Digital Twin Victoria

LEADING THE DIGITAL REVOLUTION FOR THE BUILT AND NATURAL ENVIRONMENT

Roads Australia

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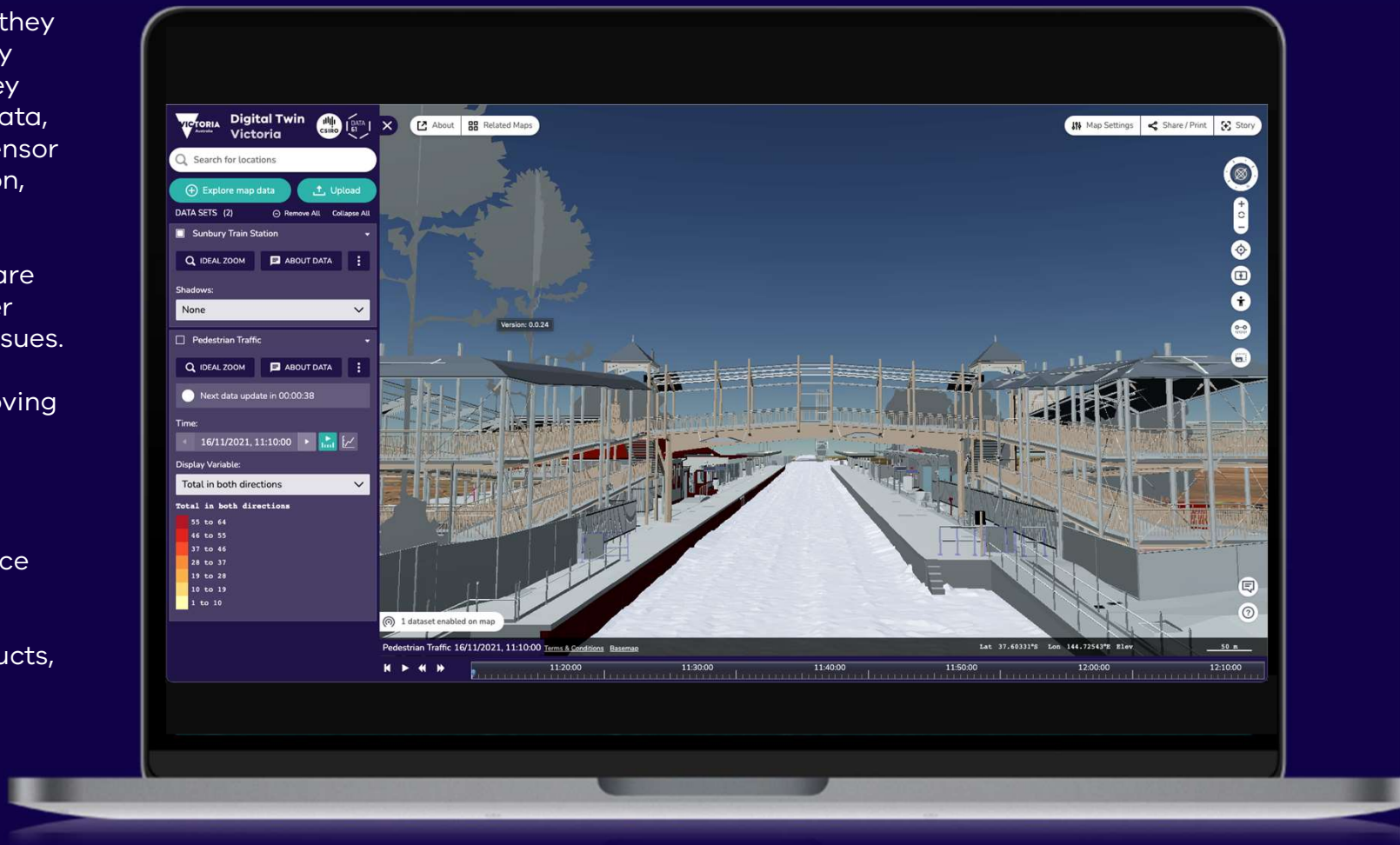
VICTORIA State Government | Environment, Land, Water and Planning

