HEREFORDSHIRE PUBLIC REALM CONTRACT 2020/21

ANNEX 7 – DRAINAGE (CAPITAL AND REVENUE)

SERVICE OVERVIEW

SERVICE SUMMARY		
		Output
Capital Activities	Highways Drainage Capital Schemes	Feasibility, design, project management and delivery of Highways Drainage schemes/investigations at various locations in Herefordshire. In addition to this there is allowance for 2021 -2021 Preparation works. *Location Details shown in Appendix C*
	Drainage & Flood Asset Management	Management of the Asset Data Programme system to inform of current and future works programming. In addition, includes site reviews to confirm requirements.
	Highway Drainage Enquiries	This is to respond to enquires raised by members of the public in-year relating to Highways Drainage. It includes public liaison, inspection of issues and determination and prioritisation of solutions which in turn will inform the Asset Management Programme of works.

	Drainage Asset Inspections	Inspections are undertaken by the Drainage Technicians in year to update the knowledge and condition of the critical assets in the network. This allows the Asset Management Drainage Team to then prioritise for cleansing and capital maintenance. 145 assets will be inspected during the period course, of the year in the two Northern and Southern halves of the County. *These are listed in Appendix C, along with a map showing all registered culverts in the county* Includes biennial Principal Inspection of Ross Flood Alleviation Scheme and an allowance for subcontractors
	Pump Station Asset Maintenance	Mechanical and Electrical Inspections and Servicing costs for 4 pumping stations with comments on the structural condition of the asset. This is carried out by a specialist subcontractor twice a year at each station who BBLP manage and monitor. Any Works identified during inspections is not accounted for within this service cost. *These are listed and mapped in Appendix C.*

Revenue Activities	Grill Inspections	Drainage Grill Inspections are undertaken by the Delivery Team on a Monthly Rota to ensure their integrity and efficiency. In addition to this Grills are reviewed pre and post severe weather events (this cost allows for an additional 3 visits to all culverts in year) Where clearing is required this is completed at time of the inspection. *These are listed and mapped in Appendix C.*
	Homms Road Telemetry System	Installation of a Telemetry System at Homs Road Car Park pumping station. This is a remote communications system to inform the operational status of the equipment and raise alerts should issues arise. Outputs from the Telemetry will be issued to Duty Offices through a generic email address.
	Yazor Brook Telemetry and Maintenance	Interpretation of Yazor Brook FAS Flow Data. Cleansing and Inspection of Flow Monitors and Gauges. Installation of a Plate to allow visual verification of recorded water level probe data.
	Flooding Investigations (Section 19), Flood Risk Management & Flood Studies	This relates to undertaking the provision of technical support to the Lead Local Flood Authority (LLFA). This budget allows for one Section 19 report.

	Land Drainage / Riparian Enquiries/Landowner and other body (e.g. network rail) Asset Inspections/Water Course Consenting	This activity is in relation to the Drainage Asset Management Team responding to land drainage enquires, originating both from HC and other parties and progressing issues towards resolution. These enquiries require interaction with 3rd Party (landowners, network rail etc). This item also covers Providing consents by the Drainage Asset Management Team, for working in ordinary watercourses
	Network Encroachments	An amount of £3,473.24 is allocated for the Asset Management Team to aid HC in resolving legacy issues associated with planning permissions and the network. This amount is allocated on historical experience. Change control would be enacted should in-year costs be unexpectedly higher.
	Yazor Brook Syphons Removal Feasibility Study	Feasibility Study and Cost Estimate for replacement of culverts on Great Western Way
Routine Reactive	Routine Reactive Drainage Maintenance	Reactive and Routine Drainage includes: - Routine Gully Cleansing - Reactive Drainage Gully Cleansing - Annual Plan Ditching and Grips (North and South)
	Annual Cleansing	This reactive cost item is for Culvert and Water course Cleansing/unblocking identified following culvert inspections and enquiries.

	Water Course Clearance HC Land	Undertaking clearing of Yazor Brook and Millstream Gardens
Flood Risk Management Revenue	Development Control: Planning Flooding Advice	This allows for the Asset Management Team to undertake responses to technical reviews and flooding risk commentary to planning applications.
	Hydraulic Modelling Data	This is an Open Order for Provision of Model data to developers and consultants When developers approach the council, BBLP will respond as appropriate The Yazor and Withy Brook models were altered during the ICS project. The changes have resulted in a need for alterations to the format of the Model data output reports. An initial amount is included to invest and prepare these models for packaging to developers.
Externally Funded Services	Property Flood Resilience at Brimfield & Orleton	Survey & implementation of measures of additional properties willing to participate in scheme A business case has been submitted and an EA funding decision is pending

	Ayles Brook Hydraulic Modelling	Hydrological modelling of Ayles Brook to create a stand-alone model that will meet the criteria to provide outputs for the EA Surface Water Flood Map. This includes provision for CCTV Surveys of existing culverts and topographical surveys. Following completion, the stand-alone model will need to be linked to the Yazor/Widemarsh Brook model. A feasibility study will then be required to investigate flood alleviation options.
	Property Flood Resilience at Stone House, Clifton-upon-Teme	Survey & implementation of measures

	Lea Flood Alleviation Scheme	A detailed design has been undertaken during 2019-20 which generated a design for proposed interventions. The proposed works comprise; Enhancements to ditch and culverts on the B4222 by Old Mill Cottage New collection chambers and pipework on Old Mill Lane New principle carrier pipe from the A40, through Crown Barns and Millbrook Gardens New outfall into the Rudhall Brook Kerbing works in front of the Crown Inn to divert flows away from the building New ramp and collection chambers at the entrance to Crown Barns Following a competitive tender process to appoint a sub contractor and associated activities in preparation for a start on site, these works are planned to be undertaken in FY2020-21 and are funded by both Section 106 monies and EA grant.

