Appendix C

Flood Risk Assessment and SUDS Provision Review

Flood Risk Assessment and SUDS Provision

The Scoping Study Identifies **minimum** and **desired** standards for flood risk. If the example of residential is typical then the desired standards require to become the norm. It must be questioned that if the desired flood protection measures are not adopted the risk of flooding to vulnerable people in the community will be significantly increased.

Residential developments.
The standards for residential developments will apply to houses and also associated garages. The design and layout of residential developments should provide for access by emergency services during flood incidents.

(i) **Minimum Standard**
The Council will require all developments to provide an absolute minimum level of protection for a 100 year return period with a freeboard allowance. (Guidance on freeboard allowance will be included in the Enhanced SUDS Guidelines.)

(ii**) Desired standard**
Residential developments should provide flood protection to the standards set out below

Type of Residential Development Desired level of flood protection
a) All residential development 200-year return period.
b) Sheltered housing These will not be permitted in areas at risk from flooding.
c) Bungalows and ground floor flats with no access to upstairs 500 year flood return period.

Furthermore the Scottish Planning Policy (SPP7) document states that *New development should be free from significant flood risk from any source.* If the minimum standard is to be applied it could be argued that significant flood risk to the developments identified in the desired standard will be evident.

SEPA have raised similar concerns in a memo dated 20th January 2006 and states:

> **Proposed Strategy**
> In the first instance, the most sustainable option is to avoid development of areas identified as being within the '200 year' flood envelope. However it would appear that the flood envelope impacts significantly upon six of the 'development zones' as identified in drawing number 185.0003-F01. The strategy document should outline the reasons and justification for the development being located within the floodplain (as opposed to relocating outwith the floodplain) which would then support the proposed strategy of providing site uplift for flood alleviation. It s also recognised that the proposals would also provide 'level for level', fully effective compensatory storage, by re-profiling the southern areas of the site to ensure that there is no negative flood risk impacts outwith the site (to ensure compliance with SPP7).

(Figure 1 shows the latest SEPA flood map for the Bishopton ROF site, which indicates that a large proportion of the site is at risk of flooding)

