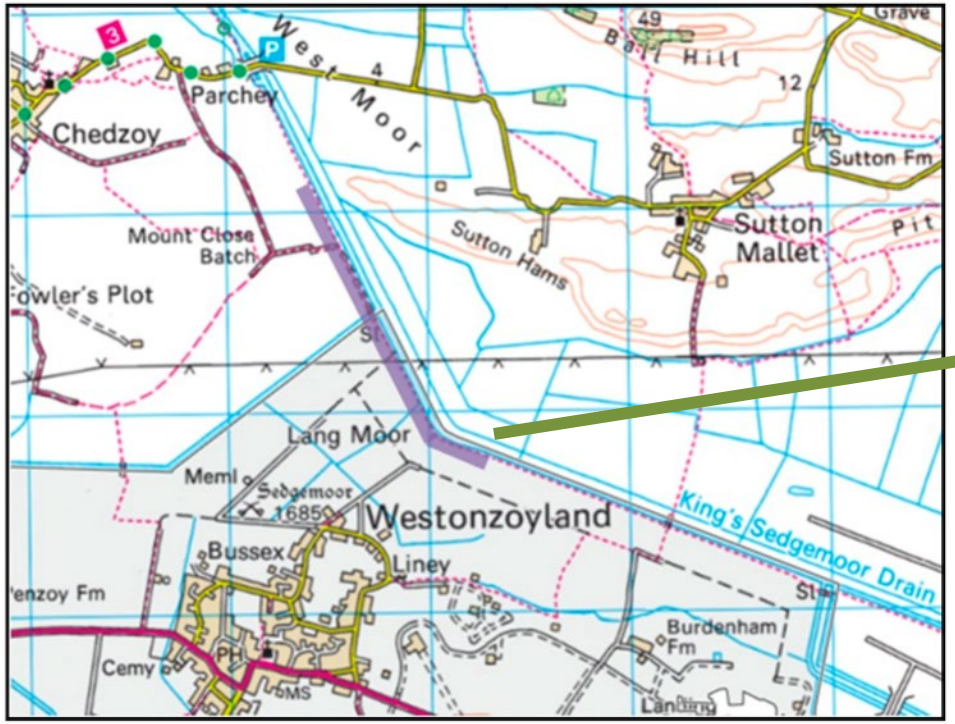
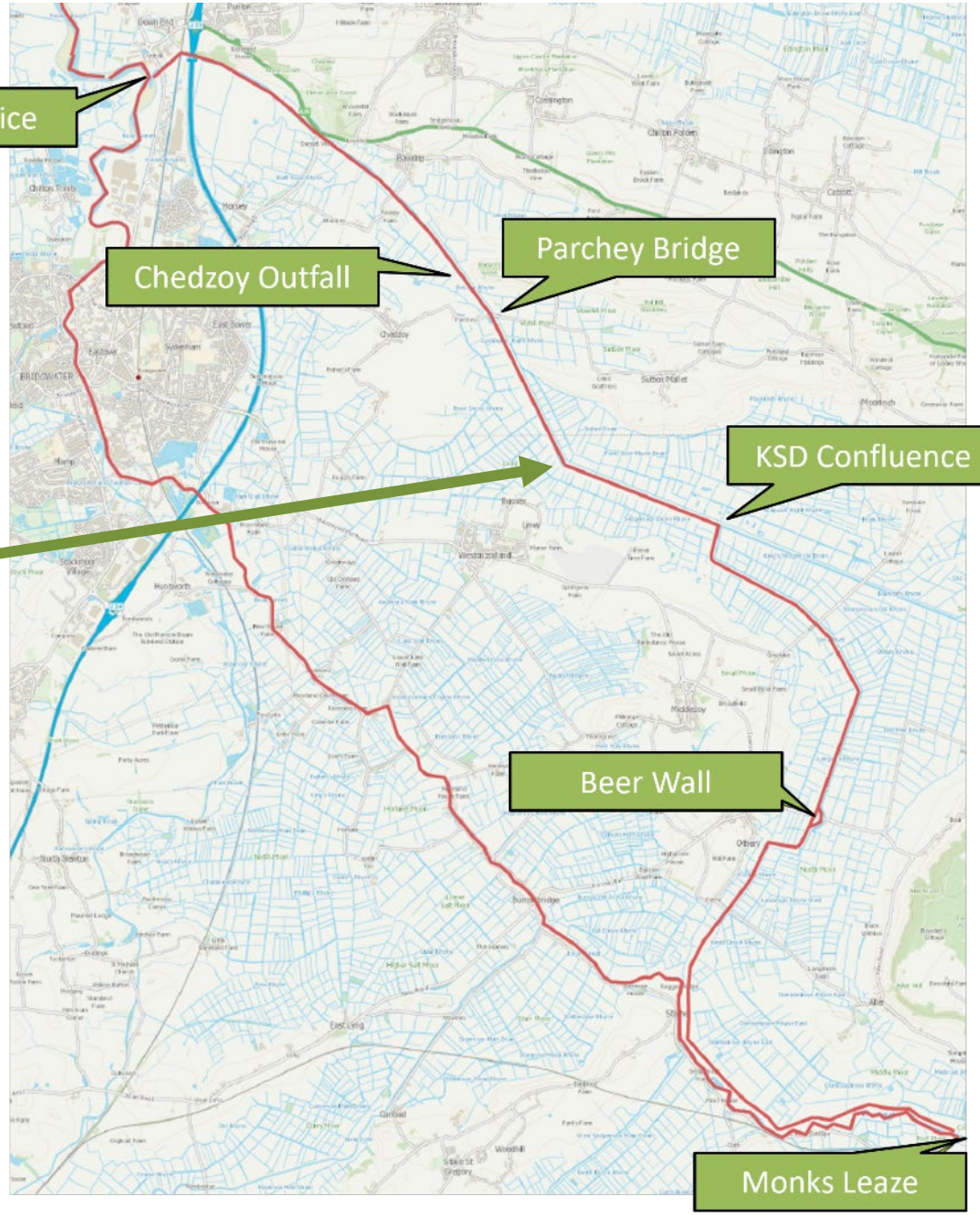
Somerset Rivers Authority

