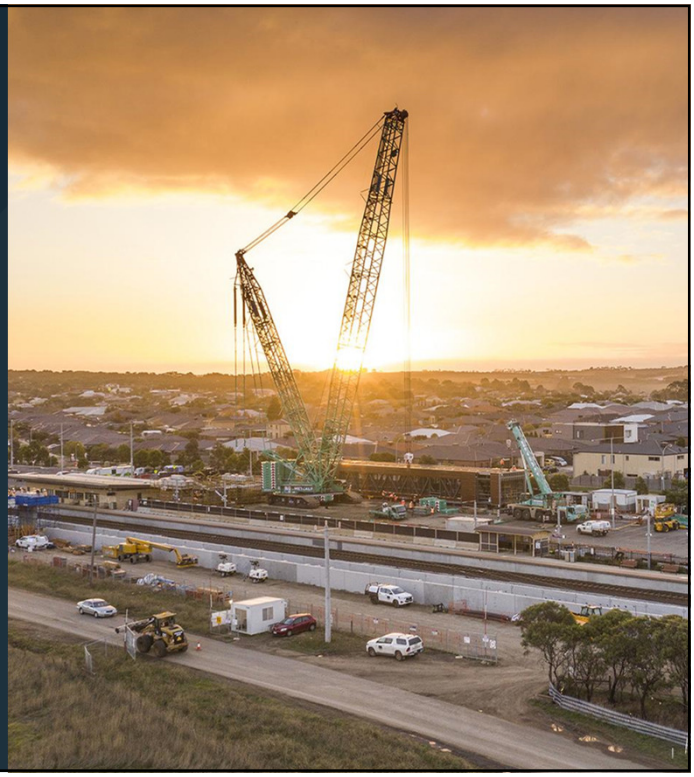
nPlan

CASE STUDY

How AI-powered forecasting and risk management is being implemented on major projects in Australia today

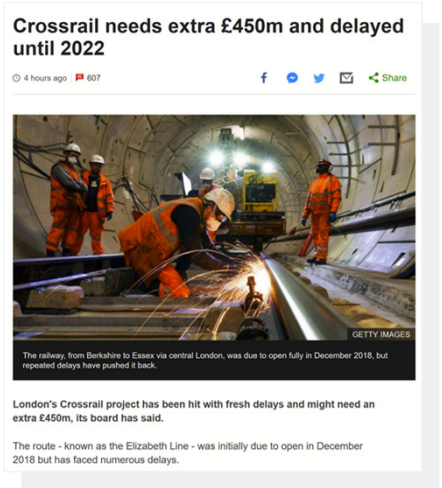
Toby Buchanan & Taylor Burns

REGIONAL RAIL REVIVAL | RAIL PROJECTS VICTORIA



What is nPlan?

Major projects mean big delays and cost overruns



Crossrail needs extra £450m and delayed until 2022

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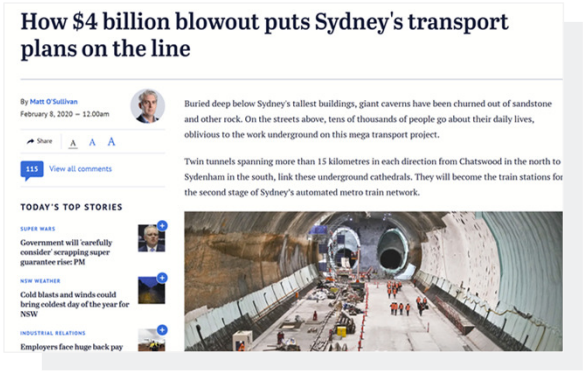
The railway, from Berkshire to Essex via central London, was due to open fully in December 2018, but repeated delays have pushed it back.

London's Crossrail project has been hit with fresh delays and might need an extra £450m, its board has said.

The route - known as the Elizabeth Line - was initially due to open in December 2018 but has faced numerous delays.



