

# MIDROC Regional Infrastructure Strategy

## May 2015



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### **The Nature of the Problem: Understanding Our “Real” Infrastructure Challenges**

MIDROC councils have given in-principle commitment to the adoption of a Regional Infrastructure Strategy to support our *Fit for the Future* strategies.

The Strategy will build on the success of our “talking apples and apples about infrastructure” project. So far we have consistently revalued transport assets based on field testing and review of asset lives using a tool that facilitates benchmarking (Jeff Roorda & Associates’ *DataShare*), which has sparked good discussions about unit rates.

Indications are that depreciation expenses will decrease significantly, thus improving Operating Performance and Building and Infrastructure Renewal Ratios for all councils.

While this will present a more realistic picture of our capacity to meet ongoing operating expenditure requirements (a core measure of financial sustainability) and whether councils are spending more on renewal than the reported depreciation, MIDROC recognises that this is only “part of the story”: the part about finances.

The other part of the story, the “story about infrastructure” must express the real infrastructure challenges faced by individual councils.

Of course, the Infrastructure Backlog and Asset Maintenance Ratios are intended to do just that, but as OLG has clearly recognised (by postponing the auditing of Special Schedule 7) the reported values are not able to be relied upon.

IPART has itself acknowledged this (p. 31 *Methodology for Assessment of Council Fit for the Future Proposals*):

there are data consistency issues that need to be taken into account when interpreting a council’s reported asset renewal, backlog and maintenance performance as there is no current requirement for this data to be routinely audited.

In comments prepared for LGNSW, IPART’s temporary tribunal member, John Comrie, said that there is:

a high degree of subjectivity by and inconsistency of approach between councils in quantifying asset renewal backlogs. I would be very wary of making financial assessments of councils or comparisons between councils based on this data.

Comrie concluded by saying that

It’s not clear to me how a council’s score for each of these indicators is applied to determine whether it is ‘fit for the future’. Providing that a council has reasonably reliable accounting records and long-term financial planning assumptions and is committed to and is forecasting ongoing achievement of modest operating surpluses (net of capital revenues) I would suggest (*prima facie*) that it is ‘fit for the future’.

Yet if NSW Government discards the assessment of councils in terms of the “real” infrastructure challenges and focuses purely on the financial measures, it has arguably failed to address the fundamental objective of the *Fit for the Future* program: “strong councils *providing the services and infrastructure communities need*”.

MIDROC councils are working towards overcoming this problem by developing a Regional Infrastructure Strategy addressing three key issues, discussed below:

- Defining “satisfactory” infrastructure (calculating the “real” backlog)
- Nominating a definite end point to forecast the future “state of the assets”
- Communicating infrastructure status clearly and consistently.

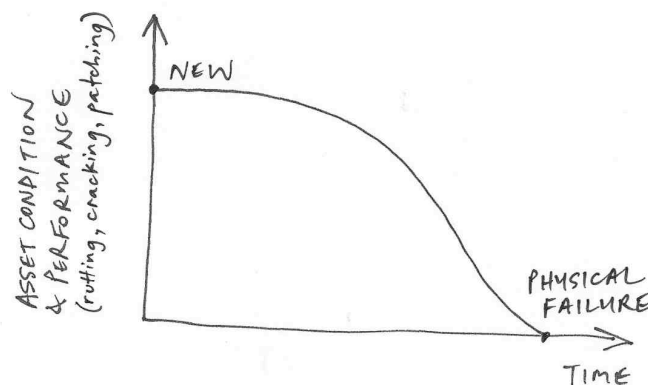
## Defining "Satisfactory" Infrastructure

The 2013 *Local Government Infrastructure Audit* identified that the "infrastructure backlog" reported by MIDROC councils was the second highest in the state relative to rate income and that the backlog in the northern coastal area of NSW equated to 29% of the State total.

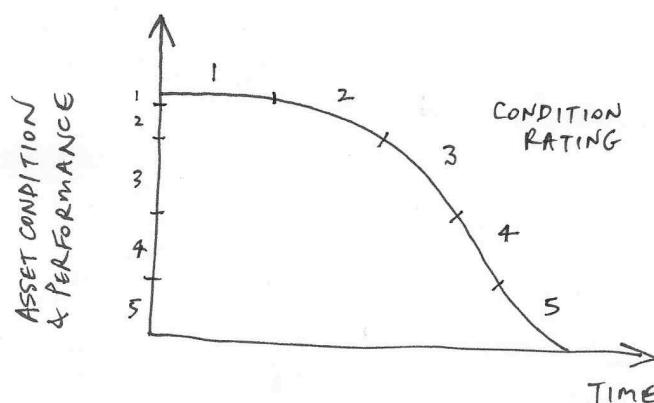
Yet this "backlog" was not real: it was simply the calculation prescribed by the OLG *Code of Accounting Practice* (the cost of bringing assets in condition 3, 4 and 5 back to 2).

