

CGW Mallard Pass Solar Farm Written Representation

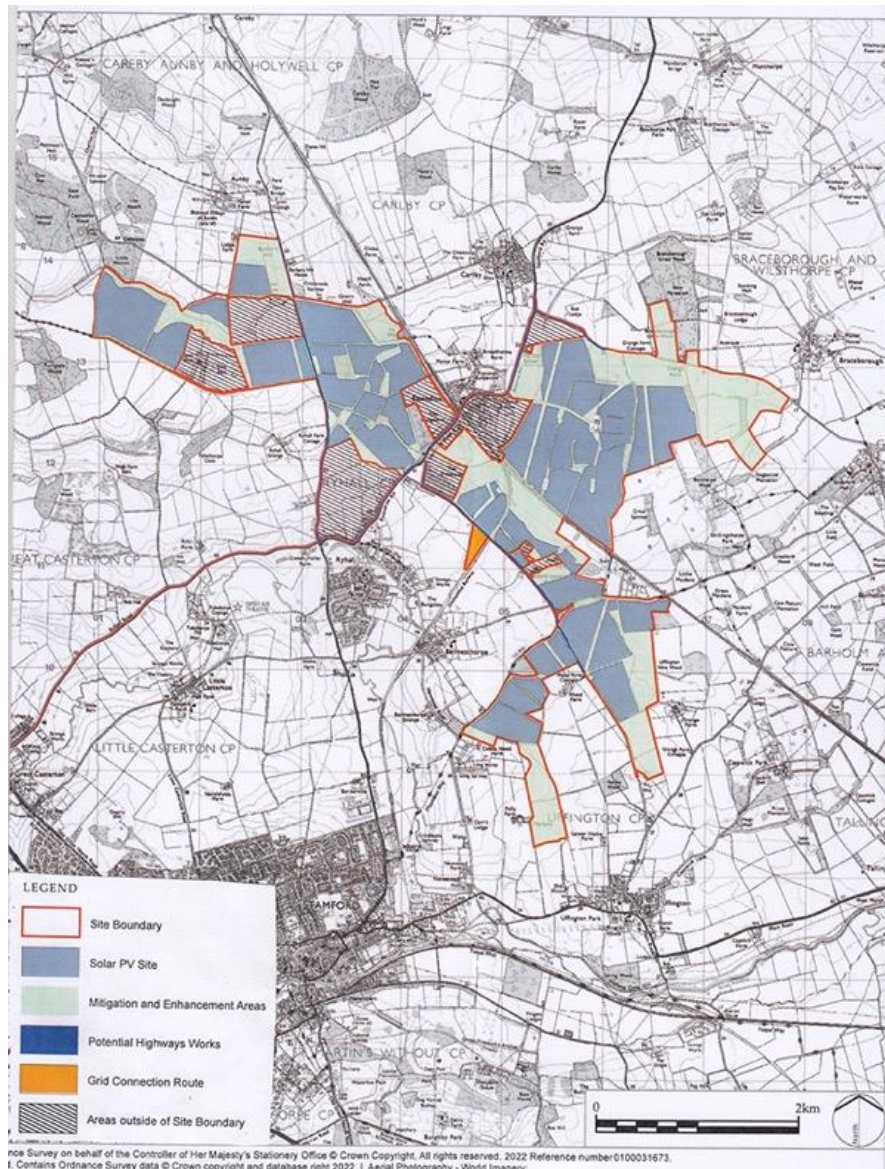
Chris Granville-White Ref No: 20033808

Four Topics Are Included

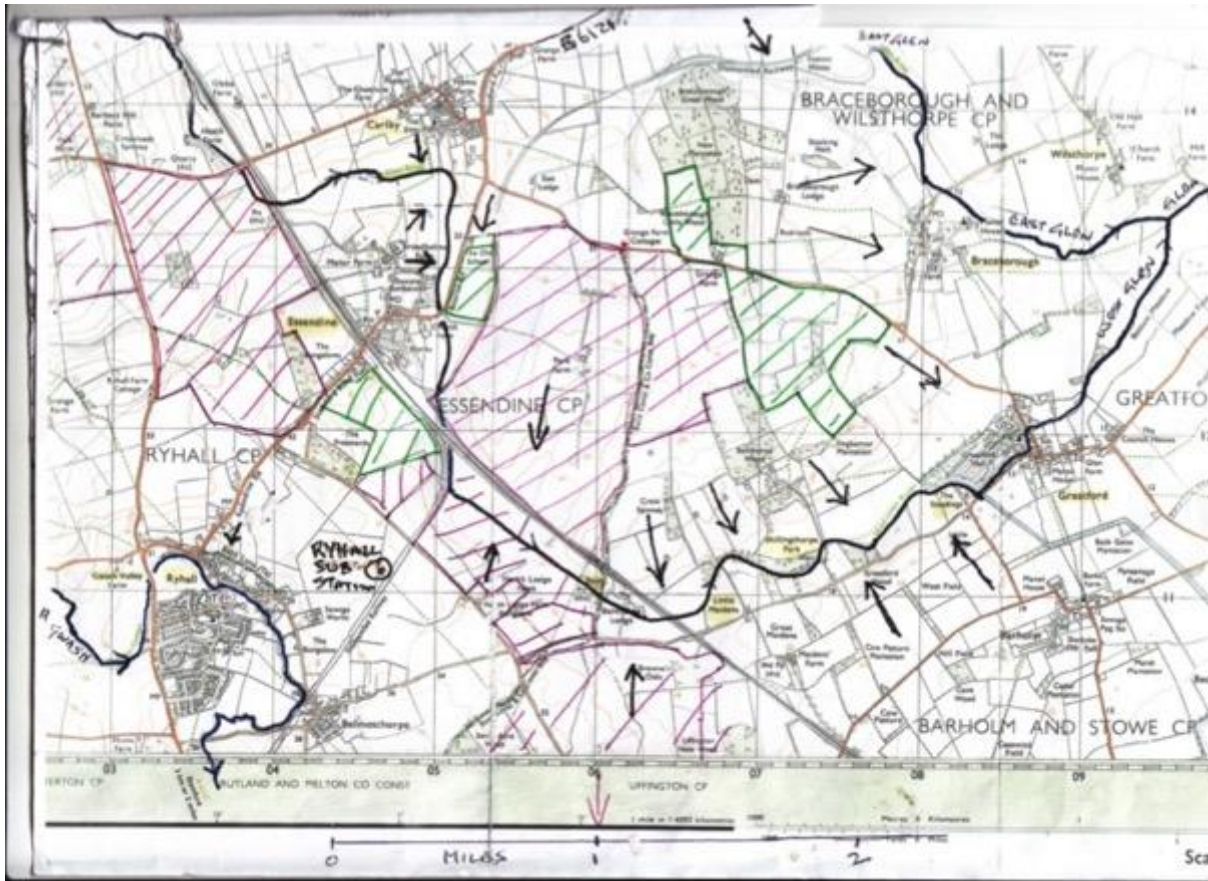
- 1, Flood Risk Implications.
2. The misuse of a large area of good quality agricultural land
3. The desecration of a huge area of scenic English countryside,
4. The possible use of forced labour in the construction of the solar panels or other equipment for the site.

Topic 1. Mallard Pass Solar Farm Proposal - Flood Risk Implications

By Chris Granville-White. Flood Warden for Greatford village since 1Feb2013



Mallard Pass Solar Farm map of proposed solar site from their website.



Greatford Parish Council Ordnance Survey topographical map to show location of villages and indicate flow of surface water.

Purple shaded areas: the original areas proposed for the Mallard Pass Solar Farm

Green shaded areas: original boundaries of so-called mitigation & enhancement areas, which were later increased in area, as on the consortium's map on the previous page.

Arrows: Arrows indicating downhill slopes as general direction of surface water flow

Dark blue lines:

-The West Glen river flowing from top-left round in a winding route, thence through the village of Greatford to the right-hand side, where it is joined by the East Glen near Wilsthorpe near the upper right side of the map, to continue as the Glen river.

-The Gwash river at the bottom left, flowing clockwise around Ryhall, before continuing to the south to join the Welland river close NE of Stamford.

Introduction

This paper details the flood risk to the area around the proposed site for a Mallard Pass Solar Farm across the Rutland-Lincolnshire border area on each side of the main north-south railway line at Essendine. There is already periodic flooding in areas within and around the proposed solar site, which would become more serious if such a site is constructed and operated for decades to come. Specific details and photos are included in this paper.

The Environment Agency (EA) is responsible for flooding from rivers, while the county council Lead Local Flood Authorities (LLFAs) are responsible for surface flooding - in this case the Lincolnshire and Rutland County Councils (LCC & RCC).