	Eardisley Flood Alleviation scheme	Eardisley Flood Alleviation scheme Design of solution

	Performance Indicators	
	Indicator	Target
OPIs	**OPI 9 Gully Cleansing** The percentage of Gully cleanses to planned programme	90%
Strategic KPI	**OPI 15 Supervisory Checks** Percentage of planned supervisory checks carried out in month	85%
	SPI 9 Flood Resilience No of properties at risk of flooding as a result of highway defects	30 Properties lower threshold 45 Properties Upper thresholds

SERVICE SUMMARY

Balfour Beatty Living Places (BBLP) will undertake Asset Management and delivery of Capital and Reactive Drainage services on the Public Realm Highway and Land Drainage Assets that are the responsibility of Herefordshire Council (HC), and will support HC as a Lead Flood Authority.

Highway Drainage – Capital

The BBLP Drainage team (with TAMP inputs) will administer all aspects of Highway Drainage maintenance and improvements on behalf of HC, including:

- A risk-based approach to inspection, cyclical and preventative maintenance of highway drainage assets accordance with the HMP and Well Managed Highways.
- Working with the local water authorities, Environment Agency (EA), Parish Councils and land owners to ensure the most effective management of surface water systems and drainage in Herefordshire.
- Utilise the 2012 Highways Maintenance Efficiency Programme (HMEP) Guidance on the management of highway drainage assets approach to managing Highway drainage assets. This guidance will inform the Drainage Lifecycle Plan.
- Enhance the drainage records on GIS and augment details held on the Drainage Assets Register in-line with the Drainage Lifecycle Plan.
- Drainage CCTV camera surveys will be carried out in house or by external contractors to determine the conditions of drainage assets that have known issues and asset data will be fed to the TAMP team
- Disputes with utility companies where highway drainage assets have been damaged or where water is spilling onto the highway, establishing cases where repair costs may be claimed by HC.
- Disputes with landowners / insurers to recover costs associated with resolving problems of root ingress within highway drains

Highway Drainage – Revenue and Routine Reactive

The purpose of this service is to discharge HC's responsibilities consenting and enforcing but to also manage and deliver the programme of rehabilitation, maintenance and improvement works on HC's land drainage assets, including culverts, grills, watercourses, flooding investigations, development control and Routine Reactive Maintenance and Planned Annual Gully Cleansing

Our teams will:

- Work with the local water authorities, Flood Groups, EA, Internal Drainage Boards (IDBs), Parish Councils, Farm Herefordshire and land owners to ensure the most effective management of surface water systems and land drainage (including ditches, ordinary watercourses, grips and inlets) in Herefordshire.
- Discharge of duties under the land drainage act, in accordance with approved protocol
- Management of drainage ditches and watercourses where HC are the riparian owner, or where the duty for maintenance has been demonstrated to rest with HC.
- Maintenance of culverted watercourses (on specific land drainage schemes) built by previous Councils and by HC, where written maintenance agreements have not been identified.

- Our teams will carry out one-off land drainage works to alleviate community affecting flooding issues where resolution of land drainage issues has been exhaustive, and it has been agreed with HC that enforcement is not to be taken.
- A risk-based approach to inspection, cyclical, planned and preventative maintenance of land drainage assets.
- A planned county wide risk-based approach to cyclical Gully Cleansing

Highway Drainage – Flood Risk Management

- Under delegated responsibilities, act on behalf of HC in their role as LLFA
- Selectively where funds and resources are available, undertake studies to enable funding grants to be accessed for Flood Risk reduction works. Appropriate design options will be identified, sufficient for a funding application to be progressed/made. As some areas have a greater level of flood risk than others, it will be necessary to prioritise those areas needing further assessment so that resources and funding are targeted at those areas and activities of highest importance. (Note, HC isn't the only source of funding – this could come from government, local funding, private funding, developer contributions, etc.)
- Carry out investigations of flooding incidents, in accordance with agreed quality plans that use a risk-based approach to determine the need for investigations. EA data will be used where relevant.
- Provision of drainage/flooding technical advice regarding planning applications.
- Implementing, monitoring and maintaining the Local Flood Risk Management Strategy (LFRMS) action plan on a continuous basis throughout the year,
- Development of the LFRMS and participation in consultation and engagement events. Helping communities to help themselves.

Where agreed, Flood Risk at sensitive sites within Herefordshire will be investigated by conducting Flood Studies. These studies may indicate measures or further capital investments that will be needed to reduce flood risk to land, property and highways. Potential sites are escalated to the asset management team for review and prioritised for action.

Land and Property may be exposed to increased flood risk as a result of construction works. This has often resulted in flooding episodes. In these cases, drainage schemes involving both revenue and capital investment are required to resolve these problems. Support will be provided to HC in dealing with construction works that have increased flood risk.

SERVICE OUTCOMES

OUTCOMES	HOW WILL THE OUTCOME BE ACHIEVED

Improved network asset	• A risk-based approach to inspection, cyclical and preventative maintenance of highway drainage assets accordance with the HMP and Well Managed Highways. • Utilise the 2012 Highways Maintenance Efficiency Programme (HMEP) Guidance on the management of highway drainage assets approach to managing Highway drainage assets. This guidance will inform the Drainage Lifecycle Plan. • Enhance the drainage records on GIS and augment details held on the Drainage Assets Register in-line with the Drainage Lifecycle Plan
Safer network	• Drainage CCTV camera surveys will be carried out in house or by external contractors to determine the conditions of drainage assets that have known issues and asset data will be fed to the TAMP team • By delivering risk ranked capital schemes we will remove flooding from the highway and maintain structural integrity of the assets
Contribution to the local economy	• Working with other organisations where applicable secure funding to assist in delivery of other drainage works
Value for money	• Disputes with utility companies where highway drainage assets have been damaged or where water is spilling onto the highway, establishing cases where repair costs may be claimed by HC. • Disputes with landowners / insurers to recover costs associated with resolving problems of root ingress within highway drains
Engaged communities	• Working with the local water authorities, Environment Agency (EA), Parish Councils and land owners to ensure the most effective management of surface water systems and drainage in Herefordshire.

