(1) Introduction – Flood Action Group

The Smallfield Flood Action Group which is affiliated to the National Flood Forum is a group of local residents who have been actively working with all the Flood Risk Agencies prior to and since its reformation in November 2017 to identify and reduce the flooding risks in our area. In addition to identifying the priority risk locations and working alongside the Flood Risk Agencies to undertake a number of surveys and investigations, we as a group have also undertaken our own flood prevention projects at a number of locations across the Burstow Parish area.

The role of the Flood Action Group is to pull together the activities of the various Flood Risk Agencies, gather information and knowledge about the factors affecting the flood risks in our area to support the development of both future strategic plans and local improvements to provide solutions to alleviate flood risks.

Local improvements already achieved with the support of the Flood Risk Agencies include:

- Clearing and silt removal from 2.6 km of ditches to increase their capacity, (Surrey County Council).
- Replacement of a major drain in the centre of the village and a new drainage system to prevent flooding at the southern end of Redehall Road, (Surrey County Council).
- Clearing of a number of obstructed main river watercourses, (Environment Agency).
- Cleaning of foul water drains and combined sewers in Orchard Road, Redehall Road, and New Road, (Thames Water and Environment Agency).

With reference to the Tandridge Local Plan the Flood Action Group would like to make comments on the Housing Allocations included in the Plan, in particular the locations HSG01 and HSG03; and provide information regarding the flood risks, including reference to TLP47.

(2) Flood Risk and Flooding History

The Burstow area and especially Smallfield has a long history of serious and repeated flooding, and is recognised by Surrey County Council as one of the highest flood risk areas in Surrey.

Examples of the flooding history include:-

- In September 1968 large parts of Smallfield were flooded.
- In the early 1980’s again there was severe flooding to large areas of Smallfield.

Within the last 6 years serious repeated flooding from both surface water and foul water has become a more regular occurrence, causing significant disruption to the village and its residents.

- During December 2013 / January 2104 as a consequence of surface water flooding a number of residential homes were affected by internal, front and rear garden flooding. Approximately 150 properties were affected. Many roads were impassable due to
flooding because the surface water flows exceeded the capacity of the ditches and road drains and culverts.

Backing up and overflow of the foul water sewage drains also occurred with residents toilets backing up and being unable to be used, and sewage overflowing into gardens. The primary school suffered sewage surcharging onto the playground, which resulted in the school having to be closed. In addition to sewage surcharging into their car park the Smallfield Surgery also suffered internal flooding which caused a huge amount of disruption for the patients and the day to day running of the surgery.

- Only this year on the 12th June 2019 a number of serious flooding incidents occurred. As a consequence of surface water overflows flooding occurred to properties in Orchard Road, Woodside Crescent and Haversham Close, with residents pumping water from their gardens to prevent it entering their homes. A number of roads were flooded and impassable including Haversham Lane, Raleigh Drive, The Acorns, and Kings Mead. Serious flooding occurred to a commercial property, Fuller’s Yard on Haversham Lane.

The capacity of the foul water system was again overcome with toilets backing up and unable to be used in Orchard Road, in the centre of the village The Acorns, and in Wheelers Lane, with the School unable to flush their toilets and water/sewage bubbling up from a manhole cover in the playground. The Surgery where the partners have invested over £50,000 in a sophisticated system including a large underground storage tank for foul waste water that is pumped into the sewer in Wheelers Lane, and an active control valve to prevent backing up from the sewer in Wheelers Lane, also suffered flooding risks. Unfortunately due to the high pressure generated when the Wheelers Lane sewer backed up this overcame the active valve on the surgery system and waste water flowed into their storage tank. Fortunately the tank had sufficient capacity on this occasion.

Foul water flooding is becoming a more regular ongoing issue in the area of Plough Road, Orchard Road and Redehall Road, with many residents reporting incidents and making complaints to Thames Water.
Surface Water Flood Risk Map  (Source – Surrey County Council / Environment Agency)

(Note - This flood risk map does not take into account climate change and is designed only to give an indication of the surface water flood risk to an area of land.)

(3) Topography and Geology of Burstow and Smallfield

Most of Burstow is a low lying flat area and is categorised as rural low lying agricultural flood plain. However, to the north of Smallfield there are steep inclines which run down into Smallfield village, these are known by their road names Rookery Hill and Scotts Hill.

There are a number of natural watercourses and other drainage across Burstow which is part of the Upper Mole Catchment area. A number of main rivers flow across the area and the Weatherhill Stream flows underground in a large culvert through Smallfield village. The area is in the catchment of the Burstow Stream, into which most of these main river discharge.

The prime direction of surface water flow across Smallfield is from the east to the west. The elevated M23 motorway creates a barrier that runs the full length of the Burstow area, and there are a number of large culverts running through the embankment.

The bedrock geology of Burstow is primarily a Weald Clay Formation – Mudstone. When weathered the surface layers of clay absorb water very readily and become soft and boggy. The underlying clay that has not been weathered is hard and impermeable. Through the centre of Smallfield village parallel to Weatherhill Road there is a superficial overlay of River Terrace Deposits, and an area of similar superficial overlay is also located along the M23
motorway north of Shipley Bridge. These types of superficial deposits can convey flood waters.

