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asset management solutions

From Data to Decisions

How RACAS Helped Lithgow Connect Engineers, Finance, and Councillors Through a Network Lens

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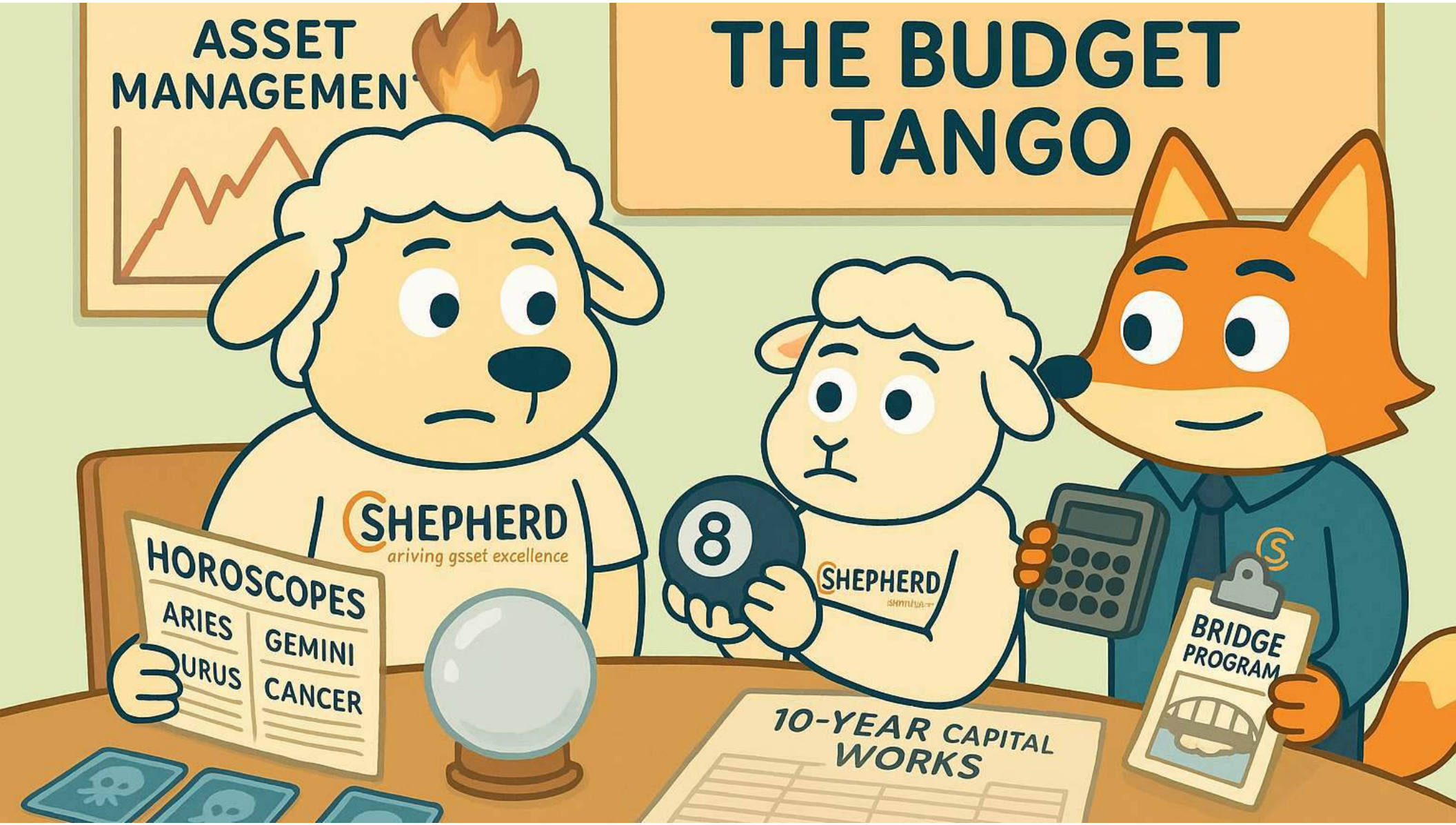
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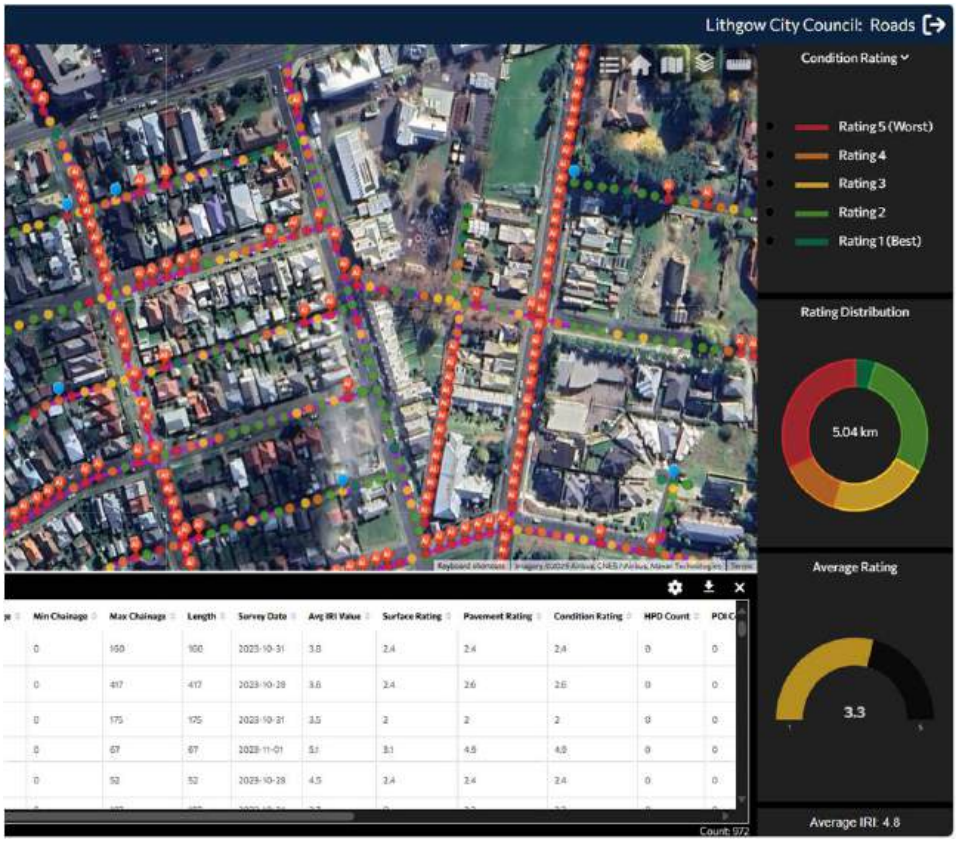
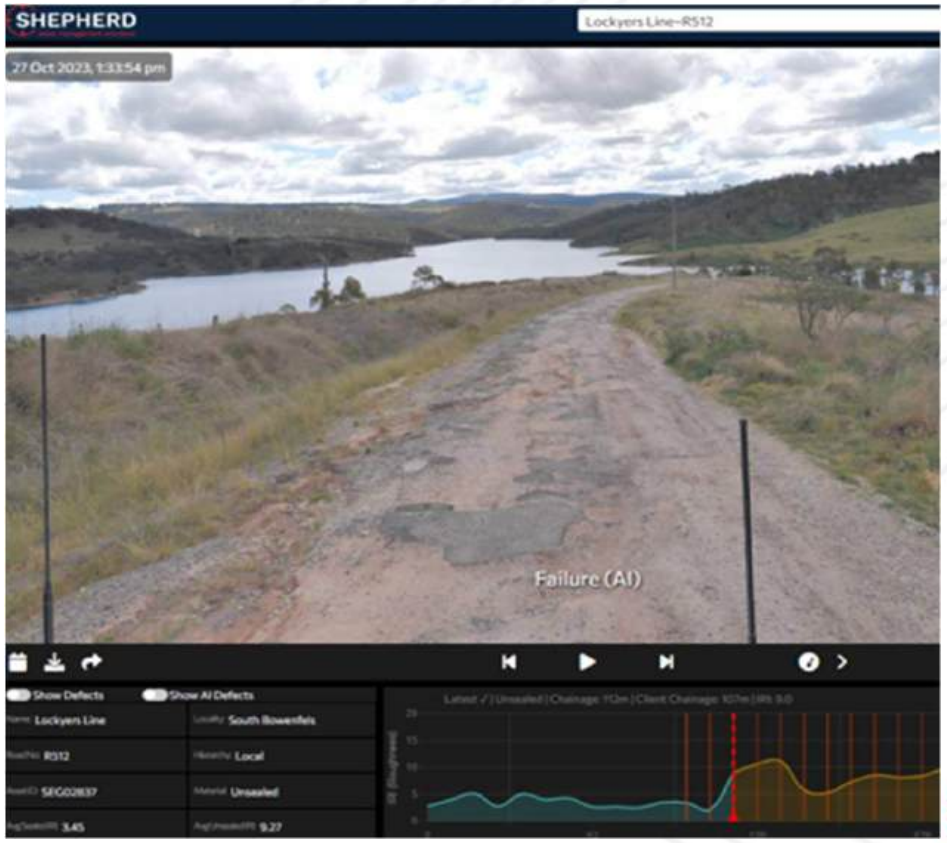
SHEPHERD
10-YEAR CAPITAL WORKS
BRIDGE PROGRAM

