

Milford Opportunities Project

MILFORD OPPORTUNITIES PROJECT TRANSPORT & INFRASTRUCTURE STREAM - ENGINEERING FEASIBILITY ASSESSMENT (STAGE 3) STAGE 2 REVIEW OF COST ESTIMATES

19 JUNE 2024.

CONFIDENTIAL





MILFORD OPPORTUNITIES PROJECT TRANSPORT & INFRASTRUCTURE
STREAM - ENGINEERING FEASIBILITY ASSESSMENT (STAGE 3)
STAGE 2 REVIEW OF COST ESTIMATES.

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1 PROJECT BACKGROUND

1.1 BACKGROUND

The Milford Opportunities Project launched an ambitious and innovative masterplan for Milford Sound Piopiotahi, the Milford corridor and the region surrounding it, in July 2021.

Masterplan concepts and recommendations were developed through research and engagement with the community, key stakeholders, national interests and the New Zealand public. (Milford Opportunities Project: Masterplan, 2023).

WSP Engineering Work Stream (Stage 3)

The current engineering work stream phase (Stage 3) of work follows the Stage 2 works completed by others. The objective of this Stage 3 work is intended to build on the technical assessments carried out in Stage 2 and take them to the next level to establish a higher degree of certainty and the technical feasibility of the infrastructure proposals in the Masterplan. The stage 3 engineering workstream included deliverables from the following WSP NZ Ltd (WSP) disciplines: Statutory Planning, Natural Hazards, Environmental (land contamination), Sustainability, Climate Change, Geotechnical, Three Waters, Structural and Aviation (Heliport).

Stage 1 Review of Cost Estimates

The Stage 1 review of cost estimates was delivered by WSP NZ Ltd (WSP) at the commencement of Stage 3 engineering work stream (November 2023). This review entailed updating the previous (May 2021) cost estimates to present day value using adjustment indexes from Waka Kotahi Adjuster website.

The Stage 1 cost estimation was developed from a PDF version of the Stantec, Stage 2 Infrastructure Assessment Report – Appendix 2.

Following acceptance of the WSP Stage 1 Cost Estimation Report, the Client provided a Microsoft Excel version of the previous Consultant's cost estimation, referred to as V5, this provided significantly more detail than was previously known about how the individual estimates were derived, it was also an updated and current version of the previous consultant's cost estimation.

Stage 2 Review of Cost Estimates

Recommended options at each hub / node / short-stop have been considered throughout the Milford Opportunities Project (MOP) Stage 3 Infrastructure Engineering Feasibility Assessment, this information has informed the cost estimation process contained within this review.

2 INFORMATION AND REPORTS

The following documents have assisted in the preparation of this report:

- MOP - Request for Proposal: Milford Opportunities Project (MOP) - Transport & Infrastructure Stream Engineering Feasibility Assessment Contract Number SSI-O-406.
- Stantec - Milford Opportunities Project, Cost Estimates V5 20201207 MS Excel, December 2020.
- WSP Report - MOP, Stage 1 Review of Cost Estimates, November 2023.
- WSP Reports - MOP, Contaminated Land Assessments, April & May 2024.
- WSP Report - MOP, Hazards Risk Assessment, Part A, March 2024.
- WSP Report - MOP, Hazards Risk Assessment, Part B, June 2024.
- WSP Report - MOP, Three Waters Infrastructure Condition and Future State Assessments, June 2024.
- WSP Report - Geotechnical Feasibility, April 2024.
- WSP Report - Vertical Infrastructure, Design Considerations and Construction Feasibility, June 2024.
- WSP Report - MOP, Milford Sound Heliport Feasibility Assessment, May 2024.

3 METHODOLOGY

Base estimates for each hub / node / short-stop have been derived from existing information, i.e. previous Consultant work, Stage 1 Cost Estimation Report or new estimates compiled as part of this Project.

3.1 ESTIMATES (EXCLUDING WSP THREE WATERS)

Base estimates for each hub / node / short stop infrastructure item, excluding WSP Three Waters estimates (ID's: PHub12-a, PHub13-a, CML2, GV5, GV6, CKF7, CKF8, CKF10, CCE4-a, CCE13, CCE14, CCE15, CTH3, CTH4, TAV10) have been retained from earlier phases of the Project, except the adjustments made for the Stage 1 Cost Estimation have been recalculated following receipt of the Milford Opportunities Cost Estimate V5 electronic file.

