

Environment Agency Mobile Assets.

Steve Whittam and Steve Stamp – Mobile Assets team
Asset Operation and Improvements.

The Mobile Assets Team



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Manager



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Senior Advisor



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Senior Advisor -
Pumps



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Team Leader



**Craig
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Project Officer



**Rhiannon
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Project Officer

Our responsibilities.

- 40km Barrier
- 100 National Pumps
- 8 Incident command units
- Logistics contract
- 8 Principal depots and 2 storage locations
- Logistics support to the NIR
- Continuous improvement projects

Mobile Assets – Our mission

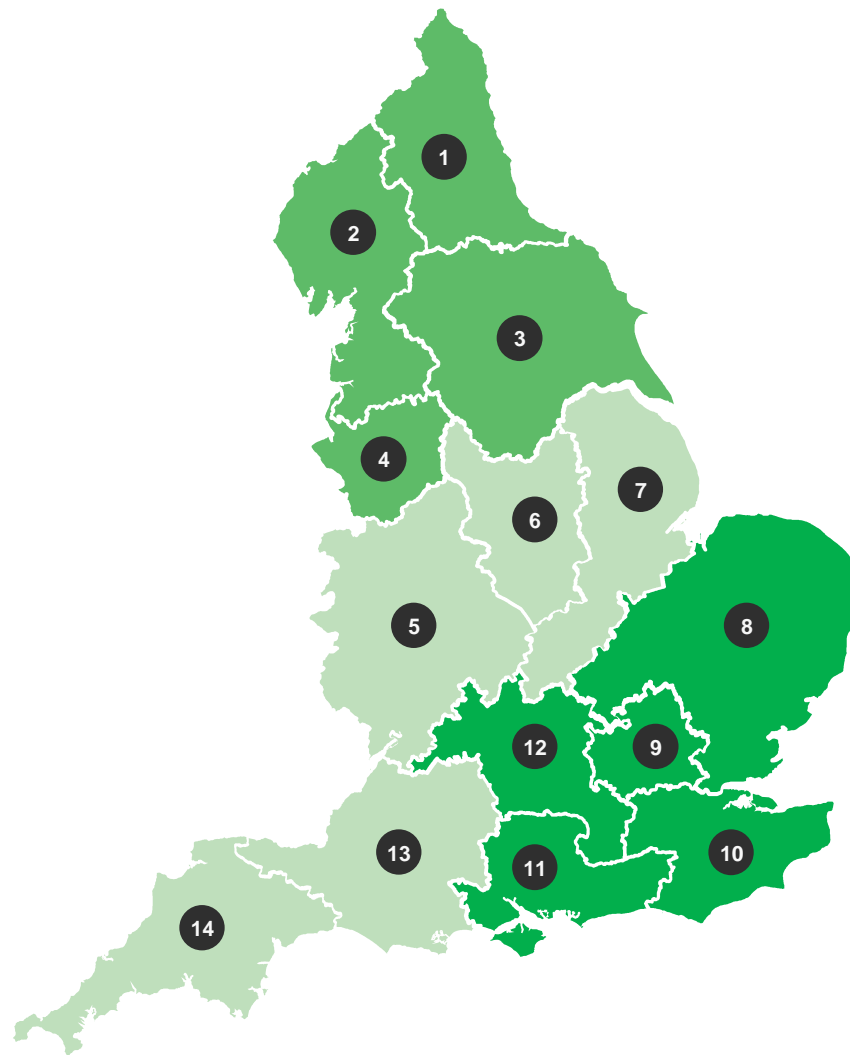
To ensure that mobile assets get where they need to be, when they need to be there. Helping areas protect people, homes and business

Multiple Incidents

Often when bad weather strikes there are multiple incidents across many areas. Thinking BIG and Acting EARLY, helps us to strategically plan where our assets can be most effective

EA areas

- 1 North East
- 2 Cumbria and Lancashire
- 3 Yorkshire
- 4 Greater Manchester Merseyside and Cheshire
- 5 West Midlands
- 6 East Midlands
- 7 Lincolnshire and Northamptonshire
- 8 East Anglia
- 9 Hertfordshire and North London
- 10 Kent, South London and East Sussex
- 11 Solent and South Downs
- 12 Thames
- 13 Wessex
- 14 Devon Cornwall and the Isles of Scilly



THINK BIG

What is the forecast?
What areas will be
affected? Where do we
need resilience?