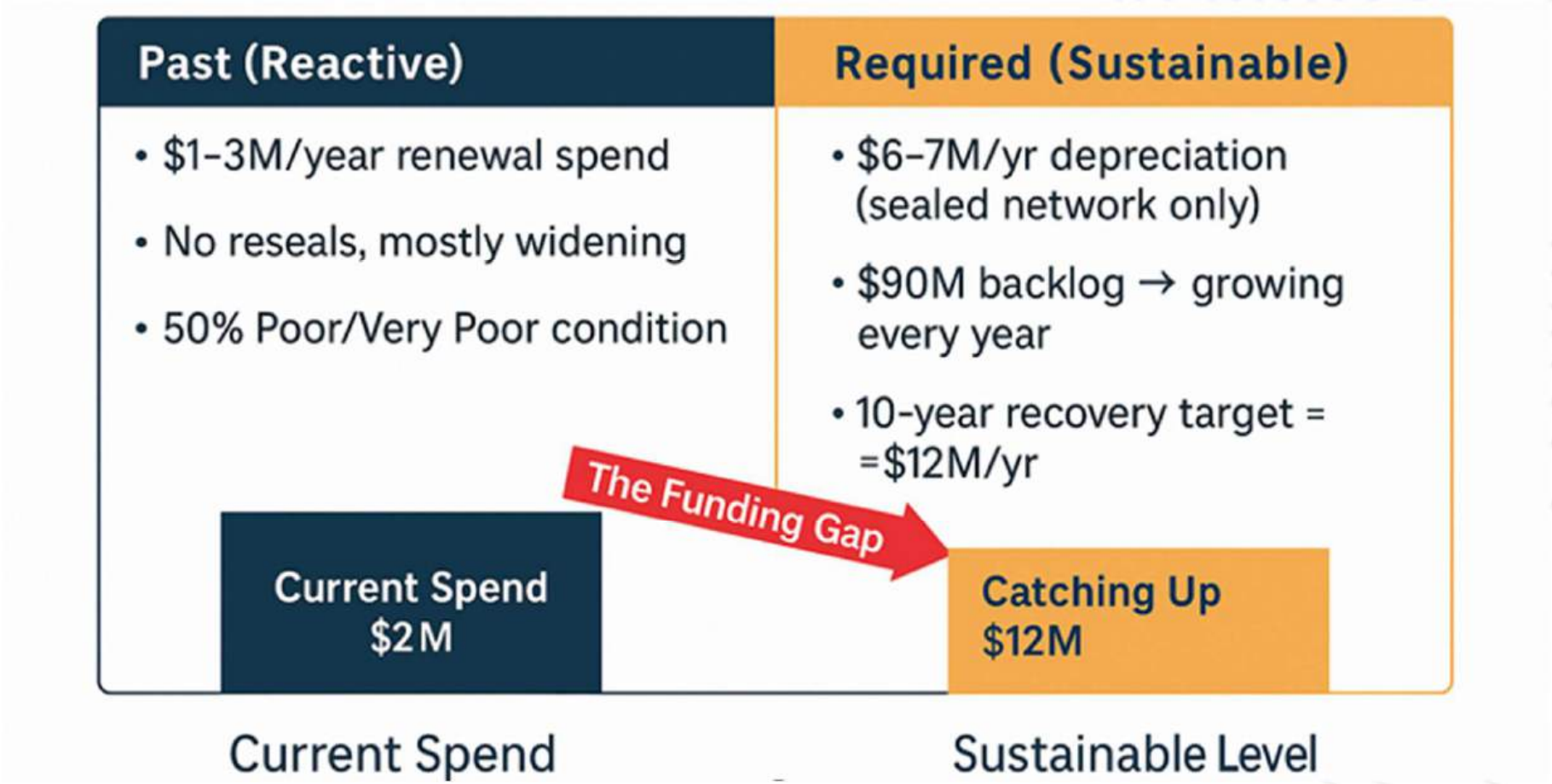
From Data to Decisions: RACAS® at Lithgow