MIDROC councils have developed an alternative definition of "satisfactory" infrastructure that serves as the foundation for calculating the "real backlog" by addressing the **confusion that currently exists between asset condition and what makes an asset unsatisfactory**.

Asset condition is a technical measure of the physical attributes of an asset (e.g. roughness, rutting, cracking etc. for a road pavement) that influence its performance. These can be plotted against time to model the life cycle of the asset: its condition and performance from new to physical failure, as shown in the chart below.



Once this life cycle is understood, we can more easily locate where particular assets are in their life cycle (and so estimate their remaining life). By breaking this life cycle up into a 1 to 5 rating, we can simply and clearly communicate the status of the asset.



But the real question is: *when do we need to renew that asset?* Ideally, we need to renew the asset *right before it becomes unsatisfactory*.

Asset condition is an *objective* measure (i.e. that can and should be consistent between councils) whereas "satisfactory" is a *subjective* measure (i.e. that must be determined by each community as part of IPR): this will differ between councils, and even within a council for different roads (e.g. a CBD road needs renewal at condition 3 whereas a rural road serving two properties may be "satisfactory" up to the point of physical failure).

Ideally, asset condition and what is “satisfactory” should line up (i.e. an asset in condition 4 should need replacement). This is the assumption behind the OLG condition rating methodology in the *IPR Manual*, however this is not the case at many (most?) councils. This is the reason the backlog is overstated and largely meaningless.

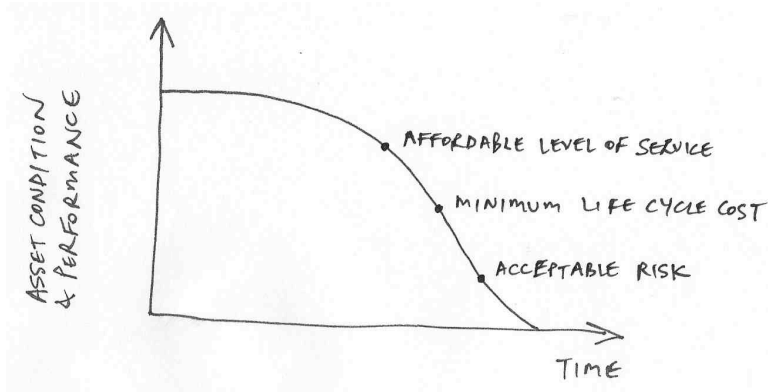
“Recalibration” of condition rating methodologies (e.g. increasing roughness and cracking scores necessary for a road to classified as “condition 4”) is problematic. Data held by many councils is limited and the “trigger points” for what is unsatisfactory are influenced by many factors.

Anyway, changing condition scales so they align with renewal programs risks rendering comparisons of condition over time meaningless (because a condition 4 ten years ago is different to condition 4 now). Understanding these trends is vital if we are to formulate predictive models of deterioration so as to forecast the required renewal funding.

Instead, MIDROC councils have endorsed a definition of “satisfactory” infrastructure based on *why* an asset is unsatisfactory. **Satisfactory infrastructure provides:**

- an **affordable level of service**
- at **minimum life cycle cost** and
- an **acceptable risk**.

Each of these factors can “trigger” an asset being deemed “unsatisfactory”. While asset condition is one of the most valuable pieces of information to determine whether or not an asset is “unsatisfactory”, it does not itself determine it. Each “trigger” may occur at a different point in the life cycle (a different asset condition) as shown in the chart below, and the “triggers” for some councils may be in reverse order (i.e. external assistance is required because risks are unacceptable, but addressing them is unaffordable).



**With this foundation in place, we can now answer three “big questions” in relation to infrastructure:** firstly, is the **current “state of the assets”** satisfactory? What is the “real backlog”? All MIDROC councils expect to report a considerable drop in backlog this year by calculating it on this basis rather than using the OLG methodology.

