Transport and Stormwater Asset Management Plan

Draft 2022/23 Annual Review – Public Consultation

Background

The District Council of Tumby Bay Transport and Stormwater Infrastructure Asset Management Plan was adopted by Council on 27th February 2020. This annual review is limited to reviewing forward expenditure projections to identify significant changes or variations to the adopted plan that require consideration in the review of the Council's Long Term Financial Plan.

Operation and Maintenance Expenditure

There has been no change to service levels or maintenance requirements that is identified to require change to the projected operation and maintenance expenditures in the Asset Management Plan.

A review of planned operating and maintenance expenditure for the first four years of the original plan adopted in February 2020 is compared against actual/budget expenditure in Table 1.

Year	Planned Maintenance Expenditure	Actual/Budgeted Maintenance Expenditure	Comment
2019/20	$891,500	$686,200	
2020/21	$918,800	$1,045,600	
2021/22	$936,800	$985,800	Includes storm damage costs of $126,700
2022/23	$954,800	$1,307,600	Includes $322,900 transferred from const program for additional mtce and grading due wet weather
TOTAL	**$3,701,900**	**$4,025,200**	

Table 1 Planned vs actual/budget operations and maintenance expenditure. Note: Planned expenditure figures adjusted for inflation based on CPI adjustment (All Groups – Adelaide) adopted in LTFP reviews.

Table 1 shows that $322,900 (Full Cost) was transferred from the rural re-sheeting program to provide for additional grading and road maintenance activities in 2022/23 due the extremely wet spring period.

Capital Renewal Expenditure

A review of planned capital renewal expenditure for the first four years of the original plan adopted in February 2020 is compared against actual/budget expenditure in Table 2.

Year	Asset Class	Planned Expenditure	Actual/Budgeted Expenditure	Comment
2019/20	Sealed Surface	$264,800	$209,900	Five segments deferred to 2021/22 based on condition. Two segments brought forward.
	Unsealed Surface	$803,500	$754,100	One segment carried over to 2020/21. One segment deferred pending port proposal.
	Rural Floodway	$15,300	$19,100	
	TOTAL	**1,083,600**	**$983,100**	
2020/21	Sealed Surface	$341,300	$387,100	Alteration of seal type on Lipson Ungarra Road (from single to double seal).
	Unsealed Surface	$802,600	$843,500	Two segments deferred to 2021/22. Two segments deferred pending port proposal. Six segments brought forward from 2021/22.
	Rural Floodway	$0	$68,100	LRCIP Funding
	TOTAL	**$1,143,900**	**$1,298,700**	
2021/22	Sealed Surface	$274,000	$304,700	Eight segments brought forward from 2022/23.
	Unsealed Surface	$817,800	$670,400	One segment brought forward from 2022/23. Two dements deferred to 2022/23. Two segments deferred.
	TOTAL	**$1,091,800**	**$975,100**	
2022/23	Sealed Surface	$278,100	$251,500	Two segments deferred.
	Unsealed Surface	$837,800	$713,100	Seven segments deferred.
	TOTAL	**$1,115,900**	**$964,600**	
	4-year TOTAL	**$4,435,200**	**$4,221,500**	

Table 2. Planned vs actual/budget renewal expenditure. Note: Planned expenditure figures adjusted for inflation based on CPI adjustment (All Groups – Adelaide) adopted in LTFP reviews.

Table 2 shows that total renewal expenditure for the first four years of the current Asset Management Plan is $213,700 below planned expenditure. The expenditure total includes $68,100 of unplanned rural floodway renewal funded through external funding under the

Local Roads and Community Infrastructure Program (LRCIP) in 2020/21, as well as additional expenditure to enhance reseal works on the Lipson Ungarra Road.

Whilst expenditure on planned renewals is only slightly below planned expenditure, there are several planned renewals that have not occurred in line with the asset management plan works program.

A total of 9.9km (3 segments) of planned re-sheeting with a present-day value of approximately $267,000 has been deferred due to the potential for impact by major developments (eg export port development). A further 36km (9 segments) of planned re-sheeting works with a present-day value of approximately $772,000 planned for 2021/22 and 2022/23 are not currently budgeted.

Appendix A – Projected 4 Year Capital Renewal has been updated with comments to reflect the actual status of planned renewal projects and is attached with this report.

New/Upgrade Expenditure

A review of planned new/upgrade expenditure for the first four years of the original plan adopted in February 2020 is summarised in Table 3.

Year	Asset Description	Planned Expenditure	Actual/Budget Expenditure
2019/20	Bratten Bridge	$1,000,000	$471,700
	Footpaths	$20,200	$78,700
	TOTAL	**$1,020,200**	**$550,400**
2020/21	Bratten Bridge	$0	$306,300
	Footpaths	$30,600	$183,100
	Kerb and Spoon Drain	$0	$24,100
	Rural Floodway	$0	$50,800
	Graham Smelt Causeway Bridge Project	$0	$7,000
	TOTAL	**$30,600**	**$564,300**
2021/22	Footpaths	$31,200	$44,600
	Sheeted Surface	$0	$43,900
	Graham Smelt Causeway Bridge Project	$1,684,800	$3,067,500
	TOTAL	**$1,716,000**	**$3,156,000**
2022/23	Footpaths	$31,800	$55,700
	Graham Smelt Causeway Bridge Project	$0	$49,300
	TOTAL	**$31,800**	**$105,000**
	4-year TOTAL	**$2,798,600**	**$4,375,700**

Table 3. Planned vs actual/budget new/upgrade expenditure. Planned expenditure figures adjusted for inflation based on CPI adjustment (All Groups – Adelaide) adopted in LTFP reviews.
Note – Footpath works for 2020/21 to 2029/30 were incorrect in the adopted plan and should have been $30,000 per year as reflected in the LTFP, these figures have been adjusted in Table 3.

Planned upgrades to the Bratten Bridge (Lipson Ungarra Road Higher Mass Limit Vehicle Upgrade) occurred in line with the Asset Management Plan. A portion of the planned $1,000,000 upgrade was allocated to asset renewal as it was used for resealing works on the Lipson Ungarra Road.

The allocation of non-competitive grant funding received from the Federal Government to new/upgraded asset construction in 2020/21 saw proposed expenditure on Ungarra/Cockaleechie Road floodway brought forward from 2024/25 as well as accelerated expenditure on footpath upgrades. Accordingly, these allocations have been removed from the future expenditure projections for new/upgrade assets, as has the value of works brought forward for footpath upgrades.

Council have also elected to remove the remaining new footpath program from the current plan and re-allocate funding to complete all footpaths within the Tumby Bay Marina precinct 2023/24.

The planned upgrade of the Graham Smelt Causeway Upgrade was completed in 2022/23 with half of the actual cost met by external grant funding.

2023/2024 Program

The 2020-2030 Transport & Stormwater IAMP included a program for renewal works up to the end of the 2022/23 financial year.

Included at Appendix B is a Draft Renewal Program for the 2023/24 period, this program has been provided from Council's Conquest database and reflects the total works required based on unlimited funding and is calculated in present day costs. The plan has been colour coded to reflect the following information: -

- Priority road segments from previous years not yet funded
- Additional road segment priorities based on unlimited funding
- Road segments deferred pending Port Proposals
- Pumpa Street – Base failures and accelerated seal degradation (Estimate is based on re-seal only)

Costs for the aforementioned items in current day values are: -

• Priority road segments	$898,818
• Additional road segments	$1,784,315
• Road segments deferred – Ports	$266,980
• Pumpa Street – Re-seal only	$56,848
	$3,006,961

Funding available as per Draft Long Term Financial Plan – 2023 Review: -

• Re-Sealing of Roads	$277,834
• Re-sheeting of Roads	$873,366
	$1,151200

Summary

In summary, at the completion of the four-year work program there will be approximately $127,000 of sealing works and $1,039,000 of re-sheeting works (current day costs) that were originally programmed that remain uncompleted. The gap appears to be in the actual cost of unsealed road renewal woks vs plan assumptions based on asset values. This has

been further exacerbated by the transfer of funds from the 2022/23 re-sheeting program to provide for additional patrol grading and unsealed road maintenance due the exceptionally wet spring period.

It is likely that the cost increases are being driven by several factors, and these will require detailed review and adjustment at the time of the next major review of the Transport and Infrastructure Asset Management Plan in 2023/24.

Dion Watson
Deputy CEO
January 2023

Description	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Footpaths – New/Upgrade	$55,000							$55,000
Rural Floodways – Upgrade		$120,000						$120,000
Total	*$55,000*	*$120,000*	*$0*	*$0*	*$0*	*$0*	*$0*	*$175,000*

Table 4. Forecast New/Upgrade Capital Expenditure. Note: All values in 2019 dollars.

Asset Group	2023-24	2024-25	2025-26	2026-27	2027-28	2028-29	2029-30	Total
Sealed Surface	$237,465	$321,635	$530,095	$221,435	$377,288	$264,967	$312,983	$2,265,868
Sheeted Surface	$746,467	$537,281	$555,535	$584,084	$526,209	$659,910	$677,659	$4,287,145
Pavement	$0	$0	$0	$0	$0	$0	$0	$0
Footpath	$0	$0	$71,011	$12,301	$0	$0	$0	$83,312
Kerb and Spoon Drain	$0	$0	$0	$0	$0	$0	$0	$0
Floodway	$0	$0	$0	$0	$0	$131,510	$0	$131,510
Headwalls	$0	$0	$0	$2,906	$0	$830	$0	$3,736
Township Stormwater Pits & Headwalls	$0	$0	$0	$0	$0	$0	$85,284	$85,284
Total	$983,932	$858,916	$1,156,641	$820,726	$903,497	$1,057,217	$1,075,926	$6,856,855

Table 5. Forecast Capital Renewal Expenditure. Note: All values in 2019 dollars.

Table 3 - Origianl Work Plan from 2020-2030 Transport & Stormwater IAMP - Adopted February 2020 - Renewal Costs not Indexed

Asset ID	Sub Catergory	Asset Name	Planned Renewal Year	Renewal Cost ($)	Status
959	Rural Sheeted	Butler Centre Road (010) from Berrymans Rd to Liddicoats Rd	2019-20	$89,705	Completed 2019/20
1001	Rural Sheeted	Cranky Flat Road (010) from Yallunda Flat Uranno Rd to Kapinka Rd	2019-20	$55,638	Completed 2020/21
902	Rural Sheeted	Howards Road (005) from Rock Valley Rd to Bailla Hill Rd	2019-20	$67,392	Completed 2019/20
4855	Rural Sheeted	Koppio Road (025) from End of Seal 150m E of Yallunda Flat Rd to Bailla Hill Rd	2019-20	$50,449	Completed 2019/20
930	Rural Sheeted	South Coast Road (020) from Bergs Rd to Chainage 16911 (Creek)	2019-20	$96,447	Completed 2019/20
983	Rural Sheeted	Cemetery Hill Road (005) from Western Boundary to Chainage 2700 (Lettons Gate)	2019-20	$43,200	Completed 2019/20
955	Rural Sheeted	East Dog Fence Road (010) from Chainage 3800 (Pfitzners Gate) to Butler Centre Rd	2019-20	$69,379	Completed 2019/20
956	Rural Sheeted	East Dog Fence Road (015) from Butler Centre Rd to Chainage 12112	2019-20	$110,160	Completed 2019/20
949	Rural Sheeted	North Coast Road (015) from Brayfield Rd to Kiandra Rd	2019-20	$39,955	Deferred pending further details on impacts of port propsals on local road network.
1108	Rural Sheeted	Brooker Road (015) from Wharminda Rd to Chainage 9495 (Sheppards Gate)	2019-20	$71,690	Completed 2019/20
867	Rural Sheeted	Mine Hill Road (015) from Thorpes Rd to Marshals Rd	2019-20	$56,333	Completed 2019/20
735	Township Sealed	Brock Sreet (005) from Park Tce to Dutton Tce	2019-20	$7,633	Completed 2019/20
737	Township Sealed	Burnett Street (005) from Treasure Crs to Wishart St	2019-20	$10,833	Deferred
4837	Township Sealed	Phyllis Street (010) from Tennant St to Wibberley St	2019-20	$15,516	Deferred
841	Township Sealed	Sidney Road (005) from Tumby Tce to Robert St	2019-20	$23,194	Completed 2019/20
730	Township Sealed	Bawden Street (010) from Gardner Ave to Esplanade	2019-20	$27,459	Completed 2019/20
732	Township Sealed	Berryman Street (010) from Provis St to Pearson St	2019-20	$49,662	Completed 2019/20
755	Township Sealed	Elfrieda Drive (005) from McCallum St to Yaringa Ave	2019-20	$15,494	Deferred
753	Township Sealed	Esplanade (010) from Tennant St to Bawden St	2019-20	$38,874	Completed 2019/20
758	Township Sealed	Goode Avenue (005) from Tumby Tce to Preece St	2019-20	$12,957	Completed 2019/20
805	Township Sealed	John Street (005) from Lebrun St to Borthwick St	2019-20	$33,718	Completed 2019/20
729	Township Sealed	Barraud Street (005) from West Tce to Tumby Tce	2019-20	$15,550	Deferred
820	Township Sealed	South Terrace (005) from West Tce to Spencer St	2019-20	$13,919	Deferred
2175	Township Stormwater	Stormwater Side Entry Pits - SW Line 8 for Tumby Tce (Trenberths)	2019-20	$4,374	Deferred
2176	Township Stormwater	Stormwater Side Entry Pits - SW Line 9 for Spencer St (Mitre10)	2019-20	$6,560	Completed 2019/20
2177	Township Stormwater	Stormwater Side Entry Pits - SW Line 10 for Tumby Tce Barraud St	2019-20	$4,374	Deferred
			Subtotal 2019-20	**$1,083,600**	

857	Rural Sealed	Lipson Ungarra Road (015) from Chainage 3630 to Chainage 7272	2020-21	$152,670	Completed 2020/21
912	Rural Sheeted	Pillaworta Road (015) from Chainage 8800 (B Harris Gate) to Bailla Hill Rd	2020-21	$48,299	Completed 2020/21
1002	Rural Sheeted	Cockaleechie Road (005) from Chinmina Hill Rd to Chainage 4000	2020-21	$75,600	Completed 2020/21
924	Rural Sheeted	Lipson Cove Road (005) from Lincoln Highway to South Coast Rd	2020-21	$74,887	Deferred pending further details on impacts of port propsals on local road network.
926	Rural Sheeted	Lipson Cove Road (010) from South Coast Rd to Lipson Cove	2020-21	$92,880	Deferred pending further details on impacts of port propsals on local road network.
1055	Rural Sheeted	Mt Hill Road (020) from Chainage 13819 to Mount Hill Coomaba Rd	2020-21	$54,346	Completed 2020/21
876	Rural Sheeted	Stirlings Road (015) from Durdins Rd to Bratten Way	2020-21	$26,624	Completed 2020/21
968	Rural Sheeted	Ungarra Yeelanna Road (015) from Baldiserra Rd to Floodway	2020-21	$70,718	Completed 2021/22
965	Rural Sheeted	Ungarra Yeelanna Road (030) from Chainage 17024 (Gate) to Pearson Rd	2020-21	$70,762	Completed 2021/22
1079	Rural Sheeted	Brooker Road (020) from Chainage 9495 (Sheppards Gate) to Butler Centre Rd	2020-21	$69,984	Completed 2020/21
1005	Rural Sheeted	Chinmina Hill Road (015) from Cockaleechie Rd to Chainage 11782 (Pearsons Pit)	2020-21	$75,600	Completed 2020/21
4469	Rural Sheeted	Mine Hill Road (030) from Dray Pole Hill Rd to Ungarra Stokes Rd	2020-21	$127,202	Completed 2020/21
787	Township Sealed	O'Loughlin Terrace (005) from Price Tce to Gill St	2020-21	$45,667	Completed 2020/21
773	Township Sealed	Bice Street (005) from Peake St to O'Loughlin St	2020-21	$13,349	Completed 2020/21
788	Township Sealed	O'Loughlin Terrace (010) from Gill St to Coney Beer Rd	2020-21	$12,706	Completed 2020/21
785	Township Sealed	Peake Terrace (005) from Gill St to Scholl St	2020-21	$12,053	Completed 2020/21
4289	Township Sealed	Peake Terrace (010) from Scholl to Bice St	2020-21	$8,100	Completed 2020/21
786	Township Sealed	Peake Terrace (015) from Bice St to Price Tce	2020-21	$15,055	Completed 2020/21
778	Township Sealed	Scholl Street (005) from O'Loughlin St to Wallis St	2020-21	$5,363	Completed 2020/21
744	Township Sealed	Anchor Drive (005) from Peake St to Boat Ramp	2020-21	$17,136	Completed 2020/21
780	Township Sealed	Price Terrace (015) from Wallis St to Peake St	2020-21	$5,778	Completed 2020/21
783	Township Sealed	Wallis Street (005) from North Coast Rd to Coney Beer Rd	2020-21	$15,431	Completed 2020/21
760	Township Sealed	Wallis Street (010) from Coney Beer Rd to Scholl	2020-21	$31,264	Completed 2020/21
			Subtotal 2020-21	**$1,121,474**	

