URA Digital Toolbox

Experimenting with Maps

The **Urban Redevelopment Authority** of Singapore is currently experimenting with new mapping technologies to enable urban planners to gain new insights on the provision of public amenities and improve lives.

We live in an age where we are constantly creating and exchanging information. Today, with higher computing powers and capabilities, technology can be leveraged to stitch different data sets together, and to help cities gain insights on the needs of the people and to better plan and provide these services and amenities.

The Urban Redevelopment Authority (URA)—Singapore's land use planning and conservation authority—is experimenting with and exploring the use of digital planning tools to improve the way we plan to meet the needs of the nation. Potentially useful digital tools include those that

can overlay multiple sets of data such as population and demographics, travel patterns and distribution of amenities over a certain area. This will help city planners draw out patterns and inter-relationships across the different data sets to allow insights into what services people need. Potentially, it would be useful if this capability can be explored further to project the future needs of an area and the trajectory of development. This will bring opportunities for city planners to quickly and more accurately test various scenarios and better plan for the staging of infrastructure development. Where possible, the impact of climate change

URBAN SOLUTIONS

01

Proportion of jobs whose workers arrive by public transport (analysis done in 2014).

Legend

━━━ Rail System

Proportion of Jobs whose Workers Arrive by Public Transport in 2014

☐ 18% – 50% ☐ 51% – 60% ☐ 61% – 70% ☐ 71% – 80% ■ 81% – 100%

and other factors should be incorporated into the modelling and simulation tools, to help cities better predict and address these issues through better planning, design and mitigation measures.

These tools encourage data sharing and coordination across government which in turn leads to better planning outcomes. For residents, this means enjoying greater convenience and choice of local amenities and, ultimately, a higher quality of life. To find out more, visit the Urban Lab exhibition, "Our Digital World", at The URA Centre from 28 June to 17 September 2016.

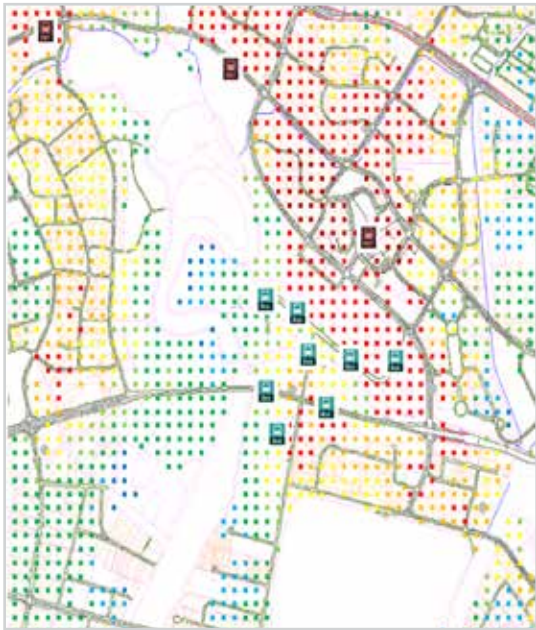**Understanding Commuter Travel Behaviour**

