

## Appendix C - Flood Mapping Methodology

A number of flood outlines from different studies were used to derive the flood zone outlines, as follows:

Flood Zone	Watercourse	Model Description
3a	Eden, Petteril and Caldew through Carlisle	Linked ISIS-TUFLOW “do minimum” model updated to create an undefended model for 1% AEP. Model outputs checked against the Eden CFMP undefended model for 1% AEP
	Eden and Tributaries outside Carlisle	Eden CFMP 1% AEP undefended model and the EA Flood Map Zone 3
	Dow Beck	1% AEP undefended linked ISIS-TUFLOW model (dow_cows_2d_Q100.dat)
	Gosling Sike	1% AEP undefended linked ISIS-TUFLOW model (goss_cows_2d_Q100.dat)
	Parham Beck	1% AEP undefended linked ISIS-TUFLOW model (Parh_cows_2d_Q100.dat)
	Wire Mire Beck	1% AEP undefended linked ISIS-TUFLOW model (Wire_cows_2d_Q100.dat)
3b	Eden, Petteril and Caldew through Carlisle	Linked ISIS-TUFLOW “do minimum” model updated to create an undefended model for 4% AEP. Model outputs checked against the Eden CFMP undefended model for 4% AEP
	Eden and Tributaries outside Carlisle	Eden CFMP 4% AEP undefended model
	Dow Beck	4% AEP undefended linked ISIS-TUFLOW model (dow_cows_2d_Q25.dat)
	Gosling Sike	4% AEP undefended linked ISIS-TUFLOW model (goss_cows_2d_Q25.dat)
	Parham Beck	4% AEP undefended linked ISIS-TUFLOW model (Parh_cows_2d_Q25.dat)
	Wire Mire Beck	4% AEP undefended linked ISIS-TUFLOW model (Wire_cows_2d_Q25.dat)
2	Eden, Petteril and Caldew through Carlisle	Linked ISIS-TUFLOW “do minimum” model updated to create an undefended model for 0.1% AEP. Model outputs checked against the Eden CFMP undefended model for 1% AEP
	Eden and Tributaries outside Carlisle	Eden CFMP 0.1% AEP undefended model and the EA Flood Map Zone 2
	Dow Beck	0.1% AEP undefended linked ISIS-TUFLOW model (dow_cows_2d_Q1000.dat)
	Gosling Sike	0.1% AEP undefended linked ISIS-TUFLOW model (goss_cows_2d_Q1000.dat)
	Parham Beck	0.1% AEP undefended linked ISIS-TUFLOW model (Parh_cows_2d_Q1000.dat)
	Wire Mire Beck	0.1% AEP undefended linked ISIS-TUFLOW model (Wire_cows_2d_Q1000.dat)
3a plus Climate Change	Eden, Petteril and Caldew through Carlisle	Linked ISIS-TUFLOW “do minimum” model updated to create an undefended model for 0.5% AEP. Model outputs checked against the Eden CFMP undefended model for Climate Change
	Eden and Tributaries outside Carlisle	Eden CFMP undefended model for Climate Change and the EA Flood Map Zone 2
	Dow Beck	0.5% AEP undefended linked ISIS-TUFLOW model (dow_cows_2d_Q1000.dat)
	Gosling Sike	0.5% AEP undefended linked ISIS-TUFLOW model

		(goss_cows_2d_Q1000.dat)
	Parham Beck	0.5% AEP undefended linked ISIS-TUFLOW model (Parh_cows_2d_Q1000.dat)
	Wire Mire Beck	0.5% AEP undefended linked ISIS-TUFLOW model (Wire_cows_2d_Q1000.dat)