The second “big question” flows on naturally from the current “state of the assets”: what are the **priorities for funding in the Delivery Program**? This will identify the need for asset renewal, but also required maintenance.

The third “big question” is: will the situation get better or worse in future, given available funding? What is the **forecast “state of the assets” in 10 years time**, say.

The *Fit for the Future* program attempts to answer this final question via the Renewal Ratio. IPART notes (page 29) that it is an indicator of whether a council’s infrastructure backlog is likely to increase by measuring whether a council’s assets are deteriorating faster than they are being renewed. But it doesn’t measure deterioration of *infrastructure*, but compares renewal expenditure to depreciation (*finances*).

John Comrie has said that he doesn't support use of this ratio, and that experience in South Australia found results to be meaningless.

The alternative methodology to be used by MIDROC will answer this question – whether the situation will get better or worse, given available funding – in a meaningful way.

### ***Nominating a Definite End Point to Forecast the Future “State of the Assets”***

There are councils within MIDROC with a significant amount of infrastructure in poor condition who need to spend far more than depreciation on renewal, and other councils whose infrastructure is relatively “young”, long-lived and in good condition who need to spend far less than depreciation on renewal.

This is why the Renewal Ratio does not provide meaningful answers about the future: the renewal profiles of many long-lived assets are “lumpy” (there are peaks and troughs in renewal need over time, far longer than the 3 year timeframe OLG has nominated, supposedly to take account of this) and the future also depends on the starting point (the current backlog).

MIDROC has identified the value in a forecast for *each asset category* that takes account of the expected deterioration and also the funding available in the Long Term Financial Plan for maintenance and renewal and presents this **“state of the assets” in 10 years, rather than relying on the Renewal Ratio** alone (although MIDROC considers that the renewal ratio has value over 10 years for assets with short service lives like reseals).

This aligns with the timeframe for the LTFP and minimum timeframe for Asset Management Plans prescribed in the IPR guidelines. It will also enable IPART to assess whether the benchmarks for renewal, backlog and maintenance will be met or improved within 10 years (as opposed to the 5 year timeframe nominated in the *Methodology*).

Critically, this forecast “state of the assets” will be expressed using the same factors determining whether or not an asset is “satisfactory” as are used for the current “state of the assets”, i.e. it will be a *forecast of the expected backlog* in 10 years time.




### ***Communicating Infrastructure Status Clearly and Consistently***

The final issue that MIDROC has recognised must be overcome is communicating infrastructure status clearly and consistently.

As noted above, whilst asset condition is an *objective* measure of physical attributes, whether or not an asset is “satisfactory” is *subjective*, a decision for each council considering the needs of their community. This is the foundation of IPR.

Recognising this, the most important issue to be communicated in the current “state of the assets”, and the “state of the assets” forecast in 10 years time, is not the physical condition of the assets nor the cost to bring to satisfactory (a dollar figure), but rather *whether or not the “state of the assets” is of concern to that community*: whether it meets the needs of the community.

On this basis, MIDROC has adopted a set of **“traffic lights” to communicate concerns with regards to infrastructure status** in terms of each of the factors determining whether or not infrastructure is “satisfactory”:

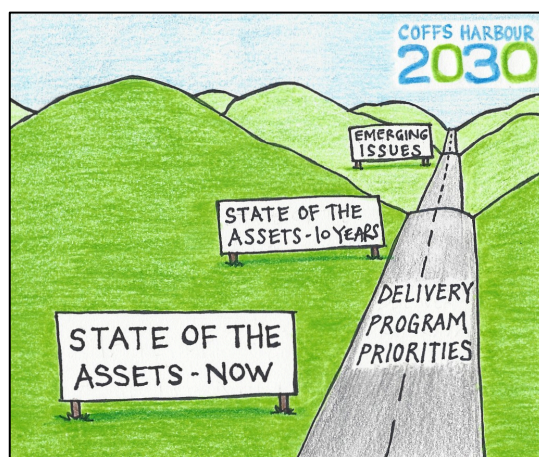
-  Major concerns
-  Moderate concerns
-  Minor or no concerns

### **Putting the Solution Together: Infrastructure Dashboards**

IPART's challenge in meaningfully assessing whether councils are "providing infrastructure communities need" (the aim of the *Fit for the Future* program) was described at the start in terms of three key issues: defining satisfactory infrastructure, nominating a definite end point and communicating status of infrastructure).

