

Pilot testing of road management plans

With Victorian councils about to come under the Victorian Road Management Act, the far-reaching impacts are being carefully evaluated by local government asset managers.

By **Ashay Prabhu**

Victorian councils are close to finalising their road management plan development, responding to MAV audits and undertaking public consultations prior to gazetting the plans. Tasmania and other states are watching, and may emulate the Victorian model.

A number of Victorian councils have been pilot-testing their service delivery processes and standards in the lead-up to the commencement of the *Road Management Act*.

Pilot implementation has been undertaken through the AMP-ITT process, and this article explores a number of the ramifications of this process.

One of the biggest issues for local governments in Victoria - or elsewhere - has been in determining and endorsing service standards and demonstrating that, in relation to road maintenance, they are 'realistic'.

Many are setting service levels that are not only conservative enough to account for 'ability to achieve' but significantly more conservative to cover from the remotest possibility of negligence.

Take, for example, the case of a pot-hole being at the point of treatment intervention when it's at least 500mm in width and over 75mm deep. Many council supervisors and foremen have questioned if

these sorts of dimensions can be realistically classified as pot-holes? In all their site-testing, they haven't come across any defects that could be left untreated to that level of intervention and still expected to be safe.

All of this has obviously been a result of the recent requirement that the performance standard has to be 100%, i.e. councils must achieve 100% responsiveness, once service levels are set.

Two questions arise from setting high intervention levels:

- Will the court consider such service levels reasonable? Will a coroner testing the evidence consider it reasonable?

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- Are we defeating the primary objective of 'asset preservation' when we set high interventions like these?

Whilst this process of setting very conservative service levels sounds good on paper, councils may be leaving themselves open to a case of being manifestly unreasonable.

For example, they may totally achieve responsiveness to repair footpath steps above 35mm in six months but the intervention of 35mm may be considered totally unreasonable in a court of law. They may also run the risk of falling into a trap of not repairing defects until they reach this intervention level, leading to more significant asset damage which will cost much more to fix in future.

Time will judge whether a mandatory performance standard of 100% is realistic. Time will tell whether a progressive target for councils to aim to gradually improve their performance targets over time is more pragmatic with a strategic focus on increasing resources, longer-lasting repairs and proactive maintenance.

The important questions to be addressed by midnight of 31 December are:

- Are service levels reasonable and equitable?
- Have they been developed them in consultation with stakeholders?
- Can they prove that they have taken into account practicality, affordability, safety, risk and stakeholder needs?
- Have they successfully employed the outcomes of best value reviews?
- Can they achieve the responsiveness stated in the service levels?

We have been working with a number of councils in presenting issues, findings and learnings from pilot-testing sites where Asset Management Plans are being tested and implemented.

Service levels and performance standards

Service Levels are measures of quality, quantity and responsiveness that an agency undertakes to deliver in the maintenance and repair of infrastructure. In setting service levels, the following key questions need to be addressed:

1. At what stage of condition or functionality does the relevant asset cease to provide the intended service or start to pose a risk?

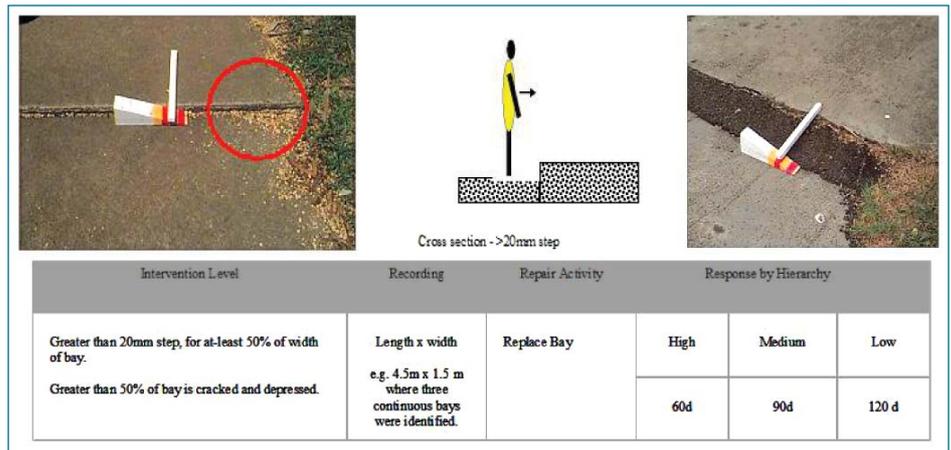


Figure 1. Pictorial representations being used in some pilot council documentation.

