



ASSET MANAGEMENT
AMPEAK
PROMOTE EDUCATE ASSIST KNOWLEDGE

2025



Digital Risk–Based Planning: Creating Value at Infrastructure Portfolio Level

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Background/Context – Mackay Regional Council (MRC)

- Local Government Authority in Queensland
- Services provided to approximately **125,000** people across **7,600** square kilometres
- Services provided include
 - Water & Waste
 - Transport & Drainage
 - Buildings & Community Facilities
 - Parks and Environment
- Infrastructure portfolio approx. **\$6B** (gross replacement cost); annual depreciation expense **\$85M** (2023)

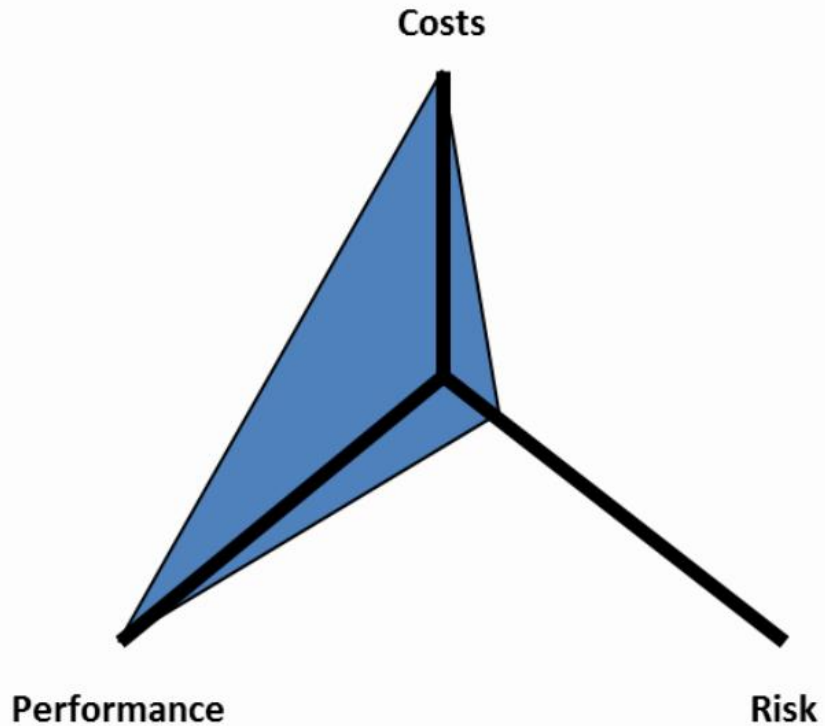


- Responsibility to **ensure assets perform** and provide community **services**, while **cost** and **risk** are managed appropriately

Need for risk-based planning

Balancing Risk, Cost and Performance.....

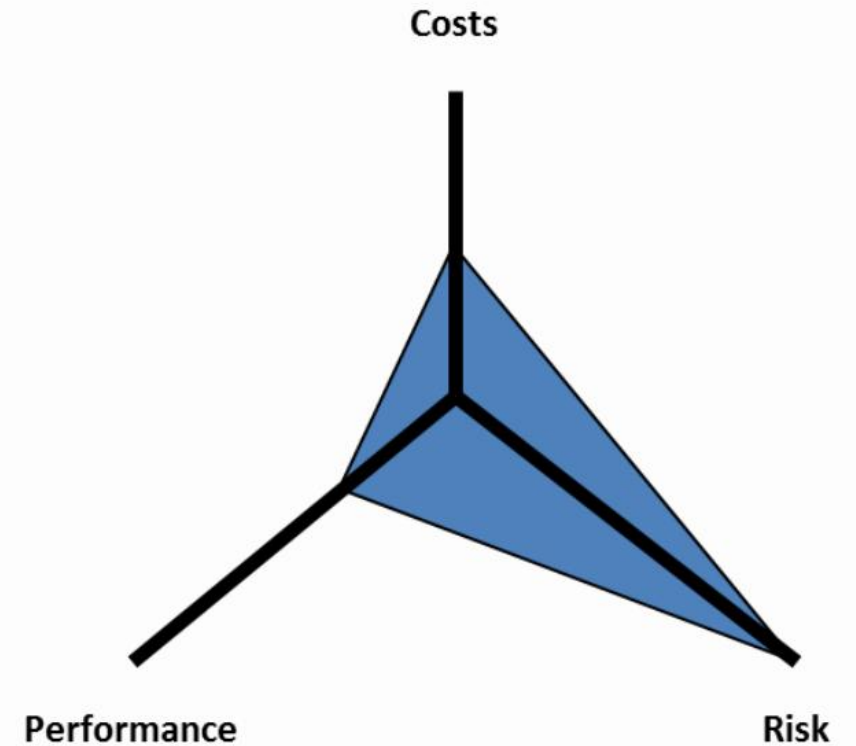
"Gold Plating?"



**Asset
Management
Balance**



"Reckless?"



Transparency/accessibility to understand risk

Why?

