

**PROTERRA  
GROUP**



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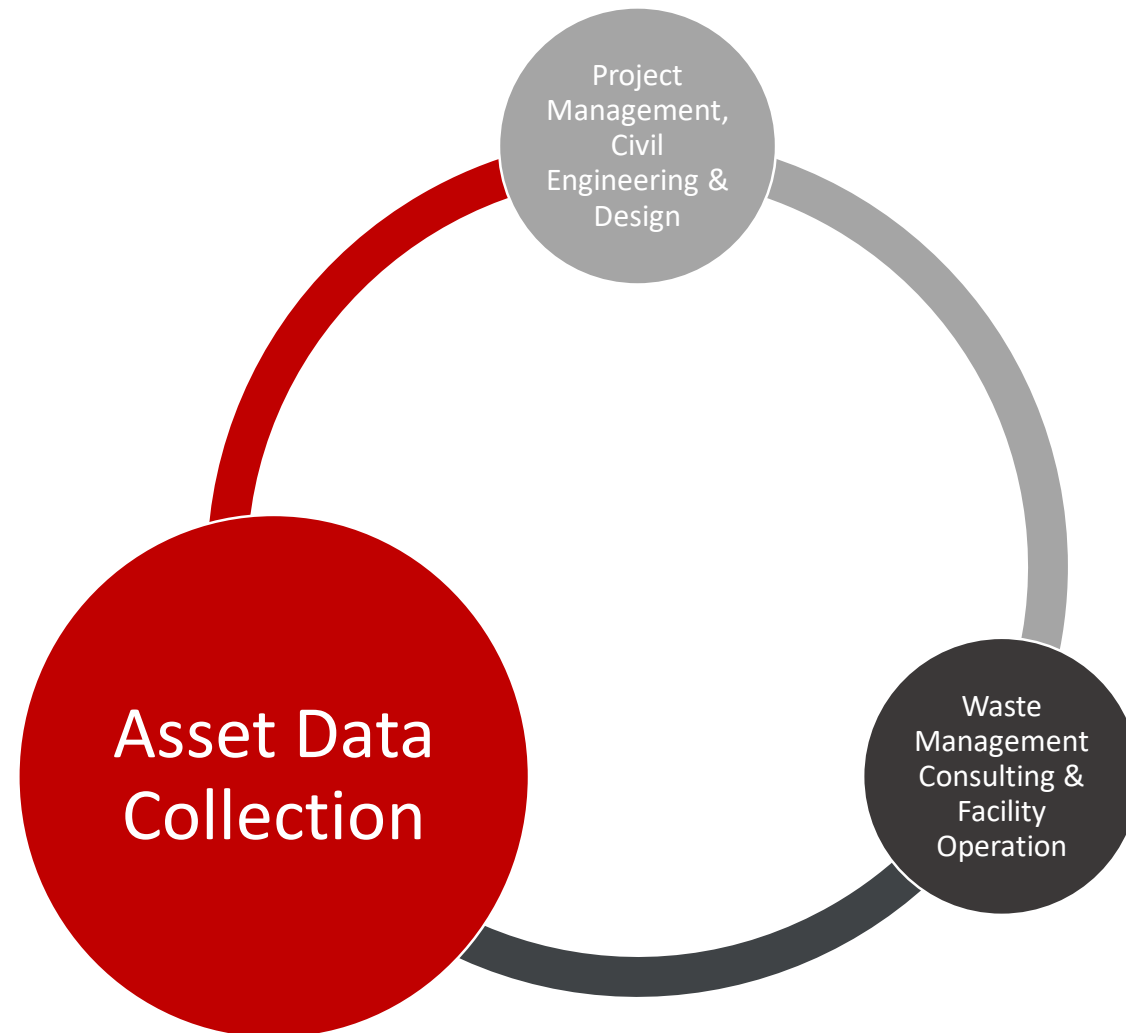
# A CONTRACTOR'S EXPERIENCES IN STORMWATER ASSET DATA COLLECTION FOR AUSTRALIAN COUNCIL'S

Presented by Sean Rice

# WHO ARE PROTERRA GROUP?

[www.proterrargroup.com.au](http://www.proterrargroup.com.au)







Data capture and condition assessment of stormwater, cross drainage and sewer assets using Quickview and CCTV technology.









