

## Croston Flooding update March 2020 - Draft

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### **Abstract**

This note is intended to provide a basis for discussion to review the recent operation of flood prevention measures in Croston and to indicate the need for improvements. It covers the prevention of significant flood damage in recent storms by the operation of the Croston Dam Flood Barrier and the LCC surface water pump. Potential improvements noted include :- better communication of when the dam gates are and will be operated, better specification of the LCC pump, better enforcement of run off control (SUDS) and suggestions for coordination of an integrated overall plan for flood control in the Douglas Catchment Area. Comments are invited and the support of Croston PC is requested to present this to the CBC Liaison Group Meeting.

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### **Background.**

Recent storms have shown exceptional frequency and severity of heavy rainfall. On these occasions the Croston area has been saved from significant property damage by the operation of the Croston Dam Flood Barrier. LYFAG volunteers operated the LCC pump to reduce surface water flood levels and distributed sandbags. Despite the relief that on these occasions significant damage was prevented there is anxiety that these were “near misses” and that further improvements are needed.

On January 22<sup>nd</sup>, when EA Flood Alerts had been raised and high river levels at Croston Town Bridge were causing alarm to potentially vulnerable residents, there was confusion as to if and when the barrier gates operated would be operated. The EA Duty Officer was unable to advise the Flood Action Group. This uncertainty is not just idle curiosity. Householders, affected by the Flood Alerts need to make decisions as to when and what items to move to safer areas (eg vehicles, furniture, carpets etc). For those away from home – how urgently do they need to return. For those no longer in the prime of youth and fitness, moving furniture and other heavy/bulky items is not so easy and not without risk.

### **Barrier operation improvements.**

There is a need for better communication and clarity. This would be helped by a clear statement of:-

- How and when the barrier gates are planned to be operate

- Procedures planned to check that they are operating as planned and what pre-planned contingency mitigation measures are there to ensure that the barrier can be operated in case of malfunction.
- The schedule for routine inspection and functional checks to give confidence that this intermittently used system continues to be available when needed.

The events of January 22<sup>nd</sup> included heavy local rainfall and surface water flooding near the War Memorial and near the junction of Out Lane and Town Road. The LCC pump at the Old School was operated but was unable to cope with the amount of surface water run off. It has been noted that the specification for this pump has not been well matched to the requirements. The pump has a high pressure output when the need is for a much lower pressure but higher flow rate. This results in about 90% of the power being wasted.

There is an urgent need to estimate the quantity of the local surface water run off and specify a pump with the appropriate flow capacity.

Some of the residents most vulnerable to the run off flooding and river level height have suggested that the flood barrier control system might be adjusted to reduce the level at which the gates are first operated. This is a reasonable proposal but the consequences would need careful assessment in terms of the effect on the overall performance and the totality of the storm surge retention over full timescale of the event.

The EA have been very economical with information about the operation of the control system and claim that no improvements are possible. As a retired Senior Professional Engineer, I find this unconvincing. It has been reported that there is a 90 minute time delay between the initial operation of the gates and further closures. While some delay is necessary to prevent potential “chattering”, examination of the EA river level traces for the upstream measuring stations show that the effects of closing the gates can be seen in Croston on a shorter timescale. Some explanation of the choice of this long delay should be provided.

Another area of concern is the adequacy of the control system to deal with tidal effects at the Castle Walks Bridge measuring station where the river level measurements are taken to operate the system. Again looking at the EA river level traces, shows that at the dates of peak tide heights, the level at Castle Walks is up to half a metre and this rise can occur over a relatively short timescale in comparison with the 90 minute time delay. Some explanation of how this effect is factored into the control system would be reassuring.

Previous discussions with the local EA management have indicated a strong top down authoritarian style, where operatives are expected to obey without thinking and are actively discouraged from suggesting improvements. This style of administration can be effective where the manager has superior education, experience and knowledge of the tasks in hand. (Historically it was most successful in the control of rookie conscript troops and agricultural and galley slaves.) With the variety of responsibilities in the EA this does not seem to be working at all well in critical areas of flood control.

## **Planning for surface water flooding/Run Off**

As noted above, run off remains a problem in Croston. Previous discussions with CBC Planners and Parish Council concerns have been met with a mantra that “the developers are required to include SUDS provisions to limit run off to the levels of the undeveloped site”. Sadly, there are a number of instances where this has not happened and where the run off is causing problems in Croston. (Out Lane, The Bishop Rawsthorne driveway/bus parking area, the station car park, the unfinished development next to the REC on Station Road ).

