;
- Use of appropriate species for re-vegetation (locally sourced);
- Portal structure to be finished in natural colours /textures;
- No signage (advertising) on site (although hazard signage would be necessary during construction).

Proposed conditions to mitigate effects on other Park users (Department).

- Monitoring of noise impacts on visitors in the park in the vicinity of works (either Concessionaire to conduct using methodology approved by DOC or DOC to conduct monitoring at Concessionaires cost);
- MDL to provide information to the public, (in a manner approved by the Grantor) to the Department, Routeburn Track and Hollyford Track Guided walks, and Gunn's Camp regarding timing of works generating noise (in particular – blasting);
- Airstrip to remain open for Fixed Wing aircraft during the 'Roar' (March /April inclusive);
- Area available at airstrip for helicopter landings for duration of construction activities;
- If airstrip to be closed for any period of time, or existing Concessionaires activities constrained, MDL (Concessionaire) to obtain consent of all existing Hollyford Airstrip concessionaires.

Conclusions

The short-term effects of construction works at the Hollyford Airstrip Construction Staging Area on visual landscape values are assessed as **temporary, potentially significant unmitigated adverse effects**, which would be **remedied in the longer term**.

The long-term effects of the Hollyford Airstrip Construction Staging Area on visual landscape values are assessed as **minor, subject to mitigation**.

The short-term noise effects of construction works at the Hollyford Airstrip Construction Staging Area on other Park visitors are assessed as **temporary, potentially significant unmitigated adverse effects**, which would be **remedied in the longer term**.

The long-term noise effects of the Hollyford Airstrip Construction Staging Area on other Park users are assessed as **minor, subject to mitigation**.

(iv) Effects on Historic and Cultural Values Hollyford Airstrip Construction Area /Spoil Disposal Area

There are no known historical sites at the Hollyford airstrip construction area/spoil disposal area.

MDL state that should any archaeological material be discovered during construction, all works with the potential to damage any such materials would cease and the appropriate authorities would be advised.

The Department concurs that it would be unlikely that historical artefacts would be discovered at this site.

The Cultural Impact Assessment prepared for MDL by Awarua Research and Development notes that although there are no documented significant sites in the area pertaining to Ngāi Tahu, the developments proposed by MDL have the potential to impact significantly on Ngāi Tahu values if not carefully managed.

MDL has undertaken to carry out further consultation with Rūnanga closer to the construction stage and operational stage of the project in accordance with their Cultural Impact Report.⁹²

Discussion and Conclusions Effects on Historic and Cultural Values:

There are unlikely to be any historical /archaeological artefacts within the airstrip area. The mitigation proposed by MDL to cease work should any artefacts be discovered and notify the appropriate parties is considered appropriate.

⁹² Awarua Research and Development, *Cultural Impact Report for Milford Dart Limited August 2006*, MDL Concession Application 2007 Document 16.

Potential impacts on cultural values are largely associated with environmental effect. Should environmental effect be mitigated to the point where they would be minor, any 'flow on' effects on cultural values would also likely be minor. It is noted MDL has undertaken to carry out further consultation with Rūnanga closer to the construction stage and operational stage of the project, in accordance with their (MDL's) Cultural Impact Report.

Proposed conditions to mitigate effects on historical and cultural values (MDL)

1.11 Cultural and Historical

This condition includes notification of appropriate parties should any archaeological material be discovered during the course of any works, and that MDL would consult with Iwi prior to any construction commencing.

Proposed conditions to mitigate effects on historical and cultural values (Department)

- Consultation with Iwi on any interpretation of cultural values occurring on public conservation lands;
- MDL to comply with Department and Ngāi Tahu Accidental Discovery Protocols;
- MDL to provide adequate time for a find to be recorded and managed;
- Historic Places Act to be complied with;
- Pounamu is property of Ngāi Tahu (pursuant to Ngāi Tahu (Pounamu Vesting) Act 1997);
- Iwi to be consulted prior to construction, (Applicant's proposed condition (above) to cover all relevant Papatipu Rūnanga.)

Conclusions

The effects of the Airstrip Construction/Spoil Disposal Area on historic and cultural values are assessed as **minor**, subject to mitigation.

4.2.3 Below Ground Tunnel Effects

The proposed tunnel, obviously, would be underground. With the exception of the physical hole in the ground, effects resulting from construction and operation of the tunnel would manifest above ground on public conservation land, in the Hollyford and Routeburn Valleys. These above ground effects are discussed elsewhere in this report.

This section of this report discusses various issues relating to engineering and construction of the tunnel itself.

**Engineering /
Geotechnical
Assessments:**

MDL has provided extensive engineering / geotechnical and construction descriptions on their proposal. The first body of work was submitted in November 2005 and updated in June 2006.⁹³

The Department sought technical review / audit of this material from Becca Infrastructure Ltd (September 2006)⁹⁴. On the basis of this audit MDL revised the technical descriptions of their application and submitted revised and additional material in August 2007. This material was prepared for MDL by URS⁹⁵ and has been quoted extensively throughout this report.

In March 2011 MDL proposed a different site for the Routeburn Portal. This aspect of the overall proposal has not been audited by engineers of behalf of the Department. Should decision be made to approve in principle grant of the concession, final engineering specifications and plans will need to be supplied by MDL for audit and final approval prior to any construction activities commencing.

**Rock Type encountered
during tunnelling:**

A key issue raised by the Becca Infrastructure audit is that there is a lack of certainty regarding the rock type (Rock Mass Classification or RMR) that would be encountered during tunnel construction (including at the portal sites). MDL accept this and acknowledge that it is not possible to predict with certainty what rock would be encountered until tunnel construction commences. Helicopter electromagnetic survey would provide a degree of further indication of the rock types present along the proposed tunnel route, and MDL state they would carry out this work at the final design phase of this project. Given the cost of doing so, MDL have not conducted this survey at this point in time.

⁹³ Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006.*

⁹⁴ Becca Infrastructure LTD, *Milford Dart Concession Application Audit –*

Geotechnical/Engineering/Roading/Recreation prepared for Southland Conservancy Sept 2006.

⁹⁵ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3

As the tunnel route exceeds 460 m beneath the ground surface of Fiordland and Mt. Aspiring National Parks, there is no means of achieving total certainty of the rock that would be encountered prior to tunnelling commencing.

Accordingly, MDL propose an adaptive approach to tunnelling operations (as was the case with the construction of the Second Manapouri Tailrace Tunnel).

They state:

'The constructability of the TBM tunnel and the management of the associated risks are very much a function of the understanding of the ground conditions, design of the ground stabilization system and design of the Tunnel Boring Machine. These go hand in hand, with each complementing the other.

... the knowledge of the ground conditions has been based on site visits and examination of published geological information on the area. From this a broad understanding of the ground conditions has been gained, sufficient to be confident that construction of a TBM tunnel through this rock is technically feasible and presents no more risk than is normally inherent in hard rock tunnels.

During subsequent stages of the project, geological mapping, geophysical surveys and cored investigations drilling at the portals (...) will be undertaken to improve the understanding of the ground conditions and rock characteristics. Rock samples will be taken from the surface and from the cored holes for testing to provide parameters for TBM design and boreability predictions.

Investigations are important and all practicable investigations will be carried out prior to detailed design being completed. However, it is not practicable to core drill a 10 km long tunnel that will be located hundreds of metres below the surface, and relatively little information can be gained by such a small sample of the whole tunnel. Normal practice is to drill cored holes at each portal and at any points where low cover may permit drilling. No such low points exist in this case, with the shallowest cover being approximately 460 metres.

Notwithstanding these planned investigations, there is a limit to the level of information that can be gained by investigations. Therefore, to a large extent, the tunnel design approach must be one of designing the TBM and the ground stabilization system to cope with all foreseeable ground conditions, and this is the approach that will be taken. This is consistent with the approach taken for the Second Manapouri Tailrace Tunnel stabilisation design and TBM design.⁹⁶

⁹⁶ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3. section 4.5

MDL's position is that there are suitable and appropriate 'engineering solutions' to any variances in rock type that may be encountered, and they detail a range of rock stabilisation approaches which would be used depending on what type of rock is encountered. They note *'the proposed concept design is based on current hard rock TBM technology and practice, and is consistent with the stabilization categories used on the Second Manapouri Tailrace Tunnel, albeit slightly modified to take into account the differences in rock characteristics expected, tunnel diameter and rock loads'*⁹⁷.

Discussion and Conclusions:

The tunnel would be underground, and the potential effects of the tunnel on flora, fauna and freshwater values in the National Parks would manifest at either the Hollyford or Routeburn valleys. These effects are discussed elsewhere in this report.

The Minister of Conservation needs to be reasonably assured that the proposed engineering works could be achieved in such a way that any potential adverse effects on conservation values could be avoided or mitigated.

The Department's independent audit of the initial technical description (2006) identified various gaps in the application material, and as a result of this URS updated that material.

It is accepted that URS, who have prepared the technical description for MDL in regards to how the tunnel would be built, have considerable expertise in hard rock tunnelling.

The Department has decided not to engage further external technical review on the material prepared by URS subsequent to 2006 in respect of tunnel construction, on the basis that the information gaps identified by the Department's external technical reviews in respect of the geotechnical aspects of the proposal appear to have been addressed by MDL. That said – final design specification and plans will need to be prepared by Milford Dart, and these would need to be approved by the Department (via a process of external audit) to confirm the the actual effects do not differ from those considered to date.

In respect of tunnel safety, these matters would be the responsibility of the concessionaire (should the tunnel be built) and subject to other relevant laws, acts and regulations, and conditions of any concession granted.

⁹⁷ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3. section 4.4.1

Proposed Conditions (MDL);

1.1 Construction Environmental Management Plan

Proposed Conditions (Department);

- Bond / guarantor requirements
- Safety Plan (construction and operational)
- Liaison Officer
- Prior to construction, the Concessionaire shall prepare for the approval of the Grantor Construction Specifications and Plans and Environmental Management Plans for all components of the Activity.

Conclusion

The below ground effects of the tunnel are assessed as **minor**, subject to mitigation.

4.2.4 Effects Routeburn Portal and Routeburn Portal Access Road

(i) Effects on Landform and Freshwater Routeburn Portal and Portal Access Road

Excavation to form portal:

Approximately 25,000 m³ (loose) of spoil would be generated at the Routeburn (resulting from drill and blast excavation of the estimated first 468 metres of tunnel). This equates to an average of 82 m³ per day for the 305 days programmed for construction. MDL note that the peak daily volume may be double this, to 160 m³ per day, or 20 truck movements each way. MDL state this would require two to three 8 m³ road trucks operating overnight to dispose of spoil outside the park.⁹⁸

A portion of the tunnel spoil would be utilised as backfill around the portal structure, and (if space was available), towards the end of the tunnelling operation, spoil could be spread for landfill re-grading around the site.

MDL state *'the spoil surge pile will be sized to accommodate a minimum of 24 hours of tunnel excavation at the peak excavation rate to allow for transport at night time. This surge pile will have a potential footprint of about 12 metres diameter and will be about 4 metres high. Any stormwater runoff from the surge pile will be captured and treated in the settling pond/water treatment system before discharge to soak pits.'*⁹⁹

Freshwater Effects

The approach to water treatment at the Routeburn is summarised by MDL as follows:

- *During the investigations phase, drilling at the portal site will include packer testing and pump out tests to model potential groundwater inflows into the tunnel and groundwater chemistry.*
- *Following analysis of the investigations and modelling of groundwater, a concept design of a treatment system will be produced to set design parameters and demonstrate the ability to perform to the required standards.*
- *Water treatment and discharge conditions will be specified in the construction contract in accordance with any relevant Concession and/or Resource Consent conditions.*

⁹⁸ URS, *Milford Dart Tunnel Amendment to Concession Application to Adopt the Final Routeburn Portal Location*, 24 January 2011.

⁹⁹ *ibid*

- *The contractor will be required to design, supply, operate and monitor a treatment system based on the best estimate of groundwater inflows and stormwater runoff from the hydro-geological information obtained, and from information available from other projects such as Manapouri Second Tunnel, where very strict requirements were successfully met. The plant design will include a contingency for additional flow. The Contractor will be required to submit detailed plans and supplier performance information on the plant for review prior to acceptance on site.*
- *The treatment plant will be designed with flexibility for enlargement and addition of dosing agents if subsequent monitoring of the discharge indicates that modifications are required.*
- *Should an excessive groundwater inflow be encountered in the tunnel, it is normal practice to separately tap into this and pipe it out as clean water discharge to the soak pit, bypassing the treatment system. This would only occur following analysis of the water chemistry to demonstrate that no adverse effects would occur.*
- *The treatment plant is likely to comprise a proprietary package plant discharging into settling tanks, and thence to a soak pit in the alluvial fan material. These plants are designed as modules, which can be added to in the event of increasing water flows.*
- *Stormwater runoff will be directed through the same system or through separate silt traps on the roadside.*
- *Settlement tanks will be periodically emptied as required with silt being transported outside the National Park.*
- *Monitoring of the treatment will be continuous to ensure compliance with the limits specified in the concession and consents.*

Based on the experience gained at Manapouri during construction of the Second Manapouri Tailrace Tunnel, the available area for a treatment system shown on Drawing C202 will be sufficient to accommodate this system.¹⁰⁰

***Discussion and
Conclusions - effects
on Landform and
Freshwater Routeburn
Portal and Portal
Access Road:***

While the site where developments are proposed does not contain any waterways, it is close to the Routeburn River (as is the existing road and roadend shelter). The Routeburn River has high freshwater aquatic values and 'scenic' values as a clear flowing river.

MDL stress that the volumes of water requiring treatment at the Routeburn cannot be quantified until further site investigations have been carried out subsequent design stage.

¹⁰⁰Ibid.

They are confident however that the systems they propose will be appropriate to mitigate the effects of any volume of water likely requiring treatment as a result of construction activities.

It can be accepted that there are likely 'engineering solutions' to any potential water management issues at this site, and that subject to effective mitigation there would be only minor effects of the freshwater values of the area. Final design specifications and plans prepared by the applicant, post design stage, would need to demonstrate this was the case. These plans would need to be approved by the Minister of Conservation (via external audit) prior to any construction commencing.

It is noted that spoil is intended to be removed from Mt. Aspiring National Park. While activities and effects on the existing road are beyond the matters to be considered by the Minister of Conservation, it is prudent to identify that potential effects mud and muddy water coming off trucks may result in adverse effects on waterways in the national park alongside the road. These potential effects would need to be identified and mitigated by MDL via the Resource Consent process.

Proposed concession conditions to mitigate adverse effects on landform and freshwater values (MDL)

- 1.1 Construction Environmental Management Plan
- 1.4 Earthworks and Leachate
- 1.5 Water Quality and Quantity

Conditions include requirement for monitoring and adaptation of work practices / infrastructure to respond to any adverse effect.

Proposed concession conditions to mitigate adverse effects on landform and freshwater values (Department)

- Bond / guarantor requirements;
- Liaison Officer;
- Prior to construction, the Concessionaire shall prepare for the approval of the Grantor Construction and Operational Specifications and Plans for all components of the Activity.

Conclusion:

The effects of the Routeburn Portal and Portal Access Road on Landform and Freshwater values are assessed as **minor**, subject to mitigation.

(ii) **Effects on Flora and Fauna Routeburn Portal and Portal Access Road**

Habitat Values of the site:

The area where the Routeburn Tunnel Portal and Portal Access road is proposed comprises exotic grasses, with scattered occasional matagouri and other shrubs, surrounded by established beech forest.

The beech forest supports Mohua, Parakeet, Kaka, and Falcon. The development does not affect the forest directly as the surface works proposed by MDL would fall entirely with the grassed area. This area has been modified in the past by grazing and the subsequent establishment of exotic grasses.

The Department of Conservation constructed a road end visitor shelter and carpark in this area (completed to 2009). The AEE completed by the Department in respect of these works concluded that there would no adverse effects on wildlife from that development.¹⁰¹ The developments and activities proposed by MDL are similar in scale to those carried out previously by the Department. It is accepted that such works, subject to good operating conditions, would have no adverse effects on wildlife.

Night- time activities:

The construction works proposed by MDL at the Routeburn Portal would take place at night, to avoid disturbance to other visitors in the area. MDL accept the need to reduce night time lighting as far as possible to avoid effects on bats which may be in the area¹⁰².

Potential Weed Invasion:

Although the site of the proposed access road and portal is predominately grassland, care must be taken to ensure that the construction activities do not introduce further weed species into the area, or encourage the establish of weeds on disturbed areas.

MDL have submitted a draft Plant Pest Management Plan¹⁰³ to address biosecurity issues and suggest appropriate conditions for managing plant pests. This plan predates the current proposed site, and would need to be updated by MDL and approved by the Department prior to construction works commencing to ensure the procedures set out in the plan are appropriate for this particular site.

¹⁰¹ Department of Conservation, *Assessment of Environmental Effects for The Routeburn Road End Shelter and Car Park Re-development* October 2006

¹⁰² Email 29 April 2011 Michael Sleigh to Chris Visser and Greg Lind.

¹⁰³ Conservation Consultancy Ltd (for Milford Dart LTD. 2007) *Draft Plant Pest Management Plan*, MDL Concession Application 2007 document 6.

**Discussion and
Conclusions: Effects on
Flora and Fauna
(Routeburn):**

MDL have offered to carry out or contribute to pest and predator control in the Routeburn Valley¹⁰⁴. This would be a positive effect, however the design and implementation of any control programme would need to be agreed to by the Department prior to implementation.

Potential effects on wildlife arising from the proposed developments would be minor.

Proposed concession conditions to mitigate effects on flora and fauna (MDL)

- 1.1 Construction Environmental Management Plan
- 1.2 Vegetation and Habitat
- 2.1 Operations Environmental Management Plan
- 2.6 Vegetation and Habitat (site revegetation)

- Prior to construction, survey the immediate vicinity of the construction site for any bat roost trees and associated flight paths, to ensure no light is shone on either bat roost trees or related flight paths.

Proposed conditions to mitigate effects on flora and fauna (Department);

- Any lighting required to shed light downwards and to minimise light spill into the wider national park; to avoid affecting people's night vision and to minimise any detracting from the natural dark values of the park;
- Concessionaire shall design (in consultation with the Department), for the Grantor's approval, a proposal for the Concessionaire's contribution to pest and predator control in the Routeburn (and Hollyford) Valleys. Such proposal may result in the Concessionaire carrying out predator and pest control themselves, or making some contribution to existing programmes being carried out by the Department of Conservation.

Conclusion:

The effects of the Routeburn Portal and Portal Access Road on flora and fauna values are assessed as **minor** subject to mitigation

(iii) Effects on other Park Users Routeburn Portal and Portal Access Road

¹⁰⁴ Lucy Hardy (for Milford Dart LTD. 2007) *Draft Routeburn Road End Predator Control Plan*, MDL Concession Application 2007 document 5.

This analysis is limited to the new access road over the National Park, and does not include effects on the existing public road at the Routeburn .

Timing and duration of proposed works: MDL anticipate that construction works at the Routeburn would take 10 months to complete (access road construction and portal works). TBM removal from the site is anticipated as another six months, which would occur concurrently with site disestablishment and site rehabilitation.¹⁰⁵ MDL note there would be some flexibility in respect of timing of works at the Routeburn. They note that works would need to be completed in time for the TBM 'breakthrough' but otherwise could be timed outside the high tourist season on the Routeburn track, or over two seasons.

Visual Effects MDL state that the portal access road would have a level of engineering similar to that of the existing Routeburn Road, and as such, would be in keeping with the existing degree of modification.

They describe the visual effects as follows;¹⁰⁶

"The portal road begins in an open area approximately 100m to the south-east from the entry road into the parking at the visitor centre, and continues in a south west direction for approximately 120m up the slope to a group of six matagouri shrubs. From the Routeburn Road to the portal the road alignment is a consistent 7m wide. Approximately six matagouri shrubs are required to be removed to construct the access road. This vegetation is in the first approximately 80m of the access road. Approximately six matagouri shrubs at the actual portal site, as well as the existing exotic grass cover are required to be removed to construct the portal, maintenance buildings and associated hard stand area. The road level at the point where it enters the portal is approximately at 483 masl while the visitor centre is at approximately 477 masl. The roof the portal is at the existing ground level of 491 masl at the portal entrance and follows the existing ground level for the length of the portal. It will be covered over with soil and planted as per the rest of the site. Therefore the proposal does not break the existing ground contour as viewed from outside of the site.

The site of the construction works is proposed to be largely re-graded to meet existing contours, with the exception of a proposed 'mound' located on the northern side of the proposal. The 'mound' is proposed to be partially constructed before the works begin in order to screen any potential views of the works and establish part of the

¹⁰⁶ Baxter Design Group Limited *Milford Dart - Routeburn Portal Current Design 2011 Mt Aspiring National Park Landscape Assessment, Report prepared for Milford Dart Limited (undated but received 25 March 2011)*

proposed planting of native beech trees. The 'mound' and planting is not proposed to screen the proposal as it is unlikely very little if any aspect of the proposal will be visible from outside of the site, but rather to alter the viewer's perception of the distance between the viewer and the tunnel portal.'

