

Title: Road Asset Valuation
Section: Tairāwhiti Roads
Prepared by: Susan Rebano-Edwards (Asset Planning Manager)
Meeting Date: 11 October 2018

Legal Financial Significance = low

Report to ASSETS & INFRASTRUCTURE Committee for information

SUMMARY

The purpose of this report is to provide the Committee with a summary of the results of the Road Asset Valuation 2018 undertaken by Stantec (formerly MWH Consultants NZ Ltd).

A copy of the valuation report is attached in Appendix 1.

The valuation report prepared by Stantec shows a comparison between the 30 June 2017 and 30 June 2018 valuations with a summary and individual comparison of each asset type as well as an explanation of the differences. It also shows valuation results summarised by rating area – DRA1, DRA1a, DRA2, DRA3, DRA4 and DRA5.

The final annual depreciation figure in 2017/18 was \$11,190,241 and in 2016/17 it was \$10,800,479. The percent change in annual depreciation between the two valuation periods – 30 June 2017 and 30 June 2018, was 3.61%.

The valuations are based on accurate and substantially complete asset registers and appropriate replacement costs and effective lives.

RECOMMENDATIONS

That the Assets & Infrastructure Committee:

1. **Notes the contents of this report.**

Authorised by:



Dave Hadfield
Tairāwhiti Roads General Manager



Neville West
Acting Director Lifelines

Keywords: land transport, road assets, valuation

BACKGROUND

1. Stantec (formerly MWH Consultants NZ Ltd) was commissioned by Tairāwhiti Roads to value its roading infrastructure assets as at 30 June 2018.
2. The valuations used data on all Council-owned road assets held in the Road Asset Management and Maintenance (RAMM) database as well as data provided by Tairāwhiti Roads. It was based on accurate and substantially complete asset registers and appropriate replacement costs and effective asset lives. The basis of the data inputs used is described in detail in the valuation report.
3. The asset lives are based upon New Zealand Infrastructure Asset Valuation and Depreciation Guidelines – Version 2.0. In specific cases, these have been modified where, in the opinion of Stantec and Tairāwhiti Roads, a different life is appropriate. The changes are justified in the valuation report.
4. The component level of the data used for the valuation is sufficient to calculate depreciation separately for those assets that have different useful lives.

DISCUSSION and OPTIONS

Road Assets that were Valued

5. The general categories under which the road components that were valued are outlined below:

Component	RAMM Table	Data Source
Land	Treatment Length	RAMM
Formation	Treatment Length	RAMM
Pavements		
• Sealed Pavement Structure	Treatment Length	RAMM
• Unsealed Pavement Structure	Treatment Length	RAMM
• Sealed Surfaces	Treatment Length	RAMM
Drainage	Drainage	RAMM
Surface Water Channels	Surface Water Channel	RAMM
Footpaths	Footpath	RAMM
Traffic Facilities		
• Retaining Walls	Retaining Walls	RAMM
• Other Structures	Traffic Facilities	RAMM
• Parking Meters	Traffic Facilities	RAMM
• Traffic Signals	Traffic Signals	RAMM
• Raised Pavement Markers	Markings	RAMM
Fords	Minor Structure	RAMM
Markings	NA	Council supplied data
Signs	Signs	RAMM
Railings	Railings	RAMM
Streetlights	Street Light	RAMM
Bridges and Bridge Culverts	Bridge	RAMM
Car Parks	Treatment Length	RAMM

Total Valuation Results – All Road Assets

6. The 2017/18 annual depreciation cost of all road assets was \$11,190,241 broken down as follows:

Asset Description	Replacement Cost	Total Accumulated Depreciation	Depreciated Replacement Cost	Annual Depreciation
Land	\$890,929,260	\$0	\$890,929,260	\$0
Formation	\$412,842,046	\$0	\$412,842,046	\$0
Sealed Pavement Surface	\$43,878,707	\$25,239,601	\$18,639,106	\$2,922,300
Sealed Pavement Layers	\$186,719,581	\$61,986,715	\$124,732,866	\$2,897,111
Unsealed Pavement Layers	\$38,777,200	\$9,394,212	\$29,382,988	\$676,409
Drainage	\$55,853,067	\$27,763,767	\$28,089,300	\$800,316
Surface Water Channels	\$42,680,628	\$19,504,063	\$23,176,565	\$569,075
Footpath	\$45,736,553	\$18,831,298	\$26,905,255	\$633,432
Traffic Facilities	\$7,689,889	\$4,125,080	\$3,564,810	\$160,291
Minor Structures	\$179,192	\$89,596	\$89,596	\$2,240
Signs	\$1,592,206	\$1,038,594	\$553,612	\$120,974
Railings	\$6,902,466	\$5,388,160	\$1,514,306	\$277,531
Street Lights	\$5,911,811	\$2,770,182	\$3,141,630	\$307,143
Car Parks	\$1,835,875	\$917,938	\$917,938	\$45,431
Bridges and Major Culverts	\$133,065,355	\$86,265,419	\$46,799,937	\$1,777,988
Total	\$1,874,593,836	\$263,314,623	\$1,611,279,213	\$11,190,241