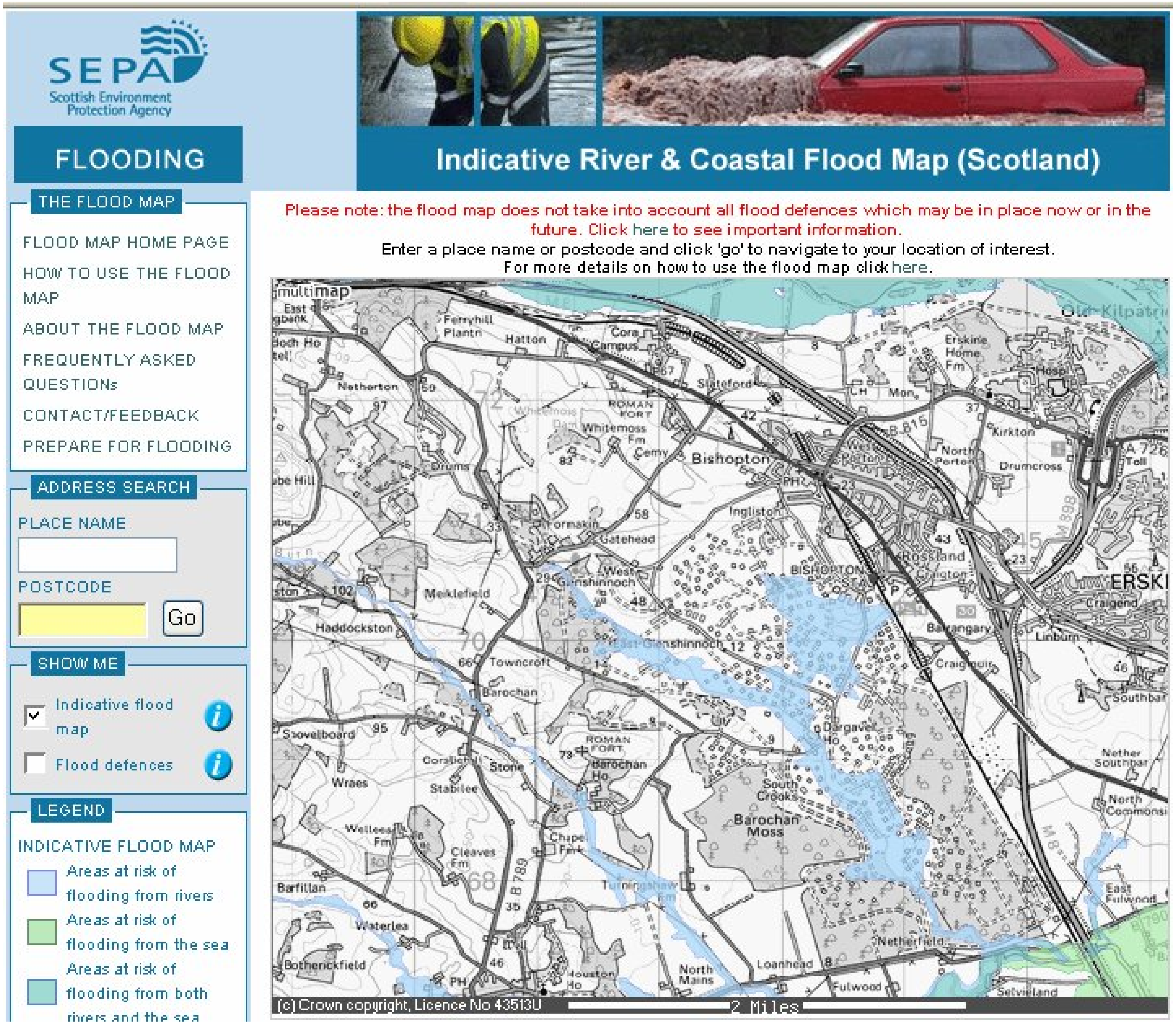

Figure 1: SEPA Flood Map of the Bishopton ROF site

The FRA addresses the above concerns and includes in its justification for the development for being located within the floodplain the following reasons:

> A key driver in the scale of development is the requirement to generate sufficient value from redevelopment to enable the remediation of the site. Moving large areas of development southwards brings areas of peat and poorer soils to bear on more of the proposed developed areas which increases the cost of developing in these areas and reduces the value which can be released for site remediation.
>
> It can be therefore be seen that to deliver a sustainable socially inclusive development at an economic level which delivers the value required to ensure remediation of the site it has been necessary to place the development in the northern area of the site which encompasses the Craigton Burn flood plain.

The developer is clearly increasing the flood risk factor to the proposed inhabitants of houses located within the floodplain on financial constraints and should not be regarded as a credible reason.

The calculation methodology for managing the flood risk is reasonable and follows statutory guidelines.

A regional SUDS provision is included in the proposals. A detailed proposal is to follow at a later date. There is clearly a chicken and egg situation here. The FRA states that:

> Within the confines of an outline planning application, source control measures for surface water run off cannot be guaranteed to be practical. Ideally, infiltration methods of surface water disposal would be the preferred method of dealing with surface water at source, however the ground conditions and existing hydrology of the site do not generally lend themselves to such systems. The site is predominantly overlain by silts and clays with a high ground water table therefore infiltration devices are likely to prove ineffective at a strategic level. In addition detailed issues related to contaminants within the ground may preclude the use of infiltration measures across the site. Treatment options combined with conveyance in the form of filter trenches may prove suitable however these are subject to detailed layouts of the development plots.

How can a robust SUDS system be guaranteed without full knowledge of source control measures at this stage?

The impact of the flood plain and SUDS proposals on contaminated land is not covered by this critique but should be given serious consideration.