

APPENDIX B: HIGHWAYS £5M ADDITIONAL INVESTMENT AND FUTURE DIRECTION ON HIGHWAY DRAINAGE

On March 4 2021, Cabinet approved £5m to address flooding as a consequence of the named storms of early 2020.

Of this, £3.5m is being used to address storm damage repairs and to prevent future flooding, including improvements to existing drainage systems.

The £3.5m funding also includes remedial works from flood damage to large and small structures, culverts, and to road and footways (schemes displayed in Tables 1 – 3 below). The scope of works also includes repairs and improvements to drainage systems to future-proof those schemes from flooding.

From the allocation of the remaining £1.5m from the £5m total, £250k has been assigned for remedial works for a landslip at Helks Brow, Lancaster, caused by the after-effects of severe flooding, which has resulted in the road being closed to vehicular traffic and pedestrians. Whilst a date for commencement on site is yet to be confirmed, the scheme is currently with the design engineers who are developing a permanent solution. There are some further site investigations to be undertaken following the removal of vegetation, which is scheduled to commence in mid-February. Once the vegetation is cleared, the design can be finalised.

The remaining £1.25m is being used specifically to prevent flooding to property and highways where analysis of the ongoing cyclical road gully and drainage cleaning programme has highlighted areas with flooding issues that require further investigation. These investigations are to identify whether drainage improvements or upgrades will prevent future flooding. These improvements are intended to reduce the amount of reactive/cyclical cleaning required in these locations. This programme is currently outsourced to WS Atkins, who are instructed to undertake design work to future-proof the highway network and to consider other methodologies to prevent flood water from entering the highway. Systems under consideration include Sustainable Urban Drainage Systems, which can use the green space surrounding the highway to disperse or store the water or allow infiltration. This methodology addresses the whole of the localised highway drainage system, rather than looking at isolated areas of flooding alone. The schemes currently being investigated are listed below in Table 4.

Another part of the £1.25m funding is being used to design, upgrade, and improve the drainage systems on a number of subway underpasses in Skelmersdale, which are not passable during heavy rain events. There is currently a prioritised list of ten schemes in Skelmersdale, where investigations are currently taking place to identify those issues that are causing flooding to underpasses. The list of underpasses is included below in Table 5.

Table 1 – Large Structures (allocated from £3.5m subtotal of the £5m total)

Road No	Project Name	Scheme Extents	Treatment	Progress
A581	1523 Ackhurst Lodge – Phase 1	1523 Ackhurst Lodge	Commission Hydrology Survey	Initial flood modelling completed. Initial options identified. Currently carrying out detailed modelling of additional options. Design to be completed Q2 22/23.
U40299	33886 Wycoller Dean Ret/Wall	33886 Wycoller Dean Ret/Wall	Re-construct 25m length of retaining wall. Improve foundations to prevent recurrence of scour	Completed
C357	6597 Rams Clough Culvert	6597 Rams Clough Culvert	Increase capacity of existing culvert with installation of 1.2m span box culvert	Design in progress. Site Investigation being undertaken Feb 22. Works on site Q2 22/23
U23221	Henthorn Road	Henthorn Road	Increase capacity of existing culvert with installation of 1.2m span box culvert	Atkins carrying out modelling of options. Options limited due to construction of new housing estates either side of the road and small culvert already installed and adopted downstream, which restricts flow. If a valid option can be found works are expected to commence Q3 22/23. Possible alternative funding from Grant In Aid fund.
B6214	31131 Ox Hey Wood Ret/Wall	31131 Ox Hey Wood Ret/Wall	Improve wall construction and foundations to prevent recurrence of scour by installation of 50m length sheet pile retaining wall	Design in progress. Area is Ancient Woodland which has delayed vegetation clearance. Expected to be on site Q2 22/23.
U7672	31050 Victoria Way No. 2 Ret/Wall	31050 Victoria Way No. 2 Ret/Wall	Re-construct 10m length retaining wall. Improve foundations to prevent recurrence of scour	Works in progress on site but requires further finance.
B6246	1008 Nethertown	Nethertown	Replace existing inadequate trash screen	Initial design identified. Delivery Q1 22/23

Table 2 – Small Structures and Culverts (allocated from £3.5m subtotal of the £5m total)

