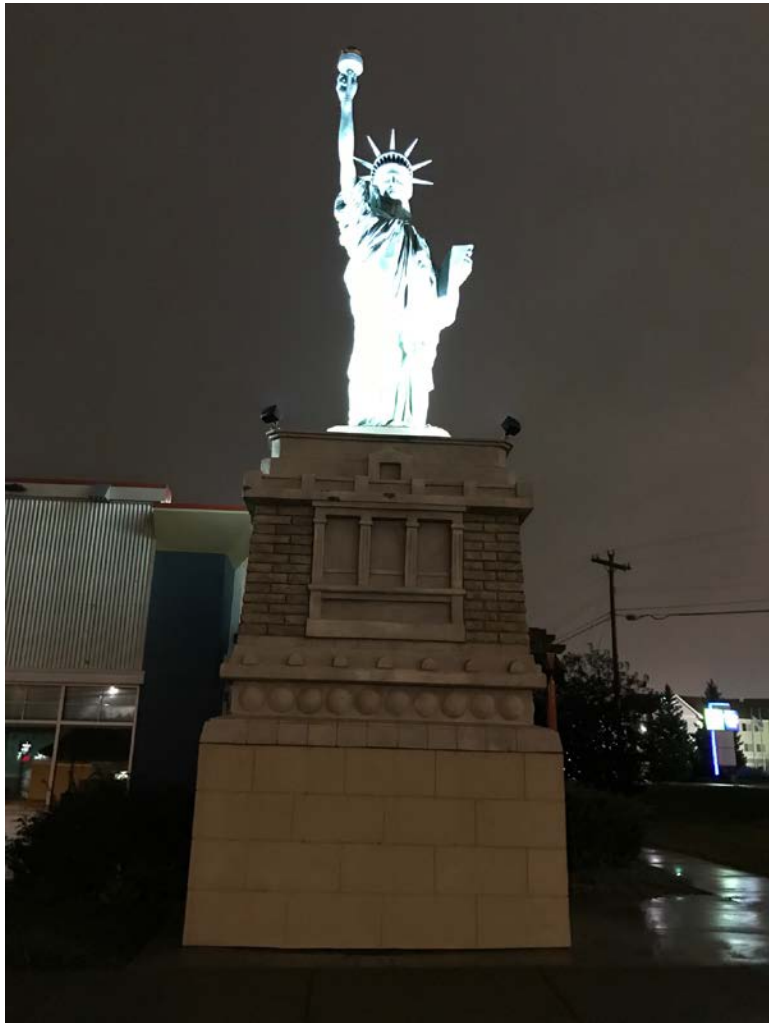




# orrb

Is that what I ordered?

Richard Wix/Stuart Cassin – Road Profiler User Group, Rapid City, South Dakota, 20 September 2018



Mt Rushmore may have been hiding but I did get to see the Statue of Liberty

# Lunchtime

What are you going to order?

## PASTA

### TOMATO SAUCE BASED

- SPAGHETTI POMODORO **99.00**
- SPAGHETTI BOLOGNESE **145.00**
- SPAGHETTI MEATBALL **155.00**
- CHICKEN PASTA **165.00**
- SEAFOOD MEDLEY **185.00**
- PASTA PAELLA **185.00**



### CREAM SAUCE BASED

- BACON & MUSHROOM PASTA **165.00**
- SPAGHETTI CARBONARA **165.00**
- WHITE SEAFOOD PASTA **185.00**
- CREAMY CHICKEN PESTO PASTA **185.00**



### OIL BASED

- 165.00**
- 185.00**
- 185.00**



### BAKED PASTA

- CHEESY LASAGNA **170.00**
- OVEN-BAKED ZITI **170.00**



**ALL PRICES ARE INCLUSIVE OF VAT**  
**PICTURES MAY VARY FROM ACTUAL PRODUCT**

ALL PRICES ARE INCLUSIVE OF VAT  
PICTURES MAY VARY FROM ACTUAL PRODUCT

# Is that what I ordered?



# Preparation is king



# Preparation is king

Clearly defined (unambiguous) project deliverables set the tone for a project

## Scope

This survey scope is based on the roads listed in the table below and attached spreadsheet.

Route	Road No	Road Name	From	To	GPS_Start	GPS_End	Direction	Surface	Length	Survey Km's
A	A5	Highland Lakes Rd	Waddamana Rd	Marlborough Hwy Milena	-42.024917, 146.813069	-41.980941, 146.679264	2	Sealed	14.6	29.6
A	B11	Marlborough Hwy	Highland Lakes Rd	Monpeelyata Rd	-41.980941, 146.679364	-42.007656, 146.600744	1	Unsealed	8.4	8.4
A		Monpeelyata Rd	Marlborough Hwy	Macclesfield Rd	-42.007656, 146.600744	-42.122430, 146.692948	1	Unsealed	18.1	18.1
B	C177	Bashan Rd	Macclesfield Road	Victoria Valley Road	-42.177768, 146.747975	-42.312466, 146.712610	1	Unsealed	18.9	18.9
B	C173	Victoria Valley Road	Bashan Rd	Sealed Surface	-42.312466, 146.712610	-42.419291, 146.753402	1	Unsealed	15.4	15.4
B	C173	Victoria Valley Road	Sealed Surface	Lyell Hwy	-42.419291, 146.751402	-42.489301, 146.709331	2	Sealed	9.3	18.6
C	C176	Strickland Rd	Lyell Hwy	Victoria Valley Road	-42.439847, 146.660307	-42.300347, 146.673787	1	Unsealed	17.6	17.6
C	C173	Victoria Valley Road	Strickland Rd	Bashan Rd	-42.300347, 146.673787	-42.312466, 146.712610	1	Unsealed	3.7	3.7
D	C178	Waddamana Rd	Bashan Rd	Highland Lakes Rd	-42.141756, 146.752366	-42.262412, 146.937825	1	Unsealed	25.1	25.1
									TOTAL Surveykm	130.3

**Note – Unsealed roads within survey routes will be surveyed in single direction and report roughness and video imagery only**

It is typically not possible to achieve satisfactory valid data collection on a road survey with isolated lengths less than 100m. ARRB cannot guarantee valid laser profiler data on the lengths; however, the video record and subsequent visual assessment will still be captured.

Setting clearly agreed parameters early gives direction and clarity to the client and the practitioner

## Deliverables

The core deliverables of this project will be:

- One (1) copy of the collected survey video on a portable hard drive
- One (1) copy of the roughness, rutting, texture and data delivered in electronic format – Microsoft Excel.
- Unsealed roads will record roughness and video imagery only
- Pre-construction assessment report of the specified sections. (This report outlines the results of the collected data. This report is basic in nature and does not contain any analysis. Its purpose is to give a broad overview of the collected results to anyone unfamiliar with road condition data.)

## Timing

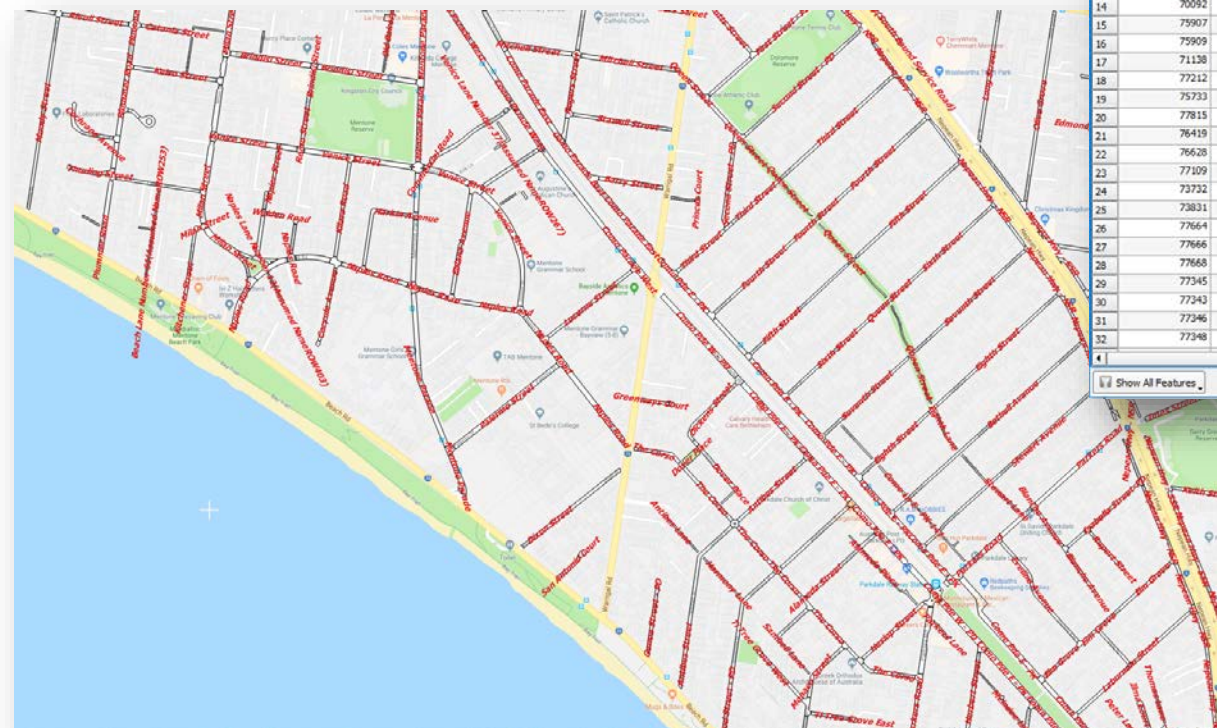
The timing for data collection and data delivery for this project needs to be discussed, and is subject to vehicle availability as well as shipping availability. Testing may need to be rescheduled if there are delays in receiving a Purchase Order for the project. Based on current weather conditions, it's anticipated that survey **will not** be possible until Spring of 2018