**Noise and Traffic
Effects:**

Construction Phase

Assessments made of predicted noise levels ¹⁰⁷ resulting from construction works at the Routeburn are now out of date as they relate to a proposed construction site some 600 m distant from the Routeburn roadend.

The same general principles apply however, and the descriptions of machinery to be used to construct the access road and portal will be largely the same.

MDL state that greatest effect on other users would be during site clearance, access road construction and excavation of the portal, when earthmoving equipment will need to use the road.

The concrete portal structure would be designed largely as pre-cast concrete, minimising the number of traffic movements for concrete trucks and reducing the construction time. Nevertheless, there would be a need for periodic concrete trucks along the Routeburn Road for secant piles, tunnel lining and other site concrete. MDL state this operation would be managed through a Traffic Management Plan.

MDL anticipate that the duration of the above ground work they propose at the Routeburn would be similar to the time taken by the Department to construct the new Routeburn Visitor Centre and associated facilities.

Once underground, the main effects would be fan noise at the portal, which would be silenced, and truck movements on the road removing spoil. Spoil would be disposed of outside the National Park. There may be periodic blasting required if large boulders are encountered in the fan material. MDL expect this to be intermittent, and able to be controlled to minimise the effect.

Spoil removal would comprise about 10 truck movements on the road per day each way on average, and MDL propose that these be

¹⁰⁷ Hegley Acoustic Consultants, Letter Dated 7 December 2006 Re: Assessment of Noise Levels, MDL Concession Application 2007 Document 14.

timed to occur at night time by stockpiling during the day, to minimise effects on other road users.¹⁰⁸

MDL state that construction works would aim to control the noise limits as set out in NZS 6803: 1999 Acoustics/Construction Noise.

As discussed previously in this report, there are issues in applying the New Zealand Standards for General Environmental Noise and Construction Noise in a National Park setting. These standards are devised mainly to protect people from ongoing sleep deprivation and the health effects of chronic exposure to noise, neither of which tend to be significant issues in natural settings. In national parks ambient noise levels are often lower than in other settings and this means that noises are audible over greater distances than they would elsewhere. The level of sound is only one factor that contributes to annoyance and this makes reliance on decibel levels problematic.

The assessment of the effects on people is complex. Whether or not people are annoyed by particular activity depends very much on their personal expectation of the site. Different visitors in different places have different tolerances to noise and visual effects.

***Discussion and
Conclusions - Effects
on Other Park Users:***

Construction phase

In the construction phase the noise and visual effects of construction would be noticeable to visitors at the Routeburn road end. These construction effects would be incongruous in the otherwise largely natural soundscape and landscape of the Routeburn Valley.

Different visitors to the area would have different tolerances to noise and evidence of commercial development, influenced by their expectation of the area, and to a degree their opinion of the 'appropriateness' of the activities being carried out there (either positive or negative).

Survey carried out on behalf of the Department in 2007 sampled 405 day walk visitors at the Routeburn road end¹⁰⁹. This research identified that 69% of day visitors were from overseas. They were predominantly first-time visitors to the Routeburn. When asked indicate on the seven-point scale how important certain aspects of the visitor experience were to them, peace and quiet and a high standard of facilities were 'very important' aspects of their visit. Audible noise associated with construction would be an effect on

¹⁰⁸ URS, Milford Dart Tunnel Amendment to Concession Application to Adopt the Final Routeburn Portal Location, 24 January 2011.

¹⁰⁹ *The Routeburn Track and Quality of the Visitor Experience August 2007* prepared for the Department of Conservation by Tourism Resource Consultants.

these visitors, particularly as day visitors they would be in the vicinity of the proposed construction works for much of their visit to the Routeburn Road end.

Trampers on the other hand would 'transit' through the site in an hour or so.

MDL have stated they would minimise noise as much as possible, would comply to noise standards, and would carry out construction works at the Routeburn during the winter season (or seasons) when few visitors are present.

Construction of the road and portal itself would be visually noticeable, especially when the site is at its most 'raw'. These effects will be the removal of the small number of matagouri shrubs within the construction footprint, removal of exotic grassland, earthworks to form the road carriageway and swales, earthworks to form the 'mound' and the establishment of the vegetation on the excavated areas.

There are no practicable or reasonable methods to totally eliminate noise or visual effects arising from construction during the 10 months of road and portal construction. It is considered feasible however that much this work could be carried out largely in the 'shoulder season' or over two seasons as suggested by MDL, as it largely independent of the major construction works associated with tunnelling occurring at the Hollyford end.

Short-term visual and noise effects can be mitigated to an extent, but remain potentially significant adverse effects. They would however, be temporary, and remedied in the longer term.

Ongoing effects

On an ongoing basis the visual effects of the new road and portal would be relatively minor as they are an 'extension' of the existing formed road. The visual effect of this change is from a slightly modified landscape to a more moderately modified landscape, and this would be a negative effect in that it is additional human modification. However the degree of modification is localised, and is situated 150m away from the existing roadend Visitor Shelter and bus park.

The portal access road, car park, infrastructure and portal would be set at a level below that of the existing ground level of the site. It is unlikely to be visible, therefore the landscape and long-term visual effect of the access road will be negligible.

The estimated ongoing bus movements of an average of 23 per day, peaking at 40 per day in the summer months on the 'new' road on public conservation land would generate a degree of noise in the area. It is considered however that this noise would be largely in keeping with the existing use of the Routeburn shelter. It should be noted that an unlimited number of buses can currently use the legal road regardless of the developments proposed by MDL.

MDL have provided an assessment¹¹⁰ of the noise generated by buses exiting the tunnel, as this was identified by the Department as a potential area of concern (unusual noise effects). Hegley Acoustic Consultants cite research at existing train tunnels, demonstrating that the noise of trains entering or leaving tunnels do not exhibit any different noise from those in the open ground.

Potential increase of facility use

The toilet facilities (composting toilets) in the 'new' Routeburn shelter have not been designed to cope with the potential level of additional use that 40 buses per day (in summer) / 360,342 pax per year MDL aim to deliver to and through the Routeburn road end.

To avoid adverse effects on this facility buses transiting through the Routeburn Valley en route to / from the tunnel should not be permitted to stop at this facility. MDL would need to provide toilet facilities (if needed) elsewhere outside of the park for tunnel users, or to contribute to an upgrade of the existing facilities in the Routeburn Valley if that is feasible.

To this end the Department will monitor use of the toilet facilities at the Routeburn road end to determine if there is any change in use of the facility resulting from the developments operated by MDL.

Should use of these existing facilities increase as a result of the tunnel MDL will need to contribute to any necessary management action required to mitigate these effects.

Proposed conditions to mitigate effects on other Park users (MDL)

- 1.1 Construction Environmental Management Plan
- 1.7 Noise
- 1.9 Roads and Traffic
- 2.1 Operations Environmental Management Plan
- 2.13 Roads and Traffic¹¹¹
- 2.11 Noise

¹¹⁰ Hegley Acoustic Consultants, *Letter Dated 4 February 2011 Re: Milford Dart Limited, Amendment to Concession for the final Routeburn Portal Location*

¹¹¹ clause 2.13 Roads and traffic is mainly to do with passenger safety and comfort in tunnel, although it does note that coaches would not enter Mt. Aspiring National Park before 7 am.

1.2 , 2.6 Vegetation and Habitat
1.10 Buildings /Structures/Signage,
1.15 Restoration and rehabilitation
2.8 Earthworks

These conditions include;

- Applicant to take all practicable measures to reduce noise, comply with noise standards;
- Monitoring of noise levels;
- Work at road /portal location to be conducted during shoulder and winter seasons;
- Minimise clearances;
- Rehabilitate site as quickly as possible;
- Rehabilitation plan to be finalised in consultation with the Department;
- Use of appropriate species for re- vegetation (locally sourced);
- Above ground structures to be finished in natural colours /textures;
- No signage (advertising) on site (although hazard signage would be necessary during construction)
- Speed limit of 50kmph.

Proposed conditions to mitigate effects on other Park users (Department).

- Monitoring of noise impacts on visitors in the park in the vicinity of works (either concessionaire to use Department approved methodology or Department to conduct monitoring at concessionaires cost);
- Provision of information by MDL of information (in a manner approved by the Grantor) regarding timing of works generating noise (in particular – blasting) to the public, Department, Routeburn Track and Hollyford Track Guided walks, and Gunn's Camp;
- Construction works to take place in shoulder season (April – October inclusive)
- Buses en route to / from the tunnel may not use toilet facilities at Routeburn
- 'Community Contribution Clause' to provide for MDL to contribute to any upgrade of public facilities provided by the Department should increased use of those facilities resulting from use of the tunnel.

Conclusions

The short-term effects of the Routeburn Portal and Routeburn Portal Access Road on other Park Users are assessed as **temporary, potentially significant adverse unmitigated effects** which would be **remedied in the longer term**.

The long-term effects of the Routeburn Portal and Routeburn Portal Access Road on other Park Users are assessed **minor**, subject to mitigation

(iv) **Effects on Historic and Cultural Values Routeburn Portal and Portal Access Road**

There are no known Historical sites at the Routeburn Portal and Portal Access Road site.

MDL states that should any archaeological material be discovered during construction, all works with the potential to damage any such materials would cease and the appropriate authorities (DOC, HPT and Te Ao Marama) would be advised.¹¹²

The Department agrees that it would be unlikely that historical artefacts would be discovered at this site, and none were found when the Department excavated the site for the new Routeburn Shelter 150m from the site proposed by MDL for development.

The Cultural Impact Assessment prepared for MDL by Awarua Research and Development¹¹³ notes that although there are no documented significant sites in the area pertaining to Ngāi Tahu, the developments proposed by MDL have the potential to impact significantly on Ngāi Tahu values if not carefully managed.

MDL has undertaken to carry out further consultation with Runanga closer to the construction stage and operational stage of the project;

*'Prior to any construction commencing the Concessionaire shall consult with Te Runanga o Ngai Tahu, and Te Ao Marama in accordance with the Cultural Impact Report (August 2006) (Document 16 of the **Concession Application**)'* and;

'Should any archaeological material be discovered during the course of any works, all works with the potential to damage or disturb those materials shall be ceased immediately and DoC, New Zealand Historic Places Trust and Te Ao Marama advised

¹¹² Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions 1.11

¹¹³ Awarua Research and Development, *Cultural Impact Report for Milford Dart Limited August 2006*, MDL Concession Application 2007 Document 16.

*immediately.*¹¹⁴

**Discussion and
Conclusions Effects
on Historical / Cultural
values**

Mitigation proposed by MDL, to cease work should any historical artefacts be discovered during the works and notify appropriate authorities would be appropriate.

Potential impacts on cultural values are largely associated with environmental effect, and should environmental effects be mitigated to the point where they are minor, any 'flow on' effects on cultural values should also be minor.

In the discussions above, the potential environmental effects of the proposed activity are discussed and it is concluded that, subject to mitigation, these effects would be minor.

The Departments own AEE for the Routeburn Shelter development consulted with Iwi regarding the site and no areas of particular concern to Iwi were identified.

It is noted MDL has undertaken to carry out further consultation with Runanga closer to the construction stage and operational stage of the project, in accordance with their (MDLs) Cultural Impact Report.

Proposed conditions to mitigate effects on historical and cultural values (MDL)

1.11 Cultural and Historical

This condition includes notification of appropriate parties should any archaeological material be discovered during the course of any works, and that MDLs would consult with Iwi prior to any construction commencing.

Proposed conditions to mitigate effects on historical and cultural values (Department)

- Any interpretation on matters relating to tangata whenua on public conservation lands subject to consultation / approval local Iwi.
- Accidental Discovery Protocol
- Pounamu clauses (advise Te Rūnanga o Ngāi Tahu in case of discovery, acknowledgement that all Pounamu is under ownership of Te Rūnanga o Ngāi Tahu)
- Iwi to be consulted prior to construction, (Applicant's proposed condition (above) to cover all relevant Papatipu Rūnanga.)

¹¹⁴ Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions. 1.11.

Conclusion:

The short-term and long term effects of the Routeburn Portal and Routeburn Portal Access Road on historic and cultural values are assessed as **minor**, subject to mitigation

4.2.5 Other Effects

Effects of Helicopter imaging survey

MDL intend to carry out helicopter Imaging Survey as described elsewhere in this report, as part of the design stage of the tunnel. This would involve flying over the route with a helicopter to take geological readings.

Although helicopter over flight of the National Park is not an activity for which a concession is required, in the interest of mitigating potential disturbance to visitors on the ground the Department would seek that MDL consult with Te Anau and Wakatipu Area Offices in regards to the timing of these flights to ensure potential disturbance on other visitors to the area is avoided as far as possible.

The Concession application has not expressed, nor applied for, any requirement to land helicopter as part of the proposed activities (either investigation or construction). Any helicopter landings would need to be with an authorised aircraft operator concessionaire, and subject to that concession.

Relevance of effects Manifesting at Milford Sound

MDL state a key objective of the Dart Passage tunnel is to provide a quicker way for buses to get to/from Queenstown to Milford Sound.

As a result of this reduced travel time, MDL submit that the tunnel would have a positive effect at Milford as visitor use would be spread throughout the day, in contrast to the current visitor 'peaks' between 12.30 and 2.30pm.

The Department of Conservation administers the land of Milford Sound, as part Fiordland National Park. Any potential effects resulting from a change in visitor patterns/use of that part Fiordland National Park, resulting from use of the Dart Passage Tunnel, are relevant matters for consideration by the Minister of Conservation in determining the concession application.

Existing visitor use Milford Sound

MDL has commissioned two reports related to visitor use of Milford Sound. Firstly, *An Assessment of the Potential Impact of the Milford Dart Proposal on the Visitor Market to Milford Sound* (prepared by Tourism Resource Consultants 'TRC')¹¹⁵ and secondly, *An analysis of Milford Sound and Te Anau Traffic* (prepared by Gabites

¹¹⁵ Tourism Resource Consultants *Assessing the Potential impact of the Milford Dart Proposal on the Visitor Market to Milford Sound*, MDL Concession Application August 2007 Document 18.

Porter)¹¹⁶.

Travel times to Milford Sound

The application states that, *'visitors undertaking the current trip from Queenstown leave at about 7 am and return 7 pm- 7:30 pm; a total journey time of 12 to 12 1/2 hours. Because of the road travel distance of about 300 km each way, these visitors tend to arrive at Milford Sound at 12:30 pm and leave 2:30 pm; currently creating a peak of about 2000 visitors at Milford Sound between these times.*

*The Milford Dart journey will be 60% shorter (120km compared to 300km) and only take two hours driving, at an average speed of 60 km/h, rather than at least 4 1/2 hours driving each way'*¹¹⁷

Change in Visitor Use at Milford Sound

TRC (on behalf MDL) have modelled various scenarios regarding the number of bus movements, whether buses would make a journey to Milford sound both ways through the tunnel, or whether a proportion would use the tunnel in one direction only. They state that (in their view) the tunnel operation has the potential to capture 53% (or 360,342 people) of the existing tourism market into Milford Sound. As a result of the tunnel, arrivals into Milford sound would spread by 6% or 12% depending on how the tourist industry would respond to changes in visitor patterns.

The application states that, *'arrivals spread more evenly during the day would make better use of existing infrastructure, and tourism plant and equipment, thereby increasing commercial viability without the need to the major facility upgrades in the short to medium term'*

¹¹⁸

Milford Sound / Piopiotahi is recognised by the Department as a national 'tourism icon', and recognises that visitor use of this area of Fiordland National Park is likely to continue to increase at this site.¹¹⁹

Provision of appropriate physical infrastructure at Milford (including toilets and parking) that does not adversely affect visitor experience of the area is of concern to the Department. It is entirely feasible that the Dart Passage Tunnel would result in a change of use patterns at

¹¹⁶ Gabites Porter *Milford Dart, Milford Sound and Te Anau Traffic*, MDL Concession Application August 2007 Document 17.

¹¹⁷ Brown and Pemberton Planning Group *Milford Dart Limited Application to the Department of Conservation for Concession to Construct and Operate The Dart Passage – Concession Application Overview*. MDL Concession Application 2007 document 1; p.43

¹¹⁸ Tourism Resource Consultants *Assessing the Potential impact of the Milford Dart Proposal on the Visitor Market to Milford Sound*, MDL Concession Application August 2007 Document 18; page 42.

¹¹⁹ *Fiordland National Park Management Plan 1997*.

Milford Sound / Piopiotahi, in particular, and that use may be spread during the day thereby increasing the carrying capacity of Milford Sound / Piopiotahi without needing to increase the 'peak time' infrastructure capability.

Spreading use is acknowledged as a potential positive effect on the visitor experience in this part of Fiordland National Park. However, for some visitors, there is value in knowing that by avoiding 'peak' visitor periods Milford Sound / Piopiotahi can be experienced as a quiet and empty place. The existing 'quiet period' at Milford Sound / Piopiotahi is identified in the Fiordland National Park Management Plan, and maintenance of this quiet period was the main driver behind restricting hours of operation of the Milford Aerodrome.

Spreading use into the quiet periods, and increasing use, to some visitors, could result in Milford Sound / Piopiotahi being perceived as a place 'that is busy for some of the time' to a place 'that is busy for all of the time'.

One way of ensuring that Milford Sound / Piopiotahi still has quiet periods would be to restrict the hours of operation of the tunnel.

Impacts on Commercial Tourism Market

The TRC report analyses how the commercial tourism market may respond to potential changes in patterns of visitor arrivals in Milford Sound / Piopiotahi. Potential impacts on commercial tourism, either at Milford Sound / Piopiotahi itself or beyond, are largely irrelevant to the Minister of Conservation, unless the potential effects of those changes manifest on public conservation land administered by the Department.

In any case, how commercial tourism may change at Milford Sound / Piopiotahi as a result of the tunnel is largely speculative at this point in time. The presence (or absence) of a tunnel is only one of a range of factors that would influence visitation. Others include the general desirability of New Zealand as a tourist destination, and alternative opportunities/products offered by the commercial tourism industry in respect of access to Milford Sound / Piopiotahi.

Impacts along the Milford road in Fiordland National Park

The flow on effects from potential changes in the numbers of buses, or the timing of buses stopping at visitor sites along the Milford Road, has not been assessed by MDL.

MDL is confident that the presence of the tunnel would effectively spread use, especially as they suggest the use of 'differential

charging' to promote use of the tunnel (and thereby arrival times at Milford) to non-peak times. On this basis, it is reasonable to assume that visitation to roadside stopping points such as Mirror Lakes and The Chasm would be spread. This would potentially be a positive effect on visitor experience at those sites.

Usage of sites between the Hollyford turn off and Te Anau (for example Mirror Lakes) might decrease. There would potentially be demand for new or upgraded facilities and places to suit the new visitor flows. Sites such as the Lake Marian track, which are not generally used by large groups, may become more attractive and there might be a need for another large toilet facility along the road in addition to that provided by MDA at Knobs Flat.

Better transport options between the Hollyford Valley and Queenstown would likely result in more use of the Hollyford Track. This would be both from trampers and from guided day walkers. There is currently excess capacity on this track so this would be unlikely to present problems for the Department. Greater use of the Routeburn Track is not anticipated as this is limited by hut capacity. The existing monitoring programmes on both tracks would pick up any issues that developed.

Differential charging

MDL state that in order to achieve 'spread' visitor arrivals into Milford Sound via the tunnel they would implement a system of differential charging. In principle, differential charging would offer cheaper access via the tunnel at the 'shoulder' times a day (i.e., in the mornings and late in the afternoons) to spread visitor arrivals at Milford.

They have stated that they would consult and discuss with the Department a system of differential charging, should the concession be granted. Although the Department would want to see visitor arrivals at Milford spread in the interests of enhancing visitor experience, how the tunnel operator would control access through the tunnel to achieve that is up to them.

It should be noted, however, that differential charging already exists on boat cruises at Milford Sound at different times of the day (Real Journeys charge passengers \$20 less on cruises outside of peak times). This pricing differential has done little to spread visitor arrival times at Milford Sound, which suggests that for differential charging to be an effective mechanism to influence when people travel it has to be a sufficiently large amount. In any case, the shorter travel times and increased flexibility that the presence of a tunnel would give operators and visitors to access Milford would likely change

visitor use patterns even without a scheme of differential charging.¹²⁰

**Discussion and
Conclusions Effects at
Milford Sound**

Spreading visitor arrivals into Milford Sound throughout the day is likely to have some positive effects on visitor experience in Fiordland National Park at Milford Sound / Piopiotahi.

Spreading use would most likely lessen perceptions of congestion and crowding at peak times. In the absence of a tunnel or alternative means of spreading out visitor flows, crowding would almost certainly continue to increase and this would have a detrimental effect on visitor experience at Milford Sound.

Spreading use of existing visitor infrastructure in the National Park (i.e. public toilets and parking areas) means that existing infrastructure may be appropriate for a longer period, and increasing infrastructure (with resulting potential environmental effects in the National Park) could be delayed.

That said, however, the degree to which the existence of the Dart Passage Tunnel would in fact spread use is largely speculative, relying as it does on assumptions on how the rest of the tourism industry would respond to the presence of the tunnel.

The Dart Passage Tunnel would only provide access to buses. Although buses are currently a large proportion of visitor traffic into Milford Sound, the visitation patterns of the general public using private vehicles and buses who would choose not to use the tunnel, would remain uncontrolled.