- Inability to communicate our risk
- Ineffective use of data to inform decision making or decision makers
- Decision makers aren't given clear information on the risk they are choosing to tolerate/accept

- Need to improve our ability to communicate risk in a simple, meaningful and effective manner

Historical Responses

- Data capture and condition assess everything we can
- Write a long and wordy AM Policy and AM Plans highlighting issues
- Request funding based on the AMP, or
- Put our heads in the sand and hope it goes away

Typical Outcomes

- Funding request rejected
- Asset Management documents become shelfware or paperweights
- Risk unofficially accepted until it's not!

Need for digital planning tools

- Mackay is **transitioning** from written asset management plans (AMPs) for each asset class
- Written AMPs have their place
 - Require structured thinking, prioritisation and a review of the environment
 - But are often **laborious** in areas where **value** isn't driven
- We are on our own asset management journey
 - Aligning our service levels, driving **efficient outcomes**, whilst bringing the whole team along with us
- We are seeking to let the **data evolve** and **drive decisions**
 - Listen and learn from outside our region and take steps to improve outcomes for our community

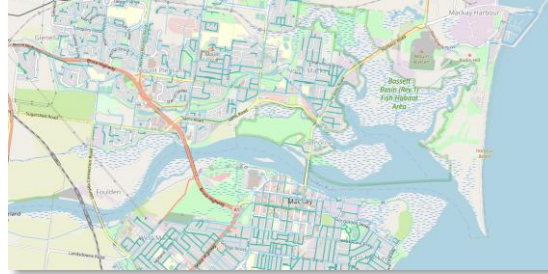


- Risk-based digital planning is fitting this bill for our region

Use of digital planning tools at MRC



Water/Wastewater Treatment and Recycling Facilities (Completed April 2023)



Water and Wastewater Networks (Completed October 2023)



Municipal Waste Management Facilities (Completed October 2023)

The Digital Plan Vision

Data driven asset lifecycle decision making at your fingertips

Supported by easy to access, trusted, fit for purpose asset information



Property Services (Completed May 2024)



Transport (Scheduled May 2025)



Drainage (Scheduled May 2025)

Staged development

1



Asset Data Model

Setting up the asset register to allow **insights** to be gathered and **conveyed easily**. Register set up to show the **impact** of asset condition and asset risk on services

2



Site Asset Data Capture

On-site inspections to **efficiently** and **accurately** verifying the asset base, assessing **condition** and recording **defects** information that describes **performance** and capability

3



Digital State of Asset Reporting

Setting up a single **source of truth** for asset quantities, health, criticality and **risk** data and information that is **accessible**, **interactive** and **easy to share**

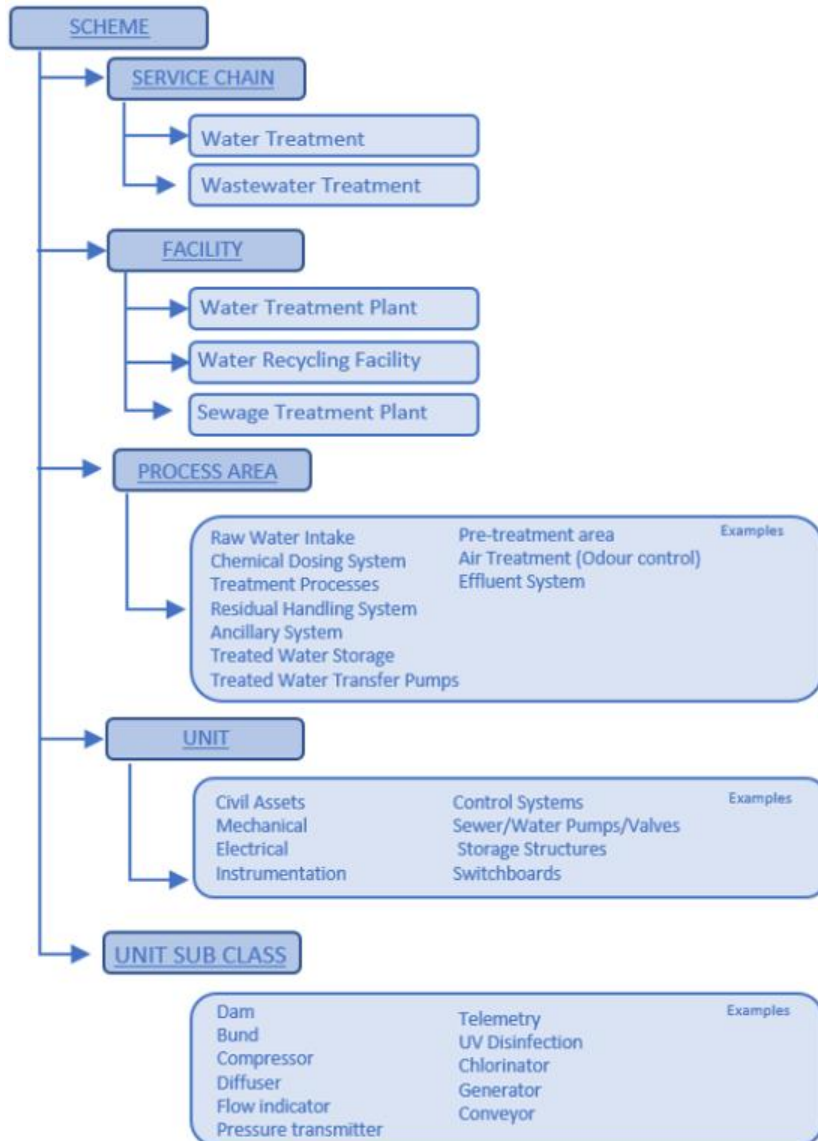
4



Digital Asset Life Cycle Plan

Forecasting **future** asset deterioration and **risk position**, maintenance and renewals **investment** scenarios and **budget forecasts**