Connecting Engineers, Finance & Councillors Through a Network Lens



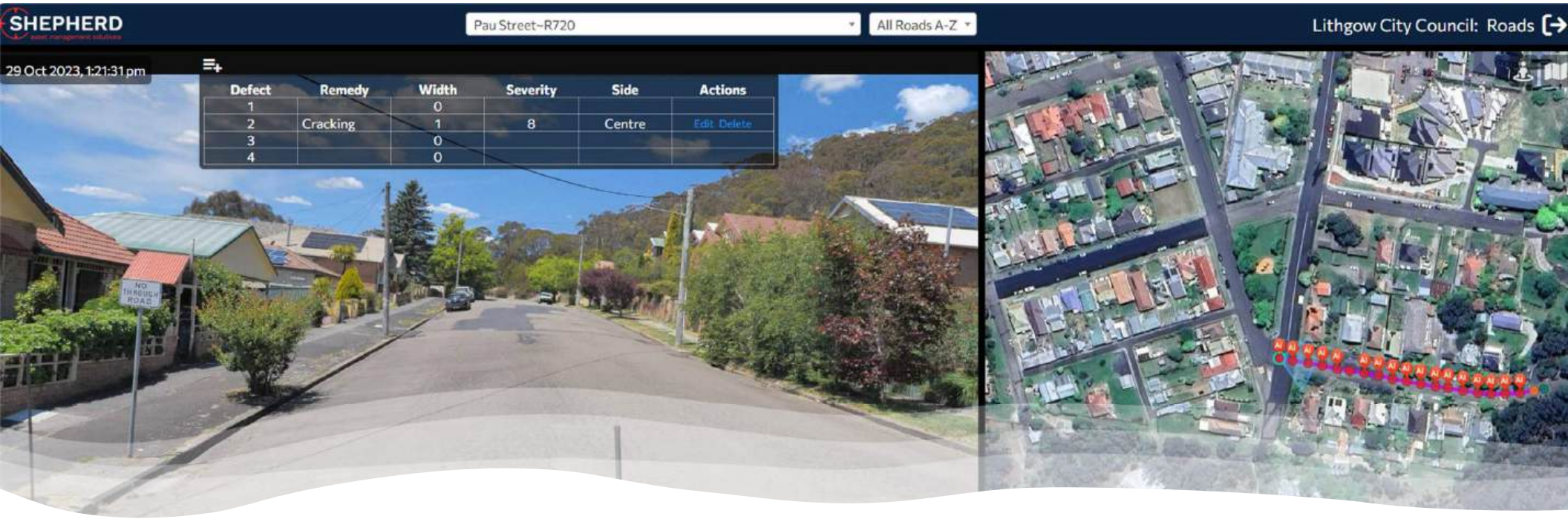


The Reality Check: A $90M Conversation Waiting to Happen



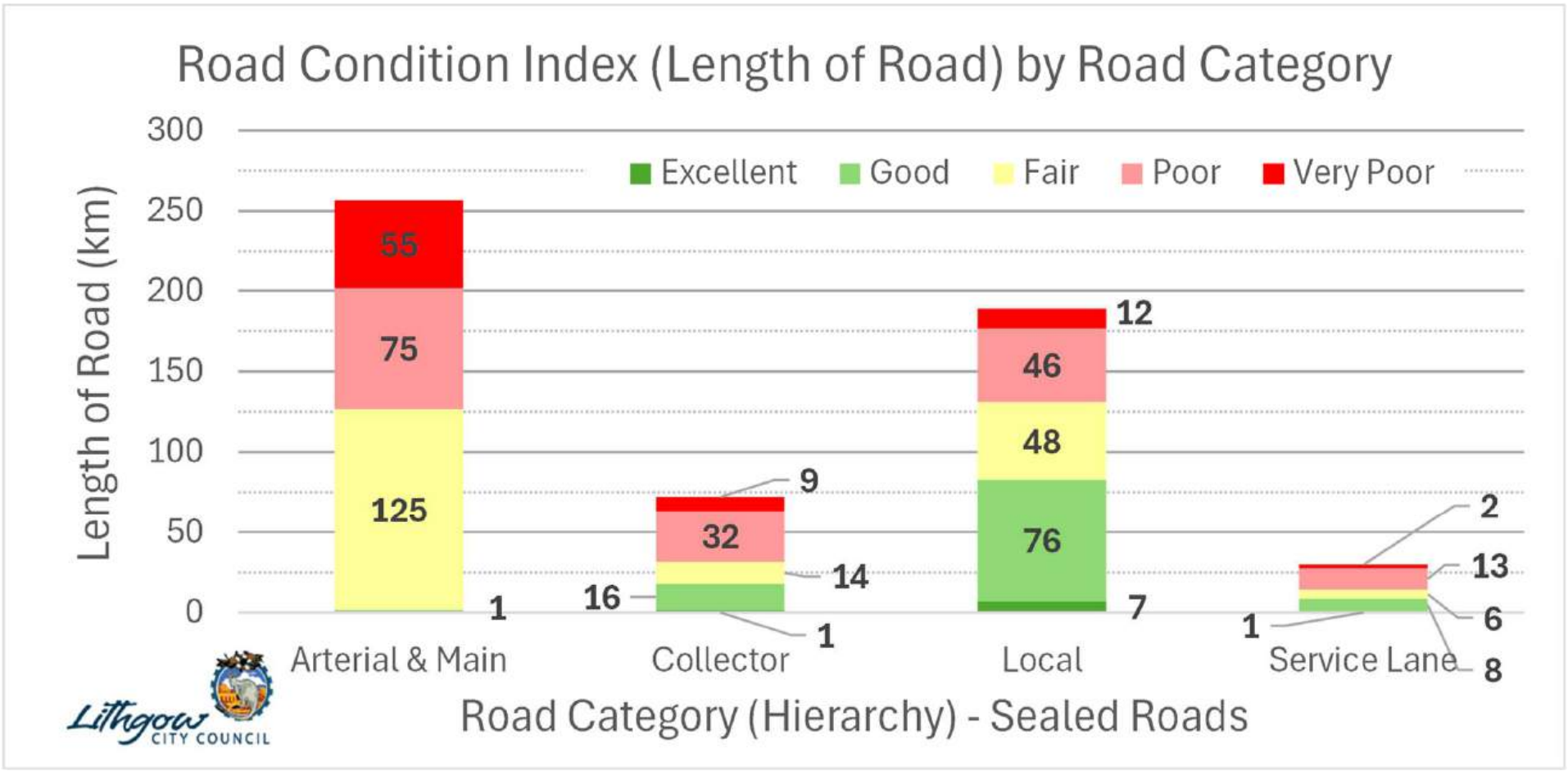
LCC Sealed Roads Condition – General Comments

- Many sealed road surfaces exceed recommended useful lives for sealed surfaces;
- Many sealed roads show evidence of high frequency filled potholes, which causes poor surface integrity and produces a high road roughness;
- A number of urban and rural roads appeared to have a thin asphalt surface layer in place. Estimated at around 20+ years of age, many areas are exhibiting crocodile cracking;
- Despite observation a), b) and c), many have not resulted in major structural pavement failures; and
- There has been a severe lack of scheduled (cyclic) surfacing and road maintenance, and limited attention to those factors that control water from entering the pavement layer.