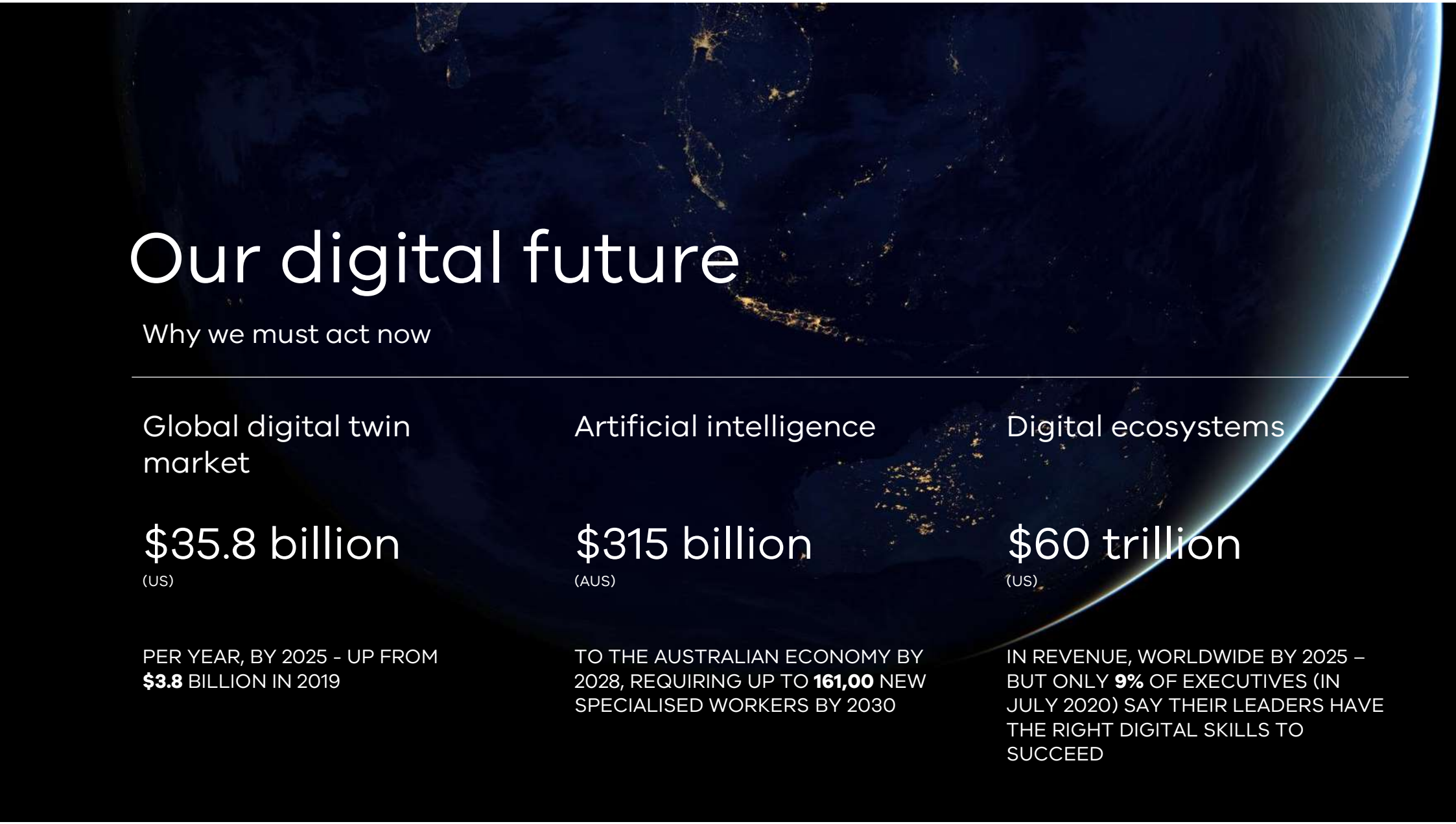
WHAT IS A DIGITAL TWIN?

Digital twins are like virtual lego kits – they can be used to plan and model digitally before investments hit the ground. They bring together 2D, 3D and 4D spatial data, with digital engineering models and sensor data, to support advanced visualisation, analytics, modelling and simulation.

With the right data, the opportunities are endless. Digital twins use data to better understand policy and development issues. They can also test interventions and monitor the impact of decisions, improving decision-making as well as social, economic & environmental outcomes.

They can support faster, more robust regulatory assessments and compliance monitoring, more community-centric design and engagement, as well as opportunities for new innovation products, services, jobs and industries.