Consistent data structures across portfolio – Treatment Facilities

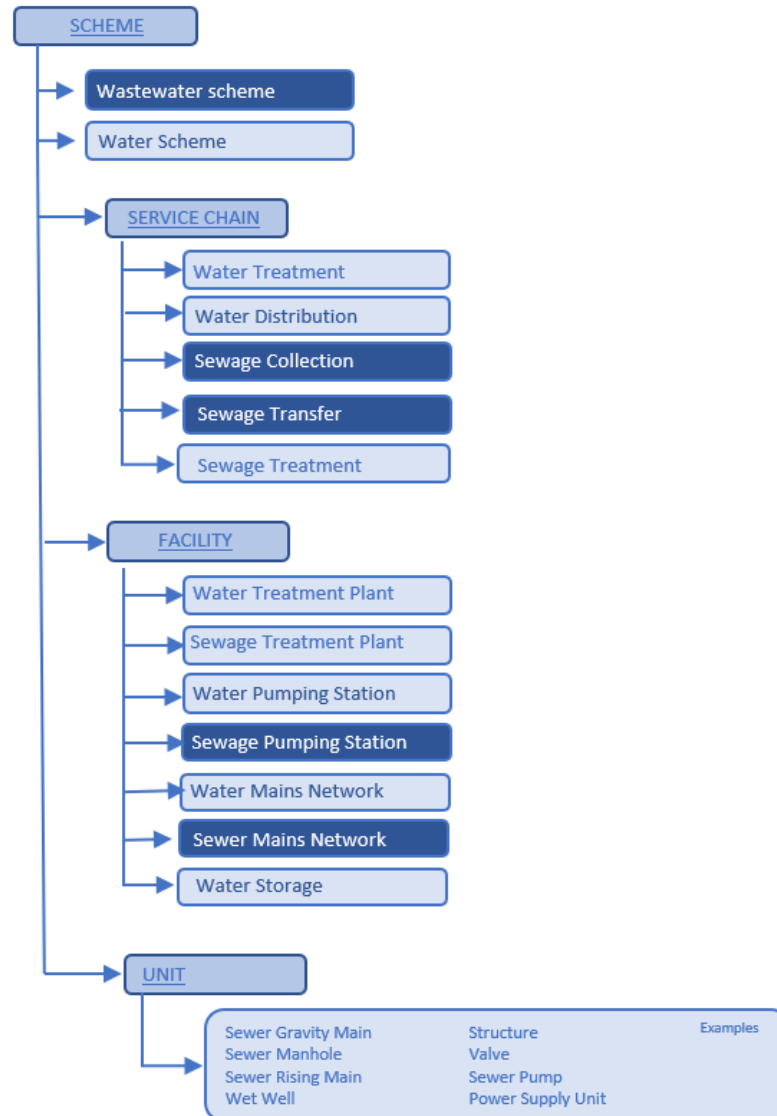


Aggregated and
viewed at all levels
within the location
hierarchy

Meaningful insights
(process/facility/
service chain/scheme)
to support planning

Criticality/Risk life-cycle
modelling at this level