Surface water flooding drains into the soils and also travels on downhill land surfaces towards and into rivers. However, as explained in an excellent study by 'CARE Suffolk' summarised below, the soil compaction created during the 2-year construction of the huge site, and through the projected 40-year life of the site, would become a permanent situation which would greatly reduce the ability of the soil to absorb and drain surface water. This situation would never recover – despite the questionable claims of Mallard Pass that the area could be returned to grow healthy crops in the years immediately after the site was de-commissioned.

Ground Compaction

Once compacted the soil's ability to absorb and hold water is reduced, and it also prevents water from seeping down further into any groundwater stores too. Therefore more water becomes available for flooding both on the surface and further downstream.

And clay soils do not uncompact themselves. It requires aerating, and ideally organic matter worked into it. This is when farmers spread well-rotted manure onto the fields, ready for them to plough the land. This process undoes any compaction from the year, and the mixed-in manure adds extra structure (as well as nutrients) to the soil. A farmer will subsoil after harvest to remove as much compaction as possible. Contractors won't be able to plough their damage out because they will have planted solar panels all over the fields and buried cables which would be pulled out by deep cultivation. Therefore the damage they do to field drainage will last 40 years, and the surrounding area will have to put up with the ensuing flooding.

The topic of soil compaction and associated flood risk is covered in greater detail in the Greatford Parish Council paper by Phil Britton

Contact and Dialogue with the Environment Agency (EA)

I have been a resident in Greatford for 43 years, and the Greatford Flood Warden for the past 10 years. During this time I have walked the area extensively, and witnessed (and photographed) evolving, near and actual flooding. I have also had many discussions with Environment Agency (EA) officials while walking river banks, and discussing the issues; and read and commented on a number of EA studies and reports about the flood risk.

Apart from the Greatford sluice being adjusted down to open 100mm lower from 1st Nov to end Mar each winter (at my suggestion), there have been no significant changes to the West Glen river through Greatford in recent years other than periodic maintenance of the Greatford and Fitzwilliams sluices, dredging of the Greatford Cut, and clearance of river banks, fallen trees, branches and other debris in the water. After flooding in Greatford during Christmas 2012 and late Jan 2013, an EA study was carried out which led to the proposal for a large water storage area to be constructed in half of a large field immediately upstream of Greatford. However, at a projected cost of £1m, this was rejected on the basis of the cost-benefit ratio.

In the context of the Mallard Pass Solar Farm proposal, there has been relatively little written information seen from the EA or the Rutland and Lincolnshire LLFAs about the flood risk associated with the Mallard Pass proposal, other than an acceptance of the Mallard Pass Flood Risk Assessment (FRA). However, as the FRA was written by an individual who is also the Flood Risk Manager for the Mallard Pass consortium, how can this be independent and objective?

Of particular concern to those of us living in Greatford, it seems self-evident that surface water on compacted ground would be absorbed to a lesser extent than cultivated agricultural land; making it inevitable that the increased surface water flowing into rivers would increase the flood risk from the West Glen and other local rivers.

Flooding Background & History

The vast area of Rutland and Lincolnshire countryside proposed for the Mallard Pass Solar Farm has 3 significant rivers:

West Glen – this river has an existing flood problem, with periodic flooding to Essendine, Banthorpe, Shillingthorpe, Greatford, and fields around Wilsthorpe (merger of E&W Glens).

East Glen – a minor flooding problem from one section of the East Glen in the area of the road bridge just to the east of Braceborough.

The West & East Glens combine to become the river Glen near Wilsthorpe, with extensive field flooding near the rivers junction south of Wilsthorpe.

Gwash – the flood risk at Ryhall was largely eliminated by the creation of Rutland Water during the late 1970s, with its dam and sluice control.

Essendine Flood Risk

The area where the West Glen flows near the ancient church in Essendine is prone to serious flooding, as shown below:

Essendine Flooding





Banthorpe Flood Risk

A mile downstream of Essendine, the West Glen river flows along the south-west frontage of Banthorpe Lodge properties before passing under the main north-south railway line. The aerial photo below shows the impact of river overflow alongside these properties.



Banthorpe Lodge Properties, looking north-west along the railway line towards Essendine with its large white warehouse in the distance. On this typical occasion, the flood water came close to the houses.