Proposed conditions

- Concessionaire to monitor use of the tunnel (bus movements each day by time of day) and report monthly to DOC;
- Concessionaire to contribute to monitoring programme on visitor experience at Milford Sound;
- Concessionaire to ensure that use of the tunnel is spread throughout the day, to spread arrivals at Milford Sound;
- The Concessionaire shall limit 'peak' time use of the tunnel (peak time defined as between 10am – 1pm) to (a % to be further discussed with MDL) of total tunnel use;
- Buses shall not be permitted to use the tunnel before 7am and after 10pm.

Conclusions:

¹²⁰ Michael Harbrow Technical Support Officer (Recreation Planner) Southland Conservancy *pers comm*

The potential effects in Fiordland National park at Milford Sound, should the Dart Passage Tunnel become operational are assessed as **potentially positive**.

4.3 Term of Concession - section 17Z

Section 17Z of the Conservation Act provides:

- (1) *A lease or a licence may be granted for a term (which term shall include all renewals of the lease or licence) not exceeding 30 years or, where the Minister is satisfied that there are exceptional circumstances, for a term not exceeding 60 years.*
- (2) *A permit may be granted for a term not exceeding 10 years but shall not be renewable.*
- (3) *An easement may be granted for a term not exceeding 30 years, but-*
 - (a) *in exceptional circumstances, the Minister may grant a term not exceeding 60 years:*
 - (b) *where the easement provides a right of way access to a property to which there is no other practical access, the term may be for such longer period as the Minister considers appropriate:*
 - (c) *where the easement is for a public work (as defined in the Public Works Act 1981), the term may be for the reasonably foreseeable duration of that public work.*

Discussion

Construction Lease or Licence

A term of 15 years to investigate and construct the tunnel, staging areas, and to carry out works on the Hollyford airstrip has been applied for. This term is substantially longer than the anticipated construction phase anticipated by MDL. However, on the basis that it may take MDL some time (if not years) to prepare the final design specifications and plans and secure investment required to build the tunnel from the date which any concession might be granted, a term of 15 years is considered appropriate.

River Protection Works Licence

As discussed previously in this report, MDL intends to form limited river protection works in the form of rip rap to protect the airstrip construction site. These works will require monitoring and potentially ongoing maintenance and repair to ensure that they fulfil their own design specifications, and that they do not fail unexpectedly resulting potentially adverse effects of the rock material entering the Hollyford River.

For this reason it is considered by the Department that MDL would need to hold a licence for these works and their ongoing maintenance and repair, for a duration of longer than 15 years (that is, the term of the construction licence). A licence of 49 years 360 days running concurrently with construction licence is considered appropriate.

Tunnel, Hollyford Portal Staging area and Routeburn Access Road Easement

A term of 49 years and 360 days has been applied for. The application acknowledges that the tunnel would be a permanent modification to landform, and that the structure itself has a design life of 100 years.¹²¹

Portal lease

Again, a term of 49 years and 360 days has been applied for. MDL state they have applied for a lease for both portal locations to ensure public safety and to enable the ongoing operation and maintenance of the tunnel and the structures and facilities at those portals.

Tunnel/access road/portal licence

MDL have applied for a licence for 49 years and 360 days *'to permit both coaches and ancillary vehicles operated and/or authorised by MDL, in the underground tunnel and on any road or part of a road, where that road or part of that road is on land administered by the Department of Conservation'*.

In respect of the easement and licence for the tunnel, and lease for the portal sites, MDL state that they have applied for terms of 49 years and 360 days in order to avoid triggering Ngāi Tahu first right of refusal as noted in section 2.5 of this report.

In 'exceptional circumstances' the Minister may grant a concession for a term of more than 30 years (but not exceeding 60). It is considered that 'exceptional circumstances' would apply in the case of a tunnel as an essentially permanent modification to land, and also in recognition of the substantial financial investment that would need to be made to construct the tunnel.

Accordingly, a term of 49 years and 360 days would be considered appropriate for any concession for the tunnel and access road, and portal site
Section 17ZD of the Conservation Act 'Failure to execute or exercise concession document' states:

(1) If any applicant for a concession who has been granted a concession fails to sign the applicant's concession document within 1 month after being required by written notice to do so, the Minister may cancel the grant of the concession to that person.

(2) A concession lapses on the expiry of 2 years after the date of commencement of the concession, or after the expiry of such longer period as the Minister may allow, unless the concession is exercised before the end of that period.

...'

MDL anticipate an 18 month period for 'Geotechnical Confirmation / Engineering Design, tendering and Contract Award / Mobilise for Construction'. Some activities (geotechnical survey) would physically take place on the land during that time, but the physical concession activities may not commence within 2 years of the date of any grant, in which case a longer commencement period (such 5 years) may be required under the concession to ensure it would not lapse within 2 years of any grant of the concession (as per s.17ZD(2) of the Conservation Act).

¹²¹ URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3.

The construction lease or licence would need to run concurrently with any easement and lease for the tunnel.

4.4 Any Relevant Oral or Written Submissions Received as a Result Of Public Notification - Section 17U(1)(f)

The effects of the proposed activities are as such that it would be appropriate that any intention to grant this application to be publicly notified pursuant to section 49 of the Conservation Act 1987.

If the recommendation from this report is accepted, then it is recommended that the application be notified in the Auckland Herald, Dominion Post, Christchurch Press, Otago Daily Times and Southland Times. Individuals, or groups, may then submit and be heard on the proposal. The submissions will be considered in a 'final' report following notification.

4.5 Any Relevant Information which may be Withheld under the Official Information Act 1982 or The Privacy Act 1993 - Section 17U (1) (g)

While any request for information under the Privacy Act or the Official Information Act would be considered on its merits and on a case by case basis, there appears to be no relevant information concerning this application which may be withheld under the Official Information Act or Privacy Act.

4.6 Decline of Application - Section 17U (2)

Section 17U(2) provides that the Minister may (emphasis added) decline any application if the Minister considers that:

'(a) the information available is insufficient or inadequate to enable him or her to assess the effects (including the effects of any proposed methods to avoid, remedy, or mitigate the adverse effects) of any activity, structure, or facility; or

(b) There are no adequate methods or no reasonable methods for remedying, avoiding, or mitigating the adverse effects of the activity, structure, or facility.'

Comment

The effects of the proposed activities are discussed in section 4.2 of this report.

These discussions conclude that there is sufficient information to assess the effects. These discussions conclude that there are adequate and reasonable methods to avoid, remedy or mitigate potential adverse effects.

4.7 Purpose for which the Land is held - Section 17U(3)

The areas under application are contained within Fiordland and Mt. Aspiring National Parks, managed under the National Parks Act 1980. The Minister may not grant a concession if the proposed activity is contrary to the purpose for which the land is held as National Park.

Section 4 of the National Parks Act 1980, '*Principles to be applied in National Parks*' states:

'4. Parks to be maintained in a natural state, and public to have right of entry-

- (1) *It is hereby declared that the provisions of this Act shall have effect for the purpose of preserving in perpetuity as national parks, for their intrinsic worth and for the benefit, use and enjoyment of the public, areas of New Zealand that contain scenery of such distinctive quality, ecological systems, or natural features so beautiful, unique, or scientifically important that the preservation is in the national interest.*
- (2) *It is hereby further declared that, having regard to the general purposes specified in subsection (1) of this section, national parks shall be so administered and maintained under the provisions of this Act that -*
 - (a) *they shall be preserved as far as possible and in natural state:*
 - (b) *except where the Authority otherwise determines, the native plants and animals of the parks shall as far as possible be preserved and the introduced plants and animals shall as far as possible be exterminated:*
 - (c) *sites and objects of archaeological and historical interest shall as far as possible be preserved:*
 - (d) *their value as soil, water, and forest conservation areas shall be maintained:*
 - (e) *subject to the provisions of this Act and to the imposition of such conditions and restrictions as may be necessary for the preservation of the native plants and animals or for the welfare in general of the parks, the public shall have freedom of entry and access to the parks, so that they may receive in full measure the inspiration, enjoyment, recreation, and other benefits that may be derived from mountains, forests, sounds, seacoasts, lakes, rivers, and other natural features.*

Section 49(2) of the National Parks Act 1980 states that, '*Before granting any concession over a park, the Minister shall satisfy himself or herself that a concession – (a) can be granted without permanently affecting the rights of the public in respect of the park; and (b) is not inconsistent with section 4 of this Act.*'

Comment

The activities proposed by MDL seek to impact on areas within Fiordland and Mt. Aspiring National Parks. These areas are held for the purpose of preserving in perpetuity as national parks, for intrinsic worth and benefit / use / enjoyment of the public, scenery, ecological systems

and natural features so beautiful, unique or scientifically important that their preservation is in the natural interest.

The mandatory nature of the wording in section 4 of the National Parks Act suggests that it would not be lawful under the National Parks Act to allow an activity to occur which undermines the preservation in perpetuity (implying maintenance in its current state) of scenery, ecological systems and natural features of the land.

However, the provisions of the National Parks Act 1980 (s. 49) and part 3B Conservation Act 1987 require the Minister to also consider a number of other matters as set out in the Act, including the effects of the proposed activity, and the possible safeguards and mitigation measures proposed. This consideration gives effect to the words in S4(2)(a) 'as far as possible', which recognises there may well be some change which could detract from the natural state.

The Minister must consider the conservation values of the area the National Park status seeks to protect, and to question whether the granting of the application, with or without conditions, would provide protection of those resources.

The values of the natural and historic resources of the areas under application (part Mt. Aspiring and Fiordland National Parks) are discussed elsewhere in this report, specifically in sections:

- 3 Natural, Recreational, Cultural and Historic Values
- 4.2 Effects of Activity and any measures to avoid, remedy or mitigate effects
- 5.2.1 Mt. Aspiring National Park Management Plan
- 5.2.2 Fiordland National Park Management Plan

Section 4.2 of this report specifically discusses the effects of the proposed activities on these values and concludes that the effects of the activities and developments proposed by MDL are either minor, subject to mitigation, or temporary.

On the basis these effects would be minor, subject to mitigation, the grant of a concession would not be contrary to the purpose for which that land is held as National Park.

4.8 Structures – Section 17U(4)

Section 17U(4) provides that:

'The Minister shall not grant any application for a concession to build a structure or facility, or to extend or add to an existing structure or facility, where he or she is satisfied that the activity-

- (a) could reasonably be undertaken in another location that-*
 - (i) is outside the conservation area to which the application relates; or*
 - (ii) is in another conservation area or in another part of the conservation area to which the application relates, where the potential adverse effects would be significantly less; or*
- (b) could reasonably use an existing structure or facility or the existing structure or facility without the addition.'*

Comment

The portal structures, construction facilities, and tunnel are clearly structures, as too would be any culverts associated with the Routeburn Access Road.

MDL have provided specific comment on this section of the Conservation Act as follows:¹²²

Comment: The Dart Passage involves construction and operation of a structure (the tunnel and portals and associated facilities) within two national parks. The activity of constructing and operating the tunnel could not be reasonably undertaken in another location that is outside the national parks, or in other parts of the national parks, for the following reasons:

- (a) The route proposed between Queenstown and Milford Sound/Piopiotahi via the Dart Passage is the shortest route available that maximises the use of existing roads and minimises the extent of new road and tunnel required.
- (b) The 60% reduction in journey distance, relative to the current road journey, maximises the positive impact on Milford Sound by allowing the widest possible Milford Sound / Piopiotahi arrival and departure window and therefore provides the greatest possible opportunity for reduction of congestion during the middle part of the day.
- (c) This "shortest" route requires 55% less driving time and therefore provides more time, relative to the current journey, for other experience/activity choices, which will enhance the overall visitor experience of the journey to and from Milford Sound/Piopiotahi.
- (d) The passage time through the tunnel is directly proportional to tunnel length and coach speed. The tunnel vehicle flow capacity is directly related to all these parameters. With the Dart Passage as proposed, the tunnel capacity and therefore its ability to cater for future growth before an additional facility is needed, or excess traffic reverts to the current routes, is maximised.
- (e) The precise location of the tunnel has been determined by fixing suitable portal locations where rock suitable for tunnel boring is known to exist within a relatively short distance of the surface. This minimises the extent of slower and more expensive initial tunneling in colluvium (slope debris), glacial deposits and/or alluvium that cannot be undertaken by a tunnel boring machine and also minimises the higher risk and costs of tunneling in these ground types.

¹²² Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix B Statutory Analysis. Page 4 – 5.

- (f) The proposed road route from the Routeburn Road to the portal largely passes around mature stands of bush that are the known habitats of Mohua and other species with minimal impact on the bush and its ecology.
- (g) A single-lane tunnel, by the most direct route between the Routeburn and Hollyford Roads, (10.4km) with direction switching every half hour, and with an "open-access" business model (for coaches and operators that meet MDL's standards for the tunnel and the trip) has been determined as diverting the most number of visitors from the current journey. This high level of diversion is required to deliver a viable business proposition that will adequately recoup the capital cost of the project at a passage charge that represents value to the visitor, for the time savings and experience gains provided, over and above the cost of the current journey. The MDL Directors have confidence in that business proposition.
- (h) The proposed route has some effect on existing users of the national parks, particularly users' amenity at the Routeburn Road end and along the Hollyford Road. This is addressed in the **Overview** document (at section 8.7), where it is concluded that those effects would not be adverse and would be minor.
- (i) The Dart Passage enables Milford Sound/Piopiotahi visitors to journey through the Mount Aspiring National Park, albeit a small part of the Park and in the *Moderate Impact Zone*, and to experience the landscape and natural values of that Park, therefore enhancing the visitor's experience of the journey to Milford further. This, and the environmental benefits from the pest and predator management programmes, contributes to the proposal's consistency with the purpose of the national parks.
- (j) Another location for the tunnel would require either a significant additional length of access road and/or a significantly greater tunnel length to arrive at suitable portal locations. This would have the following outcomes:
- A commensurate reduction in all of the key benefits of the Dart Passage proposal in distributing visitor flows at Milford Sound / Piopiotahi and the Visitor's experience of the journey including their opportunity to experience the landscape and natural values of Mt Aspiring National Parks.
 - Likely greater impact on conservation and park values because it does not maximize the use of existing roads and minimise the extent of new road and tunnel required.
 - Amenity effects may be reduced but this would be at the expense of the natural values in other areas.
 - Reduction in the tunnel's capacity to cater for future growth.
 - An increase in the cost of the scheme such that would compromise the directors confidence in its commercial viability due to its significantly greater cost, inducing higher charges and thus less diversion of visitors from the current route which would in its turn induce even higher charges and resulting lower patronage.

Section 17U(4)(a)(i) Conservation Act 1987 *Could the activity be reasonably undertaken in another location outside the Conservation Area/national park?*

MDL's reasons for choosing the site for the tunnel are set out in para (j) above. The Department considers this statutory requirement has been met and that the Minister of Conservation could be satisfied that for these reasons, the tunnel could not reasonably be located outside of the area proposed by MDL.

Section 17U(4)(a)(ii) Conservation Act 1987 *Could the activity be reasonably undertaken in another conservation area/ national park) or in another part of the conservation area/national park to which the application relates, where the potential adverse effects would be significantly less?*

MDL have, over the last 3 – 4 years, proposed various alternative road alignments at the Routeburn Valley, but their own consultant advice (with which the Department concurred) was that those alignments would have significant environmental effects. On that basis, they have proposed an alternative alignment (which is the subject of this report) and as such have attempted to find another part of the national park in which the effects would be less. The effects of the current road alignment are less than those which would have resulted from previous proposals.

4.9 Interest in Land – Section 17U(5)

Section 17U(5) provides that:

'The Minister may grant a lease or a licence (other than a profit à prendre) granting an interest in land only if-

(a) the lease or licence relates to one or more fixed structures and facilities (which structures and facilities do not include any track or road except where the track or road is an integral part of a larger facility); and

(b) in any case where the application includes an area or areas around the structure or facility, -

(i) either:

(A) it is necessary for the purposes of safety or security of the site, structure, or facility to include any area or areas (including any security fence) around the structure or facility; or

(B) it is necessary to include any clearly defined area or areas that are an integral part of the activity on the land; and

*(ii) **the grant of a lease or licence granting an interest in land is essential to enable the activity to be carried on.'***

Comment

MDL have applied for concessions as follows;

- (i) 15 year Construction lease or licence to investigate and construct tunnel (including occupation of Hollyford Airstrip Area)
- (ii) 49 yr 360 day easement for the tunnel route
- (iii) 49 yr 360 day lease for portal sites.
- (iv) 49 yr 360 day licence to operate buses in the tunnel and on any road/portals on public conservation land constructed by MDL.

MDL state that while they could operate under an easement for most of the tunnel and the portal access road, for public safety reasons a long term lease for both portal locations is required; *'to ensure public safety and to enable the ongoing operation and maintenance of the tunnel and the structures and facilities at these portals'*¹²³.

¹²³ Email T. Allan MDL 30 June 2009.

This is not sufficient information to determine that exclusive occupation is appropriate for the areas adjacent to the portal structures themselves, and MDL have been invited to provide further detail on this matter to satisfy the consideration to be made in this respect.

The Department does agree that it would be necessary for the purposes of safety and security of site/structure/facilities proposed by MDL that they could exclude the public from the area physically occupied by the portal structure. Accordingly a lease for the tunnel portal structures and tunnel entrances would be appropriate.

Although MDL have applied for a lease or licence for the Hollyford Airstrip during construction (to enable construction works to take place on the Airstrip including disposal of spoil) a lease would not be appropriate as it would confer an exclusive right of occupation, and there are currently other concessions (aircraft landing permits) issued to operate on this area of the national Park.

As discussed in section 4.2.2 (iii) of this report 'Effects of the Airstrip Construction Area / Spoil disposal area – Effects on other park users', the Department could not grant a licence over the Hollyford Airstrip without the express consent of existing concessionaires who hold concessions to operate at the airstrip. On the other hand, the ability (in the interests of public safety and so that the proposed activities could be carried out) to close the airstrip at certain times is recognised. Subject to MDL obtaining the consent of existing concessionaires regarding any closures of the Hollyford Airstrip, a **licence** over the area affected by the construction activities proposed would be appropriate.

MDL have stated they would not require any occupation of the airstrip once construction of the tunnel is complete. However, there would be permanent River Protection works constructed by MDL, which the Department considers MDL should be responsible for in respect of monitoring , ongoing maintenance and repair if necessary. These structures, once built, would appropriately be authorised to the concessionaire by way of a concession licence

4.10 Exclusive Possession – Section 17U(6)

Section 17U(6) provides that:

'No lease may be granted unless MDL satisfies the Minister that exclusive possession is necessary for-

- (a) The protection of public safety; or*
- (b) The protection of the physical security of the activity concerned; or*
- (c) The competent operation of the activity concerned.'*

For the purposes of subsection (6) of this section, the competent operation of an activity includes the necessity for the activity to achieve adequate investment and maintenance.

Comment

It is considered that a lease for the portal structures, as discussed above, would be appropriate

4.11 Conclusions regarding Type of Concession

4 different concessions would be considered appropriate;

1. 'Construction Licence' covering construction on all areas (i.e. Hollyford Airstrip, both tunnel portals and associated staging areas, and tunnel itself) – for a term of 15 years (running concurrently with all other concessions)
2. 'Tunnel and Staging Areas Easement' covering ongoing operations including operation of tunnel and operation of buses for 49yrs 360 days
3. 'Portal Lease' for Routeburn and Hollyford portal structures covering ongoing operations including operation of tunnel and operation of buses for 49yrs 360 days
4. 'Hollyford Airstrip Protection Works Concession Licence' Concession Licence for the maintenance and repair of River Protection Works (constructed by MDL for 49yrs 360 days (to match term of the tunnel concession).

5.0 PLANNING INSTRUMENTS

Notes on interpretation of Policies in Statutory Planning Documents

Policy 1 of the General Policy for National Parks 2005 sets out the convention around the use of the words 'will', 'should' and 'may' in the General Policy. These conventions are used in interpretation of policies in the relevant National Park Management Plans and Conservation Management Strategies;

- i. *policies where legislation provides no discretion for decision-making or a deliberate decision has been made by the New Zealand Conservation Authority to direct decision-makers, state that a particular action or actions 'will' be undertaken;*
- ii. *policies that carry with them a strong expectation of outcome, without diminishing the constitutional role of the Minister and other decision-makers, state that a particular action or actions 'should' be undertaken;*
- iii. *policies intended to allow flexibility in decision-making, state that a particular action or actions 'may' be undertaken.'*

5.1 General Policy for National Parks 2005

The General Policy for National Parks 2005 contains statements of general policy to guide the preparation of National Park Management Plans.

The General Policy for National Parks 2005 states:

'Section 44 of the National Parks Act 1980 provides for the adoption by the New Zealand Conservation Authority (the Authority) of statements of general policy (General Policy) that give both direction and guidance to conservation managers and to communities on how to preserve and protect these special areas and the indigenous species in them. In particular, the purpose of this general policy is to implement the National Parks Act 1980 and to provide consistent national direction for the administration of national parks through conservation management strategies and national park management plans.....