ACT EARLY

Don't wait. ACT! By
preparing early your
area will be better
protected and will also
save money

££££££££

Costs can often be
tripled by leaving until
the last minute

THINK BIG – ACT EARLY

GOLD CORNER PUMPING STATION



WORKING TOGETHER

1. SITE EMERGENCY PLAN/ CONTACTS
2. TRANSPORT ROUTES
3. OVERVIEW/ SITE PUMPS
4. SOLUTIONS/ OPTIONS
5. OPTION 1
6. OPTION 2
7. OPTION 3
8. OUT OF HOURS CALL OUT

What are Mobile Assets?

Generally, when we talk about Mobile Assets they fall into three types



Pumps



Temporary Barrier



Incident Command Units

Mobile Assets

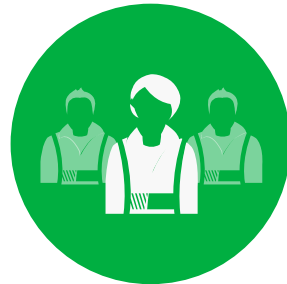
Logistics

How do the logistics work?

The process for requesting Mobile Assets



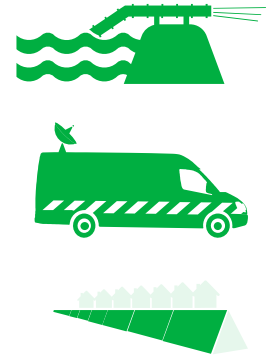
Area request
an asset(s) via
the Mutual Aid
Tool



The Mobile
Assets Team
working as part
of the NIR
process the
request



Working with
Area, the NIR
and our logistics
partners we fulfil
the request



The assets are
delivered to
area

Requesting Barriers

- **The process**
- The asset is requested through the mutual aid tool
- This is passed through to our team
- The asset is located and selected
- Transport is then requested
- Notification is then sent to donor and requesting area





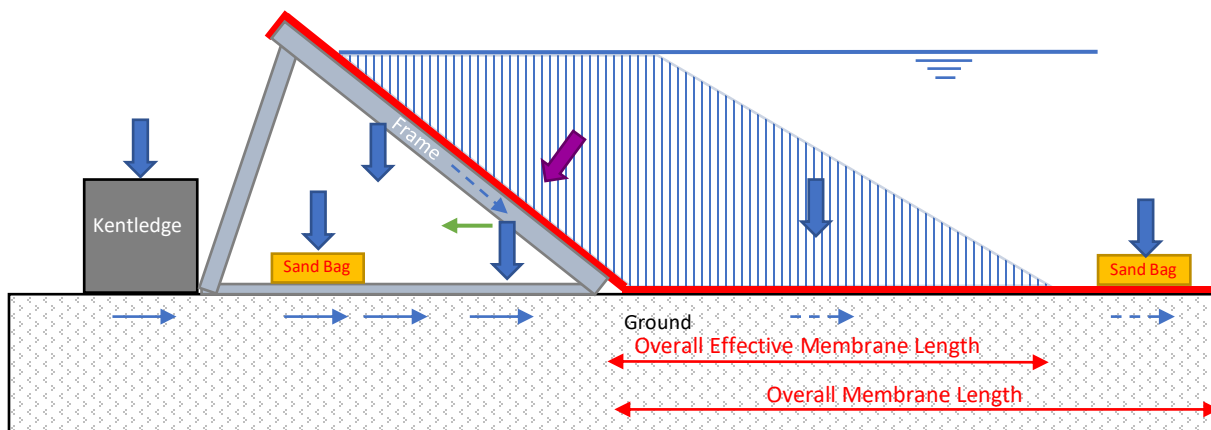
Recommendation - "Floodstop" carrier is not used by Environment Agency in Wessex



Wilton










West Bay



Sliding resisted by frame weight, additional weight (kentledge and/or sandbags) and vertical component of water pressure, multiplied by the relevant coefficient of friction.

Plastic membrane over frame, to reduce seepage and provide additional sliding resistance. Sliding resistance from the membrane is taken as the minimum of:

Key:

-  Water Pressure
-  Membrane
-  Sliding Resistance
-  Sliding Resistance from membrane
-  Sliding Force, destabilising
-  Vertical Force, to be multiplied by coefficient of friction (See table)
-  Initial Force

- Water pressure and additional weight on membrane (e.g. sandbags, chains) multiplied by the relevant coefficient of friction (between the ground and the membrane). Length of effective membrane assessed by designer, and is dependant on quality of sealing face. Vertical pressure taken at zero at edge of membrane and 100% of water depth at frame edge, to allow for uplift pressures
- Hydrostatic water pressure on the frame multiplied by the relevant coefficient of friction (between the frame and the member)

River Avon

This is one of the 8 sites where the barrier was deployed in October 2020 and became wet.



