

From Winter Maintenance Team to Severe Weather Team

How can we efficiently use resource to tackle all severe weather events?

Flood events in Yorkshire in Winter 2015 and the collaborative response

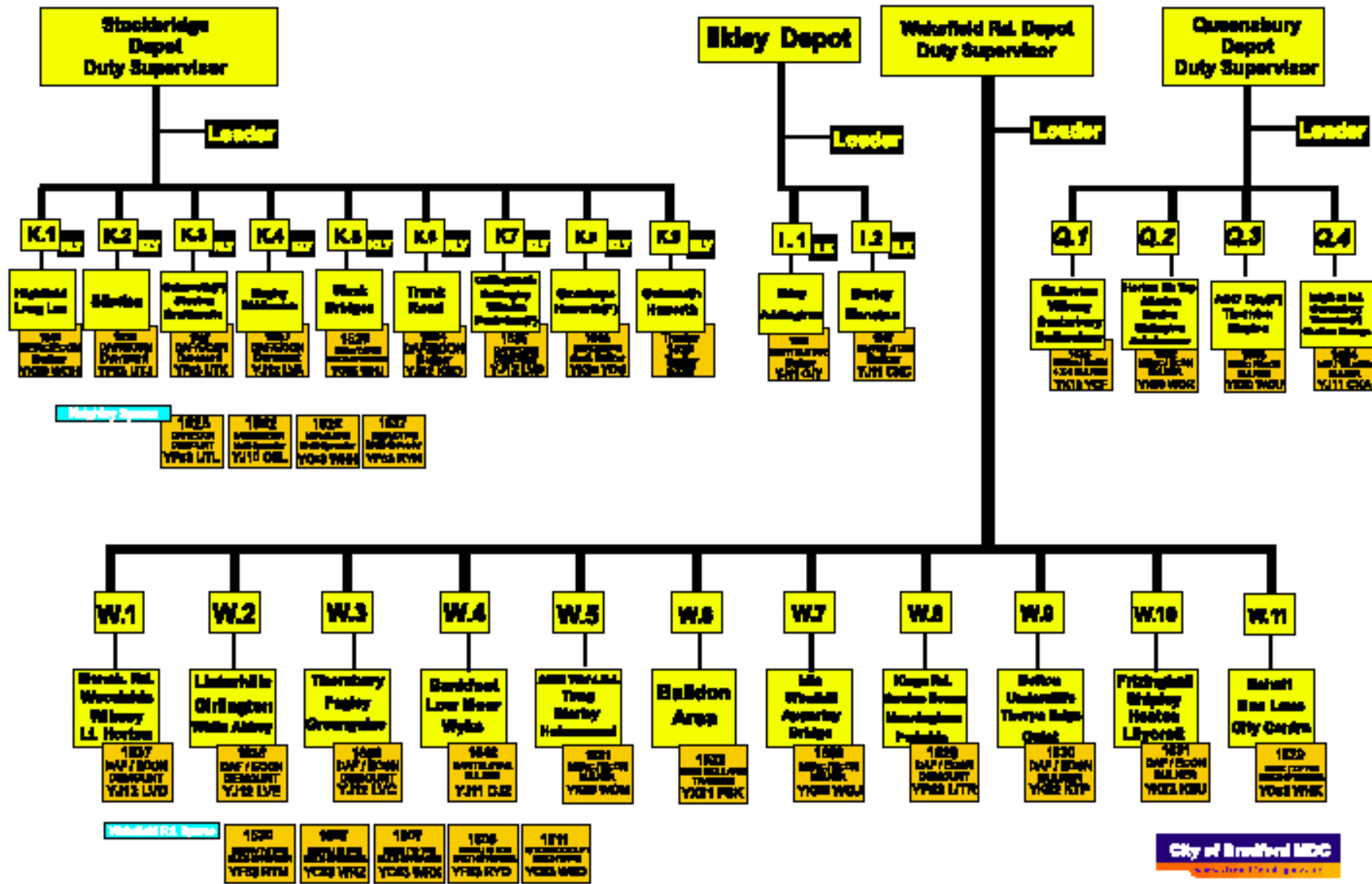
Reviewing Bradford's Flood Response strategy and building community resilience.

