The future of urban Water Management

Update on the Whaitua process and implications

Porirua is not alone……..

Decisions based on good intentions

- Supporting and establishing developable land
- Human health in a growing community
- ‘Draining’ of ever increasing impervious areas

- ……at the expense of our fresh and coastal water quality
- Lost social and cultural connections with waterways
- Ongoing impacts to our unique aquatic species

Urban impacts on our freshwater

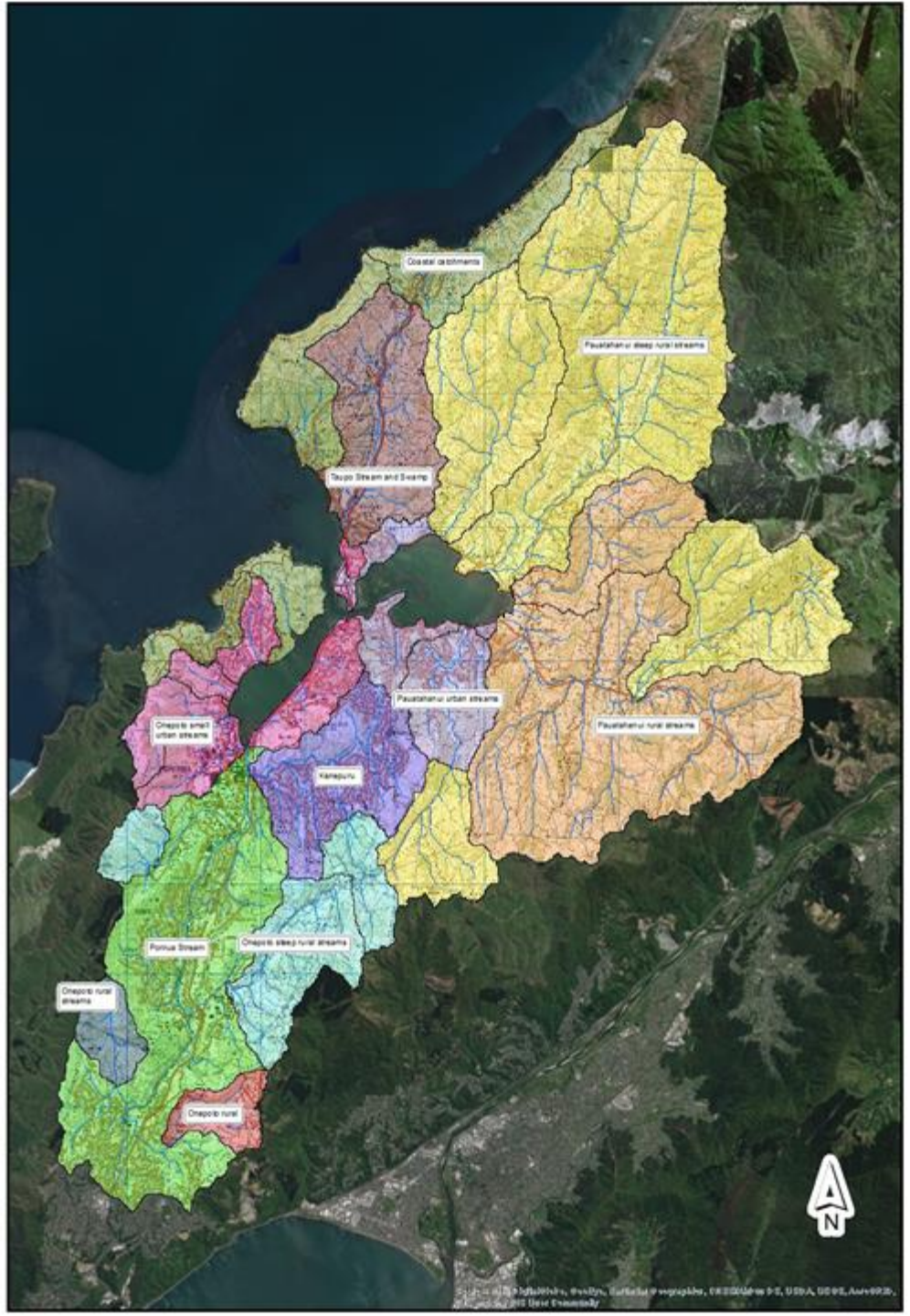
- Threats to receiving environments and human health from changes to the physical and chemical nature of water and sediment
- Contaminants concentrated in piped systems and discharged to receiving environments
- Metals, sediments, hydrocarbons, nutrients…….wastewater




