

Sustainability Assessment Tool for Pavements

Frequently Asked Questions

What is the Sustainability Assessment Tool for Pavements?

The Sustainability Assessment Tool for Pavements, or SAT4P, is an online tool that enables the concurrent whole-of-life assessment of a pavement design's impacts and economic costs.

As a project level tool, SAT4P can be used to assess and compare a pavement's design, material and product selection, maintenance regimes and end-of-life options.

Some of the functionality features of the SAT4P include:

- Accessed through user-friendly web-based Interface
- Includes data libraries with over 80 pre-loaded pavement materials
- Calculates lifecycle GHG emissions of innovative pavements
- Calculates lifecycle cost benefits of innovative pavements
- Calculates additional sustainability outputs and economic indicators
- Evaluates "use phase" vehicle emissions for the design, including alignment design
- Aligns with ISC's ratings process and requirements

Who developed the SAT4P?

The SAT4P was co-developed by:

- National Asset Centre of Excellence (NACOE), an initiative between the Queensland Department of Transport and Main Roads and the Australian Road Research Board (ARRB).
- Western Australian Road Research and Innovation Program (WARRIP), an initiative by Main Roads Western Australia and ARRB.

Why was the SAT4P Developed?

NACOE and WARRIP identified an opportunity to improve on existing pavement lifecycle assessment tools, with a focus on providing an enhanced capability to inform decisions regarding material selection and design, maintenance treatments, and end use options.

What is the SAT4P Opportunity?

SAT4P can be used in pavement planning and design phases, to inform maintenance, and at key points during the pavement life cycle. Implementation of SAT4P options can result in the following benefits:

- Informing options supporting circular economies such as reducing landfill and increasing recycled material use.
- Promoting lower Green House Gas (GHG) Emissions alternatives.
- Informing business opportunities in waste and construction industries.
- Improving materials selection on projects
- Calculating emissions by phase including construction and use phases.
- Considering cost/environmental benefit of new pavement technologies.

How does SAT4P differ from other sustainability tools and calculators?

- SAT4P is designed for use with road pavements.
- It can undertake combined GHG and economic assessments.
- It can facilitate greater "optioneering" of pavement design elements and evaluation of impacts.
- It has the ability to assess GHG emissions by life-cycle phase and source.
- It has the ability to "optioneer" use-phase factors such as maintenance and alignment with consideration to GHG and cost impacts.

Access update

The SAT4P is currently available to Queensland Department of Transport, Main Roads Western Australia and ARRB staff. The tool is undergoing quality assurance reviews by the project development team, prior to a preview launch to industry in 2023.

For more information on SAT4P

Please contact the Programs for more information:

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