1105	Rural Sheeted	Chilmans Road (010) from Chainage 4400 to Wharminda Rd	2021-22	$91,363	Completed 2021/22
1003	Rural Sheeted	Chinmina Hill Road (020) from Chainage 11782 (Pearsons Pit) to West Dog Fence Rd	2021-22	$39,679	Completed 2020/21
873	Rural Sheeted	Marshalls Road (005) from Mine Hill Rd to Chainage 2420	2021-22	$26,620	Completed 2020/21
977	Rural Sheeted	Mine Hill Road (020) from Marshals Rd to Wadella Falls Rd	2021-22	$25,812	Completed 2020/21
1068	Rural Sheeted	Mt Hill Road (005) from Lipson/Ungarra Rd to Pit	2021-22	$96,898	Budgeted 2022/23
888	Rural Sheeted	Peelina Road (005) from Bratten Way to Laube Rd	2021-22	$27,367	Completed 2020/21
935	Rural Sheeted	South Coast Road (015) from Lipson Cove Rd to Bergs Rd	2021-22	$98,450	Deferred
886	Rural Sheeted	Thuruna Road (015) from Trinity Haven Rd to White River Rd	2021-22	$50,765	Completed 2020/21
972	Rural Sheeted	Ungarra Yeelanna Road (025) from Degners Rd to Chainage 17024 (Gate)	2021-22	$75,881	Completed 2021/22
997	Rural Sheeted	Chinmina Hill Road (005) from Ungarra Stokes Rd to Telfers Lane	2021-22	$59,681	Budgeted 2022/23
960	Rural Sheeted	Ungarra Yeelanna Road (020) from Floodway to Degners Rd	2021-22	$77,306	Completed 2021/22
1034	Rural Sheeted	Willis Lane (005) from Coomaba/Mt Hill Rd to Northern End	2021-22	$55,990	Deferred
874	Rural Sheeted	Thuruna Road (010) from Chainage 3058 (Floodway) to Trinity Haven Rd	2021-22	$60,566	Completed 2020/21
754	Township Sealed	Esplanade (015) from Bawden St to Elanora Ave	2021-22	$11,124	Completed 2021/22
748	Township Sealed	Graham Smelt Causeway (005) from McCallum St to Minnipa Ln	2021-22	$80,151	Completed 2021/22
745	Township Sealed	Harvey Drive (010) from Wishart St to Pearson St	2021-22	$55,692	Completed 2021/22
835	Township Sealed	Lawrie Street (005) from Dutton Tce to Sidney Rd	2021-22	$25,936	Completed 2021/22
812	Township Sealed	Tumby Terrace (020) from South Tce to Bratten Rd	2021-22	$34,468	Completed 2021/22
733	Township Sealed	Berryman Street (005) from GS Causeway to Provis St	2021-22	$12,427	Completed 2021/22
823	Township Sealed	Spencer Street (010) from Mortlock St to Park Tce	2021-22	$43,692	Completed 2021/22
			Subtotal 2021-22	**$1,049,868**	

958	Rural Sheeted	Butler Centre Road (015) from Liddicoats Rd to East Dog Fence Rd	2022-23	$49,918	Budgeted 2022/23
1027	Rural Sheeted	Mt Hill Coomaba Road (050) from Moody Centre Rd to Pit	2022-23	$69,930	Deferred
970	Rural Sheeted	Ungarra Yeelanna Road (010) from West Dog Fence Rd to Baldiserra Rd	2022-23	$59,335	Completed 2021/22
1103	Rural Sheeted	Wharminda Road (015) from Brooker Rd to Chilmans Rd	2022-23	$83,938	Deferred
940	Rural Sheeted	Bawdens Road (015) from Chainage 5025 to Mine Hill Rd	2022-23	$10,912	Deferred
908	Rural Sheeted	Peelina Road (010) from Laube Rd to Western Boundary	2022-23	$50,104	Budgetd 2022/23
903	Rural Sheeted	Bailla Hill Road (005) from Lincoln Highway to Bailla Hill Fire Track	2022-23	$100,073	Deferred
941	Rural Sheeted	Bawdens Road (010) from Gate At Chainage 2277 to Chainage 5025	2022-23	$24,174	Deferred
1011	Rural Sheeted	Boundary Road (010) from Carrs Rd to Mount Hill Coomaba Rd	2022-23	$71,240	Deferred
1025	Rural Sheeted	Brooker Road (055) from Challingers Rd to Neats Rd	2022-23	$92,081	Deferred
946	Rural Sheeted	Butler Centre Road (005) from Lincoln Highway to Berrymans Rd	2022-23	$99,274	Budgeted 2022/23
1031	Rural Sheeted	Glover Road (010) from Chainage 3700 to Western Boundary	2022-23	$79,358	Budgeted 2022/23
750	Township Sealed	Gardner Avenue (005) from Wibberley St to Bawden St	2022-23	$13,005	Budgeted 2022/23
852	Township Sealed	Paul Street (005) from Treasure Crs to Wishart St	2022-23	$9,839	Budgeted 2022/23
851	Township Sealed	Pearson Street (005) from Berryman St to 120m E of Berryman St	2022-23	$7,056	Completed 2021/22
4839	Township Sealed	Smith Street (010) from Preece St to End	2022-23	$2,777	Completed 2021/22
793	Township Sealed	Tennant Street (005) from Esplanade to West Tce	2022-23	$43,130	Budgeted 2022/23
4843	Township Sealed	Treasure Cresent (010) North End from Oswald St to Wishart St	2022-23	$21,048	Completed 2021/22
819	Township Sealed	Freeman Street (005) from Bawden St to Wiberley St	2022-23	$10,937	Budgeted 2022/23
741	Township Sealed	Darling Avenue (005) from Wibberley to Bawden St	2022-23	$17,044	Budgeted 2022/23
799	Township Sealed	Trezise Street (005) from Dutton Tce to Bratten Rd	2022-23	$49,170	Completed 2019/20
827	Township Sealed	Nankivell Street (005) from Park Tce to Dutton Tce	2022-23	$7,463	Completed 2021/22
813	Township Sealed	Wishart Street (005) from Pearson St to Treasure Cr	2022-23	$7,668	Completed 2021/22
829	Township Sealed	Mortlock Street (010) from Spencer St to West Tce	2022-23	$13,317	Completed 2021/22
4845	Township Sealed	Freeman Street (006) from Wiberley St to Lipson Rd	2022-23	$10,952	Budgeted 2022/23
4464	Township Sealed	North Terrace (005) from Esplanade to Lipson Rd	2022-23	$4,817	Deferred
839	Township Sealed	Schramm Street (005) from Lipson Ungarra Rd to Ashman Tce	2022-23	$13,724	Deferred
846	Township Sealed	Spencer Street (005) East Carriageway from Bratten Rd to Mortlock St	2022-23	$7,243	Budgeted 2022/23
4841	Township Sealed	Spencer Street (006) West Carriageway from Bratten Rd to Mortlock St	2022-23	$7,366	Budgeted 2022/23
4848	Township Sealed	West Terrace (012) West Carriageway from Bratten Rd to Mortlock St	2022-23	$11,346	Budgeted 2022/23
791	Township Sealed	Wandana Place (005) from GS Causeway to End	2022-23	$4,454	Completed 2021/22
			Subtotal 2022-23	**$1,052,693**	
			Total 4 Year Renewal Plan	**$4,307,635**	

2023/2024 Sealing Projects - Unlimited Model

Year	Segment ID	Surface ID	Segment Description	Treatment	Cost
2024	421	809	Ashman Terrace (005) from Lipson Ungarra Rd to 150m SW of Lipson Ungarra Rd	Township Spray Seal (Low Use) Surface Preventative (Single)	$6,678
2024	4457	4853	Ashman Terrace (006) from 150m SW of Lipson Ungarra Rd to Schramm St	Township Spray Seal (Low Use) Surface Preventative (Double)	$29,521
2024	420	810	Ashman Terrace (010) from Schramm St to Lawrie St	Township Spray Seal (Low Use) Surface Preventative (Single)	$7,474
2024	332	729	Barraud Street (005) from West Tce to Tumby Tce	Township Spray Seal (Medium Use) Preventative (Double)	$25,838
2024	334	731	Bawden Street (005) from West Tce to Gardner Ave	Township Cold Overlay (Medum Use) Surface Preventative	$14,225
2024	4259	4261	Brougham Place (005) from Carr Street to End	Township Spray Seal (Low Use) Surface Preventative (Double)	$3,446
2024	339	736	Browne Street (005) from Wishart St to Harvey Dr	Township Spray Seal (Low Use) Surface Preventative (Single)	$4,279
2024	301	772	Cape Burr Road (005) from Bice St to End	Township Cold Overlay (Low Use) Surface Preventative (Double)	$30,269
2024	303	770	Carrow Terrace (010) from Kinnaird St to Price Tce	Township Cold Overlay (Low Use) Surface Preventative (Double)	$17,049
2024	343	4327	Church Street (005) from Trezise Street to Thuruna Rd	Township Spray Seal (Low Use) Surface Preventative (Double)	$45,942
2024	304	769	Coney Beer Road (005) from North Coast Rd to O'Loughlin St	Township Spray Seal (Medium Use) Preventative (Double)	$17,617
2024	305	768	Coney Beer Road (010) from O'Loughlin St to Wallis St	Township Spray Seal (Medium Use) Preventative (Single)	$6,966
2024	345	749	Doepke Street (005) from Pfitzner St to North Park	Township Spray Seal (Low Use) Surface Preventative (Double)	$12,239
2024	306	759	Duffield Street (010) from Wallis St to O'Loughlin St	Township Spray Seal (Low Use) Surface Preventative (Single)	$5,467
2024	348	4286	Elanora Avenue (010) from Pfitzner St to Bawden St	Township Spray Seal (Low Use) Surface Preventative (Single)	$5,934
2024	349	755	Elfrieda Drive (005) from McCallum St to Yaringa Ave	Township Cold Overlay (Low Use) Surface Preventative (Double)	$16,610
2024	4268	4269	Fergusson Court (005) from Carr Street to End	Township Spray Seal (Low Use) Surface Preventative (Double)	$3,046
2024	311	762	Kinnaird Street (005) from Carrow St to End	Township Spray Seal (Low Use) Surface Preventative (Single)	$6,772
2024	426	864	Koppio Road (020) from Yallunda Flat Rd to End of Seal 150m E of Yallunda Flat Rd	Rural Spray Seal (High Use) Surface Preventative (Double)	$13,578
2024	422	808	Lawrie Street (005) from Lipson Ungarra Rd to Ashman Tce	Township Spray Seal (Low Use) Surface Preventative (Single)	$16,159
2024	428	862	Lipson Ungarra Road (010) from Chainage 1362 to Chainage 3630	Rural Spray Seal (High Use) Surface Preventative (Double)	$162,728
2024	430	859	Lipson Ungarra Road (020) from Chainage 7272 to Chainage 10953	Rural Spray Seal (High Use) Surface Preventative (Single)	$177,573
2024	366	833	McCallum Street (005) from Elfrieda Dr to Lawrie St	Township Cold Overlay (Medum Use) Surface Preventative	$28,139
2024	4298	4299	McCallum Street (010) from Lawrie St to 670m West Laurie St	Township Spray Seal (Medium Use) Preventative (Single)	$36,134
2024	367	832	Minnipa Lane (005) from GS Causeway to Morialta Dr	Township Spray Seal (Low Use) Surface Preventative (Single)	$9,683
2024	368	831	Moonta Court (005) from Wandana Pl to End	Township Spray Seal (Low Use) Surface Preventative (Double)	$1,819
2024	369	822	Morialta Drive (005) from GS Causeway to Minnipa Ln	Township Spray Seal (Low Use) Surface Preventative (Single)	$12,852
2024	371	4288	Mortlock Street (005) from Tumby Tce to Spencer St	Township Spray Seal (High Use) Surface Preventative (Double)	$14,237
2024	315	767	Mottled Cove Road (010) from Mottled Cove Rd to North End	Township Cold Overlay (Low Use) Surface Preventative (Double)	$10,917
2024	314	765	Mottled Cove Road (015) from Mottled Cove Rd to South End	Township Cold Overlay (Low Use) Surface Preventative (Double)	$7,582
2024	4463	4464	North Terrace (005) from Esplanade to Lipson Rd	Township Spray Seal (High Use) Surface Preventative (Double)	$4,988
2024	376	844	Octoman Street (005) from Lipson Rd to Phyllis St	Township Cold Overlay (Medum Use) Surface Preventative	$20,427
2024	377	828	Oswald Street (005) from Lakin Cr to Treasure Cr	Township Cold Overlay (Low Use) Surface Preventative (Double)	$6,805
2024	378	830	Park Terrace (005) from Tumby Tce to Brock St	Township Cold Overlay (Medum Use) Surface Preventative	$10,137
2024	4379	4831	Park Terrace (010) from Brock St to 134m W of Brock St	Township Spray Seal (Medium Use) Preventative (Double)	$16,299
2024	4387	4832	Park Terrace (015) from 134m W of Brock St Trezise St	Township Spray Seal (Medium Use) Preventative (Single)	$20,769
2024	4397	4835	Pearson Street (010) from 120m E of Berryman St to Wishart St	Township Spray Seal (Medium Use) Preventative (Single)	$8,725
2024	423	4290	Pedler Street (005) from Lipson Ungarra Rd to Ashman Tce	Township Spray Seal (Low Use) Surface Preventative (Double)	$15,484
2024	381	4291	Pfitzner Street (005) from Carr St to Elanora St	Township Spray Seal (Low Use) Surface Preventative (Single)	$13,440
2024	322	775	Pioneer Drive (005) from Gill St to Mottled Cove Rd	Township Spray Seal (Low Use) Surface Preventative (Single)	$13,409
2024	385	838	Provis Street (005) from Berryman St to Lakin Cr	Township Cold Overlay (Low Use) Surface Preventative (Double)	$6,788
2024	326	779	Scholl Street (010) from Wallis St to Peake St	Township Cold Overlay (Low Use) Surface Preventative (Double)	$13,352
2024	424	839	Schramm Street (005) from Lipson Ungarra Rd to Ashman Tce	Township Spray Seal (Low Use) Surface Preventative (Single)	$14,341
2024	391	840	Smith Street (005) from Lawrie St to Preece St	Township Cold Overlay (Low Use) Surface Preventative (Double)	$9,264
2024	392	820	South Terrace (005) from West Tce to Spencer St	Township Spray Seal (Low Use) Surface Preventative (Double)	$23,129
2024	395	792	Swaffer Street (005) from Berryman St to Lakin Cr	Township Spray Seal (Low Use) Surface Preventative (Single)	$4,138
2024	397	794	Thompson Street (005) from Carr St to Doepke St	Township Spray Seal (Low Use) Surface Preventative (Single)	$8,805
2024	398	795	Thorpe Street (005) from Wishart St to Harvey Dr	Township Spray Seal (Low Use) Surface Preventative (Double)	$6,895
2024	399	5177	Thuruna Road (010) from Church St to Dutton Tce	Township Spray Seal (High Use) Surface Preventative (Double)	$17,346
2024	401	798	Treasure Cresent (005) South End from Wishart St to Oswald St	Township Cold Overlay (Medum Use) Surface Preventative	$27,334
2024	405	802	Tumby Terrace (005) from McCallum St to Goode Ave	Township Cold Overlay (Low Use) Surface Preventative (Double)	$6,191
2024	409	814	Viking Street (005) from Yaringa Ave to End	Township Spray Seal (Low Use) Surface Preventative (Double)	$4,594
2024	412	5179	West Terrace (015) from Mortlock St to Park Tce	Township Spray Seal (High Use) Surface Preventative (Double)	$34,911
2025	340	737	Burnett Street (005) from Treasure Crs to Wishart St	Township Cold Overlay (Low Use) Surface Rehablitation	$17,437
2025	4405	4837	Phyllis Street (010) from Tennant St to Wibberley St	Township Cold Overlay (Medum Use) Surface Rehabilitation	$24,409
2027	386	4293	Pumpa Street (005) from Lebrun St to Borthwick St	Township Spray Seal (High Use) Surface Rehabilitation	$56,848
Total Funds required - Unlimited Model					**$1,157,038**