The Whaitua process and TAoP

- Similar processes implemented across NZ – Legal response to NPS-FM
- Local approach to community led decision making
    - Importance of informed input
    - Multiple stakeholders and points of view to be considered
- Complexities of urban and rural landuse
    - Urban infrastructure – high cost and space constrained
    - Rural management – changes to practice
- Recognition of changing landuse
    - Drivers for more housing

What the modelling tells us



What the modelling tells us

Drains to	WMU group	WMU name	E.coli		Ammonia toxicity		Nitrate toxicity		Dissolved zinc toxicity		Dissolved copper toxicity		MCI		Periphyton		Fish	
			Current State	Objective 19.4.18	Current State	Objective 19.4.18	Current State	Objective 19.4.18	Current State	Objective 19.4.18	Current State	Objective 19.4.18	Current State	Objective 10.5.18	Current State	Objective 10.5.18	Current State	Objective 10.5.18
Open coast	Coastal catchments	Pukerua	E	-	B	A	B	A	A	A	C	B						
		Hongoeka to Pukerua	E	A-B	B	-	B	A	A	A	C	A						
		Whitireia	E	B	B	A	B	A	B	A	C	A						
Taupo	Taupo Stream and Swamp	Taupo Stream	E	B	B	A	B	A	C	A	D	B						
			E	B	B	A	B	A	B	A	C	A						
Pauatahanui Inlet	Pauatahanui steep rural streams	Horokiri and Motukaraka	E	B	B	A	B	A	A	A	A	-						
			D	B	A	A	A	A	A	A	A	-						
		Kakaho Stream	E	-	B	A	B	A	A	A	A	-						
		Judgeford Stream	E	C	B	A	B	A	A	-	A	-						
		Upper Duck Creek	E	-	B	A	B	A	A	A	A	-						
	Pauatahanui rural streams	Pauatahanui Stream	E	-	B	A	A	A	A	A	A	-						
		Ration Creek	E	B	B	A	B	A	A	A	A	-						
	Pauatahanui urban streams	Lower Duck Creek	E	-	B	A	B	A	B	A	C	B						
		Pauatahanui fringe streams	E	-	C	B	A	A	C	A	D	B						
Onepoto inlet	Onepoto steep rural streams	Rangituhi Stream	E	A	B	A	B	A	A	A	A	A						
		Takapu Stream	E	C	B	B	B	B	C	C	A	A						
		Upper Kenepuru	E	C	B	A	B	A	A	A	A	A						
	Onepoto rural streams	Belmont Stream	E	C	C	C	B	B	C	C	C	C						
		Stebbings Stream	E	C	B	B	C	B	A	A	A	A						
	Onepoto small urban streams	Hukarito Stream	E	-	C	A	B	B	B	A	C	B						
		Mahinawa Stream	E	-	B	B	B	B	B	A	C	B						
		Onepoto Fringe	E	C	C	B	A	A	D	A-B	D	C						
		Titahi	E	-	C	B	A	A	C	A	D	C						
	Kenepuru Stream	Kenepuru	E	C	C	C	B	B	C	B	D	C						
	Porirua Stream	Porirua	E	C	A	A	B	B	D	C	D	C						
			E	C	C	C	B	B	D	C	D	C						
			E	C	C	C	B	B	C	C	D	C						
			E	C	C	C	B	B	C	C	D	C						