Greatford Flooding & Flood Risk



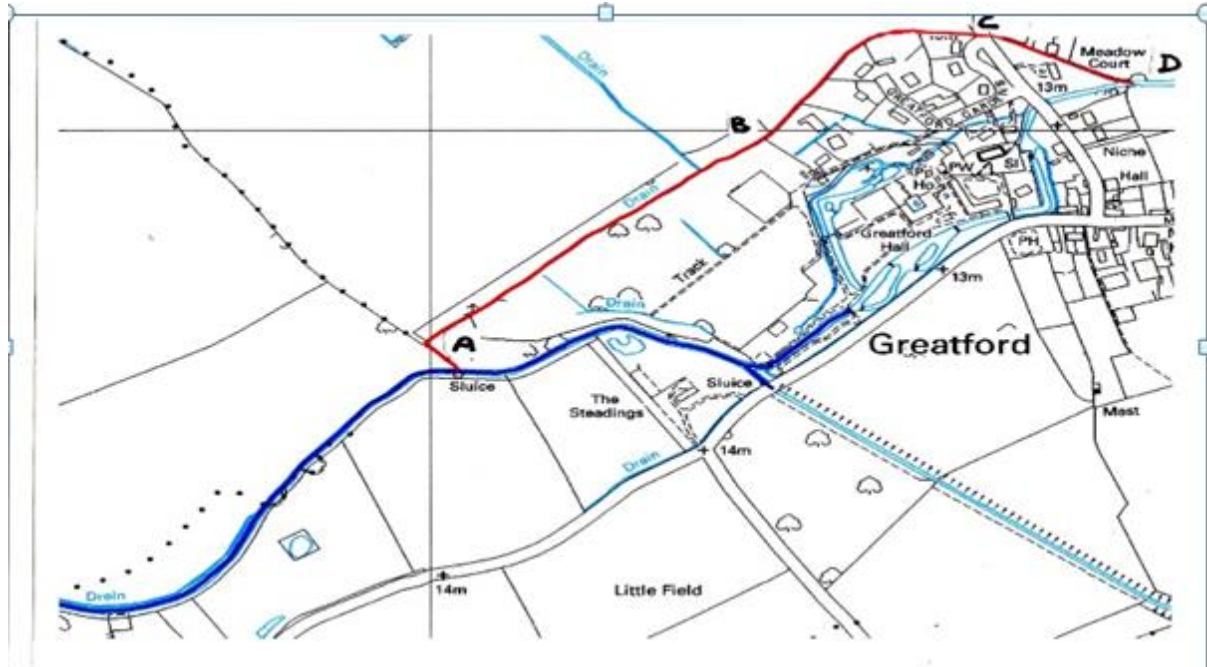
The West Glen River from the railway crossing (bottom left corner) to Little Maidens, thence lower edge of Shillingthorpe park (left of centre) to Greatford (top right)

Greatford has a long history of flooding, mainly caused by the re-routing of the river long ago (perhaps during the 1700s when the Greatford Watermill was constructed) to flow along the front gardens at Greatford Hall upstream of the mill.



Greatford Main Street Flooding 27Aug1912

This flooding extended along the Main Street until 1956 when the Greatford Sluice was installed with an associated Cut to divert excess water to the Welland river near Market Deeping. Although the sluice and cut have been effective in reducing the overall flood risk, there continues to be periodic flooding in the area of Greatford Gardens where 14 properties were built in the early 1970s in a 5-acre field known to flood.



EA Diagram with hand drawn annotations for clarity

- A. Collecting point of floodwater.
- B. Footbridge
- C. Culvert under Carlby Rd
- D. Discharge back into river

First, the river overflows extensively in the area of Little Maidens and Shillingthorpe (upstream of Greatford), some of which continues across a large field from the south-west of Greatford towards a collecting area at Point A on the map above.

Then the river overflows along the low riverbank of Greatford Hall between A and the Greatford Sluice. From there it flows through the old Watercress beds in the now wooded area of Greatford Hall; and once this area is saturated the flood water continues onwards in a sudden rush to surround several of the houses in Greatford Gardens. In parallel, the overflowing river water also flows into a small bypass stream shown in red on the map (the section A-B was probably the original river bed) which now continues around Greatford Gardens, thence back into the river at D just downstream of Greatford.

In recent years, flooding has occurred in Greatford Gardens during Feb1987, Easter 1998, Nov2000, 24/25Dec2012, 27/28Jan2013, 24/25Dec2020, 28/29Jan 2021.