ASSUMPTIONS

The following assumptions have been made:

i) Where HC has a legislative or regulatory duty to act and works are required that are outside of the annual plan, then HC will seek to recover these costs and increase the contract's budget accordingly. Should these

costs not be fully or partially recovered and have to be funded out of the public realm contract then the level of service described in this annual plan will reduce.

ii) Assessments have been made based on the current asset data and incident knowledge

iii) Planning advice is included in this annex but funded via Planning Services rather than Highways.

iv) The recommendations made in the SFRA and the Preliminary Flood Risk Assessment (PFRA), 2011 remain valid. These will be augmented by further recommendations arising from the Local Flood Risk Management Strategy.

v) The condition of the network will not deteriorate at a faster rate than prior years.

vi) Hereford Council will seek to recover the costs associated with works required to be undertaken due to their legislative duties that were caused or are the fault of third parties. A process is in place.

vii) Extreme weather events do occur in year, which would require resources to be diverted from identified services and cause delay to these and the maintenance programme.

viii) Legal advice for issues associated with Drainage and will be freely provided by HC. Land & Planning fees are to be charged without BBLP fee.

ix) HC will continue to be responsible for undertaking inspections of soak away tests for new adoptions under S38 highway drainage.

x) No allowance has been made for monitoring soak away tests on private developments

THE SERVICE

SERVICE DELIVERY

	SERVICE	RESOURCE	DELIVERY
Capital	**Highways Drainage Capital Schemes**	Asset Management & Design and Build Team Members	Highest ranked schemes are identified for delivery in year. Such schemes will be delivered through Design and Build Unit of BBLP
	Drainage & Flood Asset Management	Asset Management	Asset management team undertaking management of in year Annual Plan, in addition to investigating further Network Issue to inform the forward Programme
	Highway Drainage Enquiries	Asset Management	Responding to enquiries and complaints submitted by members of the public, the client and other entities over the 12 months of 20/21
	Drainage Asset Inspections	Asset Management	Asset management team undertaking inspection of 145 Assets in county in year
	Pump Station Asset Maintenance	Specialist Delivery Subcontractor Managed by Asset Management	Six Monthly inspection and servicing of the 4 pumping stations by the delivery contractor
Revenue	**Grill Inspections**	Design and Build Teams	Undertaking inspection and clearing of Grills in County as Noted in Appendix C
	Homms Telemetry System Installation	Specialist Delivery Subcontractor Managed by Asset Management	One of Installation and maintenance for telemetry at Homms Road
	Yazor Brook Telemetry and Maintenance	Asset Management & Design and Build	Interpretation of Yazor Brook FAS Flow Data. Cleansing and Inspection of Flow Monitors and Gauges. Installation of a Plate to allow visual verification of recorded water level probe data.
	Flooding Investigations (Section 19), Flood Risk Management & Flood Studies	Asset Management Team	Undertaking the role of Lead Local Flood Authority (LLFA) and production of flood investigation reports in line with the requirements of Section 19

	Land Drainage / Riparian Enquiries/Landowner and other body (e.g. network rail)	Asset Management Team	Asset Team responding to land drainage enquires originating both from HC and other parties and progressing issues towards resolution. This item also covers Providing consents for working in ordinary watercourses
	Network Encroachments	Asset Management Team	Providing technical support to Herefordshire Council in managing encroachment events.
	Yazor Brook Syphon Removal	Asset Management	Feasibility Study and Cost Estimate for replacement of culverts on Great Western Way
Routine Reactive	**Cyclical Gully Emptying**	Drainage Supervisor, No1. Gully Cart + TM Gang	Cyclical Maintenance of Drainage Gullies as prioritised in program attached in appendix No **.
	Additional Maintenance Highways Drainage Works	North Operational Teams	Additional Routine and Reactive gangs to undertake ditching, grip cutting/ headwall clearance/ and miscellaneous minor drainage improvements
	Re-Active Jetting	North Operational Teams	Reactive and Routine Maintenance of Drainage related defects Gullies, Ditching & Grips
	Annual Cleanse/Inspection - Culverts	Asset Management & Operational Teams and Sub Contract	Annual Cleansing of Culverts as required
	Water Course Clearance HC Land	Asset Management and Operational/Sub Contract	Undertaking clearing of Yazor Brook and Millstream Gardens

Flood Risk Management Revenue	**Development Control: Planning Flooding Advice**	Asset Management Drainage Team	Response including technical review and flooding risk commentary to planning applications
	Hydraulic Modelling Data	As required as determined by individual developer need	Provision of Model data to developers and consultants When developers approach the council, BBLP will respond as appropriate
Externally Funded Services	**Property Flood Resilience at Brimfield & Orleton**	Asset Management	Survey & implementation of measures of additional properties willing to participate in scheme A business case has been submitted and an EA funding decision is pending

	Ayles Brook Hydraulic Modelling	Asset Management	Hydrological modelling of Ayles Brook to create a stand-alone model that will meet the criteria to provide outputs for the EA Surface Water Flood Map.
	Property Flood Resilience at StoneHouse, Clifton-upon-Teme	Asset Management	Survey & implementation of measures
	Eardisley Flood Alleviation scheme	*Asset Management*	Eardisley Flood Alleviation scheme Design of solution

SERVICE SCOPE

SERVICE	SCOPE
Asset Management	**IN SCOPE** • Work with the TAMP and Operations team to optimise highway drainage inspections and maintenance. Utilise a risk-based approach to select which assets can be inspected within funding constraints • Maintain a forward programme of known defects that have been scoped, risk assessed and prioritised based on the scoring methodology outline in the Appendix of this Annual Plan. • Manage the network in accordance with HMEP Guidance on the Management of Highway Drainage Assets. This guidance will inform the Drainage Lifecycle Plan. • Maintain and continue to enhance the drainage records on GIS and AMX/Confirm systems. Databases are updated by operatives undertaking inspections • Development of an Annual Plan of capital schemes selected from the forward programme of known defects. • Leading the resolution of legacy drainage issues, such as planning or construction problems (e.g. Rose Gardens). • Survey work to facilitate disputes with insurance companies • Review drainage asset inventory data and update inspection and maintenance schedules, using hand-held GIS sets. • Record drainage defects and identify routine maintenance priorities. **NOT IN SCOPE** • Asset Management techniques such as deterioration curves, future prediction of condition.