Withdrawal

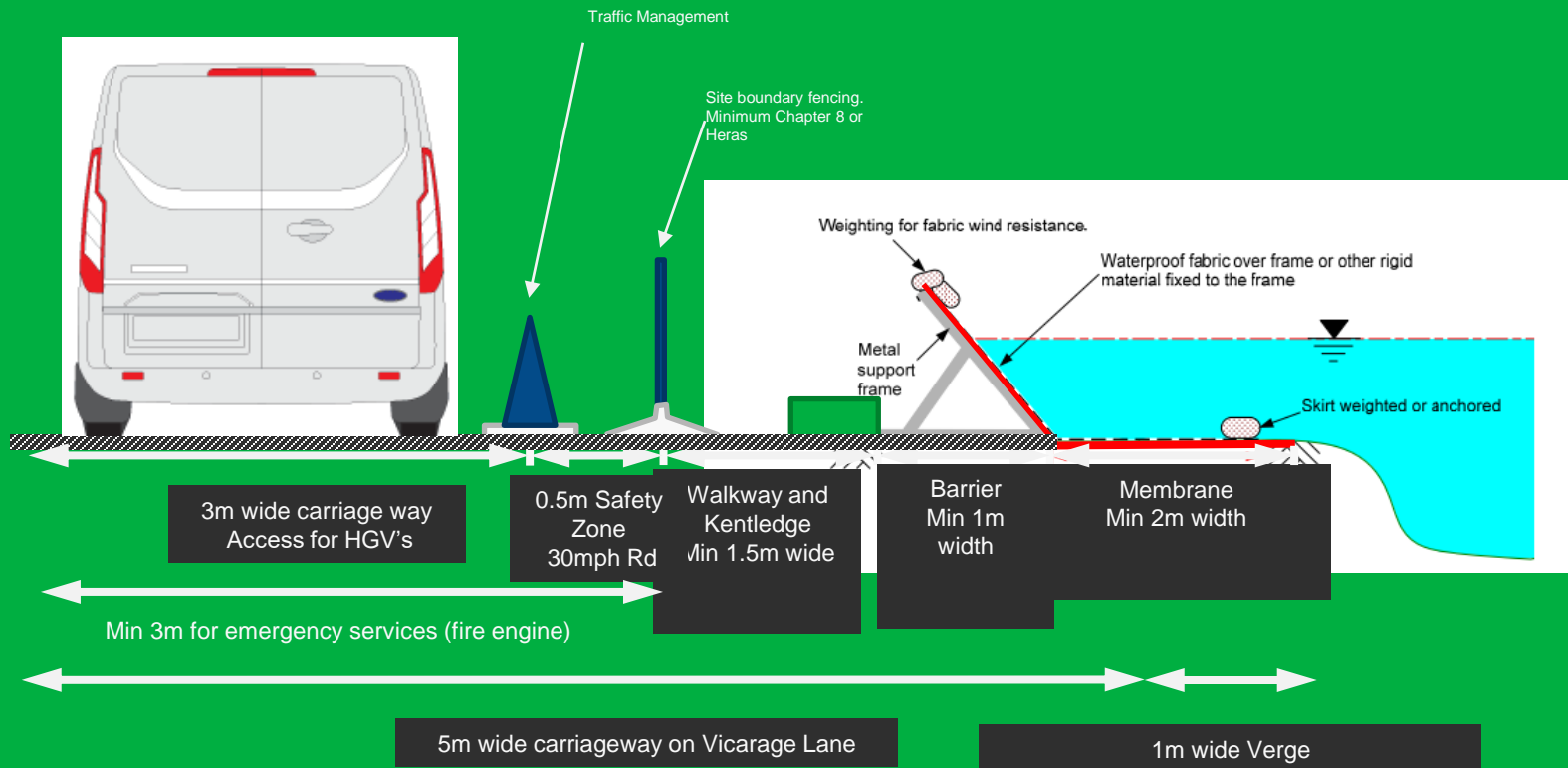


- Properties were flooded when the barrier got wet but as a consequence of the surface water that was behind the barrier. Some of the properties with their own PFR were protected but were affected by the surface water and possibly from an old underground mill stream that comes up under properties.
- There wasn't a pump in operation. When a 6" pump was deployed, it dropped the height of the water that was on the wrong side of the barrier, it is not possible to know if the barrier protected any of the properties due to the surface water and the backing up of the combined overflow.