How $4 billion blowout puts Sydney's transport plans on the line

By Matt O'Sullivan
February 8, 2020 — 12.00am

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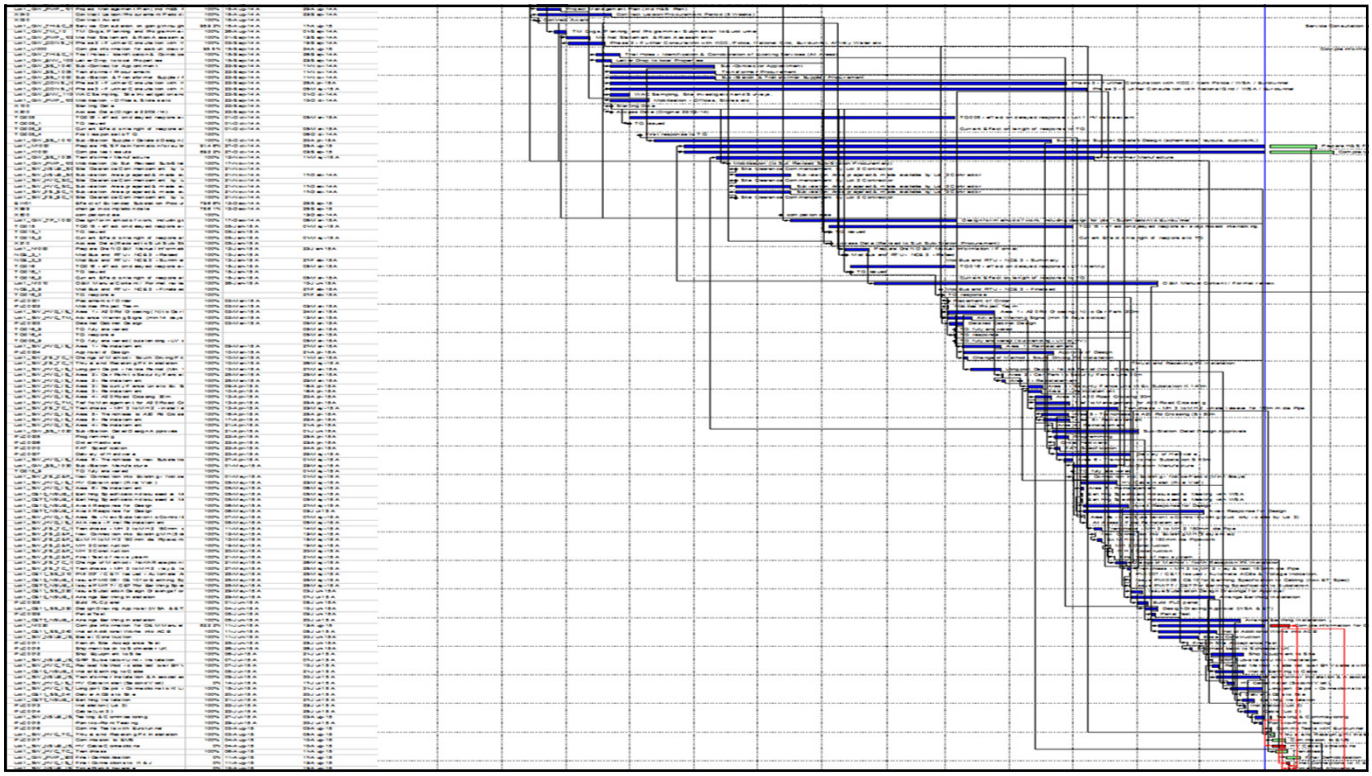
Government will 'carefully consider' scrapping super guarantee rise: PM

NSW WEATHER
Cold blasts and winds could bring coldest day of the year for NSW

INDUSTRIAL RELATIONS
Employers face huge back pay

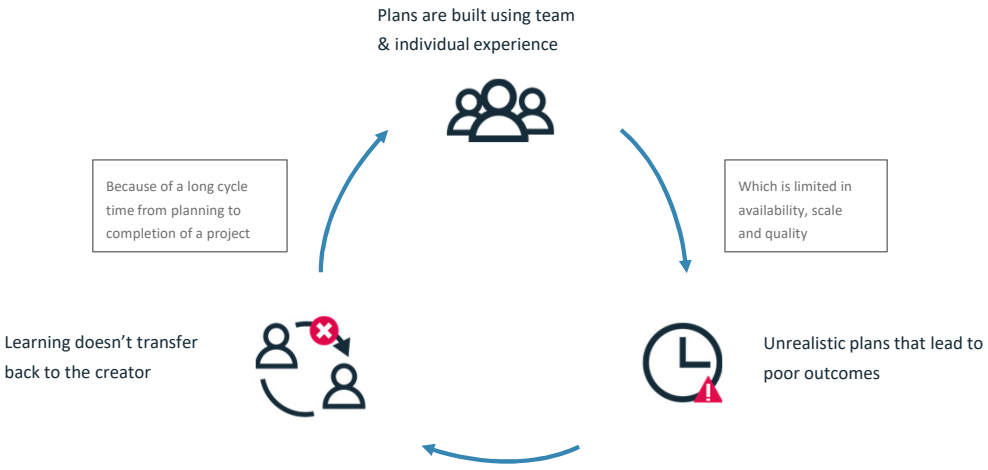
Buried deep below Sydney's tallest buildings, giant caverns have been churned out of sandstone and other rock. On the streets above, tens of thousands of people go about their daily lives, oblivious to the work underground on this mega transport project.