Consistent data structures across portfolio – Networks

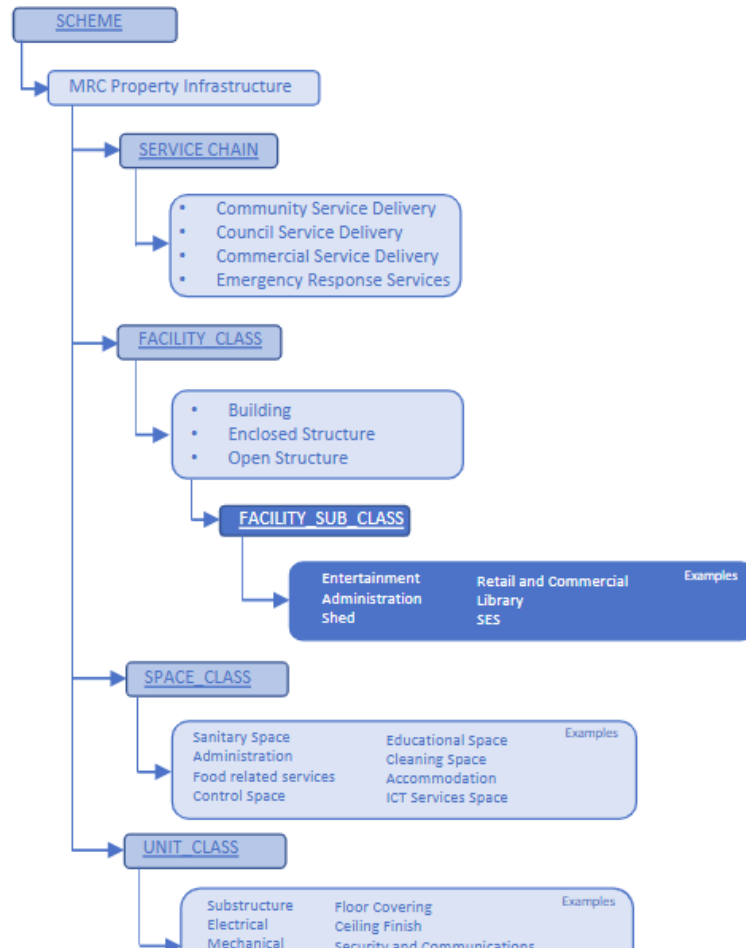


Aggregated and viewed at all levels within the location hierarchy

Meaningful insights (process/facility/ service chain/scheme) to support planning

Criticality/Risk life-cycle modelling at this level

Consistent data structures across portfolio – Buildings

