



In collaboration with



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About Speakers



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Bulloo Shire Council

SWQWSA Technical Committee Chair



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GBA Consulting Engineers

SWQWSA Regional Coordinator

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Content

The South West Queensland Water & Sewerage Alliance

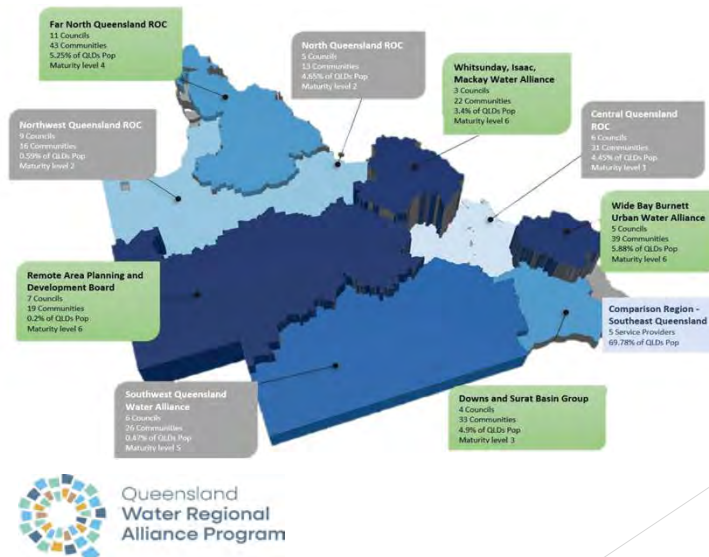
- ✓ Overview of how we got to where we are now
- ✓ Alliance Organisational Structure
- ✓ Vision and Key Functions
- ✓ Our Region
- ✓ Projects

SWQWSA Infrastructure Strategy Project

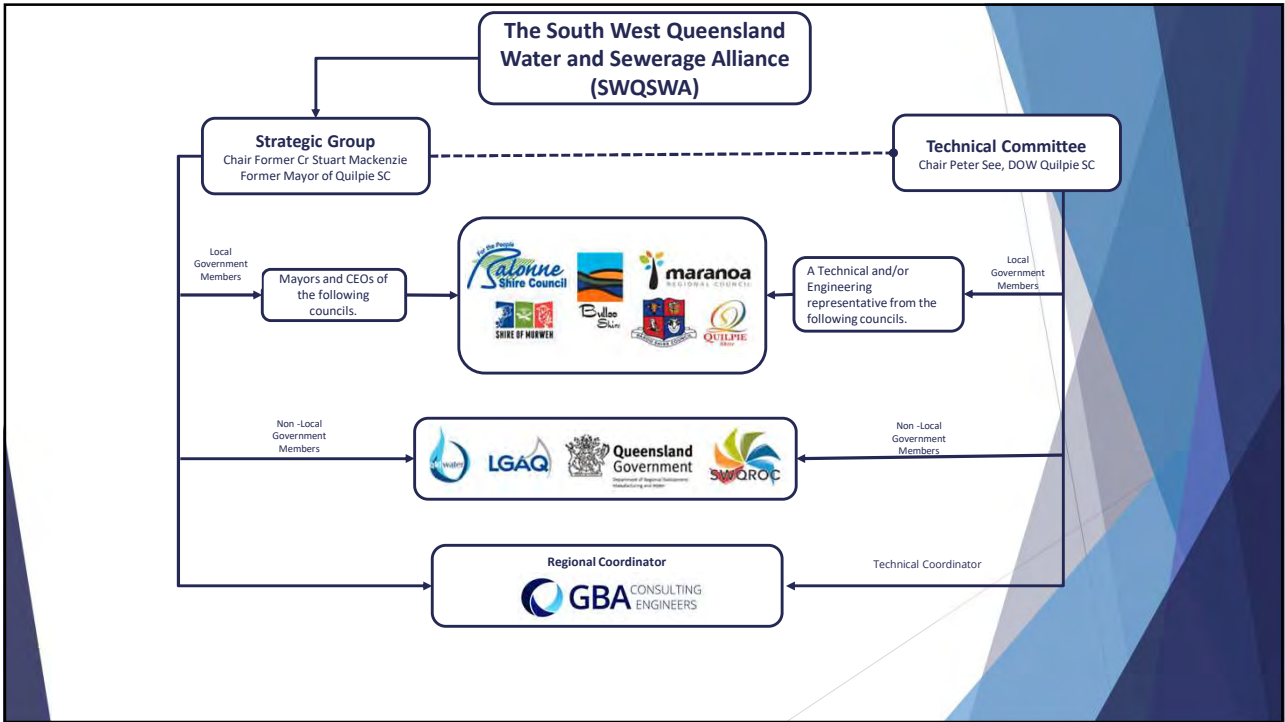
- ✓ The project
- ✓ Stages of the project
- ✓ Project Funding
- ✓ Findings – Assets Condition

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The South West Queensland Water and Sewerage Alliance (SWQWSA), established on the 25th of March 2021 by the South West Queensland Regional Organisation of Councils (SWQROC)



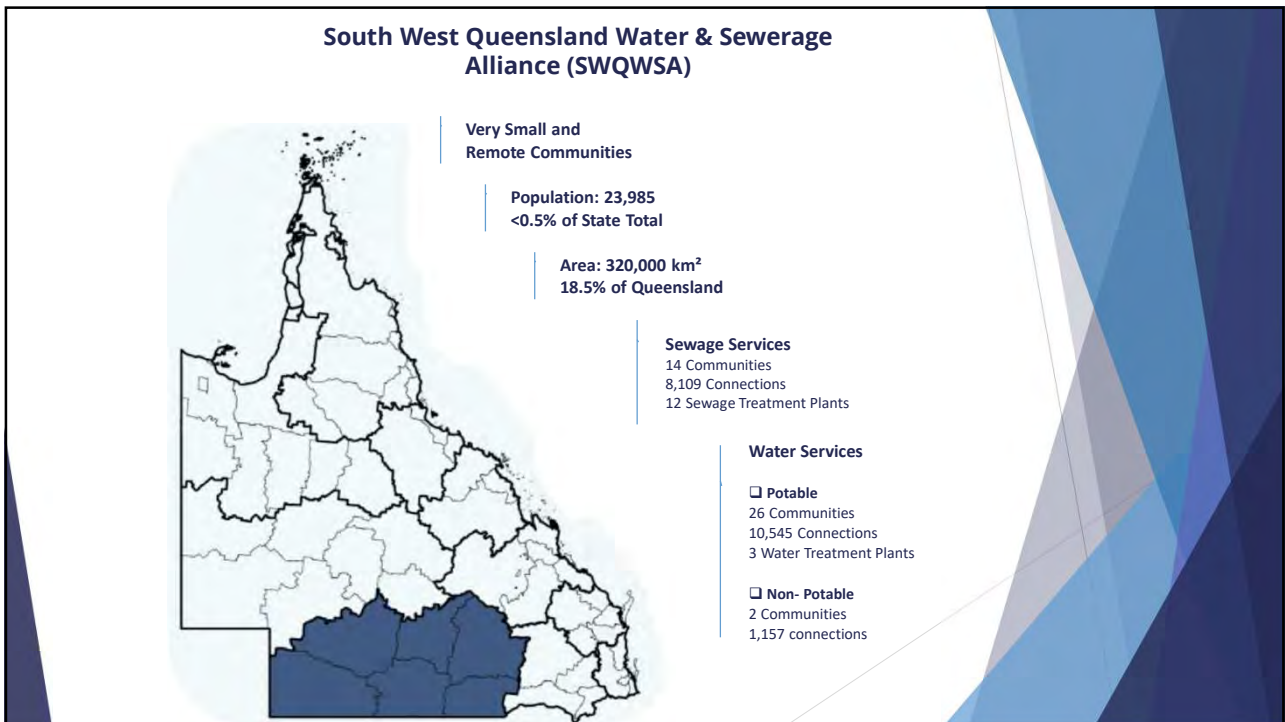
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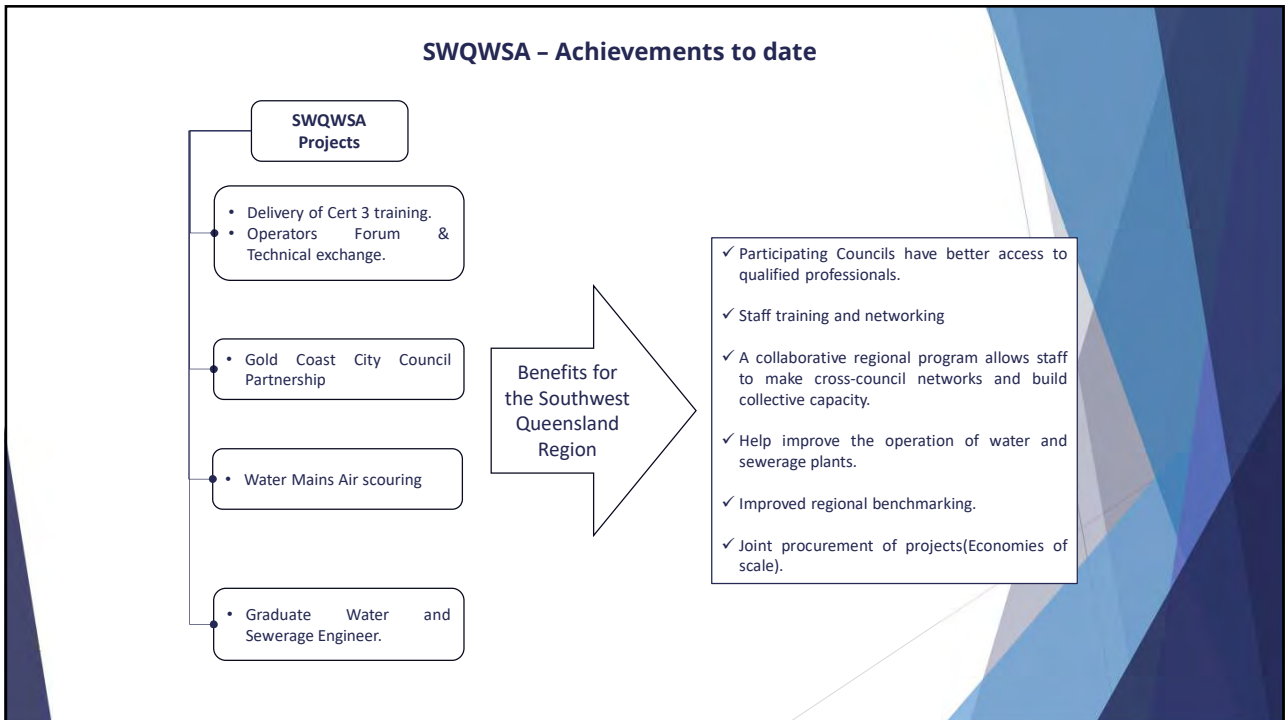
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SWQWSA Infrastructure Strategy Project

- ✓ Made possible through the QWRAP program to prepare funding submissions.
- ✓ Project funded by Building Our Regions
- ✓ Project initiated in Late 2022.
- ✓ Completion Date: September 2024

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SWQWSA - Infrastructure Strategy Project

The SWQWSA aims to understand and improve water and sewerage networks in its member councils. This includes assessing water & sewerage quality and infrastructure. The main goal is to create a regional strategy to address ageing infrastructure issues, maintain compliance and forward plan based on asset criticality, condition and risk.