Our digital future

Why we must act now

Global digital twin market

$35.8 billion
(US)

PER YEAR, BY 2025 - UP FROM **$3.8** BILLION IN 2019

Artificial intelligence

$315 billion
(AUS)

TO THE AUSTRALIAN ECONOMY BY 2028, REQUIRING UP TO **161,00** NEW SPECIALISED WORKERS BY 2030

Digital ecosystems

$60 trillion
(US)

IN REVENUE, WORLDWIDE BY 2025 – BUT ONLY **9%** OF EXECUTIVES (IN JULY 2020) SAY THEIR LEADERS HAVE THE RIGHT DIGITAL SKILLS TO SUCCEED

WHY NOW?

By leveraging Land Use Victoria's expertise, data and systems, we can transform how places are planned, developed and managed. This can support Victoria's economic recovery, whilst providing momentum towards long-term digital transformation.

Harnessing big data, artificial intelligence and rapidly-emerging spatial technologies

2x

Potential impact of AI on the economic growth rate by 2035[2]

100x

Boost to speed to market by digital twin technology[3]

Unlocking greater returns from investment in construction and infrastructure

Up to 40%

Increased productivity due to AI[2]

Up to 20%

Decreased construction costs through spatial digital twin[3]

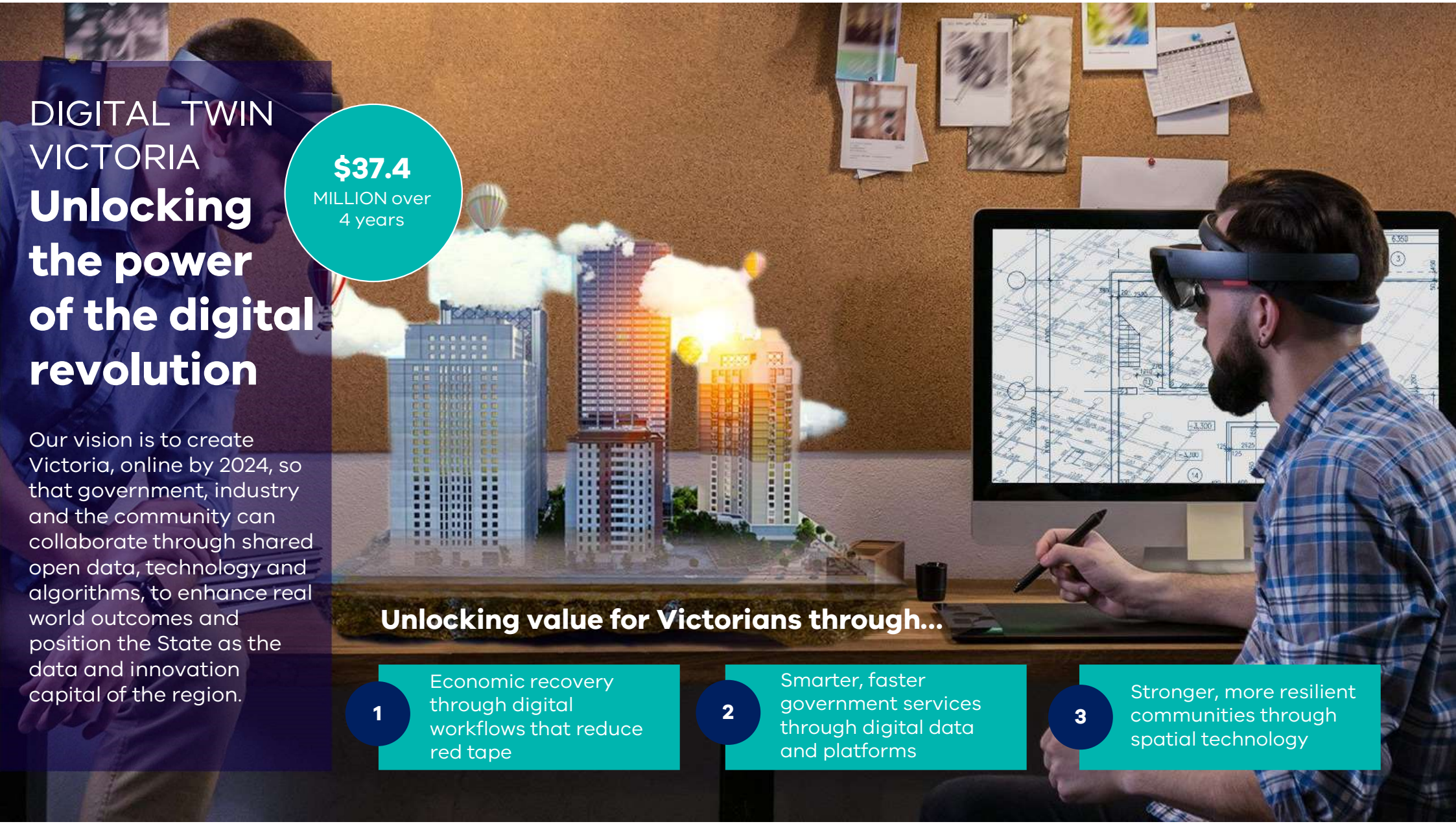
Building a skilled, diverse, future-ready workforce, public service and economy