Highway Drainage – Capital and Revenue	**IN SCOPE** Work with TAMP team to implement the established value management process for annual highway drainage scheme programme based on HMEP Guidance on the management of highway drainage assets 2012. In accordance with the Drainage Assets Lifecycle Plan, utilise a risk-based approach to selectively carryout preventative/cyclical maintenance of high-risk assets and a reactive approach to maintaining low risk assets. • Reactive response to highway flooding incidents. Following review for cost/benefit and prioritisation, our team will carry out one-off land drainage works to alleviate communities affected by flooding issues where resolution of land drainage issues has been exhaustive, and it has been agreed with HC that enforcement is not to be taken. Highway/HC owned ditch and grip clearance delivered through the Locality Teams and reported into TAMP team. Issues logged on CONFIRM will form a raw list of drainage issues. The Locality Teams will assist in resolving initial sift of entries, key issues will be brought forward onto a Drainage Tracker. Undertaken planned capital maintenance works to reduce the risk in the network and repair cat 2b defects Management of drainage inventory data which will inform the development of the highway drainage maintenance strategy. Asset data will be captured in the field using GIS Tablets, e.g. gully pot locations will thus be plotted and referenced with condition grade (depth of silt in gullies). Reviews will take place of 'hot spots' with wet skid accidents or flooding incidents criteria identified, which may be scheduled for gully/ grip clearance. Potential sites are escalated to the asset management team for review and prioritised for action. CONFIRM data management system utilised to allow refinement of the gully cleansing programme and help plan the routine maintenance of highway drainage assets. Return times for cleansing devised on a trial basis dependant on a risk-based approach. Data from reactive gully cleansing works will be utilised and the results refined by means of a flood risk assessment, for inclusion in the cyclic programme. Reviews will take place after 'hot spots' with wet skid accidents or flooding incidents criteria have been identified, which may be listed for gully/grip cleansing. Potential sites are escalated to the asset management team for review and prioritised for action. The ditching and grip cleansing programme will be extended to include the unknown network, where no current asset data is held on grip locations. Locations will be prioritised based on asset data collected to inform future programmes of work.

	Most routine highway drainage maintenance works will be non CDM notifiable, however adequate notifications to be put into place as and when required. As disputes arise with utility companies where highway drainage assets have been damaged or where water is spilling onto the highway, solutions are to be identified and delivered, with proposals established to recover repair costs. Disputes with landowners / insurers may also arise to resolve problems of root ingress within highway drains, in this case proposals will be established to recover costs. **NOT IN SCOPE** Provision of consultancy advice, free of charge, to developer enquiries in addition to the base support in answering enquiries and progressing planning applications. Our budget was established for live planning applications that are covered by planning fees and we would not normally agree to meet developers on site to discussion their proposals. The gulley and drain cleansing budget are based on the provision of Two Whale Tanker Jetter / Gully Emptying Machines and associated resource for 12 months. If there is an exceptionally wet spring a third Machine may be needed for longer, the budget makes no provision for this, and this would be managed under change control. • Traffic Management for gulley and drain cleansing is required on all A and B roads, and is risk assessed for C Roads and narrow roads. Accordingly, the budget varies month by month.

Land Drainage - Revenue	**IN SCOPE** Land Drainage Consenting, enforcement and maintenance on behalf of HC, including: • Exercise the duties and powers through the legislation on behalf of HC under the Land Drainage act 1991 including recording and managing consent applications, dealing with stakeholders regarding any land drainage issues within the county, in accordance with approved protocols. • Management of drainage ditches and watercourses where HC are the riparian owner, or where the duty for maintenance has been demonstrated to rest with HC. • Technical advice to HC Legal Team regarding the interpretation and legal action enforcement of Land Drainage Law will be addressed, some of these are between third parties but landowners have prompted involvement by BBLP. • Routine and reactive maintenance of HC land drainage assets, grill and ditch clearance, including response to flooding incidents delivered through the Locality and Operations Teams. • Dialogue with riparian owners to facilitate watercourse and ditch improvements under the Land Drainage Act, including the use of the HC website and approved leaflets. • Management of land drainage asset data will inform the development of the land drainage maintenance strategy. Lengths of HC maintained watercourses, ditches and grills will be added to GIS. • The CONFIRM and AMX data management systems will support the delivery of routine ditch and grill clearance and maintenance of land drainage assets, including assistance in any emergency or flooding incidents. **NOT IN SCOPE** Undertaking drainage maintenance work that is the responsibility of Riparian Landowners, unless instructed to by HC to ensure HC's statutory duties are fore filled. This is documented in a separate stand-alone process.