Twin tunnels spanning more than 15 kilometres in each direction from Chatswood in the north to Sydenham in the south, link these underground cathedrals. They will become the train stations for the second stage of Sydney's automated metro train network.



What is nPlan?

And learning from our mistakes is hard



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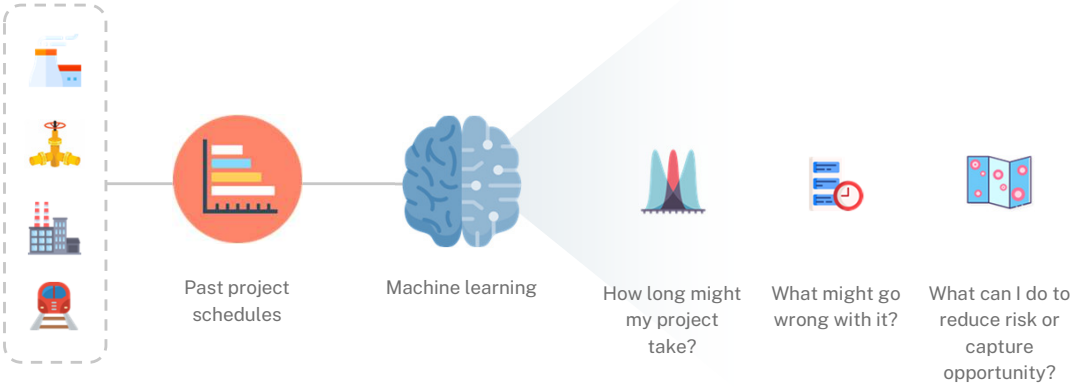
What is nPlan?

So we built an AI to learn how projects perform



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What is nPlan?

And we support project teams through different use cases

	Pre-sanction / bid phase	Execution
Portfolio of projects	**Option assessment**	**Portfolio Monitoring**
Individual projects	**Bid Evaluation**	**Project Delivery**

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nPlan

Founded in the UK in 2017

Our Purpose: to inspire the world to forecast correctly & empower it to tackle risk

Taking cognitive biases out of the equation with the ambition to solve the problem of delayed projects

Customers include:

COSTAIN, Shell, HS2, KIER, Network Rail, Google, SKANSKA

World-class team with a mix of industry experience, fresh perspectives, and technical excellence in ML and software

Team of 50

Across APAC, NA, EMEA

Has amassed over 740,000 Construction schedules creating the biggest dataset of its kind in the world