2023/2024 Re-Sheeting Prjects - Unlimited Model

2024	603	941	Bawdens Road (010) from Gate At Chainage 2277 to Chainage 5025	Rural (Cat 2A) Sheeted Collector - High Use (Poor Material) Surface Reconstruction	$41,645
2024	606	940	Bawdens Road (015) from Chainage 5025 to Mine Hill Rd	Rural (Cat 2A) Sheeted Collector - High Use (Average Material) Surface Reconstruction	$18,798
2024	458	1112	Chalmers Road (005) from Port Neill Access Rd to Lincoln Highway	Rural (Cat 3B) Sheeted Local Access - Low Use (Poor Material) Surface Resheet	$47,040
2024	534	1061	Dutton Terrace (005) from Trezise St to Thuruna Rd	Rural (Cat 2A) Sheeted Collector - High Use (Good Material) Surface Resheet	$13,686
2024	590	924	Lipson Cove Road (005) from Lincoln Highway to South Coast Rd	Rural (Cat 2A) Sheeted Collector - High Use (Average Material) Surface Reconstruction	$105,119
2024	588	926	Lipson Cove Road (010) from South Coast Rd to Lipson Cove	Rural (Cat 2A) Sheeted Collector - High Use (Good Material) Surface Resheet	$113,176
2024	443	887	Mine Hill Road (005) from Lipson Rd to Lincoln Highway	Rural (Cat 3B) Sheeted Local Access - Low Use (Good Material) Surface Resheet	$31,776
2024	575	1027	Mt Hill Coomaba Road (050) from Moody Centre Rd to Pit	Rural (Cat 2B) Sheeted Collector - Medium Use (Average Material) Surface Resheet	$85,211
2024	634	1015	Mt Isabella Road (005) from Mount Hill Coomaba Rd to Carrs Rd	Rural (Cat 2A) Sheeted Collector - High Use (Average Material) Surface Resheet	$146,339
2024	666	929	Nankivells Road (005) from Lincoln Highway to Lipson/Ungarra Rd	Rural (Cat 2B) Sheeted Collector - Medium Use (Good Material) Surface Resheet	$120,677
2024	437	949	North Coast Road (015) from Brayfield Rd to Kiandra Rd	Rural (Cat 2A) Sheeted Collector - High Use (Good Material) Surface Resheet	$48,685
2024	717	1132	Pub Corner Road (010) from Chainage 3100 to Beaumont Rd	Rural (Cat 2B) Sheeted Collector - Medium Use (Average Material) Surface Resheet	$60,536
2024	488	1018	Reserve Road (005) from Coomaba/Mt Hill Rd to Chainage 4200 (Pit)	Rural (Cat 3A) Sheeted Local Access - Standard Use (Poor Material) Surface Resheet	$74,088
2024	510	935	South Coast Road (015) from Lipson Cove Rd to Bergs Rd	Rural (Cat 2B) Sheeted Collector - Medium Use (Good Material) Surface Resheet	$119,963
2024	669	1101	Wharminda Boundary Road (015) from Chainage 9400 (Gate) to Wills Rd	Rural (Cat 2B) Sheeted Collector - Medium Use (Average Material) Surface Resheet	$118,124
2024	530	1088	Wharminda Boundary Road (020) from Wills Rd to Wharminda Rd	Rural (Cat 2B) Sheeted Collector - Medium Use (Average Material) Surface Resheet	$111,097
2024	643	1103	Wharminda Road (015) from Brooker Rd to Chilmans Rd	Rural (Cat 1) Sheeted Arterial - High Use (Average Material) Surface Resheet	$102,280
2024	586	971	Yallunda Flat Uranno Road (005) from Bratten Way to Chainage 3200 (Bellengers Gate)	Rural (Cat 2B) Sheeted Collector - Medium Use (Average Material) Surface Resheet	$87,514
2025	617	903	Bailla Hill Road (005) from Lincoln Highway to Bailla Hill Fire Track	Rural (Cat 2A) Sheeted Collector - High Use (Good Material) Surface Resheet	$121,941
2025	516	1011	Boundary Road (010) from Carrs Rd to Mount Hill Coomaba Rd	Rural (Cat 3A) Sheeted Local Access - Standard Use (Average Material) Surface Resheet	$95,203
2025	676	1025	Brooker Road (055) from Challingers Rd to Neats Rd	Rural (Cat 1) Sheeted Arterial - High Use (Good Material) Surface Resheet	$112,202
2027	476	1034	Willis Lane (005) from Coomaba/Mt Hill Rd to Northern End	Rural (Cat 3B) Sheeted Local Access - Low Use (Average Material) Surface Resheet	$74,823
Total Funds required - Unlimited Model					$1,849,923
Grand Total - Unlimited Model					$3,006,961

2023/2024 Costing Estimates Unlimited Model

Represents priorities from prvious years - Not yet Funded
Represents Additional Priorities for 2024
Represents priorities from previous years - Deferred pending Port Developments
Road suffering from multiple base failures and accelerated seal degradation - Estimate for Seal only

2023/2024 Funding available as per Draft LTFP

Sealing	$277,834
Re-Seeting	$873,366
Total	$1,151,200

2023/2024 - Funds Required Unlimited Model

Sealing	$126,752
Re-Sheeting	$772,066
Total	$898,818

2023/2024 - Funds Required Unlimited Model

Sealing	$973,438
Re-Sheeting	$810,877
Total	$1,784,315

2023/2024 - Funds Required Unlimited Model

Sealing	$0
Re-Sheeting	$266,980
Total	$266,980

20234/2024 - Funds Required Unlimited Model - Seal Only

Sealing	$56,848
Re-Sheeting	$0
Total	$56,848

Grand Total	$3,006,961

Infrastructure Asset Management Plan

Transport & Stormwater

District Council of Tumby Bay

27 February 2020
Ref: 20190638R004RevC

DISTRICT COUNCIL of TUMBY BAY

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Building exceptional outcomes together

Document History and Status

Rev	Description	Author	Reviewed	Approved	Date
A	Draft for Client Comment	KJS	RKE	RKE	14 November 2019
B	For Public Consultation	KJS	RKE	RKE	12 December 2019
C	Adopted 27/2/2020 – Motion Number 1sp/22020	KJS	RKE	RKE	27 February 2020

DISTRICT COUNCIL of TUMBY BAY

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Client: District Council of Tumby Bay
Ref: 20190638R004RevC

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1 Introduction

1.1 Background

The District Council of Tumby Bay is located 45km north of Port Lincoln, and 630km from Adelaide, and covers an area of 261,950 hectares. It has a population of 2,610. Tumby Bay is the major centre of the Council area, Port Neill a small coastal town 40km north east of Tumby Bay, Ungarra a small agricultural based town located 28km north west of Tumby Bay and Lipson a small historic farming town located 12km north west of Tumby Bay. Council provides a Transport and Stormwater infrastructure network to residential and commercial properties in both the rural areas and built up township areas.

The transport infrastructure assets provide transport services through the provision of a safe and effective road and footpath network. The road network includes unsealed surfaces, sealed surfaces including the underlying pavement, kerbing, footpath and bridge assets.

The stormwater infrastructure assets provide a network of underground pipes and culverts within the townships of Tumby Bay and Port Neill, enabling rainfall to be easily directed from the roads. Throughout the rural areas stormwater assets are located where it is necessary to direct water under the road (cross drains) or in some circumstances over the road (floodway).

An overview of the Transport & Stormwater infrastructure assets covered by this asset management plan are shown in Table 1 and Figure 1.

Table 1 Assets covered by this plan

Asset Category	Dimension	Replacement Value
Sealed Road	61.5km	$16,545,242
Unsealed Road	876km Sheeted	$15,785,309
Footpath	17km Sealed/Paved	$2,123,940
Kerbing	59km	$8,529,812
Bridge	5 items	$2,289,674
Rural Stormwater	1.4km drains, 84 headwalls, 6 vertical walls and 40 extended aprons, 59 floodways	$3,277,353
Township Stormwater	3.7km drains, 111 stormwater pits and 11 headwalls	$1,390,081
TOTAL		**$49,941,411**

Council is also responsible for several unsealed (gravel, rubble or crusher dust) footpaths and approximately 114km of formed roads, however it has been determined that the renewals are funded through maintenance expenditure rather than capital, for this reason these assets are not shown in Table 1.

In accordance with Council policy the pipe/culvert/headwall combinations at any site that are valued under $10,000 are funded through maintenance expenditure rather than capital. For this reason these assets are also not shown in Table 1. In reality, Council maintains approximately over 10km of rural stormwater drains and over 250 headwalls, vertical walls and extended aprons.

Figure 1 shows the distribution of transport and stormwater assets by replacement value as at 1 July 2019 (note: sealed roads include the surface and underlying pavement).

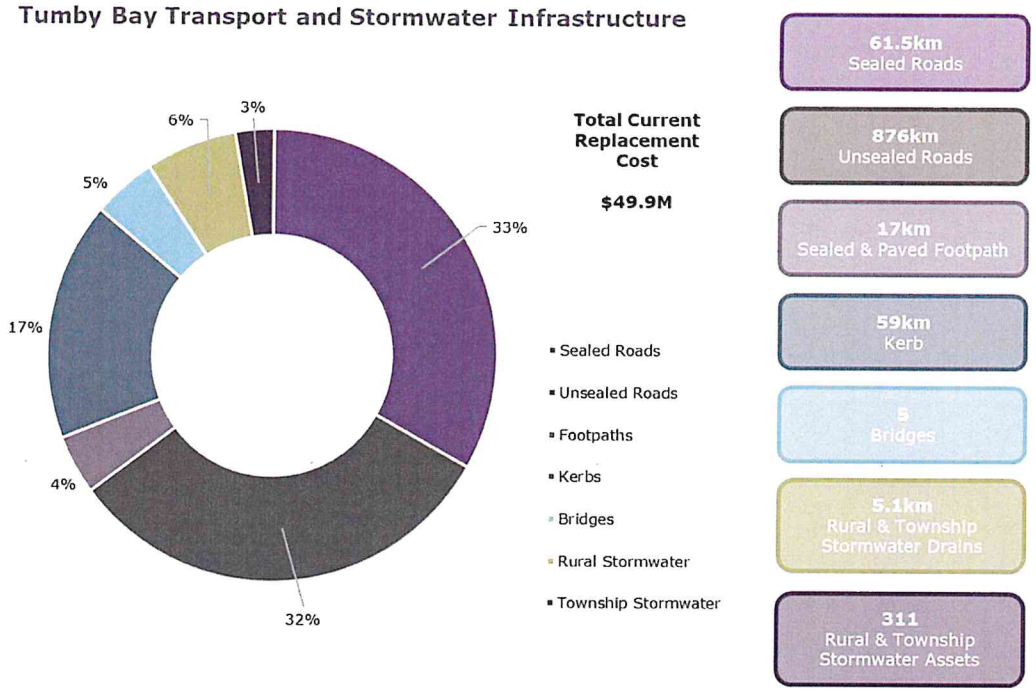

Figure 1 **Distribution of Transport & Stormwater Assets by Replacement Value as at 2019**

1.2 Plan Framework

This transport and stormwater infrastructure asset management plan is based on the fundamental structure of the IPWEA NAMS 3 Asset Management for Small, Rural or Remote Communities template and has been simplified to minimise the content to suit The District Council of Tumby Bay.

The District Council of Tumby Bay provides services for the community in part through the provision of infrastructure assets. Council have acquired these assets directly through construction by Council staff or contractors and by donation of assets constructed by developers and others over time.

The goal in managing infrastructure assets is to meet the required level of service in the most cost effective manner for present and future consumers. The key elements of infrastructure asset management are:

- Taking a life cycle approach.
- Developing cost-effective management strategies for the long term.
- Providing a defined level of service and monitoring performance.
- Managing risks associated with asset failures.
- Sustainable use of physical resources.

Key elements of the plan are:

- Levels of service – specifies the services and levels of service to be provided by Council.
- Future demand - how this will impact on future service delivery and how this is to be met.
- Life cycle management – how the organisation will manage its existing and future assets to provide the required services.
- Financial summary – what funds are required to provide the required services.
- Plan improvement and monitoring – how the plan will be monitored to ensure it is meeting the organisation's objectives.

This asset management plan is prepared under the direction of Council's Vision and Strategic Themes as described in the Strategic Plan 2020 – 2030.

Council's vision is:

"We are a district of vibrant, engaged communities. Our residents, businesses and visitors enjoy a relaxed lifestyle that our seaside and rural location affords, a pristine natural environment and a regional centre that is not compromised in character or services."

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2 Levels of Service

The community generally expect that Council will provide transport and stormwater networks which meets the required Australian and State legislative regulations. Council has defined service levels in two terms and provides the level of service objective, performance measure process and service target in Table 2 and Table 3.

2.1 Community Levels of Service

Community levels of service relate to the service outcomes that the community wants in terms of quality reliability, responsiveness, amenity, safety and financing.

Table 2 Community Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Quality	Roads provide smooth ride, footpaths provide safe access, kerbing, cross drains and stormwater provide adequate drainage.	Customer feedback and community satisfaction.	Zero complaints per year
Function	Meet user requirements.	Customer feedback and requests.	Assess and respond to requests within 30 days.
Capacity/Utilisation	Accidents related to asset conditions are minimised.	No successful claim increase against Council.	Zero claims against Council.

2.2 Technical Levels of Service

Technical levels of service support the community service levels and are operational or technical measures of performance. These technical measures relate to the allocation of resources to service activities that the council undertakes to best achieve the desired community outcomes.

Table 3 Technical Levels of Service

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Operations	Efficiently utilise assets which will consume resources such as manpower, energy and materials (IIMM).	Reinspection process developed and managed.	Reinspection program linked to maintenance and renewal programs. Reinspection program linked with customer complaints registered.

Key Performance Measure	Level of Service Objective	Performance Measure Process	Service Target
Maintenance	Retain assets as near as practicable to its original condition, but excluding rehabilitation or renewal (IIMM).	Patrol grading program developed and managed. Maintenance patching program developed and managed.	Patrol grading linked to reinspection program and road category. Maintenance linked to reinspection program and road category.
Renewal	Replace existing assets with assets of equivalent capacity or performance capability (IIMM).	Resheet model/program developed and managed. Reseal model/program developed and managed.	Meet and maintain planned renewal expenditures.

2.3 Construction and Renewal Standards for Roads

This plan has been developed based on assumptions related to the construction and renewal standards set out in the following sections for the sealed and unsealed road network.

The Condition score of a road is a measure of the road consumption between 0 and 100 where 0 represents a newly surfaced road and 100 represents a fully deteriorated road. For sheeted roads the condition score of each road is based on the sheeting depth, sheeting condition and drainage condition of the road. The Condition at End of Life is the condition at which intervention to maintain road serviceability is required. The condition of the network is further defined in Section 4 – Life Cycle Management.

2.3.1 Township Seal (High, Medium & Low Use)

Council owns and maintains a township sealed road network totalling approximately 33.1km. Township sealed roads are categorised based on high, medium and low use. Service level requirements for township sealed roads vary depending on several factors and as such no single desirable service level can be provided.

Current Standard

Construction Method

Seal Width: Varies

Seal Types: Spray seal and cold overlay

Pavement Width: Varies

Pavement Depth: 200mm

Formation: Included

Renewal Method

Reseal: Varies

- Two coat spray seal on township high use roads (spray seal 14/7mm)
- Single coat spray seal on township medium and low use roads (spray seal 5mm)

Note: it is assumed cold overlay surfaces will be replaced with spray seal.

Pavement: Varies

- For township high use roads, rework existing pavement and sub-base, import 200mm granular material, water and roll, prime surface
- For township medium and low use roads, pulverise existing sub-base, stabilise recompact and trim, prime surface

Formation: Assume have indefinite life hence no cost incurred at renewal

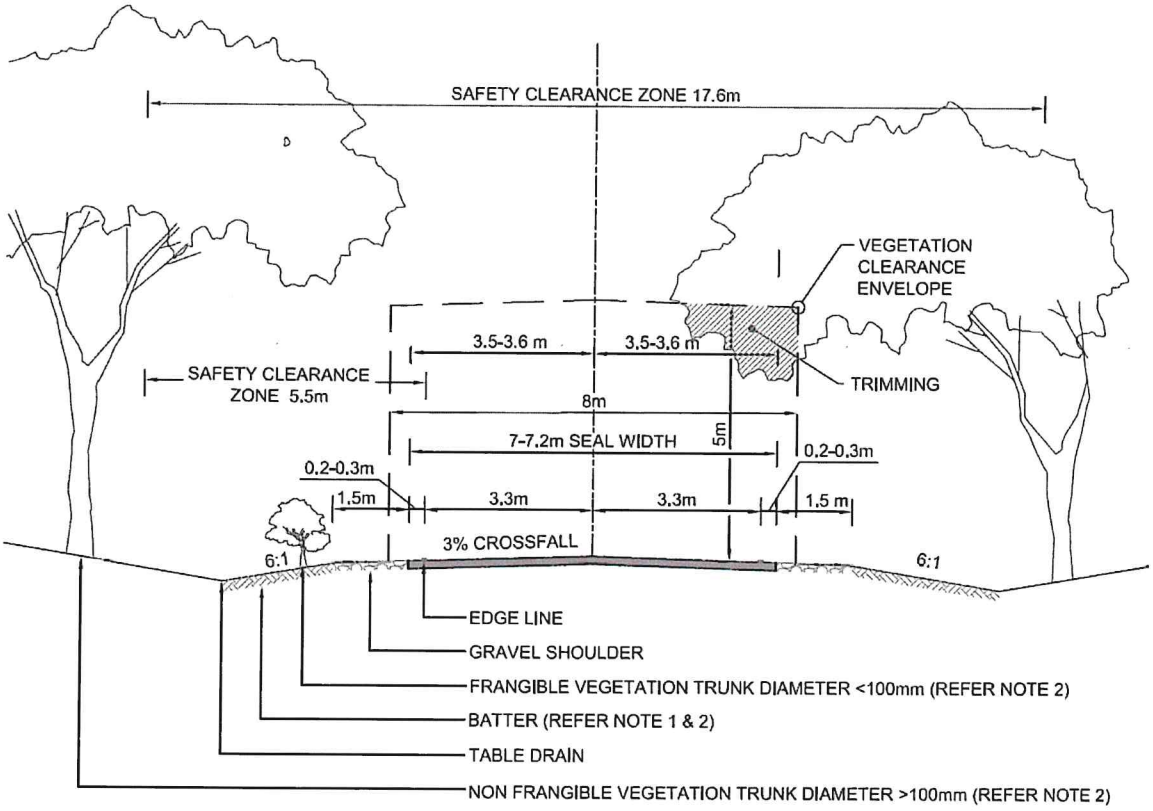
Seal Life: 10 to 22 years depending on usage

Pavement Life: 50 to 132 years depending on usage

2.3.2 Rural Seal

Council owns and maintains a rural sealed road network totalling approximately 28.4km. Rural sealed roads are all classified as high use. Figure 2 shows a typical construction cross section to illustrate Councils service target for rural sealed roads. It is noted that this is not always achievable due to native vegetation restrictions.