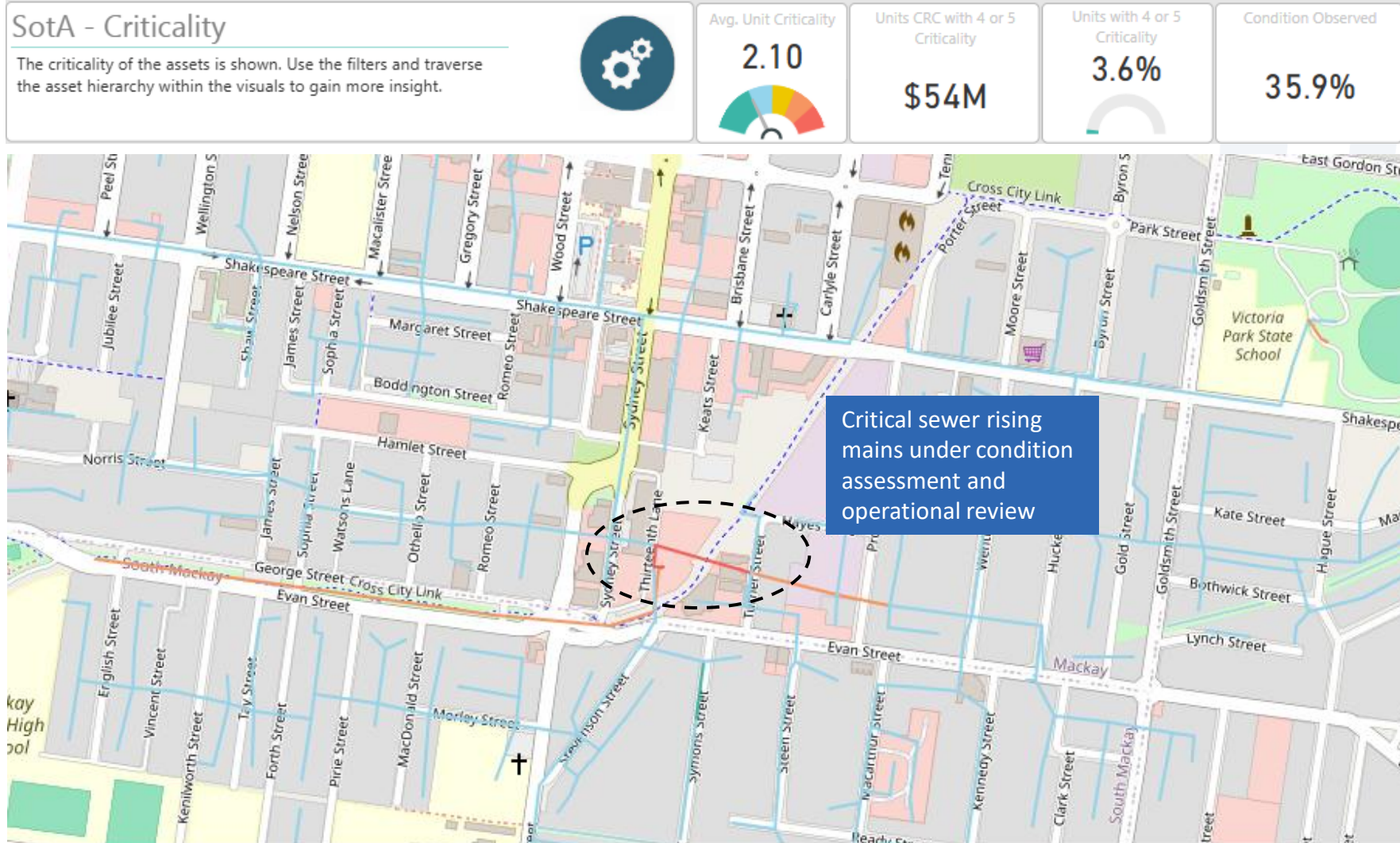


Aggregated and viewed at all levels within the location hierarchy

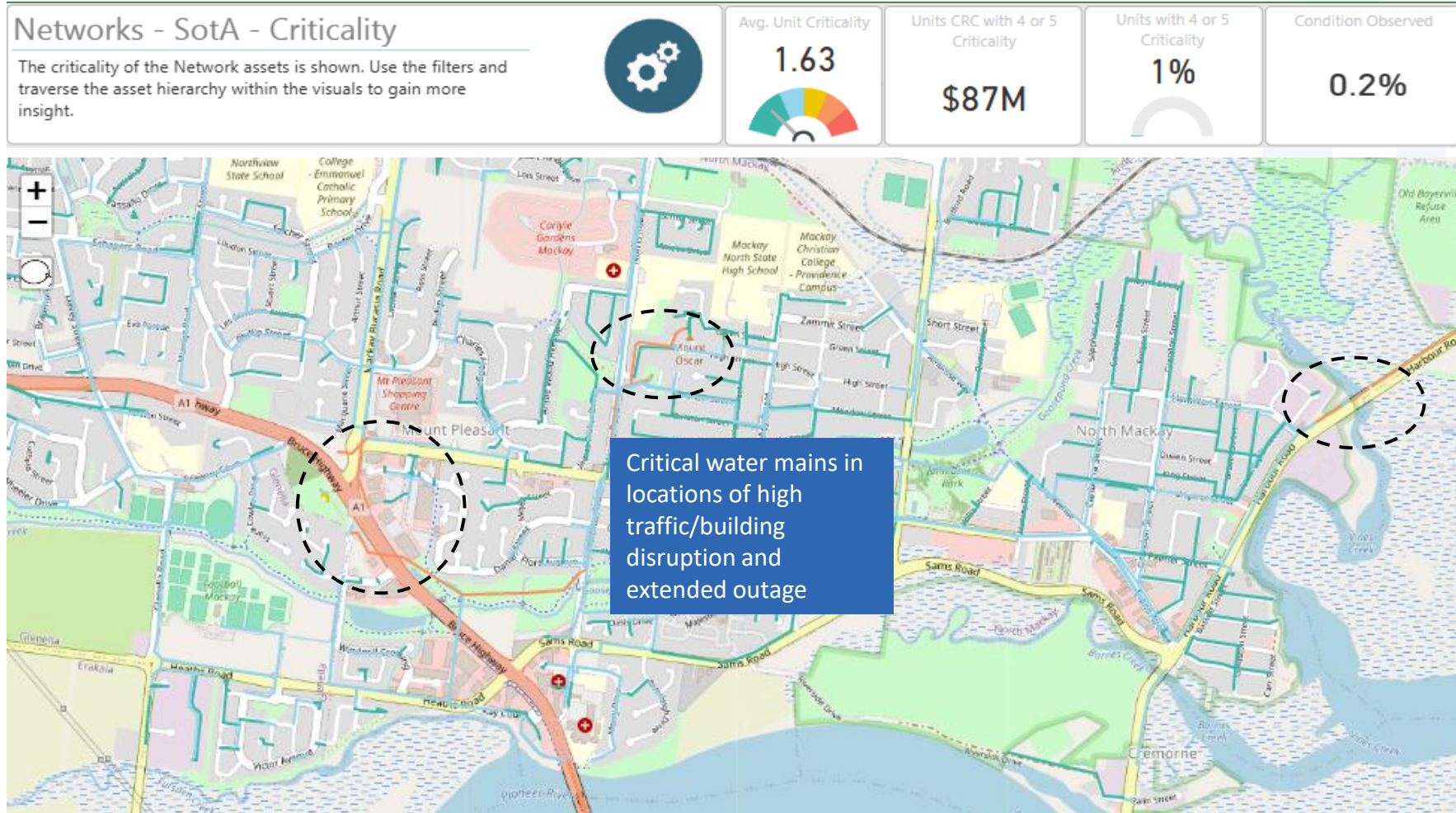
Meaningful insights (process/facility/service chain/scheme) to support planning

Can consider criticality and risk in alignment with Enterprise Risk Framework, regardless of asset type