The national park management plan for a national park has to be consistent with the general policy for national parks. If a course of action is proposed or an issue arises on which a national park management plan is silent, the General Policy (as well as the National Parks Act 1980 and the relevant conservation management strategy) will still need to be taken into account for any direction or guidance it gives on the issue. Specifically the Department is required, subject to the National Parks Act 1980 and in accordance with the General Policy, and any conservation management strategy and national park management plan covering a national park, to *'administer and manage all national parks in such a manner as to secure to the public the fullest proper use and enjoyment of the parks consistent with the preservation of the natural and historic features in the protection and well-being of the native plants and animals'*. (Section 43, National Parks Act 1980)

Management plans cannot derogate from the General Policy approved under the National Parks Act.

Relevant policies within the General Policy for this application are as follows:

Policy 8.6 Vehicles and other forms of transport

8.6(a) *A national park management plan should specify where the use of vehicles and any other forms of transport may be allowed;*

- (i) consistent with the outcome planned for places; and*
- (ii) where adverse effects on national park values, including natural quiet, can be minimised.*

8.6(f) *Powered vehicles;*

Powered vehicles should not be taken into or used in national parks except on roads formed and maintained for vehicle use, and on routes specifically approved for use by specified types of powered vehicle in a national park management plan

Policy 10. Activities Requiring Specific Authorisation (not covered elsewhere, including tourism activities)

10.1(b) *Any application for a concession or other authorisation will comply with, or be consistent with, the purposes of the National Parks Act 1980, the statutory purposes of the place with the activity is located, the conservation management strategy and national park management plan*

10.3 Utilities and Roding

The presence of utilities and development of new roads is generally inconsistent with the preservation of national parks in a natural state. It is considered that there is sufficient roading in existing national parks and that further roads are not desirable. The need for ongoing maintenance and potential upgrading of existing roading infrastructure is recognised. There may be circumstances when location of utilities within a national park will be unavoidable; but the adverse effects of any such utilities and access to them should be minor. No roads, tracks, or routes can be constructed and no building or machinery can be erected in a wilderness area within a national park.

Policies

10.3(a) *Utilities may be provided for in a national park where:*

- (i) they cannot be reasonably be established in a location outside the national park or elsewhere in the national park where the potential adverse effects would be significantly less;*
- (ii) they cannot reasonably use an existing structure or facility;*
- (iii) their provision, uses and the means of access to them is not inconsistent with the recreational uses and opportunities of the site; and*
- (iv) they have minimal impact on ecological values, scenery and natural features and on the qualities of solitude, remoteness, wilderness, peace and natural quiet.*

10.3(b) *Conservation management strategies and national park management plans should require that utilities be of a scale, design and colour that harmonises with the landscape and any seascape, and not have an adverse effect on the natural state of the national park.*

10.3(c) *The construction or extension of utilities should take into account cultural values and avoid detrimental effects on wāhi tapu.*

10.3(d) *A lease granting an interest in land with exclusive possession for a utility should be considered only when exclusive possession is necessary for the protection of public safety or the physical security of the activity or for its competent operation.*

10.3(e) *Co-siting of telecommunications and associated facilities should be required, to reduce the adverse effects of the facilities and the access to them, unless Applicants can demonstrate that this would be impracticable.*

10.3(f) *Utilities that are redundant should be removed from the national park for the purpose of minimising adverse effects on the landscape, and the site restored as far as possible to a natural state.*

10.3(g) *When new facilities are installed or existing facilities upgraded, equipment and technology that reduces visual and other environmental effects should be required.*

10.3(h) *No new roads will be made over or through a national park except with the consent of the Minister given in accordance with the national park management plan.*

10.3(i) *New or upgraded roads provided for in a national park management plan should have minimal effect on natural features and those undertaking the construction should take measures to mitigate any adverse effects, including:*

- (i) avoidance of fragmentation of habitats and ecosystems;*
- (ii) rehabilitation of surfaces of earthworks;*
- (iii) weed control; and*
- (iv) collection and treatment of storm water run-off.*

Discussion of General Policy for National Parks

The policies in the General Policy for National Parks reinforce the considerations to be made under Part 3B of the Conservation Act 1980. These considerations are set out in full in this report, and include the requirement to consider effects of the proposed concession activities and proposed methods to avoid, remedy or mitigate those effects.

In the context of this concession application, the proposed tunnel is regarded as being a road for purpose of the General Policy for National Parks. The proposed tunnel is intended to provide vehicle access through the park, albeit below ground level. That said, it must also be noted that the types of effects normally associated with roads (for example physical effects on natural landscape values associated with construction, landscape effects on the natural state of the environment, fragmentation of ecosystems, potential corridor to pest invasion, proliferation of ancillary facilities and utilities associated with the road, and changes in public use and potential displacement of existing recreational users)¹²⁴ would not, in all cases, apply to an underground tunnel.

The General Policy for National Parks plainly anticipates that new roads may be constructed within national parks. Section 10.3 expressly deals with 'Utilities and Roding'.

General Policy 10.3(a)(i) states utilities and roads may be provided for in a national park where they cannot reasonably be established in a location outside a national park or elsewhere in the national park where the potential adverse effects would be significantly less. This is the same statutory 'test' as section 17U (4)(a) of the Conservation Act 1987 and as discussed in section [4.8](#) of this report (above).

General Policy 10.3(i) requires that new or upgraded roads provided for in a park management plan should have minimal effect on natural features, and that those undertaking the construction should take measures to mitigate any adverse effects.

Potential effects of the proposed activities are discussed in section [4.2](#) of this report (above).

For discussion regarding the consistency of the proposed activities with the relevant National Park Management Plans please see section [5.2.2](#) below.

5.2 Relationship between Concessions and Conservation Management Strategies and Plans - Section 17W Conservation Act 1987

Section 17W(1) provides;

'Where a conservation management strategy or conservation management plan has been established for a conservation area and the strategy or plan provides for the issue of a concession, a concession shall not be granted in that case unless the concession and its granting is consistent with the strategy or plan.'

Section 17W(2)(b) provides;

¹²⁴ Fiordland National Park Management Plan 2007.

'Where...the relevant conservation management strategy or conservation management plan does not make any provision for the activity to which the application relates in the conservation area,- the Minister, after complying with the provisions of sections 17S, 17T, and 17U of this Act, may grant a concession.

Section 17W(3) of the Conservation Act states that;

'The Minister may decline any application, whether or not it is in accordance with any relevant conservation management strategy or conservation management plan, if he or she considers that the effects of the activity are such that that a review of the strategy or plan or the preparation of a strategy or plan is more appropriate.'

Section 17W(7) of the Conservation Act states conditions which will be in concession documents regarding Conservation Management Plans and states that *' It shall be a condition of every concession document that the concessionaire must act in accordance with every relevant conservation management strategy and conservation management plan for the time being in force, including any amendments to the strategy or plan, whether the strategy or plan or amendment was approved before or on or after the date on which the concession became effective; and that condition shall be deemed to be included in every concession document'*

It is noted that a conservation management strategy or plan cannot, of itself, prohibit an activity. Thus for example, a policy and a conservation management plan cannot, in direct terms, prohibit the Minister from considering a concession application. As ultimate decision maker, the Minister must have the ability to consider the reasonable intention of any policies in conservation management strategies and plans as a whole. The Minister has the responsibility to assess the effects of the proposed activity for compliance and / or consistency with those intentions, which includes an analysis of the effects of the proposed activities and other matters as set out in section 17U of the Conservation Act 1987.

5.2.1 Conservation Management Strategies.

The Conservation Management Strategies (CMS) relevant to Mt. Aspiring National Park and Fiordland National Park are the Otago Conservation Management Strategy, and Mainland Southland/West Otago Conservation Management Strategy 1998 – 2008 (life extended to 2012).

These two conservation management strategies state that the National Parks shall be managed pursuant to the relevant National Park Management Plans, and concession applications shall be considered pursuant to section 49 of the National Parks Act 1980 and part 3B of the Conservation Act 1987.

Mainland Southland/West Otago Conservation Management Strategy (CMS) 1998 – 2008 (life extended to 2012).

Section 6.13 of the Mainland Southland/West Otago CMS states that the Park is managed in accordance with the Fiordland National Park Management Plan and parts 1 – 5 of the CMS.

Key relevant sections of the CMS are as follows:

Section 5.14 Mainland Southland/West Otago CMS Road; Access and Utilities

Roads and other land transport systems, whether formed or unformed, can create the following issues:

- fragmentation of ecosystems/conservation areas;*
- control of public access;*
- road widening;*
- ancillary utilities;*
- provide a corridor for pest infestation;*
- change its type of public use.*

Concessions or other authorisations may be sought to use lands administered by the Department for a variety of purposes, including vehicle access to adjoining properties, water supply lines, gas pipelines and transmission lines. Concessions for these activities may be given by easement or licence or in some cases a lease in appropriate circumstances.

The Department may grant a concession or authorisation where:

- a legitimate need for the grant exists because the purpose or activity involved cannot be located on private land;*
- attributes or features of importance to natural values are not adversely affected; and*
- it does not significantly restrict or alter existing other use of an area.*

Implementation

- 1. No new roads or other land transport facilities will be constructed on lands administered by the Department, except to provide vehicle access to administrative and residential land or to adjoining private land where there are no practical alternatives, or except where provided for in Part Six of this CMS.*

- 3. All applications to use lands administered by the Department involving vegetation clearing, earthworks or the erection of any structure will require an environmental impact assessment which should clearly show that all alternatives have been investigated. Applications may only be approved if the Department is satisfied that the report shows the application to be acceptable in terms of avoiding, mitigating or remedying adverse impacts on natural values.*

- 4. Any construction on lands administered by the Department as a result of an approved concession will be subject to performance conditions and the deposit of a performance bond to guarantee compliance with conditions and remedying of any unforeseen effects of construction.*

- 11 Monitor the effects of roads as corridors for the passage of alien species.*

Discussion Mainland Southland/West Otago Conservation CMS

Section 6 of the Mainland Southland/West Otago CMS relates to the marine area surrounding Fiordland National Park. The land based areas of the Park are to be managed pursuant to the Fiordland National Park Management Plan. As such, the portal site/access road proposed by MDL off the edge of the Hollyford Road is not 'provided for' by section 6 of the CMS (as this does

not relate to land). The Fiordland National Park Management Plan (see discussion below) does, however, provide for new roads to be constructed within the National Park.

Section 5.14 of the CMS; *'The Department may grant a concession or authorisation where:*
• *a legitimate need for the grant exists because the purpose or activity involved cannot be located on private land'* is the same statutory test as that required by section 17U(4) of the Conservation Act 1987 and discussed in section 4.8 of this report above. Note that although the wording of the CMS differs slightly from that of the Act, the Act takes precedence.¹²⁵

The CMS also requires an assessment of effects of the proposed activities and imposition of conditions on any concession granted to mitigate, monitor and manage environmental effect. These matters are discussed in section 4.2 of this report above.

5.2.2 Management Plans

The Mt. Aspiring National Park Management Plan 2011 and the Fiordland National Park Management Plan 2007 are relevant to the areas under application.

5.2.2(i) Mt. Aspiring National Park Management Plan 2011

The key provisions of the Mt. Aspiring National Park Management Plan 2011 (MANPMP) relevant to this concession application are;

- section 4, stating the overall outcomes intended for Mt. Aspiring National Park;
- the outcomes and objectives and policies for the specific Routeburn 'place' set out in section 8 of the plan,
- the outcomes, objectives and policies of section 6.6 of the plan in respect of public use and enjoyment (including zoning, roads and recreation tourism concessions in the park), and
- section 6.7.2 of the plan, regarding management of recreation concessions in the park.

These are summarised below:

Section 4: Overall Park Outcomes¹²⁶

The MANPMP states 12 outcomes for Mt. Aspiring National Park. Those which could be affected or influenced by the development proposed by MDL are;

- *'indigenous species and habitats flourish*
- *people can see and hear threatened species, and the range of naturally occurring species, secure in their natural environment*
- *the dawn chorus rivals rushing water as the park's most pervasive sound*
- *the impacts of introduced species are kept to a minimum*
- *the park's waters remain wild, natural and free of exotic weeds*
- *a range of ecosystems, natural features and scenery is preserved within its boundaries*

¹²⁵ 17U(4) of the Conservation Act refers to 'reasonably', the CMS refers to 'legitimate need'.

¹²⁶ Mt Aspiring National Park Management Plan 2011 pg. 22

- *even in the busier areas, the sights and sounds of nature predominate and visitors can experience natural quiet and remoteness, separating the national park from the tourist centres located near it*
- *the opportunities for extended tramping through untracked, remote country are preserved, along with the easier multi-day trips east of the divide*
- *visitors enjoy a variety of outdoor recreational activities that do not detract from the park's intrinsic values and those of natural quiet*
- *concessions enhance visitor enjoyment and appreciation and do not impinge on its remote character or existing recreational opportunities*
- *the special connection that tangata whenua have with the park's lands and waters is recognised.'*

Section 8: Routeburn

(Note - although section 8 'Routeburn' follows section 6 'Public Use and Enjoyment' of the park plan, it is noted first in this report to provide better context)

The park plan describes the Routeburn place as encompassing the main Routeburn Track and its surrounds, most of which is in the back country zone, *'and the Routeburn road end and its surrounds in the front country zone.'*

That relevant outcome for the Routeburn roadend is;

- '5. *The front country zone surrounding the Routeburn road end is a key site for raising awareness of the park and conservation in general. Information and interpretation facilities are enhancing visitor use and enjoyment of this high use area. While it caters, at times, for relatively large numbers of visitors, it retains its essentially undeveloped character and natural values.'*¹²⁷

The relevant objectives for the Routeburn roadend are;

- '1. *To manage the wider Routeburn area (see Map 6b) to provide a range of recreational opportunities for experienced and inexperienced outdoor visitors, consistent with preservation of its significant natural values and the character of individual areas.*
2. *To manage the Routeburn road end and its immediate surrounds, that are in the front country zone, to cater for relatively large numbers of short stay visitors, at the same time ensuring that the area's significant biodiversity and scenic values are preserved and the values of the back country zone which surrounds it are maintained. Provide information and interpretation that enhances visitor appreciation of the park.'*¹²⁸

Section 6.6: Public Use and Enjoyment

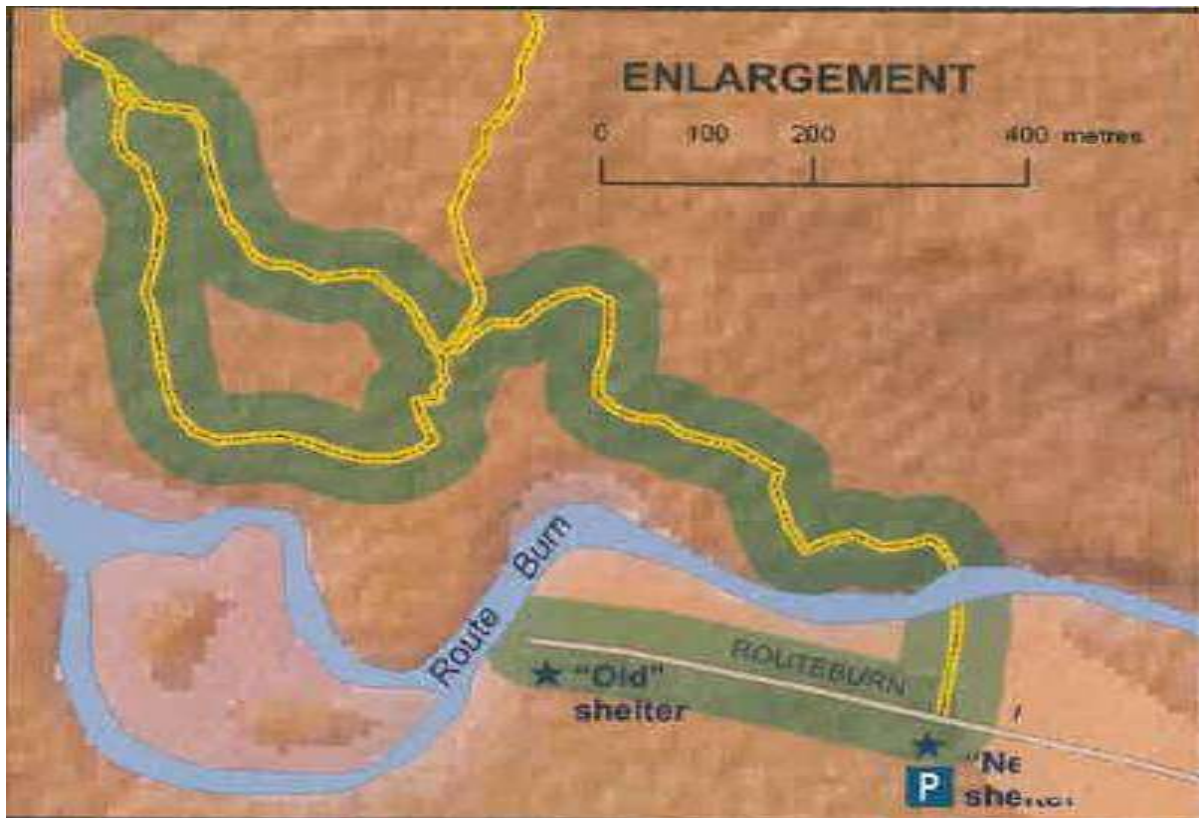
¹²⁷ Section 8.3 Mt Aspiring National Park Management Plan 2011

¹²⁸ Section 8.4 Mt Aspiring National Park Management Plan 2011

This section of the plan establishes various zones in the Park, sets objectives for those zones and describes policies to meet those objectives.

The proposed tunnel would be situated mainly within (underneath) the back country zone of Mt. Aspiring National Park.

The proposed portal access road and portal structure (tunnel entrance), being approximately 150m from the existing 'new' Routeburn shelter and carpark - would also be in the in the back-country zone of the park at the Routeburn Road end as shown on Map 6b (Routeburn) of the park plan.



Routeburn roadend from Map 6b Mt Aspiring National park Management plan green showing "front country" zone.

Section 6.6.2.4: Front Country Zone

The plan states that areas zoned as front country are generally accessible by vehicles or within easy reach of such access. Front country areas may have infrastructure such as carparks, picnic and camping areas, toilets, interpretation panels, viewpoints, public shelters and easy walking tracks, designed to both cater to and enhance the experience of relatively large numbers of people, while protecting natural park values.

Key attributes listed in the park plan defining the front country zone are:

- *'readily available access for people of most ages and abilities by providing good quality facilities and services and easy 2WD vehicle access*
- *where the majority of park visitation occurs, though often of a short duration*
- *visitors are likely to be seeking well known sights with high scenic or historical interest*
- *more passive activities are likely to predominate'.*

The Routeburn road end and its immediate vicinity are in the front country zone.

Section 6.6.2.3: Back Country Zone

The plan identifies the key attributes of the back country zone as including:

- *'some areas are suitable for the less experienced, who should be prepared for a degree of risk, are reasonably self-reliant and have moderate back country skills*
- *facilities may include basic huts, well-marked tracks and bridges in some places*
- *some aircraft access may be permitted (see section 6.6.5)*
- *visitors should expect regular interaction with other parties at certain times and in some places.'*

The objective of the backcountry zone is *'to provide a variety of back country recreational opportunities in the park, ranging from the challenging to those suitable for less experienced visitors'*

Note that despite being in the back country zone of the national park, the portal site displays the attributes of a front country zone.

Section 6.6.4: Roads, Vehicles and Other Transport Options

The plan states *'existing roads within the park are adequate to facilitate public use and enjoyment and no increase in the extent of roads is considered necessary. There will be an ongoing need to maintain the short sections of roads managed by the department for as long as their continued use is consistent with preservation of national park values.'*

The plan identifies the potential adverse effects of roads as:

- *'on natural quiet and landscape values from construction and ongoing use and maintenance*
- *loss or degradation of habitat, fragmentation of ecosystems and loss of biodiversity values generally*
- *providing a corridor for plant and animal pest infestations*
- *encouraging a proliferation of ancillary utilities and facilities*
- *changing the type of public use, displacing existing recreational users and impacting on the enjoyment of the park's values.'*

The plan states furthermore states; *'given these factors it is considered unnecessary and inappropriate for this management plan to provide for any new roads in the park. One of the main priorities for this park's management is to preserve the remote and natural quiet*

values that characterise it. The only zone where a new or realigned road may be considered would be in the front country zone for the purpose of accessing departmental visitor facilities such as parking areas, shelters, walking tracks, toilets and interpretive facilities (see also sections 8 and 13).¹²⁹

The objectives of the park plan in regards to roads include;

- '1. To maintain as far as possible the existing roads available to visitors within the park, recognising the opportunities they provide for public use and enjoyment of Mount Aspiring National Park.
2. To not provide for new roads or other land transport links, except for those required to facilitate access to departmental facilities in the front country zone of Mount Aspiring National Park.

The policies of the park plan in regards to roads are;

- '1. Subject to natural events, existing park roads and parking areas should as far as possible be maintained to an adequate standard to allow public access.
2. A new road should not be authorised anywhere in the park, except in the front country zone, and then only in the following circumstances:
 - a. if it would significantly enhance visitor access, and enjoyment of, Mount Aspiring National Park, without adversely impacting on other recreational opportunities and other national park values, and;
 - b. it is specifically required to maintain or restore access to departmental visitor facilities, such as campsites, parking areas, toilets and walking tracks within Mount Aspiring National Park.