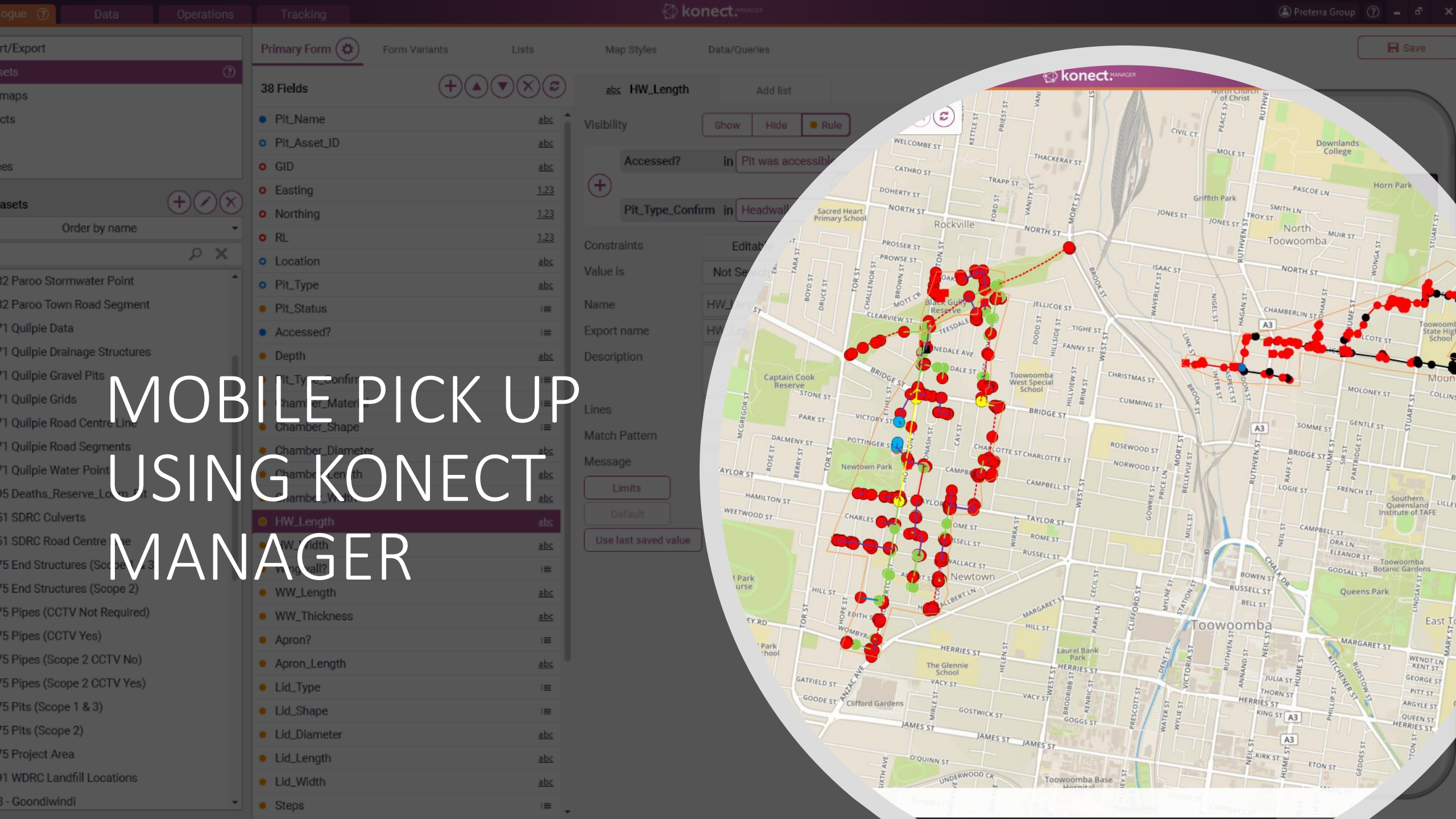
# RECORDING DATA

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MOBILE PICK UP  
USING KONECT  
MANAGER



SURVEY  
PICK UP







# CONDITION ASSESSMENT

Grade	Condition	Description	Response	Residual Life
0	Not Rated	Unable to be rated, may no longer exist or removed from plans.	Response will vary subject to circumstances	N/A
1	Very Good	Structural: sound physical condition. Insignificant deterioration. Asset likely to perform adequately without major work for 25 years or more.  Serviceability: no or insignificant loss of hydraulic capacity.	No immediate action required.	60% to 100%
2	Good	Structural: acceptable physical condition; minor deterioration / minor defects evident.  Serviceability: minor loss of hydraulic performance.	No immediate action required other than possible cleaning.	35% to 60%
3	Fair	Structural: moderate to significant deterioration evident. Minor components or isolated sections of not asset need replacement or repair now but not affecting short term structural integrity.  Serviceability: moderate loss of hydraulic performance but asset still functions safely at adequate level of service.	Take action as appropriate to address defects, if necessary, cleaning, silt removal, root cutting.	20% to 35%
4	Poor	Structural: serious deterioration and significant defects evident affecting structural integrity.  Serviceability: significant loss of hydraulic performance. Substantial work required in short-term to keep asset serviceable.	Take immediate action as appropriate to address defects. Immediately undertake risk assessment and further investigate options.	10% to 20%
5	Very Poor	Structural: failed or failure imminent. Serviceability: health and safety hazards exist which present a possible risk to public safety or asset cannot be serviced / operated with out risk to personnel.	Take immediate action as appropriate to address the defects. Immediately undertake risk assessment and further investigate options.	0 % to 10%

