

27<sup>th</sup> May 2022

F.A.O. Lancashire County Council  
Harry McGaghey  
Lead Local Flood Authority



Ribble Valley Borough Council  
Council Offices  
Church Walk  
Clitheroe  
Lancashire  
BB7 2RA

**LAND EAST OF CHIPPING LANE, LONGRIDGE**  
**Planning Reference: 3/2021/1134**

Dear Harry,

We have drafted this response to address the comments made by the LLFA (Lancashire County Council) in relation to the difference identified between the greenfield rates of run-off proposed for Phase 1 and Phase 2 & 3 on land to the east of Chipping Lane in Longridge.

In summary it should be understood that the greenfield rates of run off proposed within the Phase 1 Flood Risk Assessment & Drainage Management Strategy (FRA&DMS) and the Phase 2 & 3 FRA&DMS, differ due to the different methodologies used to calculate the greenfield surface water run-off rates.

The FRA&DMS for Phase 1 was undertaken in 2016 and the preferred approach and methodology, during this time to calculate greenfield run-off rates was to use the IH124 method. This method calculated Phase 1 to have a restricted greenfield run-off rate (QBar) of 44.4l/s, which is equivalent to 8.3l/s/ha.

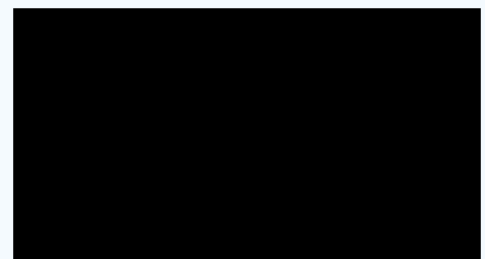
The FRA&DMS for Phase 2 & 3 was however undertaken in 2021, during this time the methodology for calculation greenfield run-off rates for undeveloped greenfield sites was updated to the FEH statistical method. It should be noted that the FEH statistical method is now a widely recognised and more accurate method to use to calculate surface water run-off for greenfield sites discharging to a watercourse.

Furthermore, the greenfield run-off rates calculated within the Phase 2 & 3 FRA&DMS are also based on a specific BFI figure, which was obtained through catchment data (onsite point data) at a specific location onsite. Based on the development area, the pre-development greenfield rate (QBar) for Phase 2 & 3 was therefore calculated to be 84.9l/s (13.6l/s/ha) using the FEH Statistical Method.

Ultimately, given the time difference between undertaking the FRA&DMS for Phase 1 the method for calculating greenfield run-off has changed. For example, if we use the FEH statistical method to calculate the greenfield run-off rate for Phase 1, a discharge rate of 72.8l/s (13.6l/s/ha) is determined (see calculations included). This greenfield run-off rate is the same as the greenfield run-off rate proposed for Phase 2 & 3.

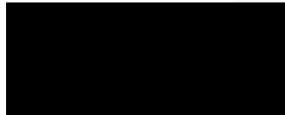
In spite of the previous approval, it is therefore understood that the development site should use the most up to date methodologies to calculate greenfield run-off rates in accordance with policy as the most up to date methodologies provide more accurate and reliable results.

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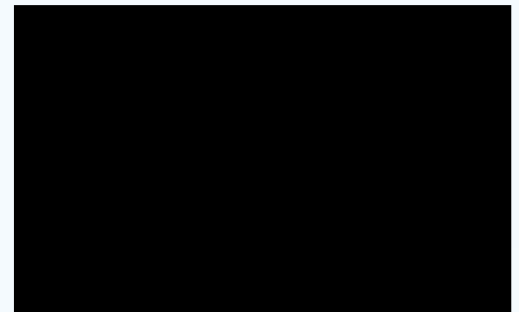
I hope the above provides clarity on the differences between the surface water discharge rates, should any further information be required please do not hesitate to contact the team.