5x

Extra jobs created by one tech job - 3x than traditional industries[1]

Up to 40%

Increased productivity due to AI[2]



DIGITAL TWIN VICTORIA

Unlocking the power of the digital revolution

$37.4 MILLION over 4 years

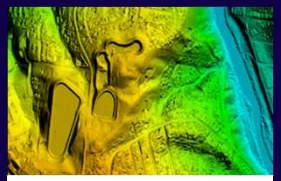
Our vision is to create Victoria, online by 2024, so that government, industry and the community can collaborate through shared open data, technology and algorithms, to enhance real world outcomes and position the State as the data and innovation capital of the region.

Unlocking value for Victorians through...

1. Economic recovery through digital workflows that reduce red tape
2. Smarter, faster government services through digital data and platforms
3. Stronger, more resilient communities through spatial technology

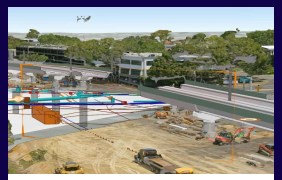
DESIGNED TO DELIVER EARLY BENEFITS

HIGH QUALITY DATASETS



Advanced earth observation
Bringing spatial context to complex environmental challenges

Enhanced disaster response
Improved crisis response through data improvements in machine learning



Digital twin utilities
Faster construction and infrastructure projects through easier access to critical location data

Digital twins for asset management
Better government management of built assets

INTELLIGENT ANALYTICS

Faster subdivision registration
Reduce land registration timeframes for new subdivisions