## Quote

Item	Road Condition Survey	Units	Price/unit	Sub Totals (ex GST)
1	Mobilisation	1		
2	Hawkeye 2000 Laser Profilometer Survey <ul style="list-style-type: none"> <li>• Images</li> <li>• Roughness – IRI, NAASRA ¼ car or ½ car</li> <li>• Texture – SMTD/SPTD</li> <li>• Rutting – 2m Straight Edge</li> </ul> Survey Preparation, Processing, Reporting and Project Management	1		

# “Here ya go, it’s all here”

Not all data sets are completely relevant to a road network survey



Attribute table - Road\_Carrum :: Features total: 106, filtered: 106, selected: 0

COMPKY	Asset_ID	Street_ID	Segment_ID	Asset_Description	From	To	SEGEN	UNTYPE	FromREF	ToREF	
0	74892	28988	Myola Street - CR	1	Surface-Myola Street (McLeod Road to Suburb Boundary) CH0010 to CH0350 - Carrum	McLeod Road	Suburb Boundary	339.57	Surface	10.02	349.
1	75755	31614	Progress Avenue	1	Surface-Progress Avenue (Nepean Highway to End) CH0010 to CH0075 - Carrum	Nepean Highway	End	64.9278	Surface	10.28	75.2
2	74964	28865	Nellie Lane	1	Surface-Nellie Lane (Carrerra Street to Myola Street) CH0000 to CH0123 - Carrum	Carrerra Street	Myola Street	122.7	Surface	0	122.
3	74965	29037	Nellie Lane	2	Surface-Nellie Lane (Myola Street to End) CH0123 to CH0184 - Carrum	Myola Street	End	60.88	Surface	122.7	183.
4	77285	33319	Village Lane	1	Surface-Village Lane (Joyce Street to McLeod Road) CH0000 to CH0185 - Carrum	Joyce Street	McLeod Road	184.67	Surface	0	184.
5	71872	30203	Dahmen Street	1	Surface-Dahmen Street (Start to McLeod Road) CH0000 to CH0256 - Carrum	Start	McLeod Road	256.4	Surface	0	256.
6	77650	31355	Westley Street	1	Surface-Westley Street (Start to McLeod Road) CH0000 to CH0305 - Carrum	Start	McLeod Road	305.1	Surface	0	305.
7	75917	30972	Riversdale Avenue	1	Surface-Riversdale Avenue (Start to McLeod Road) CH0000 to CH0301 - Carrum	Start	McLeod Road	301.47	Surface	0	301.
8	77164	31069	True Avenue	1	Surface-True Avenue (Start to McLeod Road) CH0000 to CH0301 - Carrum	Start	McLeod Road	301.21	Surface	0	301.
9	76933	31056	Tennyson Street	3	Surface-Tennyson Street (Kipling Street to McLeod Road) CH0059 to CH0321 - Carrum	Kipling Street	McLeod Road	262.27	Surface	58.54	320.
10	77205	33140	Valetta Street	3	Surface-Valetta Street (Colenso Street to Kipling Street) CH0045 to CH0063 - Carrum	Colenso Street	Kipling Street	17.56	Surface	45.34	62
11	77207	33147	Valetta Street	5	Surface-Valetta Street (Kipling Street to Joyce Street) CH0078 to CH0277 - Carrum	Kipling Street	Joyce Street	198.61	Surface	77.92	276.
12	74758	30782	Milcent Street	1	Surface-Milcent Street (McLeod Road to End) CH0010 to CH0182 - Carrum	McLeod Road	End	171.99	Surface	10.34	182.
13	73000	26841	Graham Road - CR	1	Surface-Graham Road (McLeod Road to End) CH0010 to CH0277 - Carrum	McLeod Road	End	267.09	Surface	10.23	277.
14	70092	23641	Anita Court - CR	1	Surface-Anita Court (Rigby Street to End) CH0008 to CH0033 - Carrum	Rigby Street	End	25.09	Surface	7.8	32
15	75907	30970	Rigby Street	1	Surface-Rigby Street (McLeod Road to Anita Court) CH0010 to CH0088 - Carrum	McLeod Road	Anita Court	78.1	Surface	10.04	88.
16	75909	31093	Rigby Street	3	Surface-Rigby Street (Anita Court to End) CH0104 to CH0305 - Carrum	Anita Court	End	200.81	Surface	103.96	304.
17	71138	30032	Carrerra Street	1	Surface-Carrerra Street (McLeod Road to End) CH0010 to CH0382 - Carrum	McLeod Road	End	372.78	Surface	9.59	382.
18	77212	33148	Valetta Street	10	Surface-Valetta Street (Jewellin Grove to Walkers Road) CH0461 to CH0619 - Carrum	Jewellin Grove	Walkers Road	157.88	Surface	460.8	618.
19	75733	30943	Poulson Street	1	Surface-Poulson Street (McLeod Road to Walkers Road) CH0010 to CH0252 - Carrum	McLeod Road	Walkers Road	241.78	Surface	10.43	252.
20	77815	31381	Wright Street	1	Surface-Wright Street (McLeod Road to Walkers Road) CH0011 to CH0253 - Carrum	McLeod Road	Walkers Road	241.86	Surface	10.76	252.
21	76419	31145	Smith Street	1	Surface-Smith Street (McLeod Road to Walkers Road) CH0011 to CH0252 - Carrum	McLeod Road	Walkers Road	241.48	Surface	10.86	252.
22	76628	32672	Staton Street	18	Surface-Staton Street (McLeod Road to Walkers Road) CH0214 to CH0420 - Carrum	McLeod Road	Walkers Road	206.31	Surface	214.19	420
23	77109	31065	Tonbridge Street	1	Surface-Tonbridge Street (Start to Walkers Road) CH0000 to CH0151 - Carrum	Start	Walkers Road	150.83	Surface	0	150.
24	73732	30549	Kalma Street	1	Surface-Kalma Street (Walkers Road to Eel Race Road) CH0010 to CH0409 - Carrum	Walkers Road	Eel Race Road	399.19	Surface	9.98	409.
25	73831	30673	Kemp Street	1	Surface-Kemp Street (Emma Street to Whalley Street) CH0007 to CH0085 - Carrum	Emma Street	Whalley Street	77.91	Surface	7.08	84.
26	77664	31360	Whalley Street	1	Surface-Whalley Street (Walkers Road to Thelma Street) CH0010 to CH0274 - Carrum	Walkers Road	Thelma Street	264.42	Surface	9.85	274.
27	77666	31359	Whalley Street	3	Surface-Whalley Street (Thelma Street to Kemp Street) CH0289 to CH0502 - Carrum	Thelma Street	Kemp Street	213.26	Surface	289.15	502.
28	77668	31358	Whalley Street	5	Surface-Whalley Street (Kemp Street to Eel Race Road) CH0518 to CH0818 - Carrum	Kemp Street	Eel Race Road	300.44	Surface	517.9	818.
29	77345	31337	Walkers Road	3	Surface-Walkers Road (Kalma Street to Valetta Street) CH0116 to CH0169 - Carrum	Kalma Street	Valetta Street	53.4	Surface	116.08	169.
30	77343	31340	Walkers Road	1	Surface-Walkers Road (Staton Street to Tonbridge Street) CH0008 to CH0096 - Carrum	Staton Street	tonbridge Street	87.94	Surface	7.82	95.
31	77346	31341	Walkers Road	4	Surface-Walkers Road (Valetta Street to Jewellin Grove) CH0187 to CH0273 - Carrum	Valetta Street	Jewellin Grove	85.46	Surface	187.05	272.
32	77348	31217	Walkers Road	6	Surface-Walkers Road (Church Road to Poulson Street) CH0299 to CH0338 - Carrum	Church Road	Poulson Street	38.82	Surface	299.02	337.