Road No	Road Name	Location description	Damage details	Required Actions	Flood Prevention - Small Structures Programme April 2021	Progress
U/C	Meadow Park	Outlet to River Irwell from FP, downstream of Lumb Bridge	Surcharging into pump chamber, damaging flap, pumps & triggers	Needs preventing with non-return valve & monitoring with telemetry	U/C; Meadow Park; Outlet to River Irwell from FP, downstream of Lumb Bridge; Needs preventing with non-return valve & monitoring with telemetry; Flood Prevention - Small Structures Programme April 2021	Further investigation needed
U/C	Private Road	O/S Woodland Manor	Culvert collapse, the road is closed.	Culvert repair is 8 to 10m deep and will require specialist drainage contractor.	U/C; Private Road; O/S Woodland Manor; Culvert repair is 8 to 10m deep 8 to 10m deep requires deep drainage contractor; Flood Prevention - Small Structures Programme April 2021	Completed
U/C	Grimeford Road	50m West of Grimeford Bridge	Surcharging culvert lifted carriageway	200m2 C/W inlay & Culvert repair	U/C; Grimeford Road; 50m West of Grimeford Bridge; 200m2 C/W inlay & Culvert repair; Flood Prevention - Small Structures Programme April 2021	Further investigation needed
C161	Higher Lane	Near to Windy Ridge	Stone culvert in footway damaged and lifted footway	Repair culvert and footway	C161; Higher Lane; Near to Windy Ridge; Repair culvert and footway; Flood Prevention - Small Structures Programme April 2021	Completed
U444	Tabby's Nook	Rear 15 Clovelly Drive	Damaged pipe connection into headwall	Repair headwall	U444; Tabby's Nook; Rear 15 Clovelly Drive; Repair headwall; Flood Prevention - Small Structures Programme April 2021	Completed

Road No	Road Name	Location description	Damage details	Required Actions	Flood Prevention - Small Structures Programme April 2021	Progress
A5209	Course Lane	Grass verge on approach to The Ridings	Large number of sink holes appeared in verge adjacent to carriageway	Excavate and repair culvert in a number of locations	A5209; Course Lane; Grass verge on approach to The Ridings; Excavate and repair culvert in a number of locations; Flood Prevention - Small Structures Programme April 2021	Completed
U3611	Merscar Lane	Near 16	Damaged Headwall	Repair headwall	U3611; Merscar Lane; Near 16; Repair headwall; Flood Prevention - Small Structures Programme April 2021	Completed
C104	Rosemary Lane	140m west of Plex Lane	Damaged Headwall	Repair headwall	C104; Rosemary Lane; 140m west of Plex Lane; Repair headwall; Flood Prevention - Small Structures Programme April 2021	Completed
C134	Drummersdale Lane	Between Brookside and Sunnyside	Damaged Headwall and culvert	Repair both headwall and culvert	C134; Drummersdale Lane; Between Brookside and Sunnyside; Repair both headwall and culvert; Flood Prevention - Small Structures Programme April 2021	Further investigation needed
F4372	Danbers	Rear 20 to 25	Damaged culvert, footway and sink hole extending into private garden	Replace 80m of damaged culvert and repair footway	F4372; Danbers; Rear 20 to 25; Replace 80m of damaged culvert and repair footway; Flood Prevention - Small Structures Programme April 2021	Completed

Road No	Road Name	Location description	Damage details	Required Actions	Flood Prevention - Small Structures Programme April 2021	Progress
U3657	Carvers Brow / Shevington Causeway, Croston	Full length Carvers Brow and jtn.	Regular flooding and damage to flap valves	Replacement of flap valves to non-return valves and other drainage works.	U3657; Carvers Brow / Shevington Causeway, Croston; Full length Carvers Brow and jtn; Replacement of flap valves to non-return valves and other drainage works; Flood Prevention - Small Structures Programme April 2021	Awaiting further information
C224	Railway Road, Brinscall	Jtn School Lane and Railway Rd.	Flooding to Houses and Carriageway	Drainage investigation and repairs	C224; Railway Road, Brinscall; Jtn School Lane and Railway Rd; Drainage investigation and repairs; Flood Prevention - Small Structures Programme April 2021	To be programmed - possible capacity issues
C150	Drumacre Lane West	Mid-section	Stream scoured out carriageway	Repair scour and carriageway edge	C150; Drumacre Lane West; Mid-section; Repair scour and carriageway edge; Flood Prevention - Small Structures Programme April 2021	Completed

Table 3 – Highway Schemes (allocated from £3.5m subtotal of the £5m total)