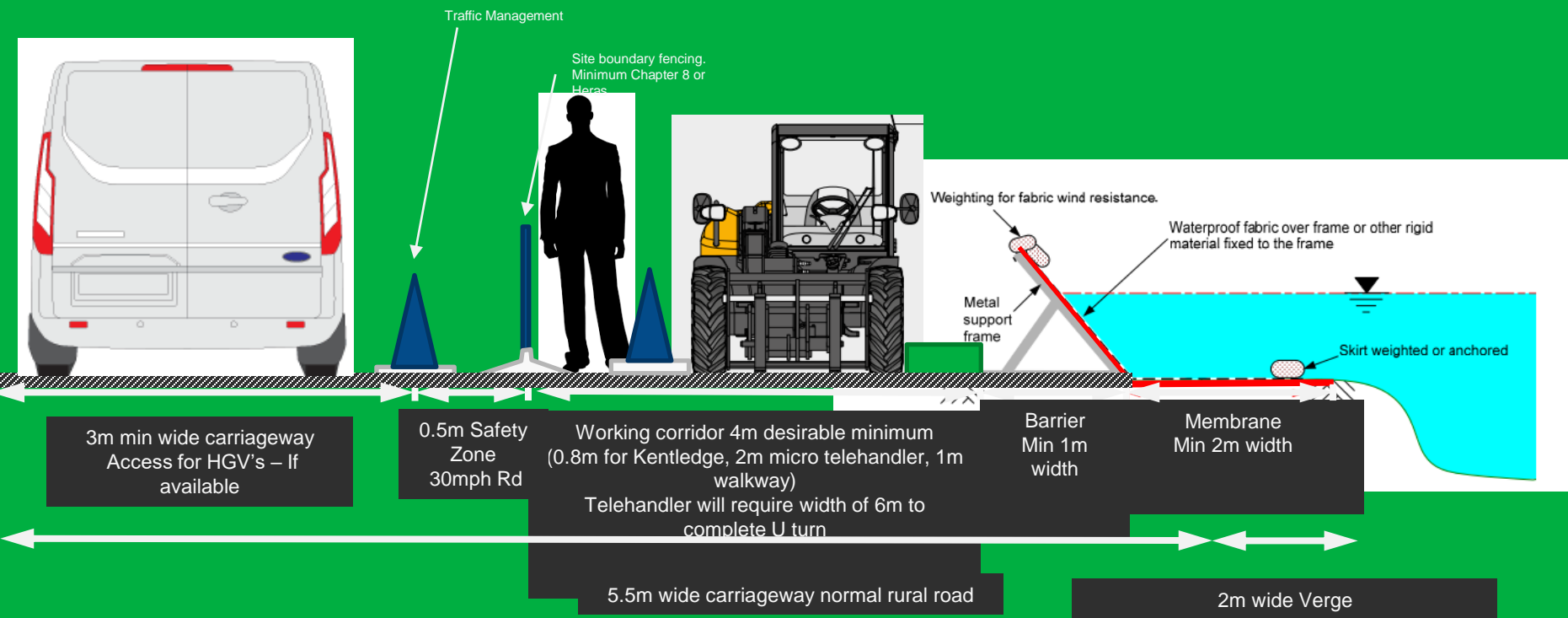
Kentledge



Environment
Agency



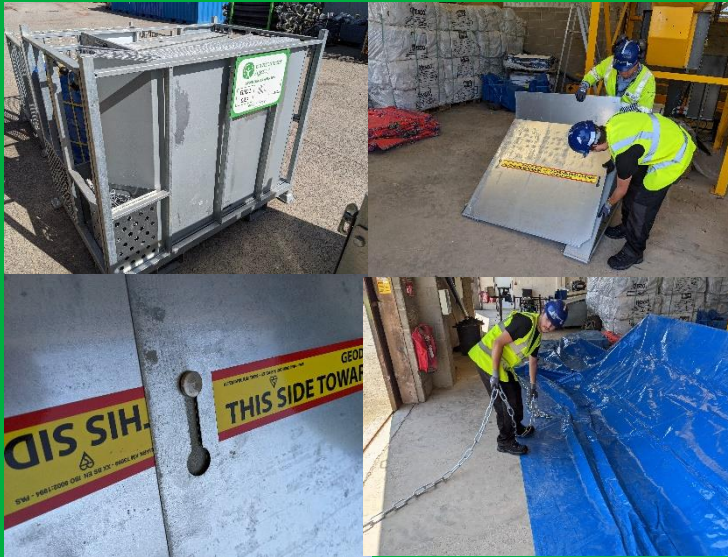
8m overall required for traffic control, 7.5m for Emergency Services, 6m provided. - Traffic cannot pass along the road



Within the national stock we have

- Geo design
- Inero
- Hesco
- Sandbags
- Aquobex

Geo design



- Packed in 50 metre stillages
- 1 metre in height
- Corners ordered separately
- Membrane and chain required
- Transported by lorry
- Kentledge may be required depending on the TDDP

Inero



- Packed in 50 metre stillages
- 1 metre in height
- Corners ordered separately
- Membrane and chain required
- Transported by lorry
- Kentledge may be required depending on the TDDP

Hesco



- A different type than the others and used where suitable
- Large bags that are filled (aggregate etc.) creating a large string barrier

Sandbags

- Available locally and from all Principal Depots
- Sandbagging machines at most Principal Depots
- National Contract to obtain sandbags during incident



Requesting Pumps

The process

What is required

The equipment required for delivery

Types of pumps available are

- 6" Diesel driven – end suction
- 8" Diesel driven – end suction
- 12" Diesel driven – end suction
- 12" Electrically driven – submersible (available through framework suppliers)
- 24" Diesel driven – end suction
- 24" Electrically driven - submersible

6" Pumps



- These pumps are mounted on a trailer
- They can be towed with a 4x4
- They come with pipework
- If multiple units are required then they will be transported on a lorry (normally 3 at a time)

8" Pumps



- These pumps are mounted on a trailer
- They can be towed with a 4x4
- They do not have pipework

8" Pumps



- A separate stillage of pipework is required
- Multiple units are transported on a lorry

12" Pumps