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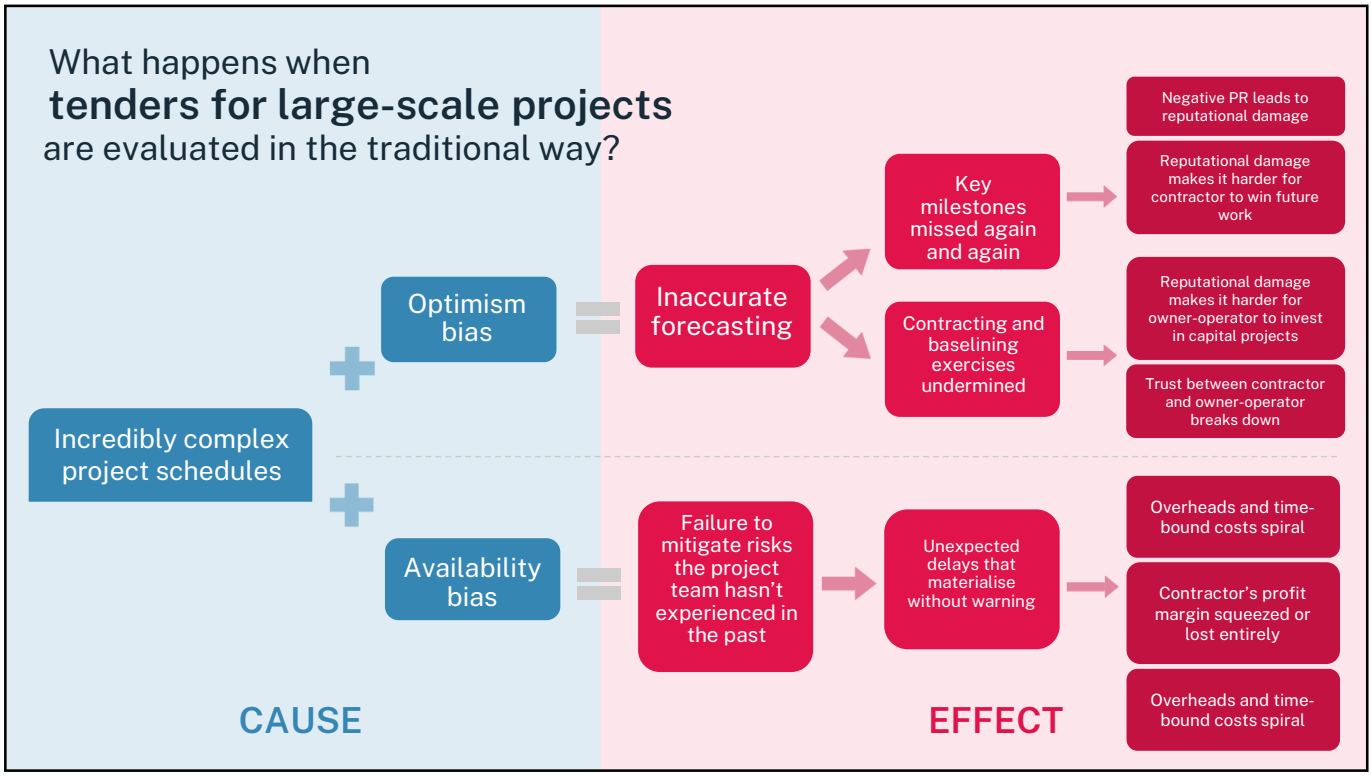