A spreadsheet and a spatial layer are often supplied as “complete” survey info.

# Get it Right

- Review the supplied information – is it relevant?

Kimba LA	20 - Sealed Section to The Piazza	Babbage	Pasadena	Un-Sealed - Natuarl Surface
Cowell LA	10 - Tumbly Blvd to The Piazza Road Reserve	Babbage	Pasadena	Un-Sealed - Natuarl Surface
Eyre LA	10 - Port Lincoln to Eyre Blvd	Babbage	Pasadena	Un-Sealed - Quarry Rubble Formation
Pritchard LA	10 - Pritchard Gr to Cowell Cr	Babbage	Pasadena	Un-Sealed - Natuarl Surface
Quinton LA	20 - No.87 Quinton Ct (Rear) to No.91 Quinton Ct (Rear)	Babbage	Pasadena	Un-Sealed - Natuarl Surface
Land LA	10 - Port Lincoln to Eyre Blvd Road Reserve	Babbage	Pasadena	Un-Sealed - Natuarl Surface
Hillrise South LA	10 - Grandview Dr to Warren Cr	Babbage	Panorama	Un-Sealed - Natuarl Surface
Hillrise North LA	10 - Panorama Ave to Warren Cr	Babbage	Panorama	Un-Sealed - Natuarl Surface
Gamble LA	10 - Myrtle Rd to Acheron Ave	The Park	Hawthorndene	Un-Sealed - Natuarl Surface
Hillcrest LA	10 - Ronald Ave to Kinedana St	Craigburn	Eden Hills	Un-Sealed - Natuarl Surface
Kinedana LA	10 - Hillcrest La to Shepherds Hill La	Craigburn	Eden Hills	Un-Sealed - Natuarl Surface
Ronald LA	10 - Hillcrest Dr to Ronald Ave	Craigburn	Eden Hills	Un-Sealed - Natuarl Surface
Ronald LA	20 - Ronald St to Kinedana La	Craigburn	Eden Hills	Un-Sealed - Natuarl Surface
Shepherds Hill LA	10 - Kinedana St to Shepherds Hill Rd	Craigburn	Eden Hills	Un-Sealed - Natuarl Surface
John St LA	10 - Hill St to John St	Boorman	Mitcham	Un-Sealed - Quarry Rubble Formation
Spiers LA	10 - Spiers Ave to Rugby La	Babbage	Pasadena	Un-Sealed - Quarry Rubble Formation
Ludgate LA	10 - Goodwood Rd to Salisbury Cr	Gault	Colonel Light Gardens	Un-Sealed - Natuarl Surface
Ludgate LA	20 - Salisbury Cr to Salisbury La	Gault	Colonel Light Gardens	Un-Sealed - Quarry Rubble Formation
Ludgate LA	30 - Salisbury La to Grange Rd	Gault	Colonel Light Gardens	Un-Sealed - Natuarl Surface

- Put on your “field hat” - can it be found from a moving car?

- Which way now?



AMS_Road_N	AMS_From_R	AMS_To_Roa
Lane 32	Lane 31	Lane 33
Lane 35	Lane 36	Lane 34
Lane 9	Lane 8	Lane 3
Lane 15	Lane 14	Lane 16
Lane 18	Lane 19	Lane 17
Lane 5	Lane 7	Lane 4
Lane 25	Lane 27 Sth	Lane 27 Nth
Lane 30	46M Lane 30 Sth ST	142M Lane 30 Sth ST
Lane 12	Lane 13	Lane 11

- Do you need to clarify locations?



# Can it be driven?

- Data must be contiguous and “driveable” for a successful vehicle survey.
- Segmentation must be done at some point to provide accurate data



• Final distances reported are based on distances driven

Road No	Road Name	Segment No	Segment Name
3290	Beattie Street	3669	George St - Spotswood Dr
3290	Beattie Street	15568	Seg 02: Cul de Sac 1 George St end North Side
3290	Beattie Street	15569	Seg 03: Cul de Sac 2
3290	Beattie Street	15570	Seg 04: Cul de Sac 3
3290	Beattie Street	15571	Seg 05: Cul de Sac 4 Spotswood Dr end

# How do we get there?

Was the map derived from a foot based survey?



Asset\_Desc  
Centre Lane Number 1194(Assumed NameROW 169) (Centre Road to Melaleuca Drive) CH0000 to CH0110 - Clarinda



# Spend now – save later

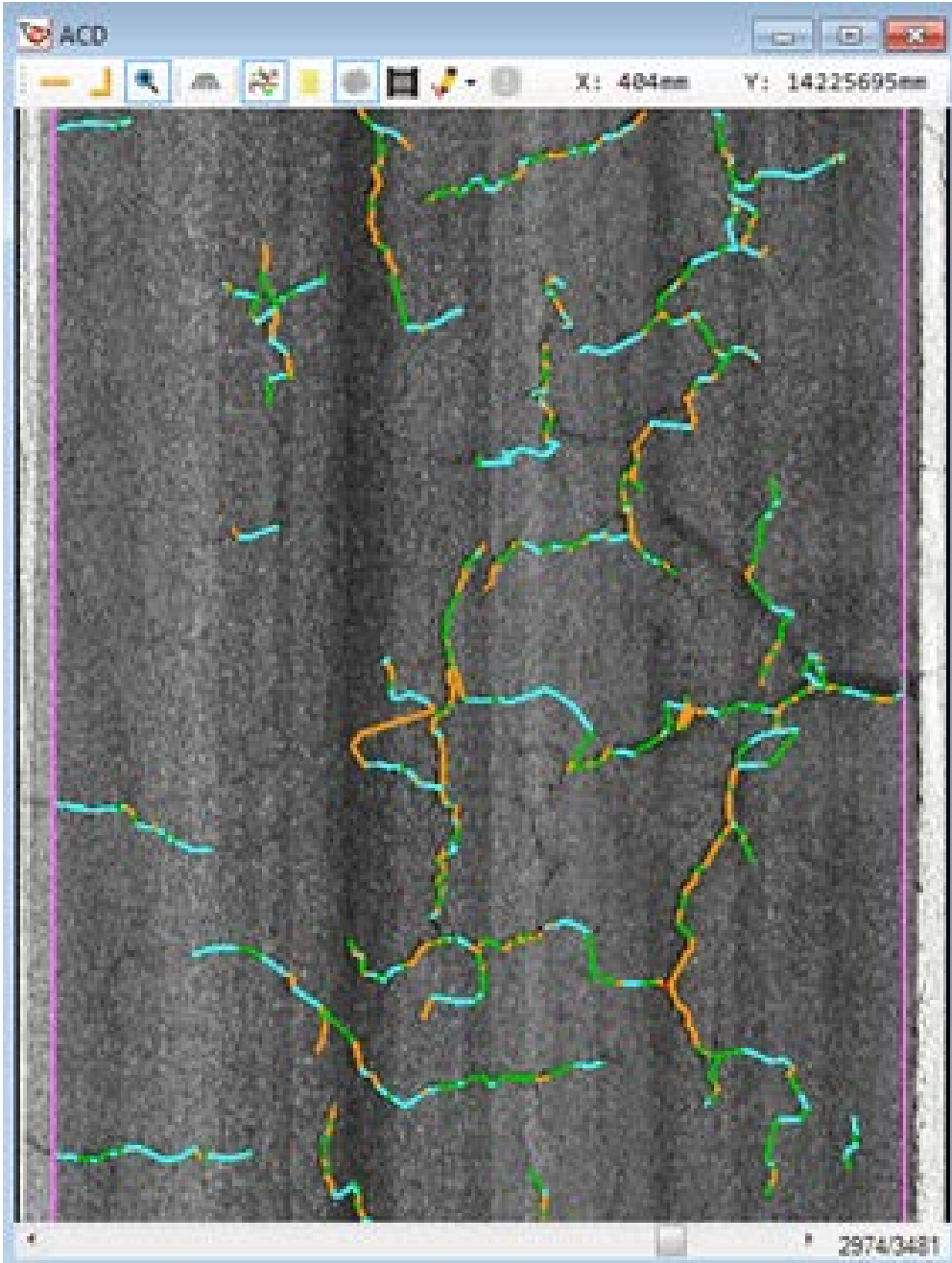
Garbage in – garbage out

By reviewing, interrogating and creating an agreed and finalised survey list, decisions “on the fly” in the field are avoided.