Automated approvals
Reduced statutory approval timeframes for affordable housing

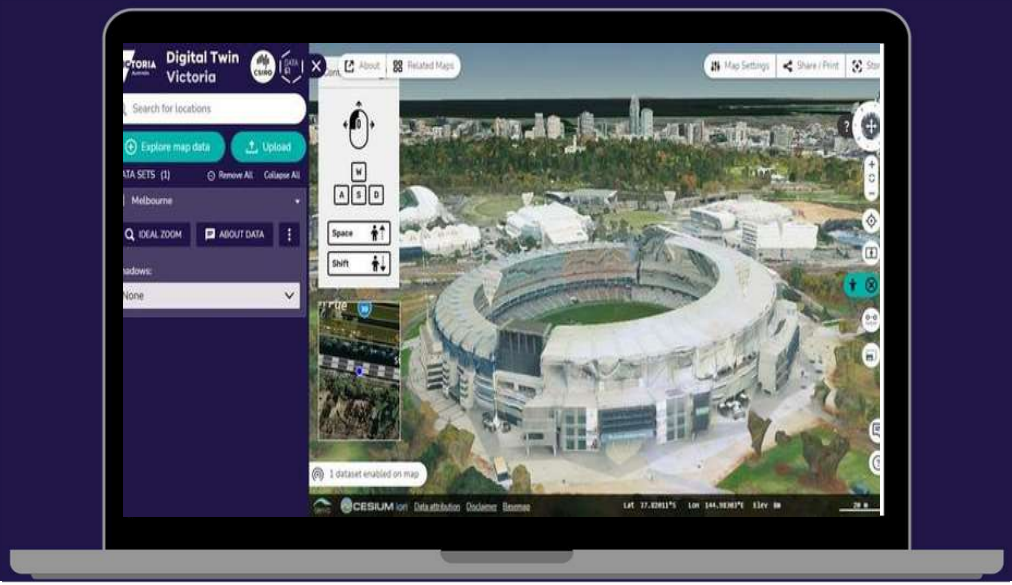
FUTURE READY INFRASTRUCTURE

Digital twin platform
Better precinct planning and design

WHOLE OF VICTORIAN GOVERNMENT GOVERNANCE, TEAMS, PROCUREMENT, COLLABORATION, ENGAGEMENT AND COMMUNICATIONS

THE DIGITAL TWIN PLATFORM

THOUSANDS OF OPEN DATASETS ALREADY LIVE ON OUR CSIRO-BUILT PLATFORM



National Data

- ABS data including statistics on housing, population health, labour and industry
- Population estimates
- Electric vehicle charger locations and registration
- Electricity infrastructure: generation, networks, residential and transmission
- Transport and freight routes including air, road and rail
- Solar: rooftop potential, climatology of daily exposure,
- Marine: bathymetry, seabed features
- Hydro: ground water, catchments, lakes, major dam walls, reservoirs, surface hydrology, water station data,

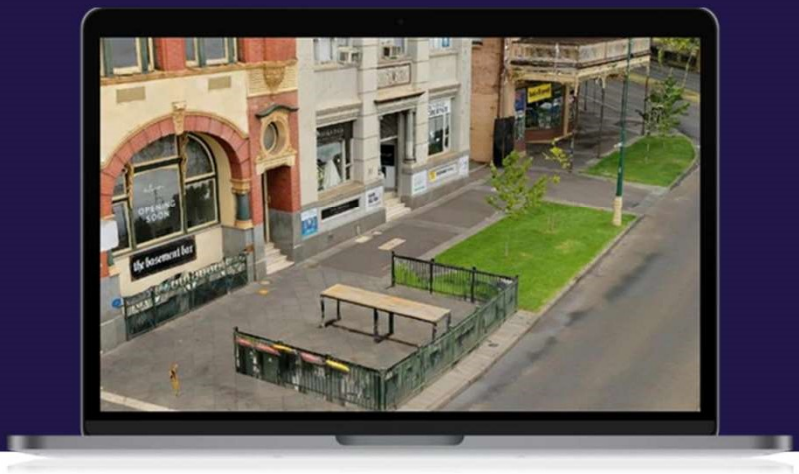
Victorian Data

- Vicmap foundational data including address, cadastre and property, admin boundaries, elevation,
- features of interest
- LIVE pedestrian traffic monitoring
- 3D textured imagery of natural and built form (project based)
- Building Information Models: Sunbury station, Eastern treatment plant
- Geology: boreholes, geological basins, licenses
- Climate and weather: planned burns, coastal inundation 2009, storm tides,
- Vegetation: forest cover, modelled old growth, state forest boundaries, modelled native vegetation,
- EVC mapping
- Open local government data: trees, assets, open spaces, waste collection zones
- and more...

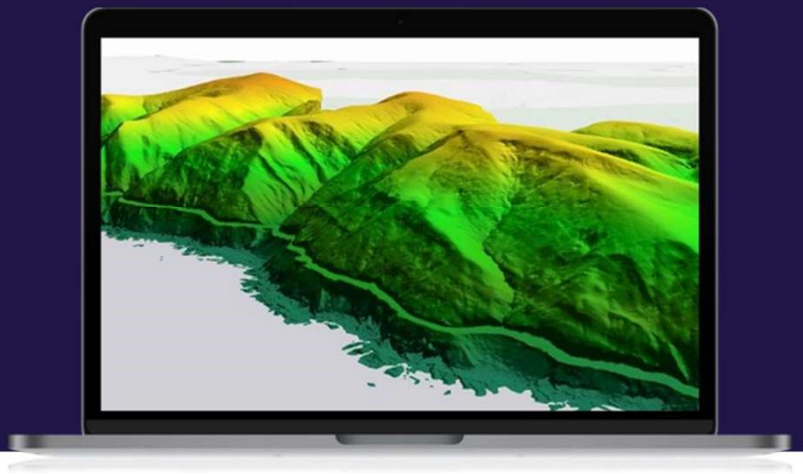
ADVANCED EARTH OBSERVATION

ACCESS THE PAST, PRESENT & FUTURE:
Statewide hi-resolution imagery, LIDAR for Victoria, satellite imagery, photomeshes and 3D models for high change areas
.

