

Lincolnshire – June 2019 Rainfall – Timeline Briefing Steeping River Incident & Forward Look

Morgan Wray

Flood Guidance Statement – Monday 10 June

Flood Guidance Statement

10:30hrs Monday 10 June 2019

FLOODFORECASTINGCENTRE

a working partnership between  Environment Agency |  Met Office

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Monday

10 Jun 2019 10:30-23:59
Trend since last FGS

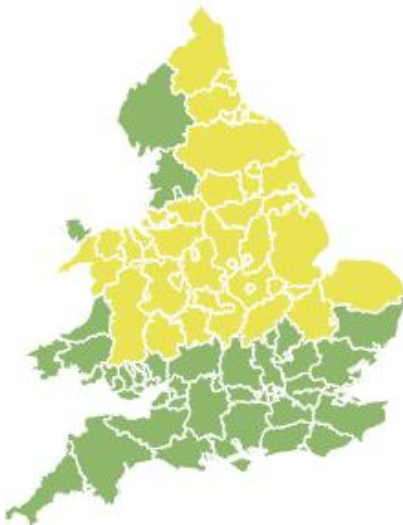
Increased



Tuesday

11 Jun 2019

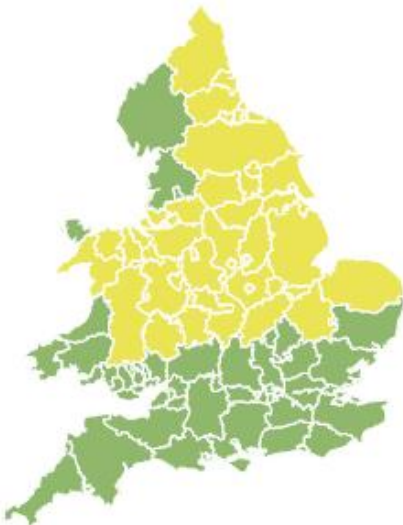
Increased



Wednesday

12 Jun 2019

Increased



Thursday

13 Jun 2019

Increased



Friday

14 Jun 2019

Steady

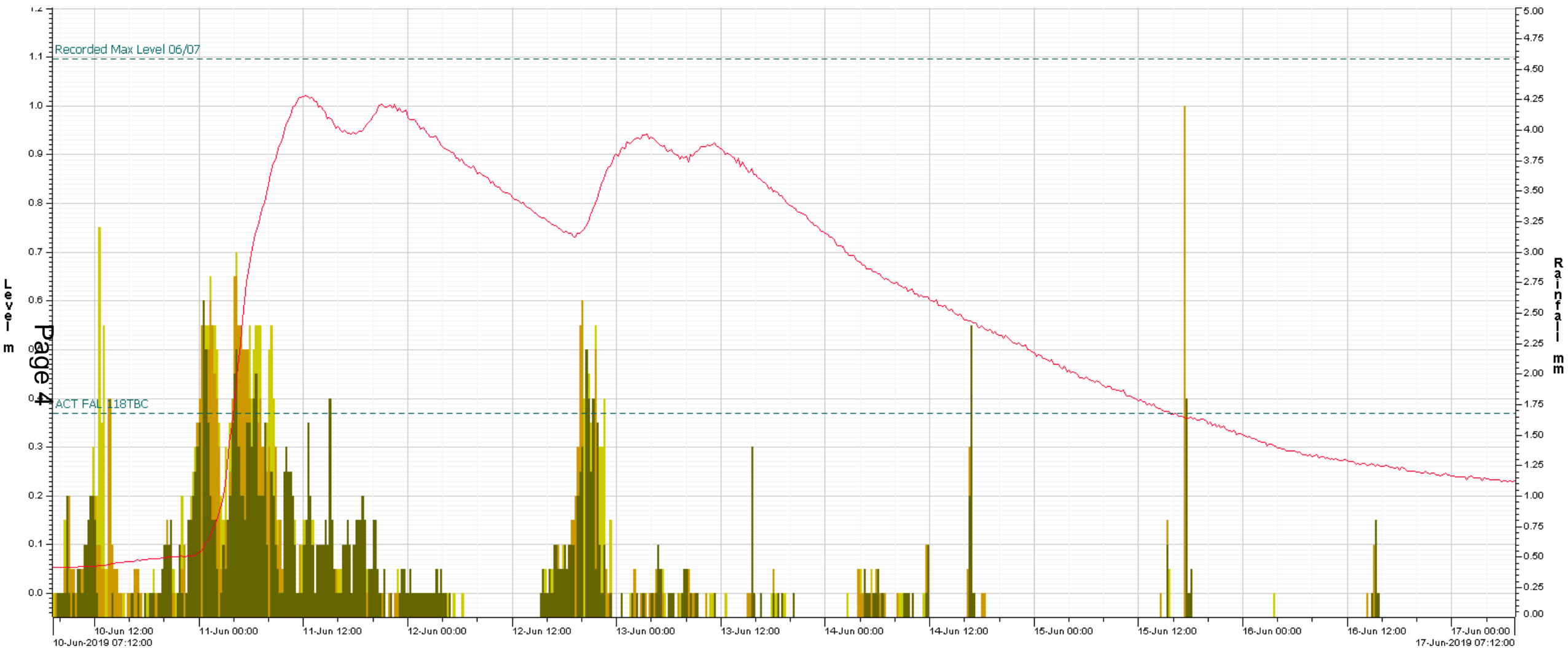


Precipitation Forecast – Monday 10 June

Precipitation Forecast Days 1 and 2

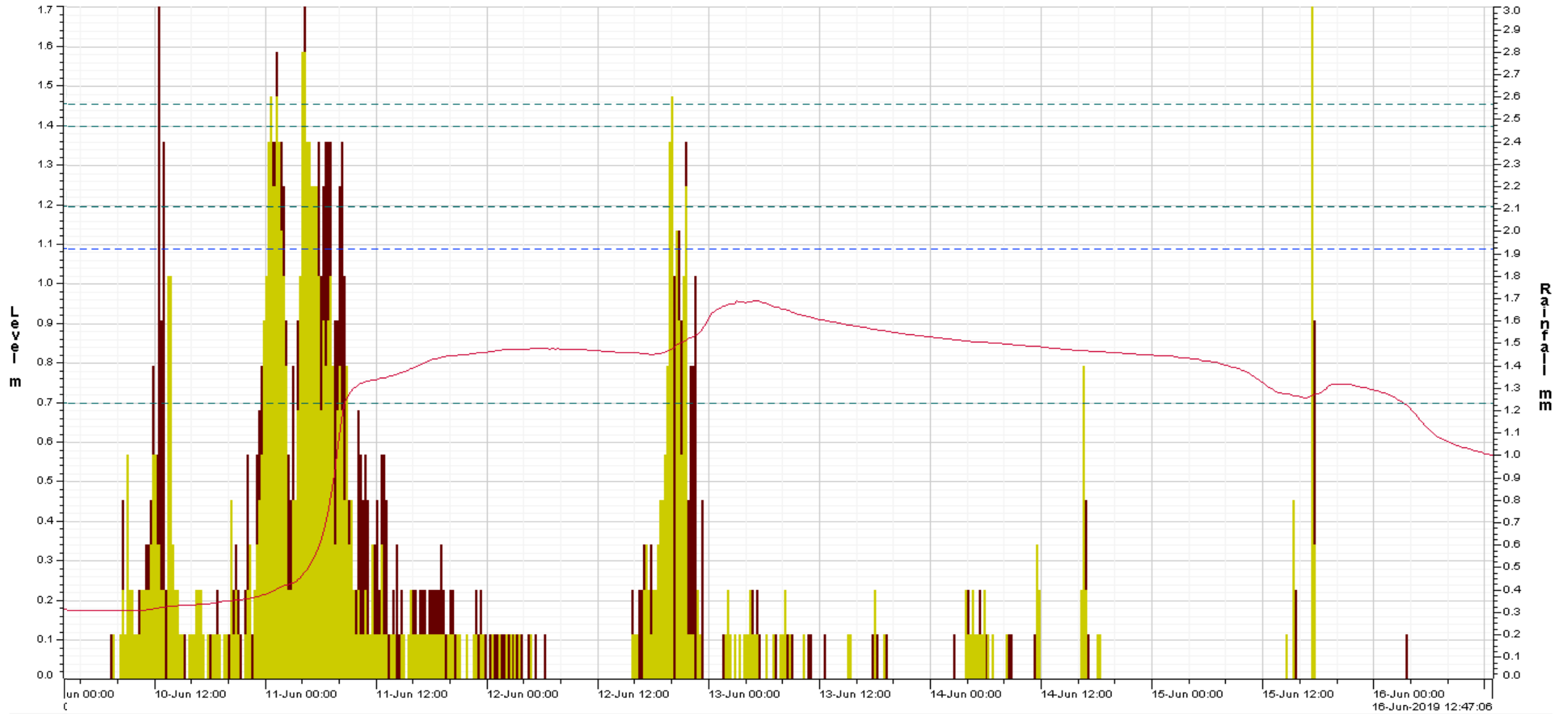
		Monday 10/06/19					Tuesday 11/06/19			
		00-06 (GMT)	06-12	12-18	18-24	Day 1 Total (06-24)	00-06	06-12	12-24	Day 2 Total (00-24)
LINCS	Ave (mm)		7	6	9	22	9	7	19	35
	Max (mm)		13	10	18	36	19	15	29	47
						29	81			

Goulceby Gauge



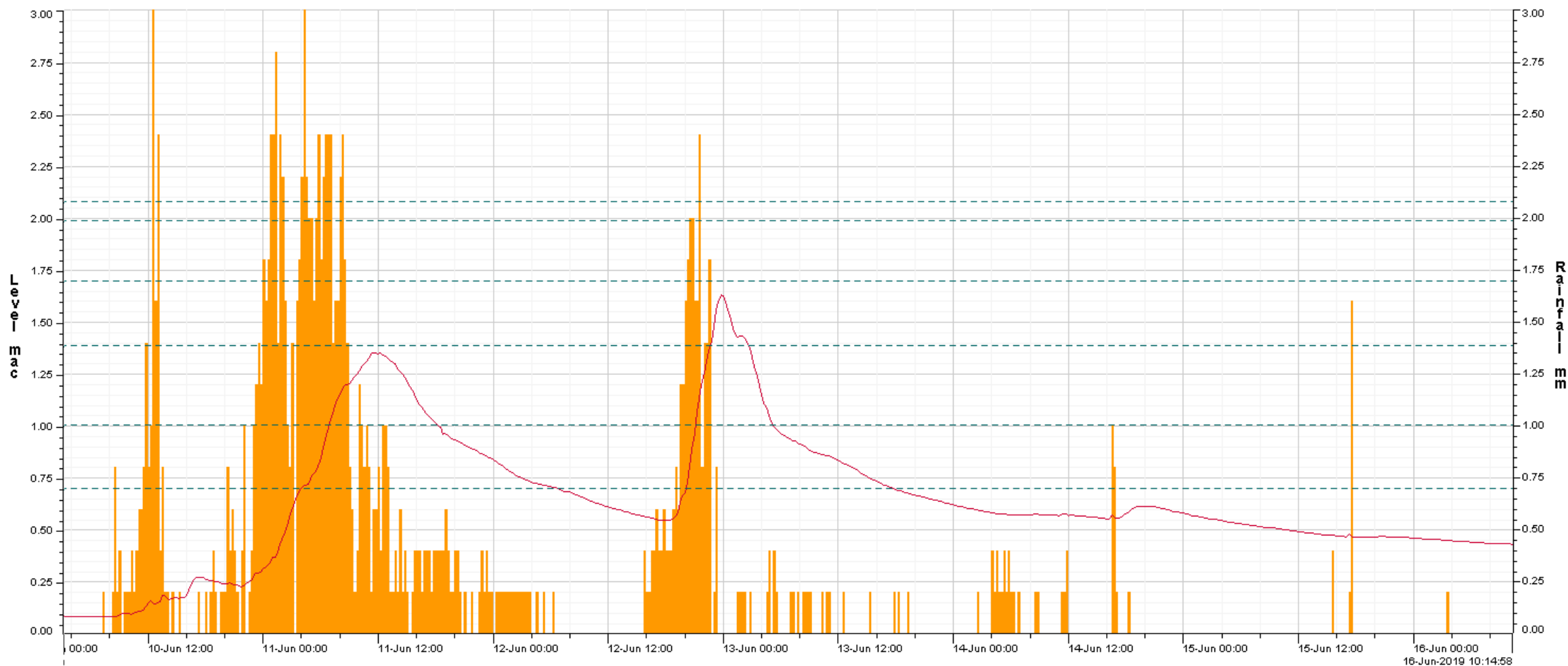
Trend	Server	Stream	Tag Name	Address	Data Type	Intersect Time	Intersect	Max	Min	Mean	Style	Time A...	Value ...	Displayed	Markers	Values	Limits	Sampling	S Devi...	2nd...	2nd Serv