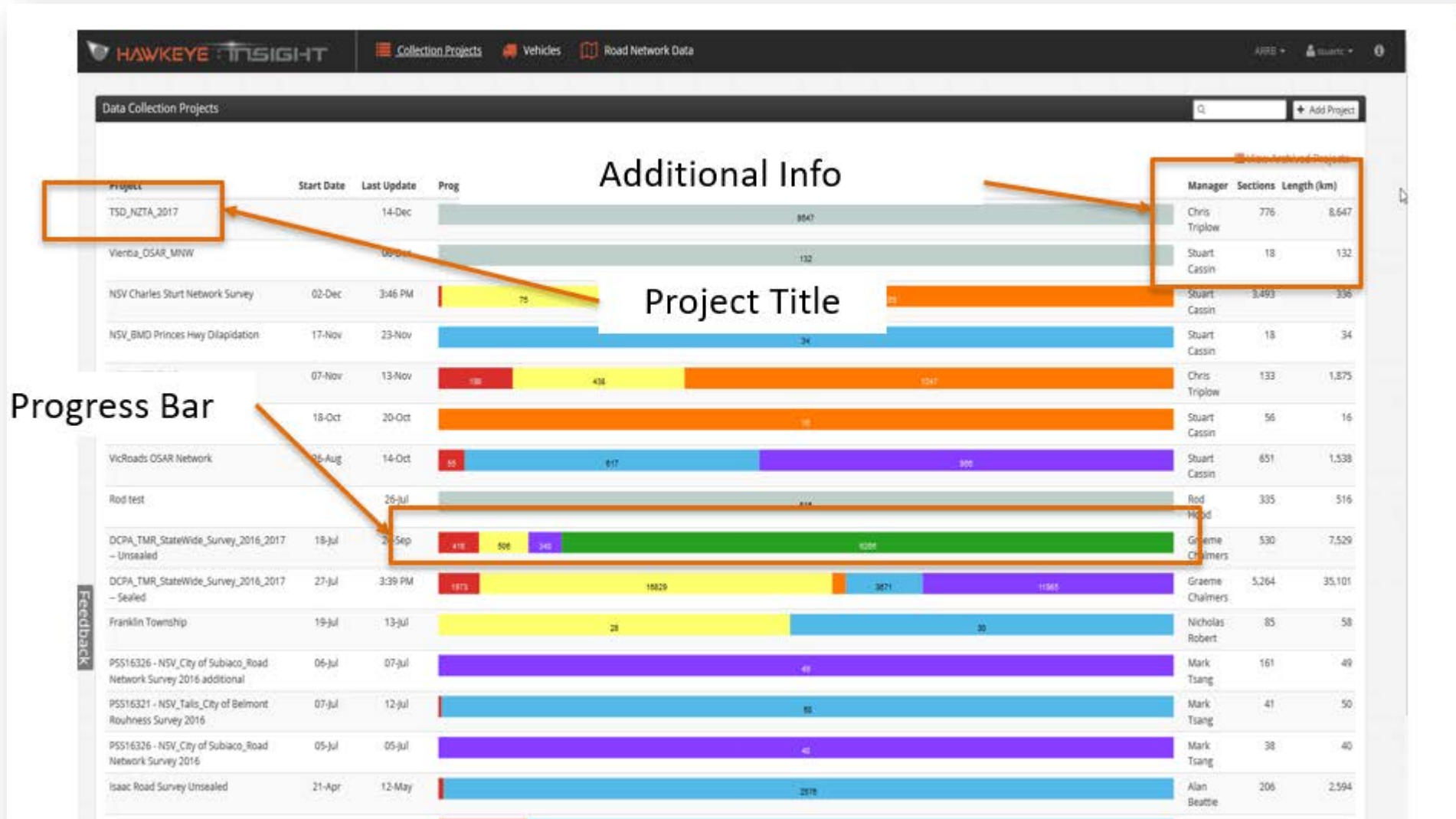
Past surveys have relied on field staff to “work it out” as they go. This has led to data being missed.

# 3D image



# Managing work flow

The use of software has streamlined data collection management



# Vehicle tracking

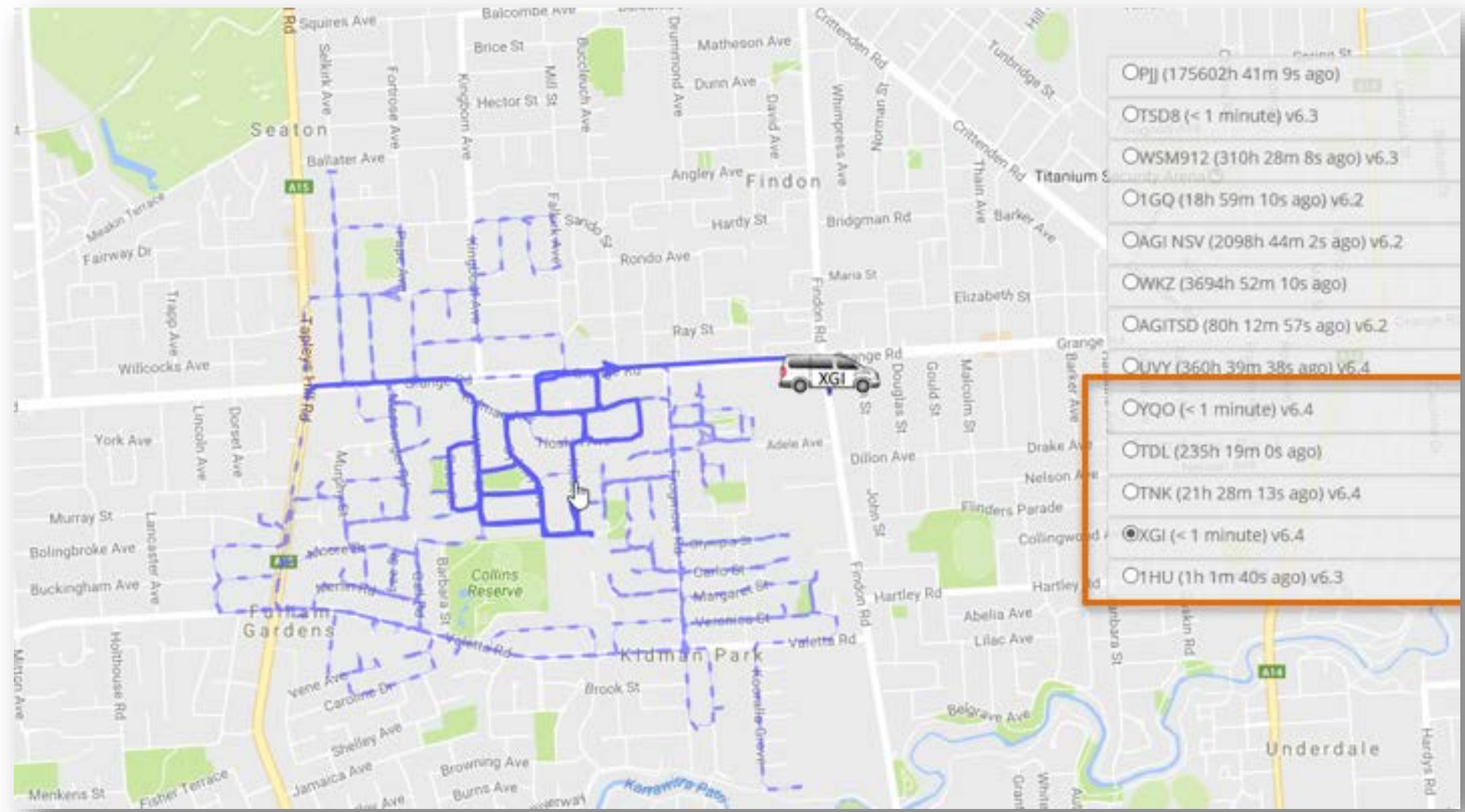
4G Connectivity provides positional info for survey fleet

The screenshot displays the HAWKEYE INSIGHT web interface. At the top, there are navigation tabs for 'Collection Projects', 'Vehicles', and 'Road Network Data'. Below this is a 'Vehicle Locations' header above a map of Australia. The map shows several vehicle icons with labels: WSM, XGI, VJ, and IHU. A sidebar on the left contains a 'Feedback' button. On the right, a list of vehicle entries is shown, each with an ID, a timestamp, and a version number. The entry for 'OXGI (< 1 minute) v6.4' is highlighted with an orange box.