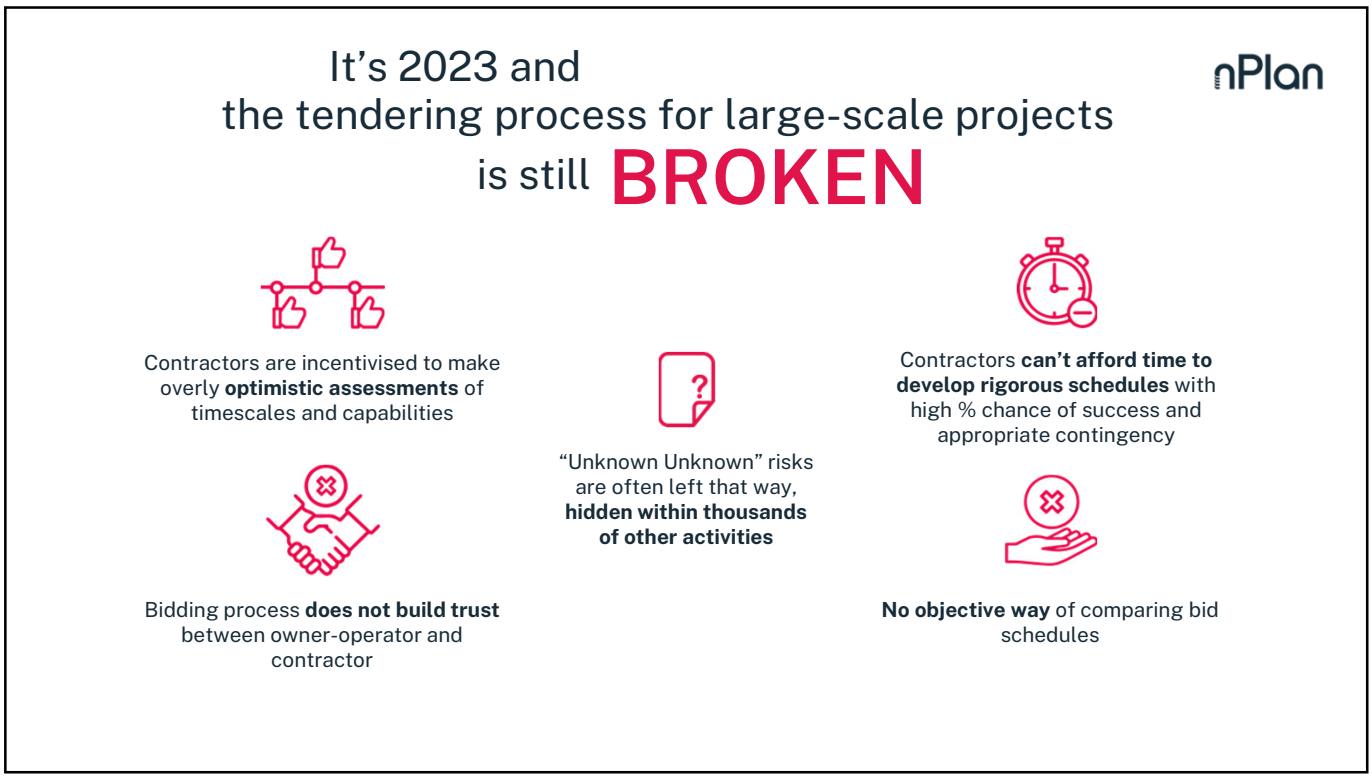
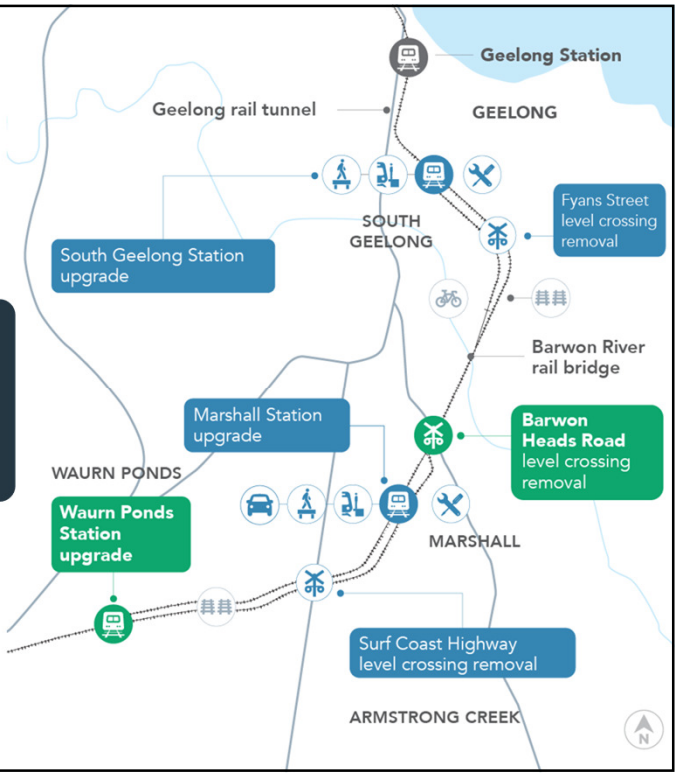