This has enabled the duplication of contingency, professional fees and other %-based assumptions to be removed and the escalation of the true base estimate figures as per the Stage 1 Cost Estimation Report. The estimates have then been rebuilt using the same or similar principles as the previous Consultant has done.

The recalculation entailed:

- Removing:
 - Contractor Preliminary and General - 15%.
- Adjusting the base estimate using the Waka Kotahi adjustment indexes in accordance with the WSP Stage 1 Cost Estimation Report (November 23).
- Recalculated estimate by reapplying the %-based assumptions as above, except as adjusted as below:
 - Increased Contractor Preliminary and General to 20% of the combined revised base estimate + scope of works uncertainty value:
 - Current and recent projects of similar scale, nature and complexity within the Te Anau to Milford Sound area are proving Contractor P&G is in the order of 30% of project value. The 30% P&G is addressed via the 20% P&G and 10% location extra over.
 - Risk factor adjustment, refer section 3.3 below.

Taking the above into account when building the estimates, the following has been applied:

- **Revised Base Estimate** – Base estimate multiplied by the Waka Kotahi adjustment indexes in accordance with the WSP Stage 1 Cost Estimation Report (November 23).
- **Scope of Works Uncertainty** – 20% of the revised base estimate.
- **Contractor P&G** - 20% of the combined revised base estimate + scope of works uncertainty value.
- **Location Extra Over** - 8% or 10% of the combined revised base estimate + scope of works uncertainty + Contractor P&G value.

- **Professional Services - Design fees** – varied 6% to 10% of the combined revised base estimate + scope of works uncertainty + Contractor P&G + location extra over value.
- **Professional Services - Consent & Tender** - Fees relating to procurement / tendering, obtaining building consents and engineering approvals - 2% of the combined revised base estimate + scope of works uncertainty + Contractor P&G + location extra over value.
- **Professional Services - Construction fees** - 6% of the combined revised base estimate + scope of works uncertainty + Contractor P&G + location extra over value.
- **Contingency** - 20% of the combined revised base estimate + scope of works uncertainty + Contractor P&G + location extra over + professional fees value.
- **Construction Complexity** (Risk Factor Adjustment) – varied 5% to 20% of the combined revised base estimate + scope of works uncertainty + Contractor P&G + location extra over + professional fees value.

3.2 WSP THREE WATERS ESTIMATES

New estimates have been derived for the following three waters infrastructure identifiers (ID):

- PHub12a - Milford Sound Hub - Wastewater.
- PHub13a - Milford Sound Hub - Potable Water.
- CML2 - Mirror Lakes - Wastewater.
- GV5 - Gertrude Valley - Potable Water.
- GV6 - Gertrude Valley - Wastewater.
- CKF7 - Knobs Flat - Potable Water.
- CKF8 - Knobs Flat - Wastewater.
- CKF10 - Knobs Flat - Kiosk Creek Accommodation - Wastewater
- CCE4a - Eglinton Reveal - Eglinton Reveal Carpark.
- CCE13 - The Chasm - Wastewater.
- CCE14 - Cascade Creek - Potable Water.
- CCE15 - Cascade Creek - Wastewater.
- CTH3 - The Divide - Super Track Head - Wastewater Services.
- CTH4 - The Divide - Super Track Head - Potable Water Services.
- TAV10 - Te Anau Hub - Stormwater.

The revised base estimates have been developed on the following basis:

- Within the accuracy range of +50% to -30%.
- Exclude contingency.
- Exclude professional services, consenting and construction monitoring fees.
- Includes scope of works uncertainty.
- Include Contractor Preliminary and General.
- No escalation of base estimates as estimates are current.
- Risk factor not included as risks are included in the development of the Three Waters estimates.

Taking the above into account when building the estimates, the following has been applied:

- **Location Extra Over** – varied 5% to 10% of the revised base estimate.
- **Professional Services - Design fees** – 6% of the combined revised base estimate + location extra over value.
- **Professional Services - Consent & Tender** - Fees relating to procurement / tendering, obtaining building consents and engineering approvals - 2% of the combined revised base estimate + location extra over value.
- **Professional Services - Construction fees** – 6% of the combined revised base estimate + location extra over value.
- **Contingency** – 20% of the combined revised base estimate + location extra over + professional fees value.