	an_oracle	AN_SCOPE E_VALUE	STENIR RAINGAUGE 15...	E7095	Raw Data			3.2	0	0.248737	Shaded St...	Bottom	Right	Yes	No	No		Simple	1		
	an_oracle	AN_SCOPE E_VALUE	BELCHR RAINGAUGE CA...	E7090	Raw Data			0	0	0	Shaded St...	Bottom	Right	Yes	No	No		Simple	1		
	an_oracle	AN_SCOPE E_VALUE	HEMING RAINGAUGE 15...	E43545	Raw Data			4.2	0	0.2104012	Shaded St...	Bottom	Right	Yes	No	No		Simple	1		
	an_oracle	AN_SCOPE E_VALUE	KENWIR RAINGAUGE 15...	E46612	Raw Data			2.6	0	0.2023774	Shaded St...	Bottom	Right	Yes	No	No		Simple	1		
	an_oracle	AN_SCOPE E_VALUE	GOULCG UPSTREAM LE...	E1147	Raw Data			1.022	0.054	0.5553466	Line	Bottom	Left	Yes	No	No		Simple	1		

Victoria Mill Gauge



Trend	Server	Stream	Tag Name	Address	Data Type	Intersect Time	Intersect	Max	Min	Mean	Style	Time A...	Value ...	Displayed	Markers	Values	Limits
	an_oracle	AN_SCOPE E_VALUE	BELCHR RAINGAUGE CALCULAT...	E7090	Raw Data			0	0	0	Shaded St...	Bottom	Right	Yes	No	No	
	an_oracle	AN_SCOPE E_VALUE	STENIR RAINGAUGE 15 MIN TO...	E7095	Raw Data			3.2	0	0.2192458	Shaded St...	Bottom	Right	Yes	No	No	
	an_oracle	AN_SCOPE E_VALUE	HEMING RAINGAUGE 15 MIN TO...	E43545	Raw Data			4.2	0	0.1846554	Shaded St...	Bottom	Right	Yes	No	No	
	an_oracle	AN_SCOPE E_VALUE	VICMLG UPSTREAM RIVER LEVE...	E1901	Raw Data			0.9580001	0.174	0.5970424	Line	Bottom	Left	Yes	No	No	

