

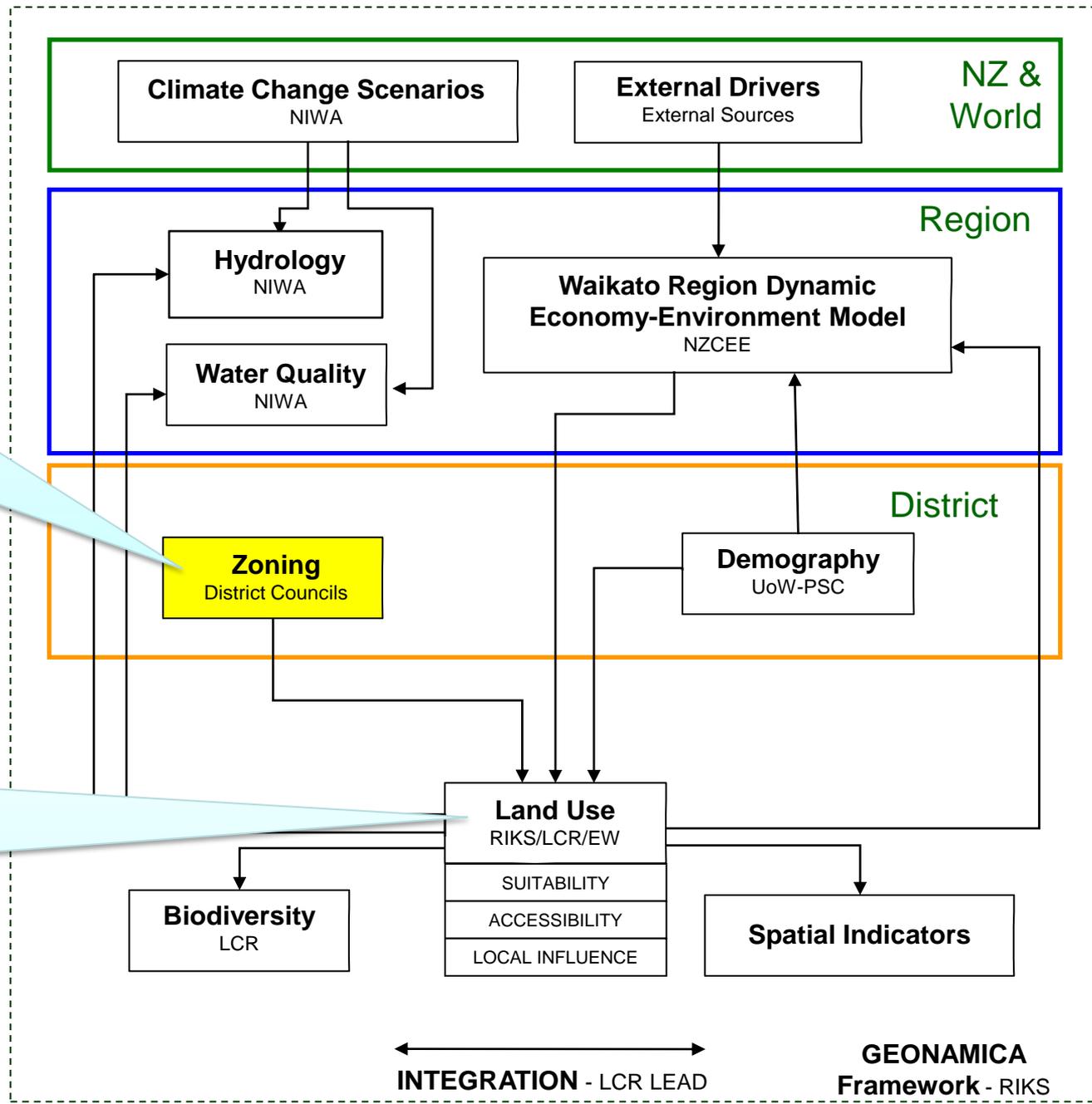
From qualitative to quantitative a case study using **WISE**

- **Future Proof** (urban growth study for Hamilton and surrounding districts)
- Three “Clues” for quantification (input to WISE)
(from FutureProof documents):
 1. **More compact urban areas**
 2. **Productive rural land protected**
 3. **Sensitive natural environments protected**