David John Mazurke

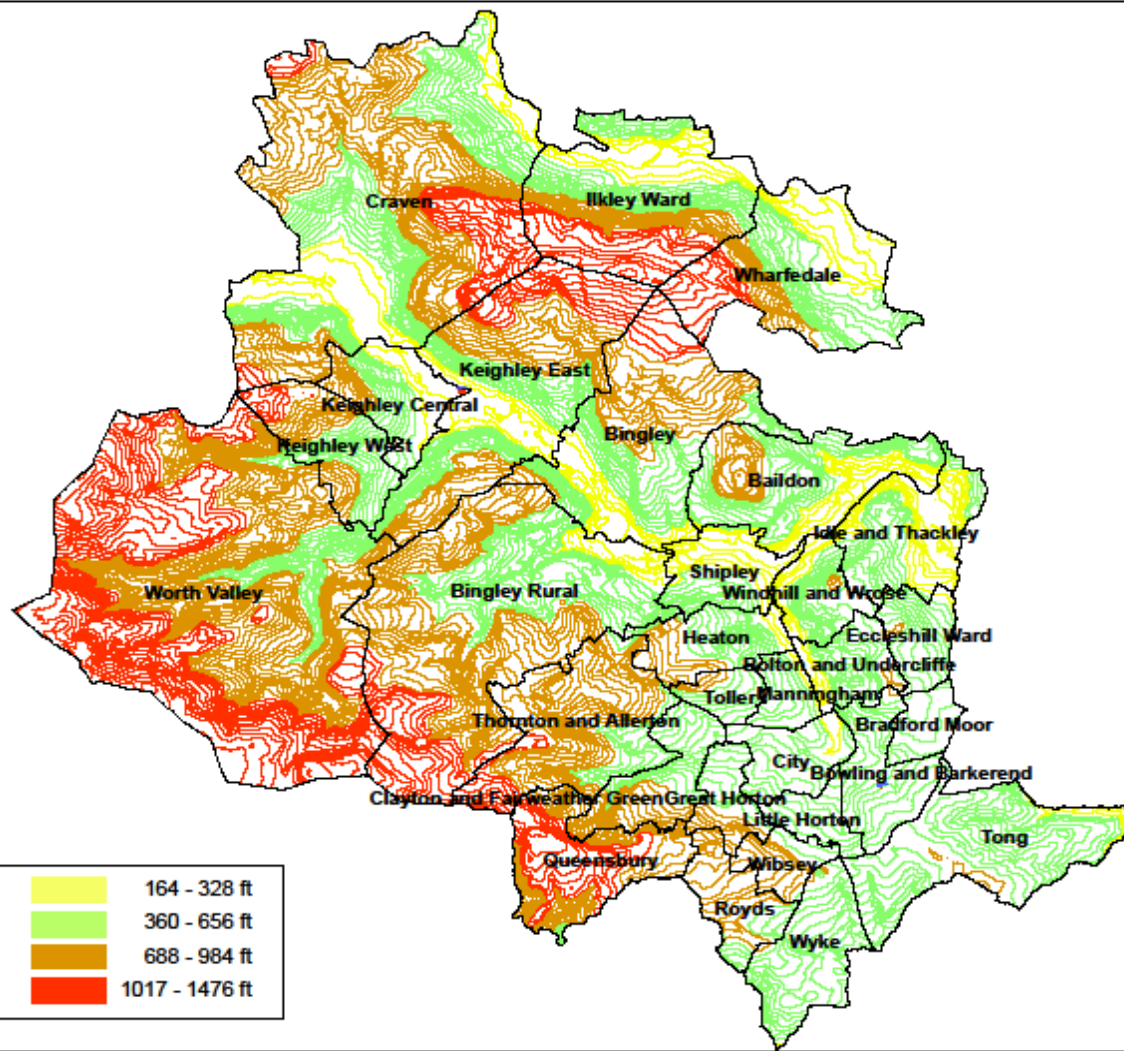
Group Manager Highways, Street lighting, Gullies and Winter Maintenance