Flood Risk Management & Flood Alleviation	**IN SCOPE** • Working with the local water companies, Flood Groups, EA, IDBs, Parish Councils and land owners to ensure the most effective management of surface water systems and land drainage (including ditches, ordinary watercourses, grips, gouts and inlets) in Herefordshire. • Where appropriate, investigate incidents of flooding in accordance with Section 19 of the Flood & Water Management Act (FWMA) 2010 and HC's Flood Investigation Policy. • Collating records of flooding incidents, including information obtained during the recovery phase. • Representing HC at quarterly meetings with the EA and other neighbouring LLFAs. Communications with residents, local flood groups, Parish Councils and Ward Councillors regarding specific flooding studies. • Provide the EA with regular project updates for grant funded schemes as required by the conditions of a grant. • maintain within AMX of a register of structures or features which are likely to have a significant effect on a flood risk in accordance with Section 21 of the FWMA 2010 • Development Control: Technical advice to HC's Planning Team on planning applications. (To be funded via planning.) A Drainage Engineer will be employed in Hereford to complete drainage planning reviews on small scale developments • Provision of Hydraulic Modelling data to developers and consultants. HC intend to allocate a budget towards this service and recover charges from ad-hoc enquiries from developers and consultants. **NOT IN SCOPE** • Drainage staff regularly attending parish flooding group meetings. (Due to their number and usual timings out of hours, key groups are often attended by Locality Stewards). • Undertaking Flooding Investigations that are not categorised as high enough impact to require investigation, in accordance with Flood Investigation Guidance document.

RISK MANAGEMENT

High level risks will be managed through the Partnership risk management process and listed on the partnership risk register. ***Refer to Appendix D***

	KEY RISK	CAUSE	CONSEQUENCE	MITIGATION
Strategic Risks	**Ice accumulation on the highway network**	Unable to see all drainage defects until they arise in extreme weather. Large backlog of Cat. 2c defects on the network and budget to address issues is constrained.	Risk to highway users	Prioritise maintenance investment to high risk areas and defects that could affect safety of highway users. Measure and report on risk in the network through winter risk management process. Please see Winter service plan for more information
	Property flooding from highway	Large backlog of defects on the network and budget to address issues is constrained	Complaints and insurance claims Vulnerable individuals are isolated	Prioritise capital schemes based on HMEP guidelines for value management processing. Risk based process to be followed.
	EA Grant Application process or commercial restrictions **(Contractors need to obtain Gold Status on Construction Line)**	Requirements significantly alter or requirements become more onerous. Procurement difficulties	Predicted resource requirements for applications are insufficient. Grant not spent	Staff keeping abreast of sector developments and in regular contact with EA. Early dialogue with contractor and EA. HC to support grant applications
	SUDs: major future liability relating to new developments using SUDS	Should developments deviate from requirements of SUDs Manual.	Inconsistent private development approach that is likely to lead to a major	Local SUDS Handbook and any necessary updates following review or change in national approach

			maintenance burden for HC in the future	
	Development/ Planning approvals: Increased development	Major increase in applications due to economic cycle and changes in planning regulations	Increase in demand on time of limited drainage team.	Risks of flooding from increased number of domestic and commercial developments Additional resource may be required.
	Development/ Planning approvals: Water flow paths	New flow path for water generated as a result of development. Alternatively, existing flow path of water is not established prior to development.	Adjacent landowners or future development is affected by water flow, causing flooding	Ability to call upon additional professional resources from third party consultants and our supply chain. Level of scrutiny needs to be enough to cover all significant design risks. Use of locally based staff
	Development/ Planning approvals: Wrong Build	Developer builds drainage out of compliance with approved design, either to save money or because key issues are missed during design.	Flooding problem arises, not reported within 8-year window because critical storm does not occur. Developer may be legally entitled to avoid requests to rectify defect. Developer could go bankrupt within this time window. In some cases, adjacent development could be affected	No budget is allocated to mitigate this risk