Horncastle Banks Road



Trend	Server	Stream	Tag Name	Address	Data Type	Intersect Time	Intersect	Max	Min	Mean	Style	Time A...	Value ...	Displayed	Markers	Values	Limits	S
	an_oracle	AN_SCOPE E_VALUE	BELCHR RAINGAUGE CALCULAT...	E7090	Raw Data			0	0	0	Shaded St...	Bottom	Right	Yes	No	No		
	an_oracle	AN_SCOPE E_VALUE	BAUMBR RAINGAUGE CALCULAT...	E7085	Raw Data			0	0	0	Shaded St...	Bottom	Right	Yes	No	No		
	an_oracle	AN_SCOPE E_VALUE	STENIR RAINGAUGE 15 MIN TO...	E7095	Raw Data			3.2	0	0.2484398	Shaded St...	Bottom	Right	Yes	No	No		
	an_oracle	AN_SCOPE E_VALUE	HEMING RAINGAUGE 15 MIN TO...	E43545	Raw Data			4.2	0	0.2104012	Shaded St...	Bottom	Right	No	No	No		
	an_oracle	AN_SCOPE E_VALUE	BANKSG SHAFT ENCODER LEVE...	E1839	Raw Data			1.632	0.082	0.5849169	Line	Bottom	Left	Yes	No	No		

Steeping Catchment Information

- 134mm rain 10-12 June 2019 (more than forecast)
- Over twice the monthly average rainfall
- 68mm rain resulted in the 2007 incident
- There was 330% of the long term average rainfall over the Steeping system between 1st and 16th June, with 159 mm rain falling between the 10th and 16th



- 2 Ultra High Volume Pumps installed
- 1 pump at Wainfleet – capacity 1.6 cumecs
- 1 pump at Lade Bank – capacity 1.9 cumecs
- Multi partner pumping operation

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- 150+ EA staff involved – including Mutual Aid
- 1 Incident Support Vehicle on site throughout