2. At what stage of condition is it optimal to repair a defect, even if it does not pose a safety risk to users?
3. How long, after it has been identified, can we afford to leave a defect unattended before it is likely to cause further asset damage?
4. How long, after identification, will it be considered reasonable, to leave a defect unattended from a safety and risk perspective?
5. What is the organisation's adopted repair guideline to address each type of defect or functional non-performance?

Questions 1 and 2 address the basis for what constitutes reasonable intervention levels. Questions 3 and 4 address the issue of responsiveness.

The last question addresses the issue of doing things consistently in order to measure performance, i.e. it defines a consistent organisational method of repair.

Organisational consistency in repair is equally critical as it ensures that defects are repaired effectively (permanent repair where nominated).

Consistency in approach provides the basis for performance measurement and management. It is likely that one of the key aspects of the insurance audits in future will be to test this consistency.

In setting intervention levels, the agency therefore needs to address the issues of both asset preservation and safety. Whilst it may not be considered unreasonable or unsafe to allow pot-holes of 500mm width to occur, it may not be good asset management practice to leave them unattended over 300mm width for more than seven days. Some organisations have adopted a two-tier approach to address this issue.

Performance standards are measures of an agency's ability to meet its service levels. Note that we assume here that

reasonable service levels have already been set first as opposed to defining service levels for a default performance standard of 100%.

It is very likely that given issues like resources, funding, political prioritisation due to local politics, staff skills etc, an agency may not achieve the responsiveness each time, every time. Performance standards therefore enable an agency to state in percentage terms what their achievable target is - between 0 and 100%.

Which approach of setting standards is more pragmatic? Any approach must be 'fit for purpose' and from a community satisfaction, risk management, safety and legal perspective, take a moment to think what is really reasonable, acceptable or equitable:

- repairing edge drop-offs at a maximum 50mm depth, 80% of the time; or
- repairing edge drop-offs at a maximum 75mm depth, 100% of the time; or
- a combination of the above approaches.

Describing service levels

How do we describe service levels in a manner that everyone can relate to? Defining service levels in the form of a matrix that describes intervention measurements (footpath step 20mm), response time (six months) and repair options (grind or replace) is the most common method.

The STEP program, the *International Infrastructure Manual*, and other guidelines conform to such matrices. Engineers and technicians can relate to matrices very easily. However, it may mean little to the wider general community from whose inputs, the standards have been set in the first place. Engineering matrices in tabulated form also have the potential for a variety of legal opinions and interpreta-

tions, particularly where the assessment of a defect is subjective. Examples are: what constitutes a 'slippery' pavement surface, what constitutes a blocked drain and so on.

It is therefore best to document the service levels with pictorial descriptions of the defect or functional non-performance of a service. This has the following advantages:

- the inspector knows precisely what to look for;
- the maintenance repair crew knows precisely what the intended repair activity is;
- the community and internal council management also have a consistent interpretation of what constitutes a particular defect;
- legal interpretations can be narrowed as the definitions are more objectively oriented.

An example of such documentation used by some pilot councils is shown in Figure 1.

Repair and treatment guidelines

The test of reasonableness from midnight of 31 December 2004 does not relate to intervention levels alone. Most councils have concentrated on getting intervention levels and response times right but haven't really put much effort into 'how we repair defects'.

The test of reasonableness will also assess whether council consistently repairs its defects in the most appropriate manner, which may be interpreted by an expert as a permanently executed repair. The importance of defining clearly what constitutes 'permanent repair' cannot be overstated. It is therefore critical that prior to future insurance audits, councils are able to document their maintenance practice guidelines as being based on best locally available practices. The consistency aspect applies to each council work crew, maintenance gang and external contractor.