Vehicle ID	Timestamp	Version
OPJJ	(175602h 29m 1s ago)	
OTSD8	(< 1 minute)	v6.3
OWSM912	(310h 16m 0s ago)	v6.3
O1GQ	(18h 47m 2s ago)	v6.2
OAGI NSV	(2098h 31m 54s ago)	v6.2
OWKZ	(3694h 40m 2s ago)	
OAGITSD	(80h 0m 49s ago)	v6.2
OUVY	(360h 27m 30s ago)	v6.4
OYQO	(< 1 minute)	v6.4
OTDL	(235h 6m 52s ago)	
OTNK	(21h 16m 5s ago)	v6.4
<b>OXGI</b>	<b>(&lt; 1 minute)</b>	<b>v6.4</b>
OIHU	(0h 49m 32s ago)	v6.3

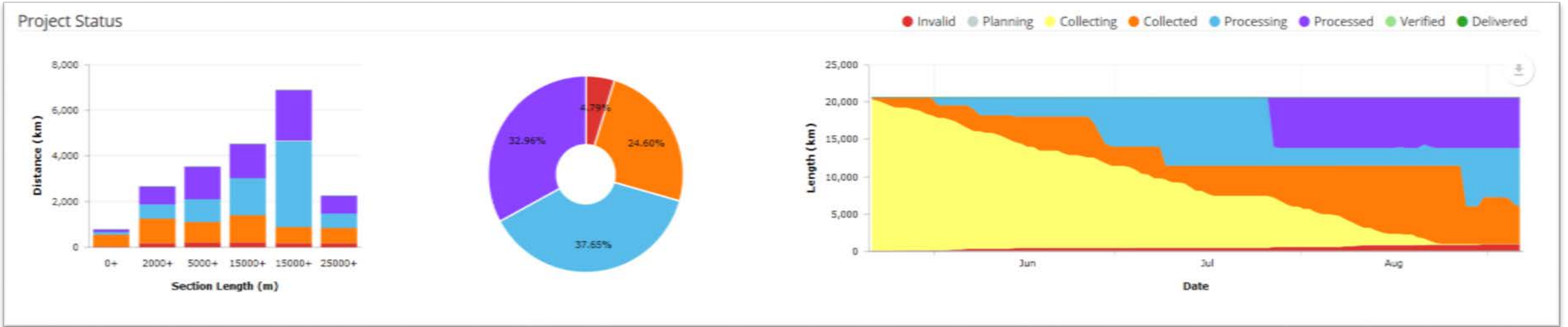
# Vehicle Tracking

Survey progress can be monitored in near real time



# Project Communication

As surveys are progressed, project status is updated



Two way messaging via aids project communications and record keeping

▼Date	Created by	Note
31-Aug.	ARRB TSD	Data collection complete.
31-Aug.	ARRB TSD	Allen this is the final road list used for the survey. The red Highlighted roads where removed from the survey after discussions with CT as not suit
31-Aug.	ARRB TSD	Completed schedule
30-Aug.	ARRB TSD	<a href="#">Vehicle Tracking</a> A-B Calibration runs at Deception Bay. The 100 laser was refocused and all data rates are now consistently above 700. There is a large change in the worthy.
27-Aug.	ARRB TSD	AB cal files. Note the 100 Doppler has been reading low for about a month so far. The outputs show it is reading differently to previous calibration ption Bay runs as is then look to refocus and possibly swap out the laser if we cannot improve the data rates.
27-Aug.	Stuart Cassin	SSD_1E Received today. Contains dates 13, 14, 15, 17, 18, 20-Day/8/2018 Data checked - All OK
21-Aug.	Stuart Cassin	SSD_1P Received today. Contains dates 9,10, 11/8/2018 Data checked - tsd.gfg files for Surveys 22C_1 & 22C_14R (10/8/2018) are missing. Please check files and resend data - data for 10/8/2018 will not b complete data is received.
18-Aug.	ARRB TSD	Updated daily Check
18-Aug.	ARRB TSD	Updated Delay log
18-Aug.	ARRB TSD	Updated Schedule
11-Aug.	ARRB TSD	Delay Log



# In field survey verification

At the completion of each survey, in vehicle survey verification is conducted and reported online

Surveys

Completed Surveys Road Sections for review

Hide passed surveys

Date	Name	NSV	Verification Tests Performed	VerificationResult
17-Dec	20161217_08	XGI	34	Failed <span style="color:red">▲</span> <span style="border: 1px solid orange; padding: 2px;">G</span>
17-Dec	20161217_07	XGI	34	Failed <span style="color:red">▲</span> <span style="color:green">G</span>
17-Dec	20161217_06	XGI	34	Failed <span style="color:red">▲</span> <span style="color:green">G</span>
17-Dec	20161217_05	XGI	34	Failed <span style="color:red">▲</span> <span style="color:green">G</span>
17-Dec	20161217_04	XGI	34	Failed <span style="color:red">▲</span> <span style="color:green">G</span>
17-Dec	20161217_03	XGI	34	Failed <span style="color:red">▲</span> <span style="color:green">G</span>
17-Dec	20161217_02	XGI	34	Failed <span style="color:red">▲</span> <span style="color:green">G</span>
17-Dec	20161217_01	XGI	34	Failed <span style="color:red">▲</span> <span style="color:green">G</span>

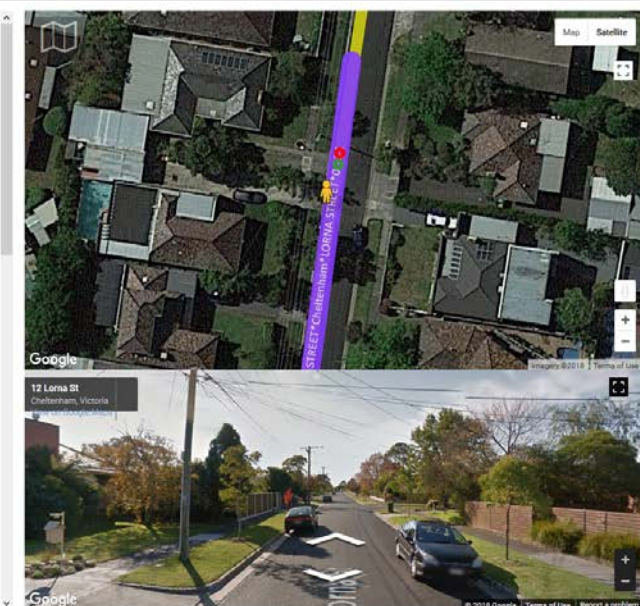
- Detailed info re. test failure, including location, are accessible for validation and acceptance/rejection of data

Verification Test Details: 20180528\_01  
Date: 28/5/18 10:04 am Vehicle: SBN ▲ 1 of 24 Test Types Failed

**Profiler Out of Range** ▲ (11 of 11 instances accepted)

(Note that information here that indicates failure, was actually ok and suppressed later in the logic (non-live data), but is difficult to remove the text for now. This will be cleaned up later, don't be alarmed by this info)