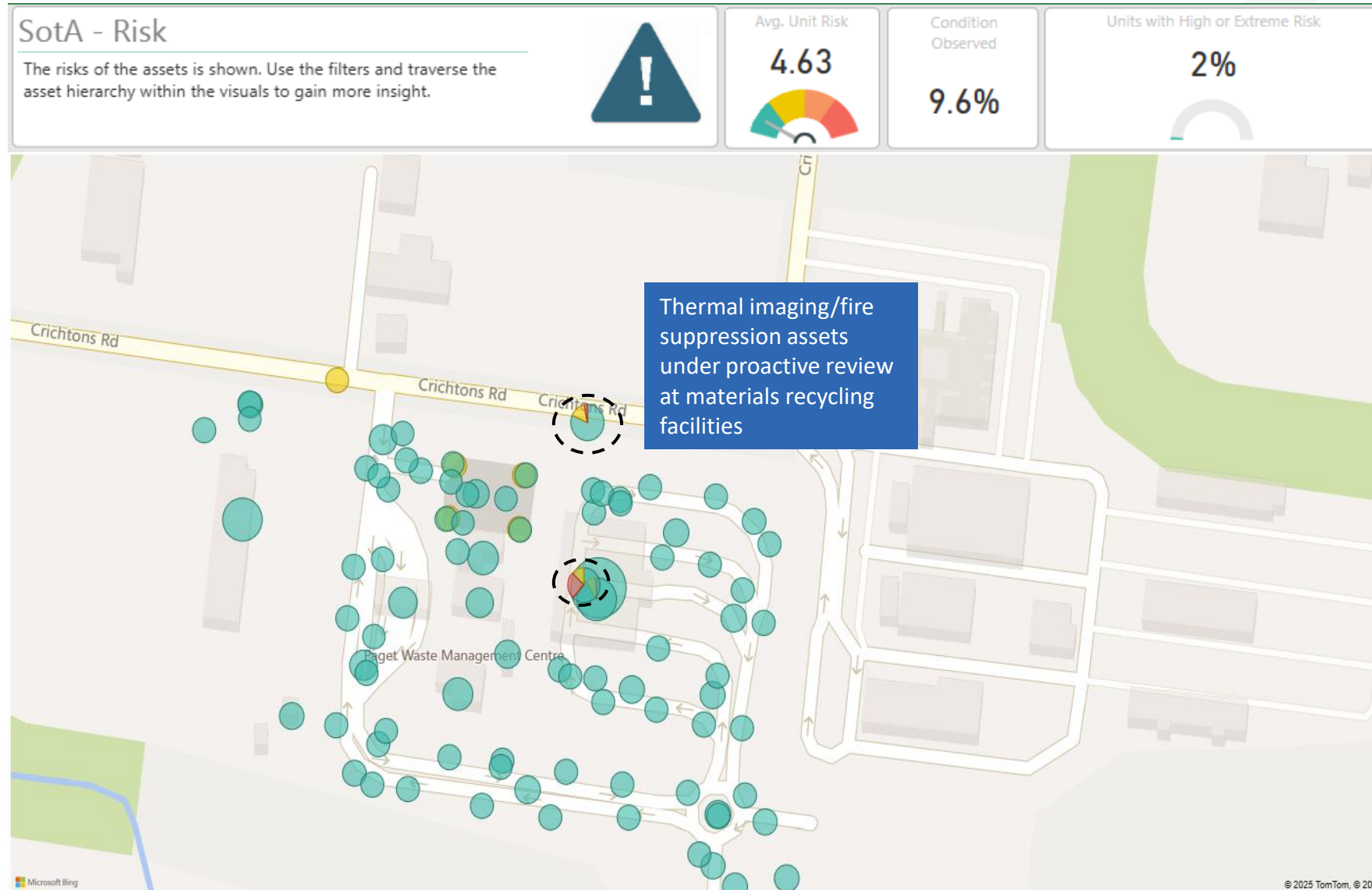
Digital view – Critical network assets – Sewer



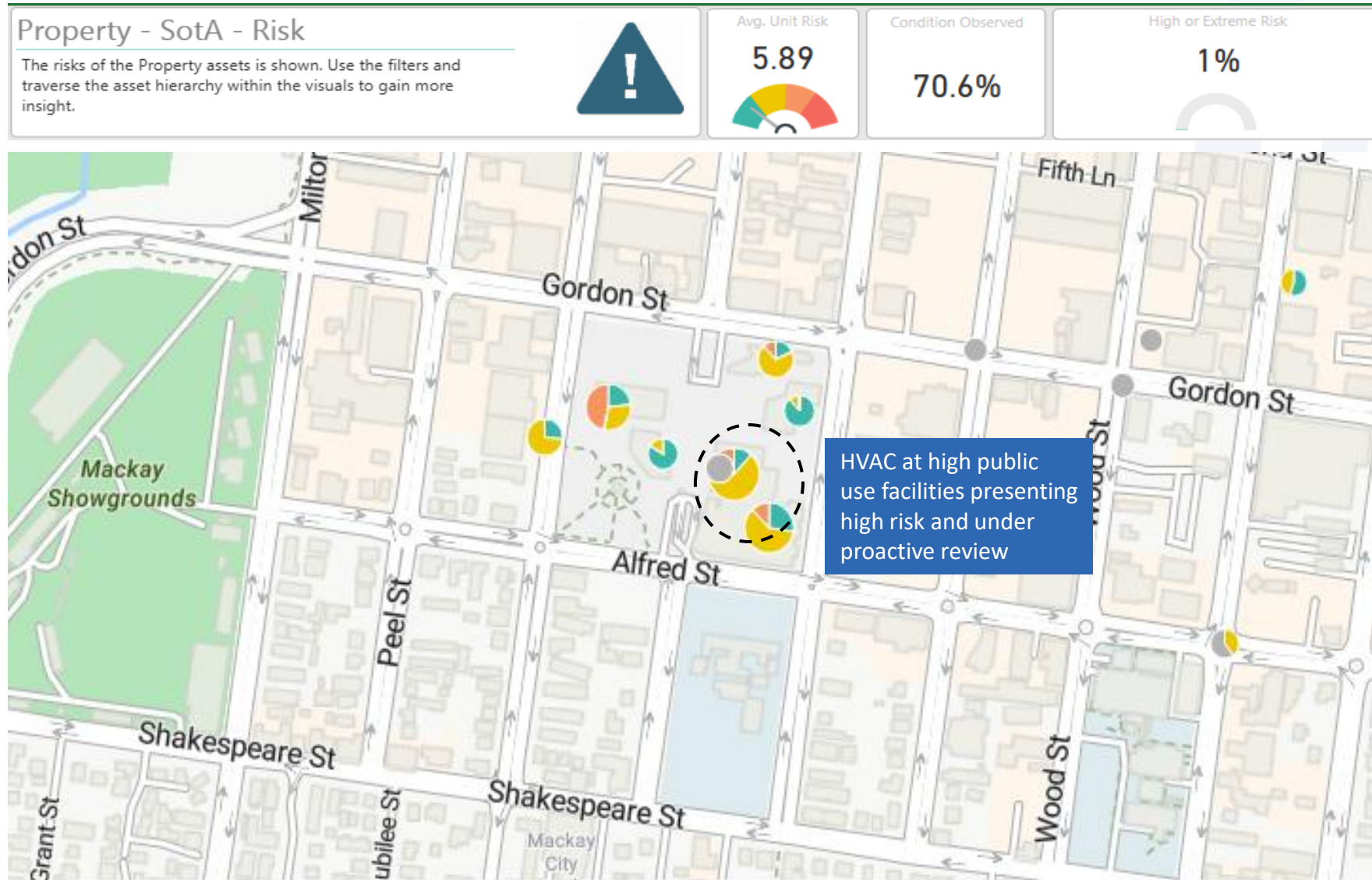
Digital view – Critical network assets – Water