- 26 Routes
- 7 Dedicated Footway Routes
- Since 2011 Continuous Cut-backs
- Total spend on Gritting £1.1 million
- £140k on Footway Gritting
- 712 Mile equates to approx 60% of Network
- Meetings in July 2015 to look at cuts in Winter maintenance Budget 2016-2017
- Reduce Network of Gritting to 50%
- 626 Miles

Winter Maintenance Operation 2014 - 2015



0 1.5 3 6 9 12 15 18 Miles



- | | |
|-------------------|--------------------|
| 1 Haworth | 14 Bingley |
| 2 Oxenhope | 15 Keighley Centre |
| 3 Denholme | 16 Steeton |
| 4 Queensbury | 17 Silsden |
| 5 Clayton | 18 Silsden Moor |
| 6 Halifax Road | 19 Addingham |
| 7 Odsal | 20 Ilkley |
| 8 Bfd City Centre | 21 Burley |
| 9 Undercliffe | 22 Menston |
| 10 Greengates | 23 Ilkley Moor |
| 11 Thackley | |
| 12 Shipley | |
| 13 Lower Baildon | |

Bradford District Elevation Profile



- Saving of 3 Gritters, salt, fuel ,labour
- Saving of £71k
- Population of Bradford over 500,000
- Up to 50% live at 600 feet and above
- Risk is high
- You put your name to it
- November the proposal went to Council and consultation
- Ratified at Full Council in February 2016 for approval
- Phone red-hot with Councillors

History of Gritting

YEAR	NO. OF GRITTING RUNS	TOTAL OF SALT USED
2009- 2010	106	21,000 TONNES
2010-2011	85	13,300 TONNES
2011-2012	73	12,500 TONNES
2012-2013	117	22,000 TONNES
2013-2014	45	6,300 TONNES
2014-2015	68	14,800 TONNES
2015-2016	36	7,700 TONNES



New Deal

- Working with community Groups
- Several parish Councils will buy grit bin and we fill for £100
- Rural roads
- Homes for the Elderly
- Health centres
- Schools
- Grit Bin meets New Deal ?????





Resilience Since 2009

- Salt Stocks – 26,000 tonnes
- New fleet investment
- Trackers
- Calibration
- Bradford Winter Service Plan
- Social media
- Maps
- Severe Weather Resilience contracts with Local Contractors
- West Yorkshire Collaboration
- West Yorkshire Winter Service Plan
- Improved Weather Information
- APSE Meetings Sharing Information, Innovations

- Quarmby Report 2010
- Appendix 'H' 2012
- Adverse Weather plans
- DFT- Transport Resilience Review- Extreme Weather Events
- Liquid Sprays
- Econ Multi -Spreaders
- Safecote
- Prewet Systems
- Slush Blades
- Domes
- Multi – Hog Snow Blower
- Drivers Hours

- Road temperature Sensors
- Thermal mapping
- Bosch cameras on the Bradford Network
- Linked into UTC Wireless Comms Network
- Does not record for Data Protection Legislation.