Road Number	Road Name	Division	District	Location description	Progress
B5269	Whittingham Lane	Preston Rural	Preston	Langley Lane to Cumeragh Lane	Completed
B6243	Preston Road	Preston Rural	Preston	St Michaels Primary School to Oban Court	Completed
A6	London Road	Preston City	Preston	Queen Street to New Hall Lane	Due to be delivered Q1
A6	Stanley Street	Preston City	Preston	New Hall Lane to Ribbleton Lane	Due to be delivered Q2
B5269	Moorside Lane	Preston Rural	Preston	Opposite Moorside Barn	Completed
C351	Langley Lane	Preston Rural	Preston	Langley Lane	Completed
C358	Horns Lane	Preston Rural	Preston	Adjacent to Horns Lane Cottage	Completed
C350	Inglewhite Road	Preston Rural	Preston	Horns Lane to Scotch Green Lane	Commenced work 09/12/21
C246	Cop Lane	Penwortham West	South Ribble	Manor Lane to Liverpool Road	Completed
C176	Moss Lane	Skelmersdale East	West Lancs	Courage Low Lane to Crow Orchard Road	Programmed in for Q1 2022
U21562	Woodland Avenue/ Trunnah	Cleveleys East	Wyre	Outside the Grade 2 Listed building	Civils work completed

Road Number	Road Name	Division	District	Location description	Progress
C381	Woodhouse/Tarn Road	Thornton and Hambleton	Wyre	Outside Raikes Barn	Work to be programmed
B5412	Station Road, Thornton	Thornton and Hambleton	Wyre	Adjacent to Ellesmere Avenue	Work to be programmed
U5278	May Lane, Cloughton	Wyre Rural East	Wyre	Between Walmsley Bridge Lane and Gonder Lane	Completed
U21394	Wardleys Lane, Hambleton	Thornton and Hambleton	Wyre	By 50m dip in road	Work to be programmed
U47848	Brock Road, Great Eccleston	Wyre Rural Central	Wyre	Outside Frog Hall Farm	Work to be programmed
B5268	Fleetwood Road North, Thornton	Fleetwood East	Wyre	Outside Calla Gran	Work to be programmed
C403	Knitting Row Lane	Thornton and Hambleton	Wyre	60m of new highway drainage system including new gullies and inspection chambers along the system.	Completed
C404	Cartgate, Preesall	Wyre Rural Central	Wyre	Adjacent to Sunnyside Terrace	Land Issues; currently on hold
C401	Staynall Lane, Staynall	Thornton and Hambleton	Wyre	Full extent	Completed

Road Number	Road Name	Division	District	Location description	Progress
A583	Blackpool Road, Clifton	Fylde East	Fylde	A583 outside Dobbies Garden Centre	Survey required
C283	Peel Road, Westby	Fylde West	Fylde	By the Electrical sub-station - Whitehills	Work to be programmed
C295	Moorside/Cross Lane, Treales	Fylde East	Fylde	Near West View Farm	Monitoring
C270	Mythop Road	Fylde West	Fylde	Mythop Road, near to the Blackpool boundary	Work to be programmed, possible Q4 delivery
U10708	Nell Lane	Clayton with Whittle	Chorley	From the junction of Shady Lane to the junction of A49 Wigan Road	Remove from programme - Use money for London Road
A587	Poulton Road, Fleetwood	Fleetwood East	Wyre	60 yards section outside the One Stop	Work to be programmed
	33566 Bank Brow Ret/Wall	Skelmersdale East	West Lancs.	Increase capacity of existing culvert with installation of 1.2m span box culvert	Liaising with Design team
C201	Town Lane	Chorley Rural West	Chorley	A49 Preston Road to Town Lane	Completed

Table 4 – Flooding to Highway and Property – Improvements to Drainage Systems including Sustainable Urban Drainage Systems (allocated from the £1.25m subtotal from the £5m total)

ROAD NUMBER	ROAD NAME	DESCRIPTION
B5251	SPENDMORE LANE	Investigation and Design in progress
A680	MANCHESTER ROAD	Investigation and Design in progress
B6236	HASLINGDEN OLD ROAD	Investigation and Design in progress
A680	WHALLEY ROAD	Investigation and Design in progress
A678	BURNLEY ROAD	Investigation and Design in progress
A679	BURNLEY ROAD	Investigation and Design in progress
C671	WHEATLEY LANE ROAD	Investigation and Design in progress
C340	HOYLES LANE	Investigation and Design in progress
C541	MELLOR BROW	Investigation and Design in progress
C549	WHALLEY ROAD	Investigation and Design in progress
A671	MARKET STREET	Investigation and Design in progress
C246	COP LANE	Investigation and Design in progress
C309	COPP LANE	Investigation and Design in progress
A588	BRECK ROAD	Investigation and Design in progress

Table 5 – Skelmersdale Underpasses (apportionment from the £1.25m subtotal from the £5m total)