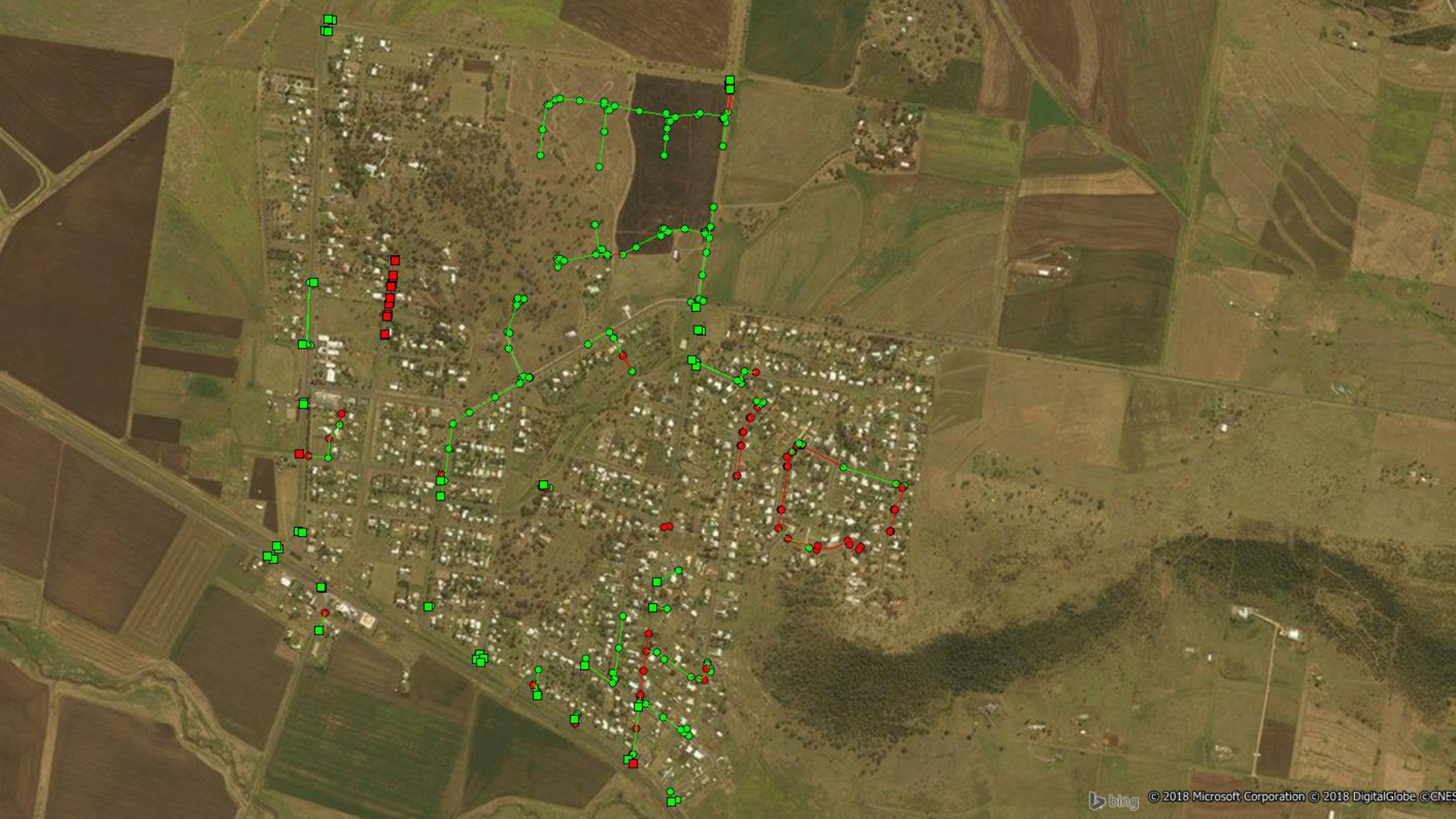


# DATA VALIDATION & SUBMISSION TO THE CLIENT

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GISID	LocationDescription	Structure_Type	SL	IL	Depth	InletType	LintellLength	LintelConstruction	Diameter	Length	Width	LidType	Material	ChamberShape	InletConfig
swPIT548972	Road	Pit	498.743	496.943	1800	OTHER - LIL Gully	2.4	Precast	1050	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Right
swPIT549128	Road	Pit	499.924	498.524	1400	OTHER - LIL Gully	3.6	Precast	1050	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Centre
swPIT549121	Road	Pit	502.303	500.753	1550	OTHER - LIL Gully	2.4	Precast	1050	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Right
newPIT003192UNK	Road	Pit	520.087	518.827	1260	OTHER - LIL Gully	2.4	Precast	1050	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Left
newPIT003193UNK	Road	Pit	515.886	514.586	1300	OTHER - LIL Gully	2.4	Precast	1050	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Left
swPIT549036	Road	Pit	510.993	507.393	3600	OTHER - LIL Gully	2.4	Precast	1800	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Left
swPIT581764	Road	Pit	528.476	Unknown	Unknown	OTHER - LIL Gully	2.4	Precast	900	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Right
newPIT003195UNK	Road	Pit	533.933	532.503	1430	OTHER - LIL Gully	2.7	Insitu	900	Not Applicable	Not Applicable	Cast Iron Grate	Concrete	Circular	Right
newPIT003196UNK	Road	Pit	532.574	531.599	975	OTHER - LIL Gully	2.7	Insitu	900	Not Applicable	Not Applicable	Cast Iron Grate	Concrete	Circular	Right
newPIT003197UNK	Road	Pit	532.439	531.559	880	OTHER - LIL Gully	2.7	Insitu	900	Not Applicable	Not Applicable	Cast Iron Grate	Concrete	Circular	Right
newPIT003198UNK	Road	Pit	532.48	531.6	880	OTHER - LIL Gully	2.7	Insitu	900	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Left
swPIT173847	Road	Pit	528.249	527.069	1180	OTHER - LIL Gully	2.4	Precast	Not Applicable	900	600	Galvanised Steel Grate	Concrete	Rectangular	Left
swPIT173848	Road	Pit	527.81	526.01	1800	OTHER - LIL Gully	2.4	Precast	Not Applicable	900	600	Galvanised Steel Grate	Concrete	Rectangular	Left
swPIT173849	Road	Pit	526.99	525.15	1840	OTHER - LIL Gully	2.4	Precast	Not Applicable	900	780	Galvanised Steel Grate	Concrete	Rectangular	Left
swPIT185676	Road	Pit	525.533	524.303	1230	OTHER - LIL Gully	2.4	Precast	Not Applicable	1200	600	Galvanised Steel Grate	Concrete	Rectangular	Left