3D photomeshes used for scenario planning, simulations and gaming



Aerial & mobile LIDAR for enhanced surveying techniques in sensitive environments



Historic imagery

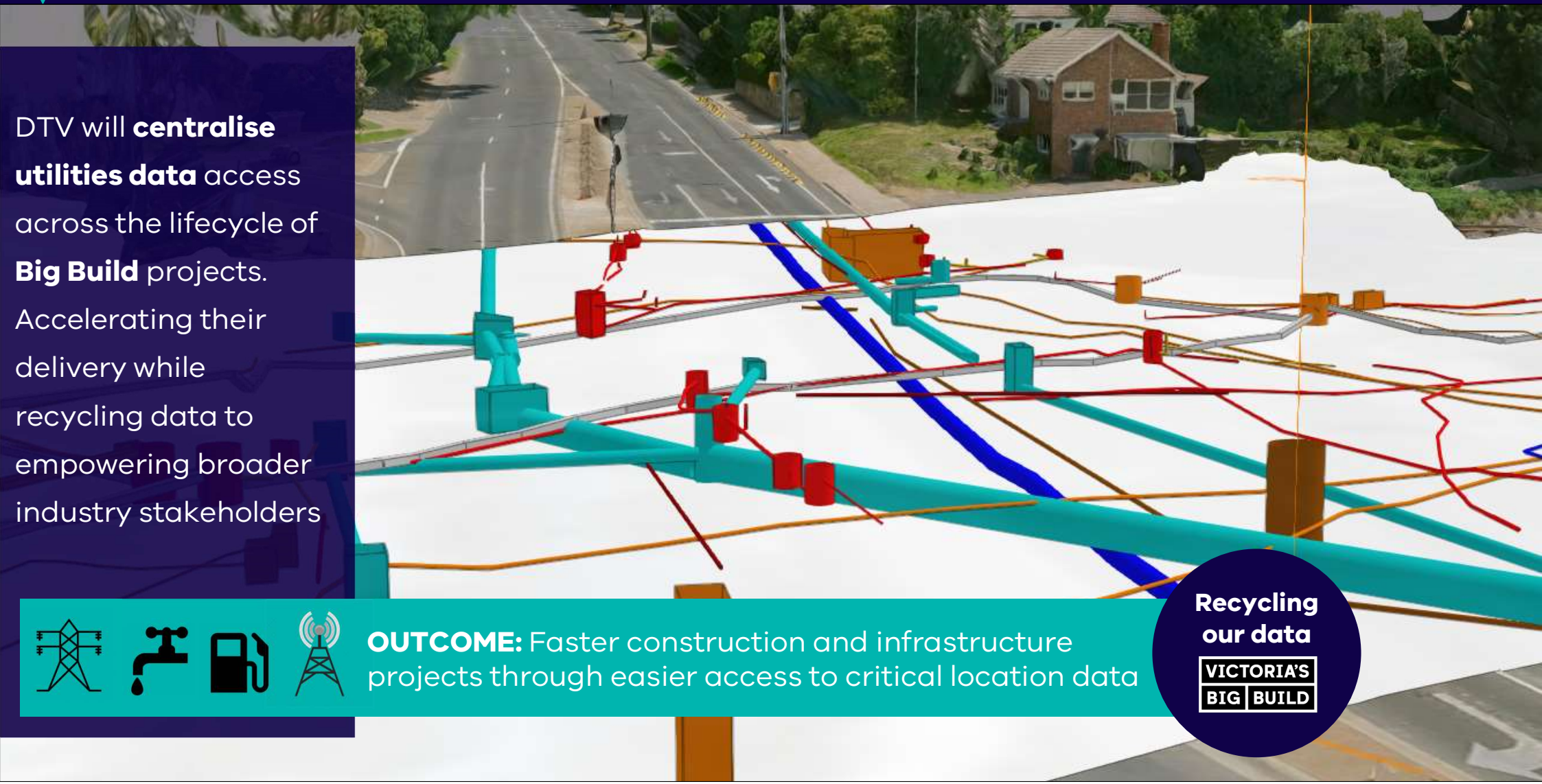
Tree ledger

Swimming pools

Building models

CONNECTING DATA PIPELINES TO MACHINE LEARNING ALGORITHMS

DIGITAL TWIN UTILITIES



DTV will **centralise utilities data** access across the lifecycle of **Big Build** projects. Accelerating their delivery while recycling data to empowering broader industry stakeholders