Section 6.7: Uses Requiring Authorisation

Section 6.7 of the park plan deals with uses requiring specific authorisation, and notes that most frequently such authorisations are given under section 49 of the National Parks Act 1980 (i.e. the 'concession provisions' of the NPA 1980)

The plan then goes on to discuss various types of uses requiring authorisation.

Of general relevance to the application made by MDL is section 6.7.2 Recreation and Tourism Concessions;

Section 6.7.2 : Recreation and Tourism Concessions.

The objective of the park plan in regards to recreation and tourism concessions is;

¹²⁹ Mt Aspiring National Park Management Plan 2011 pg. 65

*'To allow the benefits of guided concession activities to be realised where they are consistent with the relevant legislation and the objectives and policies of this plan.'*¹³⁰

The 15 policies stated in the plan re-enforce the requirements of part 3B of the Conservation Act 1987 regarding the consideration of effects of potential activities, and states various potential 'concession conditions' to manage effects including (guiding) concession party size, concessionaire responsibilities, and monitoring of concessionaire activity and effects.

Discussion Mt. Aspiring National Park Management Plan

The proposed concession activities in Mt. Aspiring National Park comprise construction of an underground tunnel and above-ground tunnel portal and approximately 150 m of access road (7 m wide).

The Mt. Aspiring National Park Management Plan is not explicit on the matter of tunnels, however, given that the tunnel provides vehicle access (albeit underground) the tunnel is, to some extent, a road. The Mt. Aspiring National Park Bylaws 1981 define a road as: '**Road** includes all tracks formed for the use of vehicles and all bridges, culverts, and fords forming part of any road.'

For the purpose of consideration against the provisions of the Mt Aspiring National Park Management Plan 2011, the tunnel is considered to be a road.

This road is proposed in back country zone of the national park.

The tunnel proper, despite being a road, would be underground and would have no effect on the backcountry values of the National Park above.

The tunnel access road, and portal structure (and construction thereof), would be aboveground in the back country zone of Mt. Aspiring National Park.

Policy 1 of section 6.6.4 of the park plan 'Roads, vehicles and other transport options' states; '*a new road **should** not be authorised anywhere in the park, except in the front country zone*' (emphasis added).

Firstly, it is important to note that the plan specifically uses the word 'should'; '*a new road should not be authorised anywhere...except...*' The use of the word should in this context means that this policy has a high expectation of outcome, without diminishing the constitutional role of the Minister of Conservation. In this case her constitutional role is her responsibility to make a decision having regard to the matters set out in part 3B of the Conservation Act 1987. The wording of policy 1 of section 6.6.4 of the park plan cannot stop the Minister of Conservation from having to consider the effects of the proposed concession activities, and all other matters as set out in part 3B of the Conservation Act, and exercising her discretion in respect of a road in any zone of the park.

¹³⁰ Mt Aspiring National Park Management Plan 2011 pg.86

If the effects described in section 6.6.4 of the Mt Aspiring National Park Management Plan 2011 regarding roads, while they apply to all roads, including a tunnel which is technically a road, are focused on the effects of the typical above - ground road. The underground tunnel can be regarded as an exceptional situation, which on the facts would warrant a departure from the high expectation contained in the management plan that a new road should not be authorised anywhere except the front country zone .

The potential effects of the Routeburn Portal and Portal Access Road on landform, freshwater, flora, fauna, other park users, and historical and cultural values of the area under application are discussed in section 4.2.4. These discussions conclude that the effects of the proposed portal and access road (including construction thereof) would, in the main, be **minor** subject to mitigation. The exception to this would be short term noise/disturbance effects on other users during the construction phase. These effects would be **potential significant adverse unmitigated effects**, but they would be **temporary**.

The effects (subject to mitigation) would be as such that they would be consistent with the overall Park Outcomes set out in section 4 of the park plan.

In conclusion, subject to effective avoidance and mitigation of effects (including concession conditions) the construction and operation of the Dart Passage Tunnel proposed by Milford Dart Limited would be consistent with the provisions of the Mt Aspiring National Park Management Plan.

5.2.2(ii) Fiordland National Park Management Plan 2007

The proposed concession activities in Fiordland National Park fall within the 'Milford Road Front Country' visitor setting. In the Hollyford Valley, where the front country setting encompasses Milford road and the Hollyford road, the boundary of this visitor setting is the true right bank of the Hollyford River on the river side of the road, and 200 metres from the road centreline on the other side.¹³¹

Key provisions of the relevant sections of the Fiordland National Park Management Plan 2007 are summarised below:

Part Three: Te Wāhipounamu - South West New Zealand World Heritage Area.

Part three of the Fiordland National Park management plan provides background and context.

Both Mt. Aspiring and Fiordland National Parks form part of the Te Wāhipounamu - *South West New Zealand* World Heritage Area.

'Objectives

1. *To maintain the ecological and landscape integrity of the Te Wāhipounamu - South West New Zealand World Heritage Area.*

¹³¹ section 5.3.9 Fiordland National Park Management Plan pg. 171

2. *To develop a co-ordinated approach to the management and servicing of visitors to the Te Wāhipounamu - South West New Zealand World Heritage Area.'*

'Implementation

- ...
2. *Provide information on the state of Te Wāhipounamu - South West New Zealand World Heritage Area is required under the Convention: (...)*
 3. *In managing for ecological values within Te Wāhipounamu - South West New Zealand World Heritage Area the international status of this designation will be taken into account.*
 4. *Advocate to protect the values of the Te Wāhipounamu - South West New Zealand World Heritage Area. In particular, advocate to ensure integrated management of the marine areas (...)*

Part Five: Visitor Management

Part five of the FNPMP provides context in respect of the objectives of the park plan in respect to visitor management, and states; *Increasing use and tourism initiatives bring pressure for additional visitor opportunities often with associated facilities. Changing and conflicting use requires consideration of what is the appropriate mix of opportunities to be provided in the future. Although Fiordland National Park contains a vast visitor resource, it is not essential nor indeed desirable to provide for every possible user taste or preference. Outside Fiordland National Park many opportunities are available, or potential exists for them, particularly on other conservation lands in the southern part of New Zealand.... It is also important to recognise that Fiordland National Park is managed to reflect its international importance as a World Heritage Area. A component of this classification is the role of Fiordland as a 'wilderness' of national and international significance. The effects of visitor management must be considered in this context, not just in terms of its importance in the regional and national New Zealand environment...*

The objectives of the park plan in respect of visitor management are;

1. *To ensure the preservation of Fiordland National Park's natural characteristics, including the iconic status of Fiordland National Park, values and historical features while meeting the needs and aspirations of visitors.*
2. *To allow for a range of both commercial and non-commercial recreational activities within Fiordland National Park managed in accordance with the range of visitor settings.*
3. *To work with commercial operators within Fiordland National Park to promote visitor appreciation of the National Park and world heritage values*
4. *To consider any proposal for changes to visitor settings in accordance with the natural, historical and cultural, recreational, landscape and amenity values of Fiordland National Park.'*

Section 5.3.9: Front Country Visitor Setting

The plan states;

'Front country refers to visitor settings that are accessible by vehicles all within easy reach of such access stop the settings usually have a substantial infrastructure and include the following facilities: car parks, picnic and camping areas, toilets, water supplies, signs, interpretation panels, viewpoints,..... (etc) - the provision of facilities in the front country encourage accessibility by all and allows for instant immersion- in-nature experience. Facilities are also used to protect the natural values from the impact of large numbers of people. The scenic backdrop, and it's natural setting, although not part of the setting, is a very important aspect of the visitor experience. While most visitors to these areas expect high use they may be sensitive to overcrowding....'

Objectives

1. *To provide opportunities for predominantly passive to mildly active recreation activities with higher vehicle accessibility, while protecting other National Park values. Key attributes defining front country include:
 - (a) *Visitors will be seeking an instant immersion with nature;*
 - (b) *Visitors are likely to be seeking sites with a high scenic or historical interest;*
 - (c) *It will be low risk, with minimal skills required; and*
 - (d) *Visits will often be of a short duration.*...*
4. *To ensure that other facilities do not have an adverse impact on the National Park values of the setting or surrounding area...'*

Section 5.3.9.1: Milford Sound / Piopiotahi

The management objectives and implementation in the park plan are relevant as they provide background and context to the application. MDL would not themselves be carrying out an activity for which a concession is required at Milford Sound / Piopiotahi. The plan states;

'...Visitor numbers peak both on a daily and seasonal basis. Concentrated peak use can also lead to the perception of overcrowding and congestion and hence a poorer quality visitor experience. The challenge for the Department and the tourism industry is how to enable continuing growth in visitor numbers at Milford Sound / Piopiotahi while maintaining the qualities of Milford Sound / Piopiotahi which have lured visitors there for over a century.....

A key matter for resolution is the impression of overcrowding, noise and congestion. If the perception of fewer visitors being in one place at the same time could occur it would create an environment that would ensure a world class visitor experience consistent with Fiordland National Park objectives. At present there are few open, quiet places. The flow of people and vehicles makes most places busy – the car park areas, the terminal and the visitor services area (i.e. hotel, café etc) are all within the key vehicle movement areas....'

The objective of the park plan in respect of Milford Sound / Piopiotahi is;

1. *To manage Milford Sound / Piopiotahi as a place where nature dominates, while ensuring a world-class experience for all visitors. The following attributes will be protected and enhanced:*

- a) *A place which is reflective of its national park and World Heritage Area status;*
- b) *A place known world-wide for its scenic grandeur;*
- c) *A destination where the road end is the end of the journey;*
- d) *A terminus for those whose main focus is visiting Milford Sound / Piopiotahi and its surrounds;*
- e) *A place where a small fishing fleet can operate;*
- f) *A place where conflicting activities are separated and managed;*
- g) *A place where only essential staff working at Milford may live;*
- h) *A place which offers a quiet and peaceful experience from early evening through to mid morning; and*
- i) *A place where visitors flow through the site so as to avoid congestion and the feeling of overcrowding....”*

The relevant implementations are;

- ...
- 3. *The majority of vehicular-based concessionaire activity at Milford Sound / Piopiotahi should occur between the hours of 8.30am and 6pm.*
- ...
- 22. *Continue to work with tourism operators to encourage this industry in finding ways of spreading visitor flows throughout the day so as to avoid congestion and overcrowding. Mechanisms to be encouraged include increased overnighting at Te Anau; modify scheduling regimes to avoid peak periods (refer also to section 5.3.9.2 Milford Road); pricing differentials for trips and car parking that are outside of peak periods.*
 - 23. *Investigate options for the use of economic incentives (such as pricing differentials for concession operations) as a tool to assist with spreading visitor flows throughout the day.*
- ...’

Section 5.3.9.2: Milford Road

The plan recognises that there are a number of matters that can affect the Milford road offering a world-class visitor experience including:

- *‘daily peaks in traffic volumes and visitor numbers at key sites resulting in congestion and overcrowding;*
- *congestion and overcrowding at the Mirror Lakes and Pop’s View;*
- *shortage of toilet facilities; (...)*
- *traffic and pedestrian safety matters.’*

The plan acknowledges that while the Milford Road is a destination in its own right it is also the main access route to Milford Sound / Piopiotahi. The plan outlines that the management of visitor flows *‘is a key tool for reducing the perceptions of congestion and overcrowding at Milford Sound’* and that *‘managing flows on the Milford road through regulation is one tool that could assist in ensuring the experience at Milford sound is*

restored back to its iconic status and reflects, more appropriately, National Park values.¹³²

'Objectives

1. *The Fiordland National Park that adjoins the Milford road will be managed to provide for and protect the following attributes:
...
(c) a place which is a destination in its own right;...
...
(f) The easily accessible and safe visitor opportunities at designated sites....*
2. *To provide for the integrated management of the Milford road and Fiordland National Park adjacent to the road in a way that ensures visitor safety, protection of park values and a high quality visitor experience; ... and
...*
5. *To promote future growth in visitor use of the Milford road outside of the existing daily peaks."*

'Implementation

2. *In conjunction with Transit New Zealand, and tourism interests, provide information to road users on the following;
• the best time of the day to travel to avoid congestion;
• general driving conditions;
• winter driving conditions (etc ...)*
...
5. *All development proposals including those proposed by the Department of Conservation and Transit New Zealand will demonstrate how the adverse effects on natural, cultural, historical and recreational values can be avoided, remedied or mitigated. Roading proposals will need to be consistent with the provisions of section 5.7 (-) and will need to demonstrate that existing facilities are being used to their full capacity and potential and that there is a proven demand for the new facility beyond what the existing infrastructure can cope with.
...*
11. *To assist with managing visitor flows into Milford sound/Piopiotaahi and to ensure a world-class visitor experience along the Milford road, advocate to transit New Zealand and other parties to investigate options for regulating visitor flows on the state highway and for assessing the effects of alternative transport options to Milford sound/Piopiotaahi. In particular advocate the following;
...
(c) that any option to regulating traffic flows provides for the following:
i) the ability for the public to access the roadside visitor sites within the Fiordland National Park on a regular basis...
v better flow of traffic so as to avoid the perception of congestion and overcrowding at roadside visitor sites along the road and at Milford sound/Piopiotaahi.'*

¹³² section 5.3.9.2 Fiordland National Park Management Plan pg. 172

Section 5.4: Concessions

Objectives

1. *To enable a range of appropriate, high-quality commercial visitor services to be provided through the granting of concessions which are compatible visitor settings described in this plan and National Park values, and which will ensure adverse effects on natural, cultural or historic resources are minimised.*
2. *To grant concessions (-) in such a way that their adverse effects can be understood and monitored in the context of other general independent use of Fiordland National Park.*

Implementation

The plan states that concession applications will be considered in accordance with section 49 of the National Parks Act 1980 and part 3B of the Conservation Act 1987. Concession operations should be kept at levels that do not detract from other visitors use and enjoyment and National Park values, and concession conditions should where relevant stipulate that,

'4. Among other conditions all concessions should where relevant, stipulate the following:

- *Limits on the number of guides/vessels/aircraft allowed to operate by virtue of the concession at any one time;*
- *Maximum group sizes (...);*
- *Clearly defined areas of operation;*
- *Clearly defined maximum permitted frequencies of use;*
- *Explicit concession monitoring requirements....'*
- ...

Such conditions, where relevant, would be part of any concession granted to MDL (see section 9 of this report - Proposed Special Conditions).

5. *Structures, facilities and services (e.g. huts and tracks) ancillary to commercial recreation/tourism activities will only be considered where it can be demonstrated that they cannot be undertaken outside Fiordland National Park or that use of existing Fiordland National Park facilities is not possible'.*

Section 5.7: Roading, Vehicle Use and Other Transport Options (other than Aircraft and Boating)

This section of the plan acknowledges that some roads are considered necessary in the Park to provide public access, use and enjoyment. The plan identifies a number of issues that can arise from roads including;

- *'Adverse effects on natural and landscape values from construction of the road and the permanent impact on the natural state of Fiordland National Park.*

- *Fragmentation of ecosystems.*
- *Provide a corridor for pest infestation*
- *Encourage a proliferation of ancillary utilities and facilities*
- *Change the type of public use and displace existing recreational uses'*

Objectives

- '1. *To maintain, subject to natural hazards, the existing road access routes available to visitors within Fiordland National Park....*
2. *To consider provision of new roading, or other land transport links, in front country visitor settings only (see map 7), and then only if they will improve visitor access and enjoyment of Fiordland National Park without impacting significantly on other recreation opportunities and national Park values.'*

Implementation

- '1. *New roading should not be authorised anywhere in Fiordland National Park except in the Front Country Visitor setting because of the likely adverse effects on the natural values or recreation opportunities that the other visitor settings are being managed for. Any proposal will require a full assessment of the adverse effects on the natural, historical and cultural, recreational, landscape and amenity values also identifying how the proposal will improve the effective management of Fiordland National Park. An audit of this assessment to determine whether the effects are either acceptable or can be adequately mitigated should be required. Consideration of such proposals should include a full public consultation. Refer also to policies 10.3 (h) and (i) of the General Policy for National Parks 2005.'*

Implementation 5 states that aggregate for all of road works should be sourced from acceptable sites within the National Park, and refers to section 6.3 of the Plan (Mining and Gravel Extraction). Section 6.3 notes that all necessary resource consents would need to be obtained for extraction activities.

Discussion Fiordland National Park Management Plan 2007

The effects of the proposed activities in Fiordland National Park are discussed in section 4.2 of this report above. That discussion concludes that, on balance, the effects of the proposed activities, while potentially significant and adverse, would be able to be mitigated to the point where those effects would be minor in Fiordland National Park.

The proposed activities, subject to concession conditions, would be consistent with the provisions of the Fiordland National Park Management Plan, as discussed below.

Visitor Setting

The proposed 'above ground' activities (Hollyford Portal Staging Area - comprising clearance of 8,500 m² to form a staging area alongside the Hollyford Road) and works at the Hollyford Airstrip (Construction/Spoil Disposal Area) in Fiordland National Park would occur in the Front Country visitor setting. Although the tunnel traversing through the mountains of Fiordland National Park passes underneath parts of the park zoned as Backcountry and the Routeburn Track High Use Track Corridor, these visitor settings would not be affected by the proposed activity.

Front Country visitor settings are recognised as areas in the Park which contain substantial visitor infrastructure. In the longer term, the presence of a tunnel, staging area/portal and modified Hollyford airstrip would not, in visual terms, appear to be particularly substantial visitor infrastructure. Traffic resulting from the tunnel, in the longer term, would only occur in a small way on public conservation land (that is, across the portal staging area).

The proposed activity is consistent with the Front Country visitor setting.

Tunnel/ Road

The Fiordland National Park Management Plan is silent on the matter of tunnels. As an underground tunnel provides access, it is, to a degree a 'road'. The types of effects associated with roads (and noted in section 5.7 of the Fiordland National Park Management Plan) do not, in all cases, apply to tunnels (some 'road' effects would apply to tunnels and these effects are discussed in section 4.2 of this report). Accordingly, the proposed tunnel must be considered subject to section 17S, 17T, and 17U of Conservation Act as stated in section 17W(2)(b) of that Act.

The proposed portal site and staging area (which is, in effect, a 'road' from the existing Hollyford road into the tunnel) is consistent with the provisions of the Fiordland National Park management plan. The plan states that, subject to environmental effect, roads should only be permitted in Front Country settings.

Social Impacts/ Milford Road / Milford Sound

The Fiordland National Park Management Plan 2007 contains a number of objectives and policies regarding enhancing visitor experience to Milford Sound/Piopiota. Should the tunnel be built, and used in such a way that would effectively spread visitor arrivals into Milford, grant of this concession would go some way towards achieving those objectives of the Fiordland National Park Management Plan. That said, how the commercial tourism industry would respond to the opportunity provided by such a tunnel is largely speculative. However, given the amount of investment MDL is willing to make on the basis that their facility would be utilised by the commercial tourism industry, it is accepted that the tunnel would most probably be utilised to a large degree by buses, and as a result, the anticipated changes in visitor patterns to Milford would be realised.

Even if, for some reason, the tunnel was not utilised by the commercial tourism industry, its presence would not have a negative effect on visitor experiences to Fiordland National Park and would be consistent with the provisions of the Fiordland National Park Management Plan.

Concessions

The key objectives of the Fiordland National Park Management Plan 2007 in respect of concessions are, firstly, to ensure that all potential adverse effects on National Park values are considered and avoided or mitigated, and secondly, that concessions, if granted, are granted in such a way that the level of use (and accordingly impact) is defined within the concession document.

The short-term construction activities associated with the initial development of the tunnel would require a relatively complex, thorough, and adaptive concession document to ensure that adverse effects were mitigated.

6.0 OTHER INFORMATION FOR CONSIDERATION

Ngāi Tahu Deed of Settlement

The area is within the takiwa of Ngāi Tahu, but is not subject to any specific statutory instruments. The term applied for, 49 years and 360 days, does not trigger Ngāi Tahu Right of First Refusal under the Ngāi Tahu Claims Settlement Act 1998.

Papatipu Rūnanga and Te Rūnanga o Ngāi Tahu

Otago: A summary of the application was sent to the Otago Papatipu Rūnanga on 26 February 2010, no response was received.

Southland: The application discussed by Kaitiaki Roopu at their meeting on 24 March 2010. No issues were raised.

Te Rūnanga o Ngāi Tahu (TRONT):

The application was sent to TRONT for comment in April 2010. TRONT commented on various draft conditions proposed by MDL relating to ongoing consultation with iwi during the construction phase of the proposed activities. These have been taken into account in the body of this report. TRONT expressed a desire to meet with MDL to discuss their application, and this request has been forwarded onto MDL.

Otago Conservation Board May 2011

From unconfirmed Otago Conservation Board minutes of 13 May 2011:

(d) Amendment to Application for Milford Dart Tunnel Routeburn Portal

An amendment to the concession application and a letter of 10 May 2011 from MDL, and an email of 4 May 2011 from the DOC Otago Conservancy had been circulated.