swPIT185675	Road	Manhole	525.342	Unknown	Unknown	Not Applicable	Not Applicable	Not Applicable	Unknown	Unknown	Unknown	Circular Cast Iron Lid	Unknown	Unknown	Unknown
swPIT581759	Road	Manhole	524.84	Unknown	Unknown	Not Applicable	Not Applicable	Not Applicable	Unknown	Unknown	Unknown	Circular Cast Iron Lid	Unknown	Unknown	Unknown
swPIT581757	Road	Manhole	523.01	Unknown	Unknown	Not Applicable	Not Applicable	Not Applicable	Unknown	Unknown	Unknown	Circular Cast Iron Lid	Unknown	Unknown	Unknown
swPIT581758	Road	Pit	523	520.95	2050	OTHER - LIL Gully	2.4	Precast	1050	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Left
swPIT581762	Footpath	Pit	520.964	519.614	1350	OTHER - Field Inlet Type 1	Not Applicable	Not Applicable	Unknown	Unknown	Unknown	Galvanised Steel Grate	Unknown	Unknown	Unknown
swPIT179912	Property - No Easement	Pit	484.381	483.041	1340	OTHER - Field Inlet Type 1	Not Applicable	Not Applicable	900	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Not Applicable
swPIT179915	Property - No Easement	Pit	481.434	479.994	1440	OTHER - Field Inlet Type 1	Not Applicable	Not Applicable	900	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Other
swPIT179914	Property - No Easement	Pit	480.53	479.41	1120	OTHER - Field Inlet Type 1	Not Applicable	Not Applicable	900	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Not Applicable
swPIT185290	Footpath	Unknown	498.688	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown	Unknown
swPIT179929	Road	Pit	498.289	496.829	1460	OTHER - LIL Gully	3.6	Precast	900	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Left
swPIT179928	Road	Pit	498.212	496.212	2000	OTHER - LIL Gully	3.6	Precast	Not Applicable	1050	1050	Galvanised Steel Grate	Concrete	Rectangular	Right
swPIT179930	Road	Pit	496.533	494.533	2000	OTHER - LIL Gully	3.6	Precast	Not Applicable	1050	1050	Galvanised Steel Grate	Concrete	Rectangular	Right
swPIT179932	Road	Pit	495.12	493.69	1430	OTHER - LIL Gully	2.4	Precast	900	Not Applicable	Not Applicable	Galvanised Steel Grate	Concrete	Circular	Left
swPIT179931	Road	Pit	495.066	493.106	1960	OTHER - LIL Gully	3.6	Precast	Not Applicable	1050	1050	Galvanised Steel Grate	Concrete	Rectangular	Right
swPIT179933	Road	Pit	493.353	491.383	1970	OTHER - LIL Gully	3.6	Precast	Not Applicable	1050	1050	Galvanised Steel Grate	Concrete	Rectangular	Right
swPIT179934	Road	Pit	492.637	491.117	1520	OTHER - LIL Gully	2.4	Precast	Not Applicable	1050	1050	Galvanised Steel Grate	Concrete	Rectangular	Right