Flood Guidance Statement – Sunday 16 June

Flood Guidance Statement

10:30hrs Sunday 16 June 2019

FLOODFORECASTINGCENTRE

a working partnership between



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Sunday

16 Jun 2019 10:30-23:59
Trend since last FGS

Steady



Monday

17 Jun 2019

Steady



Tuesday

18 Jun 2019

Increased



Wednesday

19 Jun 2019

Increased



Thursday

20 Jun 2019

Steady



Flood Guidance Statement – Sunday 23 June

Flood Guidance Statement

10:30hrs Sunday 23 June 2019

FLOODFORECASTINGCENTRE

a working partnership between



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Sunday

23 Jun 2019 10:30-23:59

Trend since last FGS

Decreased



Monday

24 Jun 2019

Steady



Tuesday

25 Jun 2019

Steady



Wednesday

26 Jun 2019

Steady



Thursday

27 Jun 2019

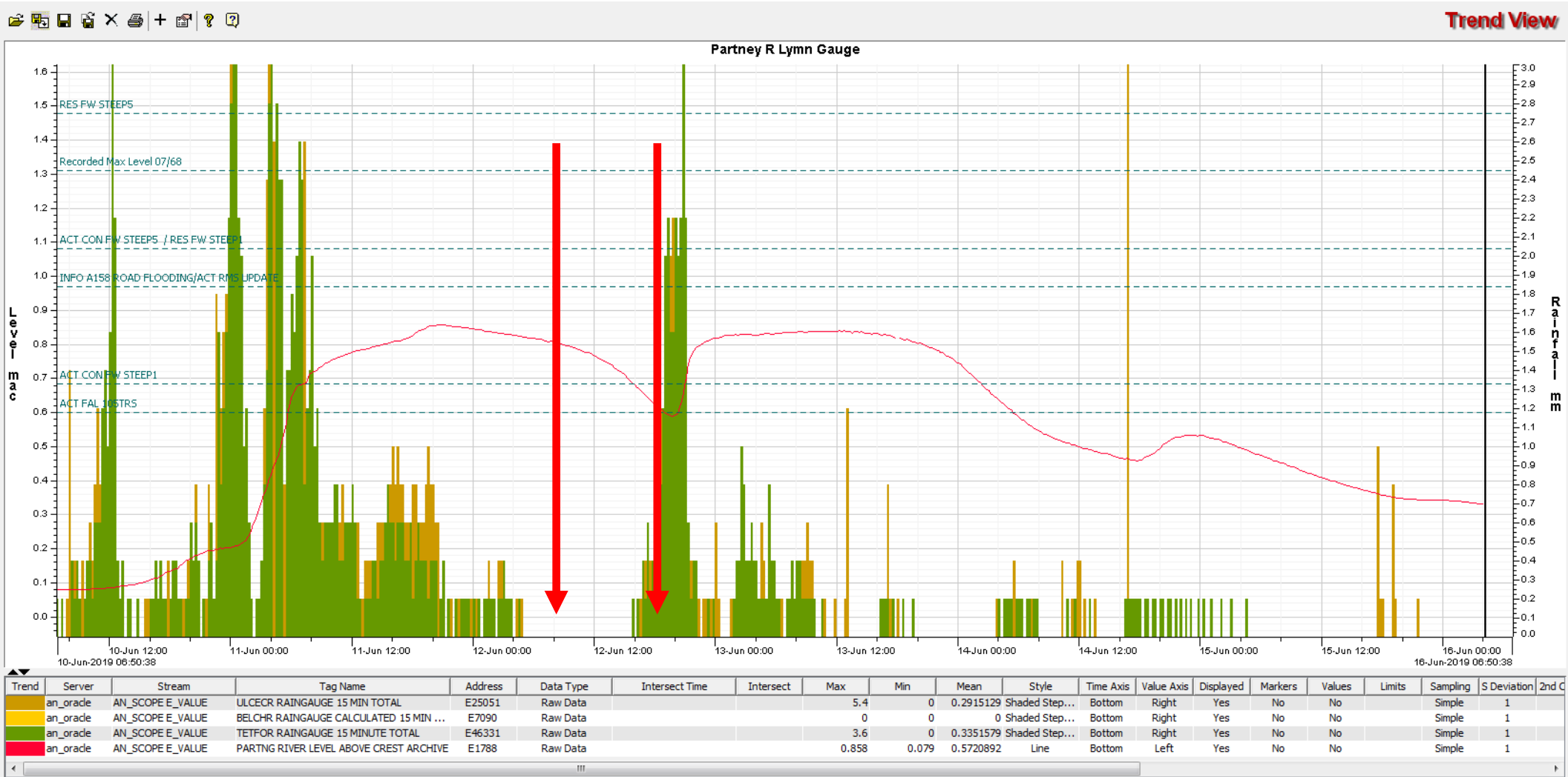
Steady



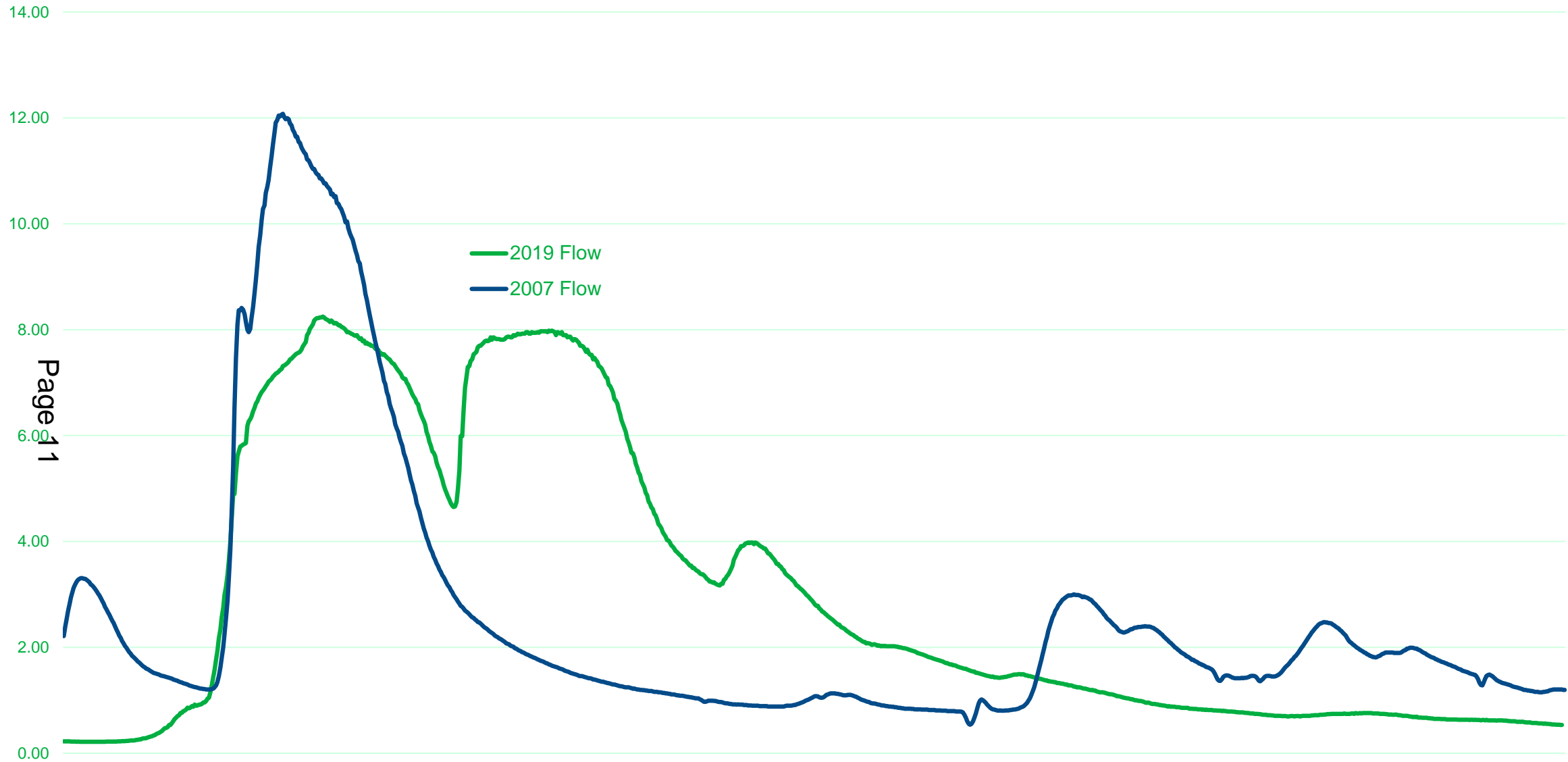
Partney River Level Gauge – 10-16 June

last 6 days as of 05:00BST

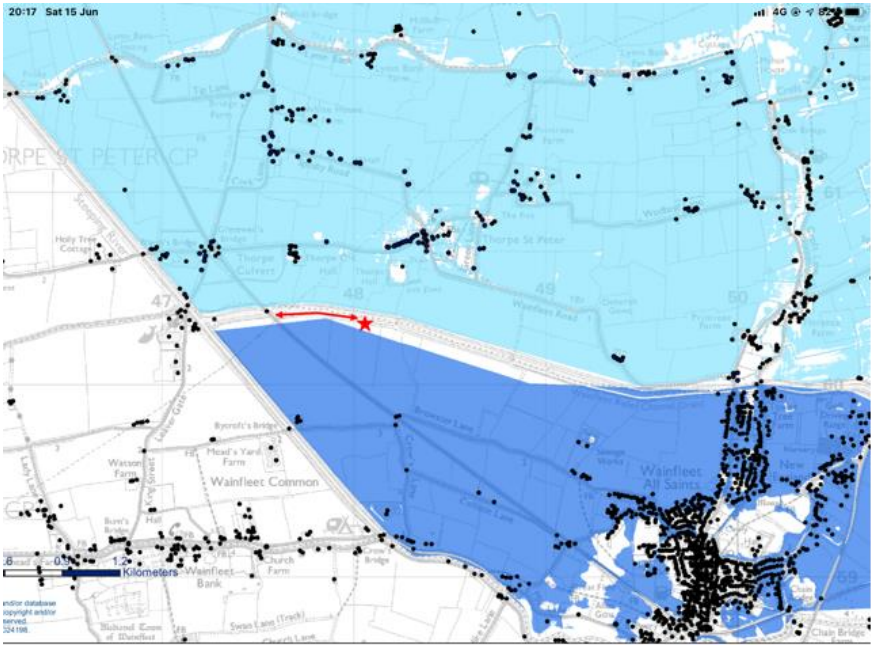
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Partney Flow Gauge