There is an urgent need for the Planners to take control of this issue and to ensure that SUDS provisions are properly designed, constructed and maintained. Authorisation for occupation/use of the developments should be withheld until effective SUDS can be demonstrated.

After some years respite, storm surge sewer flooding has begun again in Grape Lane.

The recent Central Lancashire Planning consultation has highlighted the lack of serious consideration of flooding issues. The 15year plan seems to have been based on flood reports dated 2007 (before Storm Desmond [26/12/2015] which flooded some 300 properties in Croston.) No significant further development should be approved until after the current flood and run off risks have been reassessed for the whole Douglas Catchment Area and until after the existing waste water sewers and treatment facilities are demonstrated to be adequate for the proposed developments without increased risk to the existing and proposed new builds .For far too long development has been approved ahead of the sewer and run off capacity which has lagged for decades while exposing existing property to enhanced flood risks.

There are also concerns about reports that one of the main suppliers of individual property flood resilience improvements (wall coatings, demountable flood barriers and flood proof doors) under

the grant scheme organised by CBC following Storm Desmond has ceased trading. Advice as to how best to maintain the flood resilience equipment would be welcomed.

## **Overall planning**

The Making Space for Water group, (attended by LCC, UU, EA and hosted by CBC) has provided a very useful forum to discuss flood risks and potential improvements. It has helped to expose the futility of each individual organisation claiming that the blame lies elsewhere and that somebody else should provide the solution. Further improvement and real progress in reducing flood damage could be made by providing a lead in coordinating an overall plan for the whole catchment area to:-

- Reduce storm surge runoff by upland management (vegetation, leaky dams, reservoir level reduction ahead of heavy local rainfall forecasts).
- Upgrade sewer capacity to cater for current and planned demand including surge buffer tanks.
- Domestic and commercial premises rainwater harvesting to reduce the waste of chlorinated drinking quality water for flushing WCs (typically 150 litres/person /day) and other general cleaning/watering. The storage tanks could also be emptied prior to heavy local rainfall to provide additional surge reduction capacity.
- The encouragement of standardised “cut and jack” systems to raise vulnerable properties above predicted flood levels. This type of operation has been used successfully to relocate individual buildings of exceptional historic/cultural merit and to raise very high value riverside mansions. For an individual single building the cost is very high due to

the structural analysis and provision of individually “tailored” jacking and lifting frames. However, the costs could be vastly reduced for treating groups of generally similar buildings of relatively standardised construction. It would be particularly applicable to “estate” properties and the costs could be recovered over a typical mortgage period timescale by reduced insurance/flood repair costs and property value enhancement.

- At suitable river mouth areas, tidal lagoons, gates and water turbines could be used to generate renewable electricity and in exceptional storm surges, the turbines could be reversed to pump river water out to sea.

Even for the Douglas Catchment Area, the potential flood risks are not limited to Croston and Chorley but include, Bolton, Wigan and other areas. In the North West of England the same problems exist from Carlisle to Warrington. Let us take a lead in trying to motivate our MPs to cooperate to upgrade our sewers, drains, water supplies, and flood risk reduction to formulate a plan to provide a “joined up” programme to protect the North West. There is a need for an overall plan and legislation to enforce compliance as well as the provisions of grants and tax relief for implementation.

### **Conclusions and recommendations.**

This note acknowledges the progress in flood risk reduction in Croston from the completion and operation of the EA Flood Remediation Scheme (the Croston Dam Barrier) to which CBC contributed over £1M. In the last few months it has been operated several times and prevented the flooding of at least 70 homes and other properties.



There are concerns about the poor communication of the times of operation of the dam gates and an apparent reluctance to consider an explanation of the control system. Croston residents need this information in order to react in a calm and considered way to EA flood alerts.

There are also concerns about the apparent lack of interest in confirming the optimum operation to minimise surface flooding in the village. A serious estimation of local runoff is needed together with a better specification for the LCC pump. The future reliability of the barrier would be enhanced by an outline of a planned procedure to cope with malfunction of the system and the routine inspection and testing to assure reliable operation on demand.

The need for a coordinated overall plan to reduce the flood risks for the Douglas Catchment Area is highlighted and proposals identified for consideration.

Croston Parish Council is invited to consider this note and to provide comments to be noted so that the note can be used to seek assistance from CBC.

### **Acknowledgments**

In recent storms, the Croston Dam, originally provided by the EA with prompt substantial financial assistance from CBC has prevented significant property damage in the village. The operation of the LCC pump and provision of sand bags by LYFAG volunteers has helped to prevent damage from surface water flooding. Croston Parish Council has provided financial support for LYFAG safety equipment and fuel for the LCC pump.

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