Severity	Affected	Last updated by	Action
2	011.320km	1.8m Affected	Stuart (28-May) <span>Accepted</span>
Out of range flatline section found in SMTD Right 950 of DP file. Record: 466861, Sync: 466818, PK: 40682503372989, Value: 0, Length: 388 records (1.9m)			
<a href="#">Show Raw Data</a>			
2	011.327km	1.7m Affected	Stuart (28-May) <span>Accepted</span>
Out of range flatline section found in Right 950 of DP file. Record: 466792, Sync: 466827, PK: 40682503375132, Value: 0, Length: 69 records (1.7m)			
<a href="#">Show Raw Data</a>			
2	011.320km	1.7m Affected	Stuart (28-May) <span>Accepted</span>
Out of range flatline section found in SMTD Left 950 of DP file. Record: 466854, Sync: 466821, PK: 40682503373706, Value: 4, Length: 338 records (1.7m)			
<a href="#">Show Raw Data</a>			
2	011.327km	1.5m Affected	Stuart (28-May) <span>Accepted</span>
Out of range flatline section found in Left 950 of DP file. Record: 466794, Sync: 466829, PK: 40682503375609, Value: 4, Length: 61 records (1.5m)			
<a href="#">Show Raw Data</a>			
1	011.327km	1.3m Affected	Stuart (28-May) <span>Accepted</span>



Recollect Survey Save Changes Close

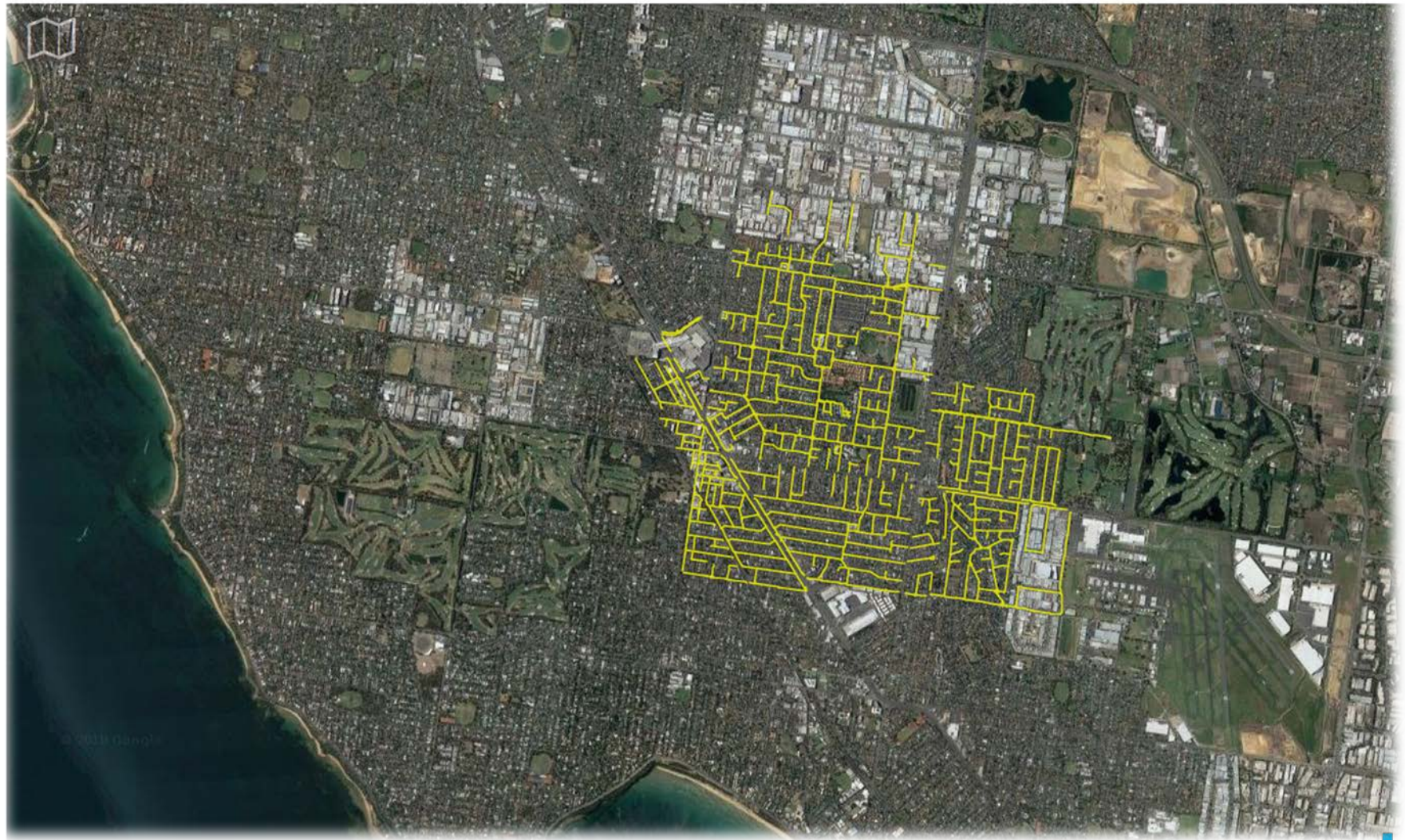
# How it helps



# Spatial support

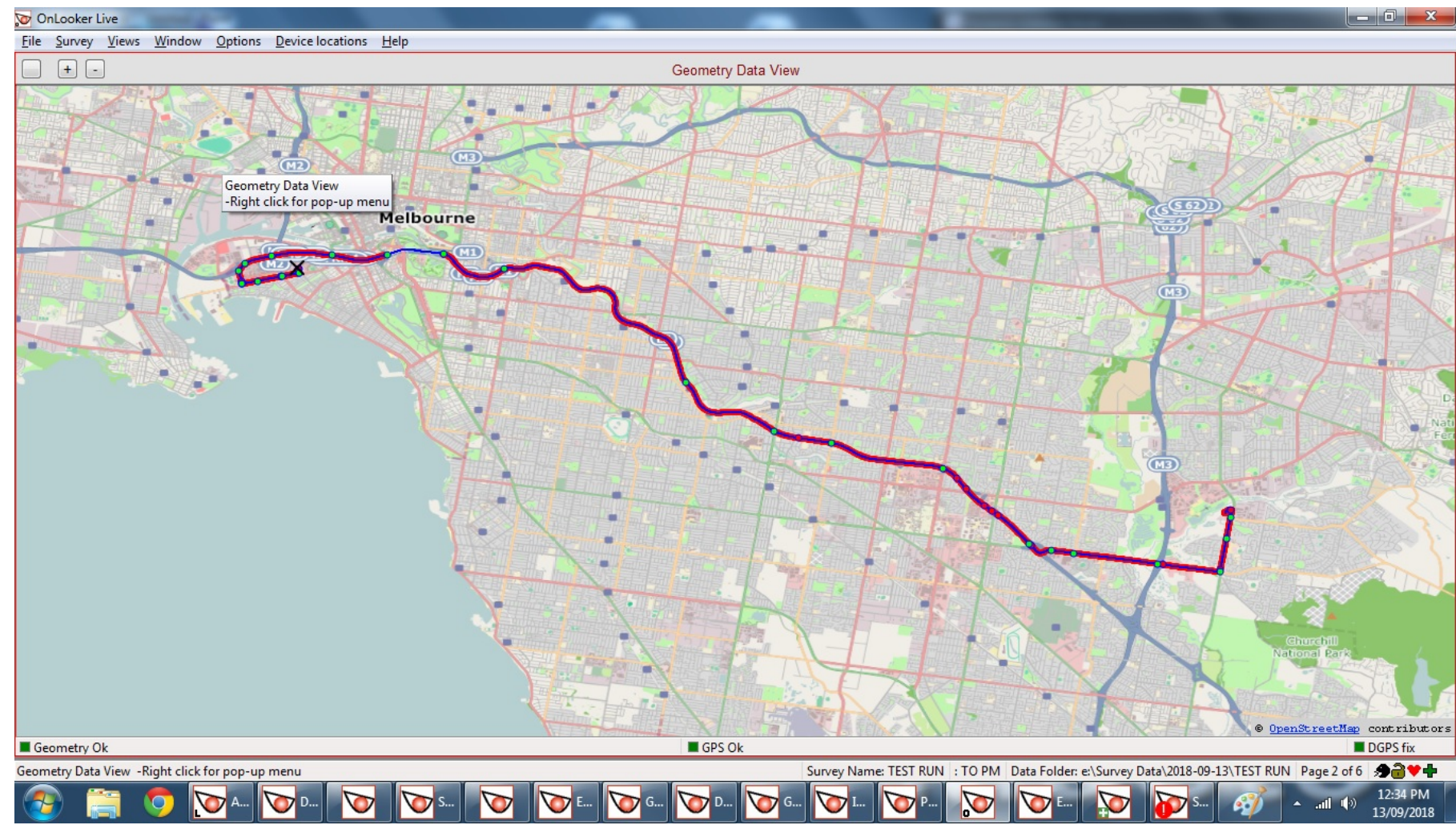
Spatial data can be added to the manager map screen to aid in navigation / survey