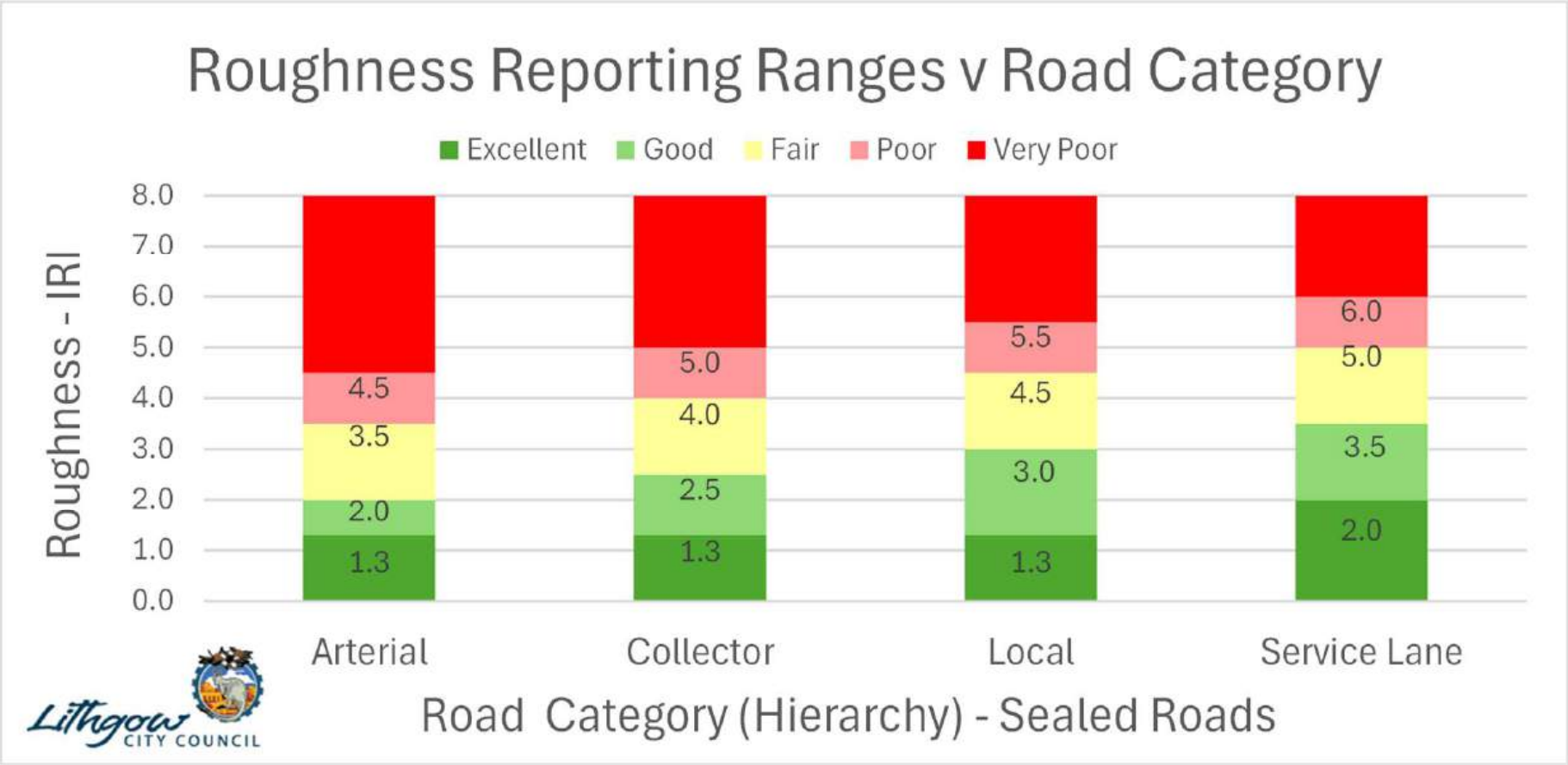


Understanding the picture & the detail behind it all…

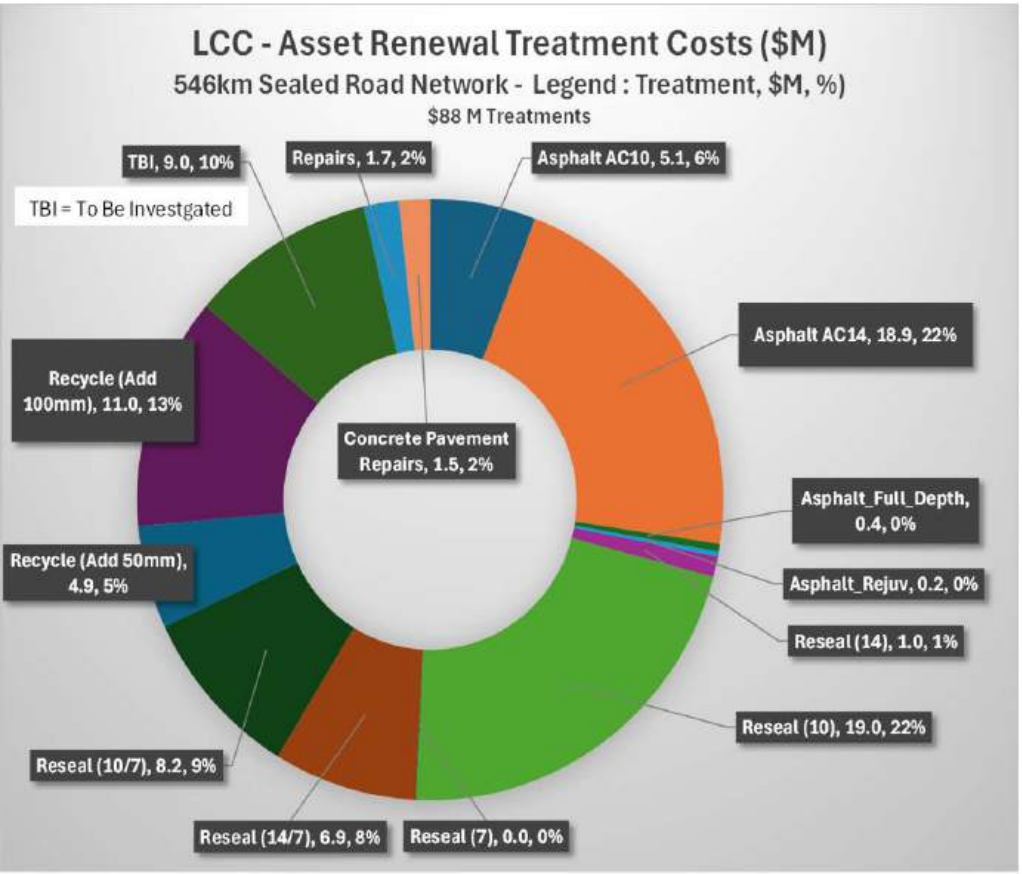
LCC Sealed Roads – RCI CONDITION – by Hierarchy



LCC Sealed Roads – CONDITION - definition



LCC Sealed Road Network - Road Needs vs. Treatment



Treatment	Treatment Cost (Excl Repairs) $ Millions	Repairs Associated $ Millions	Total Cost $ Millions	%
Asphalt AC10	4.6	0.5	5.1	6%
Asphalt AC14	18.1	2.0	20.1	22%
Asphalt_Full_Depth	0.4	0.0	0.4	0.4%
Asphalt_Rejuv	0.2	0.1	0.2	0.2%
Reseal (14)	1.2	0.9	2.1	2%
Reseal (10)	9.0	9.1	18.1	20%
Reseal (7)	0.0	0.0	0.0	0%
Reseal (14/7)	4.8	2.5	7.2	8%
Reseal (10/7)	4.3	3.9	8.2	9%
Recycle (Add 50mm)	4.7	0.1	4.9	5%
Recycle (Add 100mm)	10.5	0.6	11.0	12%
TBI	9.3	0.1	9.4	10%
Repairs	0.0	1.7	1.7	1.9%
Concrete Pavement Repairs	0.0	1.5	1.5	1.7%
Total	***67.1***	***22.8***	***90.0***	***100%***