Images of Breach



Work starting 08:45 25-06-2019

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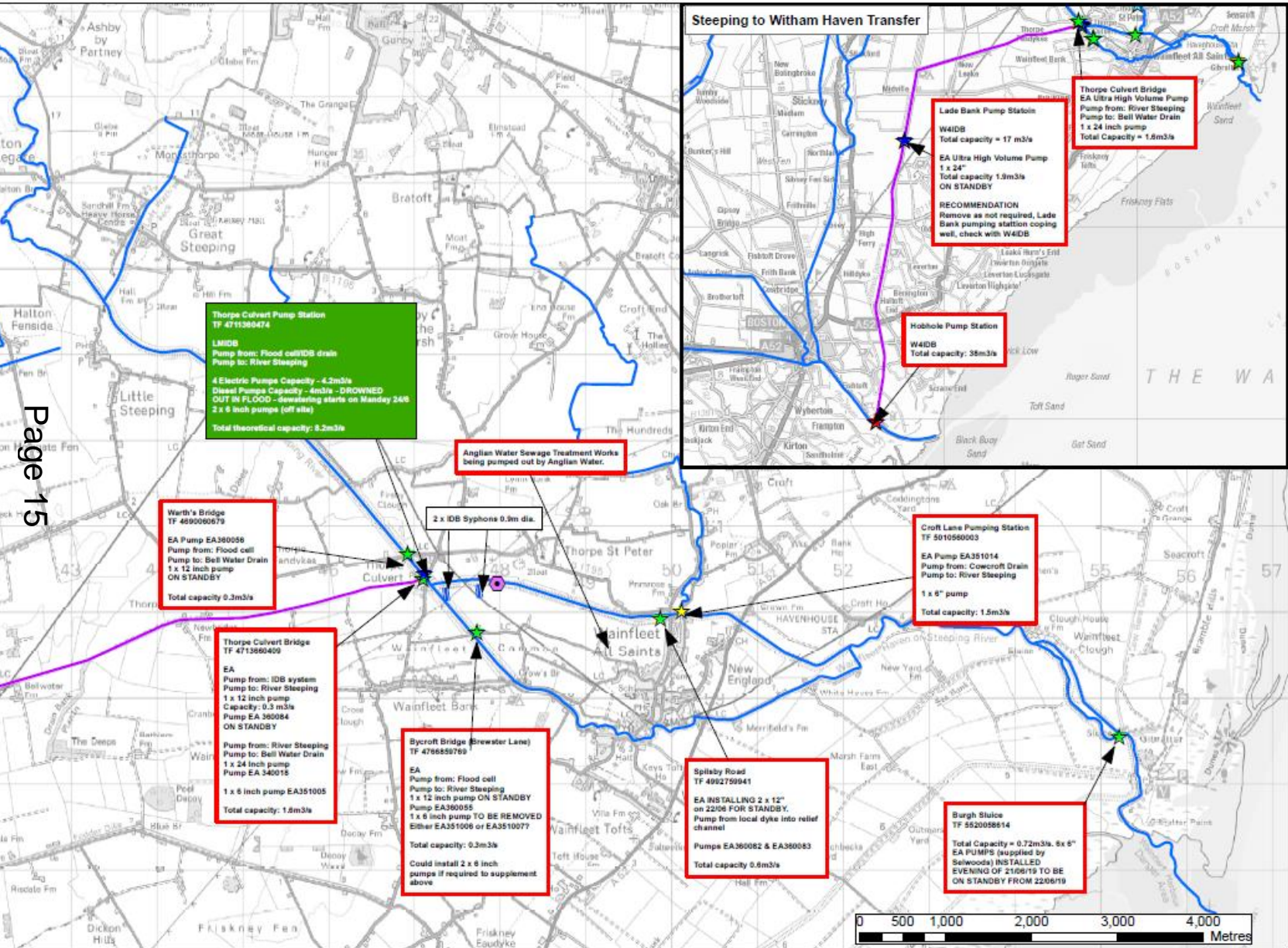


Work ongoing – 26-06-19



River Steeping - Pump Locations

Map updated 24 June 2019 - 06:20



Scale
1:45,000



Legend

Pump Owner

- ★ Environment Agency (Permanent)
- ★ Environment Agency (Temporary)
- ★ IDB
- ★ IDB (Temporary)
- ★ Fire Service (Temporary)
- IDB Drain Pump Route
- Main River
- ⬢ Breach Location

Currently Pumping

Not Pumping

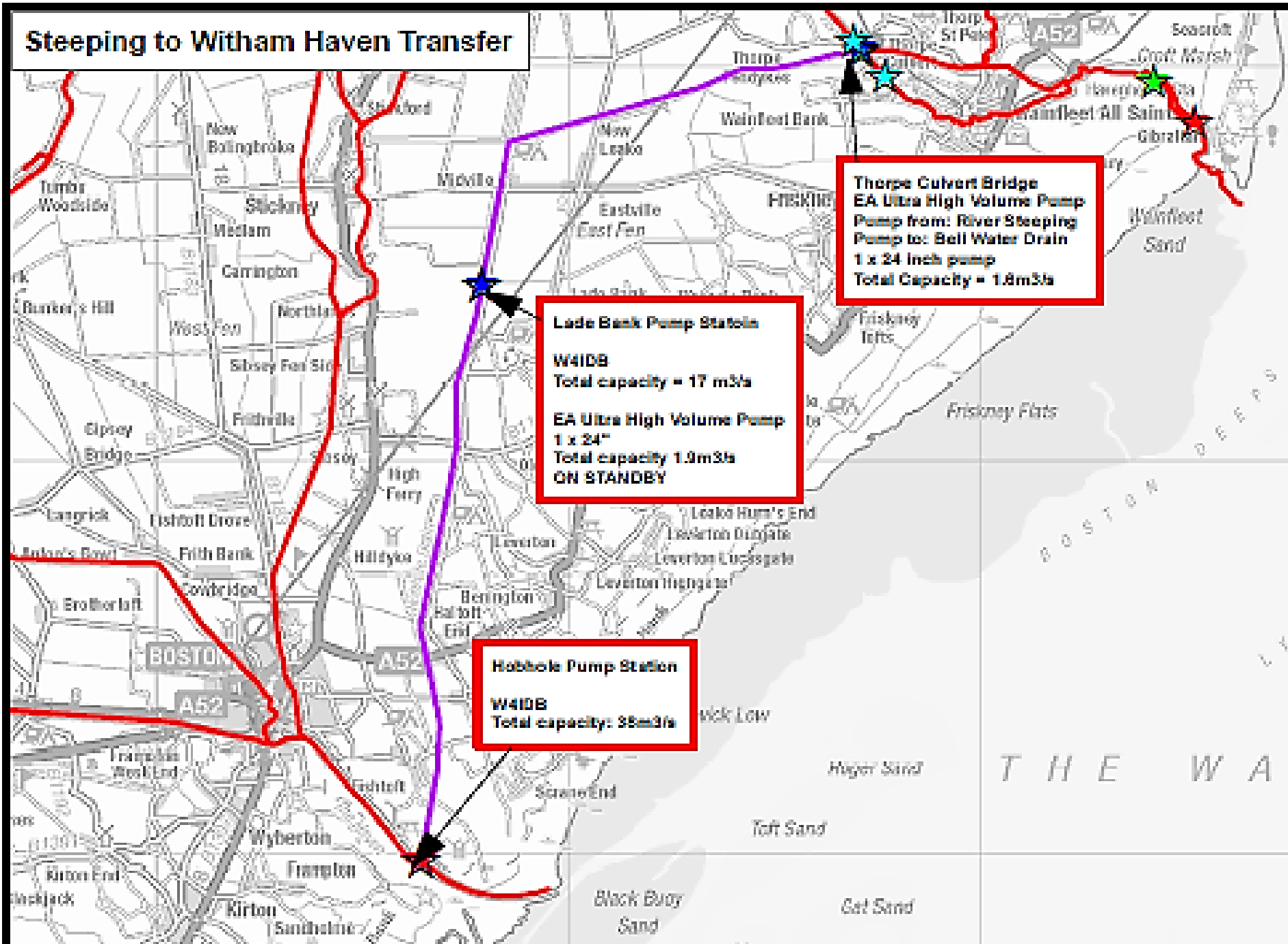
- Pump Plan Aims**
1. Continue to maximise discharge of the Steeping to the sea
 2. Reduce the level of water in the flood cell
 3. Reduce the risk to properties by ensuring the Steeping is maintained at a safe level
 4. Fire & Rescue pumps replaced with EA pumps on Saturday (22/6/19)

- Pump Deployment Numbers**
- EA pumps:
1 x Pump Station (Croft Lane)
2 x 24 Inch
5 x 12 Inch
7 x 6 Inch
- EA pumps in reserve:
2 x 6 inch at Thorpe Culvert
8 x 6 inch at Mablethorpe Depot
Lorry for transport