River Sowy - King's Sedgemoor Drain (KSD) system Improvements since 2014

David Mitchell, SRA, Adrian Govier, Environment Agency

1.22miles (1.96kms) of KSD left bank
Final part in a complex jigsaw.





Environment Agency

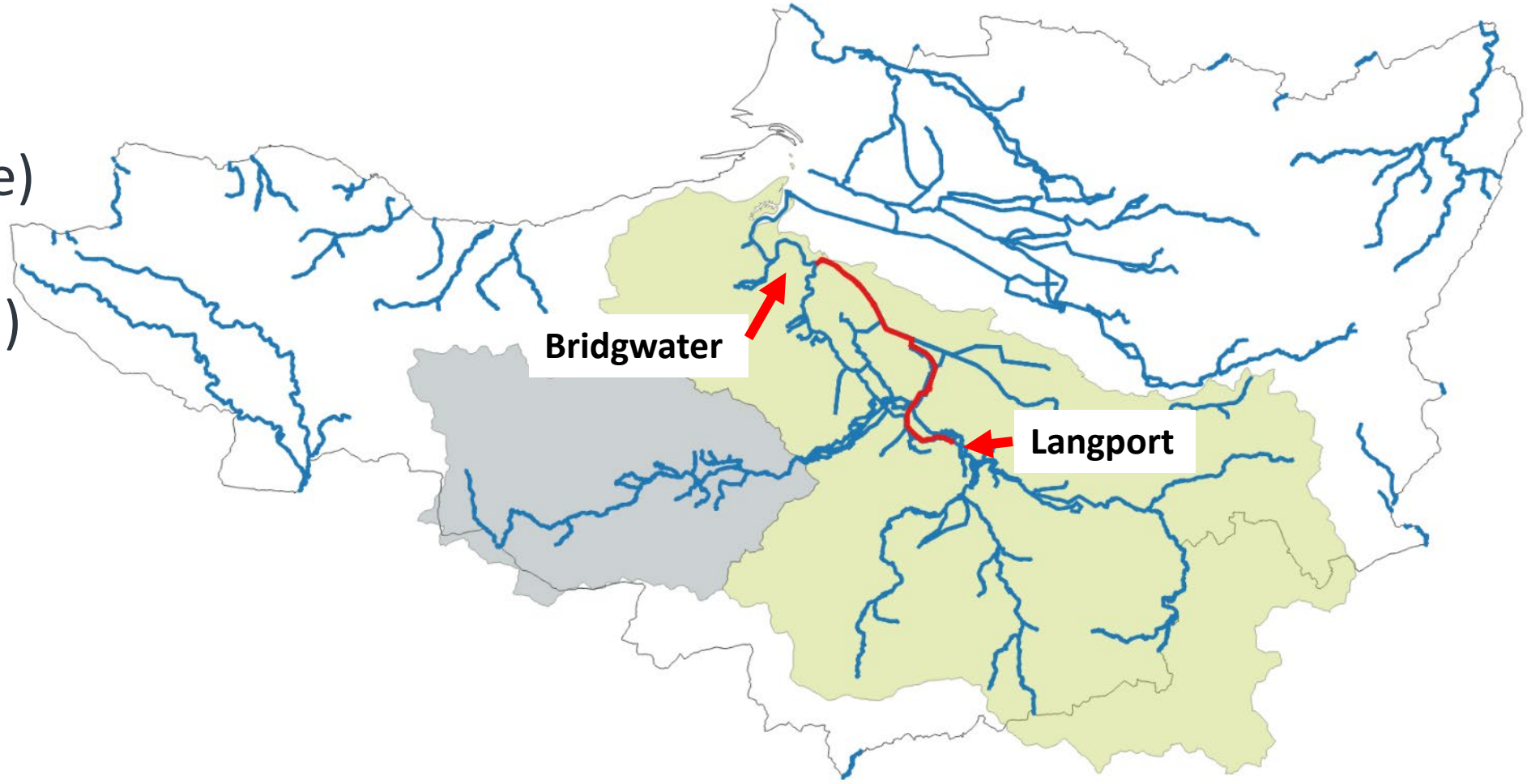
SOMERSET DRAINAGE BOARDS CONSORTIUM
INCORPORATING THE AXE BRUE AND PARRETT DRAINAGE BOARD

NATURAL ENGLAND

The scale of the challenge

The Parrett catchment (inc Tone) covering half the county (1690 sq km)

above Langport 770 square kilometres (478 square miles).