**MIDROC has addressed these issues by providing a definition of "satisfactory" infrastructure** (affordable levels of service, minimising life cycle cost and acceptable risk) **as the foundation to answer the three "big questions" about infrastructure** (the current "state of the assets", the priorities for the Delivery Program and the forecast future "state of the assets"), **and a means of communicating concerns with the "state of the assets" clearly and consistently** (the traffic lights).

The "story about infrastructure" can then be told in a form shown in the figure below which emphasises that the goal of the "journey" council is on – delivering infrastructure related services via its Delivery Program – is the priorities and aspirations of the community as set out in the Community Strategic Plan, in this case *Coffs Harbour 2030*.



MIDROC is putting this solution together via "Infrastructure Dashboards" that tell this story in a one page format. Critically, these are prepared for *individual asset categories* rather than council's asset portfolio as a whole.

The example Dashboard for sealed road pavements in Coffs Harbour (provided below) shows how clearly the "story about infrastructure" can be told: the "state of the assets" now (what issues are of concern), the priorities for the Delivery Program and the forecast "state of the assets" in 10 years, given available funding (whether or not the situation will get better or worse over the foreseeable future).

The chart comparing network condition now against the 10 year forecast shows, firstly, that the majority of pavements (89%) only require maintenance, not renewal (condition 1-3). Secondly, it shows how pavements will deteriorate over time. Thirdly, it shows that the proportion of "very poor" assets (condition 5) is projected to halve, taking account of the funding available for renewal. The "emerging issues" highlight long term challenges, but also avoid the risk of the situation being represented as better than it actually is by pushing issues out just beyond the 10 year time horizon.

Contrast this with the "story" told via the renewal ratio (Council doesn't "pass": renewal expenditure is far less than depreciation) and backlog which dropped from \$35M (calculated based on the OLG methodology in the *Code of Accounting Practice*, i.e. those below condition 2) to \$3.94M based on rectifying "unsatisfactory" assets only.

Even more important than meaningfully assessing a council in terms of *Fit for the Future*, MIDROC have recognised this is a means of communicating clearly with our communities about our infrastructure challenges so as to work to overcome them.

## **Regional Consistency and Collaboration: MIDROC Regional Infrastructure Strategy**

A consistent definition of “satisfactory” infrastructure and a template for Infrastructure Dashboards are an important start to regional collaboration and consistency, but this is not enough.

**What is important, if council infrastructure performance is to be assessed based on auditable information, is what sits behind the Dashboards, i.e. in the AMPs.**

The Dashboards are only meaningful and auditable when supported by consistent Asset Management Plans (AMPs). These set out the *objective* measures – performance and condition – relating to council’s assets that should be consistent between councils.

It is this information in the AMPs that enables individual councils to make informed decisions about the “traffic lights”, the *subjective* measures – issues of concern, both for the current and future “state of the assets” – highlighting “unsatisfactory” infrastructure.

The MIDROC Regional Asset Management Strategy is the means by which this is done, the *normative* system that provides a framework for how these objective and subjective measures are to be undertaken.

IPART is correct in saying (page 31 of the methodology) that:

performance measures for infrastructure and debt need to be assessed in a holistic manner, that is, in the context of the council’s overall capital sustainability as reflected by its Asset Management Plan (AMP).

In other words, it is not possible to rely on the *Fit for the Future* ratios alone. Yet the same (or even greater) issues will be found if IPART attempts to rely on AMPs to assess councils: a lack of consistency, a lack of clarity about what the “big issues” are and a lack of confidence in the figures.

MIDROC has recognised the value in tackling this on a regional basis. For example, MIDROC is pursuing consistent methodologies to measure asset condition and predict changes over time, a consistent asset hierarchy, levels of service measures, consistent risk assessment and treatment plans as well as life cycle optimisation strategies.

Beyond this consistent picture of our infrastructure challenges, though, MIDROC sees even greater opportunities in regional collaboration regarding actual service delivery.