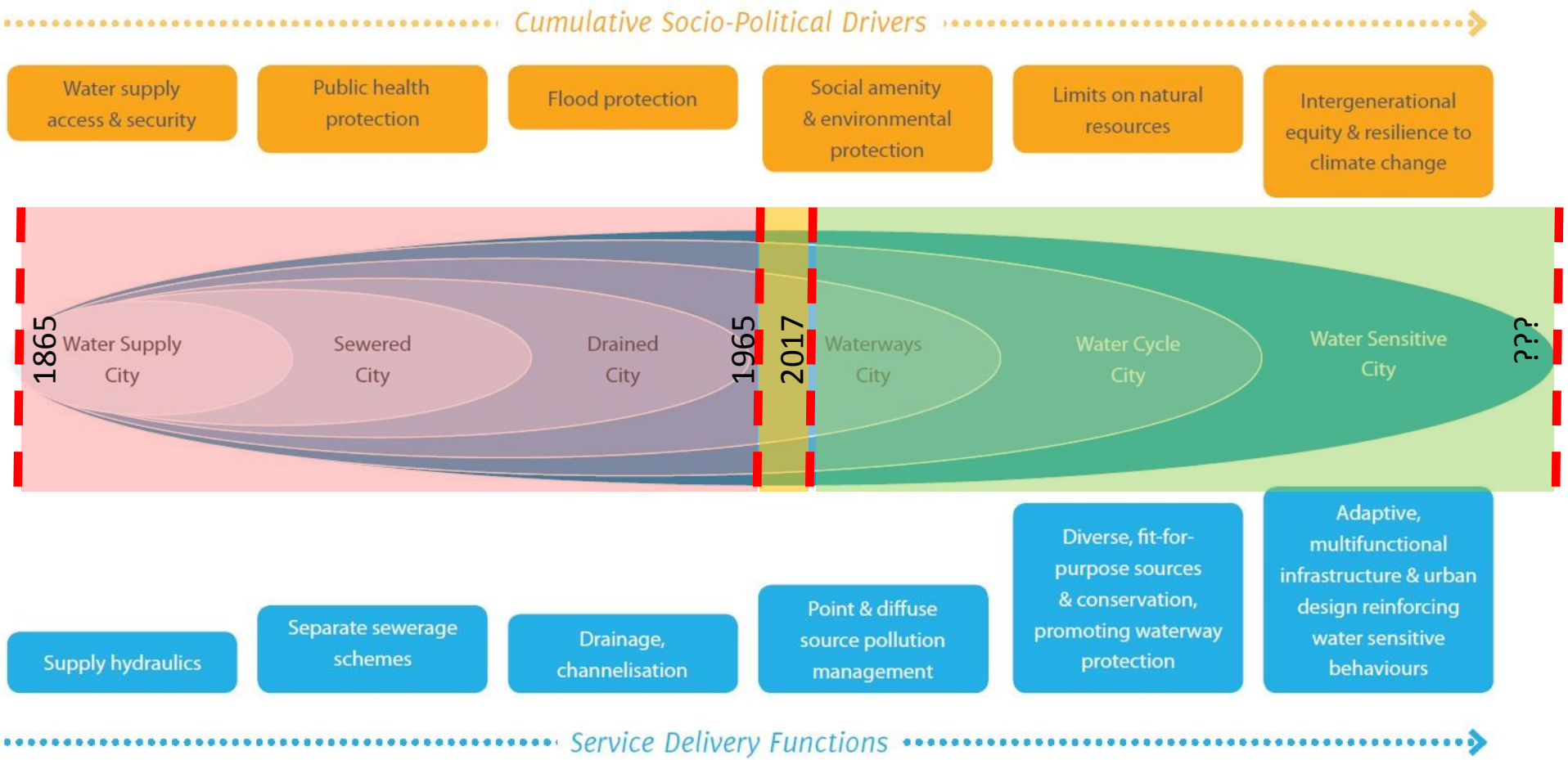
Change is inevitable

- Whaitua will ultimately set limits which will impact our city into the future and improve outcomes
    - Pathogens
    - Nutrients
    - Heavy metals
    - Flow/allocation
- Will also make recommendations for process and non regulatory action
- These changes will influence public and private stakeholders