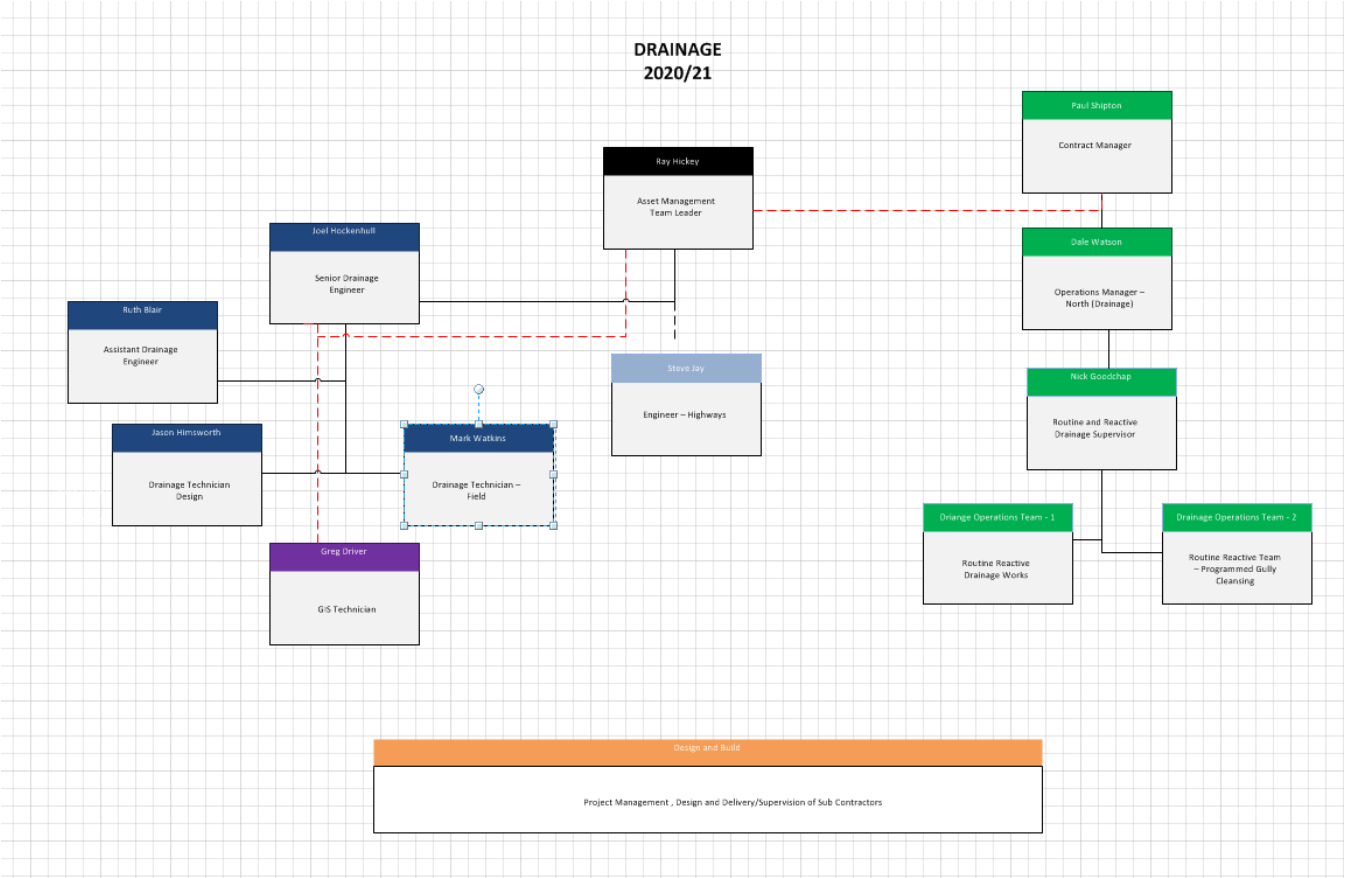
	Projects delivered late, over budget and developed to a poor quality	Major constraints arising during the project.	Delays. Stakeholder frustration.	Use of qualified Prince2 trained project managers to oversee delivery to programme, with regular progress meetings to ensure delivery issues are raised early and required actions are implemented to ensure on time delivery, with requisite quality and within budget.
	Lack of funding	Constrained budget	Acceleration of carriageway deterioration by 10-15% pa which equates in value to £1-1.5m per year. Increase in reactive maintenance	HC to consider additional budget.
	Increased number of flooding incidents	Extreme Weather. Unable to monitor key assets sufficiently closely to identify maintenance need, leading to unidentified maintenance failing prior to weather event. Constrained resources to address defects.	Resources diverted to help address issues, impacting on rest of service.	Review of Flood Risk Management Strategy throughout contract period amending response to incidents and priorities for funding. Production of Climate Adaptation Plan for the contract.
	Illicit connections to highway drainage	Developers connecting, no control over approved works	Existing network is inundated, meaning it cannot accommodate highway water	Where illicit connections are detected, HCC will be informed and BBLP will provide engineering detail should HCC pursue legal proceedings.

	Lack of external funding streams	Change to EA policy	Unable to proceed with flood risk schemes. Disappointed stakeholders.	Inability to fund flood prevention works
	Failure of recently adopted soakaways/ **drainage systems**	Poor design/build quality Lack of inspection (soakaway tests) during construction.	Flooding problem arises, not reported within 8-year window because critical storm does not occur. Developer may be legally entitled to avoid requests to rectify defect. Developer could go bankrupt within this time window.	HC to undertake inspections on S38 Highway Adoptions and follow adequate adoption procedures. No provision exists for private soakaways, these form the majority

PART 2

ORGANISATION

STUCTURE



ROLES AND RESPONSIBILITIES

Job Role	Responsibility
Asset Management Team Leader	To lead the Asset Management Team in the delivery of the team functions and requirements including maintenance of HC's Highway drainage assets. Development of systems and process to enable improved service and productivity, i.e. implementation of an Asset Management approach. Filling in for Senior Drainage Engineer when he is on annual leave or unavailable.
Senior Drainage Engineer	Management and delivery of the Annual Drainage & Flooding programme, prioritising schemes with TAMP team, lead the development of flooding schemes, feasibility designs, approval of detailed design for minor drainage schemes as required. Respond to Task and Finish Group required actions. Liaise with Highway Capital Maintenance team and TAMP with regards to existing data and proposed highway surfacing scheme proposals. Work with HC to resolve Wrong Building issues. Project Management of external consultants. Investigation of major flooding issues. Coordination with of statutory bodies. Delivery of odd-additionally instructed works. Review of technician's investigations and proposals for solutions/schemes.
Graduate Drainage Engineer	Provision of support to Senior Drainage Engineer by development of feasibility and detailed design for minor drainage schemes as required. Reviewing Planning Applications and providing flood risk and drainage comments to HC Planning Officers. Liaison with other Councils to ensure best practice regarding Suds and S38 adoptions can proceed.
Drainage Technician – Design	Provision of support to Drainage Engineer by development of feasibility and detailed design for minor drainage schemes as required. Carrying out CCTV camera surveys with operations team and liaising with asset management team in providing recorded asset information. Asset inspections.
Drainage Technician - Field	Responding to enquiries relating to Land and Highway Drainage, including defects, 3rd party issues and consenting. Development of provisional solutions to defects. Liaison with Riparian Landowners, statutory undertakers and third parties to resolve drainage related issues. Carrying out CCTV camera surveys with operations team and liaise with TAMP team in providing recorded asset information.
Engineer Highways	Liaise with TAMP and Drainage team with regards to existing drainage asset data and proposed surfacing scheme proposals.
GIS Technician	Part Time support to the Drainage Team approx. 25%. Maintenance and development of Drainage Asset Database on GIS and AMX/Confirm. Update records for adoptions and surveyed drainage information. Development of maintenance regimes for critical assets.