Enhance the sustainability of water and wastewater services & assets in the SWQWSA communities.

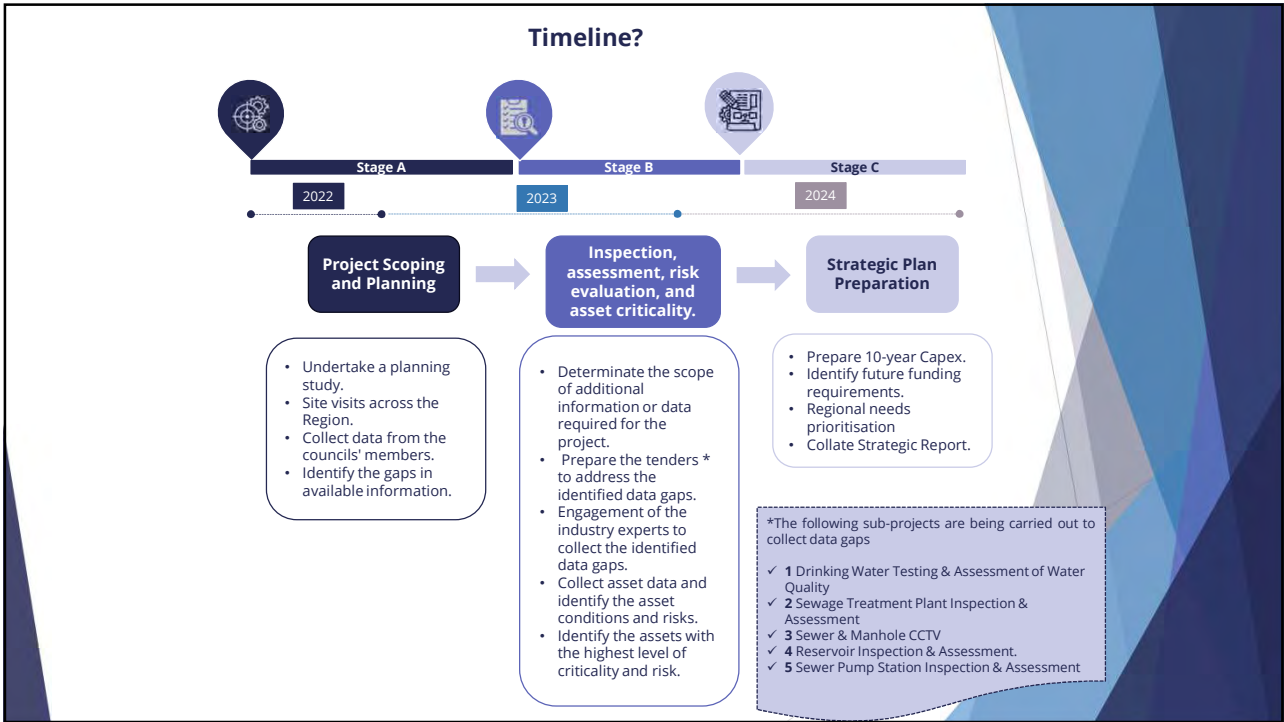
Inform and address current and future infrastructure need of all member councils

Facilitate collaborative regional initiatives and joint projects among local government bodies, enabling cost-sharing and cost-saving measures.

Notes:

1. GBA was appointed as Project Manager.
2. All Corporate Governance and Finances processed by Quilpie Shire Council.

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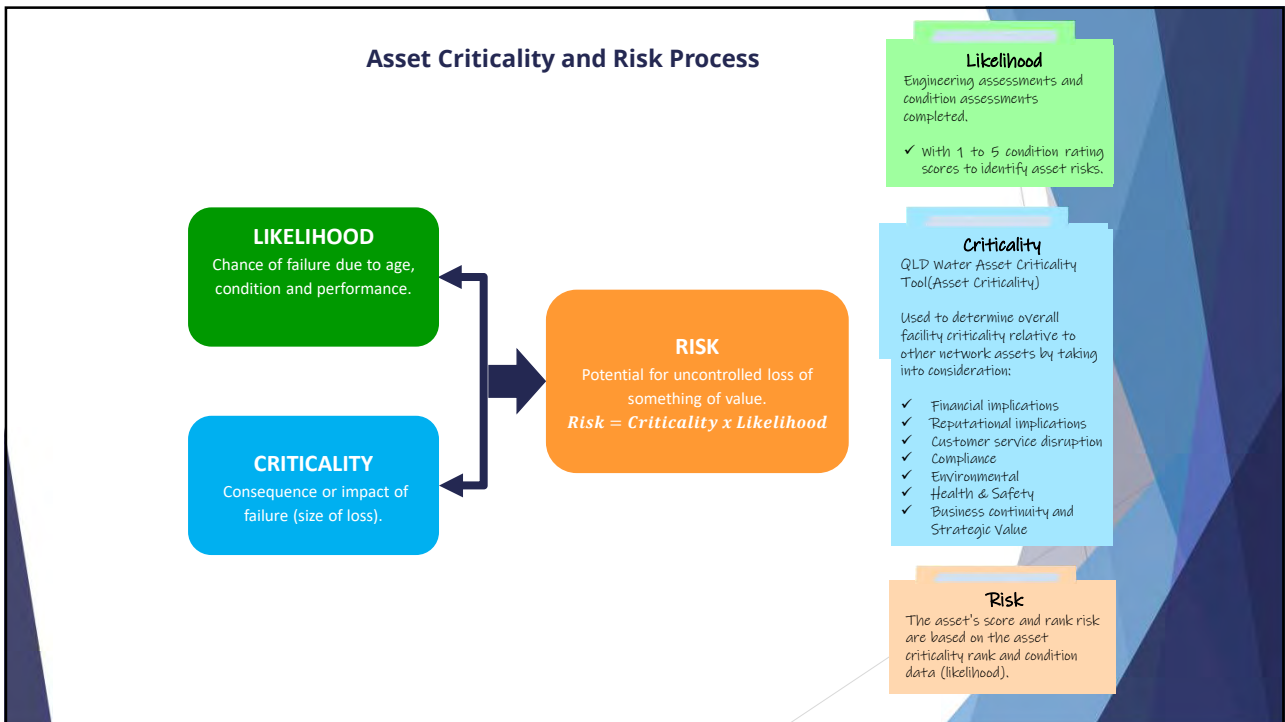
Project Funding

- The SWQWSA achieved success in securing a grant from the Building Our Regions (BoR) program during Round 6 in 2021, specifically under the planning category.
- In August 2022, The was awarded for this project.
- \$1,522,600.00** excluding GST.

The BoR funding has been distributed, as below.

Description/ Activities/Sub-Projects
Drinking Water Testing & Assessment of Water Quality
Sewerage Treatment Plant Inspection & Assessment
Sewer & Manhole CCTV
Reservoir Inspection & Assessment
Sewer Pump Station Inspection& Assessment
Project Management
Contingency
Strategic Report Preparation

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- ### Asset Criticality and Risk Process
- Engineering assessments and condition assessment completed
 - With 1 to 5 condition rating scores (likelihood)
 - QLD Water Asset Criticality Tool(Asset Criticality)
- Used to determine overall facility criticality relative to other network assets by taking into consideration:
- Financial implications
 - Reputational implications
 - Customer service disruption
 - Compliance
 - Environmental
 - Health & Safety
 - Business continuity and Strategic Value
- Asset Risk Score is a combination of both likelihood & criticality scores

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Asset Condition (Likelihood) & Asset Criticality

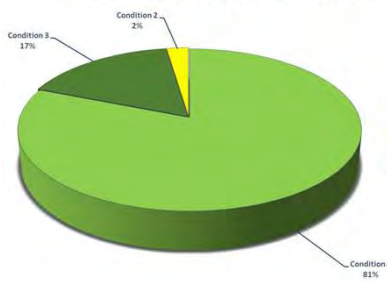
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Reservoirs

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Reservoir Condition across South West Queensland



Condition 0 - Immediate replacement or major repair required
Condition 1 - Replacement or major maintenance required within 1 year.
Condition 2 -Not likely to require replacement or major repair within 2 years.
Condition 3 - Not likely to require replacement or major repair within 3 years.
Condition 4 - As new / or satisfactory condition; no maintenance required for at least 3 - 4 years.

Note: This condition assessment is based on the expertise of Waters Marine Pty Ltd staff who conduct Reservoir inspections.