Valuation Results by Rating Area

7. The valuations were split into rating areas (refer to maps in Appendix 2). The rating area with the highest annual depreciated replacement cost was DRA 1 at \$3,586,567.18. Below are the valuation summary tables for all rating areas broken down by asset type:

- **DRA 1 (Inner Zone) – Gisborne City**

Asset Type	Replacement Cost	Depreciated Replacement Cost	Annual Depreciated Replacement Cost
Bridge Culvert	\$126,120	\$58,063	\$1,837
Bridges	\$11,141,368	\$2,583,522	\$153,314
Drainage	\$167,983	\$109,820	\$2,399
First Coat Seals	\$8,352,541	\$4,441,339	\$208,814
Footpath	\$40,497,557	\$23,609,982	\$558,000
Formation	\$21,781,806	\$21,781,806	\$0
Land	\$587,646,654	\$587,646,654	\$0
Railings	\$468,648	\$110,250	\$22,009
Retaining Walls	\$292,733	\$200,590	\$3,659
Sealed Pavement Basecourse	\$16,972,250	\$9,078,294	\$424,306
Sealed Pavement Subbase	\$22,642,508	\$17,661,484	\$123,517
Signs	\$812,820	\$176,621	\$62,096
Streetlights - brackets	\$1,077,745	\$514,096	\$71,849
Streetlights - lights	\$1,522,305	\$829,006	\$88,832
Streetlights - poles	\$2,416,760	\$1,231,295	\$97,399
Surface Water Channels	\$34,613,372	\$17,774,020	\$461,512
Surfacing	\$21,606,023	\$11,124,750	\$1,289,594
Traffic Facilities	\$203,390	\$17,616	\$17,429
Grand Total	\$772,342,583	\$698,949,207	\$3,586,567

- **DRA 1A (Inner Zone)** - The semi urban/buffer zone around Gisborne City including Wainui and Makaraka.

Asset Type	Replacement Cost	Depreciated Replacement Cost	Annual Depreciated Replacement Cost
Bridge Culvert	\$117,983	\$21,977	\$2,173
Bridges	\$446,105	\$198,587	\$7,938
Drainage	\$923,123	\$453,751	\$13,184
First Coat Seals	\$1,146,857	\$617,001	\$28,671
Footpath	\$1,466,062	\$1,072,359	\$19,575
Formation	\$6,489,624	\$6,489,624	\$0
Land	\$148,375,268	\$148,375,268	\$0
Railings	\$39,992	\$10,280	\$2,390
Retaining Walls	\$137,090	\$66,310	\$1,714
Sealed Pavement Basecourse	\$2,370,029	\$1,272,641	\$59,251
Sealed Pavement Subbase	\$3,387,842	\$2,741,819	\$17,983
Signs	\$51,044	\$12,758	\$3,900
Streetlights - brackets	\$70,563	\$33,970	\$4,704
Streetlights - lights	\$152,787	\$97,607	\$8,917
Streetlights - poles	\$156,305	\$79,147	\$6,290
Surface Water Channels	\$1,997,874	\$1,290,147	\$26,638
Surfacing	\$1,614,086	\$664,911	\$108,958
Unsealed Pavement Subbase	\$109,463	\$81,654	\$547
Unsealed Pavement Wearing Course	\$10,176	\$4,288	\$2,056
Grand Total	\$169,062,273	\$163,584,098	\$314,889

- **DRA 2 (Inner Zone)** - Poverty Bay Flats including immediate fringe hill properties, Muriwai, Manutuke, Patutahi, Makauri, Ormond, part of Waimata, Makorori and Tatapouri.

