



Logan City Council's Development Projection Model

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PRESENTATION AGENDA

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| 2 | Why build a Population Model? | |
| 3 | Key inputs to the Model | |
| 4 | Running the Model | |
| 5 | Model outputs | |
| 6 | Summary and What's Next | |
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START



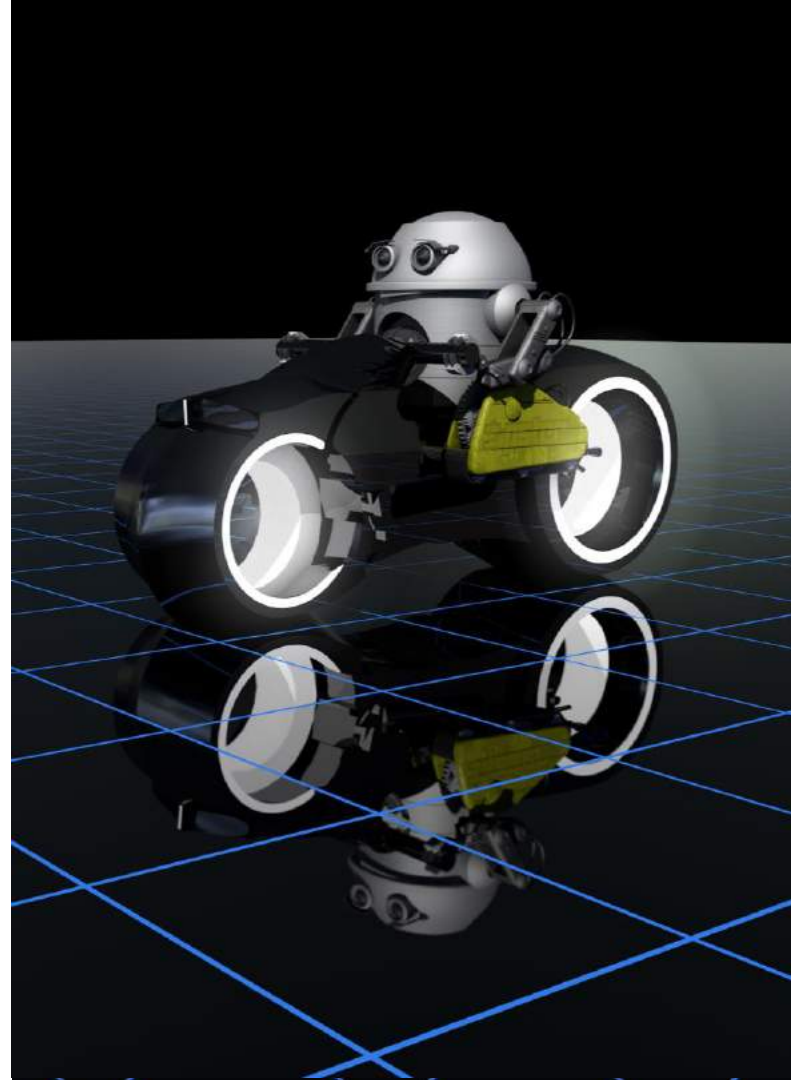
Where is the City of Logan?

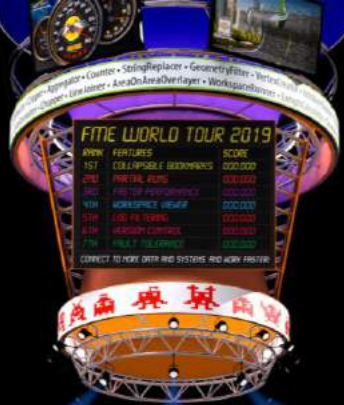
- Area - 957 km²
- Ideally situated between Brisbane and the Gold Coast
- Well serviced by Road and Rail Infrastructure



The City of Logan – Population

- Population > 320,000
(6.5% of Qld)
- One of the fastest growing cities
in Queensland → 1.9% per year
- 8th largest population in
Australia
- 217 different cultures
- 50% aged 30 or younger