1	<b>GISID</b>	<b>StruCond</b>	<b>ServCond</b>	<b>DisMod1</b>	<b>Comments1</b>	<b>StructureSurveyStat</b>	<b>StructureAccessibility</b>	<b>Update_User</b>	<b>Update_Date</b>	<b>Hyperlink</b>
2	newEST003020UNK	3	2	Surface damage	The wood is rotting away.	Surveyed	Accessed	Proterra Group	24-08-17	<a href="#">newEST003020UNK</a>
3	newEST003021UNK	2	2	Breaking	There is minor breaking on top of the headwall.	Surveyed	Accessed	Proterra Group	24-08-17	<a href="#">newEST003021UNK</a>
4	newEST003022UNK	2	1	Surface damage	There is minor surface damage at the top of the headwall.	Surveyed	Accessed	Proterra Group	29-08-17	<a href="#">newEST003022UNK</a>
5	newEST003023UNK	2	2	Cracking	There is a minor vertical crack on the headwall.	Surveyed	Accessed	Proterra Group	24-08-17	<a href="#">newEST003023UNK</a>
6	newEST003024UNK	2	2	None		Surveyed	Accessed	Proterra Group	24-08-17	<a href="#">newEST003024UNK</a>
7	newEST003025UNK	2	2	None		Surveyed	Accessed	Proterra Group	24-08-17	<a href="#">newEST003025UNK</a>
8	newEST003026UNK	2	1	None		Surveyed	Accessed	Proterra Group	24-08-17	<a href="#">newEST003026UNK</a>
9	newEST003027UNK	3	2	Cracking	There is minor cracking on headwall.	Surveyed	Accessed	Proterra Group	24-08-17	<a href="#">newEST003027UNK</a>
10	newEST003028UNK	2	2	Cracking	There is minor cracking on headwall.	Surveyed	Accessed	Proterra Group	24-08-17	<a href="#">newEST003028UNK</a>
11	newEST003029UNK	1	1	None		Surveyed	Accessed	Proterra Group	25-08-17	<a href="#">newEST003029UNK</a>
12	newEST003030UNK	1	1	None		Surveyed	Accessed	Proterra Group	25-08-17	<a href="#">newEST003030UNK</a>
13	newEST003031UNK	2	2	Cracking	There is a major vertical crack on headwall.	Surveyed	Accessed	Proterra Group	25-08-17	<a href="#">newEST003031UNK</a>
14	newEST003032UNK	2	1	Cracking	There is a minor vertical crack on headwall	Surveyed	Accessed	Proterra Group	25-08-17	<a href="#">newEST003032UNK</a>
15	newEST003338UNK	2	2	Siltation	There is minor silt and overgrowth at inlet.	Surveyed	Accessed	Proterra Group	19-10-17	<a href="#">newEST003338UNK</a>
16	newEST003339UNK	2	2	Cracking	There is minor cracking on headwall.	Surveyed	Accessed	Proterra Group	19-10-17	<a href="#">newEST003339UNK</a>
17	newEST003340UNK	2	1	Cracking	There is minor cracking on the headwall.	Surveyed	Accessed	Proterra Group	27-10-17	<a href="#">newEST003340UNK</a>
18	newEST003341UNK	1	2	Debris	There is minor water ponding and debris at the outlet.	Surveyed	Accessed	Proterra Group	27-10-17	<a href="#">newEST003341UNK</a>
19	newEST003342UNK	1	1	None		Surveyed	Accessed	Proterra Group	27-10-17	<a href="#">newEST003342UNK</a>
20	newEST003343UNK	1	2	None		Surveyed	Accessed	Proterra Group	27-10-17	<a href="#">newEST003343UNK</a>
21	newEST003344UNK	1	1	None		Surveyed	Accessed	Proterra Group	30-10-17	<a href="#">newEST003344UNK</a>
22	newEST003345UNK	2	1	None		Surveyed	Accessed	Proterra Group	03-11-17	<a href="#">newEST003345UNK</a>
23	newEST003346UNK	3	1	Breaking	The headwall is broken in half.	Surveyed	Accessed	Proterra Group	03-11-17	<a href="#">newEST003346UNK</a>
24	newEST003347UNK	1	1	None		Surveyed	Accessed	Proterra Group	03-11-17	<a href="#">newEST003347UNK</a>
25	newEST003348UNK	5	3	Breaking	Structure is at total end of life.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003348UNK</a>
26	newEST003349UNK	2	1	None		Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003349UNK</a>
27	newEST003350UNK	2	3	Siltation	There is a minor silt build up at the inlet.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003350UNK</a>
28	newEST003351UNK	2	4	Siltation	There is a major silt build up at the outlet.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003351UNK</a>
29	newEST003352UNK	3	2	Breaking	There is breaking along the top of the headwall.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003352UNK</a>
30	newEST003353UNK	2	2	Cracking	There is minor cracking on the headwall.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003353UNK</a>
31	newEST003354UNK	2	3	Surface damage	There is minor surface damage on the headwall.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003354UNK</a>
32	newEST003355UNK	2	2	Surface damage	There is minor surface damage on the headwall.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003355UNK</a>
33	newEST003356UNK	2	3	Siltation	There is minor silt / overgrowth at the outlet.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003356UNK</a>
34	newEST003357UNK	2	2	Siltation	There is minor silt / overgrowth at the inlet.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003357UNK</a>
35	newEST003358UNK	2	2	Siltation	There is minor silt / overgrowth at the outlet.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003358UNK</a>
36	newEST003359UNK	2	1	None		Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003359UNK</a>
37	newEST003360UNK	2	2	Surface damage	There is minor surface damage on the headwall.	Surveyed	Accessed	Proterra Group	06-11-17	<a href="#">newEST003360UNK</a>