Digital view – High risk assets – Materials recycling facilities



Digital view – High risk assets – Buildings



Managing to Risk Appetite

		Consequence of Failure				
Probability of Failure		Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	5	8	16	18	23	25
Likely	4	7	10	17	20	24
Possible	3	3	9	12	19	22
Unlikely	2	2	5	11	14	21
Rare	1	1	4	6	13	15

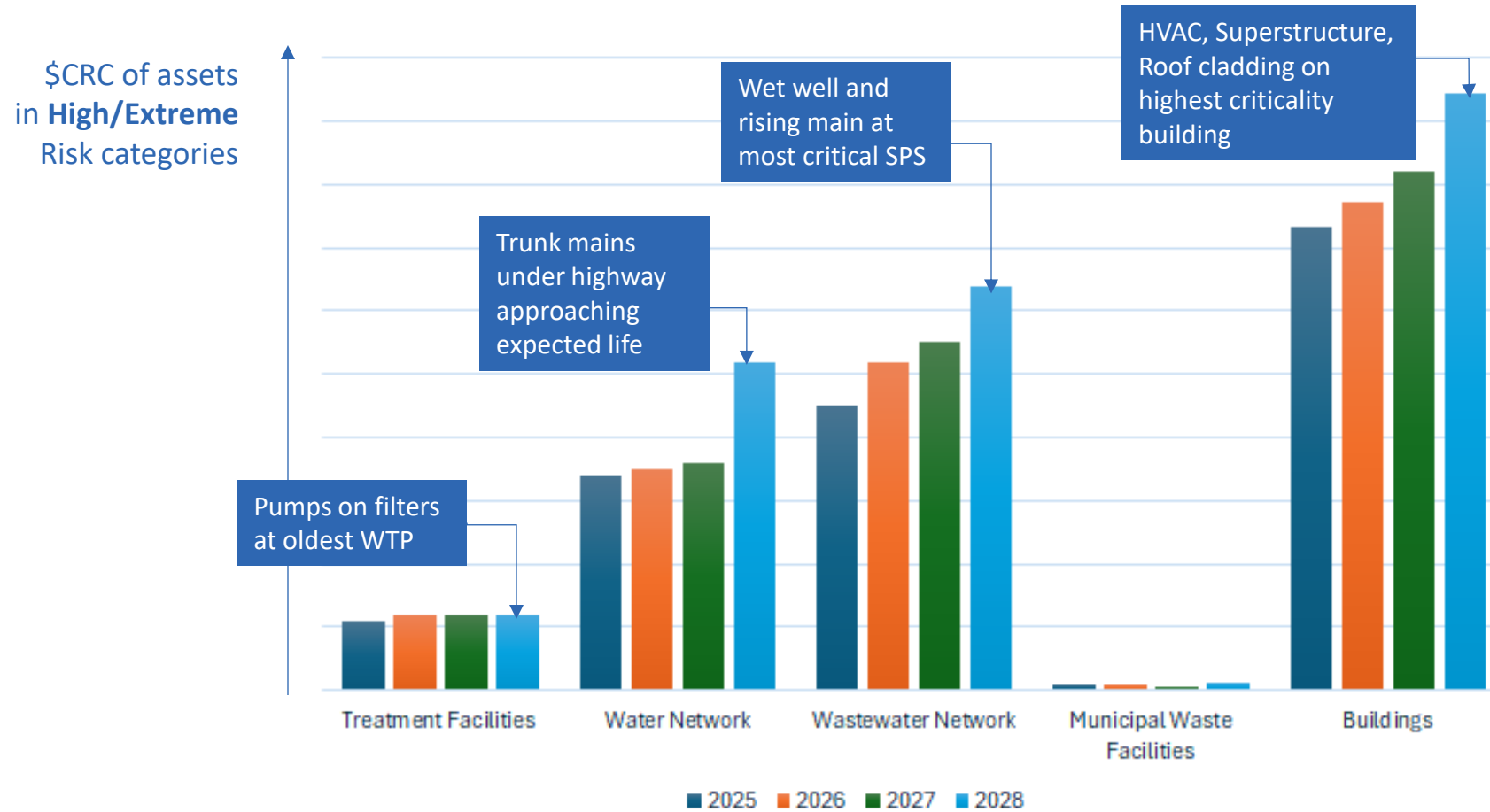
e.g. Detailed condition and structural assessment in 2026