3.3 INFLUENCES ON ESTIMATION PROCESS

The following reports have been completed as part of the WSP stage 3 engineering work stream and have been used in the preparation of this report:

1. WSP Reports - MOP, Contaminated Land Assessments, April & May 2024.
2. WSP Report - MOP, Hazards Risk Assessment, Part A, March 2024.
3. WSP Report - MOP, Hazards Risk Assessment, Part B, June 2024.
4. WSP Report - MOP, Three Waters Infrastructure Condition and Future State Assessments, June 2024.
5. WSP Report - Geotechnical Feasibility, April 2024.
6. WSP Report - Vertical Infrastructure, Design Considerations and Construction Feasibility, June 2024.

Only high-level concept design and/or risk assessments have been undertaken within the above-mentioned reports, WSP has assessed the outcome of each report on a risk-based approach to determine any additional costs that may be attributed to each hub / node / short-stop budget amount. This is presented in Figure 1 Risk Matrix below.

Risk Level	Multiplier	Percentage Increase	Geotechnical	Structures	Contaminated Land	Natural hazards/climate change
LOW	1	0%	Feasible/Low-Med Liquefaction/Simple Design and Investigation	IL2	Green - HAIL	
MEDIUM	1.1	10%	Feasible/ High Liquefaction/Simple Design and Investigation	IL3	Orange - HAIL	If additional design is required for the asset but is not a refuge
HIGH	1.2	20%	Feasible - Challenging/High Liquefaction/ High Complexity	IL4	Red - HAIL	If additional Natural hazard/Climate change hazard has been identified for any refuge/evacuation areas

Figure 1 Risk Matrix

Each hub / node / short-stop has been assessed in terms of the perceived risk of cost increase due to complexity and assigned a risk and multiplier. Prior to applying to the estimate, the risk multipliers are averaged to avoid duplication and derive an Implementation Complexity presented in monetary terms.

This amount is then added to the cost estimate to derive an overall hub / node / short-stop cost estimate.

4 ASSUMPTIONS MADE

- WSP assume the previous consultants cost estimates are accurate and in line with standard industry practise.
- The design, consenting and construction of the various projects being combined to form significant packages of work, which will result in economies of scale and efficiencies being realised.
- Adjustment indexes are from Waka Kotahi Adjuster website (Quarter 3, 2023).
- All values / estimates exclude GST.

4.1 EXCLUSIONS

The following items have not been considered or included in any estimate:

- Costs associated with any consultation processes.
- Costs and fees relating to National Environmental Standards (NES)/ Resource Management Act (RMA) / Statutory planning processes, applications and approvals.
- Cost and fees relating to Conservation Act and National Parks Act statutory planning processes, applications and approvals.
- Building Consent and Engineering Approvals - Consent application, processing and inspection fees.
- Legal costs.
- Finance costs.
- Land purchase / subdivision costs.
- Furniture, Fittings and Equipment (FF&E).

The following cost estimates are excluded from the WSP cost estimation report and spreadsheet for reasons provided below:

- **PHub 5: Milford Sound, Marine Interpretive Centre** – Milford Opportunities Project (MOP) Board confirmed this project is deleted.
- **PHub14: Milford Sound, Power Supply** – Cost estimate has been prepared by others. Refer to the Stantec, Energy Assessment Recommendations Report.
- **PHub16: Milford Sound, Piopiotahi Viewing Deck Walkway** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **PDel5: Milford Sound, Shuttles - Capital Investment** - Cost estimate has been prepared by others. Refer to the Beca, Milford Sound Park and Ride Design Report.
- **PDel6: Milford Sound, Delta Walking Track - Accessible** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.