LCC Sealed Road Network - Repairs (Prep Work)

Repairs = $23.2M

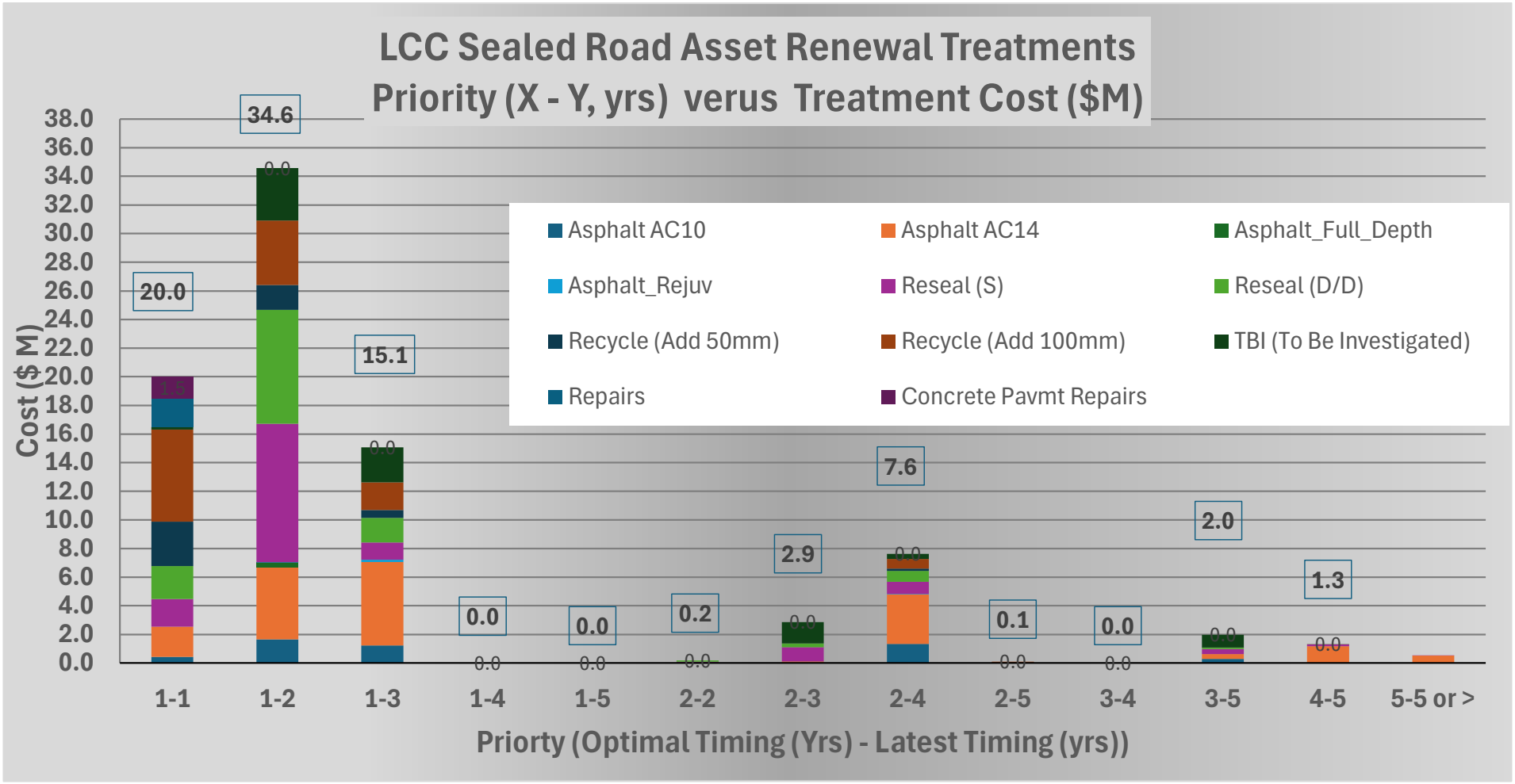
Total Sealed Network **546 kms**

REPAIRS

	Asphalt Pav Replacement	Asph_Cul-De-Sac	Insitu Stab	Rut Filling Asphalt	Rut Filling MicroSurf	Asph Surf Corr	Shoulders and Drain Clean (Rural)	Edge Repair	Crack Sealing	Kerb	Other (incl Potholes, Drge Special)	Concrete Pavement Repairs	
Unit	Tonne	Number	m2	Tonne	m3	Tonne	Length (m) (1m=bothsides)	Tonne	Length	Length	-	Conc Pav m3	
Qty	6,998	46	115,857	367	53	1,279	285,748	1,228	-	1,191	-	1,680	
Length (m)	2,460	-	6,053	4,811	1,180	-	285,748	-	-	1,191	-		**Total**
$ Total	**5,598,290**	**737,386**	**6,979,430**	**220,413**	**53,100**	**639,525**	**5,714,960**	**613,772**	**71,430**	**446,625**	**789,480**	**1,343,800**	**23,208,210**
Avg Unit Rate	*800*	*16,030*	*60*	*600*	*1,000*	*500*	*20*	*500*		*375*			