e.g. Budget for replacement (subject to confirmed health) in 2028

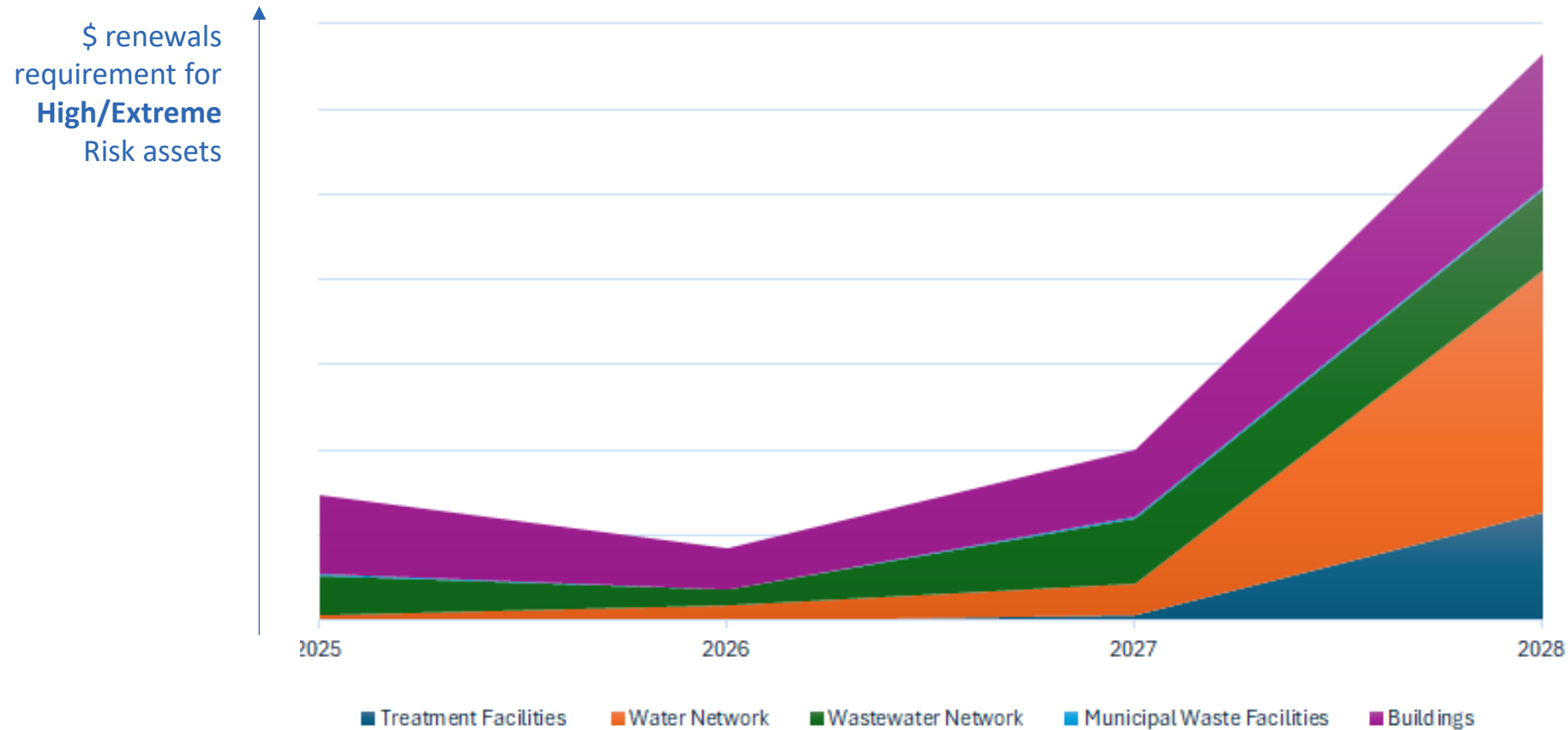


Risk exposure profile across portfolio



Common data structure and consistent criticality and risk definition
= “apples with apples” comparison

Risk-based investment profile across portfolio



Can build a capital renewals program from **bottom-up** that is **uniformly aligned** with council's risk definitions and appetite

Lessons Learned and Next Steps

- Mackay is **supporting** written asset management plans (AMPs) for each asset class with risk-based **digital tools**
- Driven by the need to **communicate** risk in a **simple**, meaningful and effective manner from asset managers to **decision makers**, prioritising asset renewals
- **Data structures** are important for complex portfolios of different asset types
 - Getting them right ensures **consistency** of digital plan application
 - Getting them wrong re-work and difficulty in updates
- Understanding **asset criticality** across council is essential – Need the right blend of skills and experience around the table
 - Asset managers, finance, asset information, engineering, **operations and maintenance**
 - Engineering only can lead to very **pessimistic** outcomes (**gold plating** 😊)
- **Incremental** advances more effective than dramatic **wholesale change** in approach

Lessons Learned and Next Steps

- Next steps are to:
- Complete the portfolio view in the digital planning tools by including **Parks and Environment** assets
- Embed **governance** on the use of digital risk-based planning tools for building renewals programs from the **bottom up**
 - Use to validate asset risk levels
 - Ensure ease of on-going updates as portfolio is better understood

Transparency = Trust = Collaboration
Digital Plans are 'Operationalised'

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