The City of Logan - Economy

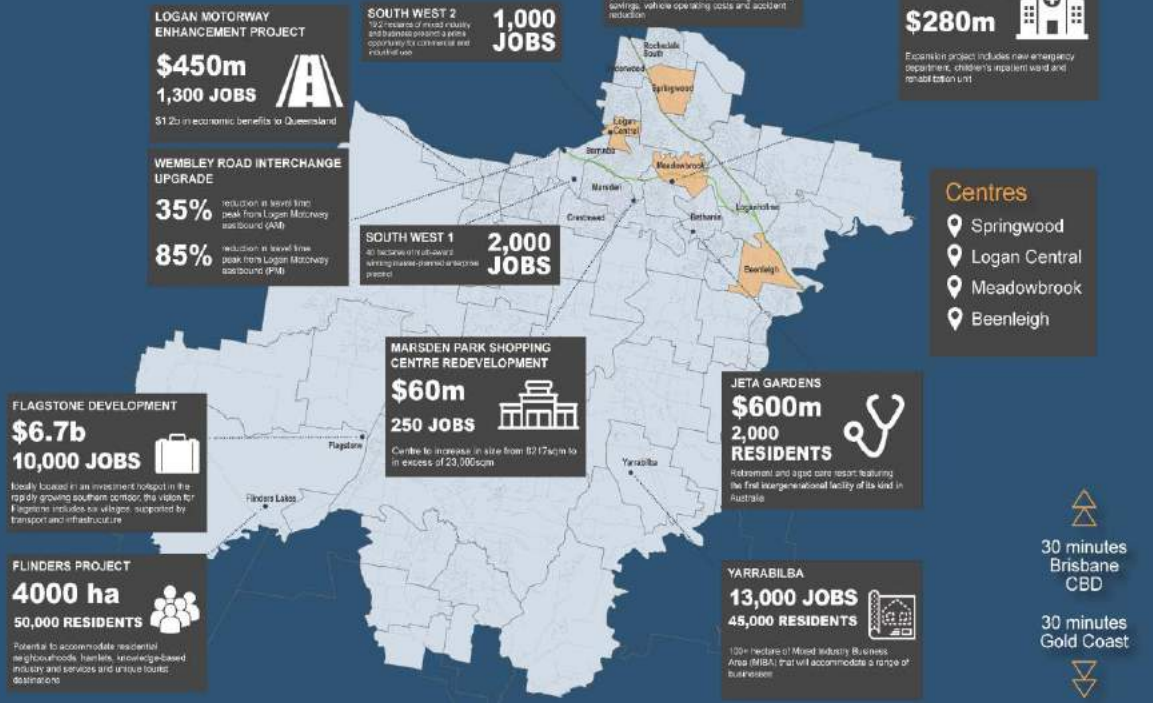
- \$13.5 billion Gross Regional Product (GRP)
- >21,000 businesses employing >89,000 people
- 132,000 employed residents
- \$26 billion Gross revenue generated by Logan businesses

The City of Logan – Zoning

- 20% is developed
- 70% is rural, semi-rural or land for conservation
- 10% is State designated Priority Development Area