2013-14 floods cost Somerset up to £147.5m

Outpouring of anger in the village that became an island

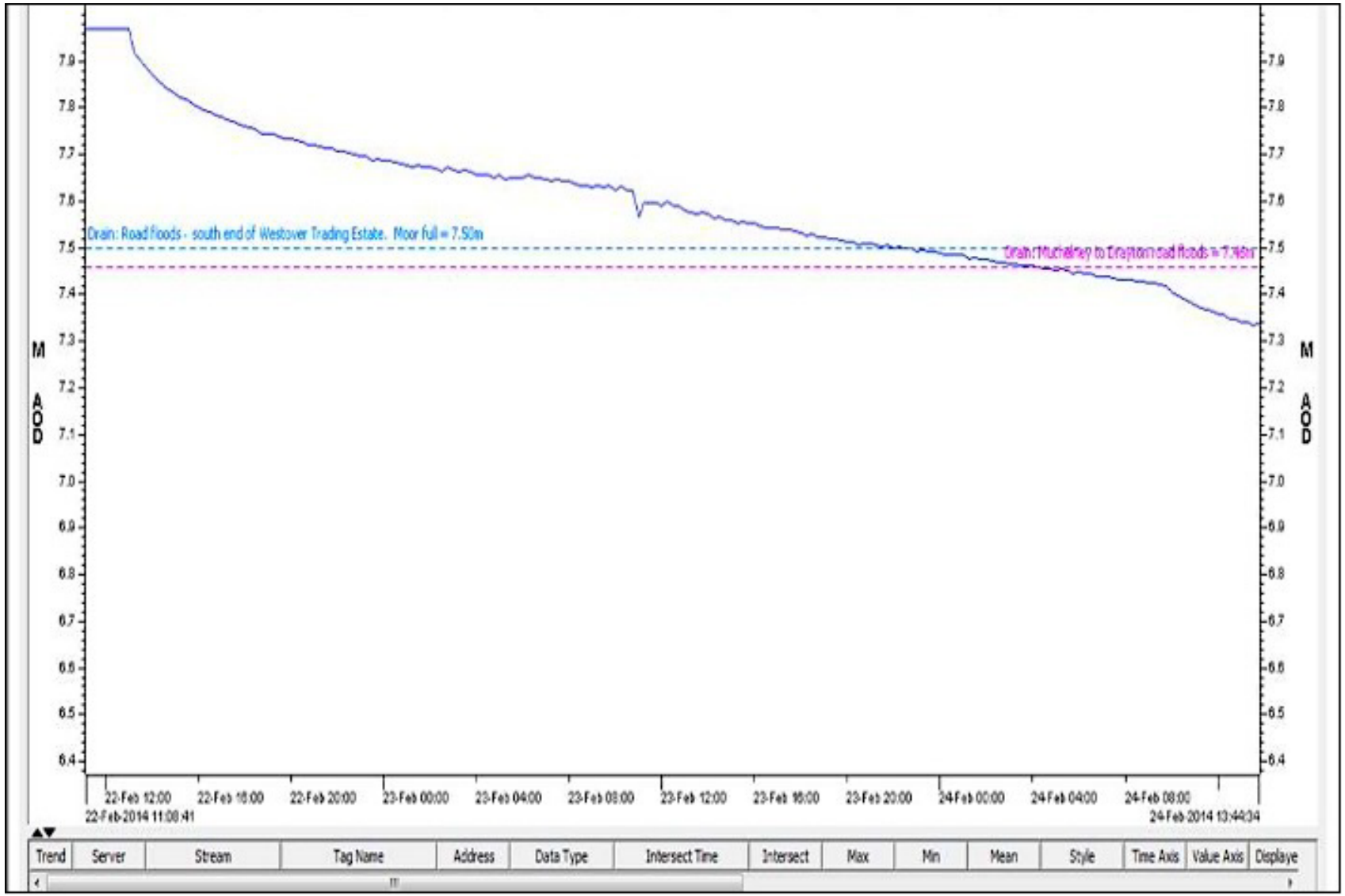
despair

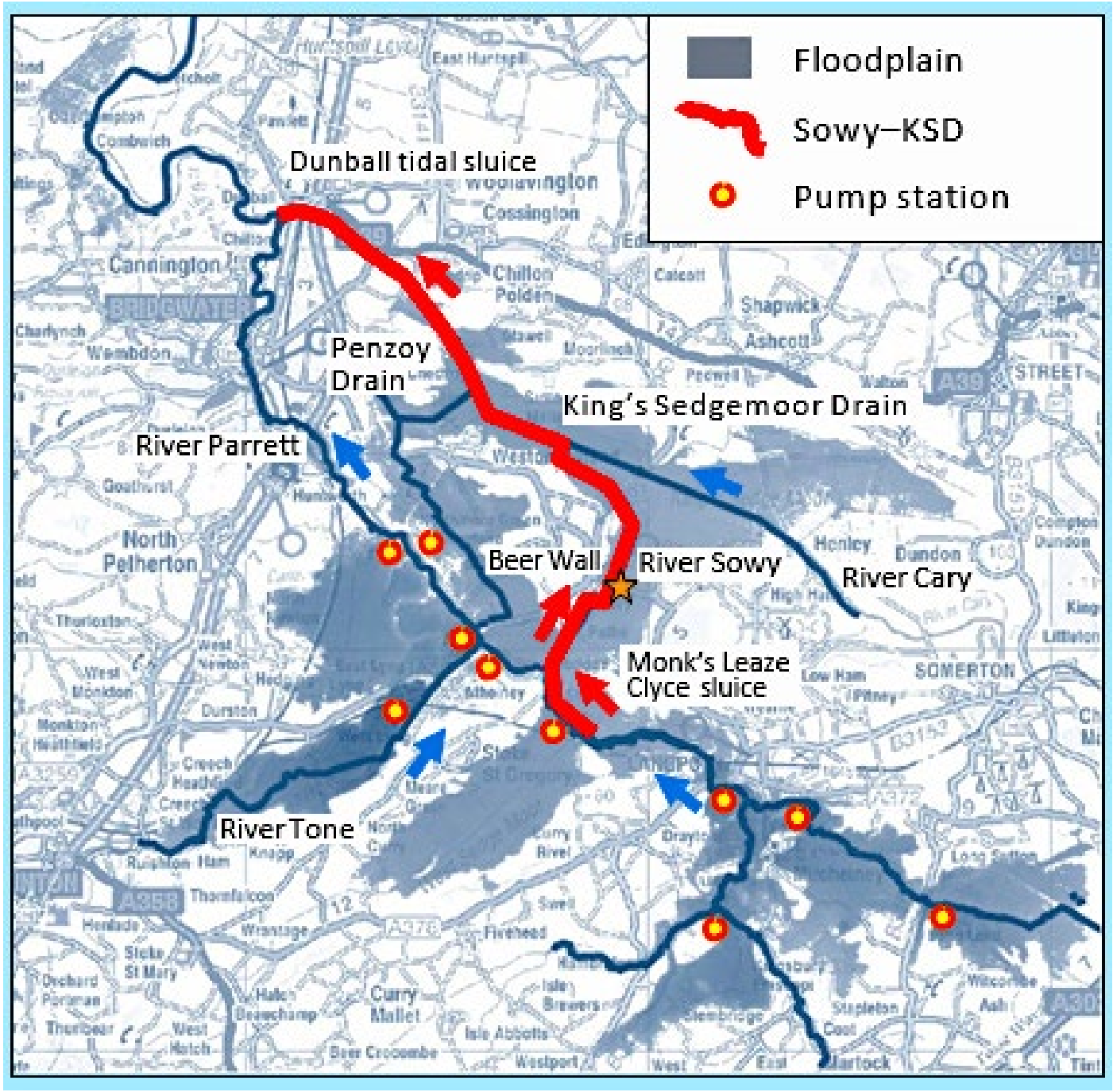
a swamp

The water is fetid. Fish are dying. Birds are lying in putrid ponds

Late February 2014: using Sowy-KSD "like magic"

During the 2013-14 floods, after Monk's Leaze Clyse was **opened fully** on 22 February, flood waters fell by 60 centimetres in two days.