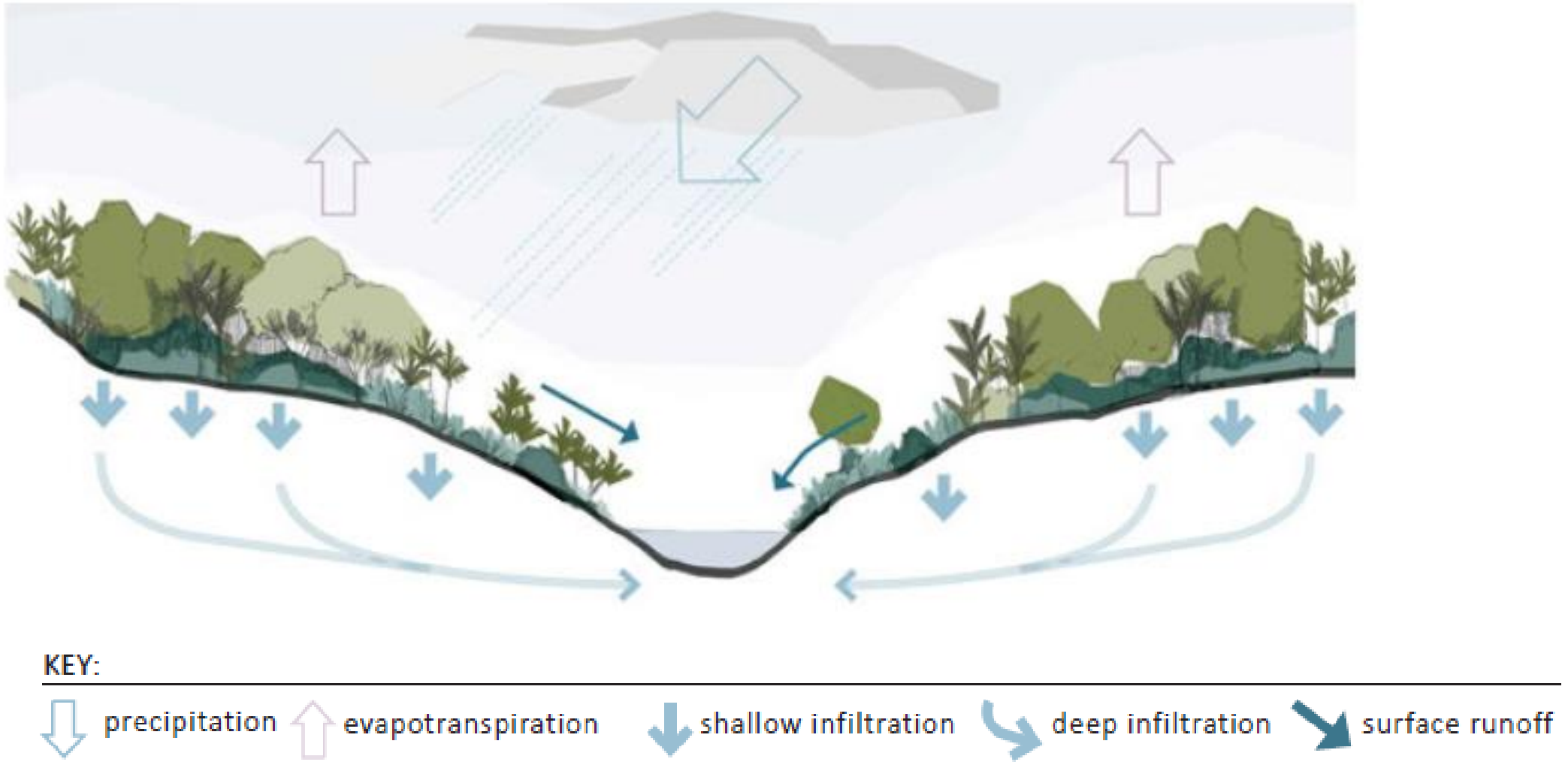
Lessons from experiences elsewhere

- Development community will have a loud voice and resist change
- Delivery of new assets needs to be aligned with Council expectations…….poor design and delivery present significant risk
- Need to change mindset to development planning
- Potential to support improved urban design and amenity
- Integrate resilience, amenity and urban ecology into future city