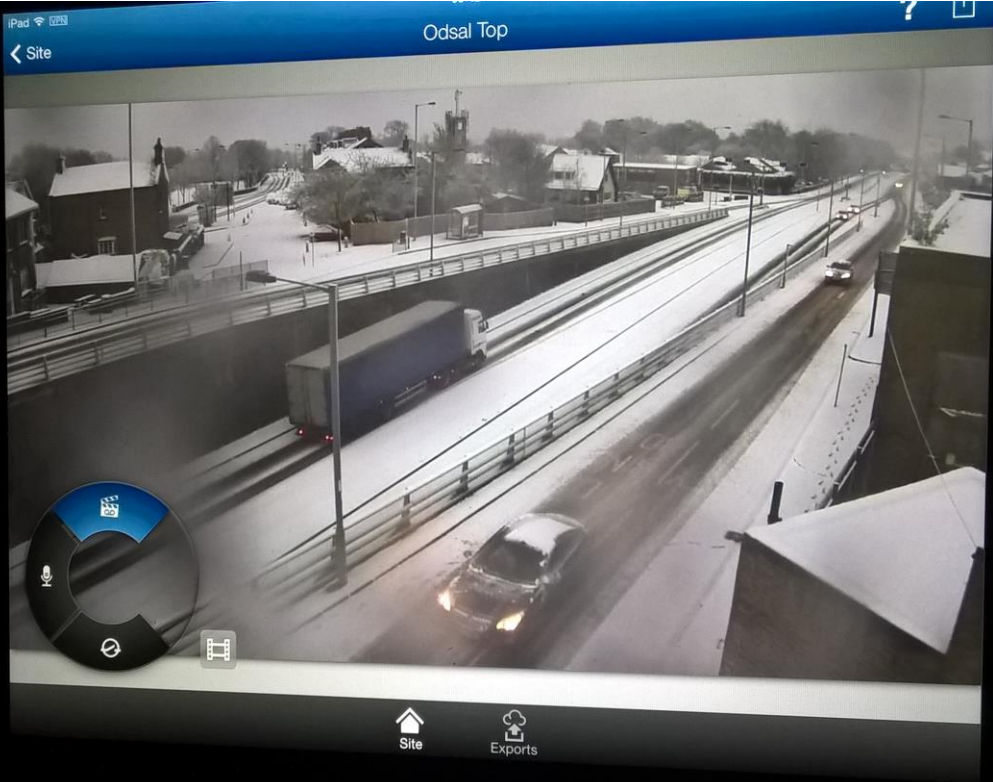
- Baldon
- Carr Lane/Wrose Road
- GI Horton/Cross Ln
- Queensbury
- Odsall Top
- Dudley Hill Roundabout
- Thornton Rd/Halifax Rd
- Bankfield Roundabout
- Thornbury
- Sandy Lane



- Output 1
- Output 1
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Control panel with a central joystick, directional buttons, and a numeric keypad (1-6). Below the joystick are buttons for 'Scene', 'Set', 'AUX on', and 'AUX off'.

Time	Device	Events
03/02/2016 08:31:21	Thornton Rd/Halifax Rd	Connecting to 93.91.35.63 (IP bullet 4000 HD) failed due to invalid access data
03/02/2016 08:30:03	Thornton Rd/Halifax Rd	Connecting to 93.91.35.63 (IP bullet 4000 HD) failed due to invalid access data
03/02/2016 07:17:55	Thornton Rd/Halifax Rd	Connecting to 93.91.35.63 (IP bullet 4000 HD) failed due to invalid access data
03/02/2016 07:17:25	192.168.246.22	Connecting to 192.168.246.22 (Unknown) failed
03/02/2016 07:17:24	Thornbury	10.136.84.133 is connected
03/02/2016 07:17:23	Thornton Rd/Halifax Rd	Connecting to 93.91.35.63 (IP bullet 4000 HD) failed due to invalid access data
03/02/2016 07:17:22	Queensbury	10.140.73.9 is connected
03/02/2016 07:17:22	172.23.3.133	172.23.3.133 is connected
03/02/2016 07:17:22	10.140.144.45	10.140.144.45 is connected
03/02/2016 07:17:21	10.140.70.76	10.140.70.76 is connected



Winter 15/16 Wet



MET OFFICE- Climate Change- likely resulting changes in our weather

- Warmer, drier summers
- Milder, wetter winters
- Increasing likelihood of summer heatwaves
- Severe thunderstorms (Summer 2016)
- Reduced occurrence of winter frost and snow
- Likely increase in extreme rainfall/wind events
- Longer growing season