Floodplain
Sowy–KSD
Pump station
Dunball tidal sluice
Penzoy Drain
King's Sedgemoor Drain
River Parrett
Beer Wall
River Sowy
River Cary
Monk's Leaze Clyce sluice
River Tone
BRIDGWATER
SOMERTON
A39
A358
A372
A378
A303

1960: Sowy origins

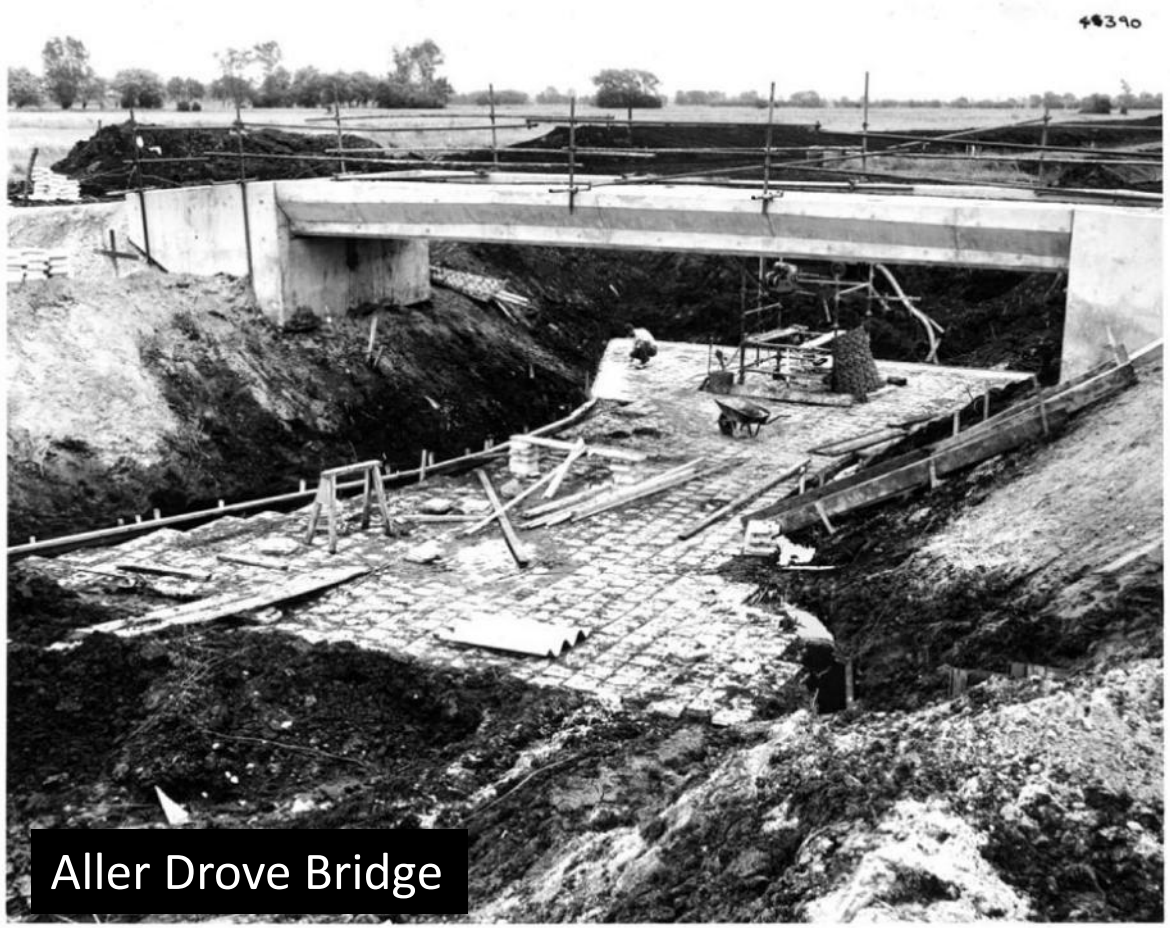
Conceived as Parrett Flood Relief Channel after flooding hit Taunton and 50,000 acres of Levels in 1960

