



# STREAMS® Smart Motorways

Experience  
safer and more reliable  
road journeys with  
**STREAMS<sup>®</sup> Smart Motorways**

# STREAMS® Smart Motorways

Some of the key challenges facing transportation departments around the world is maximizing road network efficiency, reducing congestion and better managing incidents to enable smoother and safer road journeys for commuters. Transportation departments are increasingly turning to more sustainable solutions to manage growing traffic congestion as an alternative to traditional road infrastructure expansion.

Transmax's Intelligent Transportation Systems (ITS) platform STREAMS is an industry-leading integrated solution to optimise the entire road network. The company's STREAMS Smart Motorways solution offers a suite of features alongside coordinated ramp metering to support the sophisticated management of motorways by managing journeys from end-to-end. The solution has seen outstanding results on motorways, with studies showing reduced delays, improved reliability and increased traffic throughput.

***The cost of congestion cannot be underestimated. In the U.S. alone, congestion cost \$305 billion in 2017, an increase of \$10 billion from 2016\*.***

\*CITYLAB, 2018



# The Solution

STREAMS Smart Motorways is a comprehensive suite of algorithms that prevent flow breakdown and accidents before they happen. It also provides tools to respond to incidents, if they occur, to get people moving again.

Transmax's solution coordinates variable speed signs, ramp signals, dynamic message signs, lane control, and travel time signs that respond in real time to whatever is happening on the motorway.

STREAMS Smart Motorways integrates robust traffic detection, highly advanced dynamic metering algorithms and complementary traffic management components that work together to prevent the breakdown of motorways and improve predictability.