G Bailey said that he was supportive of the amended proposal, because it would have much less of an impact on the native vegetation and associated wildlife in Mount Aspiring National Park. The proposed tunnel portal and access road were confined to a grassy area with some scattered matagouri and other shrubs.

G Nixon noted that the Department was processing the concession application from Milford Dart Ltd on the basis of legal advice that national park management plans could not fetter the Minister of Conservation. However, he believed that the Board was obliged to uphold the policy statements in the planning documents it had recommended for approval. Since the Mount Aspiring National Park Management Plan (1994) was still in force, the Board had little choice but to confirm its support for the policy statements in it.

Other Board members accepted G Nixon's reasoning, however much the impact of the proposed portal and formed road had been lessened.

It was agreed that the Board's advice to the Department was that the policy statement "There will be no increase in the extent of formed park roads within the existing park boundaries" (MANPMP

1994, page 60, 8.14 Access, Policy Statement 1) should be upheld in connection with the decision-making process relating to this application.¹³³

Otago Conservation Board comment June 2011

'As a result of the approval of the new Mount Aspiring National Park Management Plan by the New Zealand Conservation Authority on 23 June 2011, the Otago Conservation Board conveys the following further advice to the Department of Conservation on the Milford Dart Ltd concession application:

The concession application is inconsistent with the new Mount Aspiring National Park Management Plan (2011) and the Department should not grant the concession.

In giving this advice, the Board draws attention to the following points:

- *The General Policy for National Parks, page 48, 10.3 Utilities and Roading states: 'The ... development of new roads in national parks is generally inconsistent with the preservation of national parks in a natural state. It is considered that there is sufficient roading in existing national parks and that further roads are not desirable.'*
- *The General Policy for National Parks, page 49, 10.3 (h) states: 'No new roads will be made over or through a national park except with the consent of the Minister, given in accordance with the national park management plan.'(underlining added)*
- *The new Mount Aspiring National Park Management Plan, 6.6.4 Roads, vehicles and other transport options is clear. Policy 2 states: 'A new road should not be authorised anywhere in the park, except in the front country zone, and then only in the following circumstances:*
 - a. if it would significantly enhance visitor access, and enjoyment of, Mount Aspiring National Park, without adversely impacting on other recreational opportunities and other national park values, and;*
 - b. it is specifically required to maintain or restore access to departmental visitor facilities, such as campsites, parking areas, toilets and walking tracks within Mount Aspiring National Park.'*
(underlining added - this wording was agreed with the Department after considerable discussion with the New Zealand Conservation Authority.)
- *In connection with the above point, Map 6b Routeburn in the new Mount Aspiring National Park Management Plan shows that the Front Country Zone at the Routeburn Roadend does not include the site of the company's proposed short road and portal in the park.'*

¹³³ Note – these comments made in May 2011 relate to the 1994 Mt Aspiring National Park Management Plan, which has subsequently been replaced in June 2011.

Comment

The Otago Conservation Board recommends the Minister determine that the application is inconsistent with the provisions on the Mt. Aspiring National Park Management Plan 2011, and that it not be granted. This report puts forward a different view; that as management plans cannot prohibit the Minister from having regard to all matters set out in the part 3B of the Conservation Act 1987, having regard to all those matters, the effects of the proposed activities (subject to mitigation) are as such that the application is not inconsistent with the provisions of the Mt. Aspiring National Park Management Plan 2011.

Consideration of the application against the provisions of the Mt. Aspiring National Park Management Plan 2011 is set out in section 5.2.2(i) of this report above.

Southland Conservation Board

The Southland Conservation Board considered the application initially on the 15th of April 2010, and again (given the subsequent amendment to the application) on 16th June 2011.

The Southland Conservation Board resolved to take a neutral position with respect to the proposal by MDL to construct, operate and maintain the Dart Passage.

The Board expressed significant concern that there was no demonstrated need for the proposal (the tunnel) and that it had not been demonstrated that the proposal could not be undertaken outside of the National Park (expressing the fact that the proposal is for a tunnel, not for a shorter journey to Milford from Queenstown).

The Southland Conservation Board considered it appropriate that the Concessionaire (if the concession was granted) would have to contribute to the upkeep of public facilities provided by the Department - which may be subject to increasing use as a direct result of the Concessionaires development.

The comments of the Southland Conservation Board, where relevant matters for consideration to the Minister of Conservation, have been taken into account in the analysis in this report (particularly section 4 Analysis of Proposal and section 5 Planning instruments), and reflected in the proposed special conditions (Section 8).

7.0 CONCLUSION

The Department has received an application from Milford Dart Limited (MDL) to construct and operate the 'Dart Passage' a 11.3 km long 5 m diameter single lane bus/coach road tunnel through the Humboldt and Ailsa Ranges to link the Routeburn and Hollyford roads in Mt. Aspiring and Fiordland National Parks.

An initial application was lodged on 28 November 2005 with various subsequent revisions and amendments, the most recent being lodged by MDL in March 2011.

Both MDL and the Department have commissioned extensive technical audit and review of the proposed activities.

The purpose of this report is to consider the application in accordance with the relevant legislation and recommend whether the application should be approved in principle or declined. This report has been vigilant to ensure that only matters of relevance to the Minister of Conservation pursuant to the Conservation Act 1987 and National Parks Act 1980 have been considered.

Section 3 of this report provides a detailed description of the natural, cultural, recreational and historic values of the public conservation lands subject of the application.

Section 4 of this report discusses the matters to be considered by the Minister of Conservation, and includes description and discussion of the effects of the activity.

A number of effects of the proposed activities, while potentially significant and adverse, could be mitigated or avoided to the point where they would be minor.

Potential effects on other park users in the vicinity of the construction works, would likely be adverse during the construction phase. They could not be mitigated to the point where they would be minor. However, these relatively short-term effects would be temporary. In the long-term, effects on other park on public conservation land would be minor.

Section 5 of this report considers the application against the relevant General Policy and Conservation Management Strategies and Plans. These discussions conclude that grant of the concession application would be consistent with the provisions of the relevant strategies and plans, and would not be contrary to the purposes for which the land is held as National Park.

8.0 PROPOSED SPECIAL CONDITIONS

The activity proposed by MDL is a large scale engineering project. As such it will require extensive construction specifications and plans, and associated construction / environmental management plans. MDL have proposed draft concession conditions indicative of the breadth and scope of the further plans to be prepared prior to construction, and conditions to manage the effects of the developments in Mt. Aspiring and Fiordland National Parks.

These conditions proposed by MDL are attached as Appendix C.

The Department would accept these conditions as an appropriate 'starting point' for the development of concession conditions, but notes that as they were drafted by MDL in 2007 they do not accurately reflect all aspects of the developments currently proposed.

Further development of concession conditions will be required, and will require further input from technical experts to ensure that they would be appropriate to manage and mitigate all effects of the activity.

Special conditions proposed by the Department are attached as Appendix 1 to this report .

These are not proposed as 'definitive' concession conditions. They propose, amongst other things, a process to facilitate further development of concession conditions to be finally approved by the Grantor, once final up- to date engineering specifications and plans are supplied by MDL.

The Department's standard concession conditions (for easement, lease and/or licence as appropriate) will be applied also. Standard conditions of Easement are attached as appendix E to this report.

Concession fees and appropriate commercial terms including insurances and bonding/ sureties will be applied.

Four different concessions would be required to give effect to the developments proposed by MDL;

1. '*Construction Licence*' covering construction on all areas (i.e. Hollyford Airstrip, both tunnel portals and associated staging areas, and tunnel itself) – for a term of 15 years (running concurrently with all other concessions)
2. '*Tunnel and Staging Areas Easement*' covering ongoing operations including operation of tunnel and operation of buses for 49yrs 360 days
3. '*Portal Lease*' for Routeburn and Hollyford portal structures covering ongoing operations including operation of tunnel and operation of buses for 49yrs 360 days
4. '*Hollyford Airstrip Protection Works Concession Licence*' Concession Licence for the maintenance and repair of River Protection Works (constructed by MDL for 49yrs 360 days (to match term of the tunnel concession).

Execution or Exercise of concession document.

Section 17 ZD (2) of the Conservation Act 1987 states;

A concession lapses on the expiry of 2 years after the date of commencement of the concession, or after the expiry of such longer period as the Minister may allow, unless the concession is exercised before the end of that period'.

Given the scale of the proposed developments, and potential that it may take considerable "lead in time" for MDL to obtain other necessary consents (resource consent) it is considered that a exercise period of five years would be appropriate.

Concession Activity;

1. The investigation and construction of an underground tunnel of approximately 11.3 kilometres long and of approximately 5 metres internal diameter, from the Hollyford Valley south of the existing airstrip (grid reference at or about S44⁰44.499 / E 168⁰08.354¹³⁴) and the Routeburn Valley at or about Map Sheet: E40 Earnslaw. Map Grid Reference: 363 991.¹³⁵

¹³⁴ GPS and distances measured C. Visser for DOC 19 August 2009 – GPS co-ordinates accurate to 10m. Confirmation of Grid ref required.

¹³⁵ Confirmation of Grid ref required.

2. Operation and maintenance of the tunnel in (1) above, and associated infrastructure and facilities, as shown (map - Hollyford portal area, and Routeburn portal area and tunnel).
3. Construction, operation and maintenance of the Routeburn Portal Access Road of approximately 150m of single lane road 7 m wide.
4. Operation of coaches and any ancillary vehicles operated and/or authorised by the concessionaire in the underground tunnel and on any road or part of a road, where that road or part of that road is on land administered by the Department of Conservation and constructed by the Concessionaire.
5. Monitoring, operation and maintenance of River protection works constructed by the Concessionaire at the Hollyford airstrip as shown (map)

9.0 RECOMMENDATION

Pursuant to the delegation dated 29 October 1997, it is recommended that Barry Hanson, Conservator Southland, pursuant to part III B of the Conservation Act 1987 and section 55 of the National Parks Act 1980;

1. **Deem** this application to be complete in terms of section 17S of the Conservation Act 1987;
2. **Approve in principle**, subject to the outcome of public notification process, the Departments standard concession conditions, and special concession conditions outlined in Appendix 1 of this report, **the granting of**;
 - (i) A 15 year licence [*Construction Licence*] to investigate and construct a 11.3 km / 5m wide tunnel in Fiordland and Mt. Aspiring National Parks, as shown on the map attached (nb – map to be prepared with assistance from MDL – to be taken from engineering drawing C001 showing tunnel route, C0011 showing Hollyford Portal Construction facilities C014 showing Hollyford Airstrip Area Construction Facilities and Spoil Disposal but excluding the area shown in pink as discussed in section 4.2.2 of this report, and C202 Routeburn Portal During Construction);
 - (ii) An easement for 49 years and 360 days [*Tunnel Easement*] across that part of Fiordland and Mt. Aspiring National Parks which would be occupied by the Routeburn portal and access road, tunnel, staging area and Hollyford Portal and staging area and to operate and maintain associated structures and facilities, and to operate coaches and any ancillary vehicles operated by and/or authorised by MDL, as shown on the map attached (nb – map to be prepared with assistance from MDL – to be taken from engineering drawing C001 showing tunnel route C0012 showing Hollyford Portal plan of Completed Area and C203 Routeburn Portal Post Construction). *Tunnel Easement* to run concurrently with *Construction Licence*

- (iii) a lease for 49 years and 360 days [*Hollyford and Routeburn Portal Lease*] on that part of Fiordland National Park and Mt Aspiring National Park occupied by the portal structure and tunnel entrance, as shown in the map attached (nb – map to be prepared with assistance from MDL – to be taken from engineering drawing C012 ‘Hollyford Portal Plan of Completed Area’ and C203 Routeburn Portal Post Construction- subject to final survey)
 - (iv) a licence for 49 years and 360 days [*Hollyford Airstrip Protection Works Concession Licence*] for the monitoring, maintenance and repair of River protection works constructed by the Concessionaire in Fiordland National Park
3. **Determine that**, pursuant to section 17Z of the Conservation Act 1987, exceptional circumstances would warrant a term of 49 years and 360 days in respect of activities authorised by way of the *Tunnel Easement, Hollyford and Routeburn Portal Lease*, and *Hollyford Airstrip Protection Works Concession Licence*.
 4. **Determine that**, pursuant to section 17ZD(2) of the Conservation Act 1987, should a concession be issued, that that concession lapse 5 years from the commencement of that concession unless that concession is exercised before the end of that period.
 5. Having regard to the matters set out in this report, **determine** that the intent to grant the concession be notified for public comment pursuant to section 17T(4) and 17T(5) of Conservation Act 1987.
 6. Having regard to the matters set out in this report, **determine** that public notice be given pursuant to section 49 of Conservation Act 1987 and that notice be given in the Auckland Herald, Dominion Post, Christchurch Press, Otago Daily Times and Southland Times.

Report prepared by Chris Visser.
28 September 2011

Recommendation

- 1. **Approved / Declined.**
- 2(i) **Approved / Declined.**
- 2(ii) **Approved / Declined.**
- 2(iii) **Approved / Declined.**
- 2(iv) **Approved / Declined.**
- 3. **Approved / Declined.**
- 4. **Approved / Declined.**
- 5. **Approved / Declined.**
- 6. **Approved / Declined.**

.....

Date

Barry Hanson
Conservator
Southland

APPENDICES

Appendix 1 Proposed Special Conditions

1. Project Liaison Officer

- 1.1 The Concessionaire shall fund the role of Project Liaison Officer to act as a liaison contact between the Concessionaire and the Grantor prior to and during the term of construction of the concession activities authorised by this concession. The position description, tenure and level of remuneration of the Project Liaison Officer will be agreed between the Concessionaire and the Grantor, and failing agreement will be determined by arbitration under condition 19 of Concession Documents standard conditions.
- 1.2 The role of the Project Liaison Officer will include:
- (a) Facilitating the preparation of an 'Implementation Protocol' with the Concessionaire outlining the process for conducting relationships, reaching agreements and obtaining approvals to give effect to the conditions of this concession.
 - (b) Giving effect to the 'Implementation Protocol' in accordance with condition 2;
 - (c) Review of Construction Specifications and Plans and Construction Environmental Management Plans and other documentation submitted to the Grantor under this concession;
 - (d) Facilitating the audit (as required by condition 3) of the Construction Specifications and Plans and Construction Environmental Management Plans and making appropriate recommendations to the Grantor based on those documents;
 - (e) Monitoring compliance by the Concessionaire with Construction Specifications and Plans and Construction Environmental Management Plans required pursuant to this concession; and
 - (f) Monitoring and liaising any ongoing restoration works and making recommendations to the Grantor regarding successful progressive and long-term restoration and rehabilitation of the Site.
- 1.3 The appointment of the Project Liaison Officer will be by the Grantor following consultation with the Concessionaire, and the Project Liaison Officer will report to the Grantor.
- 1.4 The Project Liaison Officer will be a senior position, requiring a range of professional skills necessary for liaising effectively and autonomously with the Concessionaire, the Department, territorial authorities, other external consultants, insurance companies and bondsmen. The Project Liaison Officer must have a strong proven performance in relationship management for large-scale developments in environmentally sensitive areas.
- 1.5 The Project Liaison Officer must be appointed by the exercise date for this concession, which is not longer than five years after the commencement date. The Concessionaire shall give to the Grantor approximately 6 months notice of the intended exercise date to allow the appointment process to commence. Pending such appointment the Grantor may, if he/she considers it necessary and desirable, appoint an interim liaison person at any time between the date of execution of this Concession and the exercise of this

concession; and such interim liaison person will carry out the role of the Project Liaison Officer as envisaged by condition 1.2 of the Special Conditions for this concession.

- 1.6 The Project Liaison Officer's role will cease once the construction of the Dart Passage Tunnel is complete and all site rehabilitation required by Grantor has been carried out to the satisfaction of the Grantor. The Project Liaison Officers' role may continue past this point if both the Grantor and Concessionaire agree. If this occurs, the role of the Project Liaison Officer will be re-defined and agreed to in writing by both the Grantor and Concessionaire.
- 1.7 The Project Liaison Officer may, with the prior approval of the Grantor and Concessionaire, call on additional independent external consultants for specialist advice on matters reasonably raised by the Concessionaire's operations carried out under this concession. The Project Liaison Officer will advise anticipated costs of consultants to both the Concessionaire and Grantor and such costs shall be approved by the Concessionaire prior to any consultant being engaged. The Concessionaire shall meet the approved and reasonable costs of such consultants.

2. Implementation Protocol

- 2.1 The Concessionaire shall prepare, in consultation with the Grantor or the Grantor's advisor, and submit to the Grantor for approval an Implementation Protocol. The purpose of the Implementation Protocol shall be to outline the process for conducting relationships and reaching agreements between the Grantor and Concessionaire. The Implementation Protocol shall include, but not be limited to the following:
 - (a) A description of the intentions and objectives of both the Grantor and Concessionaire to work together in good faith to implement the Concession;
 - (b) A description of a process to facilitate discussions between the Grantor and Concessionaire should any matters arise during the implementation of the Concession that require further discussion, review or resolution; and
 - (c) A description of a dispute resolution process which shall be implemented should any disagreement arise between the Grantor and the Concessionaire during the implementation of the concession.

3. Construction Specifications and Plans and Construction Environmental Management Plans

- 3.1 Prior to construction, the Concessionaire shall prepare for the approval of the Grantor Construction Specifications and Plans and Environmental Management Plans for all components of the Activity.
- 3.2 The format and scope of these Construction Specifications and Plans and Construction Environmental Management shall be discussed by the Grantor and the Concessionaire and be finally approved by the Grantor, and shall detail and address, at a minimum;

- (i) Detailed final engineering design specifications and methodologies for all components of the activity, including clearances and excavations, waste water management systems, and methodologies and timing of all construction works;
 - (ii) Methods for managing effects as set out in the concession lodged by Milford Dart Limited comprising those documents set out in Schedule #.
 - (iii) The Concessionaire shall ensure that the Construction Management Plan includes a sub-set of management plans that cover the following topics as a minimum:
 - i. Health and Safety;
 - ii. Hazardous Substances;
 - iii. Noise Management;
 - iv. Risk Management;
 - v. Waste Management;
 - vi. Archaeological and Heritage Protocols and Plans;
 - vii. Mitigation of Effects on Users of the Area
 - viii. Erosion and Sediment Control;
 - ix. Freshwater Management
 - x. Terrestrial Ecology Management.
- 3.3 The Concessionaire shall ensure that these plans are prepared by a suitably qualified person(s).
- 3.4 The Grantor will audit the Construction Specifications and Plans and Construction Environmental Management Plans to ensure that final 'on the ground' design and construction specifications do not differ in location, or substantially in scale or level of effect to the concession application lodged by the Concessionaire. The concession application lodged by the Concessionaire comprises those documents listed in schedule ## (Appendix A of this report 'documents comprising concession application – lodged by Milford Dart Limited).
- 3.5 The Grantor may require all or some of the Construction Specifications and Plans and Construction Environmental Management Plans provided pursuant to this concession to be independently audited by an auditor approved by the Grantor. The auditor shall certify that the specifications and plans have been prepared in accordance with best practice for the relevant discipline, and shall advise the Grantor if the level of effect arising from on the ground application of the such Specifications and Plans would exceed the level of effects, or type of effects, described by the Concessionaire in the Concession Application. At a minimum, the Grantor will require external audit of all Engineering Specifications and Plans.
- 3.6 Once audited and approved by the Grantor, the Construction Specifications and Plans and Construction Environmental Management Plans shall form part of this Concession, and the Concessionaire shall not deviate from these Specifications and Plans without prior written approval of the Grantor.
- 3.7 The Concessionaire shall pay the costs incurred by the Grantor (including costs of independent audit) in auditing and approving all Construction Specifications and Plans

and Construction Environmental Management Plans required pursuant to this Concession.

- 3.8 All Construction Specifications and Plans and Construction Environmental Management Plans provided pursuant to this concession shall be provided by the Concessionaire to Grantor within reasonable time frames to allow the Grantor to review these plans.

4. Operational Management Plan

- 4.1 Prior to the commencement of the operation of the Dart Passage Tunnel, the Concessionaire shall submit an Operational Management Plan to the Grantor for approval.

- 4.2 The Grantor will audit the Operational Management Plan, and may require all or some aspects of the Operational Management Plan to be independently audited by an auditor approved by the Grantor. The auditor shall certify that Operational Management Plan has been prepared in accordance with best practice for the relevant discipline.

- 4.3 The objectives of the Operational Management Plan shall be:

- i. To ensure the Dart Passage Tunnel and its associated infrastructure are maintained to best practice standards, for the duration of this Concession;
- ii. To ensure the health and safety of the public and employees are protected by the Concessionaire at all times during the operation and use of the Dart Passage Tunnel, and including but not be limited to specification of final criteria for Approved Vehicles permitted to use the tunnel (as proposed in the draft concession conditions proposed supplied by Milford Dart Limited in their concession Application), and;
- iii. To give effect to the conditions of this concession, and identify the environmental impacts, mitigation measures, monitoring of environmental performance, emergency plans and reporting on all relevant operations activities including, but not limited to requirements under this Concession, and all sections of the various relevant Acts and Bylaws.

- 4.4 Once audited and approved by the Grantor, the Operational Management Plan shall form part of this Concession, and the Concessionaire shall not deviate from these Specifications and Plans without prior written approval of the Grantor.