Taunton


Currymoor

1969-1972: Sowy created, KSD upgraded

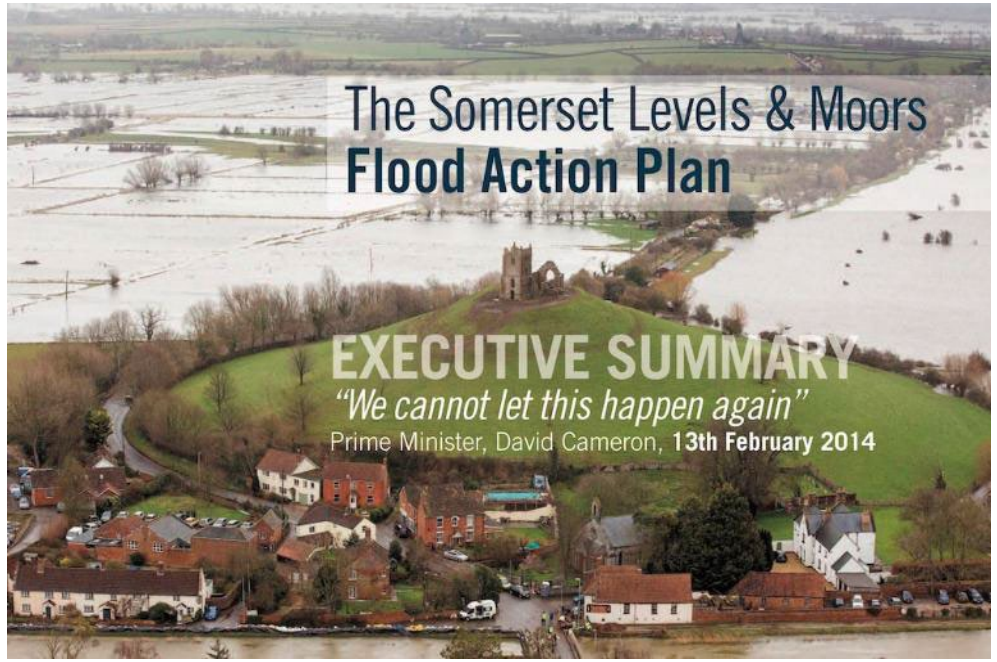
Sowy

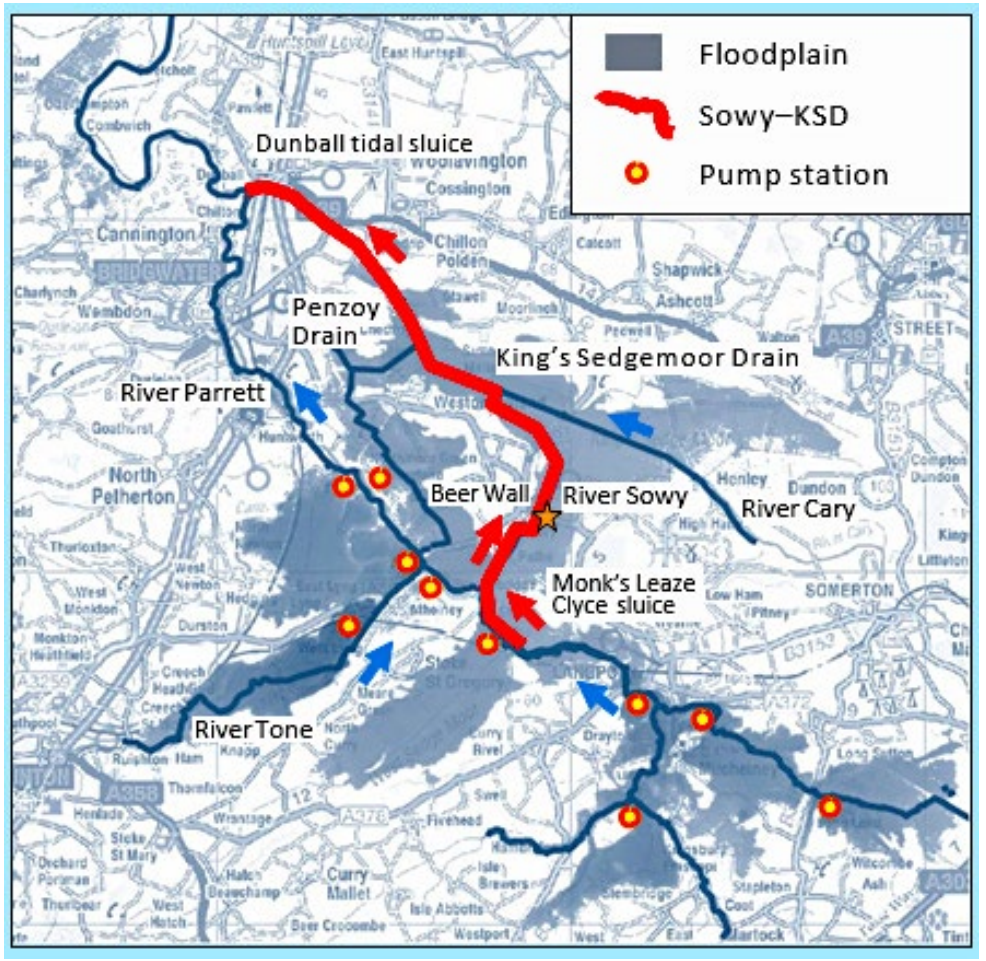


Aller Drove Bridge

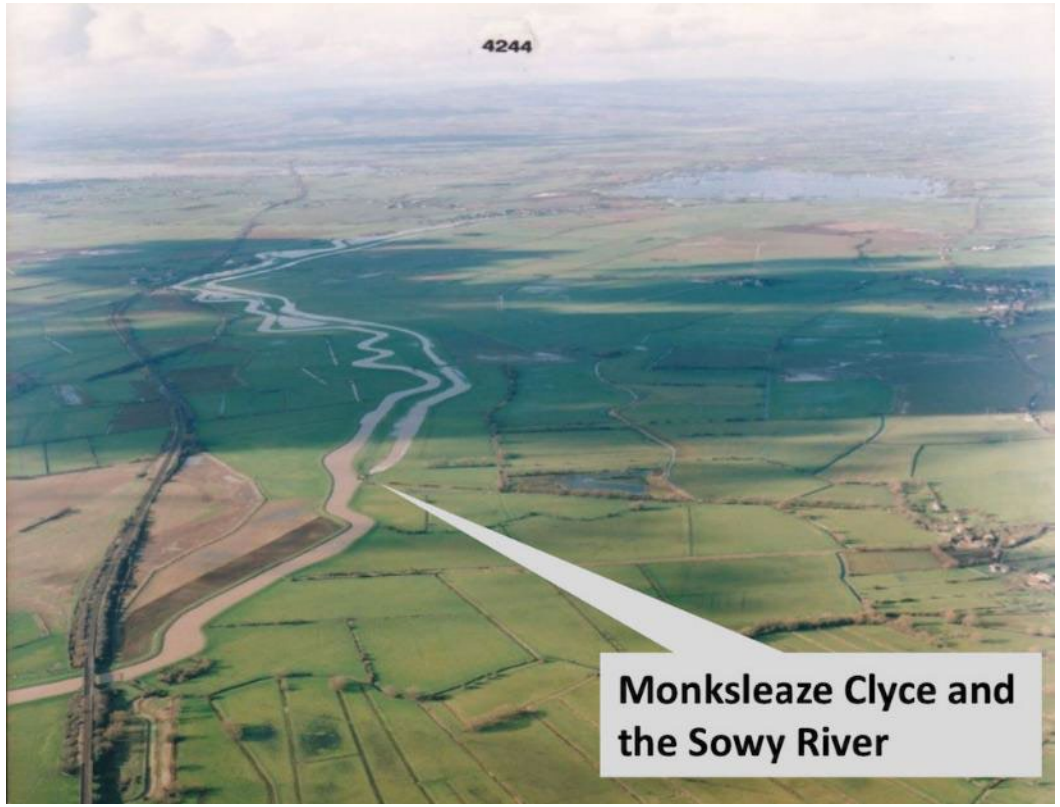
March 2014: Sowy-KSD ambitions put in Somerset 20 Year Flood Action Plan