Type of Works	Description
Repair	<ul style="list-style-type: none"> Roof Repair (holes)
Replace	<ul style="list-style-type: none"> Remove and replace the ventilator Remove, repair, and apply corrosion protection to internal pipes and ladders. Replace the external ladder Remove, seal, and apply corrosion protection to internal walls and floor.
Maintenance	<ul style="list-style-type: none"> Reservoir Cleaning (Sediment 0mm to 1000mm*) Seal internal joints



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After 2029

Between 2026 to 2028

In the next couple of years

Low

Medium

High



\$ 376,855.15

\$ 448,738.10

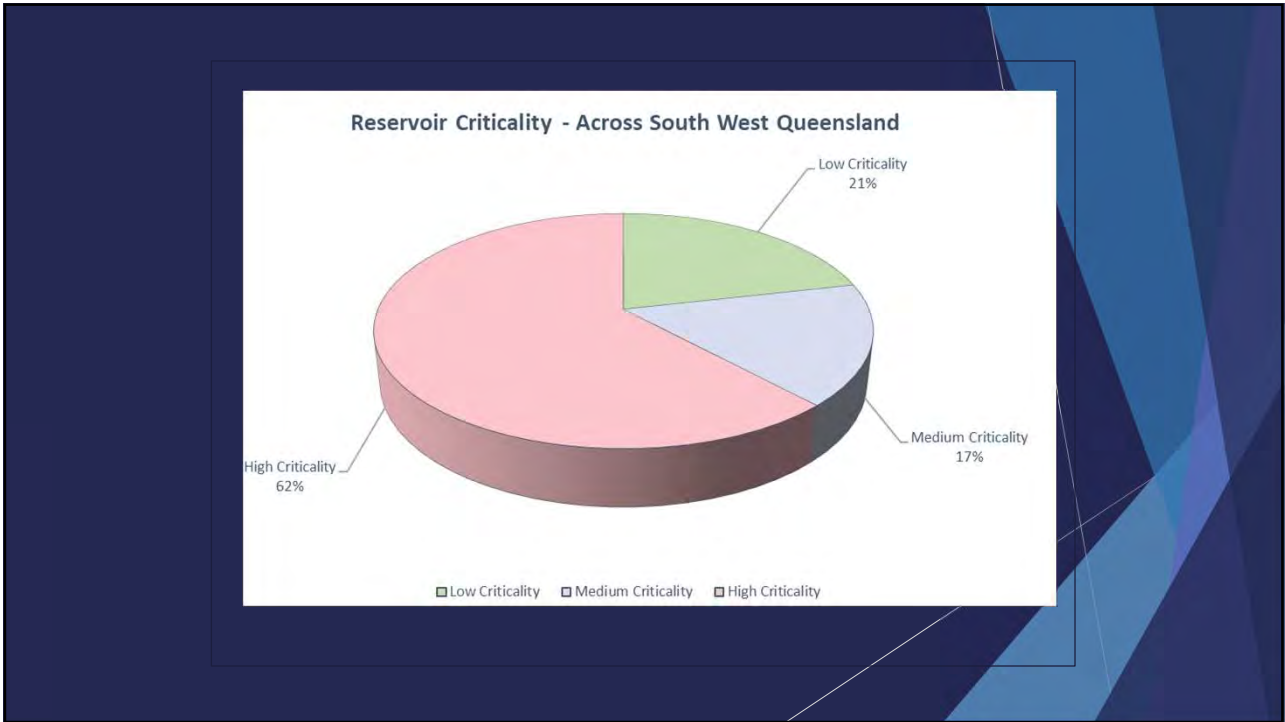
\$ 608,321.98

Estimated costs across the Southwest Queensland Region

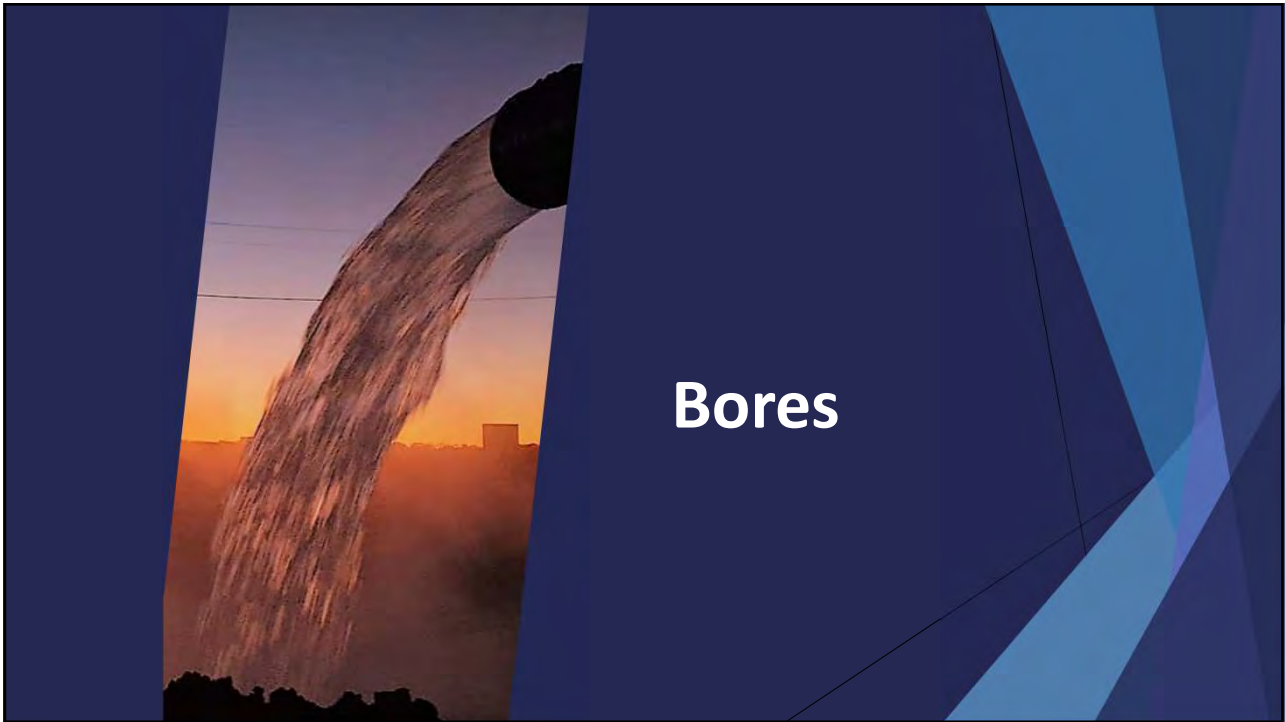