Target Service Level



NOTES

1. Where available safety clearance zone exceeds 21.6m in open country batters can reduce from 6:1 to 4:1, to reduce earthworks footprint.
2. Where terrain requires batters steeper than 3:1, refer Austroad (2010) Part 6 Guide to Road Design for assessment of safety barriers.
3. Frangible vegetation is permitted in the safety clear zone however should be clear in the vegetation clearance envelope.
4. Determination of safety clearance zone is based on an AADT ≤750, Design Speed of 100km/hr and fill batter slope of 6:1.

Figure 2 Rural Seal Construction Cross Section

Current Standard

Construction Method

Seal Width: Varies

Seal Types: Spray seal

Pavement Width: Varies

Pavement Depth: 200mm

Formation: Included

Renewal Method

Reseal: Single coat spray seal on (spray seal 7mm)

Pavement: Pulverise existing seal and base, import 125mm granular material, water and roll, prime surface.

Formation: Assume have indefinite life hence no cost incurred at renewal

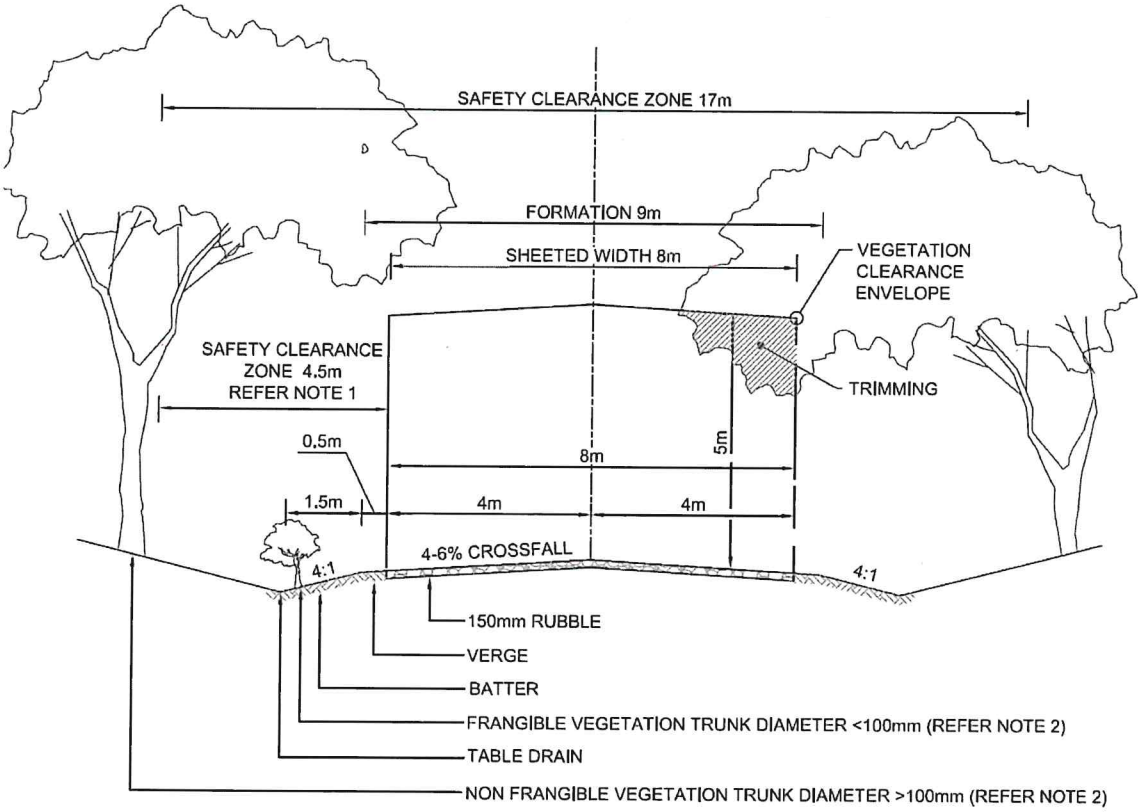
Seal Life: 15 years

Pavement Life: 120 years depending on material

2.3.3 Rural Sheeted Category 1 (Arterial)

Council owns and maintains a rural sheeted category 1 road network totalling approximately 128km. Rural sheeted category 1 roads are all classified as high use. Figure 3 shows a typical construction cross section to illustrate Councils service target for rural sheeted category 1 roads. It is noted that this is not always achievable due to native vegetation restrictions.

Target Service Level



NOTES

1. Safety clear zones have been based on practicable considerations with consideration to Unsealed Roads Manual : Guide to good practice (March 2009) & Austroads Part 6 Guide to Road Design (2010).
2. Frangible vegetation is permitted in the safety clear zone however should be clear in the vegetation clearance envelope.

Figure 3 Rural Sheeted Category 1 Construction Cross Section

Current Standard

Construction Method

Sheeting Width: 8m

Sheeting Depth: 120mm on 50mm nominal residual material (total 170mm)

Formation: Included

Renewal Method

Resheet: Reform existing material to create cross fall and shape. Supply, place and compact 120mm crushed material.

Condition at End of Life: Assume 50mm rubble left prior to resheeting with no subgrade break through, equates to a score of 60 in the asset system.

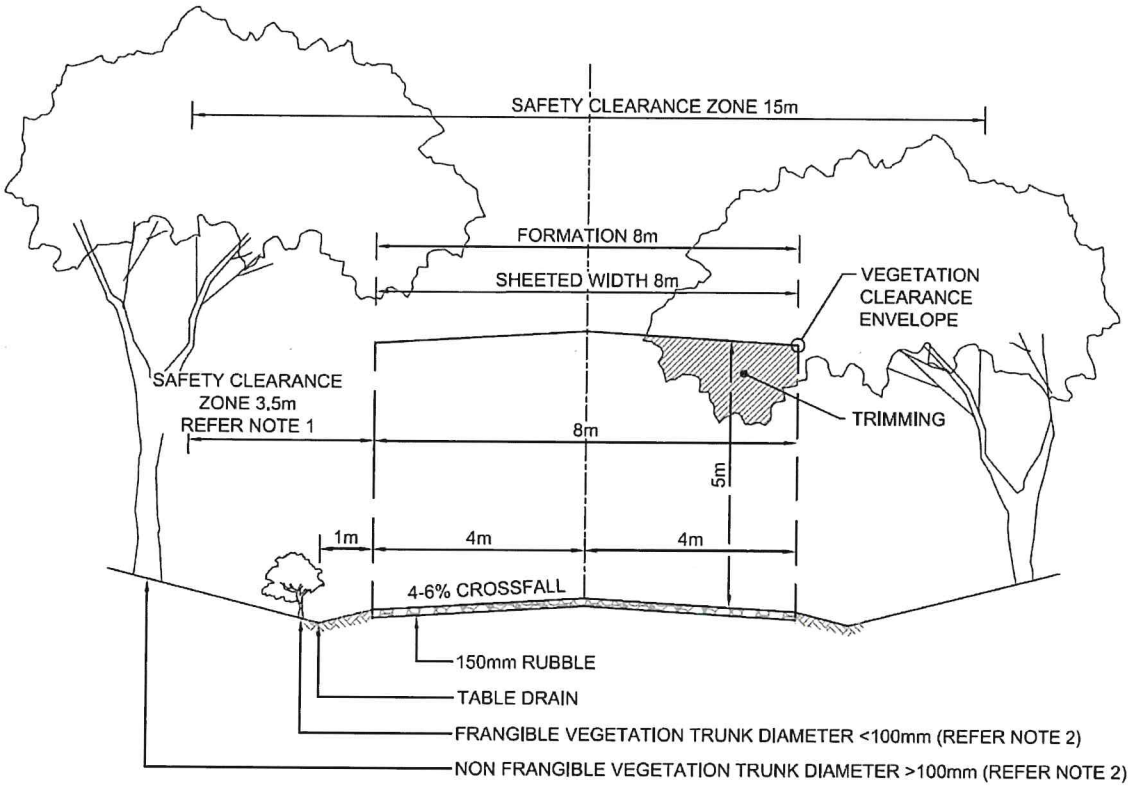
Useful Life: 10 to 15 years depending on material quality

Formation: Assume have indefinite life hence no cost incurred at renewal

2.3.4 Rural Sheeted Category 2A High Use (Collector)

Council owns and maintains a rural sheeted category 2A road network totalling approximately 180km. Rural sheeted category 2A roads are all classified as high use. Figure 4 shows a typical construction cross section to illustrate Councils service target for rural sheeted category 2A roads. It is noted that this is not always achievable due to native vegetation restrictions.

Target Service Level



NOTES

1. Safety clear zones have been based on practicable considerations with consideration to Unsealed Roads Manual : Guide to good practice (March 2009) & Austroads Part 6 Guide to Road Design (2010).
2. Frangible vegetation is permitted in the safety clear zone however should be clear in the vegetation clearance envelope.

Figure 4 **Rural Sheeted Category 2A Construction Cross Section**

Current Standard

Construction Method

Sheeting Width: 8m

Sheeting Depth: 120mm on 30-40mm nominal residual material (total 150-160mm)

Formation: Included

Renewal Method

Resheet: Reform existing material to create cross fall and shape. Supply, place and compact 120mm crushed material. No allowance made for residual rubble.

Condition at End of Life: Assume 30-40mm rubble left prior to resheeting with no subgrade break through, equates to a score of 65 in the asset system.

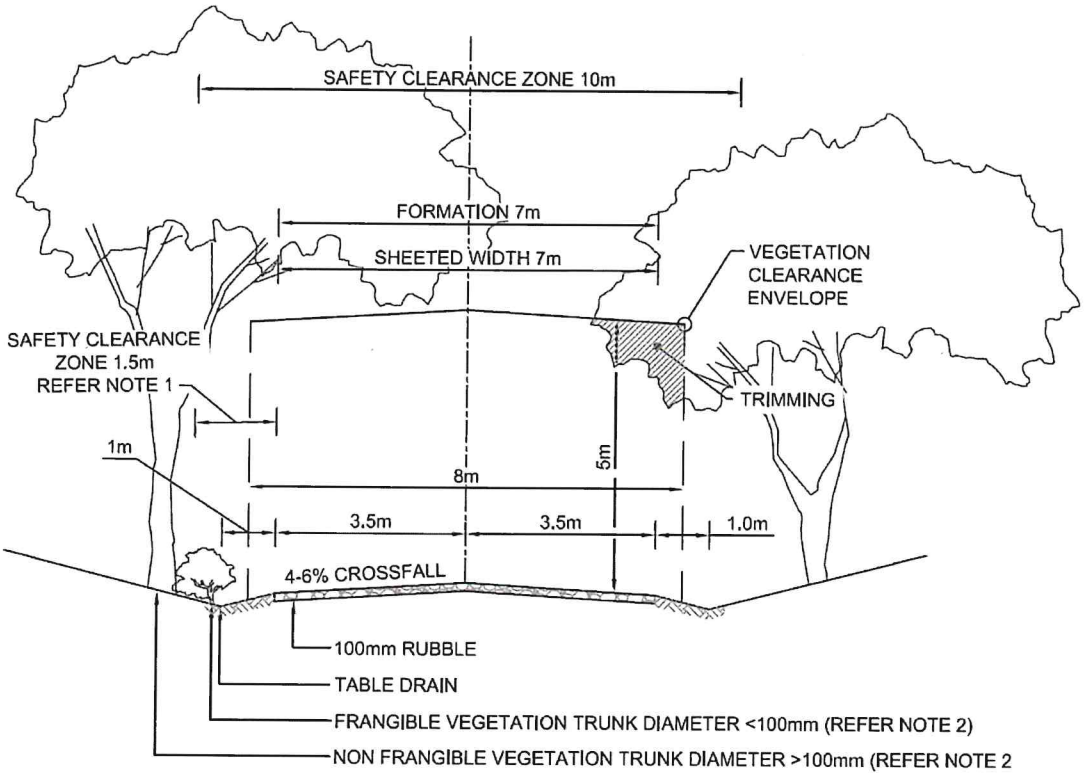
Useful Life: 12 to 17 years depending on material quality

Formation: Assume have indefinite life hence no cost incurred at renewal

2.3.5 Rural Sheeted Category 2B Medium Use (Collector)

Council owns and maintains a rural sheeted category 2B road network totalling approximately 286km. Rural sheeted category 2B roads are all classified as medium use. Figure 5 shows a typical construction cross section to illustrate Councils service target for rural sheeted category 2B roads. It is noted that this is not always achievable due to native vegetation restrictions.

Target Service Level



NOTES

1. Safety clear zones have been based on practicable considerations with consideration to Unsealed Roads Manual : Guide to good practice (March 2009) & Austroads Part 6 Guide to Road Design (2010).
2. For single lane, two way roads the following applies
   a. 6m vegetation clear envelope width
   b. 6m sheeted rubble width
   c. 8.5m safety clear zone

Figure 5 Rural Sheeted Category 2B Construction Cross Section

Current Standard

Construction Method

Sheeting Width: 7m

Sheeting Depth: 120mm on 30-40mm nominal residual material (total 150-160mm)

Formation: Included

Renewal Method

Resheet: Reform existing material to create cross fall and shape. Supply, place and compact 120mm crushed material.

Condition at End of Life: Assume 30-40mm rubble left prior to resheeting with no subgrade break through, equates to a score of 70 in the asset system.

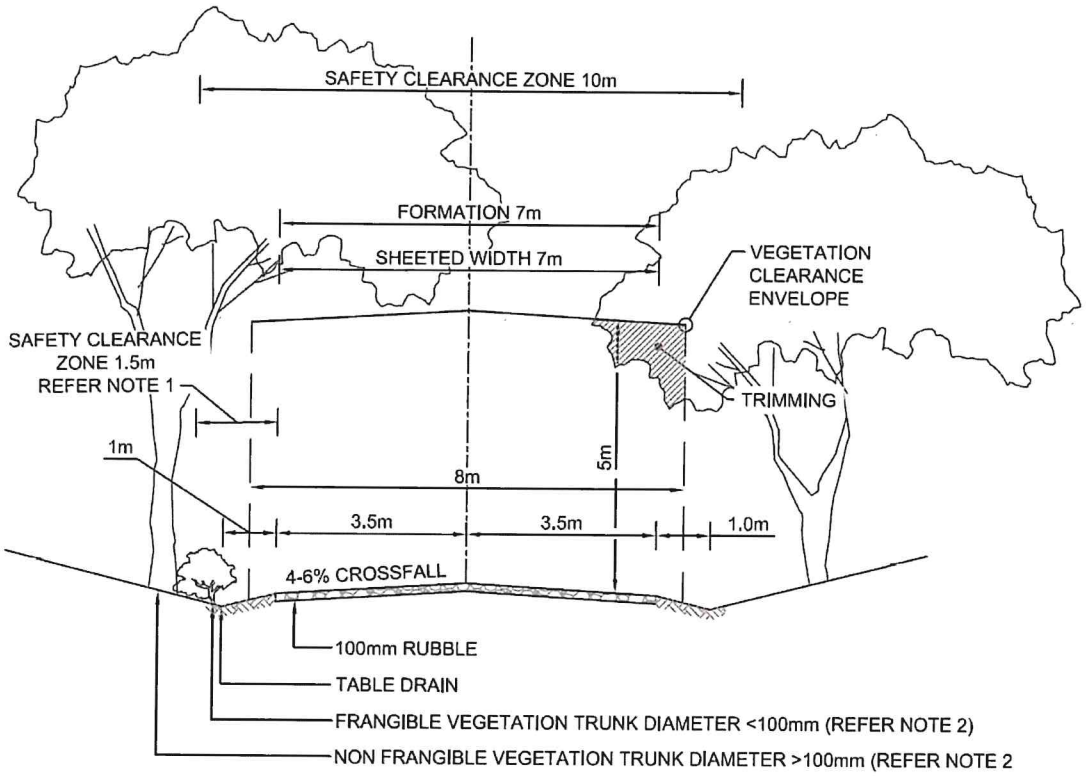
Useful Life: 17 to 25 years depending on material quality

Formation: Assume have indefinite life hence no cost incurred at renewal

2.3.6 Rural Sheeted Category 3A Standard Use & 3B Low Use (Local)

Council owns and maintains a rural sheeted category 3A & 3B road network totalling approximately 200km and 81km respectively. Rural sheeted category 3A roads are classified as standard use with category 3B roads classified as low use. Figure 6 shows a typical construction cross section to illustrate Councils service target for rural sheeted category 3A & 3B roads. It is noted that this is not always achievable due to native vegetation restrictions.