Locality Stewards	Liaison with Riparian land owners and Parish Councils regarding enquiries, reporting scheme progress and escalating drainage issues to the Drainage team.
Operations Manager – North Drainage	Management of the Drainage Routine and Reactive functions delivered on contract
Routine & Reactive Drainage Supervisor	To plan and supervise the routine gully cleansing operation as well as reactive jetting & ditching and grip cutting county wide.
Operations Teams (Work Gangs)	Delivery of routine and reactive highways drainage maintenance undertaken by in-house gangs including gully emptying, ditching, pipe and culvert clearance and investigatory works including flood incidences and jetting works whilst CCTV camera surveys are being carried out. Under direction of the Drainage Construction Supervisor undertake capital drainage improvement and repair schemes.
Design and Build	Project Management, Design and Delivery of capital schemes using in house resource and/or supervision of external resource.

KEY DELIVERY INTERFACES

	Who are the dependencies	What is their role
Public Realm BBLP Partnership	Public Realm Management Team	Agreeing budgets, procedures etc.
	Locality Teams	Routine drainage and emergency situations.
	Communication and Customer Services Team	Communications with customers
	Performance & Improvement Manager	On-going feedback/ review of service performance
	Routine and Reactive Drainage	Providing ongoing Annual Cleansing of gullies, grips and HC Ditches
	Design and Build	Undertake the Project Management, Design and Build where appropriate of Capital Drainage Works, in addition to supporting Routine and Reactive Drainage when necessary.
Herefordshire Council	Task and Finish Group	Highway Flooding incidence follow up
	HC Legal Services	Liaison for enforcement and formal notices
	Contact Centre	Customer enquiries & response updates
	HC Planning	Advice involving highway drainage and developments
	Local Members	Councillors and Cabinet Member kept abreast of local highway drainage issues
	General Scrutiny Committee	Report back annually re: LFRMS Update on LFRMS Action Plan
External Organisations	Police	Emergency Response
	Environment Agency	Flooding, water course contamination, Flood & Water Management and climate change
	Water Authorities: – Welsh Water Severn & Trent Water	Surface water drainage infrastructure, Farm Herefordshire, Flood & Water Management liaison
	Parish and Town Councils	Community liaison
	Neighbouring local authorities	Coordination of Strategic Flood Strategies & Flood & Water Management
	Land Owners	Enforcement of riparian drainage rights, land drainage, protection of drainage easements

	Natural England	Environment protection - High level support and advisory service
	IDBs	Surface water drainage infrastructure, Flood & Water Management liaison

FOUR YEAR PLAN

INNOVATION AND CONTINOUS IMPROVEMENT

Initiatives will include:

- Optimising the inspection and cleansing frequency of individual highway drainage items and HC riparian land drainage assets to improve efficiency of highway drainage systems, reducing risk of flooding.
- Continued implementation of AMX and QGIS as a Drainage Asset Management tools to enable the approach documented in this plan.
- The continued use of GPS technology linked to the asset management system to build up digitised records of the drainage network.
- Real time monitoring of drainage activities using mobile working and CONFIRM for data collection and sharing of data to the right person at the right time
- Adoption of the integrated programme in the delivery of Annex 7 tasks
- Development of a feedback process to locality stewards on the statues of prioritised schemes

FOUR YEAR PLAN

Year 2020/21 – This is included in the ***Appendix C***

Years 21/22, 2022/23 and 2023/24 - Continue to:

- Improve our knowledge of the network and its condition
- Address the known defects in the network, prioritising spending to areas that will provide the largest benefit.
- Work to reduce the risk of flooding to communities via promoting schemes, securing funding, engineering solutions and constructing works.
- All identified Drainage Issues within county, which would inform all above are mapped and included in ***Appendix D***

APPENDICES

APPENDIX A: POLICY & PROCESSES

The policy and processes that will be utilised in delivery this service is outlined in the TAMP, HMP, Drainage Lifecycle Plan and Drainage Quality Plan.

Scheme Prioritisation and Scoring

The prioritisation scoring methodology that will be utilised to select schemes for the Annual Plan will be as follows:

Note: the impact of the defect should be considered based on all seasons. I.e. if a drain is blocked and it is assessed in a dry period, the impact of defect in a wet period should be considered. Please see other documents referenced in the paragraph above for more information.

Risk & Impact Scoring, max score: 100

Drainage Safety	**Points**	
Confirmed accident due to/exacerbated by defect	40	
Defect likely to result in high risk of accident or report of safety issue from Emergency Services	25	
Other minor safety issues	10	
No Safety Issues	0	
Sub-total:	/40	

Structural Stability	**Points**	
Defect causing instability of HC or 3rd Party Asset – instability imminent or already failed. Indications of failure mechanism are evident. Or Defect leads to permanent road closure	25	
Defect causing instability of HC or 3rd Party Asset – instability likely in medium term (1yr). Asset remains fully functional.	10	
Defect not causing instability	0	
Sub-total:	/25	

Highway Impact	**Points**	
A Roads or Main distributer B Roads	10	
B Roads	7	
C Roads	5	
Unclassified Roads	2	
Score	/10	

Property Flooding	Points	
Internal Property Flood or any Foul Flood	25	
Business impacted by Flooding	15	
Multiple External Property Floods	10	
Single External Property Flood	5	
Sub-total:	/25	