City of Logan MAJOR PROJECTS



Lots of Activity

- Better connections through infrastructure
- More residents
- More jobs



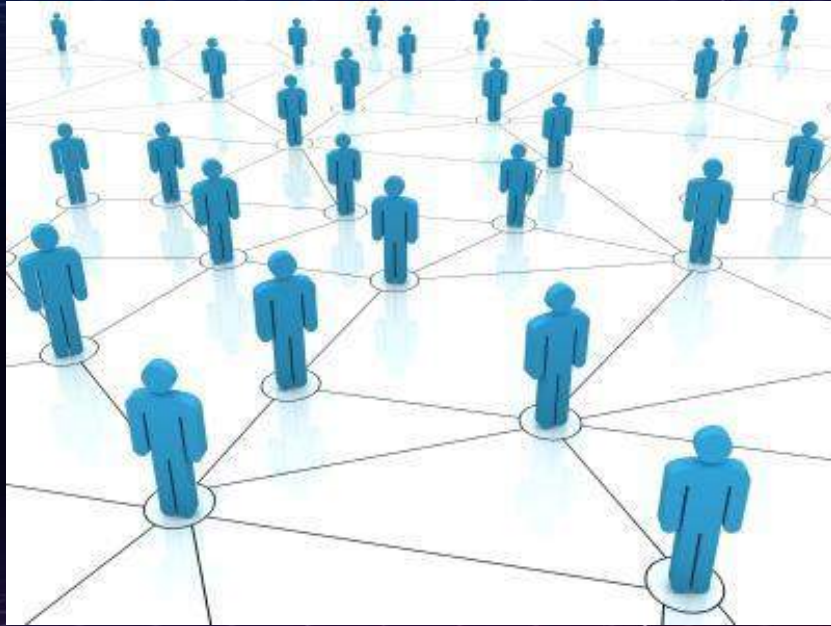
Project Brief

Develop an in-house Population and Employment Forecasting Model
(50 year horizon)

Why

- Improved forecasting model → More accurate, more **defendable** by Council
- Reduce time and cost → Long and expensive turn around times to run the model
- Migrate to ESRI/FME software





Who uses it

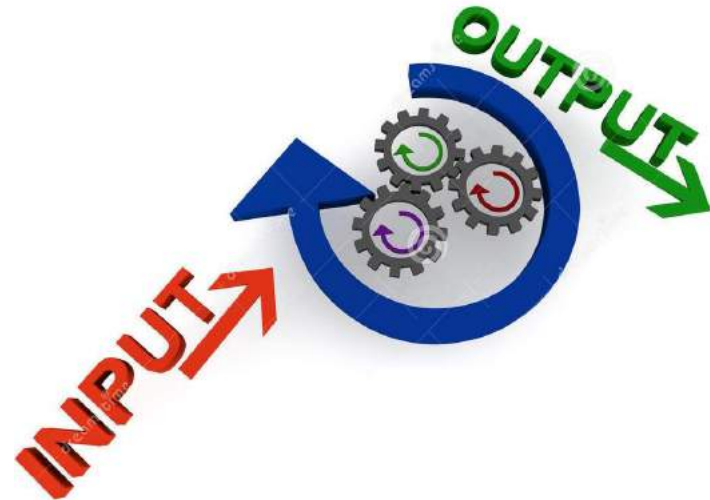
- **Transport network** → Integrated Local Transport Plan
- **Water and sewer networks** → Network planning
- **Other networks** → Same projections for infrastructure forecasting

What it does

- Forms the basis for the review of **Local Government Infrastructure Plan**
- Enables **scenario analysis** on policy levers

Key Inputs

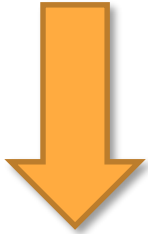
Residential Targets	Supplied by Queensland Government Statistician's Office
Non-Residential Targets	Adopted from the MacroPlan Employment and Activity Centres Strategy
Residential Occupancy Rates	Based on the 2016 Census
Non-Residential Conversion Rates	Derived from previous model parameters and updated to align with targets
Development Approvals	Derived from the Development Activity Monitoring Project
Planned Density	Realistic development yield on the site provided by Strategic Planners



Key Parameters

- Evaluate each parcel's development potential (>101,000 across the City)
- Rank possible developments by Priority Level

Highest Priority



Lowest Priority

- Development Applications (Partially Completed) by year
- Development Applications (Not Started) by year
- Vacant parcels inside the Priority Infrastructure Area with Yield Factor ≥ 2
- Parcels within Local Plan/Meadowbrook Masterplan Area with Yield Factor ≥ 2
- Parcels within Proposed Development Area with Yield Factor ≥ 2
- Remaining Citywide parcels with Yield Factor ≥ 2
- Remaining Citywide parcels with Yield Factor ≥ 1.1



Key Parameters (Continued)