For monitoring the potential situation at Greatford, the EA gauging station half a mile upstream at Shillingthorpe provides the height of water in the West Glen:

Flood Alert 1.18m

Flood Warning 1.32m

The West Glen begins to overflow by Flood Alert, leading to flooding within Greatford at around 1.37m.

Highest recorded 1.56m (27Jan 2013)

Greatford Flooding Dates and River Heights

Since 1982 (when we moved to Greatford) there has been flooding in the Greatford Gardens area of the village on these occasions:

Feb 1988	(height of river at the Shillingthorpe gauge unknown)
April 1998	c1.54m
Nov 2000	1.39m
21 Dec 2012	1.43m
27 Jan 2013	1.56m – the highest known height of river recorded
24 Dec 2020	1.55m
29 Jan 2021	1.44m

Over the years, the EA has designed two schemes to reduce or prevent the flood risk to Greatford:

1.A design during the 1960s or 1970s, for a bypass watercourse to be constructed to pass round the north of Greatford, to enable excess water to by-pass the village and rejoin the river somewhere to the east of Carlby Road.

2.A scheme designed during early 2013 for a large water-storage area in approx half of the large field to the south-west of Point A on the map diagram above. This water would then be able to return to the river at a controlled rate through fixed vortices. At an estimated cost of £1m, this was not considered cost-effective on the basis of the cost-benefit ratio.

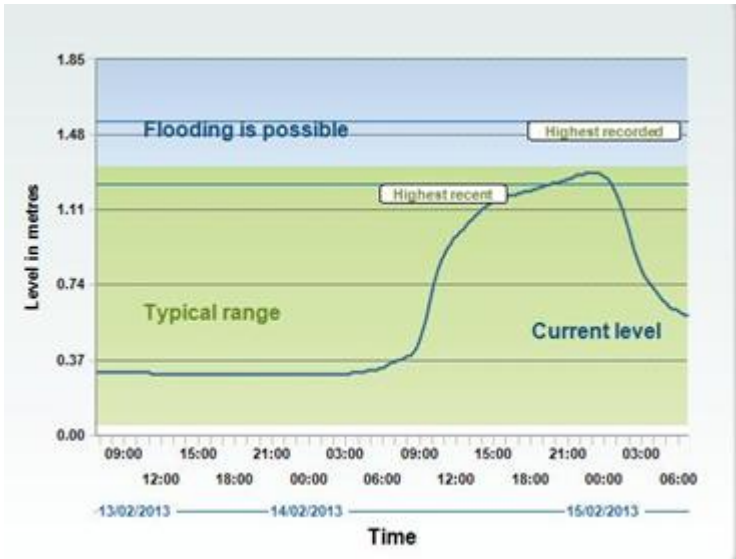
Greatford flooding

Flood Alert 14Feb2013

This section puts the flood risk at Greatford into context, by illustrating the already serious situation at only around Flood Alert height. At higher levels it can be too dangerous to try to record the flooding in open countryside.

The following photo record along the riverbank was made when the height of the river at the Shillingthorpe gauge only around 1.18m - 1.20m). On other occasions heights of the river up to 1.56m have been recorded.

These photos are included to show how the West Glen begins to overflow at a modest Flood Alert height, to begin its over-land progress towards properties in Greatford.



Looking upstream from Shillingthorpe Bridge, with overflow into Shillingthorpe Park at right.



Looking downstream from Shillingthorpe Park driveway. River overflowing into west end of the large field towards Greatford.



River and secondary drain combined with rising water. Looking from field edge towards Steadings bank.



As above, with water only just contained here.



As above

Upstream of Shillingthorpe Bridge



Further upstream. High treeline on far left background alongside road from Greatford to level crossing, and treeline on right background alongside gated track from road to Little Maidens



Extensive overflow in this area towards Little Maidens



As above, further to right.



As above, further to right again

Of note for these photos on 14Feb2013, the height of the river at Shillingthorpe was then only at around Flood Alert height around 1.18m, yet the river overflow was along most of the West Glen between Little Maidens, and through Shillingthorpe towards Greatford.

As listed below, the West Glen has reached much higher levels, sometimes at night, making it too dangerous to walk the area to record with photos.

Flooding 12/13 Dec 2012

Photos of flooding around Greatford houses during these days (with owners' permission).