\$1,433,915.24



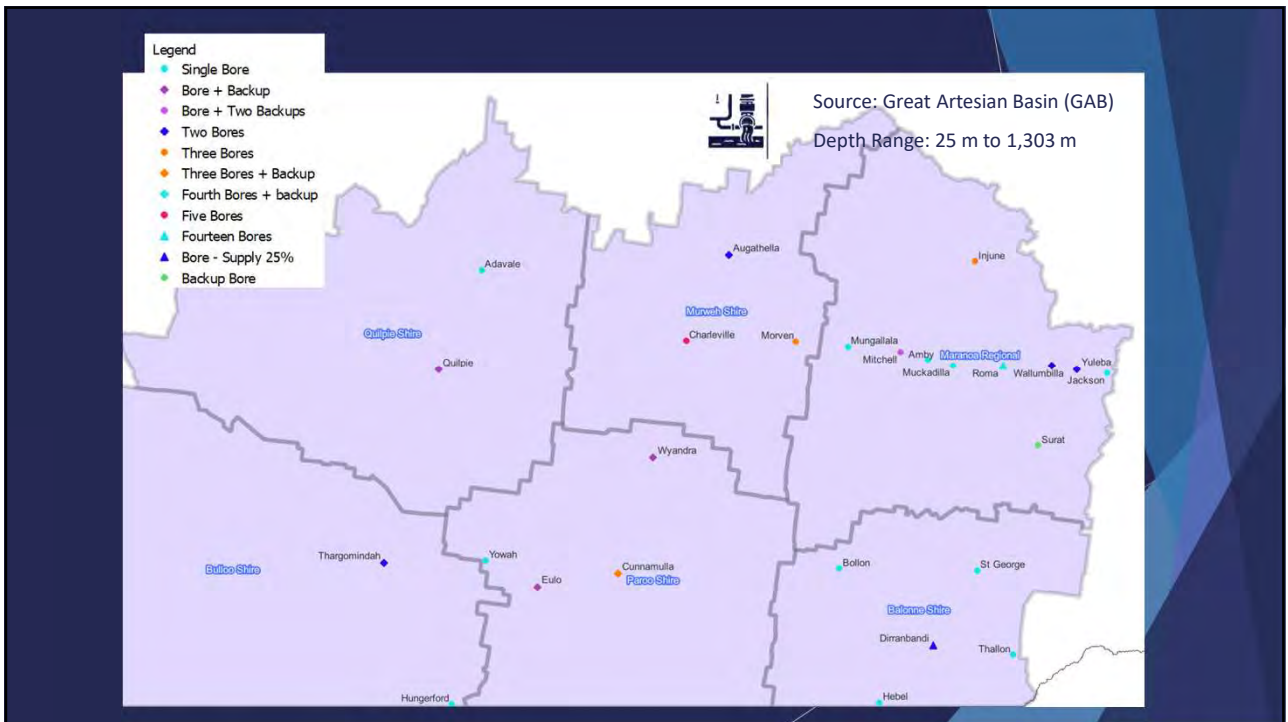
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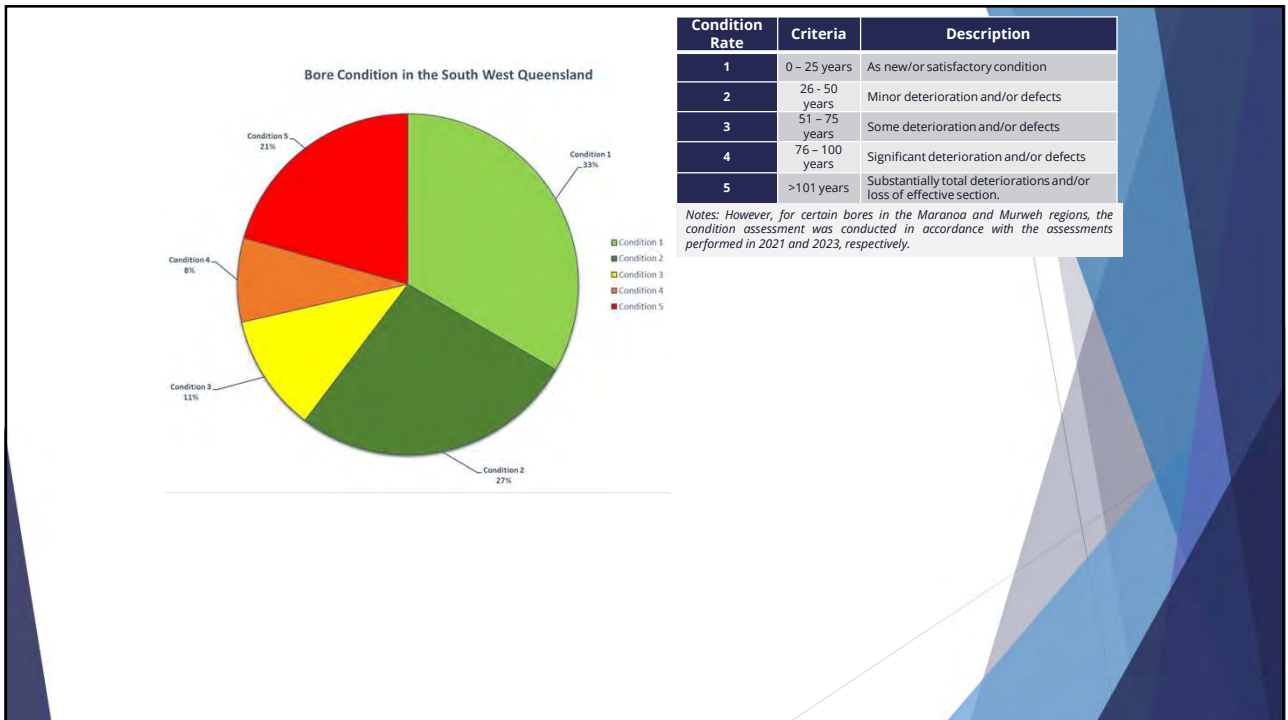
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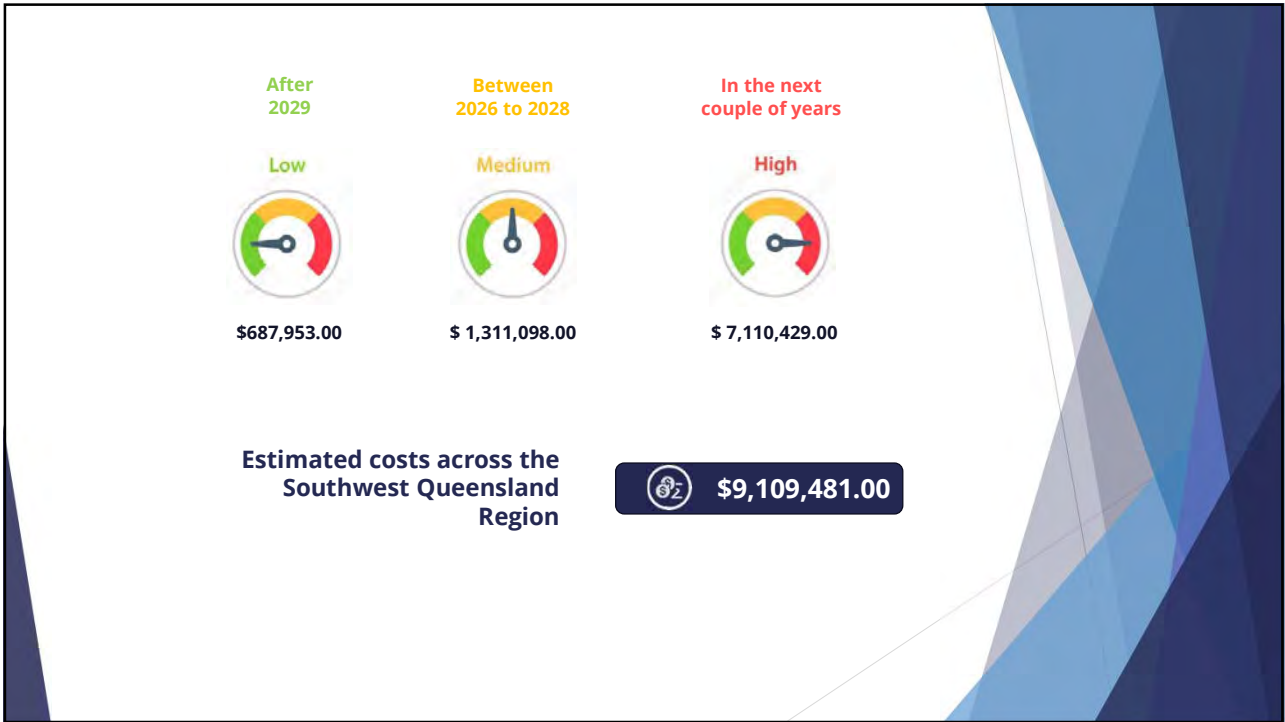
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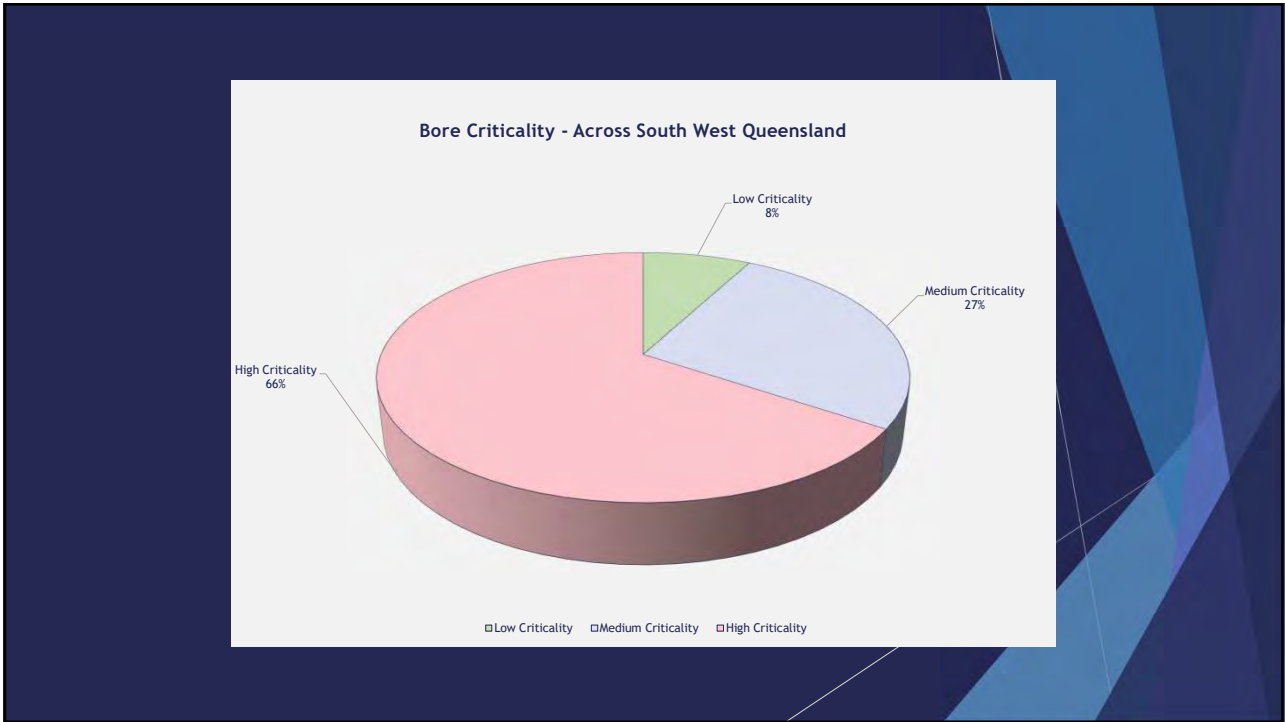
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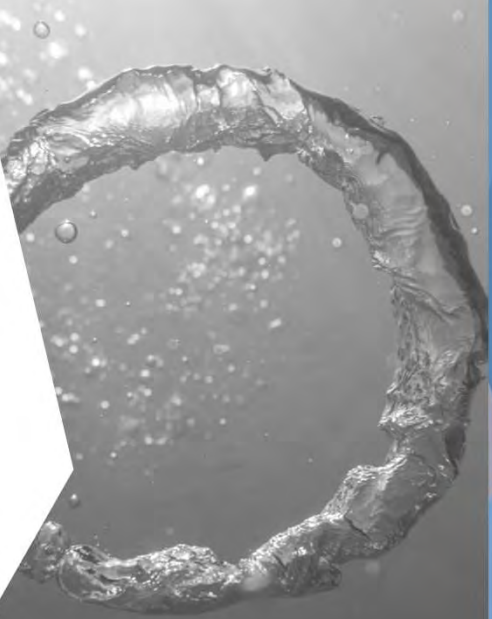


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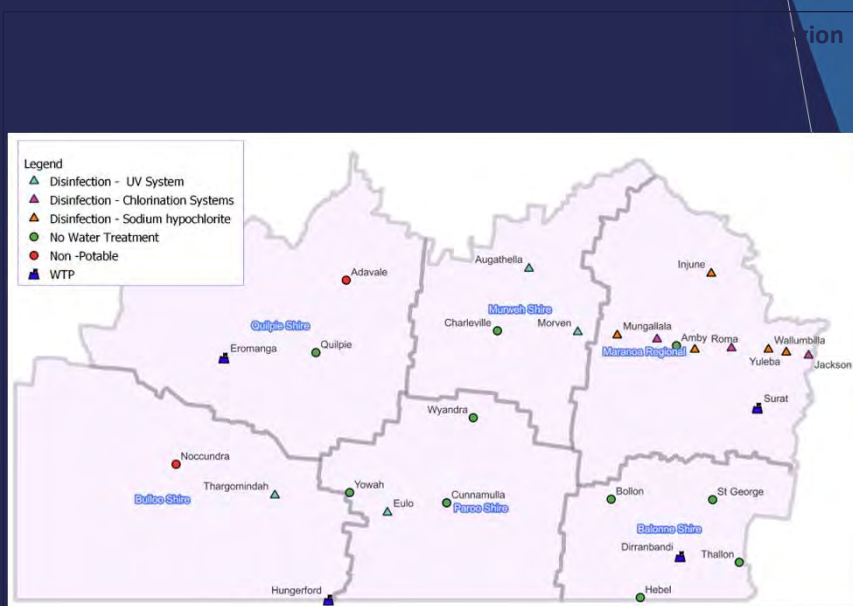
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Water Quality - Untreated systems



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MB2



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Slide 26

MB0 Possibly split into 2 slides, make more concise.