	Asphalt Pav Replacement	Asph_Cul-De-Sac	Insitu Stab	Rut Filling Asphalt	Rut Filling MicroSurf	Asph Surf Corr	Shoulders and Drain Clean (Rural)	Edge Repair	Crack Sealing	Kerb	Other (incl Potholes, Drge Special)	Concrete Pavmt Repairs	Total
Arterial	630,461	0	4,241,154	10,125	15,750	374,025	3,857,840	385,787	7,000	0	193,320	0	**9,715,462**
Collector	2,118,793	14,130	390,750	7,776	0	21,500	192,620	29,296	57,510	116,250	182,680	1,282,800	**4,414,105**
Local	2,153,831	707,677	2,139,626	155,472	37,350	179,500	1,654,940	165,984	6,920	303,750	316,020	61,000	**7,882,071**
Service Lane	650,205	15,578	207,900	47,040	0	64,500	5,600	32,704	0	26,625	97,460	0	**1,147,612**
Main	45,000	0	0	0	0	0	3,960	0	0	0	0	0	**48,960**
Check Tot	*5,598,290*	*737,386*	*6,979,430*	*220,413*	*53,100*	*639,525*	*5,714,960*	*613,772*	*71,430*	*446,625*	*789,480*	*1,343,800*	*23,208,210*

LCC Sealed Road Network - Road Needs ($$)

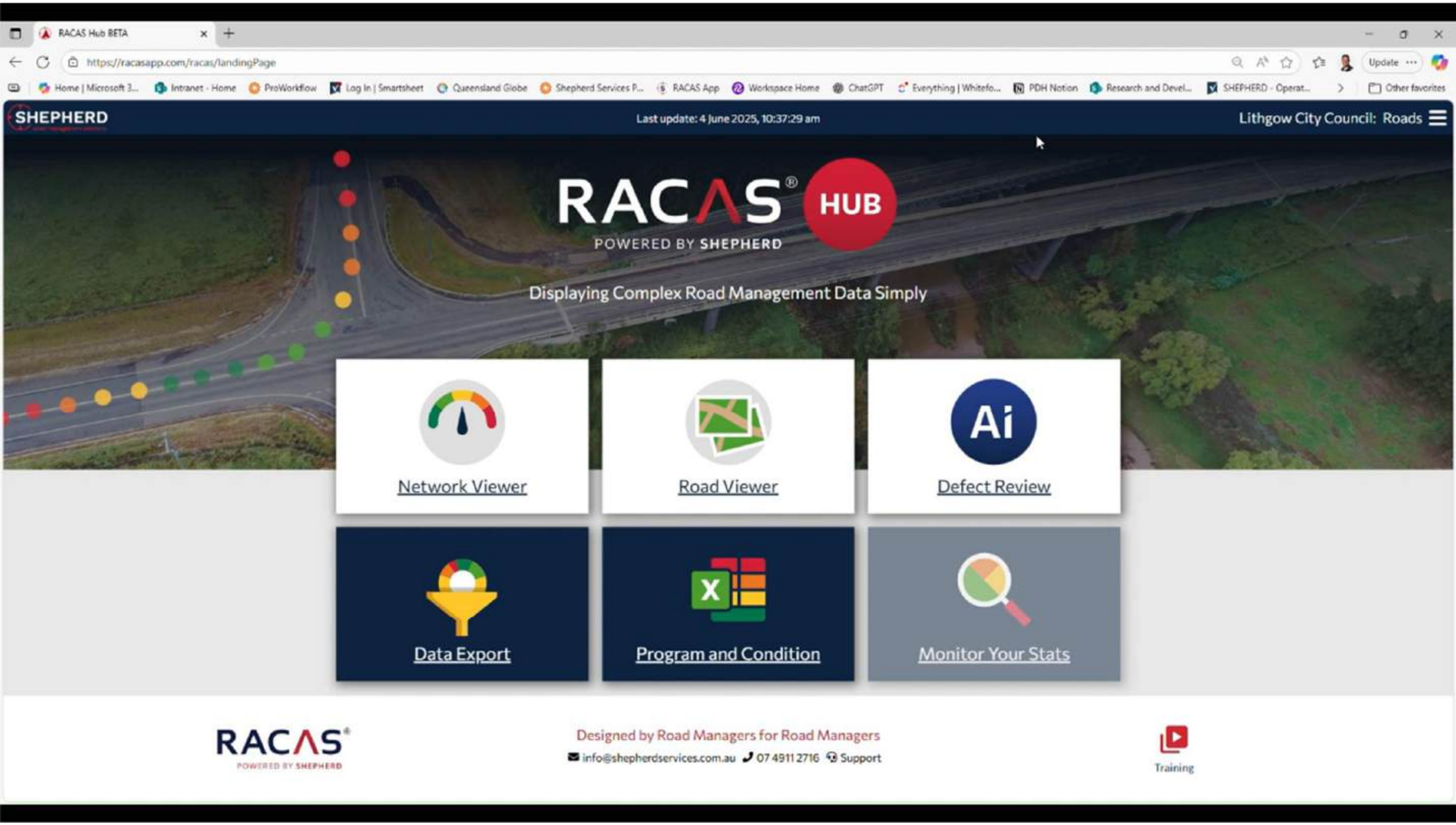


Storytelling with Council – Back to Basics

- Translate engineering risk into simple trade-offs:
  - "If we defer, it costs 3–4x more later."
  - "$90M backlog doesn't disappear – it compounds."
- Use clear visuals (condition maps, backlog $ vs spend bars).
- Anchor in community outcomes: smoother, safer, fairer roads.
- Build trust: engineers, finance, councillors working from one source of truth.

Do you own a Car ?