Inspections and the Road Management Act

Asset inspections with defined frequencies are now integral to the successful demonstration of reasonableness and the proper implementation of the road management plan. Inspections may now be considered as a qualified task where appropriate training is required to ensure that defects, risk and other issues are consistently measured and recorded.



Figure 2. Customised vehicle with spray tank and nozzle.

Some of our pilot sites have a dedicated road inspection crew while others have combined the RAMP inspections with a minor patching crew for roads. Most of our pilot sites have a dedicated footpath inspection crew.

Experiences from the pilot testing to date show that it may be wise to address a lot of the inspection process issues prior to 1 Jan 2005. Some issues to consider are:

- Length of network and frequency of inspection combined with speed of inspection can be a quick desk-top exercise to determine how many resources we need on an annual basis. For example a footpath network of 600km with an inspection frequency of twice a year, at a rate of 6km per day on foot equates to 200 working days for one person.
- Could we make this process more effective by using an option of a customised vehicle? One council certainly is trialing this option (Figure 2). The vehicle is also fitted with a spray tank and nozzle for edge spraying. However, this option may not suit other councils. Another council is trialing the use of Electronic Distance Measuring devices.
- The frequency of RAMP inspections is based on hierarchy, e.g. high risk footpaths may be nominated for inspection twice a year, as opposed to low risk ones which may be inspected once every two years. Therefore an inspection plan may need to be developed in order to ensure that those targets are met. This inspection plan is more complicated than a normal inspection plan that is purely based on regional or locality-based programs. For example, the suburb of Guama may have roads with all six council hierarchies running through it. The inspection plan should be developed in such a way that the inspector's time is optimised in terms of covering one or

more of those hierarchies within the area he/she is working in.

- In addition to RAMP inspections, councils may also need to do their regular insurance inspections, reinstatement inspections, service authority inspections and asset protection surveys. The RAMP implementation may be a good opportunity to streamline these inspections.

Some operational process issues that need to be thought through are:

- a. Confusion created by duplicate data - picked up by separate audits by the reinstatement inspector and the RAMP inspector.
 - b. Test of reasonableness if the RAMP inspector did not record a failed reinstatement as it was meant to be recorded by the reinstatement inspector.
 - c. Insurance audits generally require a detailed report. Should these be done by a different officer/inspector?
 - d. Regular customer requests also need to be inspected. Quite often the requests may not be in areas that the RAMP inspector's current schedule is. How do we attempt to keep the inspection plan on track and allow for these customer inspections?
5. An audit of inspections is also very critical to the insurance audits.
 6. Inspections have to be recorded irrespective of whether or not any intervention level defects were identified.
 7. Storage - electronic/hard copy and order of storage of the inspection sheets i.e. by street name, date order etc to enable easy retrieval.

The value of pilot testing

Piloting is an excellent method of testing processes, targets, practices and identifying key issues that can be fine-tuned to increase efficiencies.

AMP-ITTM is a standard pilot process that comes with established tools, templates, process mapping and data analysis techniques to undertake the pilot in the most optimal manner. However, any council can set up similar pilots using their own internal methods and tools, i.e. it is not rocket-science.

The pilots that we have been currently engaged with are expected to set the guidelines for each council's maintenance processes and practices from 1 Jan 2005. The testing through AMP-ITTM has meant that council managers will have real, local specific data to make more rational decisions about service levels, resources, funding or other needs. It is an

incredible platform to demonstrate evidence in setting standards. AMP-ITTM involves work crews, supervisors, team leaders, managers, works-officers, admin staff and customer call centre staff to ensure that organisation specific processes are tested.

Issues

What are some of the issues in a pilot process?