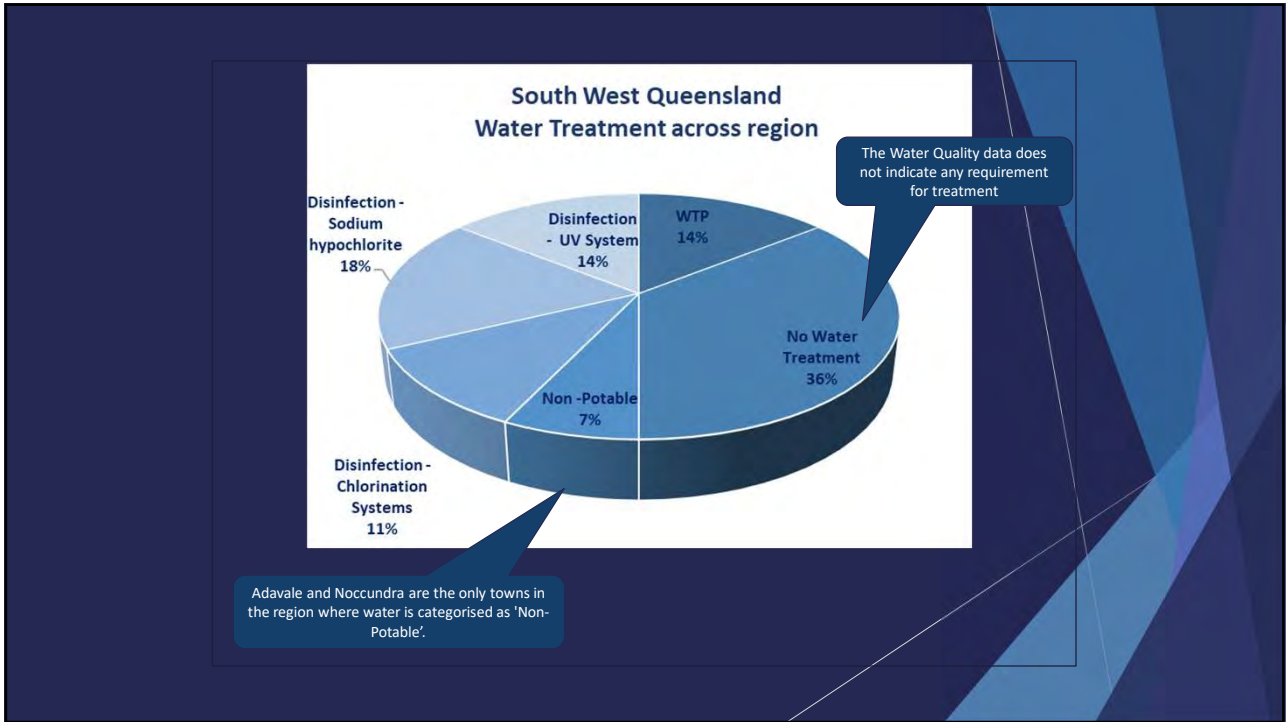
Matthew Brennan, 2024-04-07T23:28:38.212

MB1 Check if there are any otherss, Nocunda?

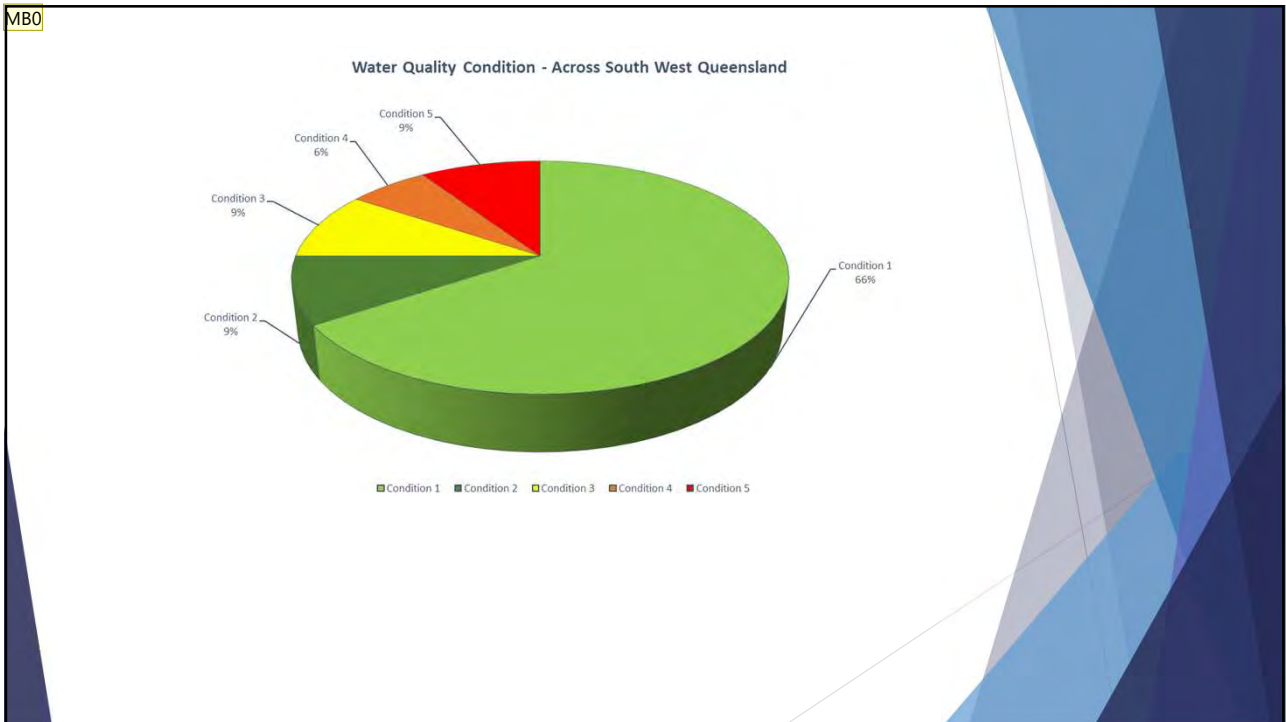
Matthew Brennan, 2024-04-07T23:29:25.153

MB2 Remove WTP?

Matthew Brennan, 2024-04-07T23:30:09.010



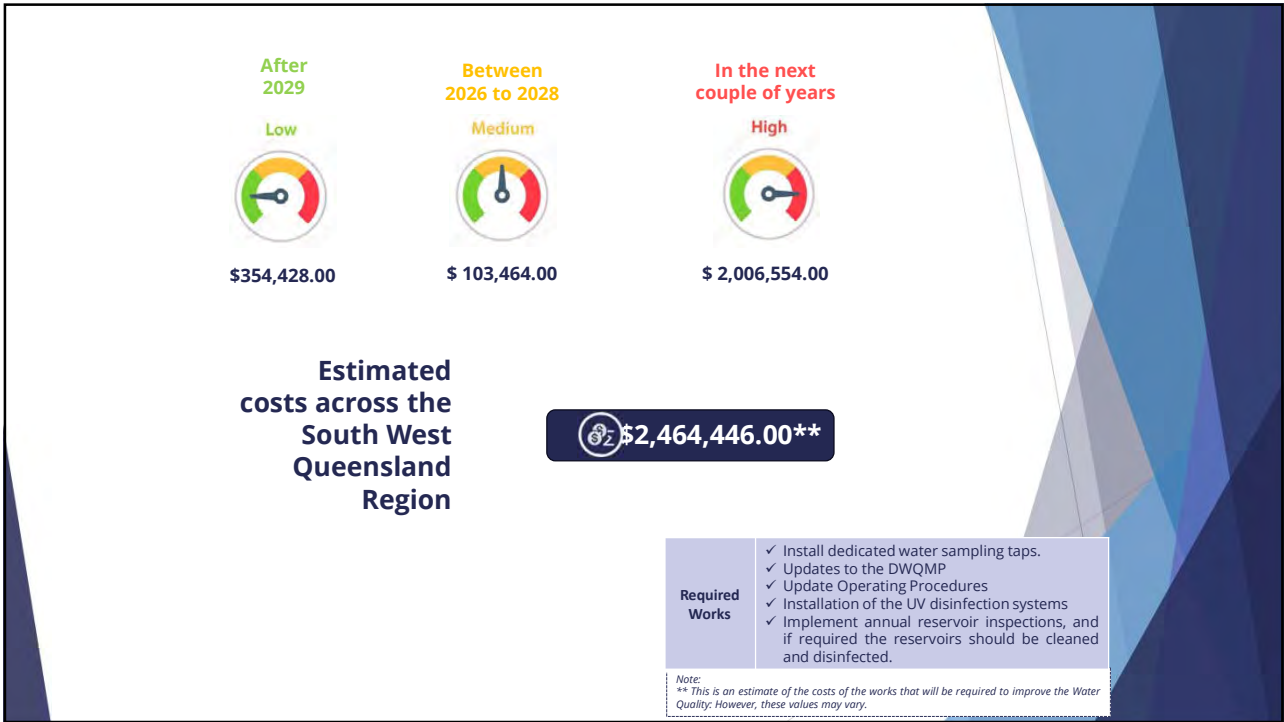
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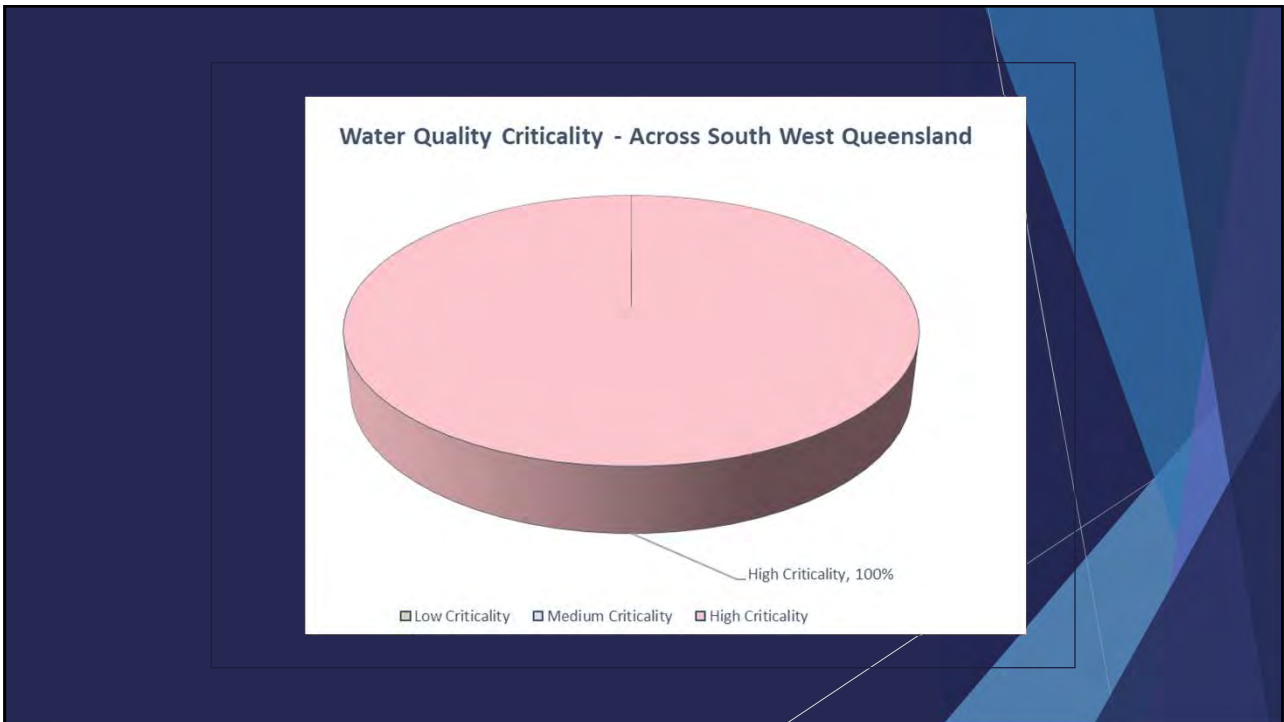
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MB0 Title