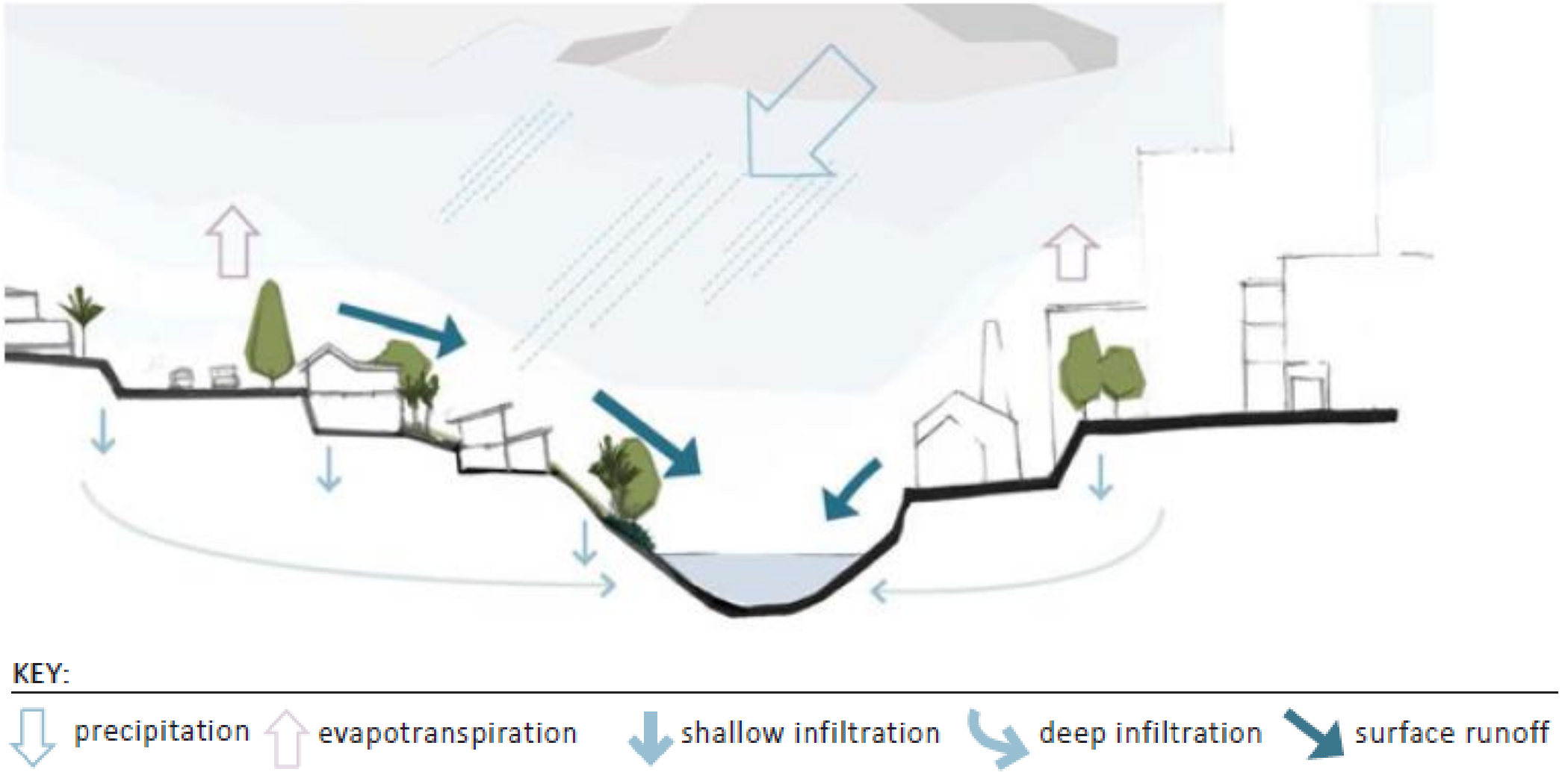
National and International transitions



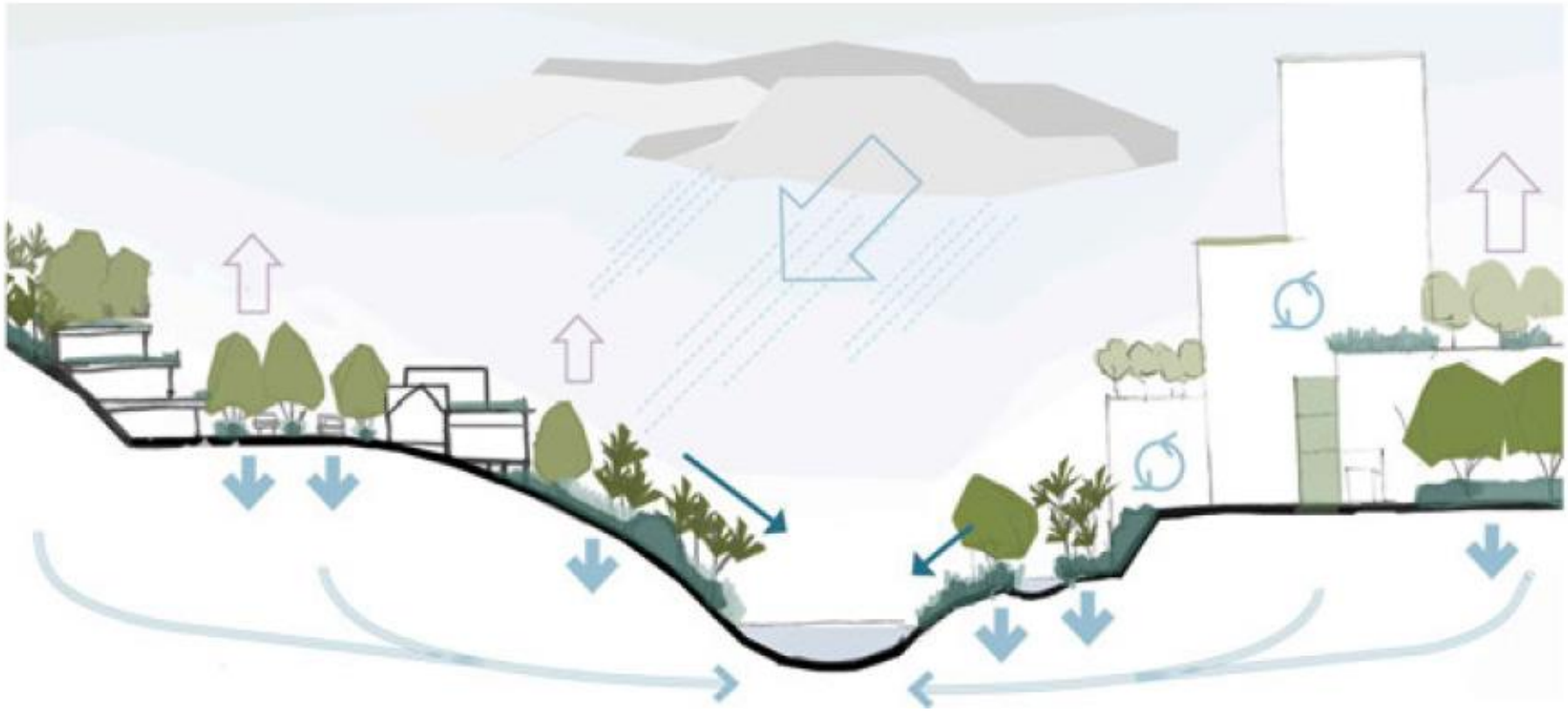