- Rank possible developments by Feasibility Index

$$\text{Feasibility Index} = \text{Total Profitability} \times \text{Opportunity Ratio}$$

$$\begin{aligned} \text{Total Profitability} = \\ \text{Estimated Sale Value} - (\text{Land Acquisition Cost} \\ + \text{Subdivision Cost} + \text{Infrastructure Charges} + \text{Construction Cost}) \end{aligned}$$

$$\begin{aligned} \text{Opportunity Ratio} = \\ \text{Ultimate Development Yield} / \text{Transport Accessibility Index} \end{aligned}$$



Scope Recap

- Generate an automated model using FME to compare every parcel within the City against the other
- Forecast growth for each parcel every 5 years up to 2066
 - Dwellings
 - Population
 - Gross Floor Area
 - Employees



Let's Run the Model

Existing Development Dataset



Identify Ultimate Development based on Planning Policy and Developable Area

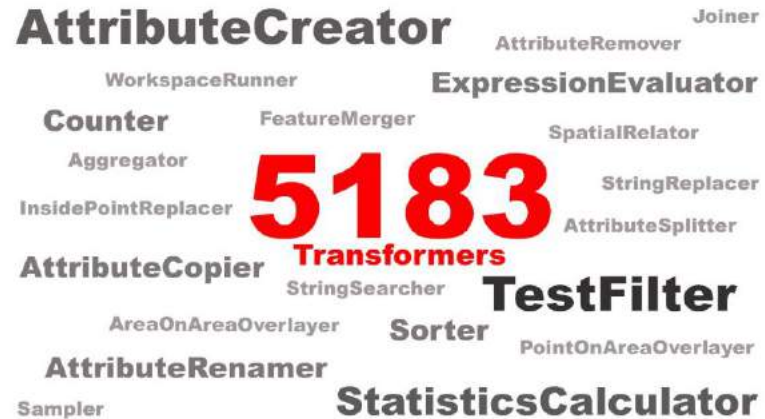


Repl



Generation and Processing

- 1,176 hours to build
(147 full work days)
- 23 linked (daisy-chained)
workbenches
- 17 hours to run
- 5,183 Transformers within the
model (only 21/499 Transformers
from the FME library are utilised)
- \$846 in the swear jar



Results

- 2,385 Attribute columns
- Every parcel compared against the other
- Spatial distribution and timing of development every 5 years up to 2066
 - Dwellings
 - Population
 - Gross Floor Area
 - Employees