Matthew Brennan, 2024-04-07T23:30:31.125



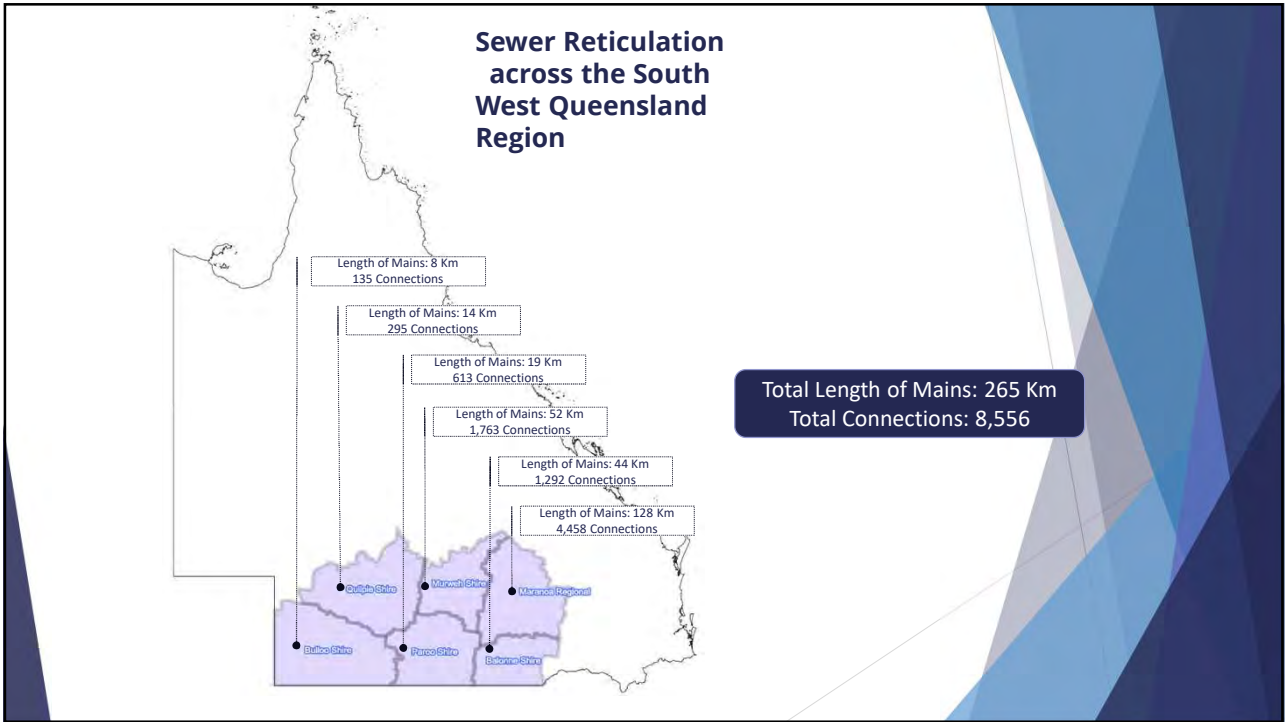
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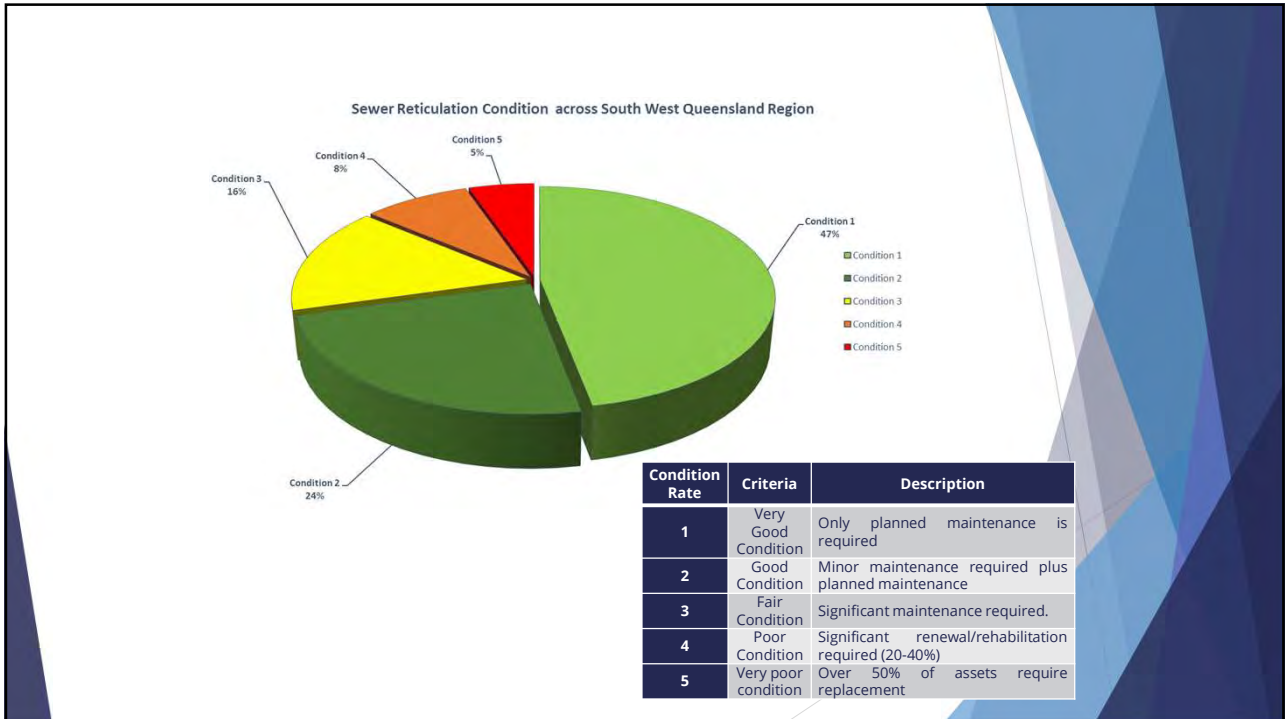
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Sewer lines may manifest various damages at different grades. The following are the most common defects affecting the South West Queensland Region sewer network.

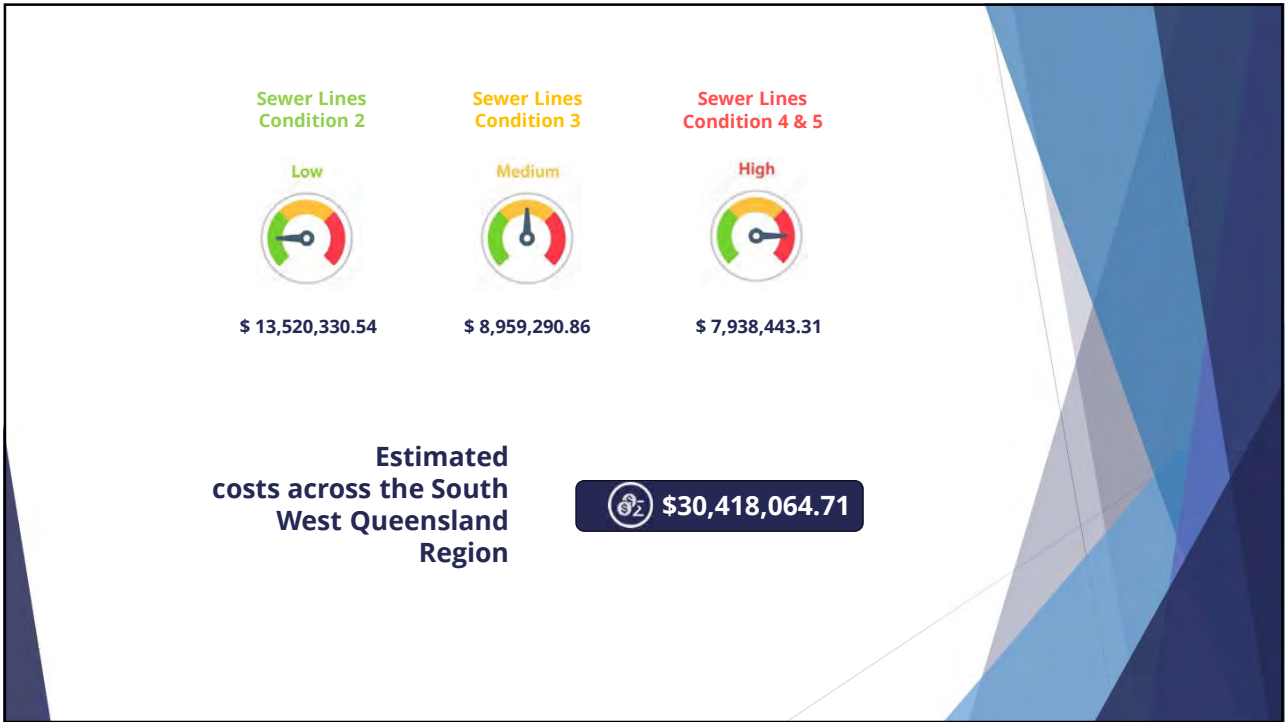
Structural Defects

- Breakages
- Surface damage
- Cracking (circumferential or longitudinal)
- Fracturing
- Root intrusions