Target Service Level



NOTES

1. Safety clear zones have been based on practicable considerations with consideration to Unsealed Roads Manual : Guide to good practice (March 2009) & Austroads Part 6 Guide to Road Design (2010).
2. For single lane, two way roads the following applies
   a. 6m vegetation clear envelope width
   b. 6m sheeted rubble width
   c. 8.5m safety clear zone

Figure 6 Rural Sheeted Category 3A & 3B Construction Cross Section

Current Standard

Construction Method

Sheeting Width: 6m

Sheeting Depth: 100mm on 20-25mm remaining material (total 120-125mm)

Formation: Included

Renewal Method

Resheet: Reform existing material to create cross fall and shape. Supply, place and compact 100mm crushed material.

Condition at End of Life: Assume 20-25mm rubble left prior to resheeting with no subgrade break through, equates to a score of 75 - 80 in the asset system.

Useful Life: Varies

- 3A Standard Use 20 to 28 years depending on material quality
- 3B Low Use 30 to 40 years depending on material quality

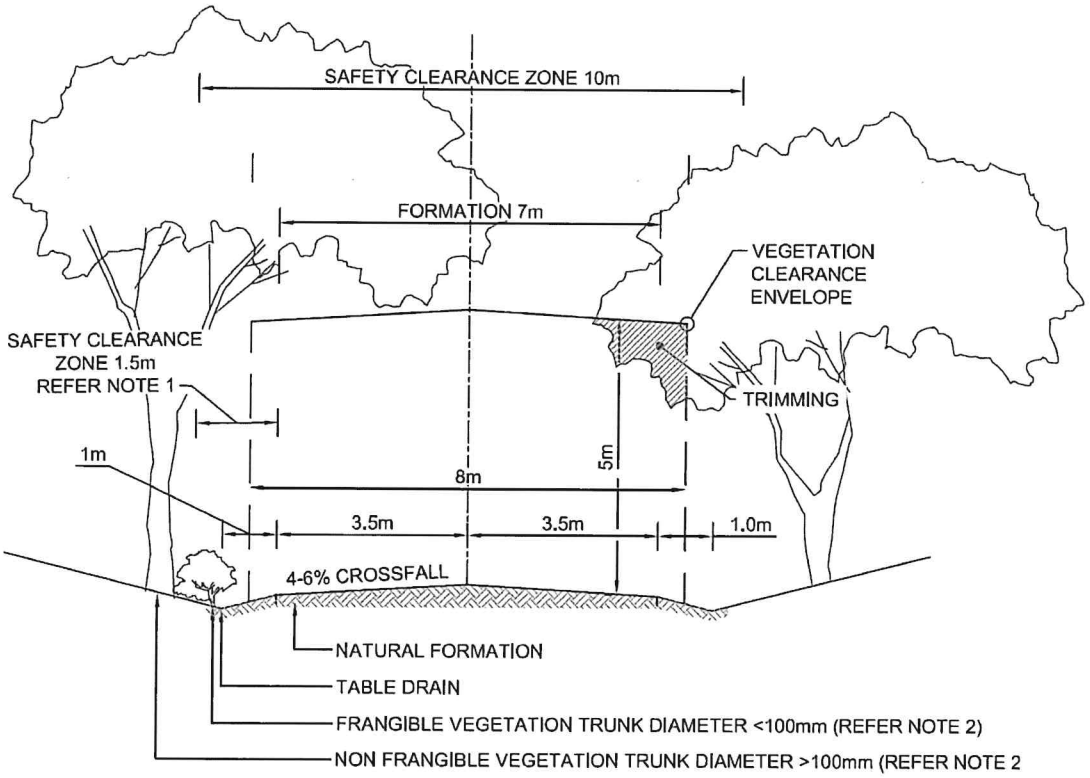
Formation: Assume have indefinite life hence no cost incurred at renewal

2.3.7 Rural Natural Formed Category 4A Standard Use & 4B Fire Track

Council owns and maintains a rural natural formed category 4A & 4B road network totalling approximately 86km and 28km respectively. Rural natural formed category 4A roads are classified as standard use with category 4B roads classified as fire track use. Figure 6 shows a typical construction cross section to illustrate Councils service target for rural natural formed category 4A & 4B roads. Natural formed roads require no road base material to provide a surface, they are never renewed by capital works, they do undergo regular maintenance activities (grading). Category 4A and 4B roads do not require all weather access.

It is noted that this is not always achievable due to native vegetation restrictions.

Target Service Level



NOTES

1. Safety clear zones have been based on practicable considerations with consideration to Unsealed Roads Manual : Guide to good practice (March 2009) & Austroads Part 6 Guide to Road Design (2010).
2. For single lane, two way roads the following applies
   a. 6m vegetation clear envelope width
   b. 6m formation
   c. 8.5m safety clear zone

Figure 7 Rural Natural Formed Category 4A & 4B Construction Cross Section

Current Service Level

Replacement Cost Assumptions

Not a valued asset

Renewal Method

Not a valued asset, maintained by grading

3 Future Demand

3.1 Demand Forecast

Factors affecting demand include population change, changes in demographics, seasonal factors, vehicle ownership, consumer preferences and expectations, economic factors, agricultural practices, environmental awareness, etc. Demand factor trends and impacts on service delivery are summarised in Table 4.

Table 4 Demand Factors, Projections and Impact on Services

Demand Driver	Present Position	Projection	Impact on Services
Mining sites in operation	EP Sands (Barli-Hi Lane) Cave Quarries (Foothills Road) Port Neill Quarry (Brooker Road) Modra Earthmoving (Boundary Road)	Demand for heavy vehicle (including over dimensional) and increase in vehicle movements (service/staff vehicles) to service mine and port proposals	Reduction in life of assets and increase in maintenance costs.
Export port	Port Lincoln, Tumby Bay, Cummins and Port Neill silos	Proposed export port south Pt Neill (change in vehicle distribution of traffic)	Increase/reduction in demand of roads. Higher importance of east/west roads in network.
Increase grain production due to increase in efficiencies	Grain cartage on existing roads	Increased movements and loads	Increased sheeting depth required and road damage after harvest.
Demand for over-dimensional heavy vehicles for commodity movement	Meeting demand on approved routes	Demand for upgrade of road network to meet expanding user desire	Increased construction and maintenance costs. Potential road safety impacts.
Demand for wider vehicles, especially agricultural.	Challenging maintaining clear widths desired by customers. Vegetation encroachment significant issue Budget for roadside vegetation management has been increased	Ongoing challenges in meeting expectation	Difficulty meeting customer expectation for carriageway clear width
Grain receiver change routes annually and within a season	Use of rail infrastructure has ceased which will reulting in an increased demand on road network; difficult to predict.	Increased demand on road network.	Challenge to adapt and keep up to date on demand and shifting maintenance requirements. Existing and potential growth and more vehicle movements.

Demand Driver	Present Position	Projection	Impact on Services
Waste Management Facility – Butler Centre Rd	Sub-regional landfill site servicing several Councils	Potential for increase in waste tonnages from new sources on Eyre Peninsula.	Increased requirement for road renewal and maintenance
Changing demographics and mobility expectations of elderly and young (e.g. parents with children)	Varying type, width and continuity of footpath infrastructure	Increased dissatisfaction, increased complaints	Nil
Population Growth	Historical background population growth of 0.4% per annum.	Growth in accordance with historical background growth, noting potential impact of significant regional economic development including mining operations and regional export port.	Ongoing increase in traffic reducing the life of roads and demands in higher standards.
Tourism – Increasing caravan numbers	Predominantly on arterial roads and in townships	Increasing movements on local roads to destinations, particularly coastal.	Expectation of higher quality roads. Change in vehicle types using road network and potential change in user risk profile.

3.2 Demand Management Plan

Demand for new services will be managed through a combination of managing existing assets, upgrading of existing assets and providing new assets to meet demand and demand management. Council will determine the ability of the existing assets to manage increased usage for new mining proposals and housing developments as well as demand for wider agricultural vehicular movements. Developers will be required to provide additional infrastructure for the existing network and upgrade where necessary to ensure adequate transportation and stormwater disposal. Opportunities identified to date for demand management are shown in Table 5. Further opportunities will be developed in future revisions of this asset management plan.

Table 5 Demand Management Plan Summary

Service Activity	Demand Management Plan
Mining	Ongoing discussion Being part of the proposal process Seek best outcome for community Construction and maintenance agreements to be sought with proponents, agencies and stakeholders No write offs
Increase grain production due to increase in efficiencies	Ongoing assessment of road service levels Monitor road pavement performance and adapt practices to meet demand
Demand for over-dimensional heavy vehicles for commodity movement	Application of DPTI Heavy Vehicle Framework Council level of service policy Network route assessment Define responsibility for assessment and upgrades
Demand for wider vehicles	Application of NVC Roadside Vegetation Guidelines for clearance envelopes Pursue Eyre Peninsula Roadside Vegetation Management Plan top provide specific exemptions for local requirements Maintain existing budget allocations to deliver tree trimming program
Grain receiver change routes annually and within a season	Monitor grain movement trends
Changing demographics and mobility expectations of elderly and young (e.g. parents with children)	Planning, priority and budget considerations for footpath upgrade and maintenance

4 Life Cycle Management

The life cycle management plan details how Council plans to manage and operate the assets at the agreed levels of service (defined in Section 2) while optimising life cycle costs.

4.1 Background Data

The District Council of Tumby Bay's Transport & Stormwater assets are located in both rural areas and townships within the Council and the assets covered by this asset management plan are shown in Table 1.

The township stormwater assets consumption is measured by age, rural stormwater and transport assets are measured by condition at time of inspection.

The age profile of the township stormwater assets shown by Current Replacement Cost (CRC) included in this plan is shown in Figure 8.

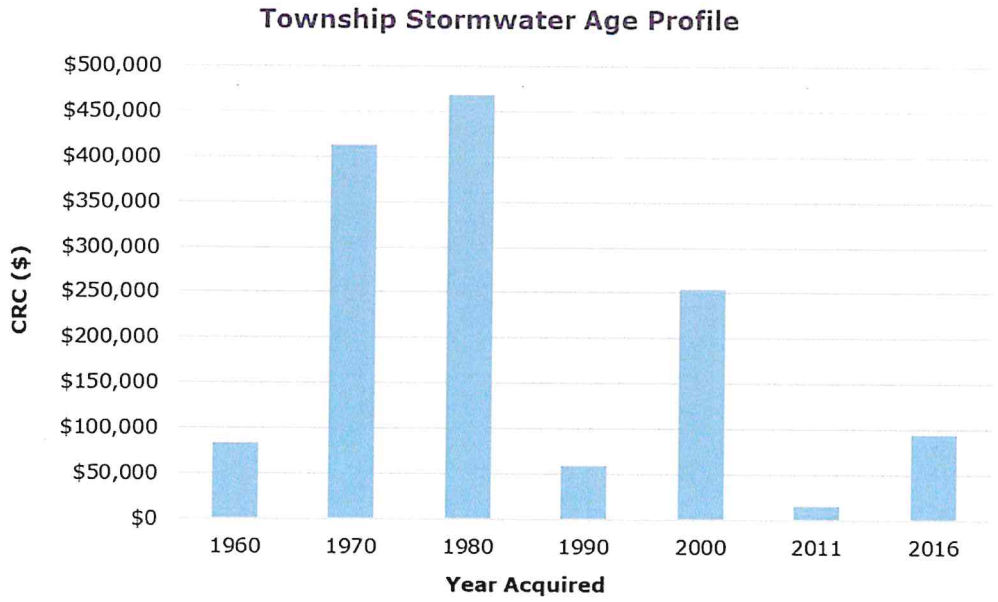


Figure 8 **Summary Stormwater Asset Age Profile**

The majority of township stormwater assets were constructed between 1970 and 1989 and a significant construction project was undertaken in 2000. Shorter life side entry pit assets constructed prior to 1980 feature in the 10 year plan for renewal.

The condition profile of the transport and rural stormwater assets shown by Current Replacement Cost (CRC) included in this plan is shown in the following figures.

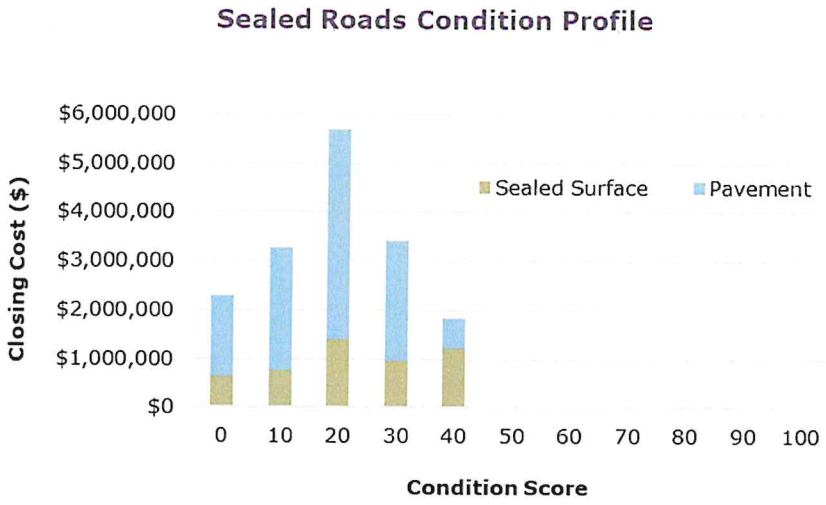


Figure 9 **Summary Sealed Road Condition Profile**

As shown in Figure 9, approximately one third of the pavement and sealed surface assets have a condition score of 30 or greater.

The defined condition score at which sealed surface assets reach their end of life is between 35 and 48. Approximately two thirds of the sealed surface assets are included in the 2019-20 and 10 year renewal plan. Pavement assets under the seal are long life assets and do not feature in the 10 year plan for renewal.

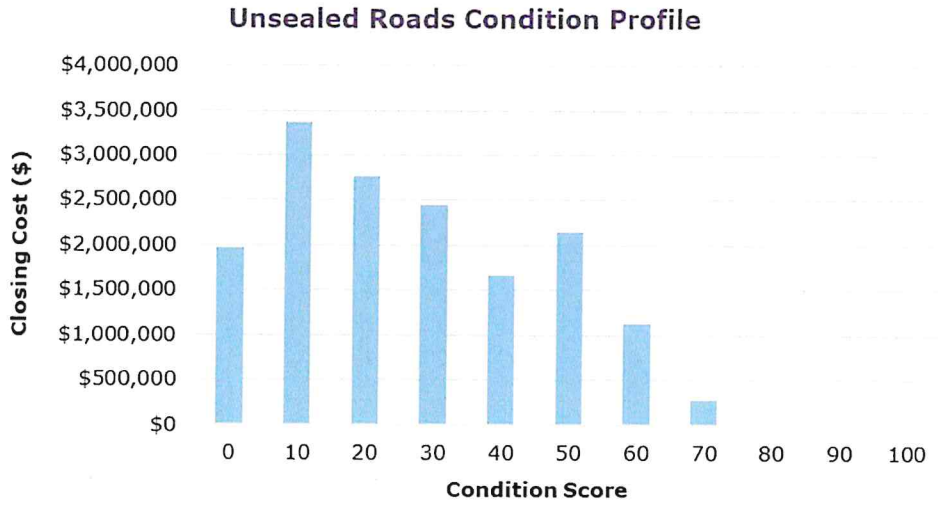


Figure 10 **Summary Unsealed Road Condition Profile**

As shown in Figure 10, approximately 50% of the unsealed road assets have a condition score of 30 or greater. The defined condition score at which unsealed assets reach their end of life is between 60 and 80. Approximately 50% of the unsealed road assets feature in the 2019/2020 and 10 year renewal plan.