- LMIDB**
1 x Pump Station
1 x 6 Inch
+ additional LMIDB pumps in reserve

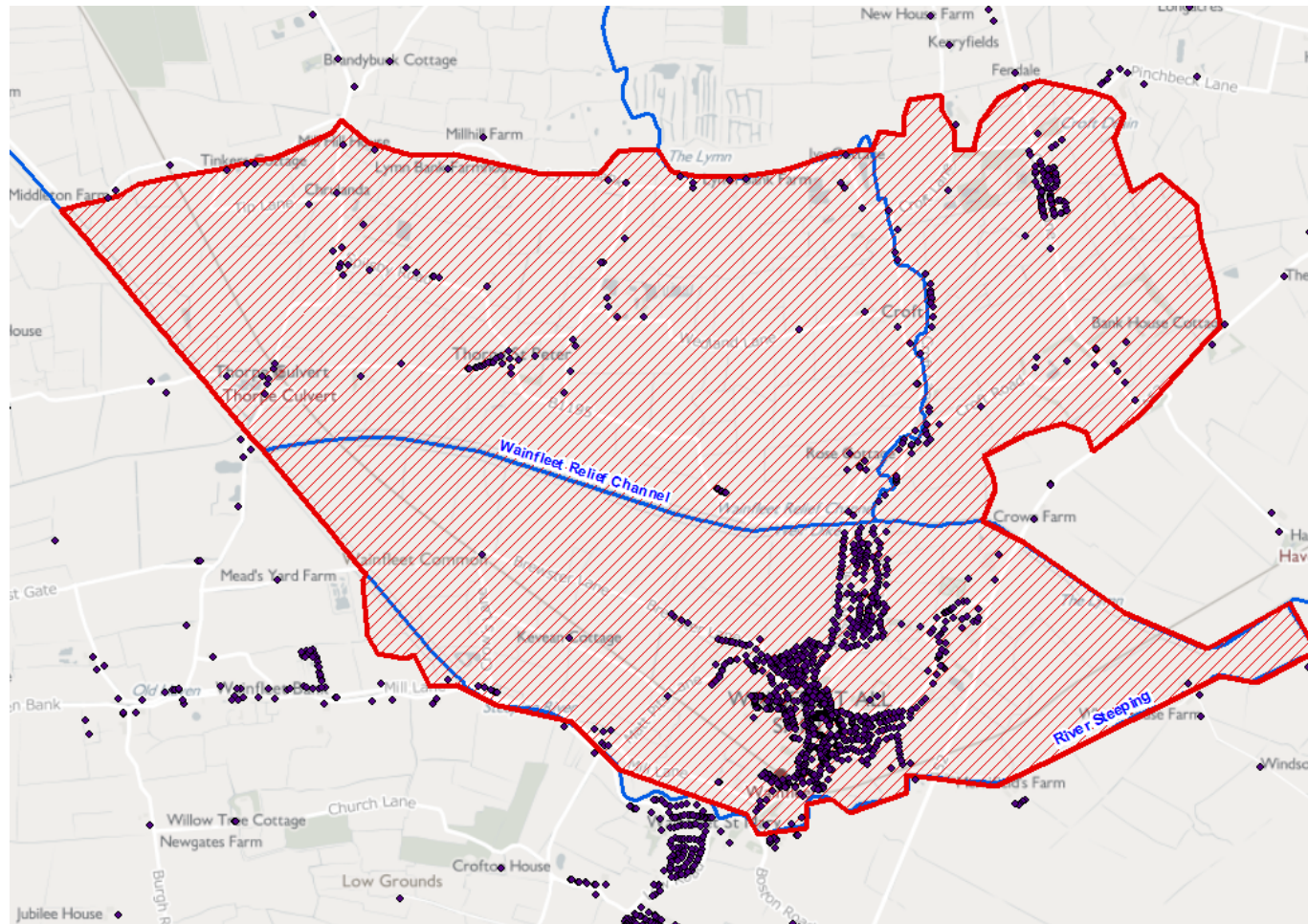


Steeping to Witham Haven Transfer

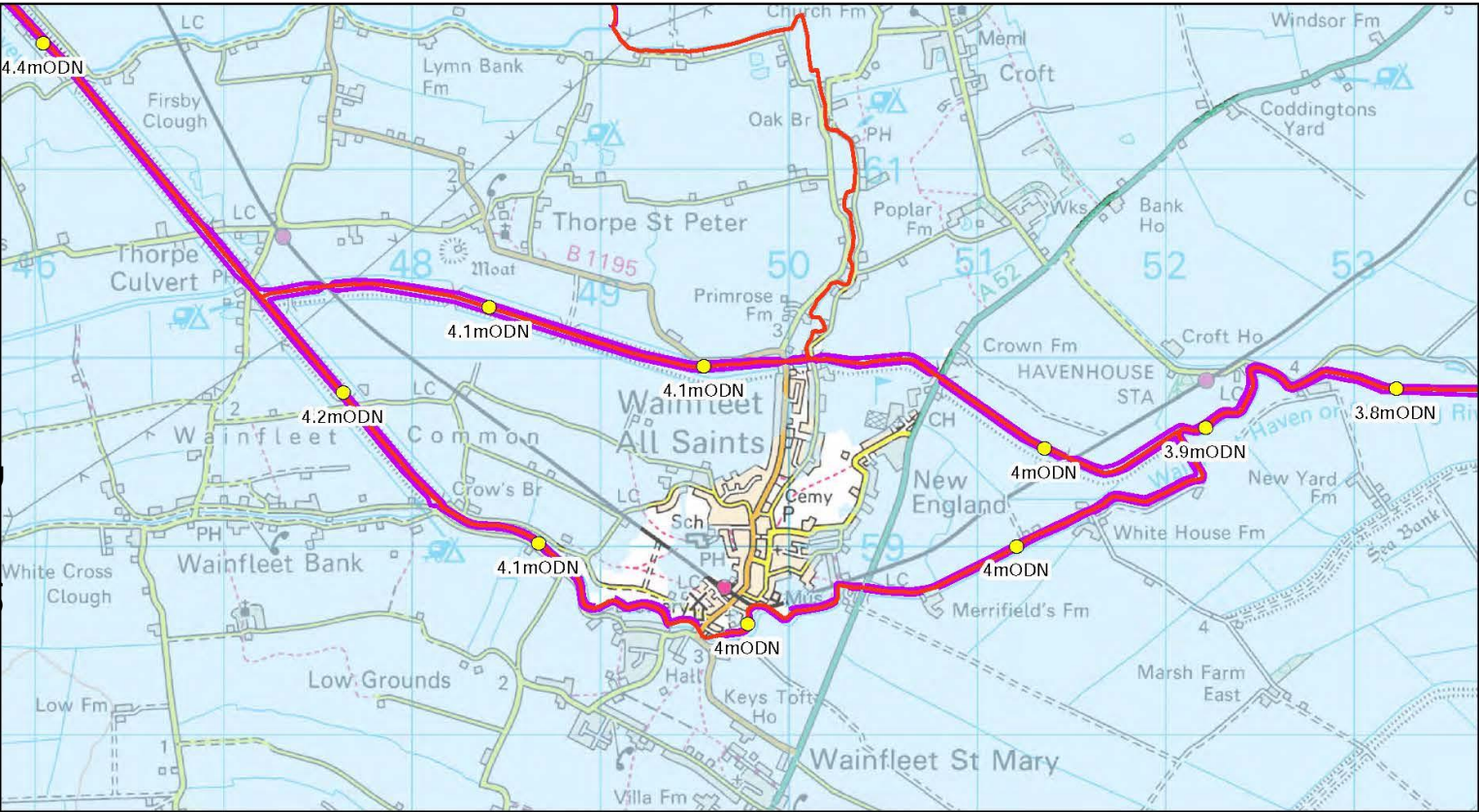


Extension of the existing flood warning area to cover Wainfleet risk Area

Before this flood incident the flood cell at Wainfleet was partially covered by Flood Warning Areas. This meant that in the interim until permanent bank repairs are complete, we'd have limited ability to warn properties at risk.