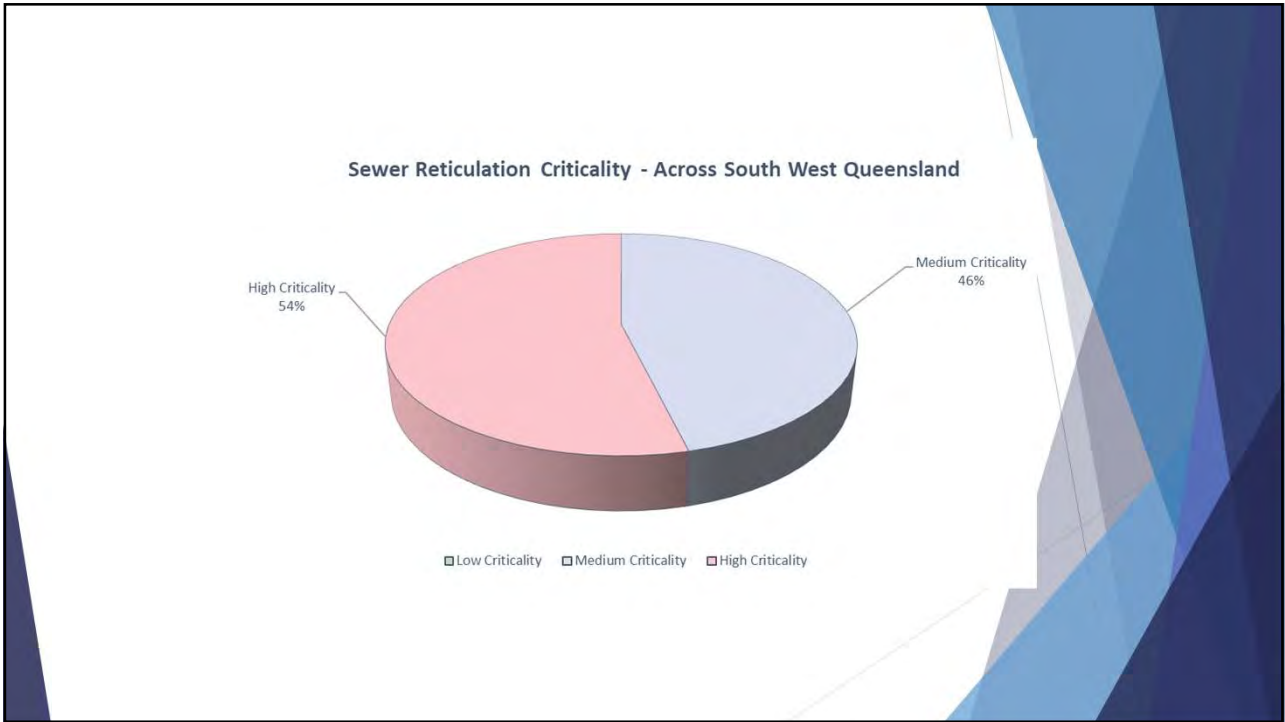
Service Defects

- Obstructions
- Defective Connections
- Defective Junctions
- Joint displaced (angular, longitudinal or radially)

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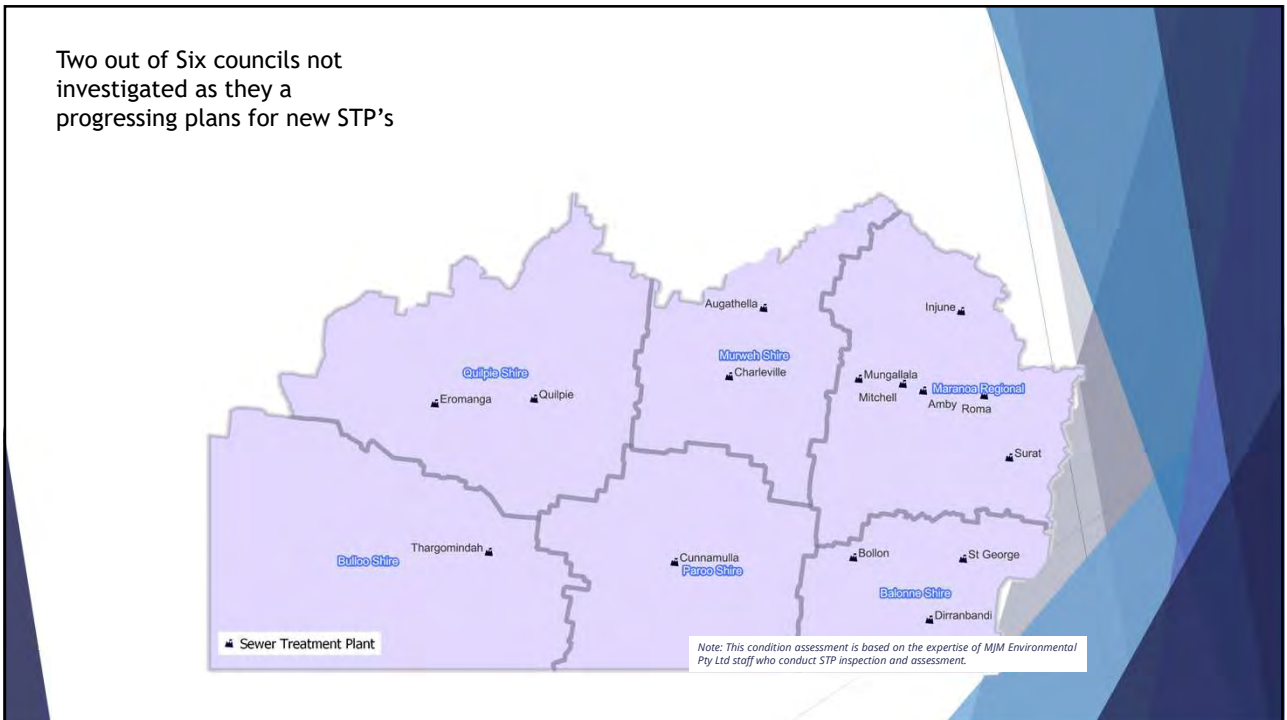


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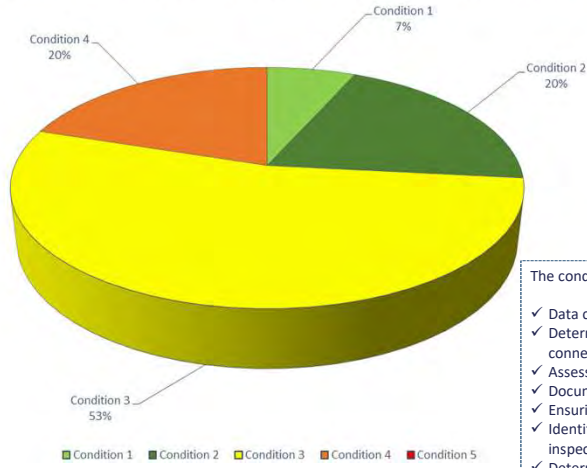
Sewage Treatment Plants

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Sewage Treatment Plant Condition - Across South West Queensland



The condition assessment of STP involves:

- ✓ Data collection and site visits,
- ✓ Determining plant capacity based on connected population and loadings,
- ✓ Assessing each asset's capacity,
- ✓ Documenting safety issues,
- ✓ Ensuring compliance with regulations
- ✓ Identifying condition issues through visual inspections, and
- ✓ Determining final plant capacity considering various factors.

Note: This condition assessment is based on the expertise of MJM Environmental Pty Ltd staff who conduct STP inspection and assessment.

After 2029



\$ 268,600.00

Between 2026 to 2028



\$ 951,600.00

In the next couple of years



\$ 18,109,040.00

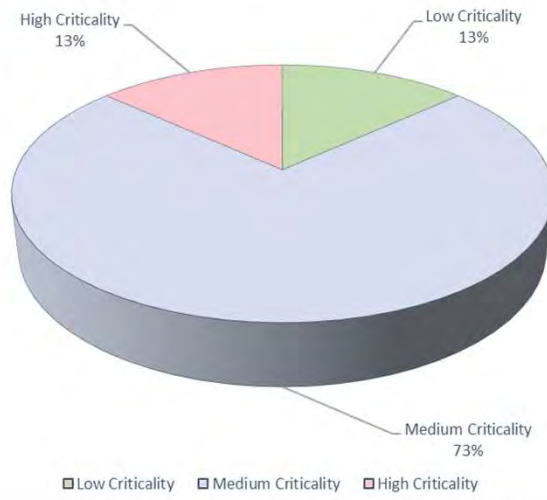
Estimated costs across the South West Queensland Region

\$ 19,329,240.00

Type of Works	Description
Renew	<ul style="list-style-type: none"> • The STP entirely • Supernatant pumps
Maintenance	<ul style="list-style-type: none"> • The Inlet tanks • Oxidation Ponds (Walls) • Sludge Lagoons • Digester pipework
Improve	<ul style="list-style-type: none"> • The manual handling • The management of residuals and handrails • The procedure and risk assessment
Implement	<ul style="list-style-type: none"> • Regular sampling of raw sewage at the Imhoff inlet. • Screening System • Irrigation System
Install	<ul style="list-style-type: none"> • Additional surface aerators

Notes:
1. These are generally the jobs required by STPs that are most repeated across the Region.

Sewage Treatment Plant Criticality - Across South West Queensland



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Sewer Pump Stations

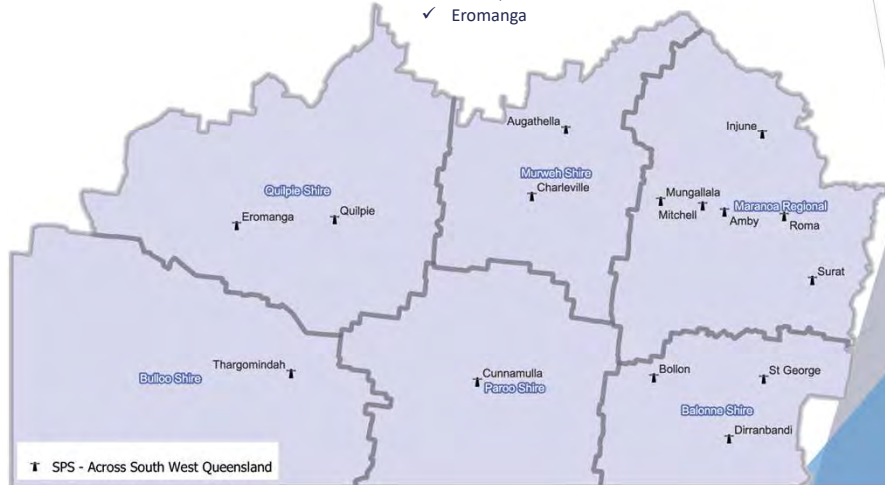
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Sewer Pump Stations

There are 67 sewer pump stations across Southwest Queensland. Among these are primary, minor, and secondary catchments.

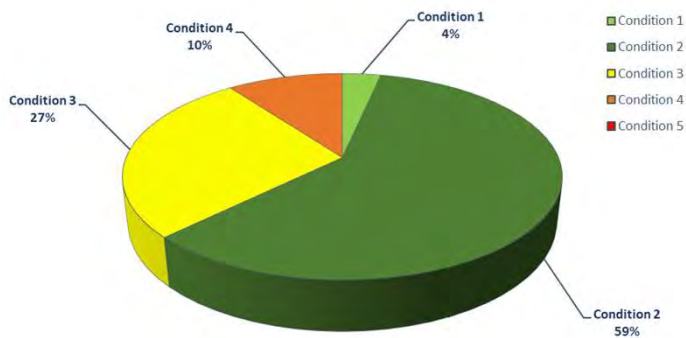
The following towns have a single SPS.