Severe Weather Teams

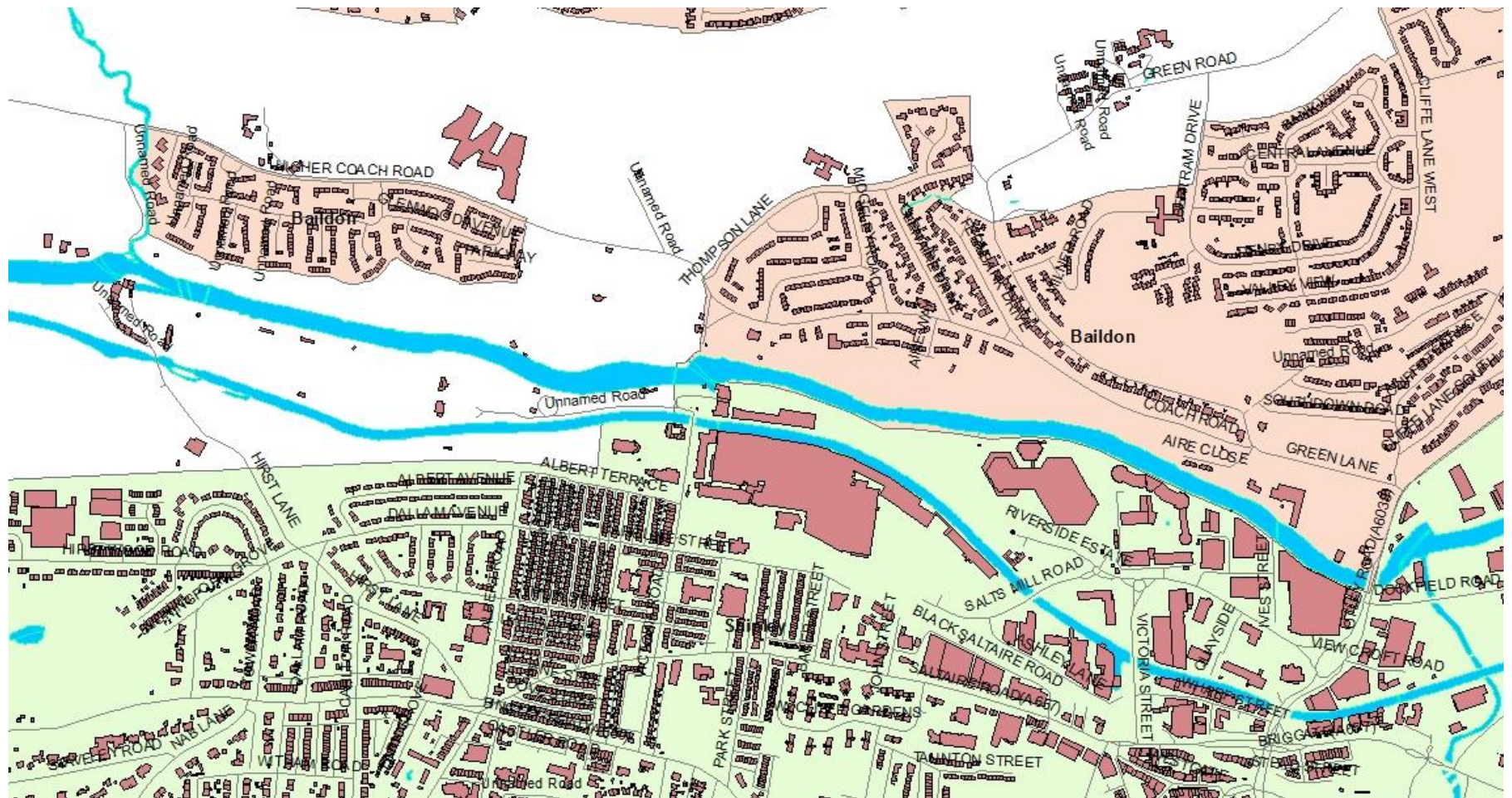
- Snow Wardens
- Snow Teams
- Boxing day Floods
- Only 24 hour operations teams available was the Winter Maintenance Teams
- 26 drivers
- Filling sandbags
- Rain and rain