Water level reducing during Christmas Day 2012



Continuing Christmas precautions after flooding 12/13Dec2012. Using sandbags covered over with plastic weighed down with large stones. Inside the house, all outside doors (except one) were sealed with strong.

Inside the house, all but one of the outside doors were taped-up with strong duck tape, as below.



Inside front door – taped



Patio door still taped up after flood water had retreated



Office outer door taped-up after flood water had retreated

This flooding over Christmas 2012, was followed by further flooding a month later on 27/28 Jan 2013, during which the height of the river at 1.56m was the highest known height of river recorded.

Then again eight Years Later - Flooding on Christmas Eve 2020

This section details the photo sequence of the flooding in Greatford during daylight on 24Dec2020. The flood water took three days to drain away.

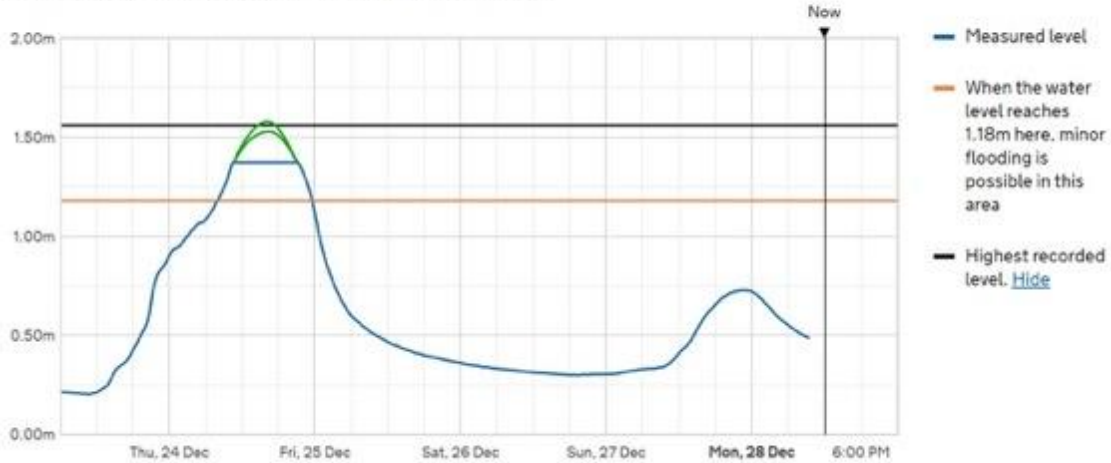
Then an identical situation took place again in the dark a month later overnight 28/29Jan2021, with similar depths of flooding which also took three days to drain away.

EA Graph for Christmas 2020

[Check for flood warnings in this area](#)

Latest recorded level **0.48m** at **9:30am Monday 28 December 2020**.