Natural catchment-pre development



Unmanaged land development



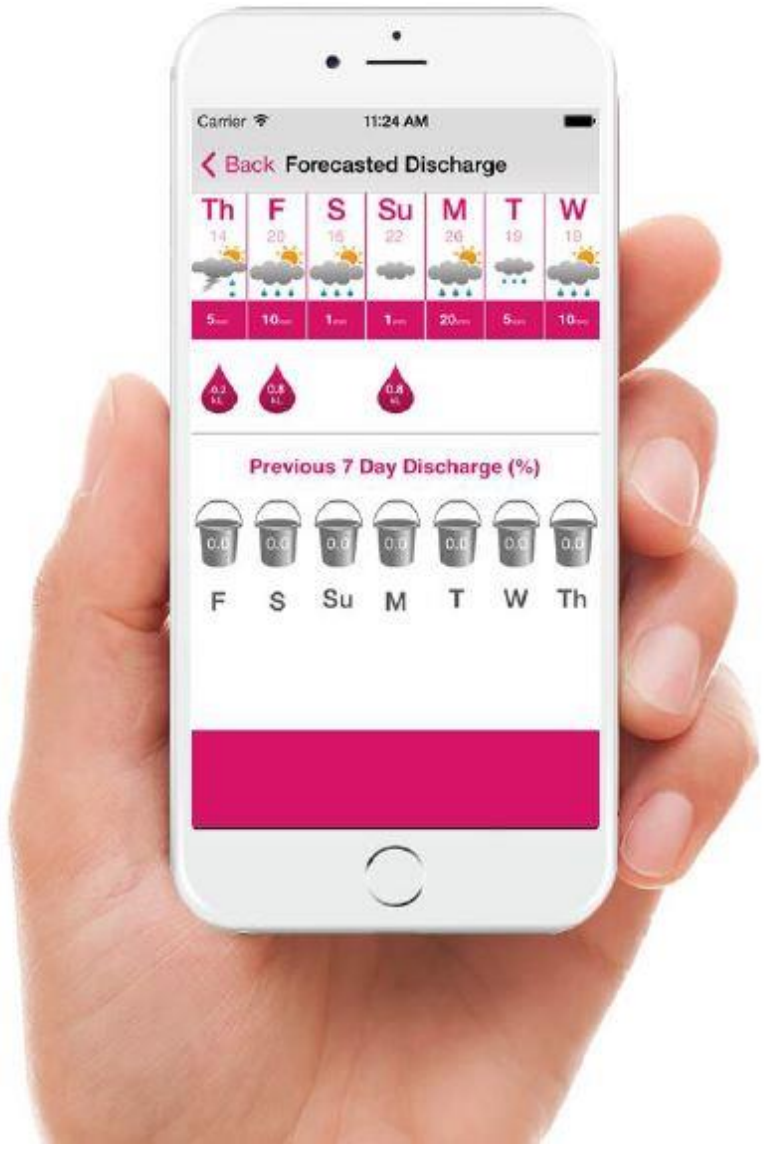