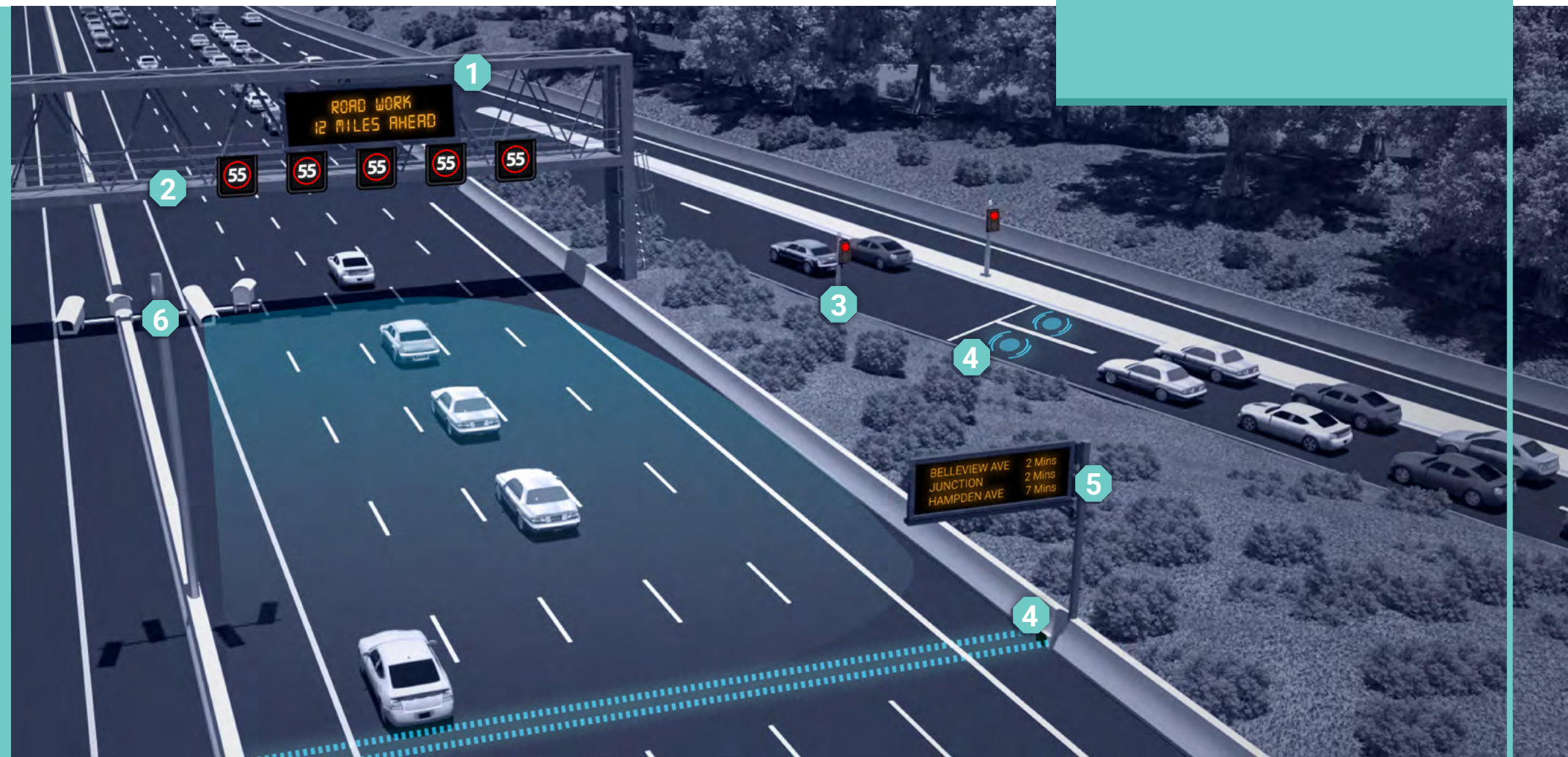
STREAMS<sup>®</sup>  
smart  
motorways

- 1 VARIABLE MESSAGE SIGNS
- 2 LANE USE MANAGEMENT SIGNS
- 3 RAMP SIGNALS
- 4 VEHICLE DETECTION SENSORS
- 5 TRAVEL TIME
- 6 CCTV CAMERAS

## How it works

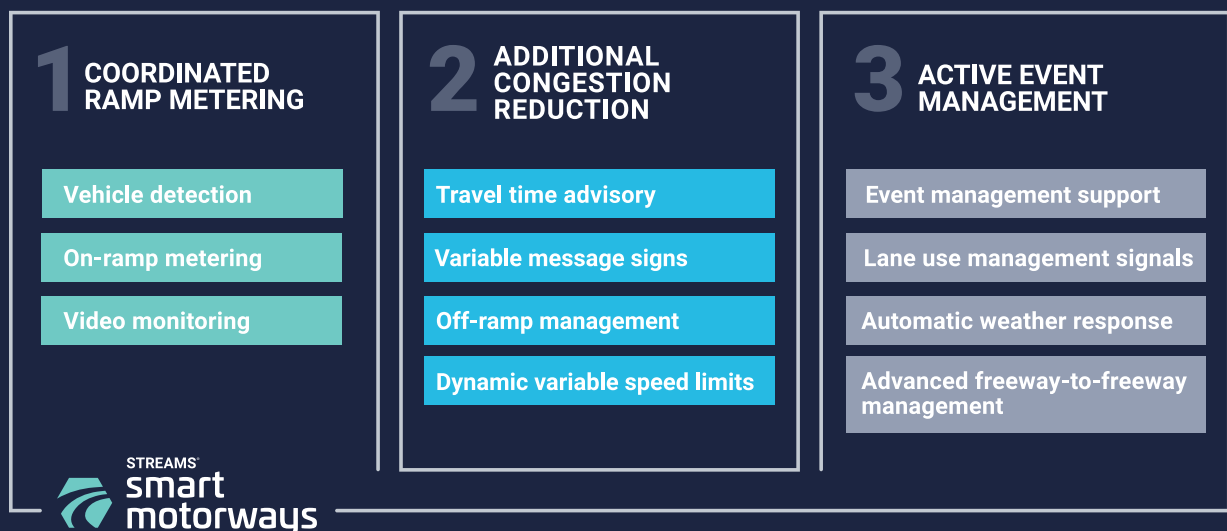
STREAMS treats the motorway network as an active system where congestion and incidents can be prevented through the careful control of roadside equipment.