Yours sincerely



**Megan Berry** BSc (Hons) MCIWEM  
Flood Risk Analyst

*Included.*  
*Surface Water Calculations*



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# Greenfield runoff rate estimation for sites

www.uksuds.com | Greenfield runoff tool

Calculated by:

Site name:

Site location:

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Cirla, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

### Site Details

Latitude:

Longitude:

Reference:

Date:

Runoff estimation approach

### Site characteristics

Total site area (ha):

### Methodology

$Q_{MED}$  estimation method:

BFI and SPR method:

HOST class:

BFI / BFIHOST:

$Q_{MED}$  (l/s):

$Q_{BAR} / Q_{MED}$  factor:

### Hydrological characteristics

Default Edited

	Default	Edited
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Hydrological region:	<input type="text" value="10"/>	<input type="text" value="10"/>
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Growth curve factor 30 years:	<input type="text" value="1.7"/>	<input type="text" value="1.7"/>
Growth curve factor 100 years:	<input type="text" value="2.08"/>	<input type="text" value="2.08"/>
Growth curve factor 200 years:	<input type="text" value="2.37"/>	<input type="text" value="2.37"/>

### Notes

#### (1) Is $Q_{BAR} < 2.0$ l/s/ha?

When  $Q_{BAR}$  is  $< 2.0$  l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

#### (2) Are flow rates $< 5.0$ l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

#### (3) Is $SPR/SPRHOST \leq 0.3$ ?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

### Greenfield runoff rates

Default Edited

	Default	Edited
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1 in 1 year (l/s):	<input type="text"/>	<input type="text" value="63.37"/>
1 in 30 years (l/s):	<input type="text"/>	<input type="text" value="123.82"/>
1 in 100 year (l/s):	<input type="text"/>	<input type="text" value="151.5"/>
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Calculated by: Megan Berry

Site name: P2&3 CHIPPING LANE

Site location: LONGRIDGE

This is an estimation of the greenfield runoff rates that are used to meet normal best practice criteria in line with Environment Agency guidance "Rainfall runoff management for developments", SC030219 (2013), the SuDS Manual C753 (Ciria, 2015) and the non-statutory standards for SuDS (Defra, 2015). This information on greenfield runoff rates may be the basis for setting consents for the drainage of surface water runoff from sites.

## Site Details

Latitude: 53.83792° N

Longitude: 2.60456° W

Reference: 1886713724

Date: May 27 2022 11:33

Runoff estimation approach: FEH Statistical

## Site characteristics

Total site area (ha): 6.236

## Methodology

$Q_{MED}$  estimation method: Calculate from BFI and SAAR

BFI and SPR method: Specify BFI manually

HOST class: N/A

BFI / BFIHOST: 0.377

$Q_{MED}$  (l/s):

$Q_{BAR} / Q_{MED}$  factor: 1.08

## Hydrological characteristics

	Default	Edited
SAAR (mm):	1211	1211
Hydrological region:	10	10
Growth curve factor 1 year:	0.87	0.87
Growth curve factor 30 years:	1.7	1.7
Growth curve factor 100 years:	2.08	2.08
Growth curve factor 200 years:	2.37	2.37

## Notes

### (1) Is $Q_{BAR} < 2.0$ l/s/ha?

When  $Q_{BAR}$  is  $< 2.0$  l/s/ha then limiting discharge rates are set at 2.0 l/s/ha.

### (2) Are flow rates $< 5.0$ l/s?

Where flow rates are less than 5.0 l/s consent for discharge is usually set at 5.0 l/s if blockage from vegetation and other materials is possible. Lower consent flow rates may be set where the blockage risk is addressed by using appropriate drainage elements.

### (3) Is $SPR/SPRHOST \leq 0.3$ ?

Where groundwater levels are low enough the use of soakaways to avoid discharge offsite would normally be preferred for disposal of surface water runoff.

Greenfield runoff rates	Default	Edited
$Q_{BAR}$ (l/s):		84.85
1 in 1 year (l/s):		73.82
1 in 30 years (l/s):		144.25
1 in 100 year (l/s):		176.49
1 in 200 years (l/s):		201.1

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