The map above shows that people who work in areas near rail stations commute more often by public transport, except those working near the ends of rail lines. Also, many people who live far from their workplace travel by public transport. Together with the Land Transport Authority (LTA), planners from URA are studying travel mode choice in order to understand the implications of decentralisation for travel demand and behaviour.
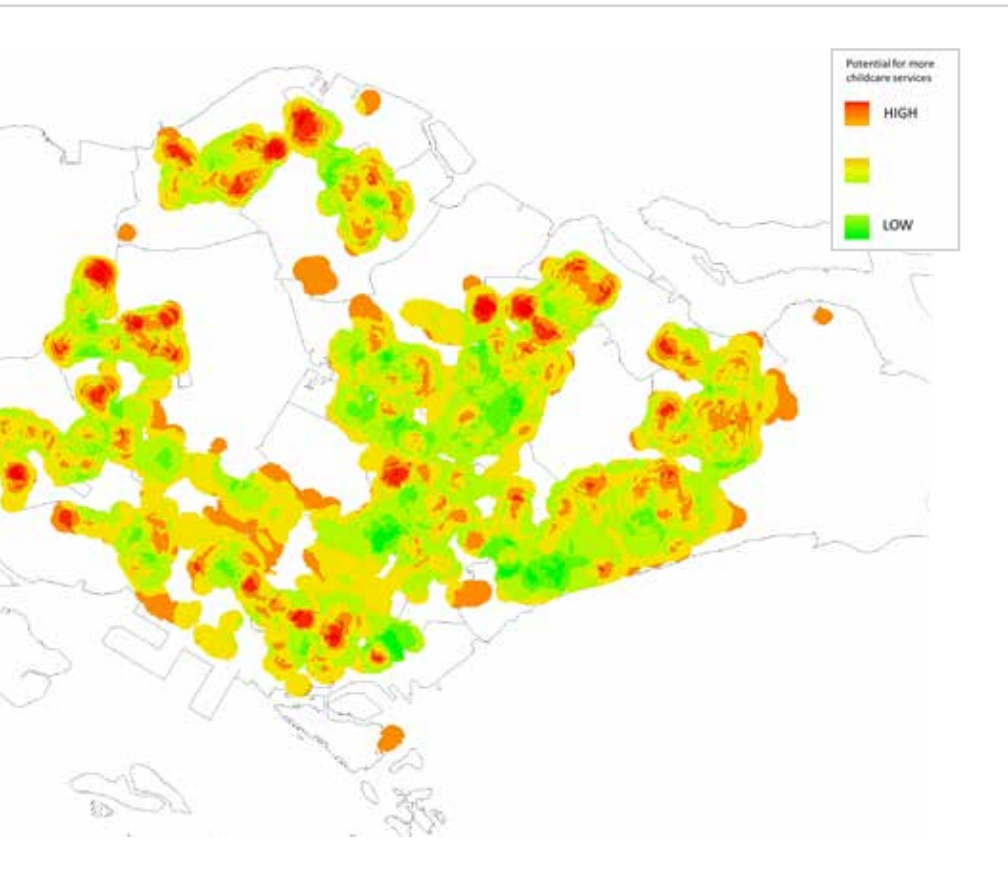
PTAL (2015)

PTAL (2030)*

*Hypothetical scenario that includes improvements to Ayer Rajah Expressway and existing bus services, and introduction of new bus services, Jurong Region Line and Cross Island Line

PTAL	Map colour
0 (worst)	
1a	
1b	
2	
3	
4	
5	
6a	
6b (best)	

LEGENDS:

 EXISTING MRT

 NEW BUS STOPS & SERVICES

02

Hypothetical projection of the transport accessibility and availability of the area around Jurong East MRT Station.

Potential for more
childcare services

HIGH

LOW

03

Island-wide childcare gap
analysis map (analysis done
in early 2015).

Enhancing First- and Last-Mile Connections and Public Transport Network

Just how far is the nearest bus stop or train station for any resident getting from point A to B? Planners in the LTA and URA want to understand public transport accessibility and availability at the local level. Since 2015, planners have adopted London's Public Transport Accessibility Level (PTAL) methodology to measure the quality of public transport provision for a given area. Planners piloted this methodology in Jurong East, Singapore, and identified potential areas where additional bus stops and services could be provided to improve the public transport network.

Responding to Childcare Needs

It can be frustrating for parents to find care for their children while they are at work when there are no convenient, accessible childcare centres close to their homes or offices. Even if there is a childcare centre nearby, it may be full with a long waitlist. How do planners determine whether there are enough childcare centres provided at the right locations? Using a mapping tool, URA and the Early Childhood Development Agency are able to analyse the number of children aged between two and six years old in all neighbourhoods, and the capacity of all childcare facilities in each location. This allows identification of areas with a critical need for additional childcare services. New childcare centres are now being developed in these areas to offer relief for parents. ◘

URA Urban Lab website:

www.ura.gov.sg/uol/
urbanlab.aspx