It uses sophisticated algorithms to precisely manage the triggers of flow breakdown: vehicle platooning, dynamic formation of bottlenecks, turbulence at merges, clogged exit ramps, phantom shockwaves, poor weather and delayed response to incidents.



# Managing congestion with STREAMS Smart Motorways

Coordinated ramp metering is the key to addressing congestion. It increases traffic flows and significantly improves reliability. Coupled with other sophisticated tools in the solution STREAMS Smart Motorways can substantially improve the performance of a motorway.



## Coordinated Ramp Metering

STREAMS Smart Motorways responds to real-time traffic by manipulating ramp metering rates on a corridor wide basis. The solution controls and coordinates all entry ramps along a route to manage the mainline freeway at a number of critical bottleneck locations to disperse on-ramp vehicle platoons and ensure traffic flow is evenly distributed into the merge area.

It also facilitates faster recovery of the freeway after congestion caused by a crash or unplanned event.

The solution uses sophisticated ALINEA HERO ramp metering algorithms. ALINEA manages local metering to fix congestion near the on-ramp and HERO balances equity of access and demand across the network.



# Success of STREAMS Smart Motorways in Australia

STREAMS Smart Motorways is delivering outstanding results for road departments and improving the journeys of millions of people. In Australia, Victoria's most congested freeway has seen outstanding results from STREAMS Smart Motorways.

Benefits realised after improving Victoria's most congested freeway with a STREAMS ITS solution:



travel time  
reduced by  
**42%**  
during peak periods



accidents  
reduced by  
**30%**  
on the motorway



a more than  
**50%**  
increase  
in sustainable peak flows



greenhouse  
gas emissions  
reduced by  
**11%**



AUD **\$2M**  
per day  
estimated economic benefits



# US trial of STREAMS Smart Motorways

STREAMS Smart Motorways is being trialled by the Colorado Department of Transportation (CDOT) as part of a managed motorways Smart 25 pilot project along I-25 in the Denver metro area. CDOT is working with Transmax, WSP and VicRoads to undertake this project. The aim of the trial is to demonstrate the

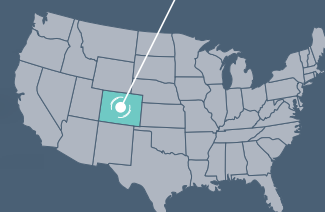
effectiveness of managed motorways, specifically the coordinated ramp metering approach, to control traffic flows within the corridor to reduce congestion, improve safety, and increase the overall efficiency of freeway traffic flows.



**COLORADO**  
Department of  
Transportation

**SMART25 Trial**

INTERSTATE I-25 COLORADO



# Start your journey with STREAMS Smart Motorways

If you are hoping to address congestion through coordinated ramp metering or achieve maximum benefit from the full STREAMS Smart Motorways solution,

Transmax can work with road departments to integrate the managed motorways features that will most effectively achieve your objectives.

Contact our team or visit  
[www.transmax.com.au/smartmotorways](http://www.transmax.com.au/smartmotorways)  
for more information.







# About Transmax

Transmax is the solutions provider of the international award-winning ITS platform STREAMS. We exist to improve people's lives by providing industry-leading transport solutions and help move millions of commuters around Australian road networks every day.

STREAMS was first developed as part of Queensland's Department of Transport and now, as a government-owned entity, Transmax supports other transport departments around Australia and internationally to achieve safer and more reliable road journeys for people in the communities they serve.

## Contact Us

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We place our customers at the centre of everything we do and work collaboratively to ensure our ITS solutions meet their needs. Transmax offers customers systems engineering, software design and development, along with a range of consulting and support services throughout the entire ITS lifecycle.

With 50 years of ITS experience, we help our customers realise the community benefits of optimising transport networks by providing smarter, more sustainable ITS solutions.





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