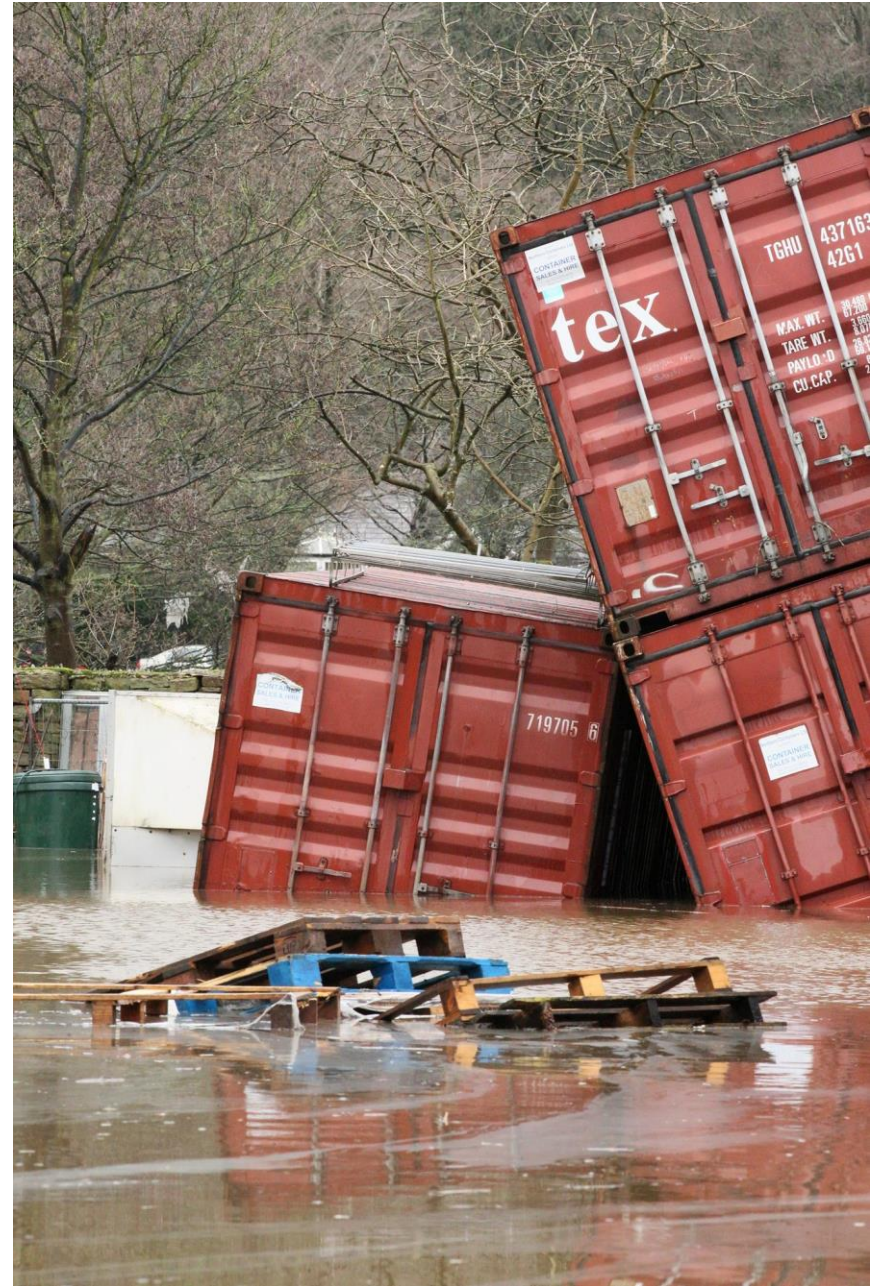
- No sand as all Building Suppliers closed.
- We did have plenty of Salt!!!
- Emergency Planning had formed Silver Command at Bradford
- Received 1,000 sandbags from Nottingham
- Calls from Calderdale- Response Nil
- British Army called in from York
- 60 Men and 3,000 sandbags empty!!













Florist Street - Stockbridge



How did we respond to the floods

- Floods events in 2015 first since 2000
- Due to this time frame of major events impact of flooding with elected members and the public had reduced in their significance
- Communication between major stakeholders had fragmented
- In Bradford 15 priority locations of flooded areas identified
- Events in Leeds, Calderdale and York reported on more
- Time line of actual events went through in detail

Build Community Resilience

- Bradford Flood Programme Board set up
- Drainage ,Highways, Emergency planning officers all involved
- Create a Community & Emergency Flood plan
- Meetings in the affected communities were held throughout 2016
- Very hostile. The Council was at fault
- However, they were told. If you live in a flood risk area it will flood again