Map

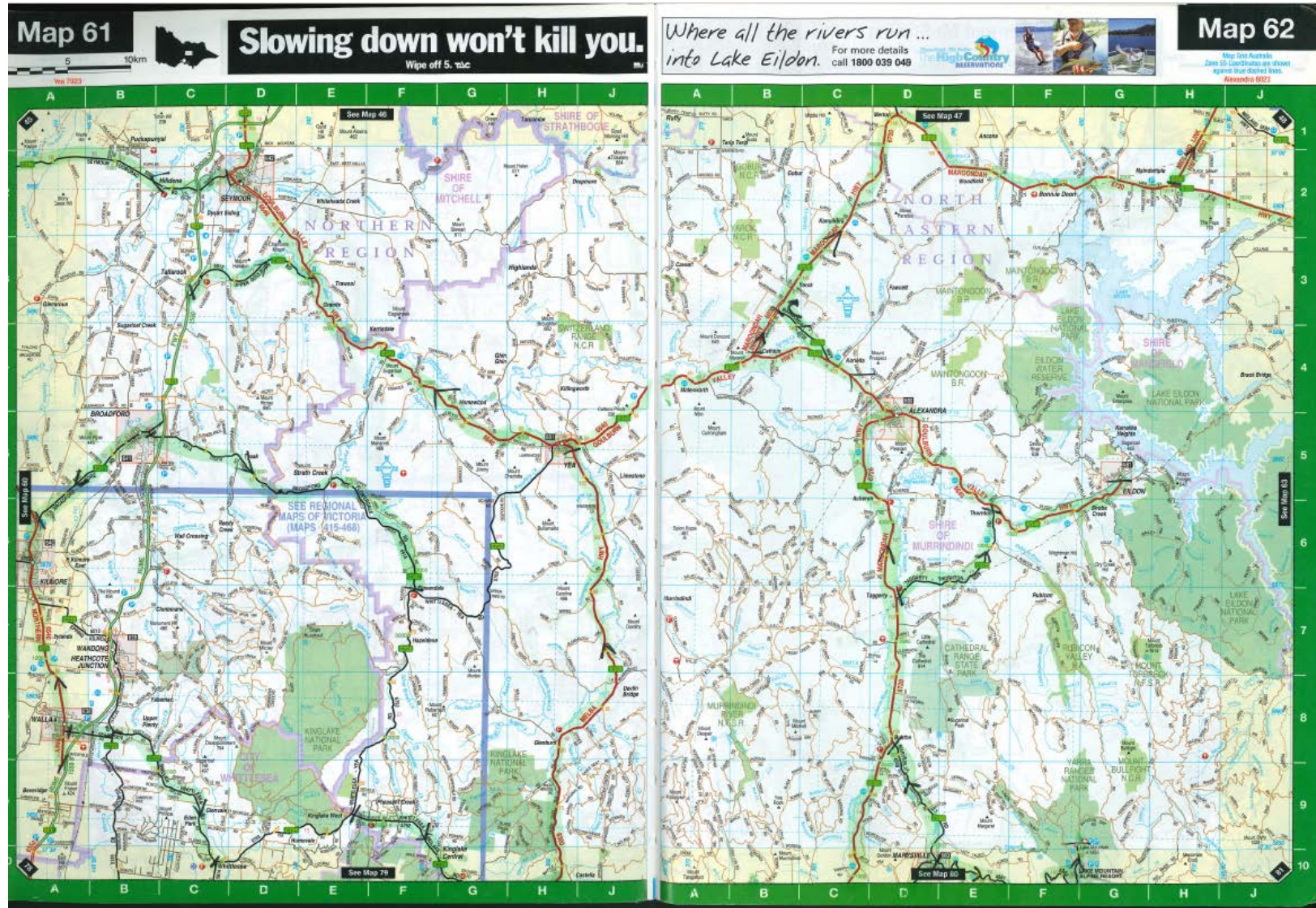


# Spatial support

On board the survey vehicle

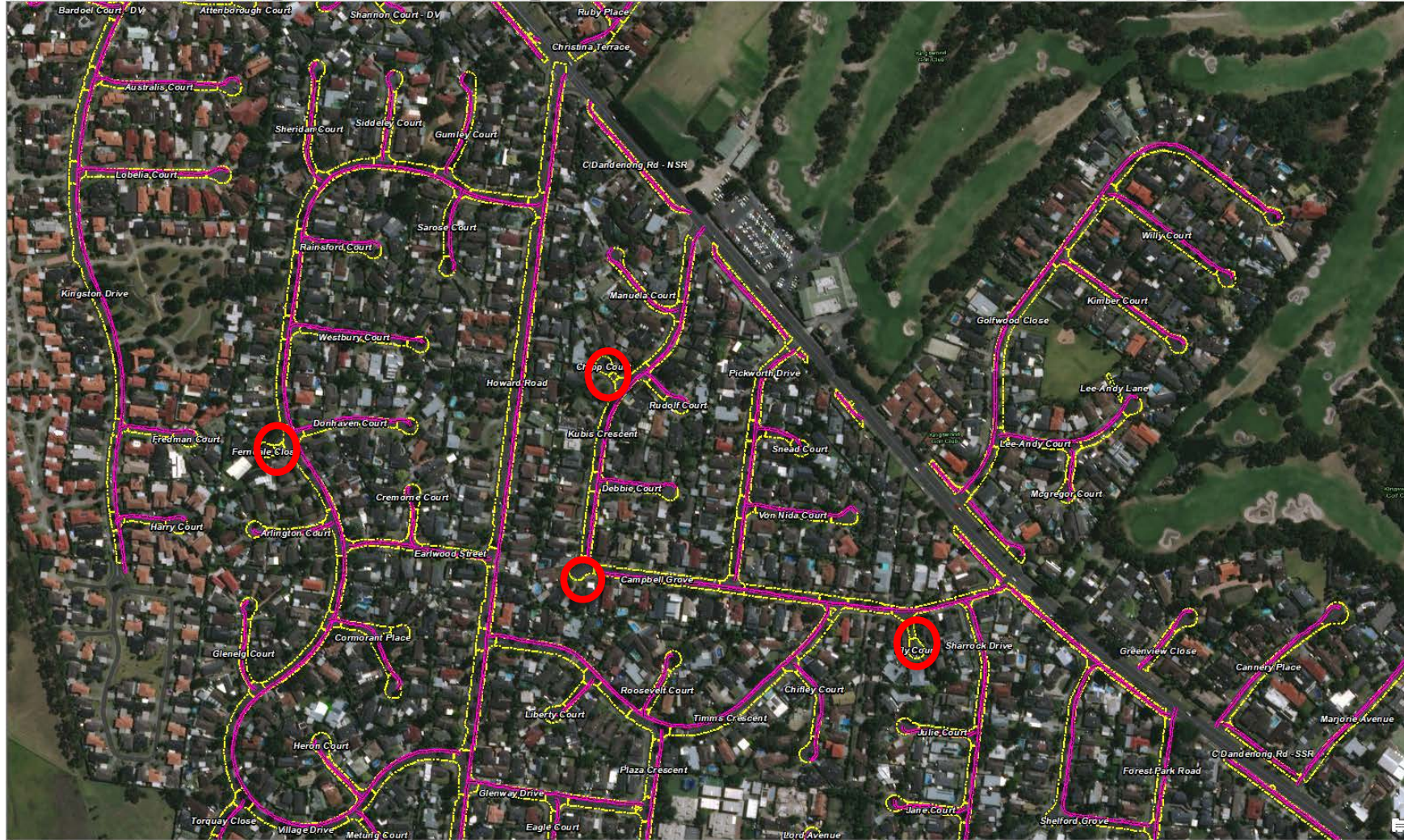


# The old way



# Did we get it all?

“Traditional” survey methods can lead to incomplete collection



# Garbage in – Garbage out

- Quality base data in a verified, useable format
- Finalised and set prior to commencement – avoid last minute or mid project changes
- Time spent in prep pays off with interest later on

Attribute table - Road\_Carrum :: Features total: 106, filtered: 106, selected: 0