5. Safety

- 5.1 The Concessionaire must control access to the tunnel at all times, to ensure that no person can enter the Dart Passage Tunnel without the knowledge or permission of the Concessionaire.

- 5.2 Only Approved Vehicles approved by the Concessionaire are permitted to use the Dart Passage Tunnel.

- 5.3 The Concessionaire must exercise the rights granted by this Concession in a safe and reliable manner and must comply with the Health and Safety in Employment Act 1992

and its regulations and all other provisions or requirements of any competent authority relating to the exercise of this Concession. The Concessionaire must comply with its safety plan, and with any safety directions of the Grantor.

- 5.4 Before commencing the Concession Activity the Concessionaire must;
- (a) prepare a safety plan;
 - (b) have it audited by a suitably qualified person approved by the Grantor and forward to the Grantor a certificate from the auditor certifying that the safety plan is suitable for the Concession Activity; and
 - (c) the Concessionaire must obtain from the auditor details as to when the safety plan is to be re-audited. The Concessionaire must comply with any such requirement to re-audit and forward a copy of the re-audit certificate to the Grantor within 5 working days of the certificate being issued.
- 5.5 If clause 5.4 applies then if the Concessionaire amends or replaces the safety plan then before the amendment or replacement plan takes effect the Concessionaire must comply with 5.4 (b) and (c).
- 5.6 The Grantor may at any time request the Concessionaire to provide the Grantor with a copy of the current safety plan in which case the Concessionaire must provide the copy within 10 working days of receiving the request.
- 5.7 Receipt of the certified safety plan by the Grantor is not in any way to limit the obligations of the Concessionaire under clause 5 and is not to be construed as implying any responsibility or liability on the part of the Grantor.
- 5.8 The Concessionaire must:
- (a) notify the Grantor of any natural events or activities on the Land or the surrounding area which may endanger the public or the environment;
 - (b) take all practicable steps to protect the safety of all persons present on the Land and must, where necessary, erect signposts warning the public of any dangers they may encounter as a result of the Concessionaire's operations;
 - (c) take all practicable steps to eliminate any dangers to the public and must clearly and permanently mark any that remain and of which the Concessionaire is aware;
 - (d) record and report to the Grantor all accidents involving serious harm within 24 hours of their occurrence and forward an investigation report within 3 days of the accident occurring;
 - (e) ensure that all contracts between the Concessionaire and any contractors contain, at a minimum, the same requirements this clause 5.
 - (f) not bring onto the Land or any land administered by the Department any dangerous or hazardous material or equipment which is not required for purposes of the Concession Activity; and if such material or equipment is required as part of the Concession Activity, the Concessionaire must take all practicable steps at all times to ensure that the material or equipment is treated with due and proper care.

6. Spoil Management

- 6.1 The Concessionaire must remove all excess fill from the Land within 4 (four) weeks of fill being created unless written approval is given by the Grantor for it to remain on the Site for longer.

7. Water Quality and Aquatic Biodiversity

- 7.1 The Concessionaire shall ensure that disturbance of riparian margins is minimised.
- 7.2 Refuelling shall not take place within 10 metres of waterways.
- 7.3 All creek and water crossings shall be bridged or culverted – specifically – Deadmans Creek in Fiordland National Park.
- 7.4 The Concessionaire shall comply with the Didymo prevention and cleaning protocols as set out in Schedule ## before and after contact (including people, equipment, clothing, footwear and other items) with any waterway.
- 7.5 The Concessionaire shall comply with all guidelines and notices put out by Biosecurity New Zealand regarding measures to avoid spreading the pest organism *Didymosphenia geminata* (refer to www.biosecurity.govt.nz/didymo).

8. Fire

- 8.1 No fires are to be lit on the Land and extreme care is to be taken with equipment likely to start fires. Full fire extinguishing equipment is to be kept on the Site at all times during construction.

9. Fuel

- 9.1 The Concessionaire and its contractors must ensure that any refuelling vehicle carry a spill kit of loose absorbent material at all times, to absorb spilled fuel. In the event of a spill, the absorbent material shall be laid immediately over the site of the spill, and every practical step taken to contain the fuel. All contaminated soil must be removed from the site and disposed of in an environmentally safe manner. The Concessionaire must immediately report all fuel spills over 1 litre to the Grantor.
- 9.2 Machinery with fuel or oil leaks shall not be used on the Land.
- 9.3 Any diesel storage tanks (maximum size 1250 litres) are to be bunded when onsite and shall not be located closer than 10 m to any waterway.

10. Rehabilitation

- 10.1 The Concessionaire shall rehabilitate all areas not required for the ongoing construction or operation of the proposed developments within six months of initial disturbance, to the satisfaction of the Grantor. To this end, the Concessionaire shall prepare and submit to the Grantor for approval, a Rehabilitation Plan.

- 10.2 The Concessionaire must stockpile all vegetation cleared during construction for later use to rehabilitate the site.
- 10.3 Where possible direct transfer of vegetation techniques are to be used.
- 10.4 Rehabilitation is to be supervised by a suitably qualified person approved by the Grantor (paid for by the Concessionaire). This person may be the Liaison Officer.
- 10.5 No dumping of substrate material in forest is permitted.
- 10.6 The Concessionaire shall provide a report on rehabilitation progress to the Grantor on an annual basis until the rehabilitation goals set out in the Rehabilitation Plan have been met.

11. Protection of Fauna

- 11.1 Prior to operation of the Dart Passage Tunnel, the Concessionaire shall design in consultation with the Department, for the Grantor's approval, a proposal for the Concessionaire's contribution to pest and predator control in the Routeburn and Hollyford Valleys. Such proposal may result in the Concessionaire carrying out predator and pest control themselves, or making some contribution to existing programmes being carried out by the Department of Conservation. The Concessionaire shall carry out, or contribute to, the pest and predator control in accordance with the agreed proposal.
- 11.2 Above ground construction works shall, as far as possible, avoid nesting periods for birds.
- 11.3 The Concessionaire shall develop for the Grantor's approval, and carry out a monitoring programme, on the adverse effects of noise on wildlife in the immediate vicinity of the construction works.
- 11.4 The Concessionaire is to survey for bats prior to construction works at the Hollyford portal site. If bats are found to be present, the Concessionaire shall consult with the Grantor regarding appropriate strategies to minimise potential adverse effects, and to follow subsequent instruction, of the Grantor.

12 Aircraft access

- 12.1 Aircraft access is permitted with authorised Aircraft Concessionaires only.

13. Historic

- 13.1 The Concessionaire shall ensure that all construction staff are appropriately trained and briefed on the recognition of artefacts, sites, and human remains.

14. Ngāi Tahu

- 14.1 The Concessionaire shall consult the relevant Papatipu Rūnanga if they wish to use Ngāi Tahu cultural information. If the concessionaire wishes to use the Tōpuni or statutory acknowledgement information contained in schedules 14-108 of the Ngāi Tahu Claims Settlement Act 1998, or any Department produced interpretative material in respect to Ngāi Tahu cultural information, they are requested to notify the relevant Papatipu Rūnanga, as a matter of courtesy.
- 14.2 The Concessionaire acknowledges that pounamu (including all nephrite, semi-nephrite, bowenite and serpentine) is under the ownership of Te Rūnanga o Ngāi Tahu pursuant to the Ngāi Tahu (Pounamu Vesting) Act 1997.
- 14.3 No pounamu may be removed or recovered by the Concessionaire or their employees/clients.
- 14.4 Where any pounamu is found by the Concessionaire, they shall immediately notify the Pounamu Manager, Te Rūnanga o Ngāi Tahu, Christchurch, ph 0800 Kai Tahu (0800 524 8248)
- 14.5 The Concessionaire is shall to ensure that any interpretation provided to its clients on Ngāi Tahu historical, spiritual, or cultural association with pounamu or any pounamu area is entirely consistent with the Ngāi Tahu Pounamu Resource Management Plan or any Department produced interpretative material.
- 14.6 The Concessionaire shall notify the relevant papatipu rūnanga if they are using the above information, as a matter of courtesy.
- 14.7 Where the Concessionaire wishes to provide clients with information not contained in these sources, which relate to Ngāi Tahu historical, spiritual or cultural association with pounamu or any pounamu area, then the Concessionaire shall consult with the local papatipu rūnanga before using any other information to ensure such information is both appropriate and accurate.
- 14.8 The Concessionaire shall comply with DOC and Ngai Tahu accidental discovery protocols, and shall provide adequate time for find to be recorded and managed pursuant to those protocols.
- 14.9 Prior to any construction commencing the Concessionaire shall consult with Te Rūnanga o Ngai Tahu, and Papatipu Rūnanga Te Ao Marama in accordance with Concessionaires Cultural Impact Report (August 2006) (Document 16 of the *Concession Application*).

15. Concessionaires' Invitees

- 15.1 The Concessionaire may to grant permission to their invitees to drive buses in the tunnel and other access roads constructed by the Concessionaire.
- 15.2 The Concessionaire is, subject to clause 8 of the Standard Terms and Conditions of the Concession Lease Agreement, entitled to enter into commercial agreements with their invitees for them to drive buses in the tunnel and other access roads constructed by the

Concessionaire, and to receive a reasonable fee from them for any agreed activity they intend to carry out.

15.3 In addition to clause 13.1 above and Clause 15 of Standard Terms and Conditions of the Concession Lease Agreement, the Concessionaire must comply with the provisions of the Commerce Act 1986 and any regulations or bylaws made under that Act.

16. Bond¹³⁶

16.1 Prior to commencing the Concession Activity, the Concessionaire must provide as surety a trading bank, insurance company or bond guarantor who is acceptable to the Grantor

16.2 The surety must execute (in the case of two or more jointly and severally) in favour of, and on terms acceptable to, the Grantor/ a performance bond initially set at NZ\$_____ (_____dollars) for due and faithful performance by the Concessionaire of the obligations under the Concession and/or reinstating any disturbed area of the Land to a standard satisfactory to the Grantor where disturbance has been caused by the Concessionaire or any agent of it and/or otherwise remedying or mitigating any adverse effects of the Concession Activity.

16.3 If the initial amount of the bond has not been set in clause 14.2 then prior to the Concession Activity commencing that amount will be set by the Grantor following an independent risk assessment using a methodology approved by the Grantor.

16.4 The initial amount set under either clauses 14.2 or 14.3 may be reviewed at the discretion of the Grantor at any time.

16.5 The cost of any independent risk assessment or review will be paid by the Concessionaire within 10 working days of being given a notice by the Grantor

16.6 Notwithstanding the expiry, surrender or termination of the Concession document, the bond will not expire and is to remain in full force and effect until such time as all obligations of the Concessionaire under the Concession document have been complied with to the satisfaction of the Grantor

16.7 If the Concessionaire breaches any condition or fails to carry out any condition of the Concession or in carrying out the Concession Activity there arise adverse effects not authorised or reasonably foreseen in the Concession document the Grantor call on the bond entered into under this Document or any portion of it to ensure compliance with the

¹³⁶ Prior to the finalisation and execution of the concession documentation, the Department would require the applicant to enter into a formal process with an independent professional bond/surety assessment firm (e.g. Golder Associates, URS Corporation) to assess and calculate bond/surety amounts for both the construction and operation phases of the concession. DOC would participate in this exercise as an observer. These bond amounts calculated would be expected to be sufficient to mitigate any adverse effects that fall outside the agreed programme of works and ongoing operation of the project, right through to the complete abandonment of the project with an ensuing full reinstatement. The amount of the bond(s) would be reviewed annually during the construction phase of the project. After commissioning the bond(s) amount would be reviewed at the discretion of the Minister.

conditions of the Concession document or to remedy or mitigate those adverse effects referred to above.

17. Visitor Impact Monitoring

- 17.1 The Concessionaire shall develop and implement, in consultation with the Grantor, a visitor impact monitoring programme to monitor impacts of construction of the proposed works on other visitors to the National Park.

18 Provision of information

- 18.1 During construction, the Concessionaire shall provide, and a manner and format approved by the Grantor, information to the public, the Department, Routeburn track and Hollyford track guided walks and the operators of Gunn's camp regarding the timing and duration of any works generating noise (in particular blasting) in the Hollyford Valley.

19. Tunnel Operation

- 19.1 The Concessionaire shall control and monitor the use of the tunnel and shall supply a monthly report to the Grantor of the number of bus movements through the tunnel each day by time of day
- 19.2 The Concessionaire shall ensure that use of the tunnel is spread throughout the day, to avoid vehicle congestion at the Routeburn and Hollyford portal sites.
- 19.3 To give effect to the Concessionaires stated objective in their concession application to spread Visitor Arrivals at Milford Sound / Piopiotahi, the Concessionaire shall limit 'peak' time use of the tunnel. The mechanism for doing this shall be proposed by the Concessionaire, and approved by the Grantor.
- 19.4 Buses shall not be permitted to use the tunnel before 7am and after 10pm.

20. Use of facilities provided by the Grantor

- 20.1 Busses using the tunnel will not be permitted to stop at the toilet facilities at the Routeburn Roadend.
- 20.2 The Grantor shall monitor use of the roadend facilities provided by the Department at the Routeburn, the Hollyford Valley and the Milford Road. If this monitoring determines that this use increases as a result of the activities and developments of the Concessionaire, the Concessionaire shall contribute towards any necessary upgrades and/or increased maintenance required.¹³⁷

21. Noise

¹³⁷ 'Community Contribution Clause' is standard in concession documents for Concessionaire contribution towards facilities provided by the Grantor for the benefit of the Concessionaire.

21.1 Construction Activities in the Hollyford Valley shall not exceed 50dBA (Leq) between the hours of 8:30 am and 6 pm. At all other times the limit is 40 dBA (L10) and 70dBA (Lmax). Noise to be measured at the boundary of the Hollyford Portal Site and the Hollyford Airstrip (as shown on the map - to be attached to the concession).

22. River protection works

22.1 The Concessionaire shall monitor the condition of all River protection works constructed by the concessionaire at the Hollyford airstrip, and shall maintain and repair those works as necessary.

23 Other Matters

23.1 The Concessionaire shall either at its sole cost meet all responsibilities and requirements, or reimburse the Grantor in respect of any costs of it meeting any responsibilities or requirements, under either the Building Act 2004 or the Resource Management Act 1991, in respect of structures associated with the concession activity, and will at its sole cost meet all statutory, regulatory or common law responsibilities, requirements or legal obligations arising in relation to such facilities, and indemnify and reimburse the Grantor or the Grantor in respect of any costs or liabilities arising out of its statutory, regulatory or common law responsibilities, requirements or legal obligations in relation to such facilities.

23.2 The Concessionaire must ensure that all rubbish and surplus materials are to be removed from the Site at the completion of construction works.

23.3 The Concessionaire shall ensure that all machinery is cleaned (water blasted) before entering the site. For the purpose of this condition, the site entrance shall be taken as..... (Mark on map)

23.4 The Concessionaire shall ensure that all gravel, fill or other material brought onto the Land comes from a weed free source.

23.5 Any building is to incorporate energy conservation within their design and be designed to eliminate all forms of uncontrolled waste, noise pollution or light spill into the surrounding Park.

23.6 All lighting is required to shed light downwards to minimise light spill into the wider national Park

23.7 Revegetation at the Hollyford airstrip to include

- i. nettle to enhance habitat for Red and Yellow Admiral Butterfly
- ii. Muehlenbeckia axillaris to enhance habitat for copper butterfly and grasshoppers; and
- iii. open stony substrates for crusting lichens, mosses and Raoulia spp mat daisy suitable for day active moths, butterflies and black cicada maoricicada campelli.

- 23.8 The Concessionaire must obtain the permission of existing Concessionaires of the Hollyford airstrip prior to carrying out activities on the Airstrip which may prevent those Concessions being exercised.
- 23.9 Hollyford airstrip to remain open during the 'Roar' (March/April inclusive.)

Appendix A: List of Documents Comprising the Concession Application.

Documents Submitted by Milford Dart Limited

Milford Dart Limited *Concession Application and Environmental Impact Assessment Milford Dart Limited June 2006*

Brown and Pemberton Planning Group *Milford Dart Limited Application to the Department of Conservation for Concession to Construct and Operate The Dart Passage – Concession Application Overview*. MDL Concession Application 2007 document 1.

Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix A Proposed Draft Conditions.

Brown and Pemberton, *Milford Dart Application to the Department of Conservation For Concession to Construct and Operate the Dart Passage*, Concession Application Overview, Milford Dart Limited Concession Application 2007 Document 1 Appendix B Statutory Analysis.

URS, *Milford Dart Tunnel Project Concession Application - Technical description update*, Milford Dart Ltd Concession Application August 2007 Document 3.

Ryder Consulting, *Milford Dart, Overview of Ecological Assessments*, Milford Dart Concession Application August 2007 Document 4

Lucy Hardy (for Milford Dart LTD. 2007) *Draft Routeburn Road End Predator Control Plan*, MDL Concession Application 2007 document 5.

Conservation Consultancy Ltd (for Milford Dart LTD. 2007) *Draft Plant Pest Management Plan*, MDL Concession Application 2007 document 6

Conservation Consultancy Limited, *The Natural Value of the Routeburn Road End Area and Part of the Hollyford Valley and the Impact of the Proposed Milford Dart Tunnel*, August 2006, MDL Concession Application 2007 Document 7.

Conservation Consultancy Limited, *Upgrading the Routeburn Road in the Mount Aspiring National Park with Minimal Disturbance*, July 2007, MDL Concession Application 2007 Document 8.

Southey, I *A Survey of birds, bats and Lizards at the Routeburn Road End*,. MDL Concession Application 2007 Document 9

Southey, I. *Birds and Bats in the Routeburn 11th-19th November 2008*.

Patrick, B *Entomological Effects Associated with the proposed Milford-Dart Tunnel through the Humboldt Mountains of Western Otago*. Milford Dart Concession Application August 2007 Document 10.

Ryder Consulting, *Milford Dart Limited Proposed Dart Passage Aquatic Ecology Assessment*, April 2007, MDL Concession Application 2007 Document 11.

TrafficPlan Limited, *Milford Dart Project Routeburn Area*, Road Safety Audit and Traffic Report on Roding, MDL Concession Application 2007 Document 12.

TrafficPlan Limited, *Milford Dart Project Lower Hollyford Road*, Road Safety Audit and Safety Report on Roding, MDL Concession Application 2007 Document 13.

Hegley Acoustic Consultants, *Letter Dated 7 December 2006 Re: Assessment of Noise Levels*, MDL Concession Application 2007 Document 14.

Petchey, P.G. (Southern Archaeology) *Milford Dart Archaeological Assessment of Proposed Routeburn-Hollyford Tunnel August 2006*, MDL Concession Application 2007 Document 15.

Awarua Research and Development, *Cultural Impact Report for Milford Dart Limited August 2006*, MDL Concession Application 2007 Document 16.

Gabites Porter *Milford Dart, Milford Sound and Te Anau Traffic*, MDL Concession Application August 2007 Document 17.

Tourism Resource Consultants *Assessing the Potential impact of the Milford Dart Proposal on the Visitor Market to Milford Sound*, MDL Concession Application August 2007 Document 18.

Milford Dart Limited Hollyford Portal Landscape Assessment Report prepared by Baxter Design Group LTD, MDL Concession Application August 2007 Document 20.

Documents submitted 2009/2010

Baxter Design Group Limited *Milford Dart Routeburn Portal Mt Aspiring National Park Landscape Assessment, Report prepared for Milford Dart Limited* (undated but received 15 January 2010)

URS Limited, Drawings C001 – C005, and accompanying email from Michael Sleigh Milford Dart Limited received 2 December 2009.

Milford Dart Limited. *Memorandum – Amendments to Description of Routeburn Portal and proposed Routeburn Access Road* 15 February 2010.

Conservation Consultancy Limited *Addendum to the Natural Values of the Routeburn Road End*, for Milford Dart Limited. Undated -received February 2010.

Documents submitted 25 March 2011

Baxter Design Group Limited *Milford Dart - Routeburn Portal Current Design 2011 Mt Aspiring National Park Landscape Assessment, Report prepared for Milford Dart Limited* (undated but received 25 March 2011)

Hegley Acoustic Consultants, *Letter Dated 4 February 2011 Re: Milford Dart Limited, Amendment to Concession for the final Routeburn Portal Location*

URS, *Milford Dart Tunnel Amendment to Concession Application to Adopt the Final Routeburn Portal Location*, 24 January 2011.

Reviews commissioned 17S(4)(a) Conservation Act 1987 [reports / advice commissioned by the Minister of Conservation].

Becca Infrastructure LTD, *Peer Review of 'Assessment of Visitor Market Impact of the Milford Dart Proposal'* prepared for Southland Conservancy March 2007.

Becca Infrastructure LTD, *Milford Dart Concession Application Audit – Geotechnical/Engineering/Roading/Recreation'* prepared for Southland Conservancy Sept 2006.

Becca Infrastructure LTD, *Milford Dart Concession Application Audit* prepared for Southland Conservancy January 2007

Department of Conservation, Wakatipu Area Office, *Assessment of the Conservation Values at the Routeburn Portal of the proposed Milford Dart Tunnel*, Internal Report, March 2010.¹³⁸

Department of Conservation, Wakatipu Area Office 'comments on report and conditions' via email R Clarke to C Visser 15 June 2011

Department of Conservation , Southland Conservancy Office , *Technical Advice Internal Report* October 2009

Wildland Consultants Ltd, *Milford Dart Tunnel Concession Application; Audit of Ecological Information, Report Prepared for the Department of Conservation Southland Conservancy* February 2007.

