

Projects

# Light Rail Contractual Performance Modelling Analysis

Modelling impacts and risks of proposed passenger experience monitoring regimes to inform contract negotiations



## LOCATION

Melbourne, VIC

## CLIENT

Yarra Trams

RISK MODELLING

DECISION ANALYTICS

## Background

Public Transport Victoria (PTV) contracts with public transport operators to provide services across Victoria. One of their contracted operators is Yarra Trams which provides services across the largest light rail / tram network in the world.

Under the contract between Yarra Trams and PTV, the operating contract was able to be renegotiated and extended for a period of time without the need to undertake a market tender process. As part of the renegotiation, PTV wanted to implement a new approach to measuring passenger experience and ensuring minimum levels of operational performance would be met over the life of the contract by Yarra Trams.

## Our role

NineSquared was engaged by Yarra Trams to model the impact of the proposed passenger experience performance monitoring regime and assess the impact of the proposed regime on the operating risk that would be faced by Yarra Trams during the life of the extended contract.

NineSquared constructed a model that used the proposed regime which included a range of both objective and subjective measures as well as different methods of measuring performance. Once the performance regime was constructed within the model, various operating scenarios were modelled which included consideration of the cost of operating the services to the required standard and the risk of failure which would lead to the imposition of penalties and, ultimately, the potential loss of the operating contract.

Scenarios in the model was risk based and included consideration of the likelihood that a particular failure would occur and that it would be detected. Finally, the model provided for modelling of these risks using monte-carlo simulations over the contract measurement periods to identify the potential penalties that could be levied on the operator.

The model outputs were used by Yarra Trams to inform their negotiations with PTV and to outline the likely cost to PTV of Yarra Trams complying with the original form of the proposed passenger experience performance regime.

This led to changes to the proposed scheme that made some measures being subject to objective rather than subjective measurement while other elements were phased in over an agreed period of time as Yarra Trams introduced new initiatives that met the increased passenger experience expectations, at a lower cost to PTV and at a lower risk to Yarra Trams.

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## FOR FURTHER INFORMATION

For more information, find one of our experts at [ninesquared.com.au/people](https://ninesquared.com.au/people)