Wainfleet - Comparison of river and land levels
Map created 28 June 2019



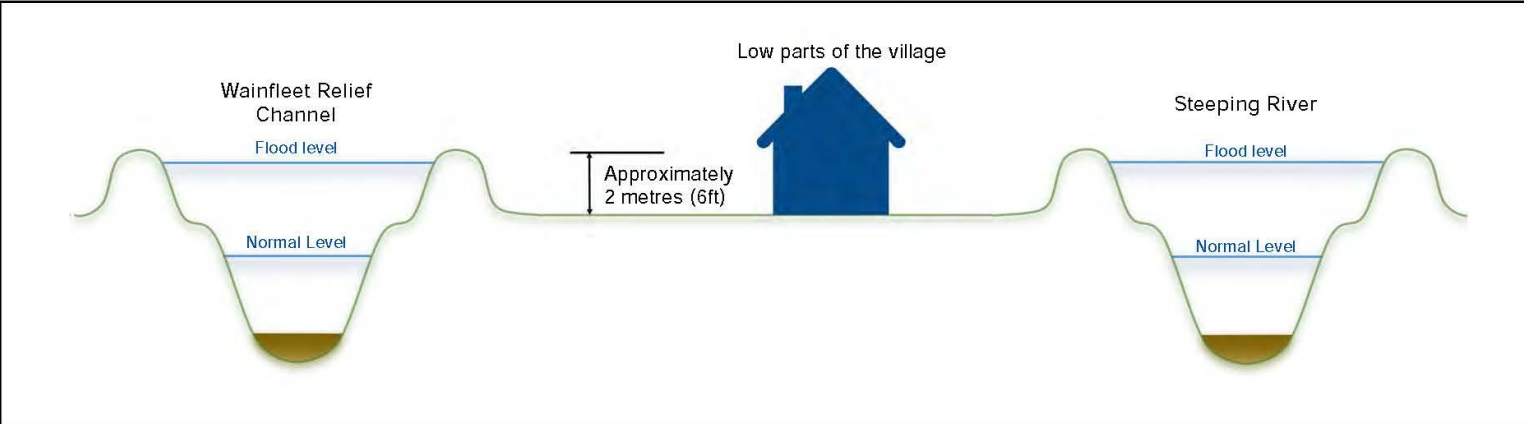
Scale 1:25,000



Legend

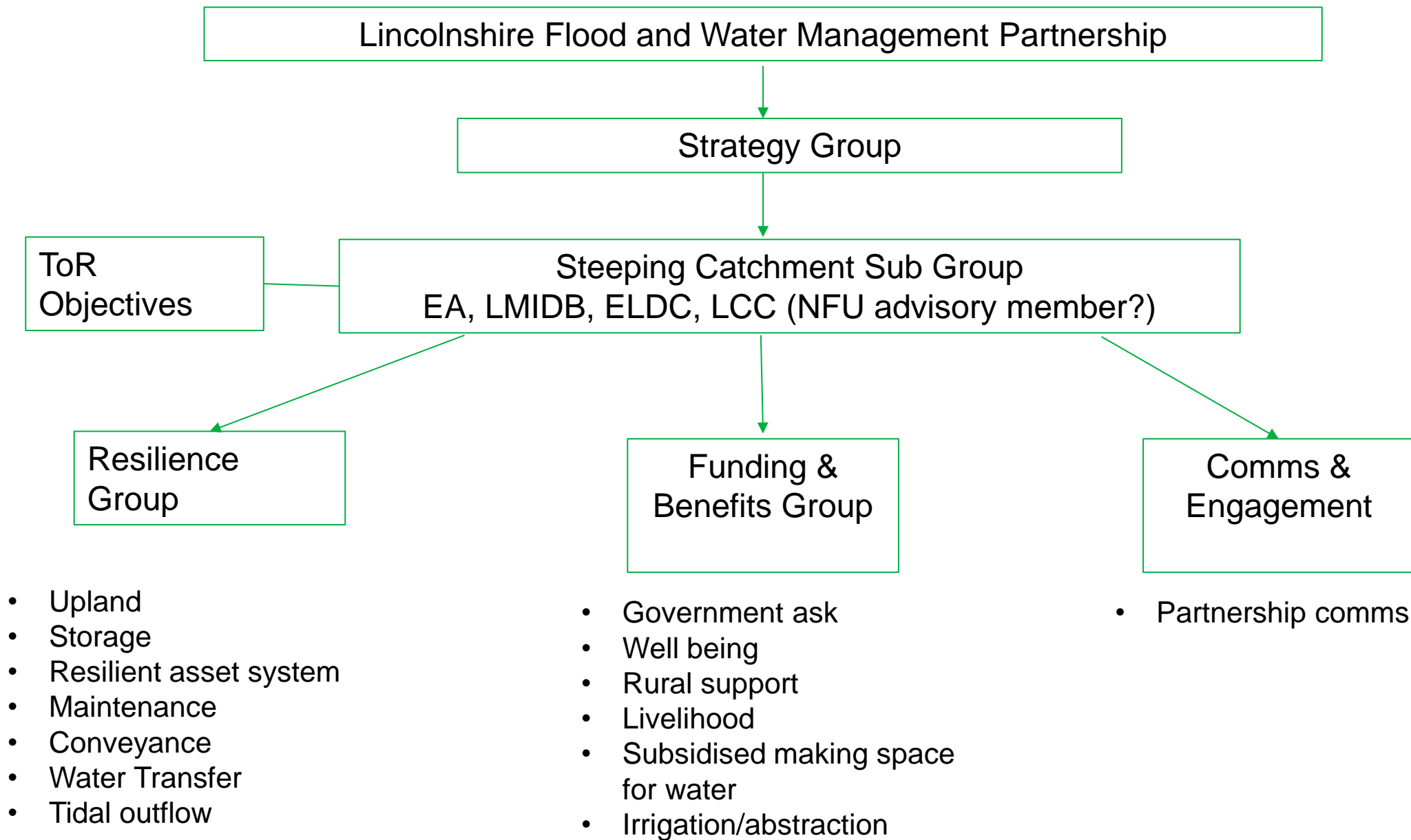
- Approximate Flood Level in River
- Main River
- Raised Embankments
- Floodplain

