Business Objectives

The Way the Sewer System Performs has a Significant Impact on ability to meet business objectives

- **Public Health** – Protecting the health of our community, water, sewerage, waste
The Way the Sewer System Performs has a Significant Impact on our Service Outcomes

- Public Health
  - Recreation Waters
  - Private Property
  - Public Areas
Business Objectives

The Way the Sewer System Performs has a Significant Impact on ability to meet business objectives

- **Public Health** – Protecting the health of our community, water, sewerage, waste
- **Environmental** – Minimise water contamination, noise, dust, fumes
The Way the Sewer System Performs has a Significant Impact on our Service Outcomes

- Environment
  - Sensitive Receiving Environments
Business Objectives

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- **Service Levels** – Delivering on Adopted Service levels
The Way the Sewer System Performs has a Significant Impact on our Service Outcomes

- **Service Standards**
  - Interruption to Services During Rain Events
  - We have provided porta loos in the past
Business Objectives

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- **Public Health** – Protecting the health of our community, water, sewerage, waste
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- **Service Levels** – Delivering on Adopted Service levels
- **Economic** – Reduce the cost to provide the service in the long run
The Way the Sewer System Performs has a Significant Impact on our Service Outcomes

✍️ Cost
- MRC 200 SPS, flat low lying land with old assets in areas
- Historically have spend $M on trying to fix Inflow & Infiltration (I & I), with broad scale Inspection Programs of both private and public assets
- Asset Utilisation

<table>
<thead>
<tr>
<th>Asset</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sewage Mains, Manholes, Pump Stations</td>
<td>$580K</td>
</tr>
<tr>
<td>Treatment</td>
<td>$150M</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$630M</strong></td>
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</table>
Business Objectives

The Way the Sewer System Performs has a Significant Impact on ability to meet business objectives

- **Public Health** – Protecting the health of our community, water, sewerage, waste
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- **Reputation** – managing council and water business reputation
The Way the Sewer System Performs has a Significant Impact on our Service Outcomes

- Reputation

Sewers at risk of overload as rain to dump on region
Factors impacting performance of Sewer Network

- Inflow resulting from direct rainfall
- Infiltration
- Blockages and Chokes Reducing Capacity
- Environmental Issues

Sewer Network is a dynamic complex system.
Defects Reducing Sewer Capacity

- Failed Sewer Reline
- Debris in Sewer
- Poor Construction
- Asset Failure
Rainfall has a big Impact, the amount of rainfall varies considerably across the network
Groundwater levels in Mackay show a close correlation with Infiltration.
What are sewer sensors?

- Simple on/off level sensors with transmitter
  - Positioned pipe full and overflow level
- Leveraging off the communication technology of MiWater
- Cost effective way of data capture
- Ability to have lots of data sample points
Real time information collection and management

- To date we have rolled out 75 remote sensors in the network collecting level information real time.
- Preliminary cost indications were total cost to install ($200-$500) and operate for 10 years.
- Continuing to review the prototype.

Trial Monitoring Site
<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Code</th>
<th>Status 1</th>
<th>Status 2</th>
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<tr>
<td>MACKAY</td>
<td>2 MANSFIELD DRIVE</td>
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Sewer Sensor results - Beaconsfield
- Relatively low rainfall event which leads to overflows
- Notice the long time the sewer pipe was full
Rainfall intensity above 10mm per 5 mins in the Beaconsfield catchment as recorded at the Beaconsfield Pump Station.

- Fast response time indicating inflow.
- This observation indicates that something is not right at the Brewers Road site.
Dry Weather Events

Sensor Installation

Dry Weather Defects

Sewer Blockage
Opportunities

- Learn the signature of local catchments and sub catchments
- Being able to target investigations including CCTV
- Collection of real time data allows for definition of normal operation and ability to identify patterns
- Using the different technology at minimal cost capital and operational cost
- Operationalisation of the tool then value realised.
Future - development of MiSewer