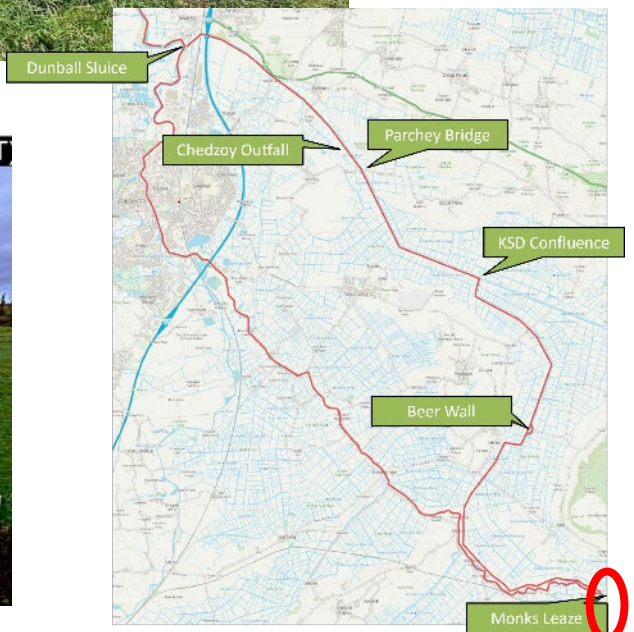
"The use of the Sowy and King Sedgemoor Drain… has been tested in late February 2014… a key priority of this plan is… to ensure this option is available in the future."