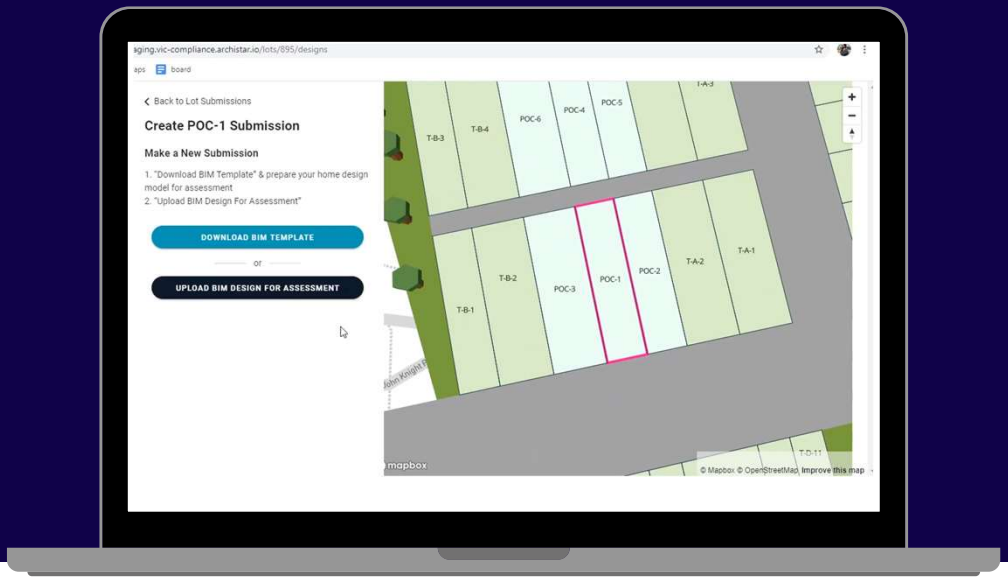
OUTCOME: Faster construction and infrastructure projects through easier access to critical location data