WISE System Design

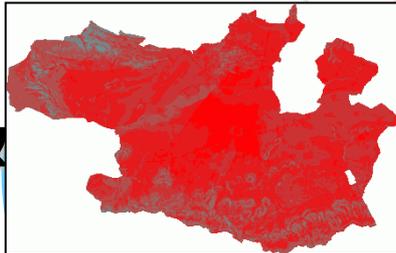
Policies are enacted via changes to zoning

Zoning determines where different land uses may/may not occur



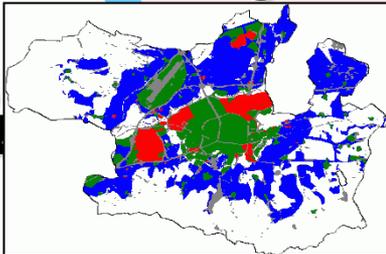
Land Use Change

Suitability



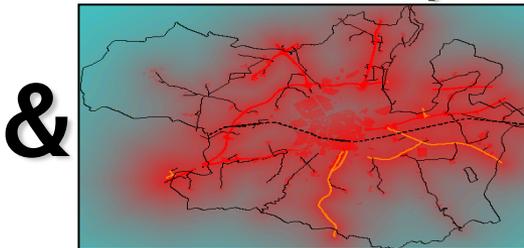
&

Zoning



&

Accessibility

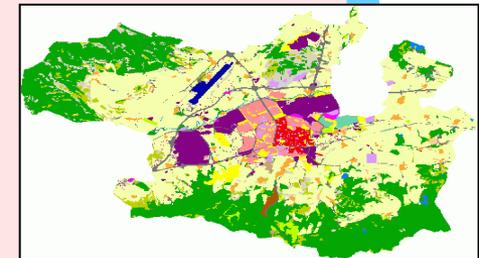


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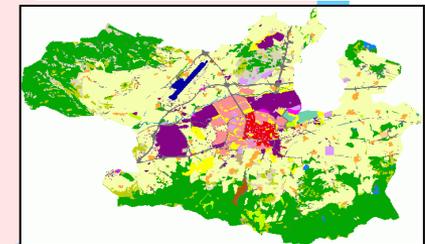
& CA-Rules

		Functions			Features	
		Red	Grey	Yellow	Green	Cyan
F u n c t i o n s	Rule set					
	Rule set					
	Rule set					

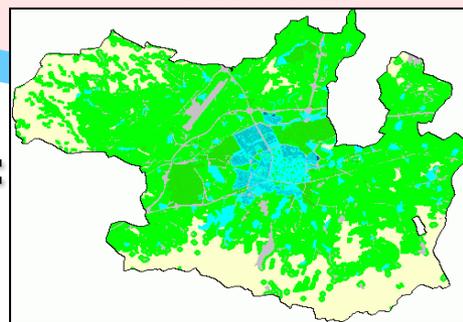
Land use at T_0



Land use at T_0+1



Transition
Potential



=



1. More compact urban areas

“Increased densities in new residential developments located in defined and designated areas and more intensive redevelopment of existing residential areas”

- Model input 1: projected increase in total resident population per district

District	2006	2021	2041	2050
Hamilton	134400	173400	221100*	233370**
Waikato	45400	58900	76900*	94510**
Waipa	43700	55500	67000	70190