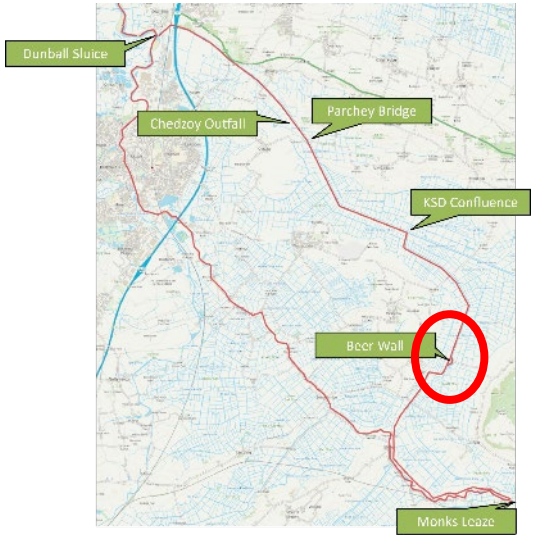
Monk's Leaze: opening allows earlier pumping





Value in getting ahead of the curve

2014-15: road-raising at A372 Beer Wall (SCC)



The road near Othery was raised by 60cms so as not to flood as did for 9 weeks in 2014. Then 4 massive culverts were installed underneath the raised road…

2015-16: 2 new Beer Wall river channels (EA)

Two new channels branch off from the Sowy and Langacre, pass under the A372, then reconnect downstream. They more than double the amount of water that can flow underneath the road, through the big culverts.

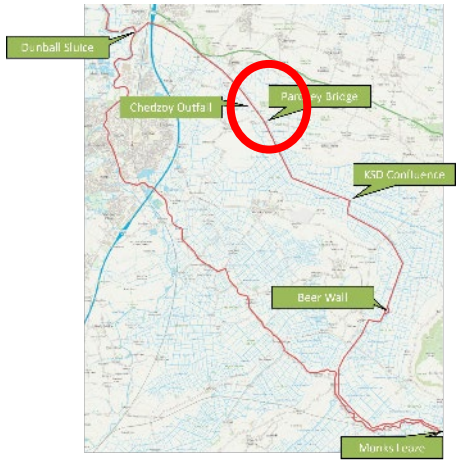
2021-22: Sowy and KSD bank-raising (EA)

Then bank-raising: 10km in total. Aim to increase the amount of water that can flow, in a controlled way, from the Parrett (near Langport) into the Sowy into the KSD and back into the Parrett at Dunball…

2016: restoration of Chedzoy New Cut Sluice, aka Chedzoy Flap (EA), to “proper working condition”

Chedzoy Flap controls the confluence of the Penzoy system (including Chedzoy New Cut) and the KSD. It prevents water entering the Penzoy river system from the KSD during normal operation, so better protecting farmland around Chedzoy and Andersea.

2021-25: 6 more outfall upgrades (4 EA, 2 IDB)



Left: Chedzoy tilting weir. *Right:* Parchey tilting weir.

2020-22: environmental improvements (EA)

100 Water Level Control Upgrades

Backwaters, Embayments & 2-Stage Channels

2018: de-silting of bridges Parchey, Dunball (EA)

Silt and overhanging vegetation were removed at Parchey Bridge near Chedzoy, and Dunball railway bridge, to give them back the capacity to deal with flows they had in the early 1970s. *Pictured:* Parchey in early 70s, modern de-silting.

2016: Dunball lump of concrete removal (SCC)

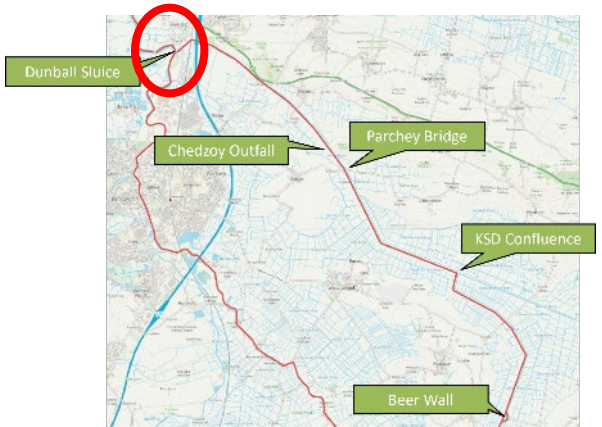
The “lump of concrete” was a relic from the 1950s which stuck out beneath Dunball Old Bridge and acted like a bottleneck.

It made water in the KSD more turbulent.

Which threatened the foundations of Dunball Old Bridge and Dunball New Bridge. So it was removed.

2014-15: new pump platform at Dunball (EA)

Left: note the earthern banks in 2014.
Right: new permanent space for pumps

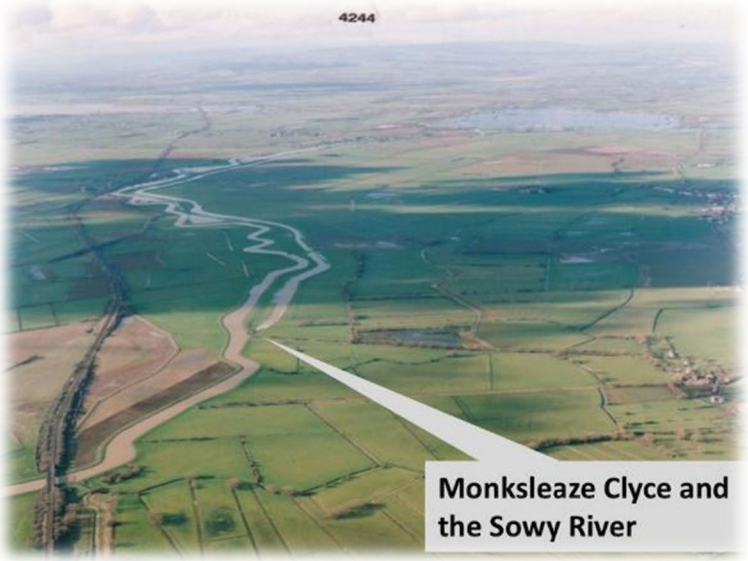


2022-25: Dunball Sluice refurbishment (EA)

Dunball Sluice became operational in 1971. It controls the intersection of the KSD and the River Parrett north of Bridgwater. A £9.7million project was carried out to give the sluice another 25 years of life.