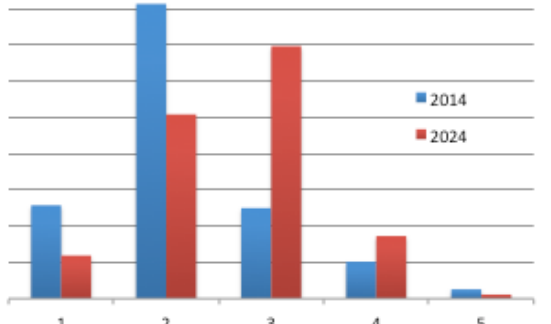
Opportunities that have been identified thus far as warranting further exploration include sharing of bridge rehabilitation and construction resources, improving strategies to optimise life cycle costs (e.g. resealing frequencies) and capacity building regarding improved pavement rehabilitation and maintenance techniques.

MIDROC is also developing a regional action plan to improve Asset Management Maturity, informed by a gap analysis undertaken against the *National Assessment Frameworks for Local Government Asset Management and Financial Planning*.

We believe this should be required under IPR guidelines as a means of benchmarking all councils and stimulating regional collaboration to either work on “gaps” that are shared amongst a number of councils or recognise “centres of excellence” that can help others.

The problems arising from the absence of such a standard assessment tool were clear from the difficulties assessing infrastructure management at councils in the 2013 *Local Government Infrastructure Audit* (which did not use the National Framework).

In summary, MIDROC is substantially addressing recommendations 1-4, 6-9 and 10 of the 2013 *Local Government Infrastructure Audit* and is fast becoming a “centre of excellence” with regards to regional asset management collaboration, at the same time addressing the “scale and capacity” objectives at the heart of *Fit for the Future*.

 <p>\$360M to renew</p>	<h1>Sealed Road Pavements</h1> <p>715km</p>			 <p>Opex \$1.5Mp.a. Capex \$3Mp.a.</p>
	We have a system of well-maintained and safe roads for all users			
<b>State of the Assets Now:</b> \$3.94M backlog	Level of Service	Minimising Cost	Acceptable Risk	
	While customer requests are decreasing and satisfaction measures are improving there is still a “service level gap”. Equity issues (no kerb in some areas). Capacity of Hogbin Dr. roundabouts.	Resealing frequencies & drainage mtc. preventing premature failure. Heavy patching program is addressing level of service and risk, but renewal would be a better long term investment.	Effective maintenance management system has been implemented, but need review of backlog of defects and targets for response time. Road safety issues: alignment, width, intersections.	
<b>Delivery Program Priorities</b>	<ul style="list-style-type: none"><li>• Pavement maintenance (potholing) to fix defects and prevent more failure.</li><li>• Partial renewal by heavy patching to address failures outside renewal program of concern due to risk or high maintenance cost.</li><li>• Reconstruction of pavements that have reached condition 5 (avoid earlier intervention as this reduces service life and means life cycle cost isn't minimised) so as to achieve a long service life. Priority given to roads higher in hierarchy, with higher traffic speeds or other risks / level of service issues.</li><li>• Road safety issues (alignment, width, intersections) of priority concern.</li><li>• Upgrade for capacity e.g. Hogbin Drive roundabouts (CHEC and Orlando St).</li><li>• New kerb at problem locations and in conjunction with pavement renewal.</li></ul>			
<b>State of the Assets in 10 years:</b> no backlog	Level of Service	Minimising Cost	Acceptable Risk	
	Improving as roads in worst condition are renewed. Progress on new kerb and gutter. Hogbin Dr roundabouts upgraded catering for growth of the City.	Continued focus on resealing, table drains to prevent premature failure. Focus on long service lives (renewal only at condition 5, but to a high standard) and reducing maintenance costs (via heavy patching).	Backlog of defects decreasing due to improved asset condition and maintenance management. Improved targeting of higher risk issues. High priority road safety issues addressed.	
<b>Asset Condition v's Total Replacement Cost (forecast)</b>			<b>10 year overview:</b> Current condition 5 roads will all be renewed, but other roads will deteriorate. Increased condition 1 assets will be a mix of new assets and renewed. Relatively slow shift to the right for condition as the network deteriorates, with the “peak” currently at condition 2 flattening out (condition 3 growing).	
<b>Emerging Issues:</b>	Renewal needs will “ramp up” as the “peak” now in condition 2 deteriorate. This will grow from 3 to 4 then 6km/year over the next 3 decades. Current funding is sufficient to manage this. But after this – after 2045 – the renewal will begin to “peak” at around 10km/year. This will require an increase of \$1M to \$1.5M p.a. in renewal funding (current \$), or significant decrease in levels of service. Future costs will, however, be offset by longer service lives for reconstructed pavements.			





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