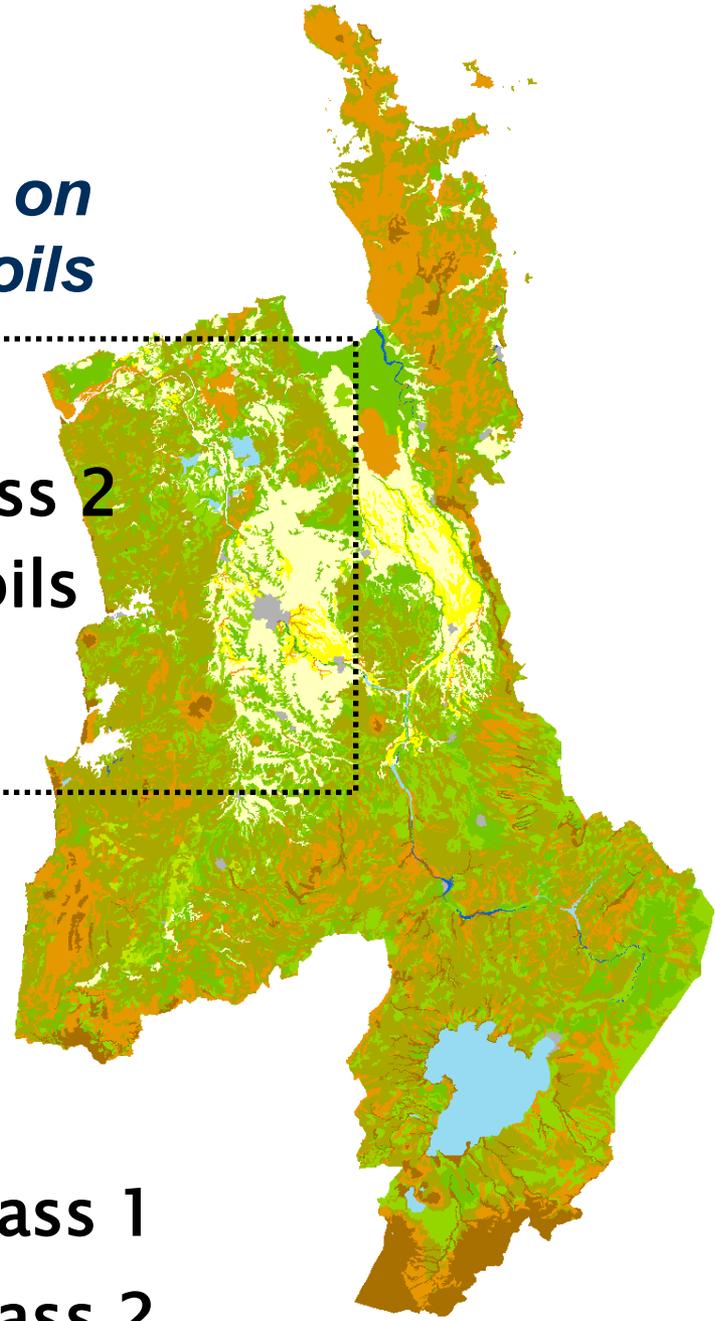
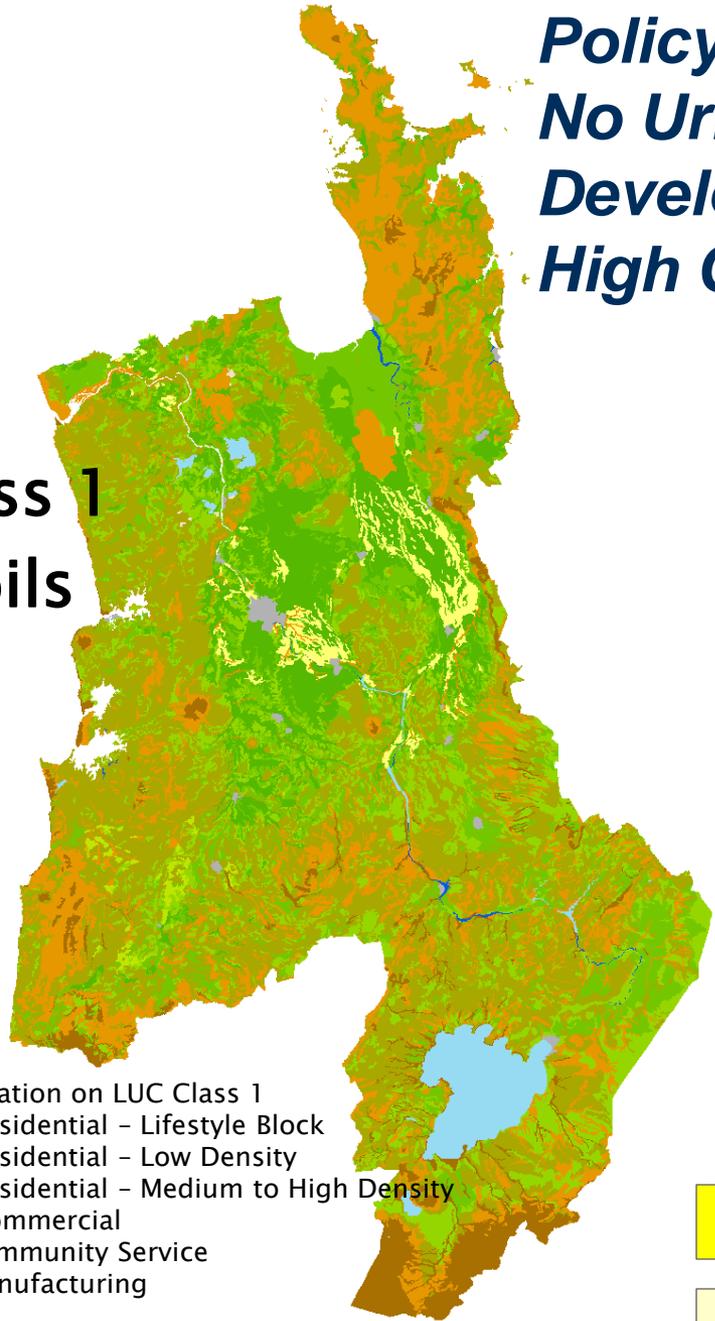
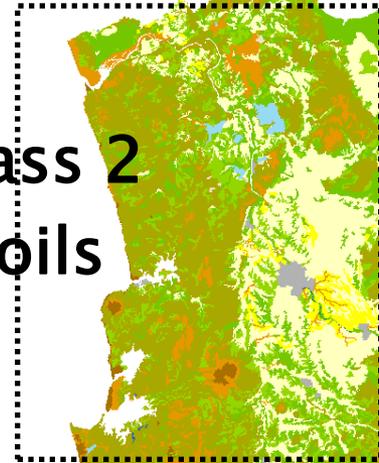
- Model input 2: Change in the proportion of residential populations in various zoning:

- Rural lifestyle
- Residential – low density
- Residential – medium to high

***Policy:
No Urban
Development on
High Class Soils***

**Class 1
Soils**

**Class 2
Soils**



No Urbanisation on LUC Class 1

- Residential – Lifestyle Block
- Residential – Low Density
- Residential – Medium to High Density
- Commercial
- Community Service
- Manufacturing



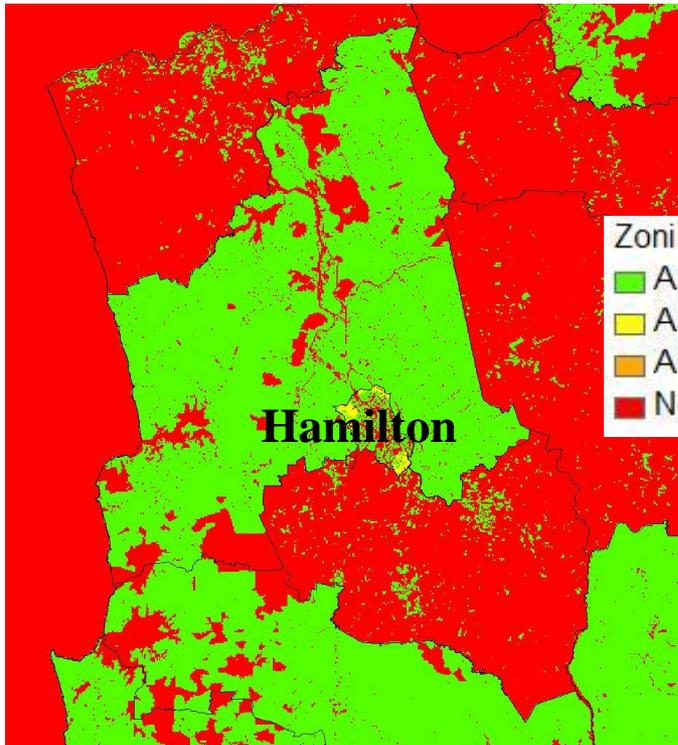
Class 1



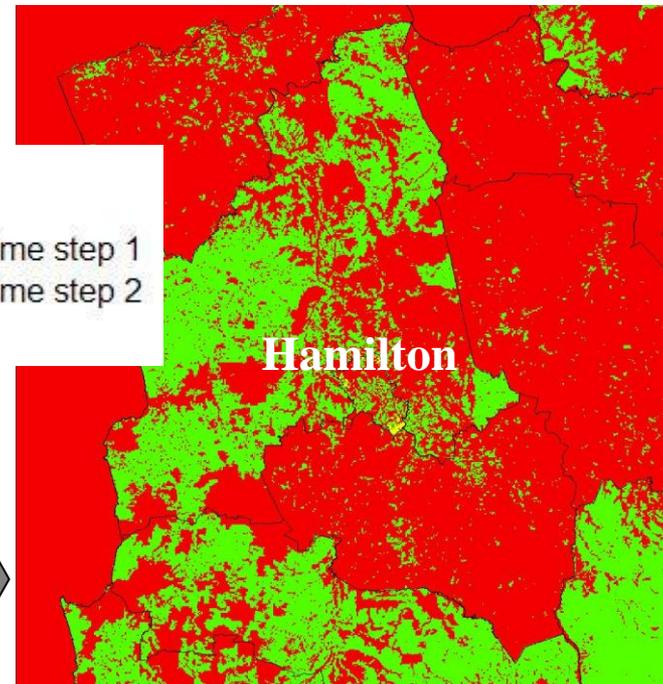
Class 2

4. Both high quality soils and sensitive natural environments protected

Original Zoning

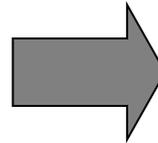


Both Protected Zoning



Zoning Status

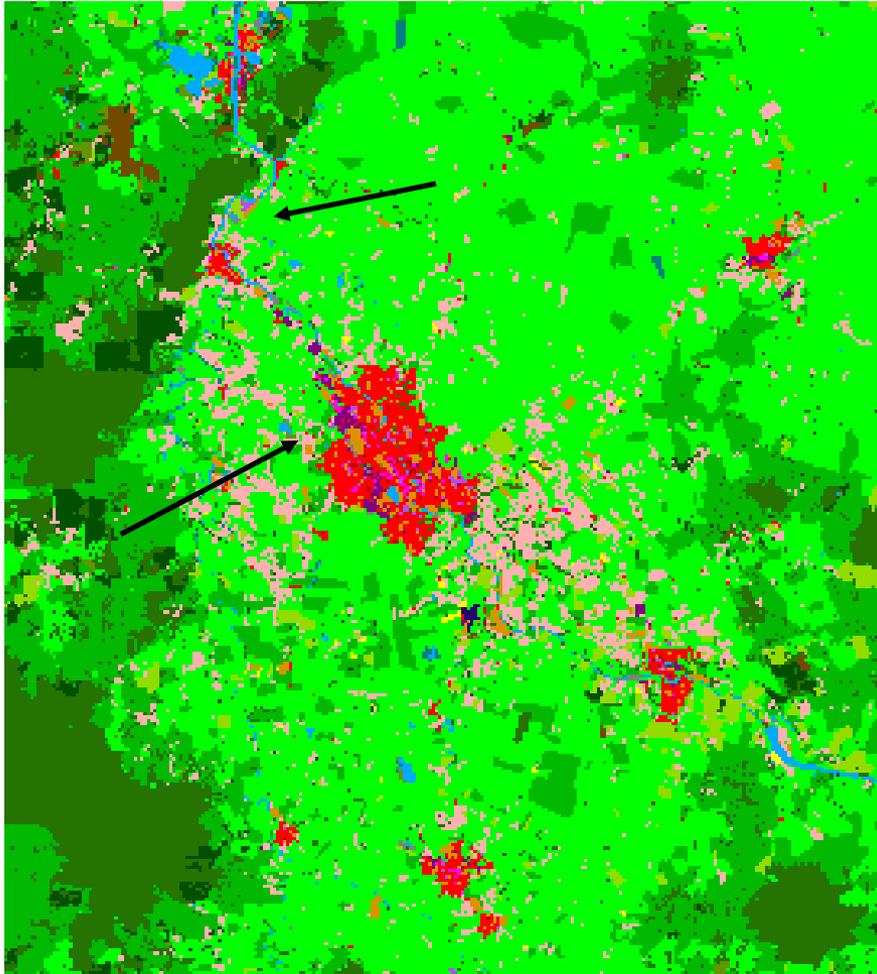
- Allowed
- Allowed from time step 1
- Allowed from time step 2
- Not allowed