What happens when
tenders for large-scale projects
are evaluated in the traditional way?
Incredibly complex project schedules
Optimism bias
Availability bias
Inaccurate forecasting
Failure to mitigate risks the project team hasn't experienced in the past
Key milestones missed again and again
Contracting and baselining exercises undermined
Unexpected delays that materialise without warning
Negative PR leads to reputational damage
Reputational damage makes it harder for contractor to win future work
Reputational damage makes it harder for owner-operator to invest in capital projects
Trust between contractor and owner-operator breaks down
Overheads and time-bound costs spiral
Contractor's profit margin squeezed or lost entirely
Overheads and time-bound costs spiral
CAUSE
EFFECT

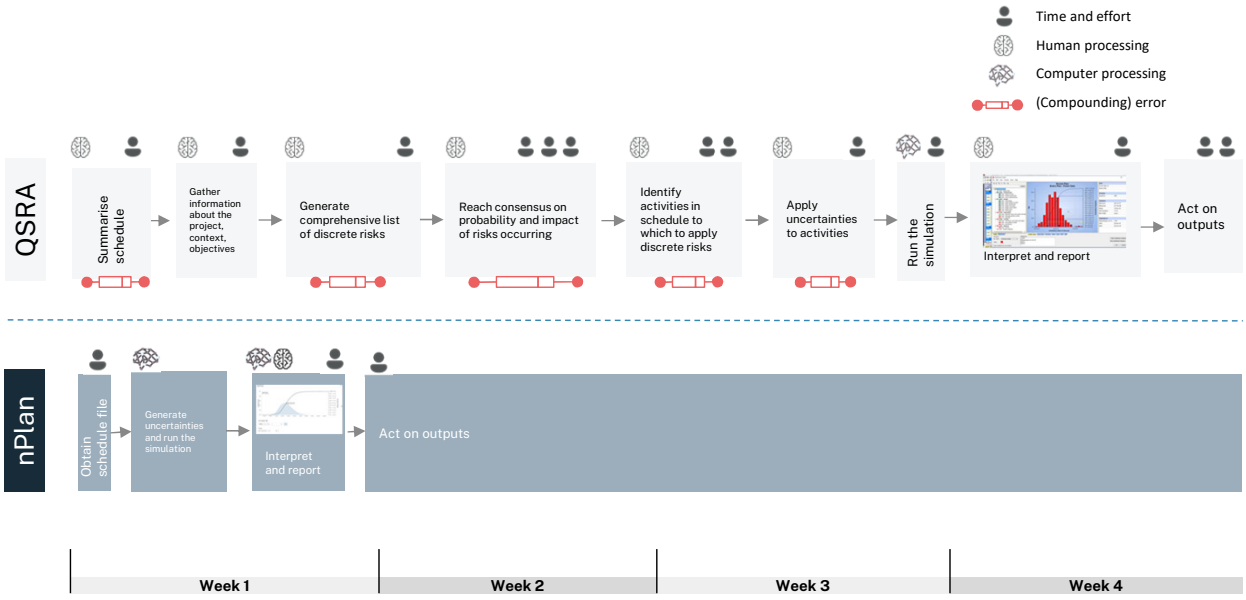

It's 2023 and
the tendering process for large-scale projects
is still BROKEN
nPlan
Contractors are incentivised to make overly optimistic assessments of timescales and capabilities
"Unknown Unknown" risks are often left that way, hidden within thousands of other activities
Contractors can't afford time to develop rigorous schedules with high % chance of success and appropriate contingency
Bidding process does not build trust between owner-operator and contractor
No objective way of comparing bid schedules

About the Project

Project Name:	South Geelong to Waurn Ponds Duplication
Project Type:	Railway construction
Project Value:	~$900M AUD
Works started:	Late 2022



How nPlan worked with RPV



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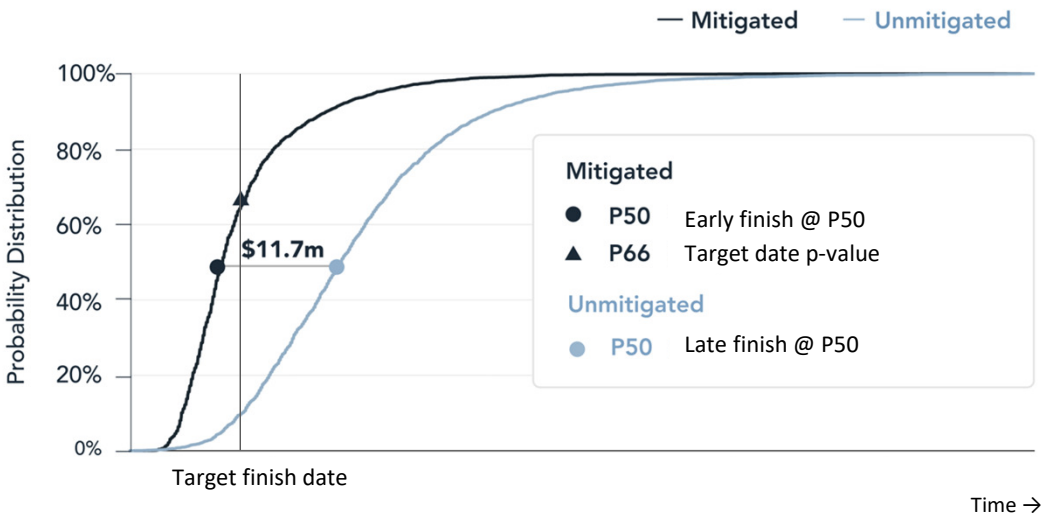
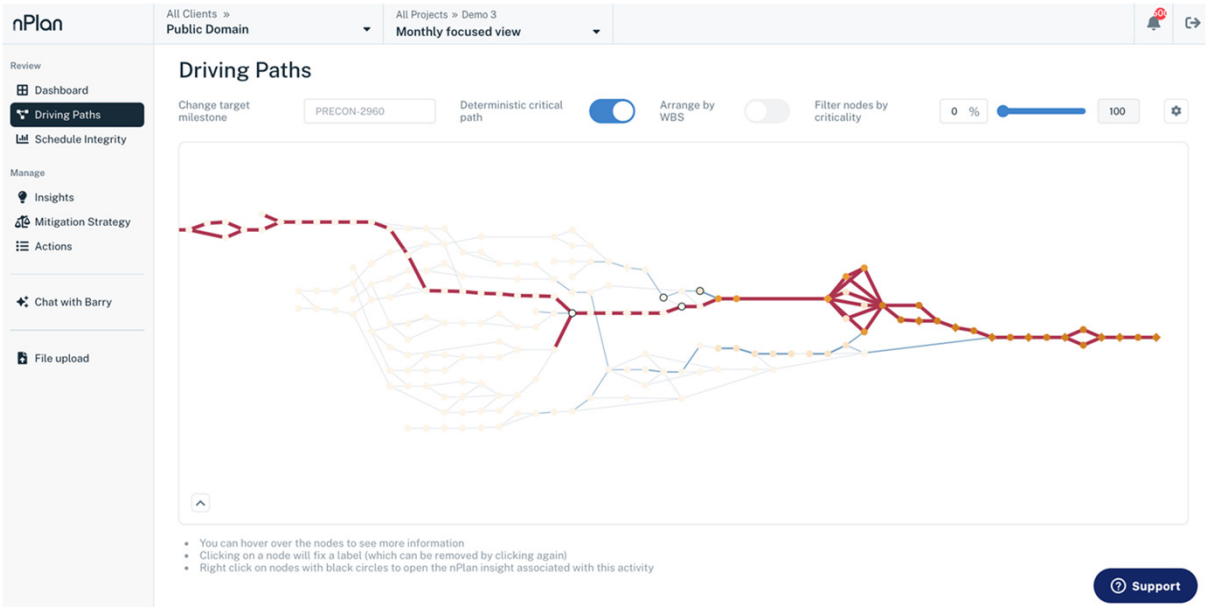
Data in the side-by-side analysis provided by nPlan