A change for the future

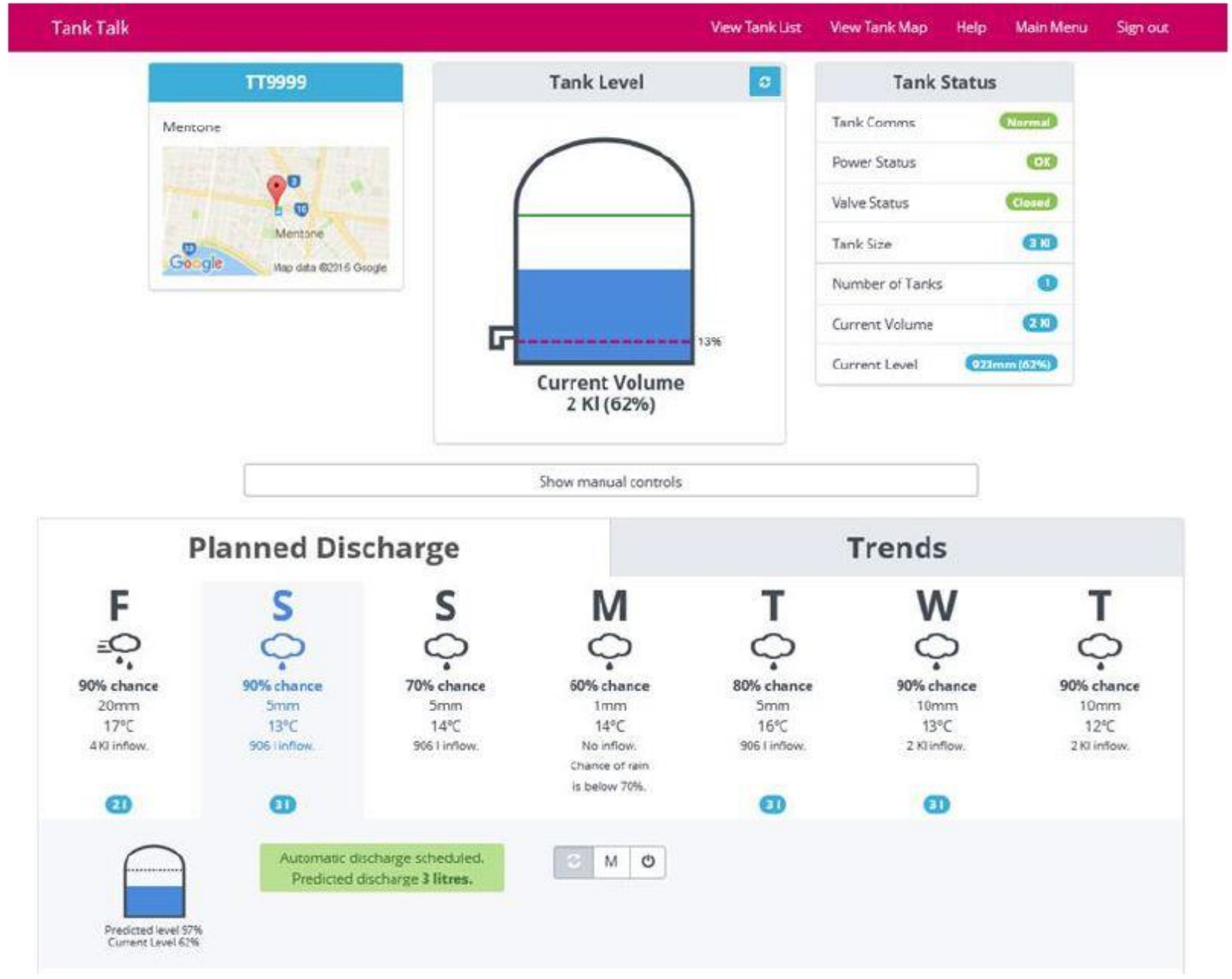


KEY:

precipitation evapotranspiration shallow infiltration deep infiltration surface runoff

Smart rainwater tanks





Provide homeowners with real-time information