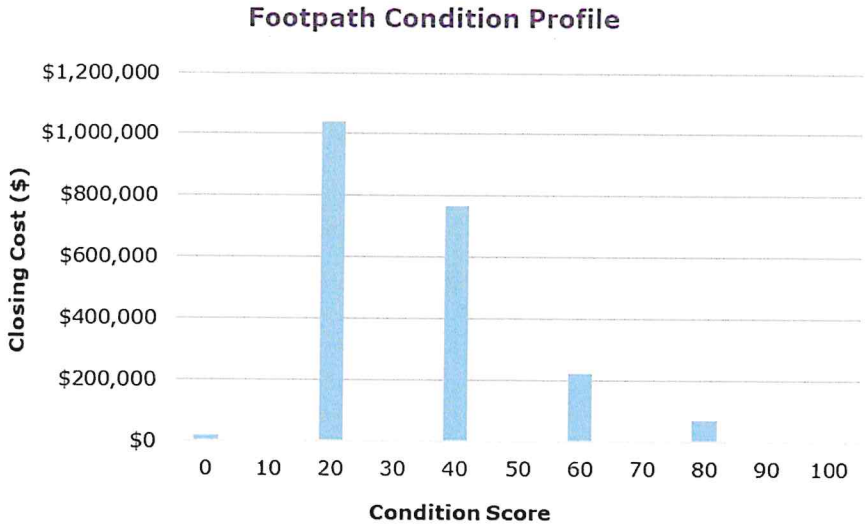


Figure 11 **Summary Footpath Condition Profile**

As shown in Figure 11, approximately 50% of the footpath assets have a condition score of 20 or less. The defined condition score at which footpath assets reach their end of life is 100. Approximately $83K of footpath assets are listed in the 10 year plan for renewal.

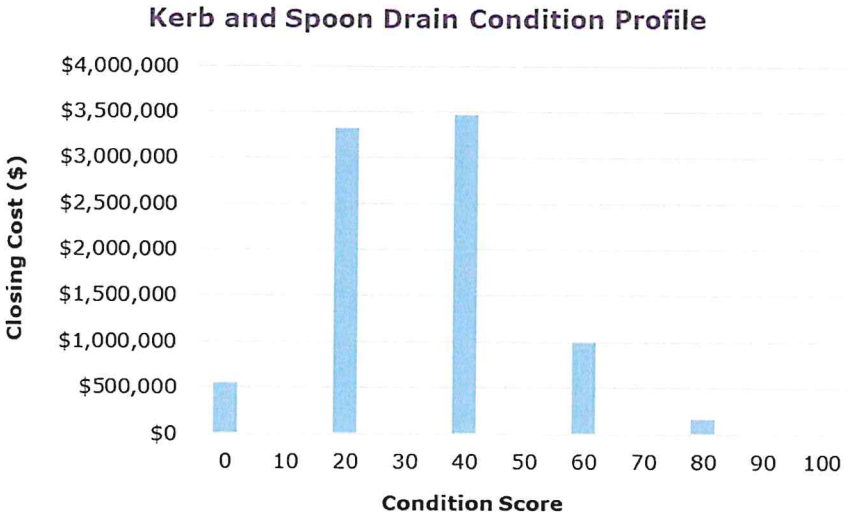


Figure 12 **Summary Kerb and Spoon Drain Condition Profile**

As shown in Figure 12, a large portion of the assets are have a condition score between 20 and 40. The defined condition score at which kerbing assets reach their end of life is 100. This is reflected with no kerbing assets featuring in the 10 year plan for renewal.

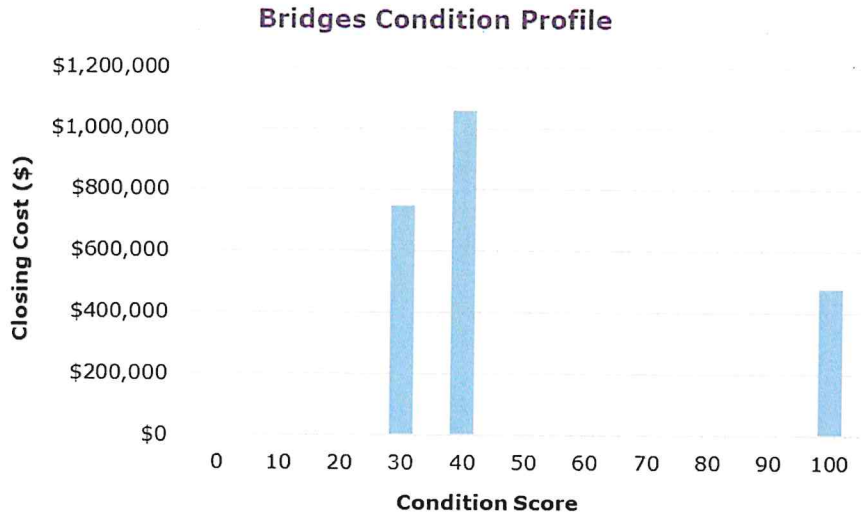


Figure 13 **Summary Bridge Condition Profile**

Council is only responsible for 5 bridge assets. As shown in Figure 13, four of the bridges have a condition score between 30 and 40. The Graham Smelt Causeway Bridge has a condition score of 100. Council plans to dispose of this bridge and replace it with an upgraded bridge that is wider and includes bike lanes.

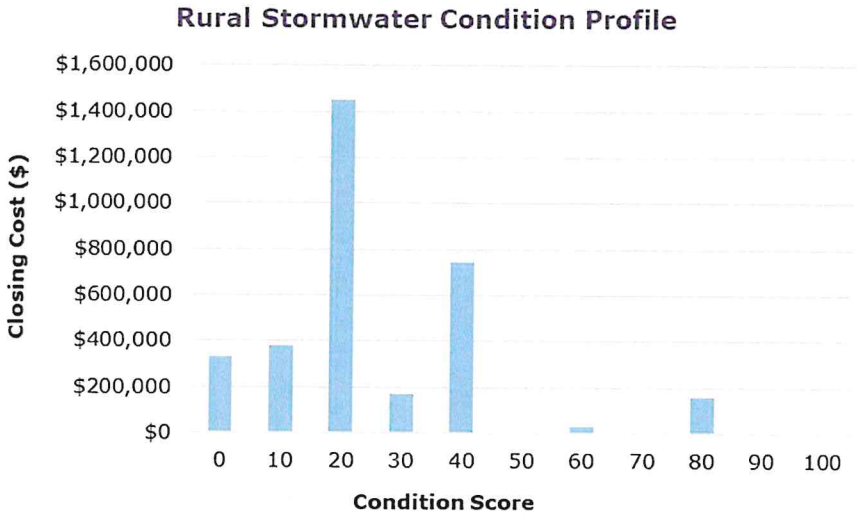


Figure 14 **Summary Rural Stormwater Condition Profile**

As shown in Figure 14, a large portion of the rural stormwater assets have a condition score of 40 or less. The defined condition score at which rural stormwater assets reach their end of life is 100. Approximately $135K of rural stormwater assets are listed in the 10 year plan for renewal.

Note: In accordance with Council policy only rural stormwater pipe/culvert/headwall combinations at any site with a replacement cost over a threshold of $10,000 are to be recognised as valued assets and therefore included as part of the 10 year renewal plan. All other assets are held within Council's asset register and subject to maintenance when required.

4.1.1 Asset Capacity and Performance

Council's services are generally provided to meet design standards where these are available. Locations where deficiencies in service performance are known are detailed in Table 6.

Table 6 Known Service Performance Deficiencies

Location	Service Deficiency
Age friendly infrastructure within townships	Inconsistent surface type, width and alignment of footpaths. Risk of trip hazard, particularly for elderly people. Currently not being addressed. Provision of kerb ramps inconsistent and of varying standard. Inadequate linkage between aged activity hubs (hospital, aged homes, recreation areas, town centre, senior citizens centre) being considered through Urban Design Framework process.
Restricted Access Vehicle networks extent does not meet expectations	Limited network to allow access by RAVs for commodity transport. Budget limitation prevents network assessment and consideration of upgrades to extend network.
Carriageway clearance width management	Vegetation encroaching in envelope affecting large vehicles. Seasonal issue particularly at seeding time.
Family friendly infrastructure	Potential improvement in pedestrian and bicycle movements through townships, promoting links between activity hubs (school, town oval, town centre, foreshore) being considered through Urban Design Framework process.
Tumby Bay	Lack of direct collector road network to service 'island' residential areas. Current indirect route places high traffic volumes on local access standard roads.

4.1.2 Asset Condition

Transport and rural stormwater assets have been visually inspected and the condition is measured using a 0-100 rating system, a summary of the condition rating methodology implemented for the different assets types is described below.

It is not practical to condition rate township stormwater assets, therefore construction dates (age) will be used to estimate asset consumption.

Sealed Road

Sealed roads are inspected at a segment level, several defects are recorded and given a score out of 100 based on their severity and extent of damage. The defects recorded vary depending on the type of surface, additional defects are collected to assess the underlying pavement and the construction date of the pavement is also included as a factor. The defects collected for sealed roads include:

- Binder
- Flushing (Texture)
- Stripping
- Patching

- Aggregate
- Environmental cracking
- Load induced cracking

The individual defect scores are weighted to provide a single overall score based on a 0 (as new) to 100 (fully consumed) rating.

Unsealed Road

Unsealed sheeted are inspected at a segment level, several defects are recorded and give a score out of 100 based on their severity and extent of damage, the defects collected for sheeted roads include:

- Sheeting depth
- Sheeting condition
- Drainage
- Rideability
- Shape (cross fall)

The individual defect scores are weighted to provide a single overall score based on a 0 (as new) to 100 (fully consumed) rating.

Footpath

Footpath assets are inspected at a segment level for both left and right hand sides. When a footpath segment is condition rated the overall condition of the footpath is recorded along with the cross fall (%). The individual scores are weighted to provide a single overall score based on a 0 (as new) to 100 (fully consumed) rating.

Kerbing

Kerbing assets are inspected at a segment level for both left and right hand sides. When a kerb segment is condition rated the cracking, misalignment, chipping and drainage ability of the kerb is assessed along with the replacement required (%). The individual scores are weighted to provide a single overall score based on a 0 (as new) to 100 (fully consumed) rating.

Bridge

Bridge assets are inspected at a component level and include wingwalls, floor, abutments, deck, kerbs, barriers and surface. The components score is then averaged to provide an overall score based on a 0 (as new) to 100 (fully consumed) rating.

Rural Stormwater

Rural stormwater assets include pipes, box culverts, headwalls and floodways, each asset type is inspected individually. Pipe and box culvert assets are assessed based by visual assessment of the condition, a blockage score and a vegetation score. These three scores are weighted to provide a single overall score based on a 0 (as new) to 100 (fully consumed) rating. Headwall and floodway assets are assessed by visual assessment of the condition only based on a 0 (as new) to 100 (fully consumed) rating.

4.1.3 Asset Valuations

The value of the transport and township stormwater assets recorded in the asset register as at 1 July 2019 covered by this asset management plan is shown below. Assets were last revalued at 1 July 2019.

Current Replacement Cost as at 1 July 2019	$49,941,411
Accumulated Depreciation	$20,220,334
Written Down Value	$29,721,077
Forecast Annual Depreciation 2019-20	$1,375,067

The current rate of consumption (annual depreciation / depreciable amount) for transport and township stormwater assets is 2.8%. This indicates on average over the life of the asset that 2.8% of the depreciable amount is consumed annually. The translation of this consumption rate into renewals is subject to a decision on funding, service level determination, timing of renewal and condition.

4.2 Risk Management

A formal assessment of risks associated with service delivery from transport and township stormwater infrastructure assets has not been undertaken by Council. The risk assessment process identifies credible risks, the likelihood of the risk event occurring, the consequences should the event occur, develops a risk rating, evaluates the risk and develops a risk treatment plan for non-acceptable risks.

Critical risks, assessed as being 'Very High' - requiring immediate corrective action and 'High' - requiring prioritised corrective action will be identified with associated costs in future revisions of the plan.

This plan does not include a full risk assessment, future iterations of the plan may consider this.

At a high level, the following risks have been identified and considered in the development of this plan:

- Failing to fund annual depreciation costs and therefore not meeting long term renewal requirements for existing assets
- Reduction in maintenance budgets leading to level of service reduction in assets
- Loss of external funding eg Roads to Recovery, Financial Assistance Grants that provides critical financing of this plan
- Inability to respond to changing user expectations due to funding or resourcing limitations

4.3 Required Expenditure

This asset management plan identifies the projected operations, maintenance and capital renewal expenditures required to provide an agreed level of service to the community over a 10 year medium term financial planning period. This provides input into the current long term financial plan and is aimed at providing the required services in a sustainable manner.

4.3.1 Routine Maintenance

Routine maintenance is the regular on-going work that is necessary to keep assets operating, including instances where portions of the asset fail and need immediate repair to make the asset operational again. Maintenance includes reactive (unplanned), planned and specific maintenance work activities. Assessment and prioritisation of reactive maintenance is undertaken by operational staff using experience and judgement.

Note that all costs are shown in 2019/2020 financial year dollar values.

Future operations and maintenance expenditure is forecast to trend in line with the value of the asset stock as shown in Table 7 and Figure 15, the average annual operation and maintenance cost over 2019/2020 and the 10 year planning period (medium term) is $899,955. This plan does not include an allowance for growth, future development of this plan may include growth (%).

Table 7 **Projected Operation and Maintenance Expenditure**

Financial Year	Operation	Maintenance	Total
2019-20	$296,900	$594,600	$891,500
2020-21	$296,400	$604,400	$900,800
2021-22	$296,400	$604,400	$900,800
2022-23	$296,400	$604,400	$900,800
2023-24	$296,400	$604,400	$900,800
2024-25	$296,400	$604,400	$900,800
2025-26	$296,400	$604,400	$900,800
2026-27	$296,400	$604,400	$900,800
2027-28	$296,400	$604,400	$900,800
2028-29	$296,400	$604,400	$900,800
2029-30	$296,400	$604,400	$900,800
Total	**$3,260,900**	**$6,638,600**	**$9,899,500**

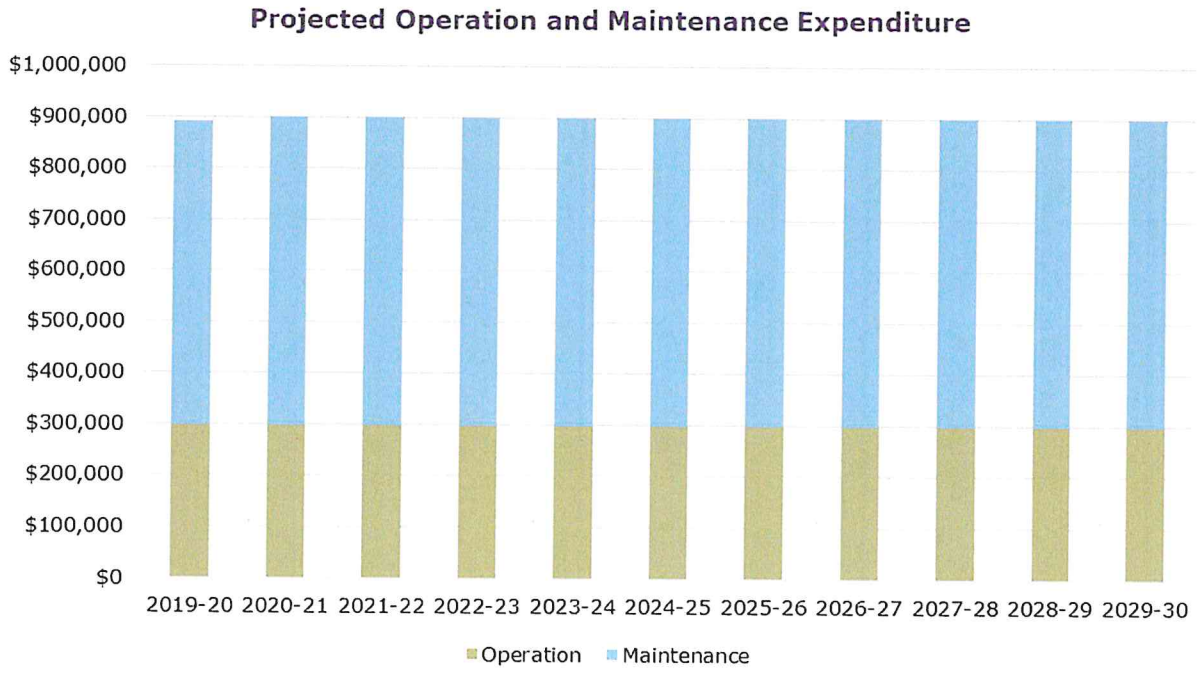


Figure 15 **Projected Operations and Maintenance Expenditure**

The operation and maintenance budgets remain static over the 2019/2020 financial year and 10 year planning period (medium term).

4.3.2 Capital Renewal

Renewal expenditure is major work which does not increase the asset's design capacity but restores, rehabilitates, replaces or renews an existing asset to its original service potential. Work over and above restoring an asset to original service potential is considered upgrade expenditure.

The 2019/2020 and 10 year renewal plan for assets including kerb, footpath, bridge, rural and township stormwater assets was based on the asset expiry date data for assets within the register. Minor adjustments have been made to the planned renewal year for several of the assets to reflect Council's renewal plans.