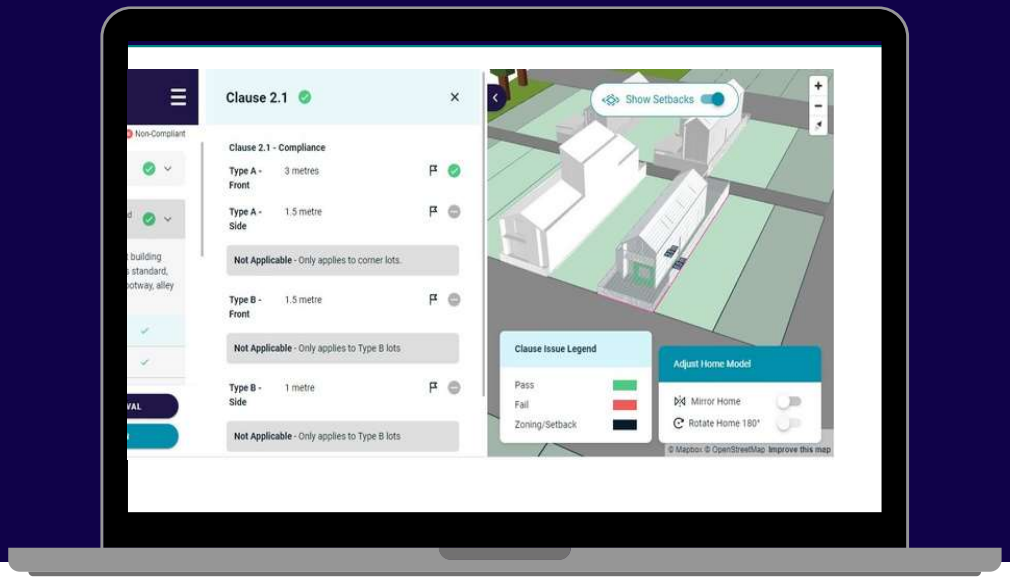
Recycling our data

VICTORIA'S BIG BUILD

AUTOMATED APPROVALS

LANDMARK REGTECH DESIGNED TO MAKE IT QUICKER, EASIER AND CHEAPER TO APPROVE DEVELOPMENTS





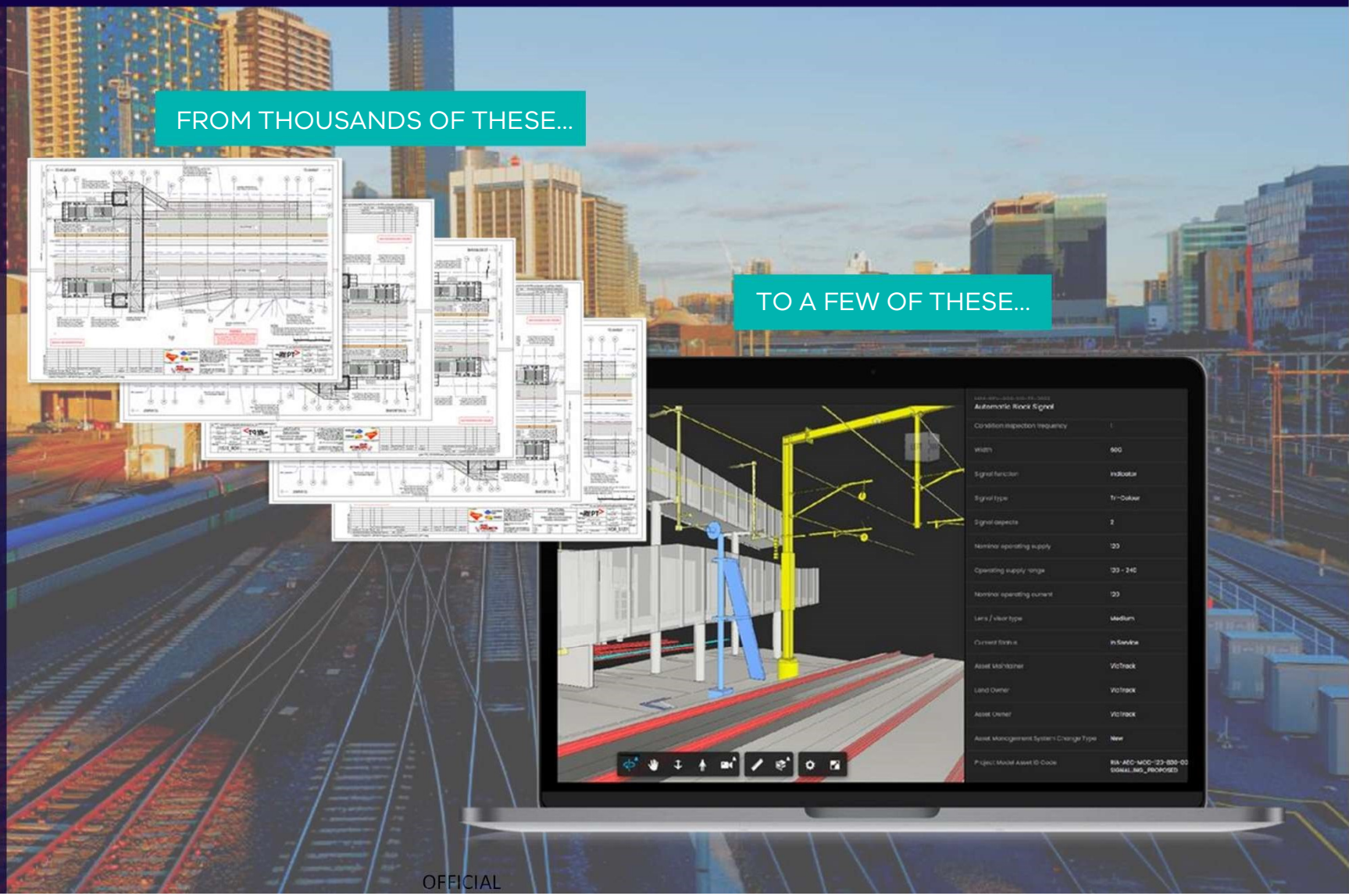
- Project to develop a 3D automated property development compliance tool for Cairnlea.
- Digital building designs will be auto-assessed against Small Lot Housing Code (SLHC) using spatial intelligence (Vicmap data)
- Working with consortium led by one of Australia's fastest growing proptech startups, Archistar

- Investment will produce over $30 million worth of benefits across the planning and development value chain
- Demonstrator completed in late March Finished successful proving that technology can support digital compliance
- Tender to develop implementation plan for statewide roll-out and next stage applications currently out to market

VICTORIA State Government Environment, Land, Water and Planning
VBA VICTORIAN BUILDING AUTHORITY
DEVELOPMENT VICTORIA
PROJECTS VICTORIA

BETTER ASSET MANAGEMENT

DTV will define standards for BIM enabling easier sharing and access through DTV across whole asset life cycle



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Map it Out newsletter

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Join us on the journey