River levels at this location in the last 5 days

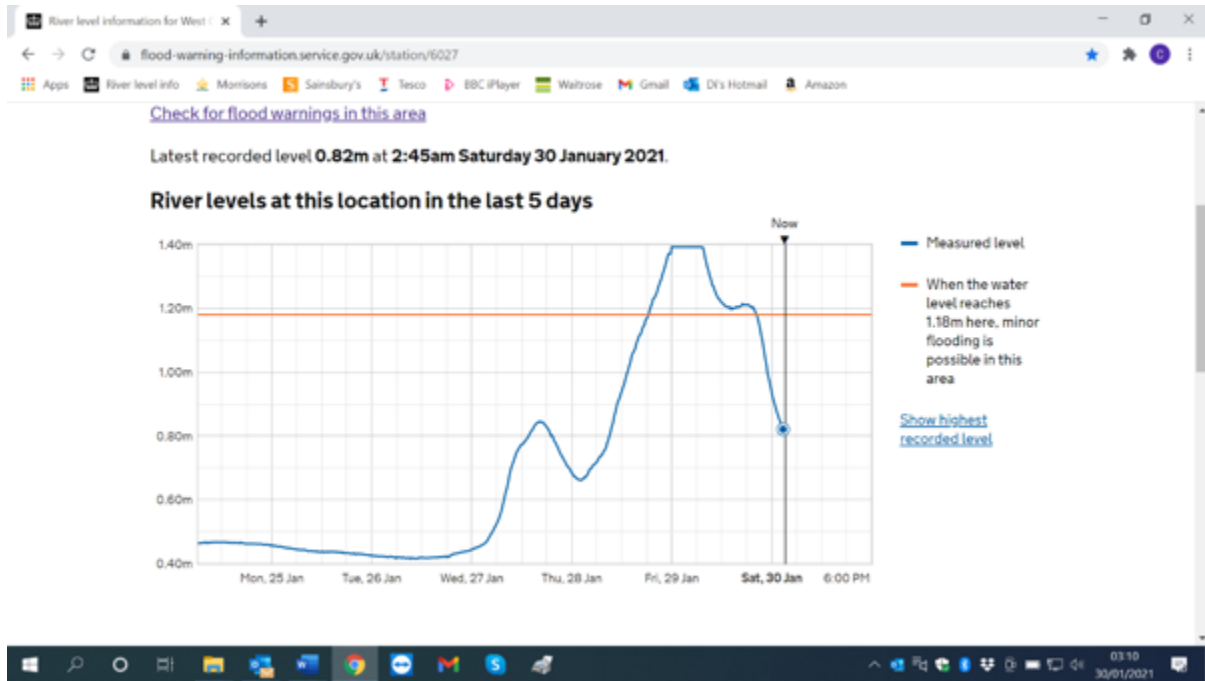


As the gauge at Shillingthorpe, flat-lined for a period indicating about 1.37m, projections in green by the author is based on historic river height curves at the Shillingthorpe Gauge. The actual peak height appears to be about 1.55m.

A similar horizontal line occurred at 1.37m - 1.39 m on three other occasions in Jan 2021, as below for the flooding on 29 Jan incorrectly indicating a constant 1.39m with no peak.

The flat-lining was caused by river water overflowing the container walls surrounding the measuring equipment at the Shillingthorpe gauge station. The sides of the gauge walls have since been built up to prevent this gauging problem in future.

29 Jan 2021



Photos of flooding during Christmas Eve 2020.

This was repeated a month later on 28/29Jan21



Flood water advancing towards the camera from the rear gates of Greatford Hall and up the private drive past the house on the right. As seen on previous occasions, once started the water progressed swiftly at walking speed.



Christmas Eve 2020



Water overflowing from the small watercourse (flowing left to right behind the large tree) into the garden of a property in Greatford. Christmas Eve pm 2020.



The junction of the small watercourse around Greatford Gardens with the drainage ditch alongside Carlby Road. The water is backing up against the brick front of the overloaded culvert under Carlby Rd (constructed 1837). The water height is above the flooded arch. Christmas 2020



Overflow from small watercourse in the Old Rectory stables area



Looking out across the flooded drive of property in Greatford. 24Dec2020



Flooding around a house & garage. 24Dec2020



24Dec2020



Identical to the flooding in April 1998



Back doorway of garage. 24/25Dec2020





Heavy flower pots one foot high



Christmas Day 2020



Christmas 24/25Dec2020



Christmas 24/25Dec2020

Braceborough Flooding



Back Garden area flooding Christmas Eve 2020

27 Oct 2019

A section of the road floods periodically at the eastern end of the village, at the bottom of a slope to the river bridge over the East Glen.



Looking back across flood water towards Braceborough, from the start of the road to Wilsthorpe.



Leaving Braceborough towards Wilsthorpe, with East Glen river bridge ahead

East Glen overflowing all around.



Flooding around East Glen bridge area, Braceborough



East Glen flooding to north of Braceborough-Wilsthorpe road



East Glen flooding to south of Braceborough-Wilsthorpe road.

Wilsthorpe Flooding

Wilsthorpe is close to the junction of the East and West Glens which then continues as the River Glen. Large areas of fields flood around the river junction.

Wilsthorpe Flooding Jan 2021



Glen river on left overflowing into large farm field.

Mallard Pass Solar Farm Flood Risk Assessment (FRA)

A major concern is that the Flood Risk Assessment (FRA) carried out during 2022 for Mallard Pass by Arcus Environmental, was compiled by an individual who is also the Flood Risk Manager for Mallard Pass. This cannot be appropriate, and something which should be of concern to the EA and LLFAs within LCC and RCC. *Chris Granville-White*

Greatford Flood Warden. In consultation with residents in Essendine, Banthorpe, Greatford, Braceborough. **CGW 15June2023**

Topics 2&3 combined

Concern about the loss of productive farmland, and the desecration of scenic English countryside.