Cost Avoidance



Cost Avoidance



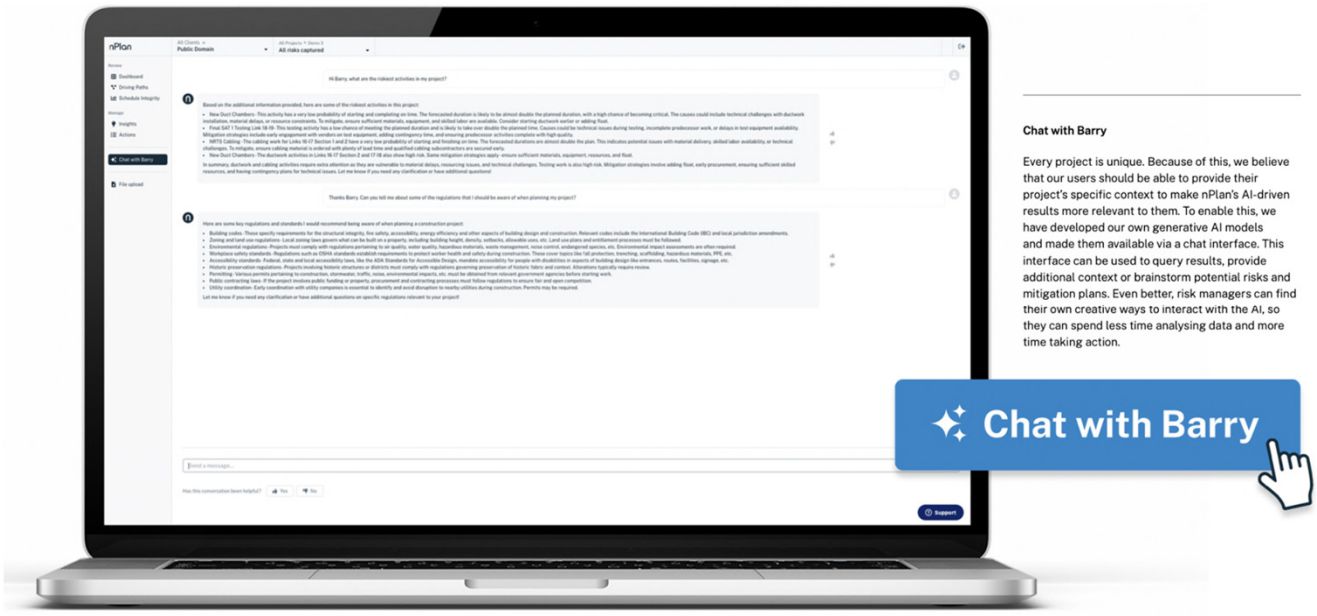
Benefits for Rail Projects Victoria

- Easily assess whether schedules are realistic
- Compare bid schedules with quantitative data
- Develop risk mindset from the tender phase
- Quantify project risk contingency

Benefits for chosen contractor

- Rewarded for developing a rigorous, realistic schedule
- Start negotiation phase with a de-risked schedule
- Receive ongoing insights from nPlan to help with identification of risks
- Start project from position of trust with owner-operator