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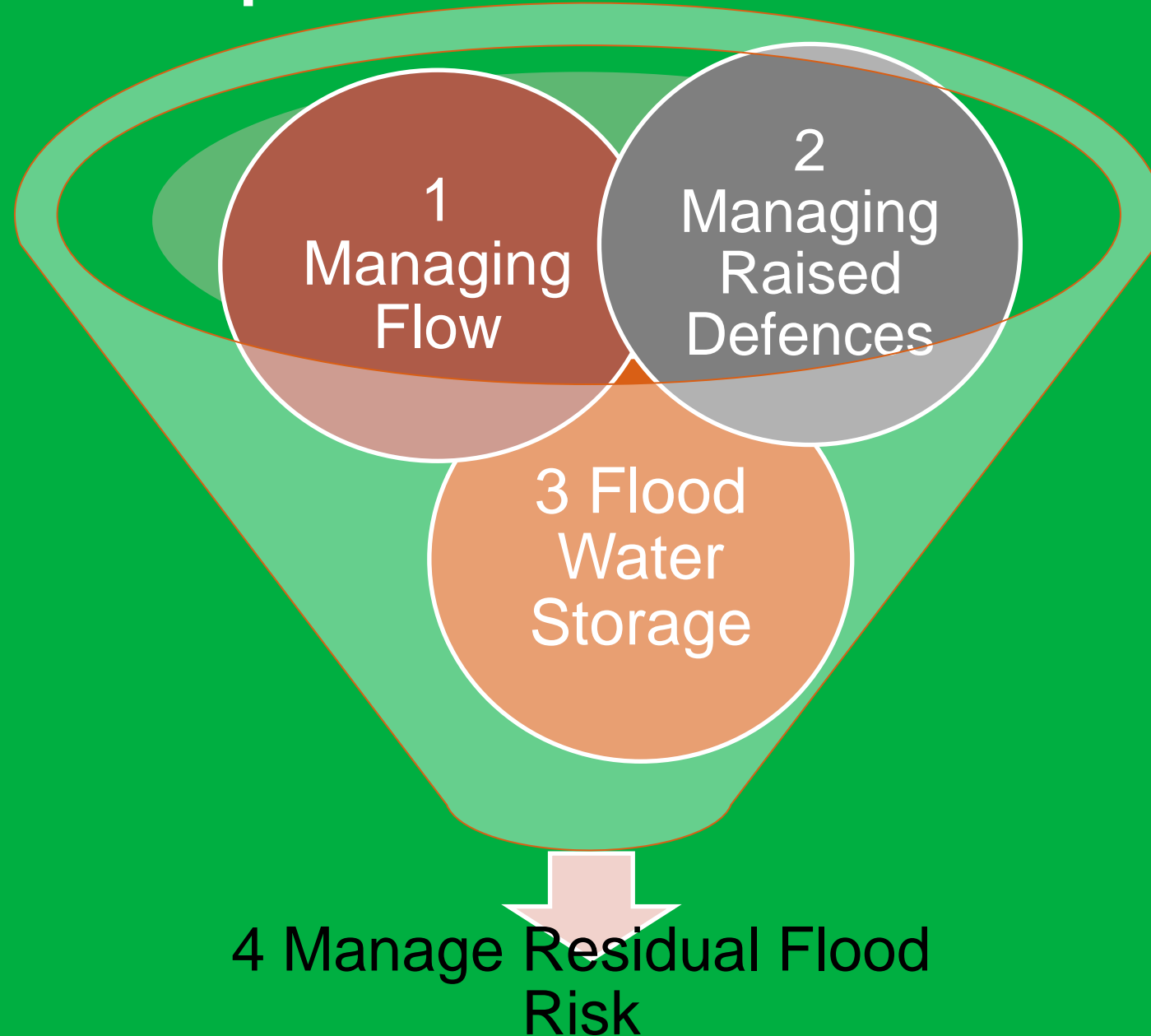
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Steeping River Catchment Plan

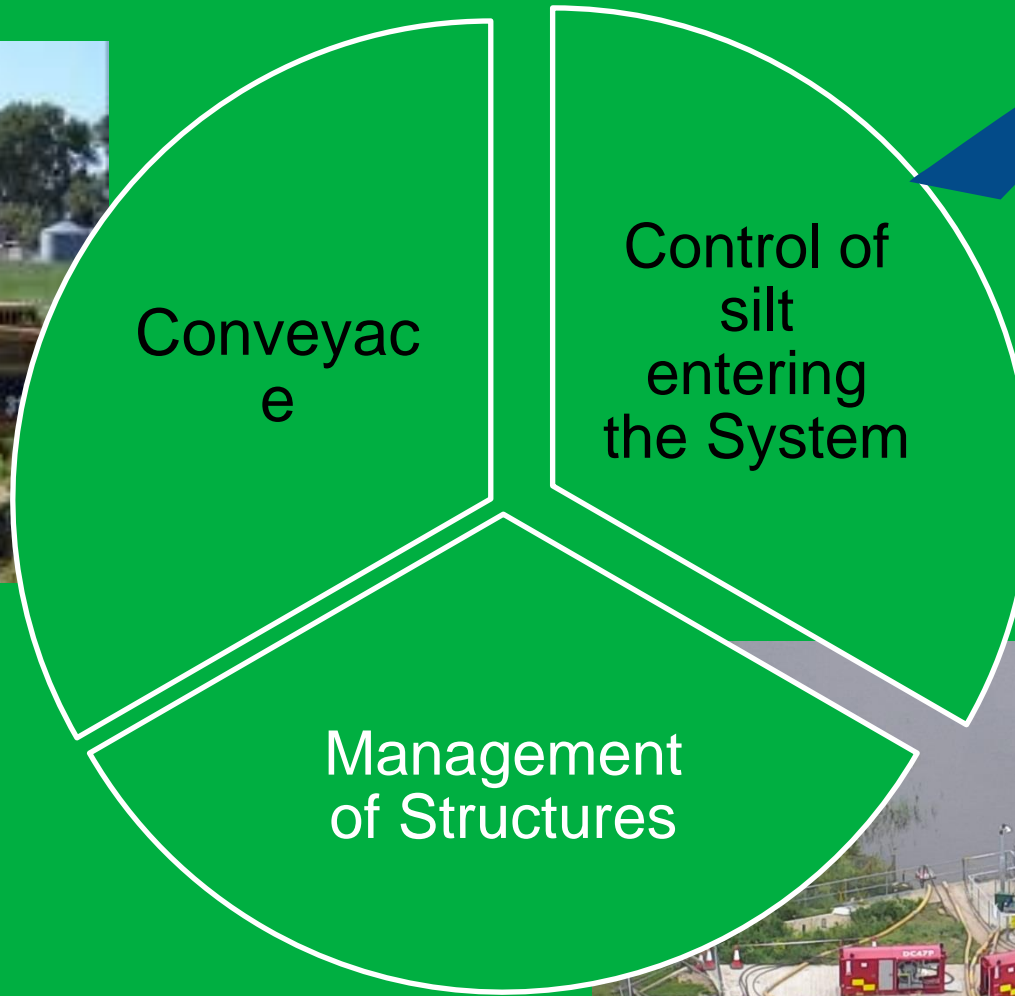
Themes for Improvements Sub Group



Managing Flow



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Managing Raised Flood Defences

Routine
Maintenance

Rebuild &
Refurbish



Floodwater Storage

Natural Flood Management



Flood Reservoirs



Overspill Areas



Manage Residual Flood Risk (A climate resilient community)



Agriculture



Infrastructure



Homes



Business

FUNDING & BENEFITS GROUP

- Investigate Sustainable Funding Streams
- Investigate Alternative Funding Streams
- Clarify Benefits to funders
- Coordinate Funding Bids (ERDF)

COMMUNICATIONS AND ENGAGEMENT GROUP

- Weekly Drop In Sessions in Wainfleet – Ongoing
- Monthly Newsletter
- Pumping Station Open Day
- Catchment Tours