Asset Type	Replacement Cost	Depreciated Replacement Cost	Annual Depreciated Replacement Cost
Bridge Culvert	\$491,459	\$203,850	\$9,212
Bridges	\$6,459,565	\$2,631,520	\$83,638
Drainage	\$5,532,227	\$2,698,838	\$79,013
First Coat Seals	\$5,139,504	\$2,847,657	\$128,488
Footpath	\$758,126	\$420,233	\$10,147
Formation	\$36,550,301	\$36,550,301	\$0
Land	\$109,714,767	\$109,714,767	\$0
Railings	\$396,117	\$80,426	\$18,398
Retaining Walls	\$127,813	\$85,085	\$1,598
Sealed Pavement Basecourse	\$10,831,770	\$6,017,663	\$270,794
Sealed Pavement Subbase	\$15,497,627	\$12,478,128	\$83,228
Signs	\$191,855	\$68,768	\$14,523
Streetlights - brackets	\$13,314	\$6,499	\$863
Streetlights - lights	\$59,518	\$48,310	\$3,466
Streetlights - poles	\$29,114	\$15,216	\$1,200
Surface Water Channels	\$3,818,513	\$2,896,145	\$50,914
Surfacing	\$5,239,028	\$2,031,626	\$415,174
Traffic Facilities	\$284,370	\$128,139	\$11,757
Unsealed Pavement Subbase	\$785,009	\$627,944	\$3,925
Unsealed Pavement Wearing Course	\$72,974	\$21,259	\$10,611
Grand Total	\$201,992,970	\$179,572,374	\$1,196,947

- **DRA 3 (Outer Zone)** – Whangara, part of Waerenga-o-Kuri, Ngatapa, Whatatutu and Te Karaka.

Asset Type	Replacement Cost	Depreciated Replacement Cost	Annual Depreciated Replacement Cost
Bridge Culvert	\$472,338	\$185,316	\$7,014
Bridges	\$27,000,948	\$9,931,401	\$346,022
Drainage	\$9,341,897	\$4,641,911	\$133,629
First Coat Seals	\$5,327,151	\$2,936,451	\$133,179
Footpath	\$703,236	\$416,804	\$12,625
Formation	\$69,205,524	\$69,205,524	\$0
Land	\$20,181,584	\$20,181,584	\$0
Railings	\$1,511,590	\$385,418	\$59,947
Retaining Walls	\$918,399	\$475,218	\$11,480
Sealed Pavement Basecourse	\$11,633,608	\$6,429,342	\$290,840
Sealed Pavement Subbase	\$15,988,374	\$13,042,523	\$89,372
Signs	\$165,101	\$89,218	\$12,476
Streetlights - brackets	\$7,988	\$3,644	\$533
Streetlights - lights	\$43,314	\$34,907	\$2,528
Streetlights - poles	\$17,442	\$8,584	\$725
Surface Water Channels	\$998,853	\$549,004	\$13,318
Surfacing	\$4,678,843	\$1,630,959	\$350,227
Traffic Facilities	\$75,098	\$33,840	\$5,272
Unsealed Pavement Subbase	\$5,162,375	\$4,027,110	\$25,812
Unsealed Pavement Wearing Course	\$479,895	\$170,352	\$83,688
Grand Total	\$173,913,558	\$134,379,107	\$1,578,685

- **DRA 4 (Outer Zone)** – Rural hinterland including Tiniroto, Otoko, Matawai, Motu and Tolaga Bay.

Asset Type	Replacement Cost	Depreciated Replacement Cost	Annual Depreciated Replacement Cost
Bridge Culvert	\$1,550,050	\$727,922	\$33,186
Bridges	\$47,880,204	\$19,123,432	\$625,717
Drainage	\$25,854,700	\$13,092,617	\$370,799
First Coat Seals	\$7,301,836	\$3,808,126	\$182,546
Footpath	\$162,865	\$73,306	\$2,424
Formation	\$174,560,869	\$174,560,869	\$0
Land	\$19,858,247	\$19,858,247	\$0
Minor Structures	\$131,407	\$65,704	\$1,643
Railings	\$2,695,144	\$664,404	\$110,982
Retaining Walls	\$1,647,141	\$897,920	\$20,589
Sealed Pavement Basecourse	\$16,165,831	\$8,434,545	\$404,146
Sealed Pavement Subbase	\$21,977,756	\$17,667,690	\$124,528
Signs	\$258,019	\$140,512	\$19,296
Streetlights - brackets	\$5,991	\$2,860	\$399
Streetlights - lights	\$47,386	\$41,682	\$2,765
Streetlights - poles	\$14,490	\$8,118	\$634
Surface Water Channels	\$360,766	\$203,406	\$4,810
Surfacing	\$6,892,678	\$2,188,152	\$498,609
Traffic Facilities	\$588,228	\$265,060	\$22,549
Unsealed Pavement Subbase	\$18,334,441	\$14,898,808	\$91,672
Unsealed Pavement Wearing Course	\$1,704,370	\$466,836	\$236,797
Grand Total	\$347,992,420	\$277,190,217	\$2,754,091

- **DRA 5 (Outer Zone)** – The East Cape north of Mangatuna (Hicks Bay, Te Araroa, Tikitiki Ruatoria, Waipiro Bay, Te Puia Springs, Tokomaru Bay.