# PRELIMINARY (QUICKVIEW) & SECONDARY (CCTV) INSPECTIONS

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2018/02/13 08:45:11

AF:ON

newPIP006 swPIT17699 newPIT0060 Downstream Avondale S  
300 Reinforced Con Circular TDP06-17/18 CC 16/02/2018



16.02.2018

-16.62 %  
0.01 m





Photo: swPIP161301\_12022018\_123233\_A.JPG

108.44m, Steel reinforcement is visible with little or no corrosion evident , Obstruction: <5%, at 12 o'clock



Photo: swPIP161304\_12022018\_113552\_A.JPG

18.71m, Breaking, some pieces are missing, length of break 300 , from 1 to 3 o'clock





Challenges



# FAILURE TO COMMUNCIATE

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## DAILY PRE START

Project Name: .....

Project No.: .....

Supervisor: .....

Date: .....

### 1. CONCERNS FROM PREVIOUS DAY:

- ☐ Quality
- ☐ Safety
- ☐ Environmental
- ☐ Time
- ☐ Community

### 2. TODAY'S WORK: (Who, What, When, Where)

☐ Complete Plant & Machinery Pre-Starts

- ☐ First Aiders:
- ☐ Evacuation Procedures:

☐ Today's Work Requirements:

- |   |   |
|---|---|
| <input type="checkbox"/> Personnel job tasks        | <input type="checkbox"/> PPE Requirements     |
| <input type="checkbox"/> Spotters / observers       | <input type="checkbox"/> Competency           |
| <input type="checkbox"/> Plant requirements         | <input type="checkbox"/> Excavation           |
| <input type="checkbox"/> Traffic Control Procedures | <input type="checkbox"/> Location of services |

### 3. SWMS, RISK ASSESSMENTS AND SAFE WORK INSTRUCTIONS TO BE USED ONSITE TODAY

☐ Personnel are signed onto relevant SWMS

☐ Plant Movement(s):

☐ Risk assessments to be actioned:

☐ Review SWMS No

☐ Review SWMS No

### 4. NOTIFICATION OF ANY CHANGES AFFECTING SITE PERSONNEL

- |  |   |
|--|---|
| <input type="checkbox"/> Site Hazards            | <input type="checkbox"/> Safety                 |
| <input type="checkbox"/> Training                | <input type="checkbox"/> Drug & Alcohol Testing |
| <input type="checkbox"/> Other sites information | <input type="checkbox"/> New Plant & Machinery  |

### 5. IS THERE ANY CHANGE WHICH COULD AFFECT THE DOCUMENTED PROCEDURES?

- |  |  |
|--|--|
| <input type="checkbox"/> Be aware of all hazards     | <input type="checkbox"/> Overhead Services     |
| <input type="checkbox"/> Slips, Trips & Falls        | <input type="checkbox"/> Underground Services  |
| <input type="checkbox"/> Manual Tasks                | <input type="checkbox"/> Environmental factors |
| <input type="checkbox"/> Access/Traffic arrangements | <input type="checkbox"/> Housekeeping          |
| <input type="checkbox"/> Different personnel/plant   | <input type="checkbox"/> Changed methodology   |
| <input type="checkbox"/> Any other changes           |  |

#	Corrective / Preventive Action	Assigned to	Target Date	Complete date



## PG-SWMS-001 WORKING ON OR ADJACENT TO ROAD OR RAILWAY

Organisational details:  
Activity: (type of work)

Proterra Group

ABN:

59680055106

Data collection on stormwater assets.

SWMS prepared & monitored by:

J. Burchett

S. Rice

Location of Work:

Warwick, QLD

Principal Contractor (PC):

Southern Downs Regional Council

### INTRODUCTION

This Safe Work Method Statement details how specific risks associated with working on or adjacent to road or railway are to be managed. It outlines the common risks and dangers associated with this work and how to best prevent them. The control measures listed in this SWMS must be implemented on site.

### KEY SAFETY MESSAGES

#### ROADS:

- For Main Roads - must get relevant permission and approvals from Department.
- For private roads or access (e.g. shopping centres) seek approval from relevant authorities.
- For major Council roads - must get permission and approval from relevant Council.
- During set up and dismantling, operate flashing lights of work vehicle.
- Employees or other persons working on Proterra worksites, operating in low light or at night must wear reflective vests.
- Prepared Traffic Management Plan must be in compliance with the MUTCD - Part 3 - 2010.
- Refer to page 3 for details.