¹³⁸ NOTE – this report refers to a different Routeburn Portal Site than that currently proposed.

Wildland Consultants Ltd, *Milford Dart Concession Application Audit Sewage/Waste water/Solid waste/Hydrology/Hydraulics* (MWH New Zealand Ltd) March 2007

Other Information

Department of Conservation, *Assessment of Environmental Effects for The Routeburn Road End Shelter and Car Park Re-development*, October 2006 (DOCDM 78648)

Appendix B: Maps and Drawings provided by MDL and referred to this report

Appendix C: Draft Concession Conditions proposed by Applicant

Appendix D: Draft Environmental Management Plans Submitted by Applicant

Appendix E: Standard Conditions of Easement

Addendum 'Tunnel Design and Tunnel Safety Considerations' (29 Oct 2011)

29 Oct 2011

Addendum Officer's Report to Decision Maker:

Notified Multi Conservancy Application

'DART PASSAGE' TUNNEL FIORDLAND AND MT. ASPIRING NATIONAL PARKS

MILFORD DART LIMITED

FILE: PAC 14 06 185

4 OCTOBER 2011

TUNNEL DESIGN AND TUNNEL SAFETY CONSIDERATIONS

The Decision Maker has requested clarification regarding the process and responsibilities surrounding approval of tunnel design and systems and processes surrounding safe construction and use of the Dart Passage Tunnel in Fiordland and Mt Aspiring National Parks.

A concession for the construction and operation of a bus tunnel of this scale is a new activity to be considered under the Conservation Act 1987 and National Parks Act 1980. While there are other underground tunnels on, and through public conservation land, these are either not concessions involving passenger egress, or authorisations issued under the Conservation Act¹³⁹.

Although the tunnel proposed by Milford Dart Limited (MDL) is not a public tunnel, as MDL would control entry into the tunnel (and would be responsible for doing so), members of the public who are passengers in buses, will be in the national park. The Minister of Conservation has a legal responsibility to ensure that there are appropriate legal mechanisms in place to ensure that any people in the tunnel would be safe.

The purpose of this addendum to the Officer's Report is to;

1. Identify and outline the responsibilities of the Minister of Conservation in respect of the safety aspects of concessions granted;
2. Identify and outline the responsibilities of other regulatory agencies in respect of safety of activities and developments authorised by a concession granted by the Minister of Conservation;
3. Detail the specific conditions proposed as a condition of any grant of a concession to MDL, which give effect to 1 and 2 above.

¹³⁹ Manapouri Tailrace Tunnels Lake Manapouri to Deep Cove authorised via the Manapouri-Te Anau Development Act 1963, and includes a tunnel to the Manapouri power Station to which buses operate tours with permission of Meridian Energy. Various mines authorised via access arrangement under Crown Minerals Act 1991. Homer Tunnel – public road through Fiordland National Park managed by Transit NZ.

1. Responsibilities of the Minister of Conservation in respect of safety.

Conservation Legislation

Applications for concessions are considered by the Minister of Conservation pursuant to part 3B of the Conservation Act 1987 (CA). This analysis is provided in the Officer's Report (to which this paper is an addendum).

Consideration of safety matters is not explicitly a 'Matter to be considered by Minister' in respect determining if a concession could be granted (having regard to section 17U of the CA). However, it is something that may be considered by the Minister (particularly given the provisions of the Occupiers Liability Act 1962 and the Health and Safety in Employment Act 1992, both discussed in more detail below). Section 17U(1)(b) of the CA requires consideration of 'the effects of the activity, structure, or facility'. Effects encompass a wide range of matters and may include the degree of danger or hazard introduced to other visitors by a new concession activity. Accordingly any measures that can reasonably and practicably be undertaken to avoid, remedy or mitigate adverse effects (section 17U(1)(c)) including, obviously, the putting into place of safety measures have a bearing on an applicant's ability to carry out an activity. Safety is also a relevant consideration in the Department's processes via s17S(1)(f)¹⁴⁰ and s17U(1)(d)^{141, 142}.

Occupiers Liability Act 1962 and the Health and Safety in Employment Act 1992.

The Department has responsibilities in respect of the safety of persons on public conservation lands under the Occupiers Liability Act 1962 (OLA) and the Health and Safety in Employment Act 1992 (HSE Act).

The OLA imposes a duty on occupiers of land or buildings to take such care in all circumstances as is reasonable to ensure that visitors are reasonably safe in using the land or building for the purpose for which they are invited or permitted by the occupier to be there.

The HSE Act places specific obligations on persons who control workplaces. It requires a person who controls a place of work to take all practical steps to ensure that no hazards that are in or arise in the workplace harm:

- DOC employees,
- DOC contractors,
- Concessionaires, Concessionaires' employees and clients,
- other people in the vicinity of the workplace

The HSE Act imposes obligations on employers. It requires employers to take all practicable steps to ensure the safety of employees while at work; and in particular to take all practicable steps to:

- Provide and maintain a safe working environment for employees
- Ensure that plant used by employee's at work is arranged, designed, made, and maintained that it is safe to use

¹⁴⁰ The ability of the applicant to carry out the activity.

¹⁴¹ Any information received by the MOC under sections 17S&17T of the Conservation Act 1987.

¹⁴² Parts of the above paragraphs have been extracted from a previous SOP "The Requirements for Concessionaire Safety Plans" QD Code VC1410.

- Ensure that while at work employees are not exposed to other hazards
- Develop procedures for dealing with emergencies that may arise while employees are at work.
- The HSE Act also requires employers to take all practicable steps to ensure that no action or inaction of any employee while at work harms any other person.¹⁴³

At present the the Dart Passage Tunnel does not exist, so is not a “place of work”. If the Minister grants a concession once construction work commences, it will become a place of work. The concession, if granted, proposes lease for the two portals at either end of the tunnel and an easement for the tunnel itself. For all intents and purposes however, Milford Dart will have exclusive possession, and therefore control, of the tunnel as no one can enter without its permission. The Minister would not be the Occupier in that instance for the purposes of the Occupiers Liability Act. However, in terms of the HSE Act the Minister as Landowner and Lessor retains some control in terms of compliance with the lease terms and conditions and knowledge of any hazards, despite the Concessionaire having the main responsibility as lessee who has effective exclusive control over the tunnel¹⁴⁴. Thus the Minister has a duty to take all reasonably practicable steps to ensure that persons using the tunnel are reasonably safe. This duty is not the same duty as an employer or even a contractor or a principal.

The Department’s current practice for many concessions is to require the concessionaire to have an independently audited safety plan in place as a condition of the concession. The intention of this is to ensure that concessionaires offer a safe and reliable service to their clients. The Minister (and Department) is not an expert in these activities so it requires that the safety plan be audited. This is a practical step that the Minister (and Department) can take to prevent harm arising from hazards in the work place.

The Department is a conservation agency not a safety agency, and as an organisation the Department does not possess the necessary expertise in these fields. Therefore, the Minister (and Department) does not set safety standards, or ‘judge’ the safety plan for any concession operation. This is primarily the responsibility of the Concessionaire and the industry in which they operate. It is they, not the Minister (and Department), which have the necessary competencies, to ensure that their clients are protected from harm.

What is required

This duty on the Minister can be achieved by requiring the Concessionaire:

- obtain an independently audited safety plan from a suitably qualified auditor; and
- obtain and comply with all necessary authorisations required by New Zealand law which relate to safety (specifically a building permit) and to comply with other laws, regulations, provisions and requirements of any other competent authority relating to the exercise of the activity authorised by the concession, and
- the other special conditions of concession proposed (see section 3) below.

¹⁴³ Concessionaire Safety Plans Guidelines for Applicants, leaflet produced by the Department of Conservation: <http://www.doc.govt.nz/publications/about-doc/concessions-and-permits/concessions/concessionaire-safety-plans/>

¹⁴⁴ More than one person can be held concurrently liable under the HSE Act, s2(2)

2. Responsibilities of other regulatory authorities in respect of safety

Construction and operation of the Dart Passage Tunnel will require, in addition to a concession, a Resource Consent(s) and a Building Permit.

Building Act 2004

Building permits are considered and issued by Building Consent Authorities, which are Local Authorities, in this case the consenting authority will be the relevant District Councils.

For a building permit to be issued, a building needs to comply with the Building Code.¹⁴⁵ The Building Code is schedule 1 of the to the Building Act 2004 and *'prescribes functional requirements for buildings and the performance criteria with which buildings must comply in their intended use'*¹⁴⁶

In respect of safety matters, the Building Code includes (but is not limited to) requirements in respect of control of fire /egress from fire, and 'durability' of structures from fire.

The process of considering an application for a building permit will consider design matters related to tunnel safety.

It should be noted that the tunnel design proposed by MDL at this point in time is not a 'final design'. MDL need to carry out final design work which can only be carried once they have conducted further survey work to confirm the rock types they will encounter across the route. These final investigations and final design stage are by their nature very expensive, and as such MDL have sought approval of a concession subject to final design being confirmed before carrying out this work.

3. Proposed conditions of grant to give effect to responsibilities around safety.

The imposition of conditions around safety, are conditions set pursuant to s 17X of the CA, which provides;

'In granting any concession, the Minister may impose such conditions as he or she considers appropriate for the activity, structure, or facility, including (but not limited to) conditions relating to or providing for—

(a) the activity itself, the carrying out of the activity, and the places where it may be carried out:'

...'

A number of the Departments 'standard' concession conditions relate to safety. Special conditions are also proposed as a condition of any grant of a concession to MDL.

These conditions are detailed below.

Standard Conditions

¹⁴⁵ <http://www.legislation.govt.nz/regulation/public/1992/0150/latest/DLM162576.html>

¹⁴⁶ <http://www.consumerbuild.org.nz/publish/bact/buildingact-nzbuildingcode.php>

14. **What about Health and Safety?** (note – this is a standard condition in Lease Documents but not in Easements – it will be imposed a special condition in any Easement)

14.1 The Concessionaire must exercise the rights granted by this Concession in a safe and reliable manner and must comply with the Health and Safety in Employment Act 1992 and its regulations and all other provisions or requirements of any competent authority relating to the exercise of this Concession. The Concessionaire must comply with its safety plan (if one is required in Item 15 of Schedule 1), and with any safety directions of the Grantor.

14.2 Before commencing the Concession Activity the Concessionaire must, if required by Item 15 of Schedule 1:

- (a) prepare a safety plan;
- (b) have it audited by a suitably qualified person approved by the Grantor and forward to the Grantor a certificate from the auditor certifying that the safety plan is suitable for the Concession Activity; and
- (c) the Concessionaire must obtain from the auditor details as to when the safety plan is to be re-audited. The Concessionaire must comply with any such requirement to re-audit and forward a copy of the re-audit certificate to the Grantor within 5 working days of the certificate being issued.

14.3 If clause 13.2 applies then if the Concessionaire amends or replaces the safety plan then before the amendment or replacement plan takes effect the Concessionaire must comply with 13.2(b) and (c).

14.4 The Grantor may at any time request the Concessionaire to provide the Grantor with a copy of the current safety plan in which case the Concessionaire must provide the copy within 10 working days of receiving the request.

14.5 Receipt of the certified safety plan by the Grantor is not in any way to limit the obligations of the Concessionaire under clause 14 and is not to be construed as implying any responsibility or liability on the part of the Grantor.

14.6 The Concessionaire must:

- (a) notify the Grantor of any natural events or activities on the Land or the surrounding area which may endanger the public or the environment;
- (b) take all practicable steps to protect the safety of all persons present on the Land and must, where necessary, erect signposts warning the public of any dangers they may encounter as a result of the Concessionaire's operations;
- (c) take all practicable steps to eliminate any dangers to the public and must clearly and permanently mark any that remain and of which the Concessionaire is aware;

- (d) record and report to the Grantor all accidents involving serious harm within 24 hours of their occurrence and forward an investigation report within 3 days of the accident occurring;
- (e) ensure that all contracts between the Concessionaire and any contractors contain, at a minimum, the same requirements as clause 14;
- (f) be satisfied that facilities or equipment provided by the Grantor to enable the Concession Activity to be carried out meet the safety requirements of the Concessionaire;
- (g) not bring onto the Land or any land administered by the Department any dangerous or hazardous material or equipment which is not required for purposes of the Concession Activity; and if such material or equipment is required as part of the Concession Activity, the Concessionaire must take all practicable steps at all times to ensure that the material or equipment is treated with due and proper care.

15. What are the compliance obligations of the Concessionaire?

15.1 The Concessionaire must comply where relevant:

- (a) with the provisions of any conservation management strategy or conservation management plan under the Conservation Act 1987 or Part IIA of the Reserves Act 1977, or any general policy statement made under the Conservation Act 1987, Reserves Act 1977, National Parks Act 1980, or Wildlife Act 1953, or management plan under section 45 of the National Parks Act 1980, whichever is appropriate to the Land, together with any amendment or review of any policy, strategy or plan whether approved before, on, or after the date on which this Concession takes effect; and
- (b) with the Conservation Act 1987, the Reserves Act 1977, the National Parks Act 1980, Wildlife Act 1953 and any other statute, ordinance, regulation, bylaw, or other enactment (collectively the "Legislation") affecting or relating to the Land or affecting or relating to the Concession Activity, including any regulations made under the Conservation Act 1987 and Wildlife Act 1953 or bylaws made under the Reserves Act 1977 or the National Parks Act 1980; and
- (c) with all notices and requisitions of any competent authority affecting or relating to the Land or affecting or relating to the conduct of the Concession Activity; and
- (d) with all Department signs and notices placed on or affecting the Land; and
- (e) with all reasonable notices and directions of the Grantor concerning the Concession Activity on the Land.

15.2 The Concessionaire must comply with this Concession.

15.3 A breach or contravention by the Concessionaire of a relevant conservation management strategy, conservation management plan, management plan or any

statement of general policy referred to in clause 15.1.(a) is deemed to be a breach of this Concession.

- 15.4 A breach or contravention by the Concessionaire of any Legislation affecting or relating to the Land or affecting or relating to the Concession Activity is deemed to be a breach of this Concession.

Special Conditions

3. Construction Specifications and Plans and Construction Environmental Management Plans

- 3.1 Prior to construction, the Concessionaire shall prepare for the approval of the Grantor Construction Specifications and Plans and Environmental Management Plans for all components of the Activity.
- 3.2 The format and scope of these Construction Specifications and Plans and Construction Environmental Management shall be discussed by the Grantor and the Concessionaire and be finally approved by the Grantor, and shall detail and address, at a minimum;
- (i) Detailed final engineering design specifications and methodologies for all components of the activity, including clearances and excavations, waste water management systems, and methodologies and timing of all construction works;
 - (ii) Methods for managing effects as set out in the concession lodged by Milford Dart Limited comprising those documents set out in Schedule #.
 - (iii) The Concessionaire shall ensure that the Construction Management Plan includes a sub-set of management plans that cover the following topics as a minimum:
 - i. Health and Safety;
 - ii. Hazardous Substances;
 - iii. Noise Management;
 - iv. Risk Management;
 - v. Waste Management;
 - vi. Archaeological and Heritage Protocols and Plans;
 - vii. Mitigation of Effects on Users of the Area
 - viii. Erosion and Sediment Control;
 - ix. Freshwater Management
 - x. Terrestrial Ecology Management.
- 3.3 The Concessionaire shall ensure that these plans are prepared by a suitably qualified person(s).
- 3.4 The Grantor will audit the Construction Specifications and Plans and Construction Environmental Management Plans to ensure that final 'on the ground' design and construction specifications do not differ in location, or substantially in scale or level of effect to the concession application lodged by the Concessionaire. The concession application lodged by the Concessionaire comprises those documents listed in schedule ## (Appendix A of this report 'documents comprising concession application – lodged by Milford Dart Limited).

- 3.5 The Grantor may require all or some of the Construction Specifications and Plans and Construction Environmental Management Plans provided pursuant to this concession to be independently audited by an auditor approved by the Grantor. The auditor shall certify that the specifications and plans have been prepared in accordance with best practice for the relevant discipline, and shall advise the Grantor if the level of effect arising from on the ground application of the such Specifications and Plans would exceed the level of effects, or type of effects, described by the Concessionaire in the Concession Application. At a minimum, the Grantor will require external audit of all Engineering Specifications and Plans.
- 3.6 Once audited and approved by the Grantor, the Construction Specifications and Plans and Construction Environmental Management Plans shall form part of this Concession, and the Concessionaire shall not deviate from these Specifications and Plans without prior written approval of the Grantor.
- 3.7 The Concessionaire shall pay the costs incurred by the Grantor (including costs of independent audit) in auditing and approving all Construction Specifications and Plans and Construction Environmental Management Plans required pursuant to this Concession.
- 3.8 All Construction Specifications and Plans and Construction Environmental Management Plans provided pursuant to this concession shall be provided by the Concessionaire to Grantor within reasonable time frames to allow the Grantor to review these plans.

4. Operational Management Plan

- 4.1 Prior to the commencement of the operation of the Dart Passage Tunnel, the Concessionaire shall submit an Operational Management Plan to the Grantor for approval.
- 4.2 The Grantor will audit the Operational Management Plan, and may require all or some aspects of the Operational Management Plan to be independently audited by an auditor approved by the Grantor. The auditor shall certify that Operational Management Plan has been prepared in accordance with best practice for the relevant discipline.
- 4.3 The objectives of the Operational Management Plan shall be:
- iv. To ensure the Dart Passage Tunnel and its associated infrastructure are maintained to best practice standards, for the duration of this Concession;
 - v. To ensure the health and safety of the public and employees are protected by the Concessionaire at all times during the operation and use of the Dart Passage Tunnel, and including but not be limited to specification of final criteria for Approved Vehicles permitted to use the tunnel (as proposed in the draft concession conditions proposed supplied by Milford Dart Limited in their concession Application), and;
 - vi. To give effect to the conditions of this concession, and identify the environmental impacts, mitigation measures, monitoring of environmental performance, emergency plans and reporting on all relevant operations activities including, but not limited to requirements under this Concession, and all sections of the various relevant Acts and Bylaws.

- 4.4 Once audited and approved by the Grantor, the Operational Management Plan shall form part of this Concession, and the Concessionaire shall not deviate from these Specifications and Plans without prior written approval of the Grantor.

5. Safety

- 5.1 The Concessionaire must control access to the tunnel at all times, to ensure that no person can enter the Dart Passage Tunnel without the knowledge or permission of the Concessionaire.
- 5.2 Only Approved Vehicles approved by the Concessionaire are permitted to use the Dart Passage Tunnel.
- 5.3 The Concessionaire must exercise the rights granted by this Concession in a safe and reliable manner and must comply with the Health and Safety in Employment Act 1992 and its regulations and all other provisions or requirements of any competent authority relating to the exercise of this Concession. The Concessionaire must comply with its safety plan, and with any safety directions of the Grantor.
- 5.4 Before commencing the Concession Activity the Concessionaire must;
- (a) prepare a safety plan;
 - (b) have it audited by a suitably qualified person approved by the Grantor and forward to the Grantor a certificate from the auditor certifying that the safety plan is suitable for the Concession Activity; and
 - (c) the Concessionaire must obtain from the auditor details as to when the safety plan is to be re-audited. The Concessionaire must comply with any such requirement to re-audit and forward a copy of the re-audit certificate to the Grantor within 5 working days of the certificate being issued.
- 5.5 If clause 5.4 applies then if the Concessionaire amends or replaces the safety plan then before the amendment or replacement plan takes effect the Concessionaire must comply with 5.4 (b) and (c).
- 5.6 The Grantor may at any time request the Concessionaire to provide the Grantor with a copy of the current safety plan in which case the Concessionaire must provide the copy within 10 working days of receiving the request.
- 5.7 Receipt of the certified safety plan by the Grantor is not in any way to limit the obligations of the Concessionaire under clause 5 and is not to be construed as implying any responsibility or liability on the part of the Grantor.
- 5.8 The Concessionaire must:
- (a) notify the Grantor of any natural events or activities on the Land or the surrounding area which may endanger the public or the environment;

- (b) take all practicable steps to protect the safety of all persons present on the Land and must, where necessary, erect signposts warning the public of any dangers they may encounter as a result of the Concessionaire's operations;
- (c) take all practicable steps to eliminate any dangers to the public and must clearly and permanently mark any that remain and of which the Concessionaire is aware;
- (d) record and report to the Grantor all accidents involving serious harm within 24 hours of their occurrence and forward an investigation report within 3 days of the accident occurring;
- (e) ensure that all contracts between the Concessionaire and any contractors contain, at a minimum, the same requirements this clause 5.
- (f) not bring onto the Land or any land administered by the Department any dangerous or hazardous material or equipment which is not required for purposes of the Concession Activity; and if such material or equipment is required as part of the Concession Activity, the Concessionaire must take all practicable steps at all times to ensure that the material or equipment is treated with due and proper care.

Chris Visser, Clare Lenihan

29 Oct 2011