As a consequence of the shape of the land and the characteristics of its underlying geology Burstow generally, and in particular Smallfield village, are at high risk of flooding.

(4) Causes of Flooding

The area is subject to flooding because of three different causes:-

(1) Surface water flooding due to the overflow of the many ditches across the area.
(2) Surface water flooding due to the backing up and overflow of the drainage pipe systems.
(3) Foul water flooding due to the overcapacity demand on the sewer system.

The foul water system, which includes large lengths of combined sewers, has inadequate capacity and operates at near to capacity in dry weather. During periods of rainfall this results in ‘hydraulic overload’, with frequent backing up of the sewers and many residents and locations such as the School being unable to use their toilet facilities.

The proposed housing allocation locations HSG03 and HSG01 will discharge into these combined sewer systems in an area where residents are repeatedly reporting flooding and toilet backing up incidents to Thames Water, and will then flow through the centre of the village.

(It is also interesting to note that the sewage treatment plant which is operating close to maximum capacity, also takes waste water and foul sewage from a large area of new housing development in Horley in addition to all the Burstow area.)

(5) Location of Proposed Housing Development

We would question whether the ‘sequential test’ with its aim of ‘directing development to areas of lowest flooding risk’, and identifying that it is not possible to use an alternative site, has been correctly applied to the identification of sites for housing development included in the Local Plan. Also whether the ‘exceptions test’ requirements are practical and appropriate with the sustainable benefits of the developments to the community outweighing the flood risks.

(6) Comments on Specific Housing Allocation Locations

HSG03 – 120 Houses. North of Plough Road, Meadow View: this site is in an area of high surface water flood risk as illustrated by the Environment Agency map on page 3, it is also a Zone 2 risk location as identified by the Environment Agency, and as a consequence its suitability for development requires careful scrutiny and consideration to show that the development will be safe for its lifetime taking into account the vulnerability of its users and that it will not increase flood risk elsewhere.
We are aware that this location has been identified as an important feature in the proposed Flood Alleviation Scheme, and we believe that the measures proposed as part of this scheme are the minimum requirement to manage the risks associated with surface water flooding.

Furthermore and in addition to the considerations of the surface water flooding risks it is essential that any development at this location should include measures to manage the additional foul water that will be generated and discharged into an already overloaded combined sewer system that cannot cope with current demands. As a consequence any development should we believe have requirements to manage the additional waste and foul water generated as described in Section (7) ‘Development Requirements for New Housing’ section below.

**HSG01 - 160 houses.** South of Plough Road and along Redehall Road: this site is again on the edge of a designated flood risk zone and is in an area of high flood risk as illustrated by the Environment Agency map on page 3. Due to its repeated severe flooding and the extensive standing water that the location experiences it is known locally as the ‘Duck Pond’. Photographs have been taken of a small dingy floating on this standing water. This site acts as an important natural and historical attenuation pond.

As a consequence we would challenge the suitability of this site for housing development, and believe that extensive flood prevention measures are required both to ensure that no surface water flood risks exist to any new housing development, and that as a consequence of any development the removal of the natural attenuation pond does not cause new flooding risks to adjacent or downstream areas.

Similar to HSG03, furthermore and in addition to the considerations of surface water flooding risks it is essential that any development at this location should include measures to manage the additional foul water that will be generated and discharged into an already overloaded combined sewer system that cannot cope with current demands. Any development should we believe have requirements to manage the additional waste and foul water generated as described in Section (7) ‘Development Requirements for New Housing’ section below.

**Section (7) Development Requirements for New Housing**

Due to restricted capacity of the foul water system and the impact that increased flows of surface water have on the combined sewer systems we would request that consideration be given to the requirement that all new housing development have mandatory surface water storage installations.

With regard to the additional foul water that will be generated we believe that either foul water storage tanks with active control valves to hold and prevent the discharge of their foul water into the existing system if it is at peak capacity should be required, or preferable appropriate local foul water treatment facilities should be installed so that treated foul water can be managed without imposing additional demand on the existing systems.
(8) Sustainable Drainage and Climate Change (TLP47)

We question whether the impact of climate change has been sufficiently taken into account in the allocation of housing development in the Smallfield area, particularly when the already high risk of flooding, both from surface water and overflow of the capacity of the combined sewers, is considered, and the history of repeated serious flooding that appears to be increasing in frequency is known.

(9) Conclusions

- Given the current high surface water flooding risks combined with the overcapacity demands on the foul water systems, and the historic evidence, Smallfield is a poor choice for new development.
- Compound this with the impacts of climate change, then unquantifiable additional problems are likely to be caused.
- Development should not be considered in Smallfield unless it is funding proven benefits and improvements that will ensure flood risk reductions for both current and new residents. Taking account of both upstream and downstream impacts.
- There is a massive risk that any new development will make the situation worse not better.
- If new development must happen, it needs to be with appropriate policies in place to ensure that every property built helps strengthen the existing overloaded drainage systems rather than increase the flooding risks.

Graham Pooley
Chairman Smallfield Flood Action Group
14th August 2019