The method used to develop the renewal plan for the sealed and unsealed roads was based on the most recent condition data collection and valuation as at 1 July 2019. Road Surface Manager (RSM) modelling package was utilised to assist in the development of the 2019/2020 and 10 year renewal plan for the sealed and unsealed roads. Various funding scenarios were run in RSM to determine the optimum expenditure to maintain the condition of Council's road network.

The costs associated with the renewals have been aggregated for each financial year over the 2019/2020 and 10 year planning period (medium term) and shown in Table 8 and Figure 16. The average annual capital renewal cost over 2019/2020 and the medium 10 year term is $1,019,655.

Table 8 Required Capital Renewal Expenditure

Financial Year	Capital Renewal Expenditure	Budget	Funding Gap/Surplus
2019-20	$1,083,600	$1,083,600	$0
2020-21	$1,121,474	$1,121,474	$0
2021-22	$1,049,868	$1,049,868	$0
2022-23	$1,052,693	$1,052,693	$0
2023-24	$1,035,650	$1,035,650	$0
2024-25	$858,916	$858,916	$0
2025-26	$1,156,641	$1,156,641	$0
2026-27	$820,727	$820,727	$0
2027-28	$903,497	$903,497	$0
2028-29	$1,057,218	$1,057,218	$0
2029-30	$1,075,926	$1,075,926	$0
Total	**$11,216,209**	**$11,216,209**	**$0**

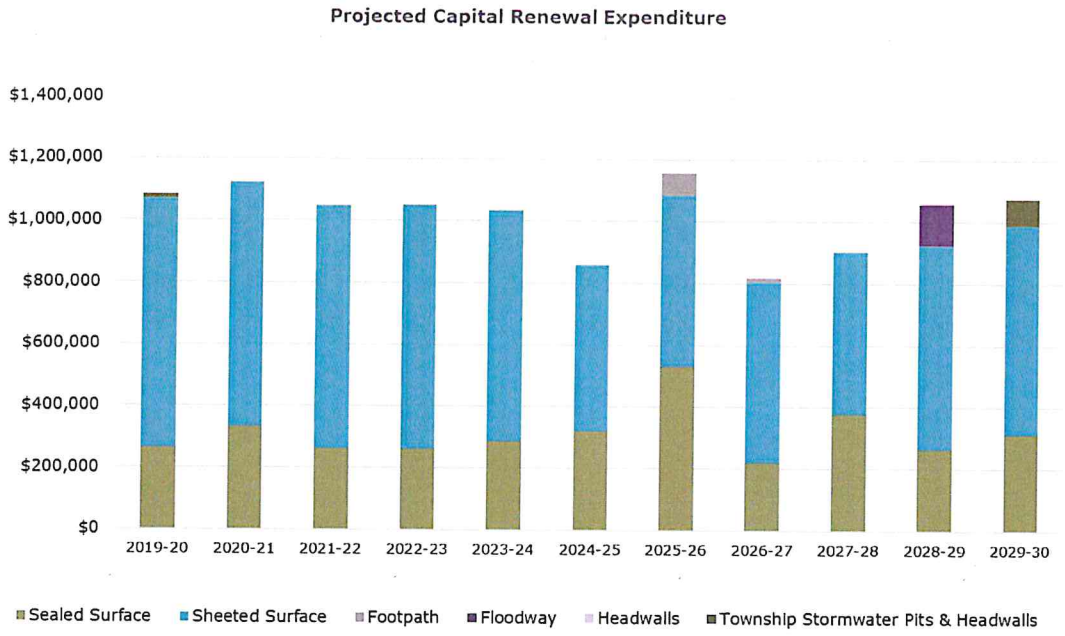


Figure 16 **Required Capital Renewal Expenditure**

The Projected capital renewal program is shown in Appendix A.

4.3.3 Capital New/Upgrade and Acquisition

New/upgrade expenditure is major work that creates a new asset that did not previously exist, or works which upgrade or improve an existing asset beyond its existing capacity. They may result from growth, social or environmental needs. Assets may also be acquired at no cost to the Council from land development.

Council has identified the upgrade of the Bratten Bridge (Lipson Ungarra Road) during 2019/2020, upgrade of the Graham Smelt Causeway Bridge (Tumby Bay township) during 2021/2022, upgrades to rural floodways during 2024/25 and the construction of new footpaths over the life of the plan as the upgrade works to be undertaken.

The costs associated with the new/upgrades have been aggregated for each financial year over the 2019/2020 and the 10 year planning period (medium term) and shown in Table 8 and Figure 16, the average annual upgrade cost over the medium term is $292,178.

Table 9 **Budgeted New/Upgrade Expenditure**

Financial Year	Capital New/Upgrade Expenditure
2019-20	$1,020,200
2020-21	$42,500
2021-22	$1,661,600
2022-23	$42,000
2023-24	$41,700
2024-25	$239,400
2025-26	$36,400
2026-27	$36,200
2027-28	$33,400
2028-29	$33,500
2029-30	$33,000
Total	**$3,219,900**

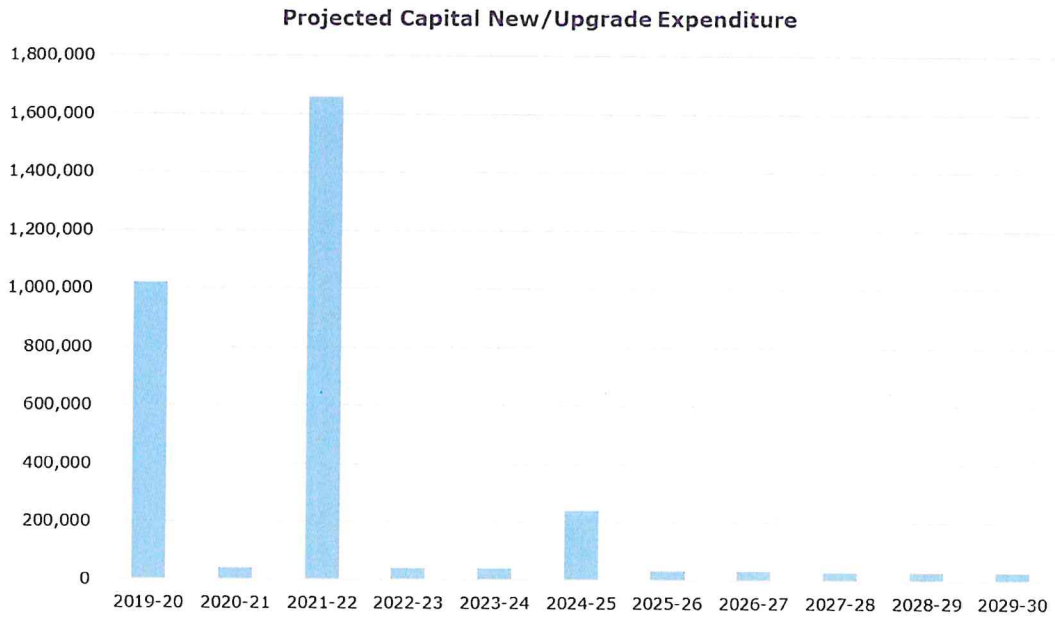


Figure 17 **Budgeted New/Upgrade Expenditure**

4.3.4 Disposal Plan

Disposal includes any activity associated with disposal of a decommissioned asset including sale, demolition or relocation. The current Graham Smelt Causeway Bridge that is due for renewal in 2019/2020 will be disposed during replacement with an upgraded bridge that is wider and includes bike lanes. These works are planned for 2021/2022.

4.3.5 Financial Projections

The financial projections are shown in Table 10 and Figure 18 for projected operating (operation and maintenance), capital renewal, capital new/upgrade and estimated budget funding. The projected average operation, maintenance and capital expenditure required over the 2019/2020 financial year and 10 year planning period is $2,212,328 per year.

Table 10 Operating and Capital Expenditure

Financial Year	Operation and Maintenance	Capital Renewal	Capital New/Upgrade	Estimated Budget Funding
2019-20	$891,500	$1,083,600	$1,020,200	$2,995,300
2020-21	$900,800	$1,121,474	$42,500	$2,064,774
2021-22	$900,800	$1,049,868	$1,661,600	$3,612,268
2022-23	$900,800	$1,052,693	$42,000	$1,995,493
2023-24	$900,800	$1,035,650	$41,700	$1,978,150
2024-25	$900,800	$858,916	$239,400	$1,999,116
2025-26	$900,800	$1,156,641	$36,400	$2,093,841
2026-27	$900,800	$820,727	$36,200	$1,757,727
2027-28	$900,800	$903,497	$33,400	$1,837,697
2028-29	$900,800	$1,057,218	$33,500	$1,991,518
2029-30	$900,800	$1,075,926	$33,000	$2,009,726
Total	**$9,899,500**	**$11,216,209**	**$3,219,900**	**$24,335,609**

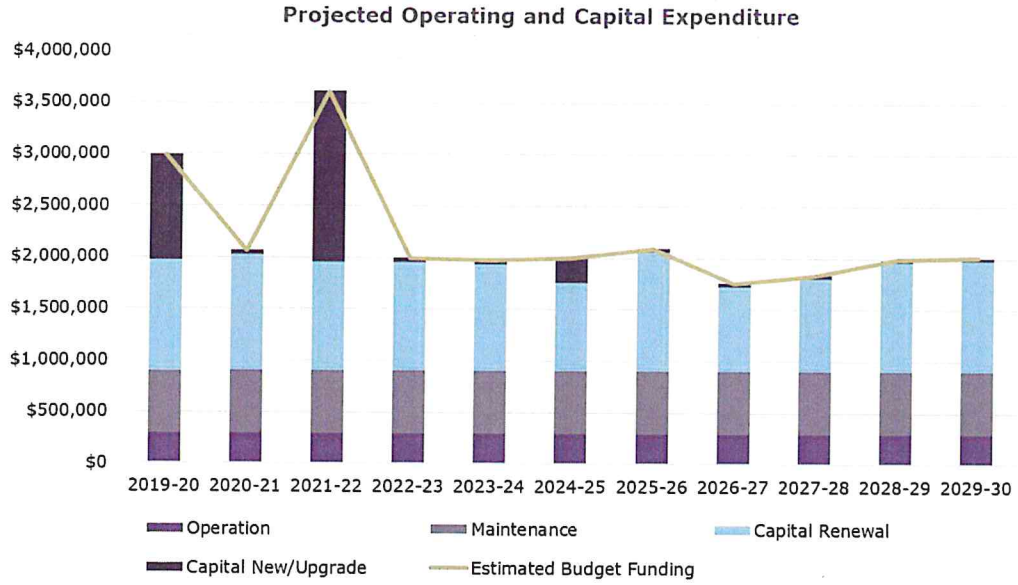


Figure 18 **Ten Year Projected Operating and Capital Expenditure**

5 Plan Improvement and Monitoring

The following tasks have been identified for improving future versions of the plan. Council should assign responsibilities and resources to these tasks as part of the endorsement of the plan.

Table 11 Tasks identified for improving future versions of the plan

Task No.	Task	Responsibility
1.	Conduct a risk assessment workshop in order to develop a critical risk and treatment plan for inclusion in future iterations of the plan.	Council
2.	Visual condition assessment of individual township stormwater pits and update renewal plan. Township stormwater assets are currently age based and grouped within the asset register.	Council

This asset management plan will be reviewed during annual budget planning processes and amended to recognise any material changes in service levels and/or resources available to provide those services as a result of budget decisions.

This plan has a life of 10 years and is due for revision and updating within 2 years of each Council election.

6 References

District Council of Tumby Bay Strategic Plan 2020-2030

District Council of Tumby Bay Annual Report 2017/2018

IPWEA, 2006, *NAMS.PLUS3 Asset Management*, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org

IPWEA, 2011, *Asset Management for Small, Rural or Remote Communities Practice Note*, Institute of Public Works Engineering Australia, Sydney, www.ipwea.org

District Council of Tumby Bay Road Service Levels (20130799DR1B)

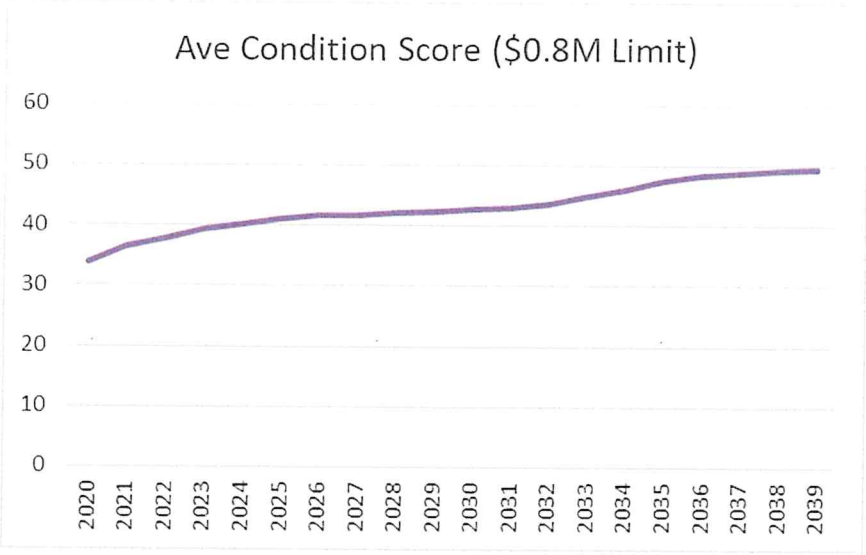
District Council of Tumby Bay Road Asset Valuation & Methodology 1 July 2019 (20190638R001RevA)

District Council of Tumby Bay Stormwater Asset Valuation & Methodology 1 July 2019 (20190638R002RevA)

Appendix A – Road Surface Modelling Outputs

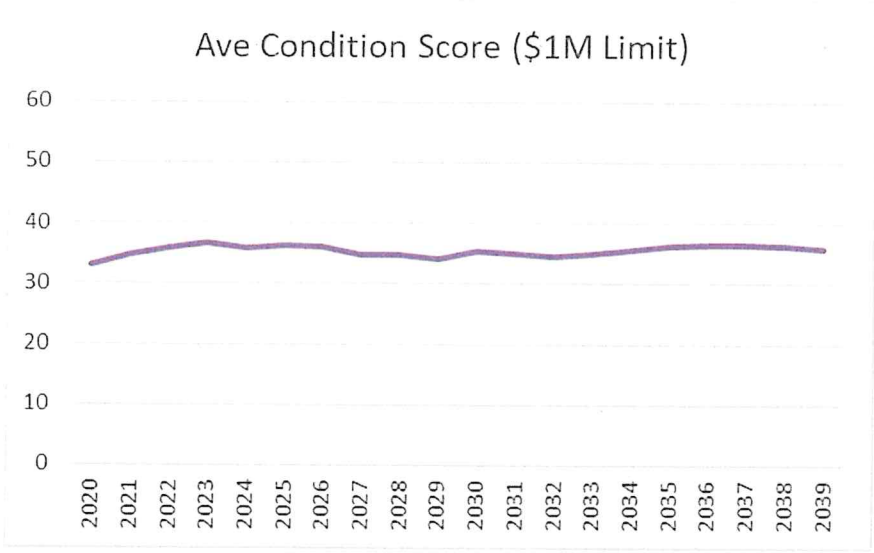
Fixed Budget Scenarios

The figure below shows the condition forecast using a fixed budget scenario with a limit of $0.8M per year. The graph demonstrates that over the next 20 year period the average network condition deteriorates as the funding is insufficient to maintain the network (Condition score 33 to 50). The average network condition is also forecasted to continually deteriorate past that period.



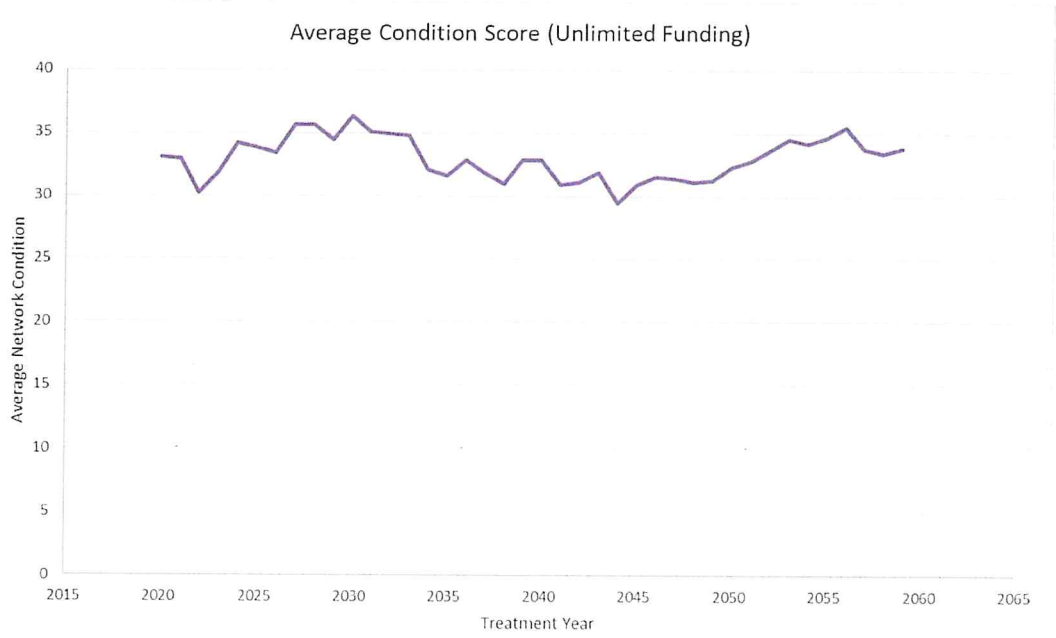
$0.8M Limited Funding Scenario Condition Score

The figure below shows the condition forecast using a fixed budget scenario with a limit of $1M per year. The graph demonstrates that over the next 20 year period the average network condition is reasonably steady (Condition score 33 to 36) as the funding is sufficient to maintain the network condition over this period. Should this funding scenario continue past the 20 year period, the average network condition score is forecasted to continue to remain steady. The benefit of optimum funding and the application of strategic renewal and maintenance works is demonstrated through the figure below and over time improves Council's financial sustainability.