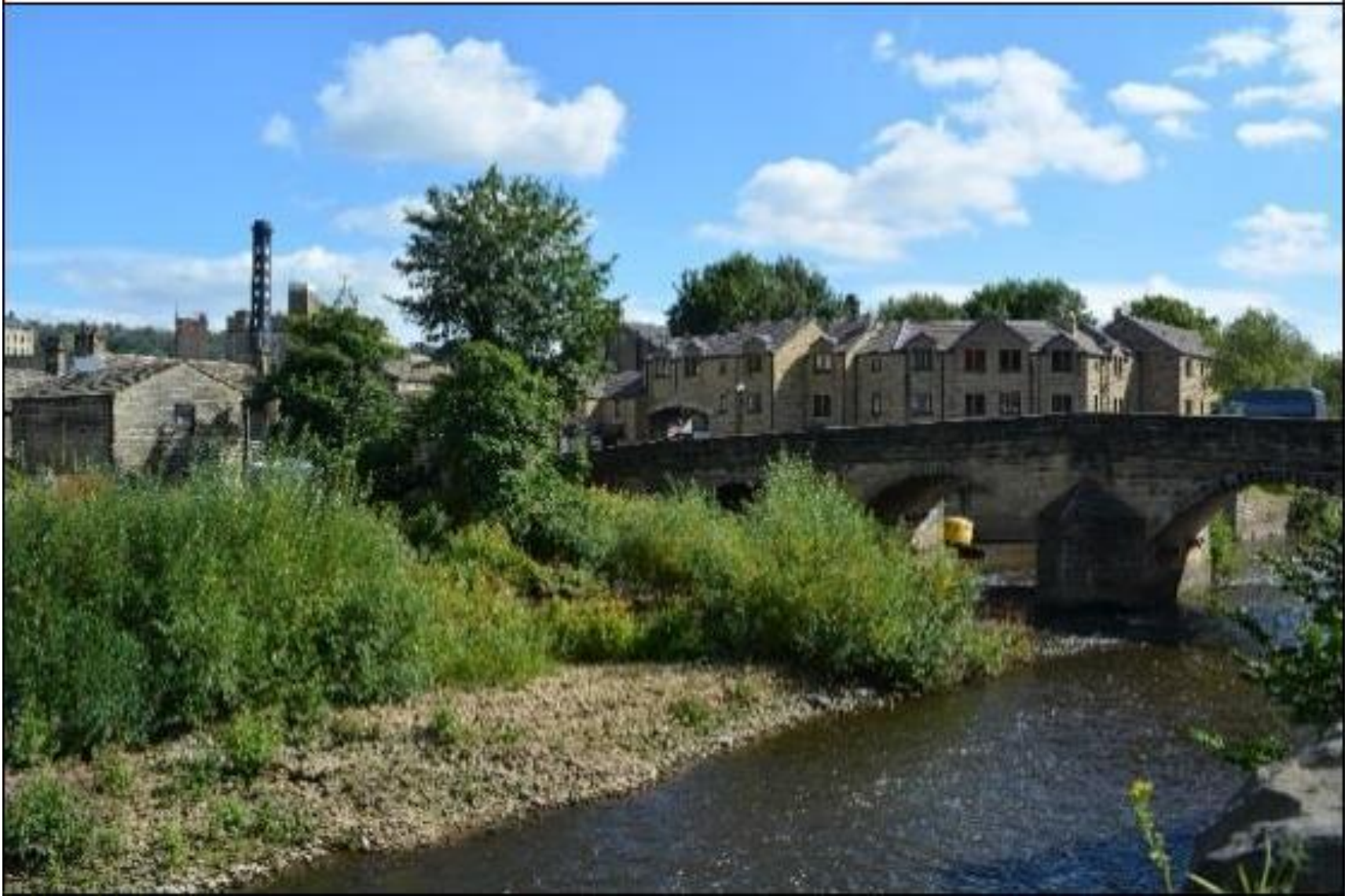
Why Build Community Resilience

- The Community knows best
- They are on site, they know where vulnerable individuals or groups are
- Most of the Community groups are driven by the Parish and Town Councillors
- Flood kits issued to Community leaders
- Flood packs issued to 6,000 homes in January 2017

What are the solutions

- Bradford is engaged in extensive partnership working to learn and adapt best practice approaches
- Sustainable Urban Drainage Systems
- Up Stream Storage
- Up-grade systems
- Continue Flood Road shows
- EA Officer in with the Drainage teams one day per week

Before Shoal Removal



After Shoal Removal