Many of us living in Greatford and other villages on the edge of what would become the Mallard Pass Solar Farm take much pleasure in valuing enjoying our essential local farmland and scenic countryside.

In particular, the bridleway which runs across a central area of the proposed solar site, is valued for its views over a wide area, and a place to enjoy walking, horse riding, or simply being there to enjoy the views across open productive high-quality productive farmland through the changing seasons. These photos taken during a family walk during 2021 say it all – wonderful scenic productive English countryside.



The start of the bridleway at 'Sunset Point' on Carlby Road



Looking along the bridleway towards a small copse of trees, with productive farmland on each side early in the season.



A few months later. Approaching the copse of trees, with healthy crops and the changing colours through the seasons



Looking across the huge fields, after the harvest, with the distant electricity pylons running alongside the main North-South railway line



As above in the early part of the year, with a passing train



As above, with the train passing left to right, towards Essendine a mile to the right (north).



This herd of deer roams the area freely, and a common sight, but they would be restricted in their natural pattern by the terrifying metal corridors across the solar site. My photo in the snow near Greatford Feb 2018.

Topic 4. The likely use of forced labour from Uighur and other groups in China for the production of solar panels

I understand that Uighur people and other local groups in China are known to be used as forced labour in the construction of solar panels – in this case, for what would be around 500,000 solar panels for the Mallard Pass Solar Farm proposal.

This is a despicable and inhuman situation which I utterly deplore and which should be stamped out. To have such forced labour being used for solar panels and other items in Britain is unthinkable, and the Government must prevent this.

Chris Granville-White. Ref 20033808

CGW Summary Topics 1-4. 10% words. Ref No 20033808 Doc2

By Chris Granville-White, Greatford Flood Warden since 2013 (ten years so far)

Topic 1. Increased Flood Risk

Background

During 41 years living in Greatford, there have been seven serious flooding events. Each time our house has been entirely surrounded by water up to 2ft deep and within 3ins of entering house doors. Flood water remained for several days. Flooding dates: Feb1987, Easter 1998, Nov2000, Christmas 2012, Jan2013, Christmas 2020, Jan 2021.

West Glen river re-routed c1700s to drive a watermill and follow attractive route through Greatford Hall gardens. When the river is very high it overflows to follow its original route.

Flood risk reduced in 1956 with installation of Greatford Sluice to divert excess river flow via Greatford Cut to Welland river, but still periodic flooding.

Increased Flooding with Mallard Pass Solar Farm

Periodic serious flooding occurs periodically from the West Glen river at Essendine, Banthorpe, Shillingthorpe, Greatford, Braceborough, Wilsthorpe. With some houses surrounded by flood water up to 2 feet depth, and a few inches from entering front/back doors.

Ground compaction during 2-years construction of vast solar site, then 40 years operation, and decommission, would increase surface water run-off into West and East Glens. The rivers couldn't cope with this, with increased frequency and extent of flooding.

Ground Compaction

Once compacted, soil ability to absorb and hold water reduced, preventing water from seeping down further into groundwater stores. Therefore more flooding on surface will flow into West & East Glen rivers to further increase flood risk.

Clay soils do not uncompact naturally, and require aerating and organic matter not possible under vast area of solar panels. Surface water on compacted ground absorbed less than on cultivated land; so increased surface water into rivers to further increase flood risk.

Topic 2. Concern about the loss of productive farmland

BMV farmland vital for population.

Topic 3. The desecration of scenic English countryside.

Many of us living in Greatford and villages near proposed Mallard Pass Solar Farm area take much pleasure in our superb local farmland and scenic countryside.

A very significant area of productive high quality farmland, much of it graded 'Best and Best Versatile (BMV).

The bridleway which runs across a central area of the proposed solar site is also valued for its superb views over wide area, and a place to enjoy walking, horse riding, or simply being there to enjoy the views across open high-quality productive farmland through the changing seasons.

A large herd of a hundred deer roams this area freely, and a common sight; but they would be restricted in their natural pattern by the terrifying metal corridors if the land were transformed into an industrial solar site.

Topic 4. The likely use of forced labour from Uighur and others in China for the production of solar panels

I understand that [REDACTED] [REDACTED] s – in this case, for what would be around 500,000 solar panels for the Mallard Pass Solar Farm proposal.

This is a despicable and inhuman situation which I utterly deplore and which should be stamped out. To have such forced labour being used for solar panels and other items in Britain is unthinkable, and the Government must prevent this.