Structure Number	Name	Suggested Action
4083U	ASHURST NO.4 SUBWAY	Monitor - work has already been undertaken to rectify the issue
4051U	EGERTON SUBWAY	CCTV, investigation and remedial works if required
5634U	CHURCH FARM SUBWAY	CCTV, investigation and remedial works if required
4061U	WINSTANLEY SUBWAY	CCTV, investigation and remedial works if required
4060U	WHITE HEY SUBWAY	CCTV, investigation and remedial works if required
4069U	BIRCH NO.5 SUBWAY	CCTV, investigation and remedial works if required
4013U	BROCK SUBWAY	CCTV, investigation and remedial works if required
4070U	BIRCH NO.6 SUBWAY	CCTV, investigation and remedial works if required
4043U	ELSWICK SUBWAY	CCTV, investigation and remedial works if required
4044U	EVENWOOD SUBWAY	CCTV, investigation and remedial works if required
4047U	ELMSTEAD SUBWAY	CCTV, investigation and remedial works if required

FUTURE-PROOFING THE HIGHWAY ASSET

In addition to the £5m Flood Prevention Fund, in 2021, £1.42m from the Department for Transport (DfT) grant funding was allocated to improve drainage systems in Lancashire. This funding was divided into two elements.

£710k was assigned to address drainage issues identified in the development and delivery of the 2021/22 and 2022/23 Capital carriageway maintenance programmes. This includes drainage maintenance and improvements to existing drainage systems, where resurfacing schemes have been approved by Cabinet.

The other element of £710k was assigned to those areas that have been identified to have a risk of flooding to property and highways and is being used to improve drainage systems not associated with any currently planned resurfacing schemes. These locations were identified countywide using data analysis to ascertain locations of risk, with evidence to justify why these schemes were required.

Asset Management is committed to allocating a budget of circa £500k to £1m per annum to supplement any resurfacing schemes where the drainage system needs remedial works or improvements. This allocation is fully dependent on the funding allocated from central government. CCTV surveys are now completed on all resurfacing schemes approved by Cabinet to identify whether there is potential for flooding to the highway or property in the future. When remedial works or upgrades are identified as necessary to the existing drainage system, then the improvements are undertaken using the funding from this budget. These works are completed prior to the resurfacing works being undertaken in order to mitigate the risk of having to return and dig up the new road surface should a drain fail in the immediate future.

A proportion of the funding is to be used to identify areas of localised flooding to highway and property, which is not associated with any highway resurfacing schemes. This is a countywide programme of work and is being developed on a risk-based approach, using data gathered from both internal and external sources such as: the number of repeated visits to clean gullies, reports of flooding on the highway and or adjacent property from stakeholders. This risk-based approach allows the county council to demonstrate a transparent decision-making process with fair justification for schemes approved.

Over the last few years, we have had a number of high intensity rainfall events, which have overwhelmed antiquated drainage systems, that were not designed to cope with the increased rainfall encountered in recent years.

The latest UK State of the Climate report has identified the UK's climate as becoming wetter. For example, the total rainfall monitored over a five-day period demonstrated a 4% increase during the most recent decade (2008-2017), when compared to a similar period between 1961-1990. Also, the amount of rain encountered on extremely wet days has increased by 17% when compared to similar days within the same time period.

The winters of 2013/14 and 2015/16 were two of the wettest on record, with December 2015 being the wettest December ever recorded, with rainfalls two to four times the average for the north of England.

This trend has continued over the following years, with further severe weather events encountered during the winters of 2019/20 and 2020/21, which caused more than £5million worth of flood-related damage to highway assets (excluding structures and bridges) in the Lancashire region.

Existing funding streams received from central government (anticipated circa £20m for 2022/23, is apportioned to all highway assets). Also, additional funding from the DfT may be provided following some named storm events and is only ever sufficient to provide relief and improvement to local drainage systems. However, if more funding were to be made available, a more holistic approach to the wider catchment area could be undertaken. For example:

- Introduction of source control.
- Increase system capacity of a drainage system rather than an isolated area.
- Storing runoff and releasing it slowly (Attenuation)
- Allowing water to soak into the ground (Infiltration)
- Slowly transporting (conveying) water on the surface.

Currently, only localised drainage improvements are made in response to flooding events where resurfacing work is to be undertaken and where flooding to property is evident. However, the number of actual outstanding issues across the network is currently unquantifiable without significant funding for survey and investigatory work.

A long-term programme of works could be developed to improve drainage systems to cope with modern day flooding events if funding could be guaranteed. This funding would allow additional resources to identify and develop sustainable drainage systems to reduce flood risk on the highway and to adjacent property. In turn this should reduce the significant disruption caused to the public by extreme weather events thus facilitating continued economic growth and activity throughout the county.