	COMPKEY	Asset_ID	Street_ID	Segment_ID	Asset_Description	From	To	SEGLEN	UNITTYPE	FromREF	ToREF
0	74892	28988	Myola Street - CR	1	Surface-Myola Street (McLeod Road to Suburb Boundary) CH0010 to CH0350 - Carrum	McLeod Road	Suburb Boundary	339.57	Surface	10.02	349.57
1	75755	31614	Progress Avenue	1	Surface-Progress Avenue (Nepean Highway to End) CH0010 to CH0075 - Carrum	Nepean Highway	End	64.9278	Surface	10.28	75.2078
2	74964	28955	Nellie Lane	1	Surface-Nellie Lane (Canberra Street to Myola Street) CH0000 to CH0123 - Carrum	Canberra Street	Myola Street	122.7	Surface	0	122.7
3	74654	29081	Nellie Lane	2	Surface-Nellie Lane (Myola Street to End) CH0123 to CH0141 - Carrum	Myola Street	End	60.88	Surface	122.7	183.58
4	77285	33319	Village Lane	1	Surface-Village Lane (Joyce Street to McLeod Road) CH0000 to CH0185 - Carrum	Joyce Street	McLeod Road	184.67	Surface	0	184.67
5	71872	30203	Dahmen Street	1	Surface-Dahmen Street (Start to McLeod Road) CH0000 to CH0256 - Carrum	Start	McLeod Road	256.4	Surface	0	256.4
6	77650	31355	Westley Street	1	Surface-Westley Street (Start to McLeod Road) CH0000 to CH0305 - Carrum	Start	McLeod Road	305.1	Surface	0	305.1
7	75917	30972	Riversdale Avenue	1	Surface-Riversdale Avenue (Start to McLeod Road) CH0000 to CH0301 - Carrum	Start	McLeod Road	301.47	Surface	0	301.47
8	77164	31069	True Avenue	1	Surface-True Avenue (Start to McLeod Road) CH0000 to CH0301 - Carrum	Start	McLeod Road	301.21	Surface	0	301.21
9	76933	31056	Tennyson Street ...	3	Surface-Tennyson Street (Kipling Street to McLeod Road) CH0059 to CH0321 - Carrum	Kipling Street	McLeod Road	262.27	Surface	58.54	320.81
10	77205	33140	Valetta Street	3	Surface-Valetta Street (Colenso Street to Kipling Street) CH0045 to CH0063 - Carrum	Colenso Street	Kipling Street	17.56	Surface	45.34	62.90
11	76207	31039	Valetta Street	2	Surface-Valetta Street (Kipling Street to McLeod Road) CH0063 to CH0078 - Carrum	Kipling Street	McLeod Road	198.11	Surface	45.34	276.45
12	74758	30782	Millicent Street	1	Surface-Millicent Street (McLeod Road to End) CH0010 to CH0182 - Carrum	McLeod Road	End	171.99	Surface	10.34	182.33
13	73000	26841	Graham Road - CR	1	Surface-Graham Road (McLeod Road to End) CH0010 to CH0277 - Carrum	McLeod Road	End	267.09	Surface	10.23	277.32
14	70092	23641	Anita Court - CR	1	Surface-Anita Court (Rigby Street to End) CH0008 to CH0033 - Carrum	Rigby Street	End	25.09	Surface	7.8	32.89
15	75907	30970	Rigby Street	1	Surface-Rigby Street (McLeod Road to Anita Court) CH0010 to CH0088 - Carrum	McLeod Road	Anita Court	78.1	Surface	10.04	88.14
16	75909	31093	Rigby Street	3	Surface-Rigby Street (Anita Court to End) CH0104 to CH0305 - Carrum	Anita Court	End	200.81	Surface	103.96	304.77
17	71138	30032	Canberra Street	1	Surface-Canberra Street (McLeod Road to End) CH0010 to CH0382 - Carrum	McLeod Road	End	372.78	Surface	9.59	382.37
18	77212	33148	Valetta Street	10	Surface-Valetta Street (Lewellin Grove to Walkers Road) CH0461 to CH0619 - Carrum	Lewellin Grove	Walkers Road	157.88	Surface	460.8	618.68
19	75733	30943	Poulson Street	1	Surface-Poulson Street (McLeod Road to Walkers Road) CH0010 to CH0252 - Carrum	McLeod Road	Walkers Road	241.78	Surface	10.43	252.21
20	77815	31381	Wright Street	1	Surface-Wright Street (McLeod Road to Walkers Road) CH0011 to CH0253 - Carrum	McLeod Road	Walkers Road	241.86	Surface	10.76	252.62
21	75419	31445	Wright Street	1	Surface-Wright Street (Walkers Road to Eel Race Road) CH0253 to CH0409 - Carrum	McLeod Road	Walkers Road	241.48	Surface	10.86	252.34
22	76528	32072	Station Street	18	Surface-Station Street (McLeod Road to Walkers Road) CH0214 to CH0420 - Carrum	McLeod Road	Walkers Road	206.31	Surface	214.19	420.50
23	77109	31065	Tonbridge Street	1	Surface-Tonbridge Street (Start to Walkers Road) CH0000 to CH0151 - Carrum	Start	Walkers Road	150.83	Surface	0	150.83
24	73732	30549	Kalimna Street	1	Surface-Kalimna Street (Walkers Road to Eel Race Road) CH0010 to CH0409 - Carrum	Walkers Road	Eel Race Road	399.19	Surface	9.98	409.17
25	73831	30673	Kemp Street	1	Surface-Kemp Street (Emma Street to Whatley Street) CH0007 to CH0085 - Carrum	Emma Street	Whatley Street	77.91	Surface	7.08	84.99
26	77664	31360	Whatley Street	1	Surface-Whatley Street (Walkers Road to Thelma Street) CH0010 to CH0274 - Carrum	Walkers Road	Thelma Street	264.42	Surface	9.85	274.27
27	77666	31359	Whatley Street	3	Surface-Whatley Street (Thelma Street to Kemp Street) CH0289 to CH0502 - Carrum	Thelma Street	Kemp Street	213.26	Surface	289.15	502.41
28	77668	31358	Whatley Street	5	Surface-Whatley Street (Kemp Street to Eel Race Road) CH0518 to CH0818 - Carrum	Kemp Street	Eel Race Road	300.44	Surface	517.9	818.34
29	77345	31337	Walkers Road	3	Surface-Walkers Road (Kalimna Street to Valetta Street) CH0116 to CH0169 - Carrum	Kalimna Street	Valetta Street	53.4	Surface	116.08	169.48
30	77343	31340	Walkers Road	1	Surface-Walkers Road (Station Street to Tonbridge Street) CH0008 to CH0096 - Carrum	Station Street	tonbridge Street	87.94	Surface	7.82	95.76
31	77346	31341	Walkers Road	4	Surface-Walkers Road (Valetta Street to Lewellin Grove) CH0187 to CH0273 - Carrum	Valetta Street	Lewellin Grove	85.46	Surface	187.05	272.51
32	77348	31217	Walkers Road	6	Surface-Walkers Road (Church Road to Poulson Street) CH0299 to CH0338 - Carrum	Church Road	Poulson Street	38.82	Surface	299.02	337.84

Show All Features

# Spaghetti meatball

## PASTA

### TOMATO SAUCE BASED

SPAGHETTI POMODORO	<b>99.00</b>
SPAGHETTI BOLOGNESE	<b>145.00</b>
SPAGHETTI MEATBALL	<b>155.00</b>
CHICKEN PASTA	<b>165.00</b>
SEAFOOD MEDLEY	<b>185.00</b>
PASTA PAELLA	<b>185.00</b>



### CREAM SAUCE BASED



BACON & MUSHROOM PASTA	<b>165.00</b>
SPAGHETTI CARBONARA	<b>165.00</b>
WHITE SEAFOOD PASTA	<b>185.00</b>
CREAMY CHICKEN PESTO PASTA	<b>185.00</b>

### OIL BASED

SPAGHETTI AL PESTO	<b>165.00</b>
SEAFOOD AL PESTO	<b>185.00</b>
CHICKEN AL PESTO	<b>185.00</b>



### BAKED PASTA



CHEESY LASAGNA	<b>170.00</b>
OVEN-BAKED ZITI	<b>170.00</b>

ALL PRICES ARE INCLUSIVE OF VAT  
PICTURES MAY VARY FROM ACTUAL PRODUCT







QUESTIONS?

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