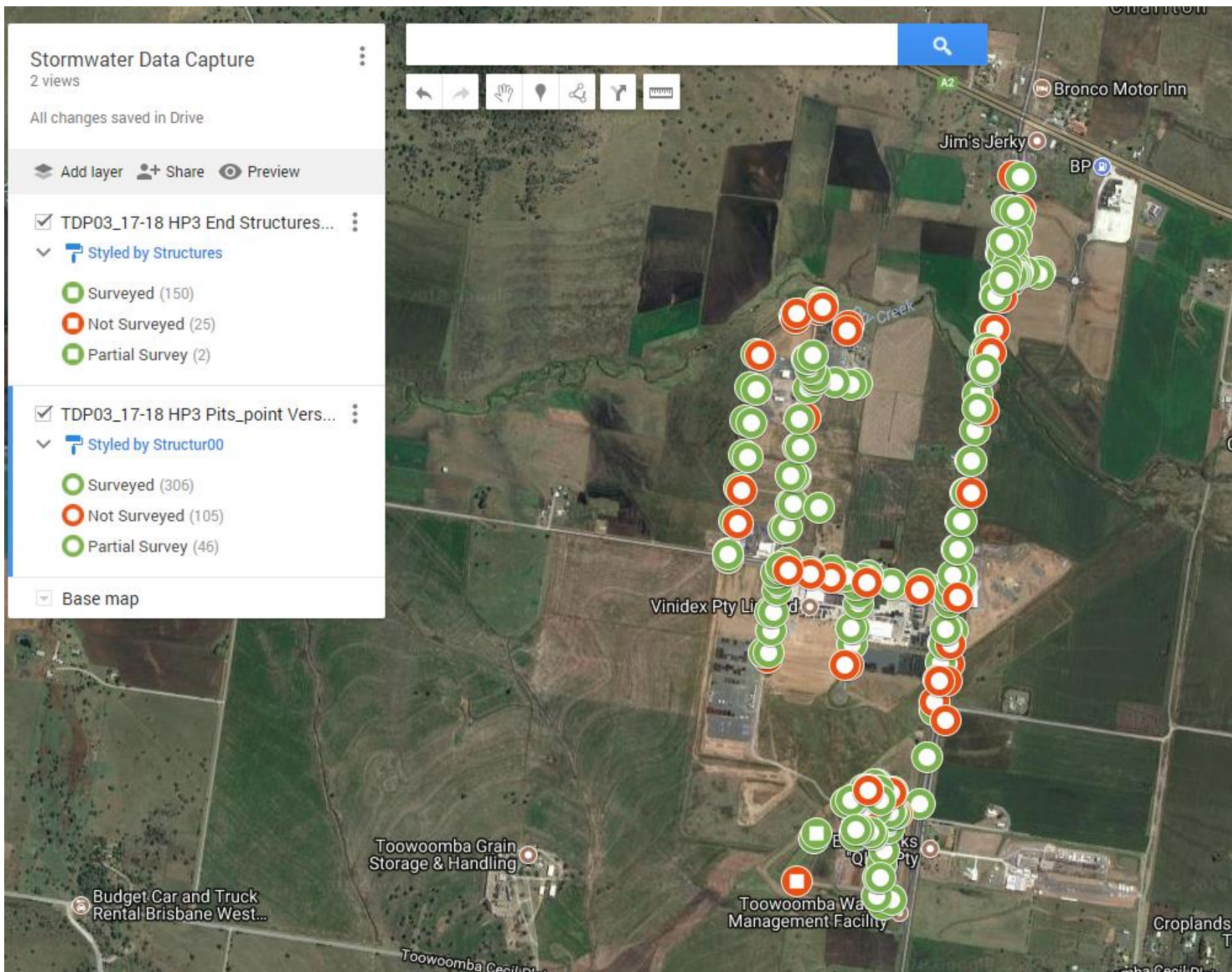
#### RAIL:

- For planned and responsive work contact the Railway Authority before work begins within the authority's boundaries.
- Do not start until permission is granted from controlling authority.
- All work must conform to controlling authority's guidelines.
- No employee or other persons on Proterra worksites are permitted access to the site unless they receive a valid Tracksides Safety Induction issued by Queensland Rail.






**It's Hold Point Data  
Time**





**Catchment and inspection  
period**



**Number of stormwater  
elements inspected**



**Wellcamp:**  
Inspection Period: 19/10/2017-NOW

Number of stormwater elements inspected:					As per Technical Specification		
Type	Accessed (Surveyed)	Accessed (Partial Survey)	Not Accessed (Not Surveyed)	TOTAL	Assets in Current GIS	Indicative / LIDAR	Variance
End Structures (EST)	30	-	3	33	33	5	-5
Pits (PIT)	112	3	18	133	191	16	-74
Pipes (PIP)	143 (4397m)	10 (115m)	6 (107m)	159 (4619m)	N/A	N/A	N/A

**North Connection:**  
Inspection Period: 24/08/2017-25/08/2017

Number of stormwater elements inspected:					As per Technical Specification		
Type	Accessed (Surveyed)	Accessed (Partial Survey)	Not Accessed (Not Surveyed)	TOTAL	Assets in Current GIS	Indicative / LIDAR	Variance
End Structures (EST)	13	-	2	15	2	22	-7
Pits (PIT)	-	-	-	-		1	-1
Pipes (PIP)	8 (104m)	-	-	8 (104m)	N/A	N/A	N/A