Results

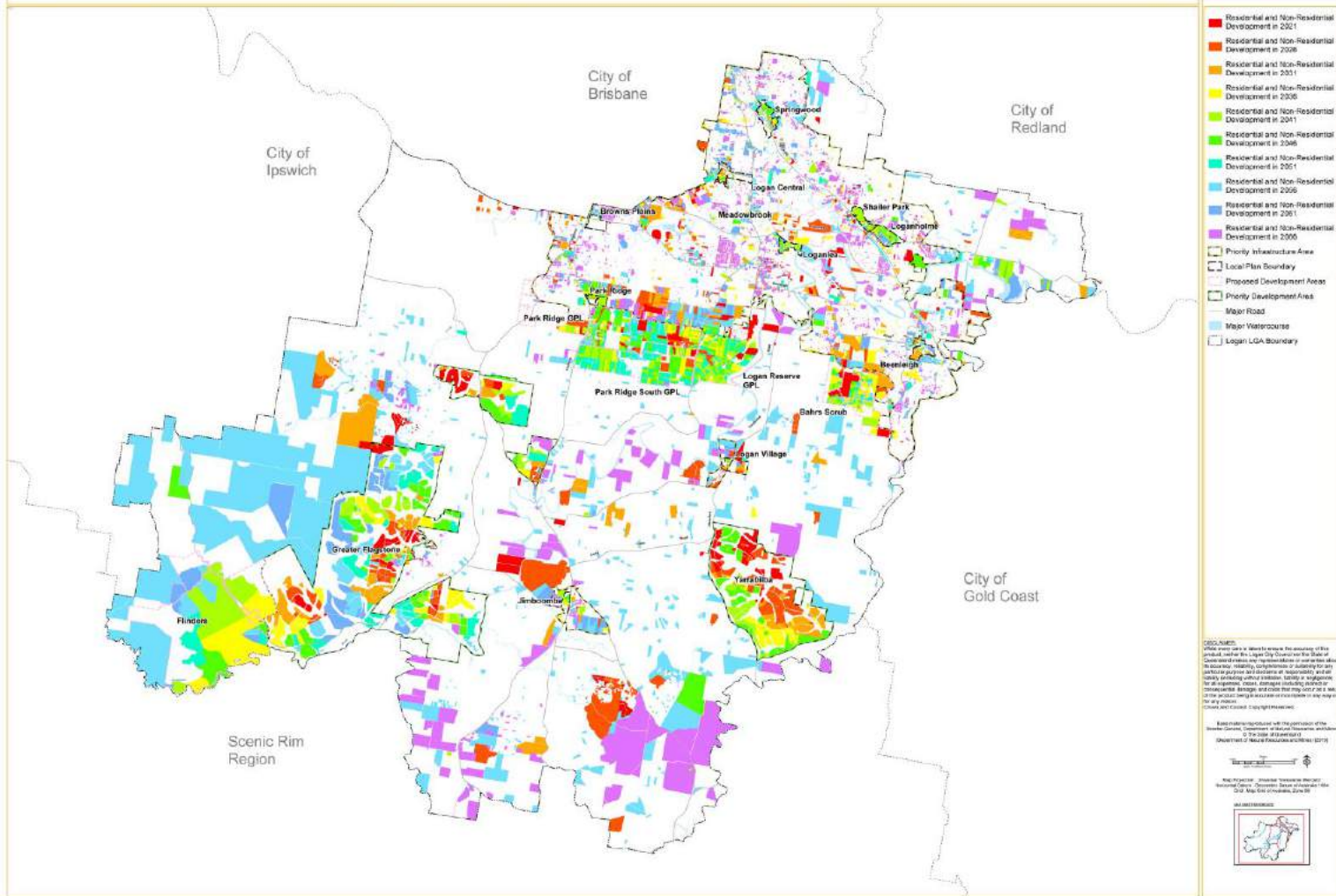
- 2021** ■
- + 2026** ■
- + 2031** ■
- + 2036** ■
- + 2041** ■
- + 2046** ■
- + 2051** ■
- + 2056** ■
- + 2061** ■
- + 2066** ■

CITY OF LOGAN: Innovative,
Dynamic, City of the Future

Projected Residential and Non-Residential Development

LOGAN CITY COUNCIL

Projected Residential and
Non-Residential Development





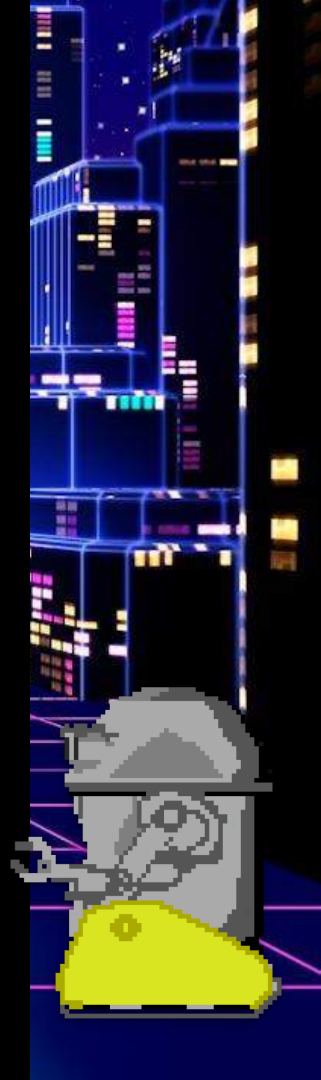
Summary

- ✓ Logan now has a sustainable Development Projections Model
- ✓ Delivers reliable forecasting of growth across the City in 5 year epochs
- ✓ **Free and quick to run**
(no need to engage consultants)

What's next for Logan



- Interactive 3D Development Assessment Tool
- Links directly to the Development Projection Model to provide live development forecasting across the City





THANK YOU!

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