- ✓ Amby,
- ✓ Mungallala,
- ✓ Bollon, and
- ✓ Eromanga



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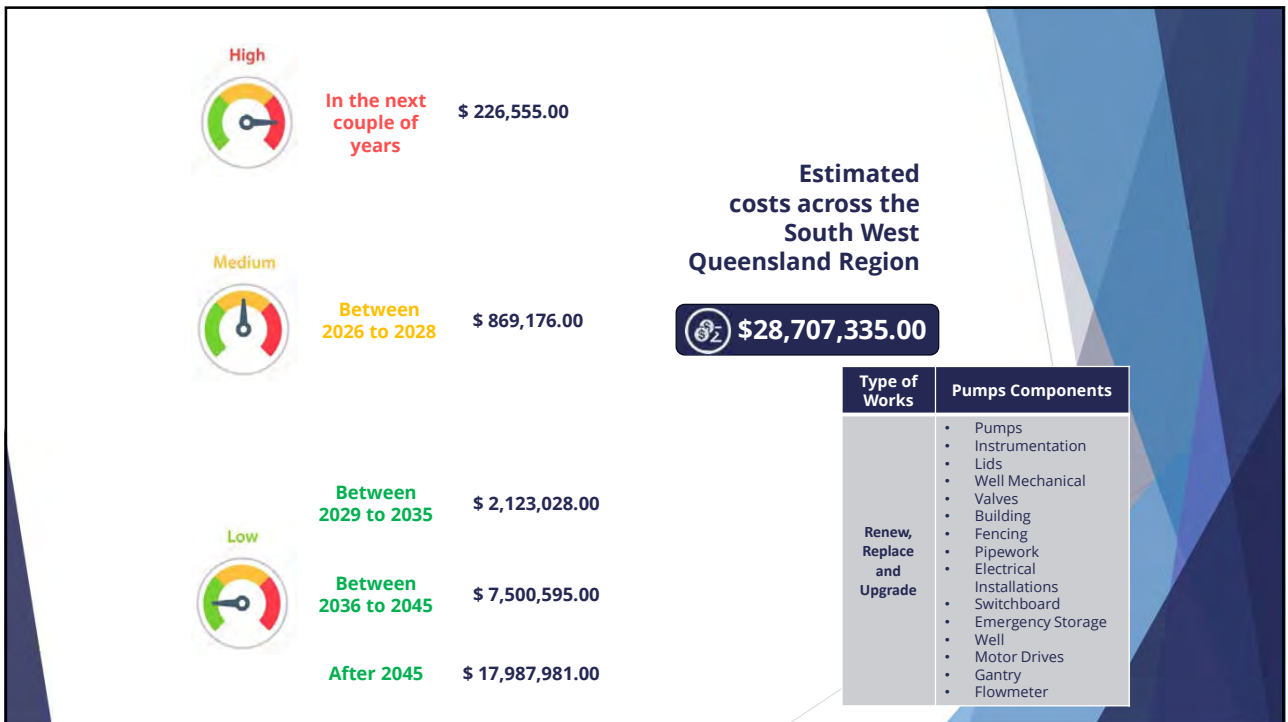
Sewer Pump Station Condition - Across South West Queensland



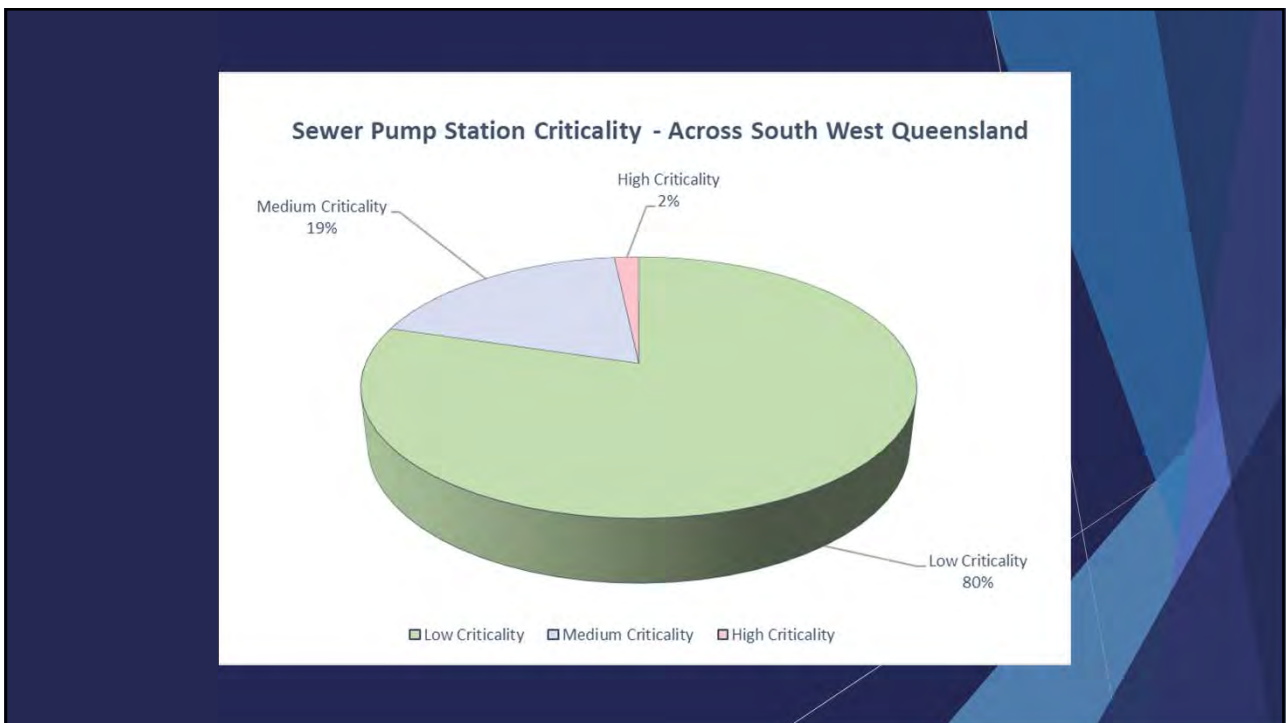
Condition Rate	Criteria	Description
1	Near new	Cosmetic defects only
2	Good Condition	Minor signs of deterioration
3	Fair Condition	Clear deterioration, and elevated maintenance requirements.
4	Poor Condition	Clear deterioration, high maintenance requirements. Renewal is required in the near future.
5	Very poor condition	Significant reduction in function.

- The condition assessment of STP involves:
- Comprehensive data collection and site visits
 - Ensuring compliance with regulations
 - Hydraulic performance
 - The capacity to handle significant tourist loads and wet weather events
 - Internal/external condition assessments

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Asset Risk

- The primary objective is to establish a Ten-Year Capital Program to assess the risk probability of assets across the South West Region.
- calculating the total score and risk range, assist with identifying and prioritizing the most critical projects.
- Assets with higher scores correspond to higher priority for maintenance and investment.

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Risk Rates and Ranks Matrix

Risk Level		Negligible	Low	Moderate	High	Major
Likelihood	Rare (0% - 20%) (Condition 1)	1	2	3	4	5
	Unlikely (20% - 40%) (Condition 2)	2	4	6	8	10
	Possible (40% - 60%) (Condition 3)	3	6	9	12	15
	Likely (60% - 80%) (Condition 4)	4	8	12	16	20
	Almost Certain (80% - 100%) (Condition 5)	5	10	15	20	>25
Risk level & rates		Negligible Risk 0 - 1	Low Risk 1.1 - 4	Moderate Risk 4.1 - 9	High Risk 9.1 - 16	Major Risk 16.1 - > 25

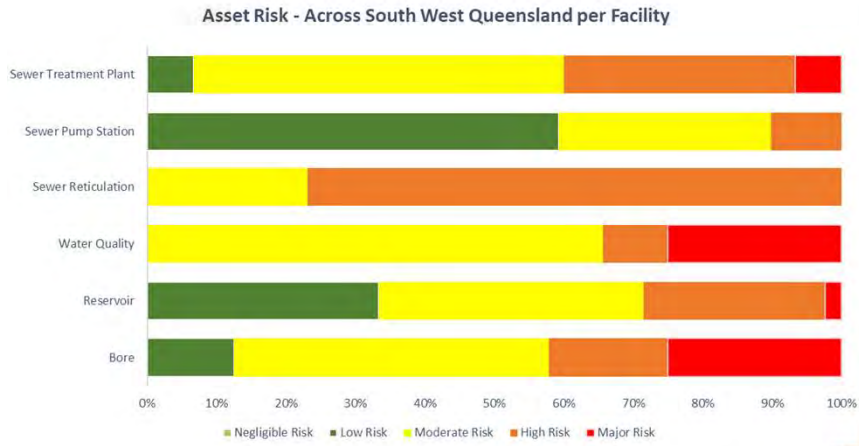
Risk = Criticality x Likelihood

The combined score ranges above show us the overall importance of a specific asset and help with prioritisation.

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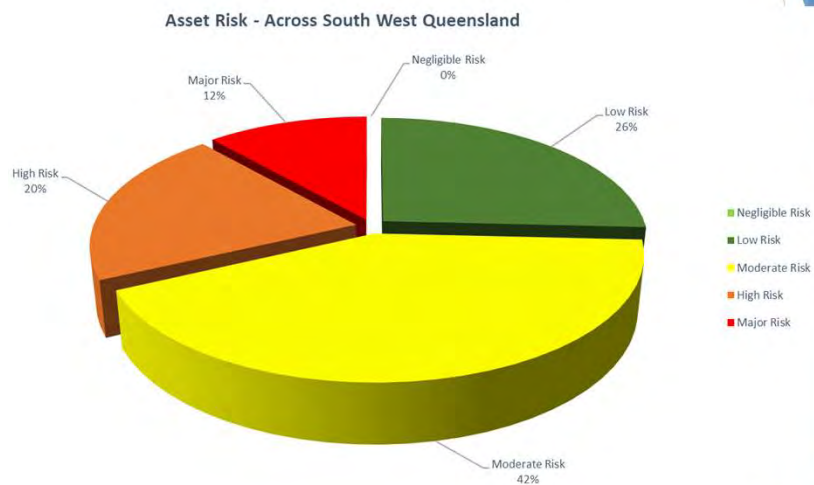
Results

Asset Class – Combined Risk



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Combined Water & Wastewater Asset Class – Combined Risk



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What's Next ?

- Based on calculated risk values Project are ranked
- Priority projects are identified and form part of a 10 year regional Plan
- Funding requirements are highlighted
- All asset data/condition assessments are collated with the report and presented to the alliance members.

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Questions?

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