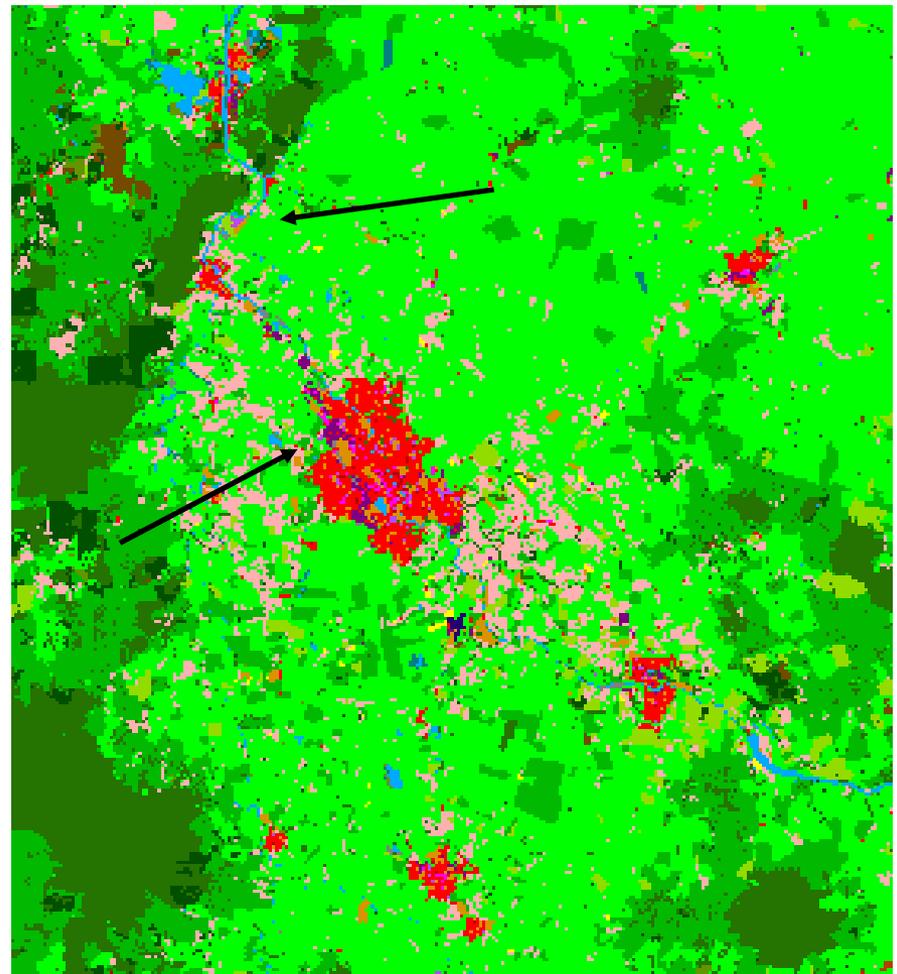
Policy: Protecting High Class Soils

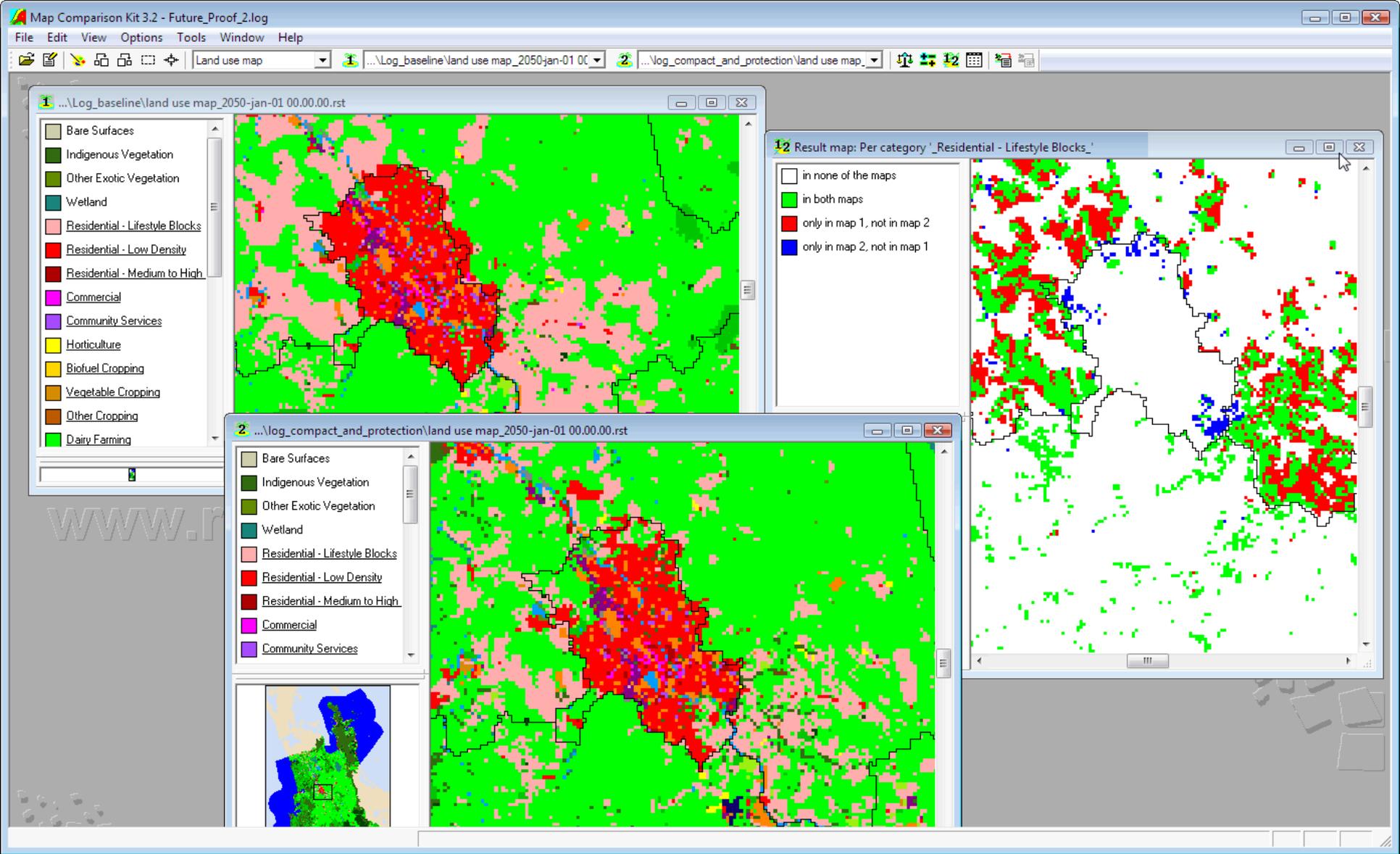
Land Use Change – 2006 to 2050

Business as Usual



High Quality Soils Protected





Conclusions

- WISE is a powerful tool to explore issues and spatially evaluate alternative policy options and associated trade-offs in an integrated way
- Further development of regional integrated spatial DSS is underway (SP2 FRST project – Auckland, Wellington) and Envirolink workshop for regional councils in September)
- This presentation only skimmed the surface, there is much more to learn how WISE can be used for better planning outcomes

Key Success Factors for WISE

1. Strategic value
2. Availability of models and data
3. Credibility of system
4. Institutional embedment
5. Ease of use
6. Ongoing support

Thanks

- ✓ **FRST** – Foundation of Research Science & Technology
- ✓ **Project Team members** (Daniel Rutledge, Liz Wedderburn *et al*)
- ✓ **Environment Waikato** and project partner organisations

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