How to Plan Tomorrow's Cities?

Developing a spatial, multi-criteria optimisation approach to support strategic land-use planning

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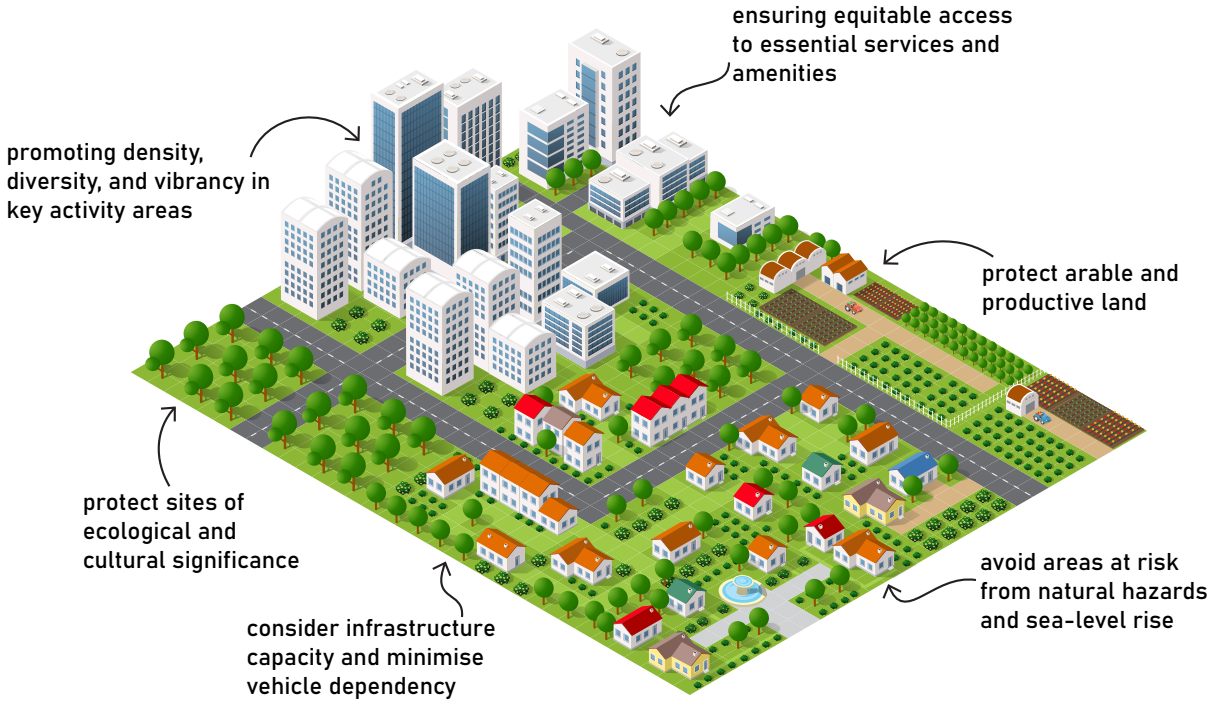

Context & Motivation

Today's urban planning is more complex than ever: climate change, the housing crisis, natural hazards, and chronic disease mean that planning decisions must consider multiple objectives. Aotearoa New Zealand's planning landscape is also shifting with the recent NPS on Urban Development, the likely introduction of the Strategic Planning Act, and climate risk requirements of the Zero Carbon Act. As a result, future development must enable sustainable and healthy lifestyles, reduce exposure to natural hazards and pollution, and promote equity and community cohesion, often among many other objectives.

Aim

To support this planning, we are developing a sophisticated tool that supports housing agencies, councils, and iwi to identify favourable areas for urban development or intensification that maximises the co-benefits between the community's objectives.

Method

We use a multi-criteria spatial optimisation approach using a genetic algorithm that evaluates and improves spatial plans based on the community-specific objectives and priorities. Our proof-of-concept tool currently discourages development in areas exposed to hazards and encourages development near key centres.

Partner with us

We seek partners (potential end-users), such as councils, iwi, and development agencies, with whom we can co-design this tool:

1. Join our advisory board so we can provide you with updates on the project's progress and seek regular input from you on what you require.
2. Participate as a case study so we can develop the tools in your region, with your data, understanding your needs.