(Asset Management Principles)


RACAS Hub BETA
https://racasapp.com/racas/landingPage
SHEPHERD
Last update: 4 June 2025, 10:37:29 am
Lithgow City Council: Roads
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Road Viewer
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Data Export
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info@shepherdservices.com.au
07 4911 2716
Support
Training

Strategic Context: Why This Program Matters

The Network Is At Risk

- 50% of sealed roads are in poor or very poor condition
- Ageing assets and delayed renewals now compounding failure risks

The Cost of Inaction Is High

- $90M+ backlog already identified
- Delays increase reconstruction needs — in excess of **4x the cost** of earlier treatments

We Have a Narrow Window to Act

- Current road conditions allow us to **treat, not rebuild**
- Without action, more roads will fail structurally

Multi-Source Funding Is Now Available

- **DRFA**, SRV, Council CAPEX — with a **potential special loan** under consideration
- These funds are **time-bound and targeted** — delivery must be strategic

The Game Plan..

Early Testing Program

- Conduct deflection testing, trenching, and coring to address treatment risks. Estimated cost: $200,000.

Budget Commitment

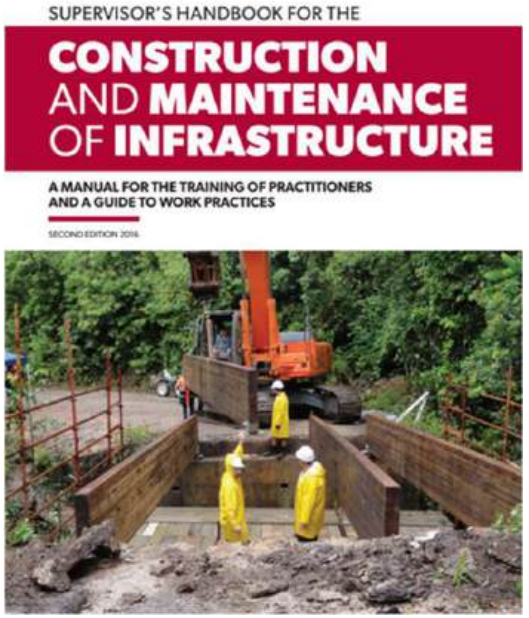
- Develop a funded program to align with Council's proposed financial commitments (2 years minimum, 3 years recommended).
- Secure financial commitments for a 3-year cycle to enable optimized planning and cost efficiency.

Resource Planning

- Review resource allocation, plant, and personnel to ensure the readiness of teams and contractors.

Training Programs

- Include targeted training for staff, focusing on modern techniques and materials management.
- Emphasize on-the-job training, mentoring, and formal technical courses to build staff capabilities.



Our 18-Month Plan - At a Glance

Stage 1: Testing, Investigation & Early Works
(April – July 2025)

- Falling Weight Deflectometer (FWD) and geotech testing underway
- Re-prioritisation and treatment validation
- 25/26 'reseal' prep works commence
- DRFA program alignment

Stage 2: Design, Mapping & Program Finalisation
(August – October 2025)

- Final treatment design based on test results (asphalt overlay, recycle, stabilisation, reconstruction)
- GIS-based scheduling and budget alignment
- Contractor procurement and sequencing

Stage 3: Delivery & Capability Uplift
(November 2025 – onward)

- Staged rollout of stabilisation and surfacing works
- Hybrid delivery model: Council + external support
- Internal teams upskilled for perpetual delivery

Strategic Funding Assumptions

Program Underpinned by Secure Revenue

- Based only on **guaranteed income** streams:
  - Rates revenue
  - SRV (Special Rate Variation)
  - NSW Government block grants (e.g. Roads to Recovery)

Optional Funding Leverage

- **Special loan scenario** modelled (not yet approved)
- Allows for accelerated delivery in years 2–4
- Loan uptake remains flexible, adjusted year by year

Indexed Budget for Realistic Planning

- Budget indexed at **3% annually** to account for cost escalation
- Aligns with CPI and known material/labour inflation

Total Indicative Program Budget

- ~$98 million over 6 years
- Designed to scale delivery sustainably, even if external funding tightens

Funding Options: The Cost of Deferral

Aspect	Option A – Full Program	Option B – Full Program
Annual Spend	~$16M/yr (loan / grant supported)	~$12M/yr (no loan)
Backlog	Stabilised, then reduced	Grows beyond $100M
Program Length	~6 years	12–13 years (not 6)
Treatments	Reseals & overlays at optimum time	$25M overlays deferred → $38M reconstructions (+$13M)
Maintenance	Predictable, planned	+$3.3M reactive patching over 8 years
Network Condition	Average IRI ~4.6 (Poor)	IRI ~5.7 (Very Poor)
Community & Risk	Transparent, predictable	More complaints, liability risks, inefficiency

Consequences of Deferral:

- Crews tied up in reactive patching instead of renewals.
- Councillors face more complaints.
- Legal/liability exposure grows.
- Service levels visibly decline.

It's Not an Exact Science… But the Direction is Certain

- Pavement deterioration isn't exact:
  - Wet years can double deterioration.
  - Dry years slow it slightly – but roads never improve.
  - Local materials & traffic create variability.
- Climate change = more extremes:
  - Heavy rainfall → rapid failures.
  - Heat/drought → cracking, oxidation.
- Certainty: Roads will deteriorate. The only unknown is how fast.
- Delaying renewal always increases cost and risk.

Summary – Where We Stand

- A **fit-for-purpose framework** has been adopted
- A **10-year renewal roadmap** is in place and resourced
- First-year delivery is scoped, and **testing is underway**
- Council teams are **embedded in rollout**, not watching from the sidelines
- Internal capability uplift is actively progressing
- We've **laid the groundwork** for a self-sufficient, long-term delivery model

This is not just a program. It's a reset.


THE NETWORK CONVERSATION
LITHGOW COUNCIL • BUDGET WORKSHOP
RACAS
RACAS
10-Year Road
Renewal Plan
Option A
10-YEAR
ROAD

End Slide

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