Drainage Prioritisation Value Management Scoring

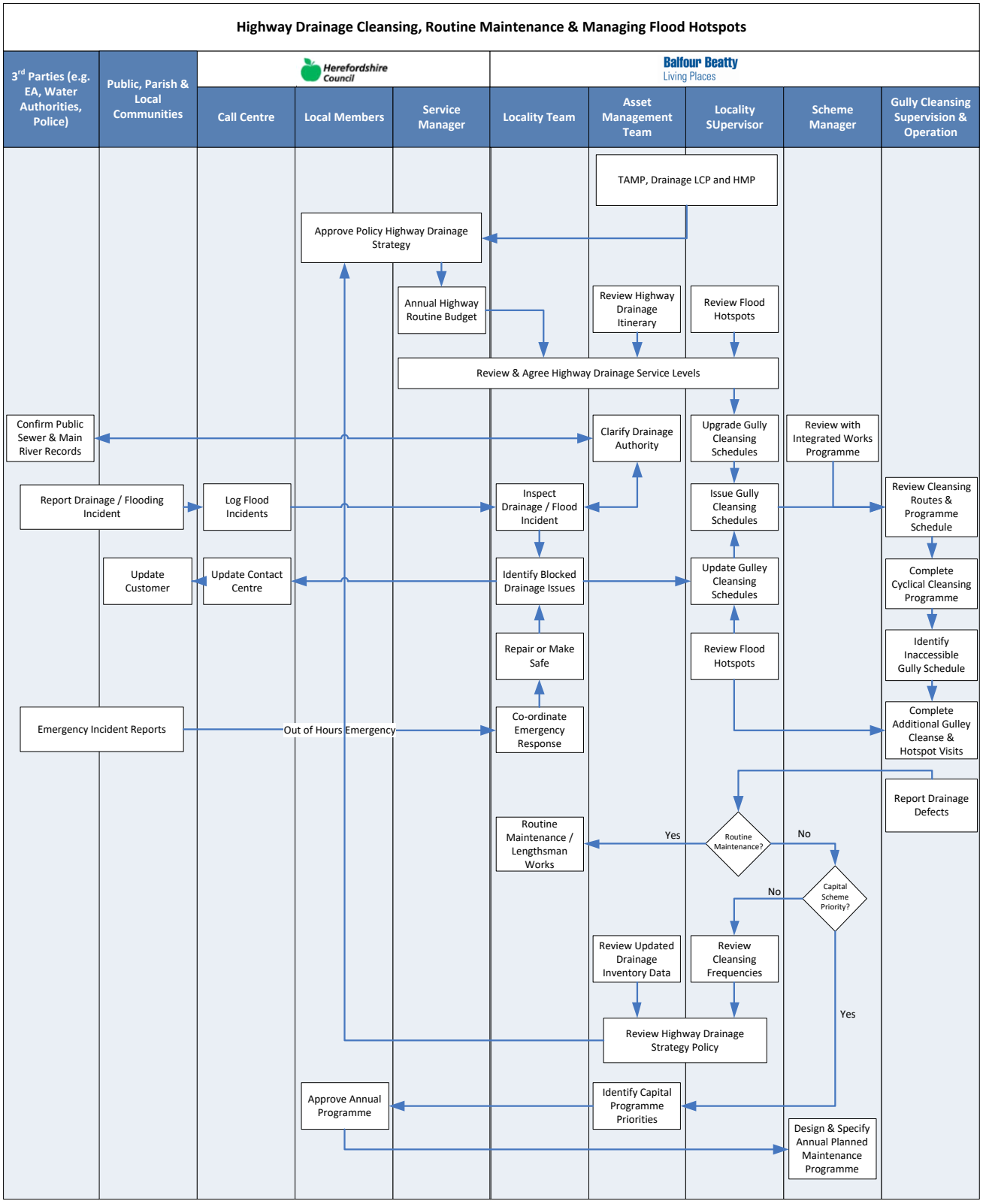
For Category 2 defects the Asset Management team will review the Locality Steward's risk assessment and apply the following additional considerations, to develop a max score out of 100:

Social & Economic	Points	
Flooding in vicinity of Critical Services or Infrastructure e.g. schools or hospitals. Potential for loss of outstanding legal claim.	+15	
Critical route affected within urban area, part of strategic network or vital community link	+10	
Complete flooding or splashing of footways near property	+10	

Deliverability	Points	
Low value works (£3k) or simplistic scheme	+5	
Requires excavation in carriageway that's had surfacing works carried out in the last 3 years	-15	
Requires excavation in soon to be surfaced carriageway	+20	
Environmental Constraints	-10	
Positive Vocal Stakeholder Engagement / Public Demand for the Scheme	+5	
Significant traffic disruption likely due to remedial works	-5	
Excessive Cost vs. Value	-20	
Sustainability of Solution – Low	-10	
Accessibility for Land Drainage works – constraints present	-5	

Whole Life Costing	Points	
Change in drainage asset will result in increased maintenance burden	-5	
No change in maintenance requirements	0	
Change in drainage asset will result in decreased maintenance burden	+5	

Process – Highways Drainage Cleansing and Routine Maintenance



APPENDIX B: REFERENCE DOCUMENTS

- Highways Act 1980
- Land Drainage Act 1991 & 1994
- Flood Risk Regulations 2009
- FWMA 2010
- HMEP Guidance on the management of Highway Drainage Assets 2012
- Common Law
- Highway Maintenance Plan
- UK roads Liaison Group Highway Maintenance Efficiency Programme Infrastructure Asset Management Guidance Documents
- HC's Drainage Lifecycle Plan
- HC's Highway Maintenance Plan
- CIRIA C697 SUDS Manual
- CIPFA latest guidelines
- Drainage Standards Policy
- Public Realm Specification
- SFRA (2009)
- PFRA (2011)
- Local Flood Risk Management Strategy
- Flood Study reports
- Herefordshire Flood alleviation Strategy
- Well-maintained Highways Code of Practice

APPENDIX C: PROGRAMME OF WORKS

Planned 2020/2021 Capital Works Programme and Locations

Annual Plan
2020-2021 Culvert Ins

Planned 2020/2021 Culvert Inspections

Annual Plan
2020-2021 Culvert Ins

Annual Plan
2020-2021 Grill Inspec

Planned 2020/2021 Grill Inspections

Annual Plan
2020-2021 Pump Stati

Planned 2020/21 Pump Station Maintenance

Annual Plan
2020-2021 Grill and P

Planned 2020/21 Grills and Pump Stations Locations

(Note the above Map also plots all Culverts in County)

APPENDIX D:SUPPORTING DOCUMENTATION

Annex 7 Risk Register

2021 to 2024 Drainage Asset Register Locations