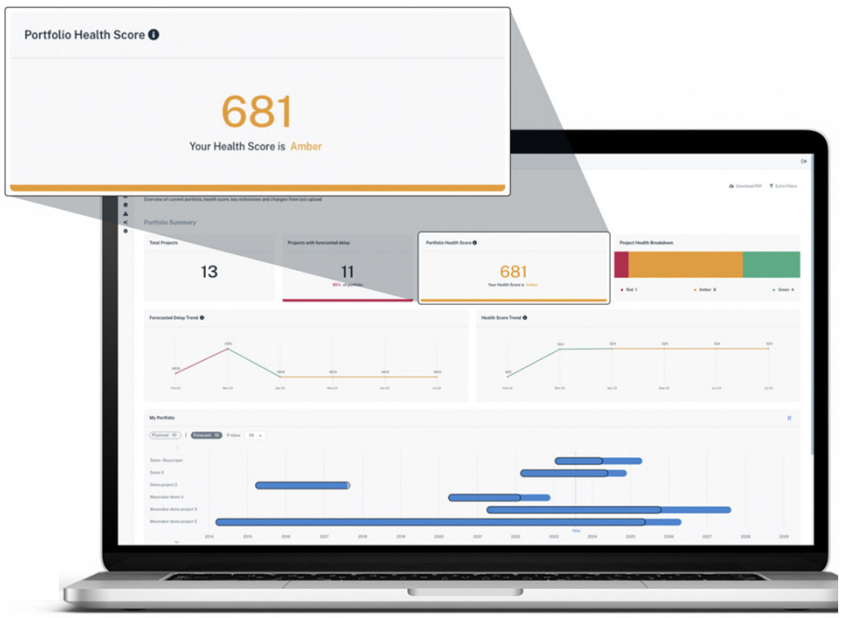
Future of nPlan



Chat with Barry

Every project is unique. Because of this, we believe that our users should be able to provide their project's specific context to make nPlan's AI-driven results more relevant to them. To enable this, we have developed our own generative AI models and made them available via a chat interface. This interface can be used to query results, provide additional context or brainstorm potential risks and mitigation plans. Even better, risk managers can find their own creative ways to interact with the AI, so they can spend less time analysing data and more time taking action.

Future of nPlan



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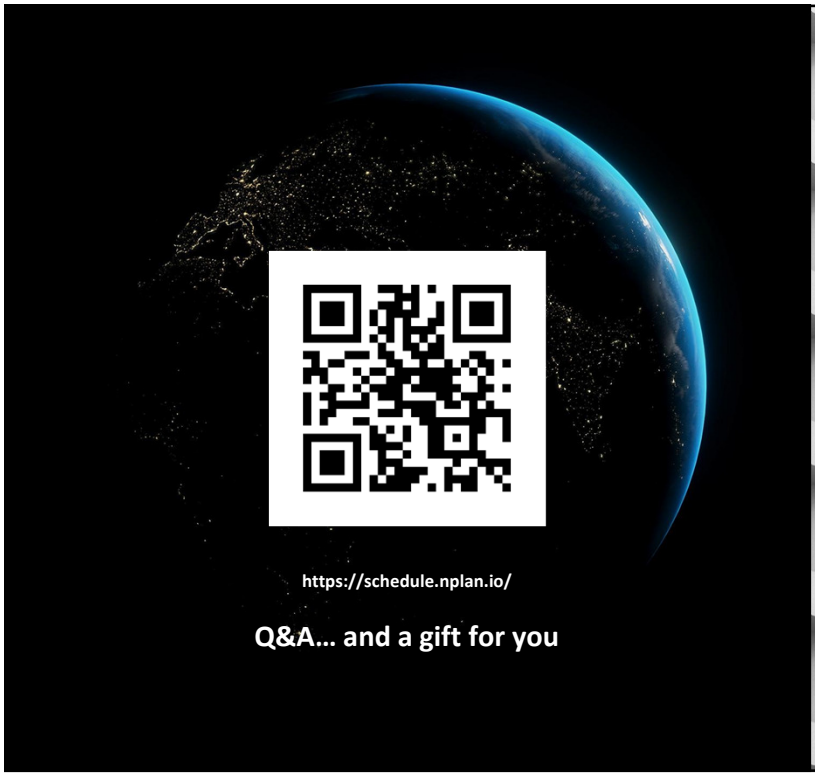

https://schedule.nplan.io/

Q&A… and a gift for you

nPlan

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