



SWMP – Pluvial Data Provision and Mapping Outputs

Jonathan Werritty
CIWEM SWMP Workshop 18/3/14

Flood Risk Management Act



Data Provision

- Data available:
 - Regional Pluvial Flood Hazard Dataset
 - Regional Pluvial Risk Outputs
 - Characterisation Reports, Chapter 4 – Surface Water Flooding
 - S16 Sewer model outputs (from Scottish Water)
 - National Pluvial outputs
 - Existing studies and models

Flood Risk Management Act



Regional Pluvial Model

- 73 catchments modelled
- 14 scenarios in total (7 return periods x 2 storm durations)
- Standardised drainage allowance
- Depth thresholds / small areas
- S22 requirement for flood extent maps showing depth, extent and where appropriate velocity

Flood Risk Management Act



Regional Pluvial Hazard Outputs

- Two key outputs
 - hazard rating and hazard rating bands
- $HR = d(v+1.5) + DF$

| Hazard Rating | Degree of Flood Hazard | Description |
|---------------|------------------------|--|
| < 0.75 | Low | Lowest degree with shallow flooding levels or deep standing water |
| 0.75 – 1.25 | Moderate | Dangerous for drivers, e.g. 10 litres Dangerous for small boats or fast flowing water |
| 1.25 – 2.50 | Significant | Dangerous for small boats Dangerous for small boats with deep fast flowing water |
| > 2.50 | Extreme | Dangerous for all Extreme danger, fast flow with deep fast flowing water |

Flood Risk Management Act



Hazard Rating



Flood Risk Management Act



Hazard Bands



Flood Risk Management Act



Regional Pluvial Risk Outputs

- Part of the baseline appraisal process
- Measures impacts against a range of flood risk receptors
 - **Economic:** RPs, NRPs, Roads, Vehicles, Emergency Services
 - **Social:** Human Health, Community facilities, Utilities, Disruption to transport, Cultural heritage

| Receptor | Pluvial Risk Output | Receptor | Pluvial Risk Output |
|-------------|---|-------------|---|
| Residential | <ul style="list-style-type: none"> • 1.000 - 1.000 • 1.000 - 1.000 • 1.000 - 1.000 | Residential | <ul style="list-style-type: none"> • 1.000 - 1.000 • 1.000 - 1.000 • 1.000 - 1.000 |
| Commercial | <ul style="list-style-type: none"> • 1.000 - 1.000 • 1.000 - 1.000 • 1.000 - 1.000 | Commercial | <ul style="list-style-type: none"> • 1.000 - 1.000 • 1.000 - 1.000 • 1.000 - 1.000 |
| Industrial | <ul style="list-style-type: none"> • 1.000 - 1.000 • 1.000 - 1.000 • 1.000 - 1.000 | Industrial | <ul style="list-style-type: none"> • 1.000 - 1.000 • 1.000 - 1.000 • 1.000 - 1.000 |
| Public | <ul style="list-style-type: none"> • 1.000 - 1.000 • 1.000 - 1.000 • 1.000 - 1.000 | Public | <ul style="list-style-type: none"> • 1.000 - 1.000 • 1.000 - 1.000 • 1.000 - 1.000 |

Flood Risk Management Act



Flood Risk Management Act



Point Receptors



Flood Risk Management Act



Point Receptors at Risk



Flood Risk Management Act



Extracting Information



Flood Risk Management Act



Extracting Information



Flood Risk Management Act



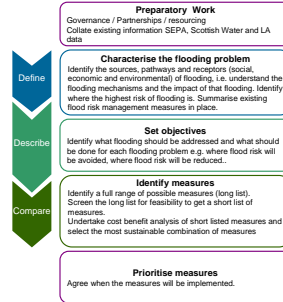
Area & Linear Receptors at Risk



Flood Risk Management Act



The Appraisal Process



Flood Risk Management Act



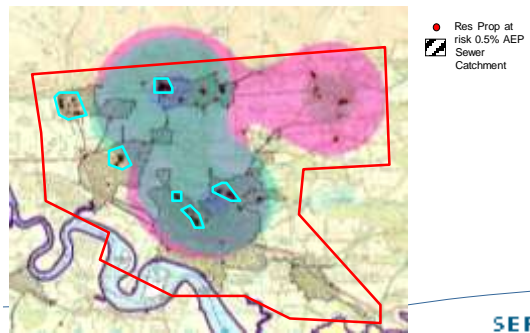
Next Steps...

- Data application and verification
- Identify areas for further study / modelling
- Working arrangements
- Applying good practice
- Option appraisal

Flood Risk Management Act



Data Application



Flood Risk Management Act



Any questions?

Flood Risk Management Act