- **PDel7: Milford Lodge to Tutoko Bridge Walking Track** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **PEOx1: Milford Sound Hub – Aerodrome - Pavements - Runway reconstruction** - Cost estimate has been prepared by others. Refer to the Stantec, Milford Aerodrome Pavement Assessment, May 2022 and CPM, Milford Sound Aerodrome Project Preliminary Design Estimate & High-Level Programme, November 2023.
- **PEOx2: Milford Sound Hub – Aerodrome - Pavements - Taxiway Realignment** - Cost estimate has been prepared by others. Refer to the Stantec, Milford Aerodrome Pavement Assessment, May 2022 and CPM, Milford Sound Aerodrome Project Preliminary Design Estimate & High-Level Programme, November 2023.
- **PFW3: Milford Sound, Bowen Falls Pontoon Walkway** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CH1: Cleddau Cirque – Chasm, Walking tracks and huts** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **GVI: Gertrude Valley, Walking tracks and huts** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CKF5: Knobs Flat Walking Track - Abled Body** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CKF6: Knobs Flat Walking Track - Accessible** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CCE1: Homer Tunnel – Eastern Portal** - Project deleted by MOP.
- **CCE6: Cycleway - Knobs Flat to Cascade Creek** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CCE7: Cycleway - Knobs Flat from FNP Threshold** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CCE10: Walking Track - Mistake Creek Destination** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CCE11: Tramping Hut - Mistake Creek Destination** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CTH5: The Divide, Super Track Head - Power** - Cost estimate has been prepared by others. Refer to the Stantec, Energy Assessment Recommendations Report.
- **CTH6: The Divide, Walking Track - Lake Marian Loop** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CTH7: The Divide, Walking Track - Waterfall Loop** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CTH8: The Divide, Walking Track - Nature Loop** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CTH9: The Divide, Walking Track - Track Head to Key Summit** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.

- **CTH10: The Divide, Walking Track - Cascade Creek to Key Summit** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CTH11: The Divide, Walking Track - Lake Howden - Upgrade** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **CTH12: The Divide, Walking Track - Track Head to Hollyford Track** - Cost estimate has been prepared by others. Refer to the Southern Land Ltd, Walking and Cycling Experiences Report.
- **TAB2: Te Anau Hub, Pavements - Park and Ride - Te Anau** - Cost estimate has been prepared by others. Refer Beca, Milford Sound Park and Ride Design Report.
- **TAB3: Buses - Capital Investment** - Cost estimate has been prepared by others. Refer Beca, Milford Sound Park and Ride Design Report.
- Reports / Cost estimates prepared by others.

Cost estimates have not been provided for the following items, due to the scope and extent of the projects being unknown:

- **CML1: Mirror Lakes** - Road layout.
- **CCE6: FNP Entrance** - Road Layout.
- **GV2: Gertrude Valley** - Road Layout.
- **GV3: Gertrude Valley** - Carpark.
- **GV4: Gertrude Valley** - Flood Protection – Maintenance.
- **OCC3: Mistake Creek** - Flood Protection – Maintenance.
- **OCC4: Mistake Creek** - Kayaking facility.
- **TD1: The Divide** - Car Park.
- **TD2: The Divide** - Visitor Shelter.

5 CONCLUSIONS

Cost estimates for each hub / node / short-stop, excluding those listed in 4.1 above, have been developed following the studies undertaken as part of the Project.

The Net result is an overall estimate of **\$372,087,038 + GST**, accurate to -30% / +50%.

6 LIMITATIONS

This report ('Report') has been prepared by WSP New Zealand Limited ('WSP') exclusively for Department of Conservation ('Client') in relation to the Milford Opportunities Project Transport & Infrastructure – Engineering Feasibility Assessment ('Purpose') and in accordance with the Agreement for Engagement of Consultant dated 11th October 2023 ('Agreement'). The findings in this Report are based on and are subject to the assumptions specified in the Report. WSP accepts no liability whatsoever for any use or reliance on this Report, in whole or in part, for any purpose other than the Purpose or for any use or reliance on this Report by any third party.

In preparing this Report, WSP has relied upon data, surveys, analyses, designs, plans and other information ('Client Data') provided by or on behalf of the Client. Except as otherwise stated in this Report, WSP has not verified the accuracy or completeness of the Client Data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in this Report are based in whole or part on the Client Data, those conclusions are contingent upon the accuracy and completeness of the Client Data. WSP will not be liable for any incorrect conclusions or findings in the Report should any Client Data be incorrect or have been concealed, withheld, misrepresented or otherwise not fully disclosed to WSP.

APPENDIX A

COST ESTIMATES – MICROSOFT EXCEL SPREADSHEET

RELEASED BY THE MINISTER OF CONSERVATION