£13m+ invested

Benefits:
system wide enhancement
a near 25% increase in capacity
reductions in frequency, depth and duration



24.2% equates to an extra 14,760 cumecs per hour - or around 354,000 per day.

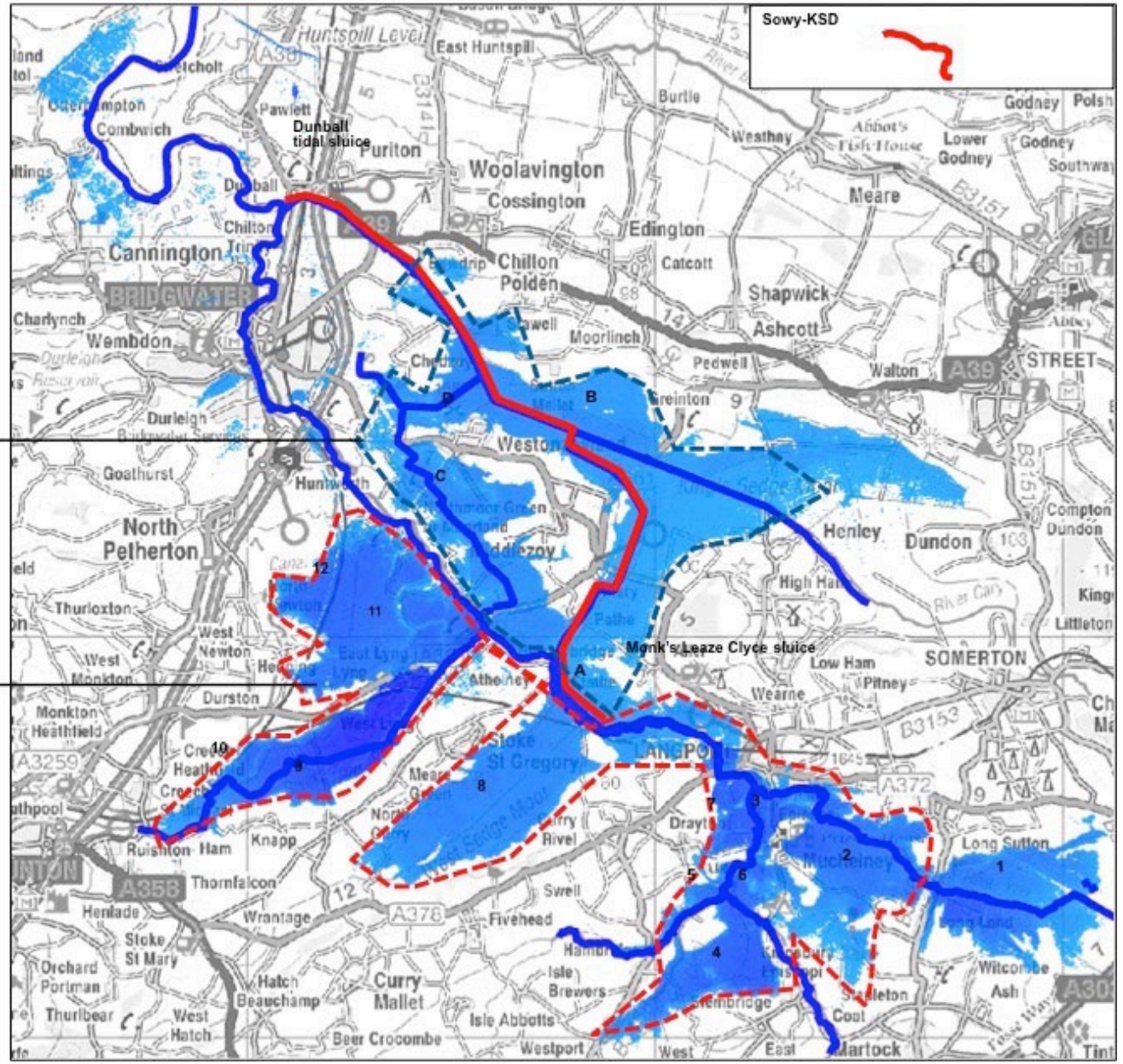
An average 2-storey house with 2 bedrooms is around 200-250 cubic metres in volume.

Benefit: reduced flood risks

Extra capacity helps to protect homes, businesses, land and roads across 150 square miles, especially around Langport and upstream of Langport.

Enhanced capacity benefit area:
A. Aller Moor
B. King's Sedgemoor
C. South Moor
D. Lang Moor

Enhanced operation benefit area:
1. King's Moor
2. Wet Moor
3. Muchelney
4. West Moor
5. South Moor
6. Huish Level
7. Thorney Moor
8. West Sedgemoor
9. Hay Moor
10. Curry Moor
11. Salt Moor
12. North Moor



Somerset Rivers Authority

- Thank you for listening. Any questions?