- These pumps are mounted on a roll on roll off body
- They come with some pipework
- A special lorry is required to move them

24" Pumps



- These are mounted on a roll on roll off body
- The pipework and all associated ancillaries are transported separately

24" Pumps



- There are two cabins that accompany the pump for bolts and gaskets and a tool store
- A full load can be up to 5 HGV vehicles

Set up of 10 Submersible Pumps at Northmoor Pumping Station

- Each Pump has a capacity of 1 cumecs that is equivalent to 1000 litres per second.
- Each pump is electrically powered and 4 generators are required to run all 10 pumps.



Installing pipe work

- Pipe work is pre bolted together in 25m sections and transported to where the crane could pick up the sections and position them where required



Site Overview near completion



•Photo to show layout of pipe work in relation to activities on site.



•Photo shows the temporary road diversion set up through the site compound to allow the discharge pipes to be positioned using a lorry Mounted Crane (Hiab).

Repatriation



- It takes the same amount of time and vehicles to return the asset
- All Barrier components including stillages need to be cleaned and checked
- Any defects need to be reported to the Mobile Asset team



**How can areas help
us achieve this?**

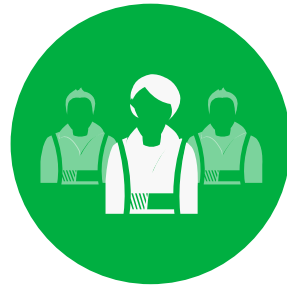
Repatriation

The process for returning Mobile Assets

Once the asset is no longer required it needs to be returned promptly and in good condition



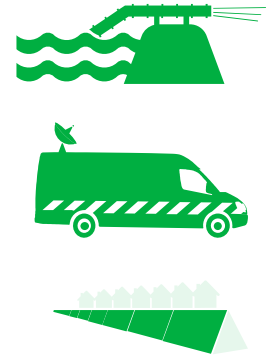
It is areas responsibility to tell us that the asset(s) are to be returned and to process the repatriation on the Mutual Aid Tool



The Mobile Assets Team receive the repatriation request



Working with Area and our logistics partners we fulfil the request



The assets are returned to there home location