Inspection Process

- Who carries out the inspection and what information is collected?
- Do we have the most optimal inspection program by hierarchy?
- On-site testing of inspection process to test that service levels are defined in the most practical manner.
- Design of a council-specific inspection form.
- How is the information recorded to get best use out of it. For example, do we record a reinstatement size separately to consequential maintenance damage size?
- Identification of urgent safety or risk factors along with asset preservation/defect information.
- Technology support in data collection, i.e. hand-held recorders or other methods.

Data Recording

Often the inspection data is not able to optimise work scheduling and in many cases can be a cause for frustration and dis-enchantment to work crews. Some examples are:

- Size of defect is significantly smaller than what has been recorded in the inspection. Work has been allocated to a major crew leading to an inefficient practice.
- Size of defect is significantly greater than was recorded. i.e. secondary damage not identified. Work has been allocated to a minor crew who is unable to undertake the repair on site, i.e. loss of time and increased frustration.
- Size of the repair has been identified in terms of area say 18sqm - what does that mean? Does the admin staff record it as 18m x 1m or 3m x 6m. How does the team leader or supervisor then determine which crew he allocates to that job?

Administration

- How do we ensure that work completed is actually recorded and closed off. Most of us know how frustrating it is for supervisors when they get work orders

for jobs that have been finished six months ago.

- Training of external contractors like concreters and footpath grinders to ensure that their paperwork complies with the requirements of the Act.
- Training of customer service centre staff in the requirements of the Act to ensure that customer requests are interpreted and recorded in the most practical manner. For example, the inspector needs to know a very precise location to identify the request/complaint. The customer service staff may therefore need to verify the request by cross checking with relevant questions like "is the footpath damage outside house no. 30 or does the resident reside in house no. 30 and the damage is further away?"

Operational Process

- Setting the prioritisation process. How often do we program work and how do we prioritise based on our RAMP hierarchies and service levels?
- How do we ensure that we allocate work to the right crews - i.e. major patching crews are allocated large jobs and minor patching crews are allocated small jobs.
- Do we need to re-assign crews if we have the data to support it, i.e. do we need to increase our internal strength in minor patching and get external contractors for major works? Are we better off assigning all concrete works to external contractors and re-assigning our concrete crews to do more asphalt patching works?
- Prioritisation process should check if any of the defects are on a street/footpath that is on our reseal/rehab program.
- How do we ensure that our work crews optimise their patching in the months that also include reseal patching?
- If we are reacting to a customer complaint/request, will we also repair any other faults/defects that are identified close to that repair?
- If we are reacting to a service authority request, how do we record/address the consequential maintenance damage?

Value-added outcomes

The following are some outcomes of the pilot process that councils have found to be valuable:

- enabled councils to clearly identify resources required to implement the Plan appropriately;
- enabled the maintenance unit to identify the quantity of defects on their

road and footpath network that are considered either unsafe or beyond intervention;

- enabled the maintenance unit to establish a priorities and allocate work programs to appropriate crews, both in-house and external;
- provided an indication of the level of achievement in terms of service standards;
- provided an indication of funding levels required to deliver adopted standards;
- formalised an inspection, data-recording processes, and data-capture criteria;
- identified and resolved issues of inefficient practice;
- updated the process of filling out time-sheets to capture more relevant data from the RMA perspective;
- identified the extra patching work carried out at council's expense arising from inefficient practice and communication by service authorities; in two cases this was over 6,000sqm in under three months;
- identified in degree of importance, ancillary issues like notifying residents, private clubs and Parks Victoria about key factors affecting the road and footpath infrastructure;
- determined an objective process of identifying hot-spots in line with the service standards.

AMP-ITTM is an implementation pilot that enables councils to test their service levels, standards, work practices and processes for compliance with legislation, insurance and good-practice asset management.

- **Ashay Prabhu of ACEAM Pty Ltd has developed asset management plans for rural and metropolitan Australian councils in the areas of roads, footpaths, buildings and open spaces. The programs comply with *International Infrastructure Manual* and STEP programs. Ashay is also a co-founder of the Asia-Pacific Institute of Asset Management and is its inaugural Director of Asset Management Training. Ashay may be contacted on ashay.prabhu@aceam.com or for company profiles and training calendars contact training@aceam.com** 