

# SUMMER RESEARCH 2024/25

## PROJECT ABSTRACT



THE UNIVERSITY OF  
**WAIKATO**  
*Te Whare Wānanga o Waikato*

### PROJECT # 26

<b>SUPERVISOR/S:</b>	Dr Jessica Turner
<b>PROJECT TITLE:</b>	Designing Smart Cities in NZ
<b>FIELD:</b>	Computer Science; Software Engineering
<b>DIVISION/SCHOOL:</b>	HECS - Au Reikura School of Computing and Mathematical Sciences
<b>PROJECT LOCATION:</b>	Tauranga
<b>EXTERNAL PARTNER:</b>	Tauranga City Council

#### PROJECT ABSTRACT:

Tauranga City Council is currently developing a smart community strategy to better understand community-wide issues that may be addressed with smart city technologies. The smart city field is broad encompassing public transport, community services, education, environment & sustainability, and business. To help prioritise smart city investment, inform the strategy, and take a community-centric approach, understanding the needs of the community is essential. Potential research areas include but are not limited to: digital equality and community connectivity; sustainability & the environment; city mobility; and supporting business & education. In this project you will use human-centred design techniques to define community needs and ideate solutions. This will involve running workshops with local community groups to identify their key challenges, ideating possible solutions using existing toolkits (e.g. Tiles IoT Toolkit or IoT Service Kit), and rapid prototyping techniques for Internet of Things technologies. You will digitise and analyse the results of the study to determine the best solutions. This project offers hands-on experience in designing IoT systems in smart cities environments and related research techniques.

#### STUDENT SKILLS:

- Experience with Internet of Things development processes.
- Programming languages (any language).
- Would be useful to be familiar with human computer interaction techniques.
- Would be useful to be familiar with some data analysis techniques.
- Ability to work independently and adapt.

#### PROJECT TASKS:

1. Familiarise yourself with previous work.
2. Identify key challenges to address in workshops and suitable rapid prototyping toolkits.
3. Complete workshops with attendees and analyse results.
4. Make recommendations based on workshop findings and complete short research report.
5. Create a poster describing your research and present to council.

#### EXPECTED OUTCOMES:

- Student's Research Poster (as per clause 6 of the [Scholarship regulations](#))
- Completed workshops and analysis.
- Recommendations for Smart City technology in Tauranga.