**Comparison of assets inspected  
vs Council scope**







Structure ID: newPIT003029UNK Location: -27.493333, 151.893436  
Page Name: newPIT003029UNK\_05 Date:29-Aug-17 Time:10:27 AM



Location: -27.494011, 151.899956  
Image Name: newPIT003029UNK\_02 Date:01-Sep-17 Time:11:02 AM



Image Name: newPIT003029UNK\_02 Date:01-Sep-17 Time:11:02 AM  
Location: -27.494011, 151.899956



Image Name: newPIT003029UNK\_02 Date:01-Sep-17 Time:11:02 AM  
Location: -27.494011, 151.899956



Image Name: newPIT003029UNK\_02 Date:01-Sep-17 Time:11:02 AM  
Location: -27.494011, 151.899956



Image Name: newPIT003029UNK\_02 Date:01-Sep-17 Time:11:02 AM  
Location: -27.494011, 151.899956



# ENTRY TO PRIVATE PROPERTIES AND ENGAGING WITH THE PUBLIC

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TO THE HOUSEHOLDER:

### ACCESS TO SEWER MANHOLE

Proterra Group is currently conducting sewer manhole inspections on behalf of the Mackay Regional Council. This inspection process enables Council to verify the condition of their sewage network and to plan upgrades / repairs to improve the service to customers.

We wish to advise that we will require access to the sewer manhole at your property to conduct these inspections. Our anticipated inspection dates are weekdays between the **19<sup>th</sup> of January and 16<sup>th</sup> February 2017**.

If this is not suitable, a mutually agreed time can be arranged. You are not required to be home during this inspection.

Whilst the inspection is underway the manhole will be opened and the lid will be replaced. This basically involves lifting the lid off (including gain access), conducting a visual assessment of the interior of the manhole and taking a number of photos.

As a safety precaution, our staff will not leave the site whilst there are a number of high visibility cones in place drawing attention to the site.

Thank you very much for your cooperation and if you have any questions please contact us anytime. We would be more than happy to run you through the process and let you know in detail what we will be doing:

Project Manager: Shelley Burchett  
Phone: 0419 279 383



July – December 2017

Dear Sir / Madam

### Stormwater Inspection Project

Toowoomba Regional Council (TRC) is currently conducting a comprehensive project team undertaking a comprehensive inspection of the stormwater network.

The information collected will assist Council in planning future works.

Field work commenced in July 2017 and will continue until the end of the year. Duties involve the lifting and reinstatement of manhole covers.

TRC Contractors can be clearly identified by their high visibility clothing.

Should you have any queries please contact Shelley Burchett on 0419 279 383.

Rich traditions. Bold ambitions.



TO THE HOUSEHOLDER:

### ACCESS TO SEWER MANHOLE

As per our previous letter, Proterra Group is currently conducting sewer manhole inspections on behalf of the Mackay Regional Council. This inspection process enables Council to verify the condition of their sewage network and to plan upgrades / repairs to improve the service to customers.

Unfortunately, today at \_\_\_\_\_ we could not gain access to your site due to \_\_\_\_\_.

A representative from Mackay Regional Council will be in contact to organise a suitable time for the inspection.

Thank you very much for your cooperation and if you have any questions please contact us anytime. We would be more than happy to run you through the process and let you know in detail what we will be doing:

Project Manager: Shelley Burchett  
Phone: 0419 279 383

# ID CARDS

- Worn at all times;
- Identify Proterra Group as a Contractor for Council;
- Contain a current colour photo of the card holder;
- Are valid for a period not exceeding the contract period;
- Returned once site works are complete.





**HOURLY RATE, PER M, PER NODE, PER PIPE???**

**DO WE NEED TO INCLUDE PIPE CLEANING?**





TO ENGINEER, OR NOT TO  
ENGINEER?

---

## WHAT ABOUT LABOURERS? ARE THEY ANY BETTER?

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WE USE SPECIALIST DATA COLLECTORS AND PROTERRA PITS  
TRAINING PROGRAM.

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# THE UNFORESEEABLE

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A dramatic, dark, and cloudy sky, likely a storm brewing, serves as the background for the text. The clouds are heavy and layered, with some light breaking through near the horizon.

**Bad Weather**

**Mobile Data Blackspots**

**Powerlines**

**Large dense foliage trees**

**Old infrastructure**

**Parked Cars**

**Sick days**

**A Circus**



*Shaping New Dimensions*





## HOW CAN WE HELP YOU?

- A free one hour coffee catchup to help you scope your project.
- No obligation Quotation for data collection with different options and pricing
- Example tender / contract documentation
- Share knowledge / learnings



Meet our Assets Manager:  
**SHELLEY BURCHETT**  
0419 279 383  
[shelley.burchett@proterragroup.com.au](mailto:shelley.burchett@proterragroup.com.au)

Meet our Managing Director:  
**SEAN RICE**  
0488 715 700  
[sean.rice@proterragroup.com.au](mailto:sean.rice@proterragroup.com.au)