Asset Type	Replacement Cost	Depreciated Replacement Cost	Annual Depreciated Replacement Cost
Bridge Culvert	\$492,273	\$230,529	\$10,252
Bridges	\$36,886,942	\$10,903,819	\$497,686
Drainage	\$14,033,137	\$7,092,364	\$201,292
First Coat Seals	\$3,652,549	\$1,984,905	\$91,314
Footpath	\$2,148,707	\$1,312,571	\$30,660
Formation	\$104,253,922	\$104,253,922	\$0
Land	\$5,152,740	\$5,152,740	\$0
Minor Structures	\$47,784	\$23,892	\$597
Railings	\$1,790,976	\$263,529	\$63,805
Retaining Walls	\$1,310,085	\$446,256	\$16,373
Sealed Pavement Basecourse	\$7,223,724	\$3,926,565	\$180,593
Sealed Pavement Subbase	\$11,107,823	\$9,346,695	\$55,542
Signs	\$113,369	\$65,736	\$8,684
Streetlights - brackets	\$30,622	\$15,947	\$2,041
Streetlights - lights	\$108,087	\$90,309	\$6,308
Streetlights - poles	\$67,218	\$39,681	\$2,976
Surface Water Channels	\$891,249	\$463,843	\$11,883
Surfacing	\$3,848,049	\$998,708	\$259,738
Traffic Facilities	\$2,105,542	\$948,775	\$47,873
Unsealed Pavement Subbase	\$11,087,776	\$8,749,446	\$55,439
Unsealed Pavement Wearing Course	\$1,030,720	\$335,292	\$165,862
Grand Total	\$207,383,294	\$156,645,523	\$1,708,919

Valuation Comparison – 30 June 2017 and 30 June 2018

8. In summary the 2018 RAMM valuation aligns well with the 2017 RAMM valuation, with some notable exceptions that are explained in the valuation report. Tairāwhiti Roads continues to improve RAMM data, through continual auditing of assets. This year, RAMM have moved to accept the Core logic road centrelines for all networks, where in the past these were supplied by Critchlow Limited. This has required a larger inspection of assets and locational data. Due to this change, Tairāwhiti Roads have started a larger project validating centreline location of physical assets such as bridges, rails, signs and drainage. This provides the opportunity to further audit and validate the RAMM asset register will see some movement in the road asset tables as existing assets are captured and those that are no longer in service are removed. This has ensured a more robust valuation process and better asset management planning.

Valuation	Replacement Cost	Depreciated Replacement Cost	Annual Depreciation
30 June 2017	\$1,699,053,956	\$1,450,908,338	\$10,800,479
30 June 2018	\$1,874,593,836	\$1,611,279,213	\$11,190,241
% Change	10.33%	11.05%	3.61%

Improvements to valuation results

9. The following actions have been completed by Tairāwhiti Roads during the 2017/18 financial year to improve the RAMM database. They are all recommendations made in the 2017 valuation.

Recommended Improvement Actions June 2017 valuation		Action Taken 2017/18
Construction Dates	Drainage, streetlights, and surface water channels are missing almost all of their construction dates. Bridges and signs have large percentage of assets missing construction dates. Investigate other sources of construction date data. Ensure construction date data is recorded for all assets in the future.	On-going updating is occurring through inspections as part of maintenance contracts.
Missing Data	Collect and record in RAMM all missing asset data including, but not exclusive to, railings, footbridges, ADLS (large cantilever signs), retaining walls and stock underpasses.	On-going data collection is taking place with new assets being added to RAMM when identified through field visits
Sealed Surfacing Methodology	Research is required to find the appropriate total useful life break-down for these assets to be used in the next valuation. Incorporate the results of Deighton Total Infrastructure Management Solutions (dTIMS), Treatment Selection Algorithm (TSA), please break down what the abbreviations stand for, condition assessments, and other decision making tools into the calculation of total useful lives.	Achieved lives in RAMM used to compare with lives used in the valuation
Unsealed Pavement Layer Methodology	Research is required to find the appropriate total useful life break down for these assets to be used in the next valuation. Incorporate the results of dTIMS, TSA, condition assessments, and other decision making tools into the calculation of total useful lives	High Speed Data (HSD) data obtained for the unsealed network. This was used to assess lives.
Railings	Investigate Total Useful Lives (TUL) for bridge railings, these assets are usually designed to last the life of the bridge they are attached to. Currently assigned a TUL of 15 years.	Lives are based on those of the bridge. On-going investigation to access maintenance records and determine replacement

APPENDICES

Appendix 1 – 2018 Road Asset Valuation

Appendix 2 – Maps of Differential Rating Areas