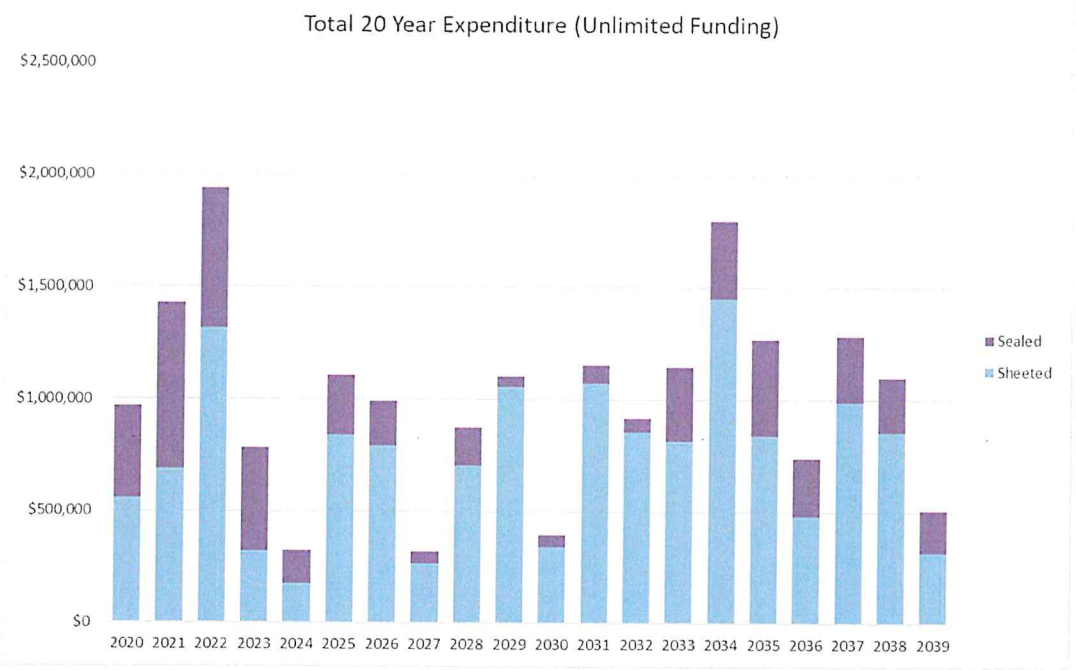
$1.0M Limited Funding Scenario Condition Score

As part of the process, it is necessary to model the network over a longer period as the expected life of some surfaces assets is greater than 20 years. The figure below shows the condition forecast using unlimited funds over a 40 year period. At year 2039 (20 year period) the average condition of the network is the same as at 2019 (Condition 33). The average condition improves for a period of 5 years and then begins to deteriorate. This is expected as the cycle of road life and renewal moves forward. This unlimited funding scenario uses the first treatment when first required but it does not allow roads to deteriorate to the next higher cost treatment thereafter.



Unlimited Funding Scenario Condition Score

The 20 year expenditure for the unlimited funding scenario is provided below. The total expenditure for the 20 year period for the unlimited funding scenario is $20.2M. The actual 10 year renewal plan has been developed by adjusting the renewal years to reflect the planned renewal of sealed and sheeted road surfaces.



Unlimited Funding Scenario 20 Year Expenditure

Appendix B – Projected 4 Year Capital Renewal

Tumby Bay Roads and Stormwater Projected 4 Year Capital Renewal Program

Asset ID	Sub Category	Asset Name	Planned Renewal Year	Renewal Cost ($)
959	Rural Sheeted	Butler Centre Road (010) from Berrymans Rd to Liddicoats Rd	2019-20	$89,705
1001	Rural Sheeted	Cranky Flat Road (010) from Yallunda Flat Uranno Rd to Kapinka Rd	2019-20	$55,638
902	Rural Sheeted	Howards Road (005) from Rock Valley Rd to Bailla Hill Rd	2019-20	$67,392
4855	Rural Sheeted	Koppio Road (025) from End of Seal 150m E of Yallunda Flat Rd to Bailla Hill Rd	2019-20	$50,449
930	Rural Sheeted	South Coast Road (020) from Bergs Rd to Chainage 16911 (Creek)	2019-20	$96,447
904	Rural Sheeted	Tod River Road (005) from Growdens Rd to Rock Valley Rd	2019-20	$53,136
983	Rural Sheeted	Cemetery Hill Road (005) from Western Boundary to Chainage 2700 (Lettons Gate)	2019-20	$43,200
955	Rural Sheeted	East Dog Fence Road (010) from Chainage 3800 (Pfitzners Gate) to Butler Centre Rd	2019-20	$69,379
956	Rural Sheeted	East Dog Fence Road (015) from Butler Centre Rd to Chainage 12112	2019-20	$110,160
949	Rural Sheeted	North Coast Road (015) from Brayfield Rd to Kiandra Rd	2019-20	$39,955
1108	Rural Sheeted	Brooker Road (015) from Wharminda Rd to Chainage 9495 (Sheppards Gate)	2019-20	$71,690
867	Rural Sheeted	Mine Hill Road (015) from Thorpes Rd to Marshals Rd	2019-20	$56,333
735	Township Sealed	Brock Sreet (005) from Park Tce to Dutton Tce	2019-20	$7,633
737	Township Sealed	Burnett Street (005) from Treasure Crs to Wishart St	2019-20	$10,833
4837	Township Sealed	Phyllis Street (010) from Tennant St to Wibberley St	2019-20	$15,516
841	Township Sealed	Sidney Road (005) from Tumby Tce to Robert St	2019-20	$23,194
730	Township Sealed	Bawden Street (010) from Gardner Ave to Esplanade	2019-20	$27,459
732	Township Sealed	Berryman Street (010) from Provis St to Pearson St	2019-20	$49,662
755	Township Sealed	Elfrieda Drive (005) from McCallum St to Yaringa Ave	2019-20	$15,494
753	Township Sealed	Esplanade (010) from Tennant St to Bawden St	2019-20	$38,874
758	Township Sealed	Goode Avenue (005) from Tumby Tce to Preece St	2019-20	$12,957
805	Township Sealed	John Street (005) from Lebrun St to Borthwick St	2019-20	$33,718
729	Township Sealed	Barraud Street (005) from West Tce to Tumby Tce	2019-20	$15,550
820	Township Sealed	South Terrace (005) from West Tce to Spencer St	2019-20	$13,919
2175	Township Stormwater	Stormwater Side Entry Pits - SW Line 8 for Tumby Tce (Trenberths)	2019-20	$4,374
2176	Township Stormwater	Stormwater Side Entry Pits - SW Line 9 for Spencer St (Mitre10)	2019-20	$6,560
2177	Township Stormwater	Stormwater Side Entry Pits - SW Line 10 for Tumby Tce Barraud St	2019-20	$4,374
			Subtotal 2019-20	**$1,083,600**
857	Rural Sealed	Lipson Ungarra Road (015) from Chainage 3630 to Chainage 7272	2020-21	$152,670
912	Rural Sheeted	Pillaworta Road (015) from Chainage 8800 (B Harris Gate) to Bailla Hill Rd	2020-21	$48,299
1002	Rural Sheeted	Cockaleechie Road (005) from Chinmina Hill Rd to Chainage 4000	2020-21	$75,600
924	Rural Sheeted	Lipson Cove Road (005) from Lincoln Highway to South Coast Rd	2020-21	$74,887
926	Rural Sheeted	Lipson Cove Road (010) from South Coast Rd to Lipson Cove	2020-21	$92,880
1055	Rural Sheeted	Mt Hill Road (020) from Chainage 13819 to Mount Hill Coomaba Rd	2020-21	$54,346
876	Rural Sheeted	Stirlings Road (015) from Durdins Rd to Bratten Way	2020-21	$26,624
968	Rural Sheeted	Ungarra Yeelanna Road (015) from Baldiserra Rd to Floodway	2020-21	$70,718
965	Rural Sheeted	Ungarra Yeelanna Road (030) from Chainage 17024 (Gate) to Pearson Rd	2020-21	$70,762
1079	Rural Sheeted	Brooker Road (020) from Chainage 9495 (Sheppards Gate) to Butler Centre Rd	2020-21	$69,984
1005	Rural Sheeted	Chinmina Hill Road (015) from Cockaleechie Rd to Chainage 11782 (Pearsons Pit)	2020-21	$75,600
4469	Rural Sheeted	Mine Hill Road (030) from Dray Pole Hill Rd to Ungarra Stokes Rd	2020-21	$127,202
787	Township Sealed	O'Loughlin Terrace (005) from Price Tce to Gill St	2020-21	$45,667
773	Township Sealed	Bice Street (005) from Peake St to O'Loughlin St	2020-21	$13,349
788	Township Sealed	O'Loughlin Terrace (010) from Gill St to Coney Beer Rd	2020-21	$12,706
785	Township Sealed	Peake Terrace (005) from Gill St to Scholl St	2020-21	$12,053
4289	Township Sealed	Peake Terrace (010) from Scholl to Bice St	2020-21	$8,100
786	Township Sealed	Peake Terrace (015) from Bice St to Price Tce	2020-21	$15,055
778	Township Sealed	Scholl Street (005) from O'Loughlin St to Wallis St	2020-21	$5,363
744	Township Sealed	Anchor Drive (005) from Peake St to Boat Ramp	2020-21	$17,136
780	Township Sealed	Price Terrace (015) from Wallis St to Peake St	2020-21	$5,778
783	Township Sealed	Wallis Street (005) from North Coast Rd to Coney Beer Rd	2020-21	$15,431
760	Township Sealed	Wallis Street (010) from Coney Beer Rd to Scholl	2020-21	$31,264
			Subtotal 2020-21	**$1,121,474**
1105	Rural Sheeted	Chilmans Road (010) from Chainage 4400 to Wharminda Rd	2021-22	$91,363
1003	Rural Sheeted	Chinmina Hill Road (020) from Chainage 11782 (Pearsons Pit) to West Dog Fence Rd	2021-22	$39,679
873	Rural Sheeted	Marshalls Road (005) from Mine Hill Rd to Chainage 2420	2021-22	$26,620
977	Rural Sheeted	Mine Hill Road (020) from Marshals Rd to Wadella Falls Rd	2021-22	$25,812
1068	Rural Sheeted	Mt Hill Road (005) from Lipson/Ungarra Rd to Pit	2021-22	$96,898
888	Rural Sheeted	Peelina Road (005) from Bratten Way to Laube Rd	2021-22	$27,367
935	Rural Sheeted	South Coast Road (015) from Lipson Cove Rd to Bergs Rd	2021-22	$98,450
886	Rural Sheeted	Thuruna Road (015) from Trinity Haven Rd to White River Rd	2021-22	$50,765
972	Rural Sheeted	Ungarra Yeelanna Road (025) from Degners Rd to Chainage 17024 (Gate)	2021-22	$75,881
997	Rural Sheeted	Chinmina Hill Road (005) from Ungarra Stokes Rd to Telfers Lane	2021-22	$59,681
960	Rural Sheeted	Ungarra Yeelanna Road (020) from Floodway to Degners Rd	2021-22	$77,306
1034	Rural Sheeted	Willis Lane (005) from Coomaba/Mt Hill Rd to Northern End	2021-22	$55,990

Tumby Bay Roads and Stormwater Projected 4 Year Capital Renewal Program

Asset ID	Sub Category	Asset Name	Planned Renewal Year	Renewal Cost ($)
874	Rural Sheeted	Thuruna Road (010) from Chainage 3058 (Floodway) to Trinity Haven Rd	2021-22	$60,566
754	Township Sealed	Esplanade (015) from Bawden St to Elanora Ave	2021-22	$11,124
748	Township Sealed	Graham Smelt Causeway (005) from McCallum St to Minnipa Ln	2021-22	$80,151
745	Township Sealed	Harvey Drive (010) from Wishart St to Pearson St	2021-22	$55,692
835	Township Sealed	Lawrie Street (005) from Dutton Tce to Sidney Rd	2021-22	$25,936
812	Township Sealed	Tumby Terrace (020) from South Tce to Bratten Rd	2021-22	$34,468
733	Township Sealed	Berryman Street (005) from GS Causeway to Provis St	2021-22	$12,427
823	Township Sealed	Spencer Street (010) from Mortlock St to Park Tce	2021-22	$43,692
			Subtotal 2021-22	**$1,049,868**
958	Rural Sheeted	Butler Centre Road (015) from Liddicoats Rd to East Dog Fence Rd	2022-23	$49,918
1027	Rural Sheeted	Mt Hill Coomaba Road (050) from Moody Centre Rd to Pit	2022-23	$69,930
970	Rural Sheeted	Ungarra Yeelanna Road (010) from West Dog Fence Rd to Baldiserra Rd	2022-23	$59,335
1103	Rural Sheeted	Wharminda Road (015) from Brooker Rd to Chilmans Rd	2022-23	$83,938
940	Rural Sheeted	Bawdens Road (015) from Chainage 5025 to Mine Hill Rd	2022-23	$10,912
908	Rural Sheeted	Peelina Road (010) from Laube Rd to Western Boundary	2022-23	$50,104
903	Rural Sheeted	Bailla Hill Road (005) from Lincoln Highway to Bailla Hill Fire Track	2022-23	$100,073
941	Rural Sheeted	Bawdens Road (010) from Gate At Chainage 2277 to Chainage 5025	2022-23	$24,174
1011	Rural Sheeted	Boundary Road (010) from Carrs Rd to Mount Hill Coomaba Rd	2022-23	$71,240
1025	Rural Sheeted	Brooker Road (055) from Challingers Rd to Neats Rd	2022-23	$92,081
946	Rural Sheeted	Butler Centre Road (005) from Lincoln Highway to Berrymans Rd	2022-23	$99,274
1031	Rural Sheeted	Glover Road (010) from Chainage 3700 to Western Boundary	2022-23	$79,358
750	Township Sealed	Gardner Avenue (005) from Wibberley St to Bawden St	2022-23	$13,005
852	Township Sealed	Paul Street (005) from Treasure Crs to Wishart St	2022-23	$9,839
851	Township Sealed	Pearson Street (005) from Berryman St to 120m E of Berryman St	2022-23	$7,056
4839	Township Sealed	Smith Street (010) from Preece St to End	2022-23	$2,777
793	Township Sealed	Tennant Street (005) from Esplanade to West Tce	2022-23	$43,130
4843	Township Sealed	Treasure Cresent (010) North End from Oswald St to Wishart St	2022-23	$21,048
819	Township Sealed	West Terrace (005) from Bawden St to Wiberley St	2022-23	$10,937
741	Township Sealed	Darling Avenue (005) from Wibberley to Bawden St	2022-23	$17,044
799	Township Sealed	Trezise Street (005) from Dutton Tce to Bratten Rd	2022-23	$49,170
827	Township Sealed	Nankivell Street (005) from Park Tce to Dutton Tce	2022-23	$7,463
813	Township Sealed	Wishart Street (005) from Pearson St to Treasure Cr	2022-23	$7,668
829	Township Sealed	Mortlock Street (010) from Spencer St to West Tce	2022-23	$13,317
4845	Township Sealed	West Terrace (006) from Wiberley St to Lipson Rd	2022-23	$10,952
4464	Township Sealed	North Terrace (005) from Esplanade to Lipson Rd	2022-23	$4,817
839	Township Sealed	Schramm Street (005) from Lipson Ungarra Rd to Ashman Tce	2022-23	$13,724
846	Township Sealed	Spencer Street (005) East Carriageway from Bratten Rd to Mortlock St	2022-23	$7,243
4841	Township Sealed	Spencer Street (006) West Carriageway from Bratten Rd to Mortlock St	2022-23	$7,366
4848	Township Sealed	West Terrace (012) West Carriageway from Bratten Rd to Mortlock St	2022-23	$11,346
791	Township Sealed	Wandana Place (005) from GS Causeway to End	2022-23	$4,454
			Subtotal 2022-23	**$1,052,693**
			Total 4 Year Renewal Plan	**$4,307,635**