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Flooding and Woodlands- Highland Examples

Tuiltean agus Coilltean – Eisimpleirean sa Ghàidhealtachd

Matt Smith- Principal Engineer
The Highland Council - Flood Risk Management Team

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Overview

Flood Risk Management Team

- Inspection of watercourses (identifying areas of flood risk and blockage risk)
- ***Responsible Authority*** (under the Flood Risk Management Act), developing risk based, plan-led ***Flood Risk Management Strategies*** with SEPA and Scottish Water, and a ***Local Flood Risk Management Plan***.
- Consultee for new development on matters relating to ***Drainage and Flood Risk***

- Investigating flooding incidents
- Developing ***Capital Flood Protection Schemes***

Prevention is CHEAP!!
Cures are EXPENSIVE!!

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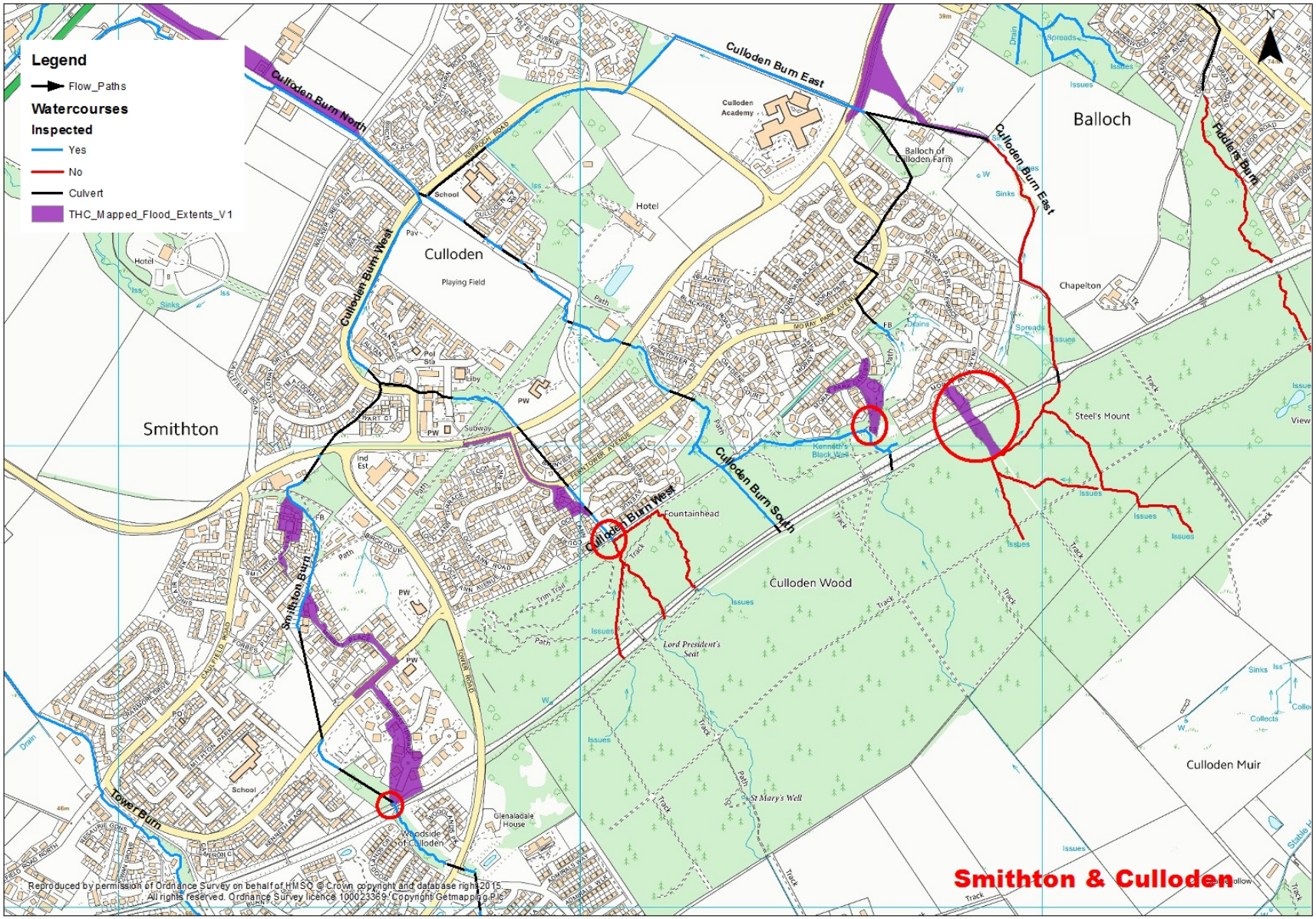
Smithton & Culloden Flooding



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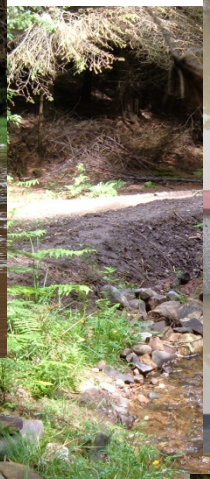
Smithton & Culloden Flooding



Smithton & Culloden Flooding

Development/ Change	• Housing pressure
Cause	• Inadequate planning for water environment, assessment of flood risk or neighbouring land uses • Historical- natural water course routes altered by Railway and housing construction, reducing number of routes and increasing flow
Effect	• Transferred catchments; erosion/ deposition; watercourses bursting banks; flooding to roads & property= people suffering
Participation	• Forestry Commission/ THC/ Scottish Flood Forum- understanding existing and historic flood mechanisms
Solutions	• Significant capital investment by THC to capture debris, improve screens, upsize culverts, create attenuation areas. • FC clearing debris, inspecting watercourses, reacting to flood events • FC assessment for potential to provide attenuation
Improvements	• Planning Service considering neighbouring land uses, wider water environment, future pressures • Land Managers engaging more proactively in the planning process, in neighbouring housing plans and ensuring infrastructure (culverts/ flow paths) for future drainage operations is considered • Consideration and Implementation of NFM where possible

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General Questions:

- Are developers/ planners taking account of existing watercourses within new development and those pressures beyond their limits?
- Is development placing undue pressure on land managers upstream?
- Should land managers be shedding water or trying to conserve it?
- Is data on Potentially Vulnerable Areas and historic flood risk areas being shared adequately?
- Is a reduction in runoff/ betterment through small measures possible in practice and is guidance being updated to include best practice?

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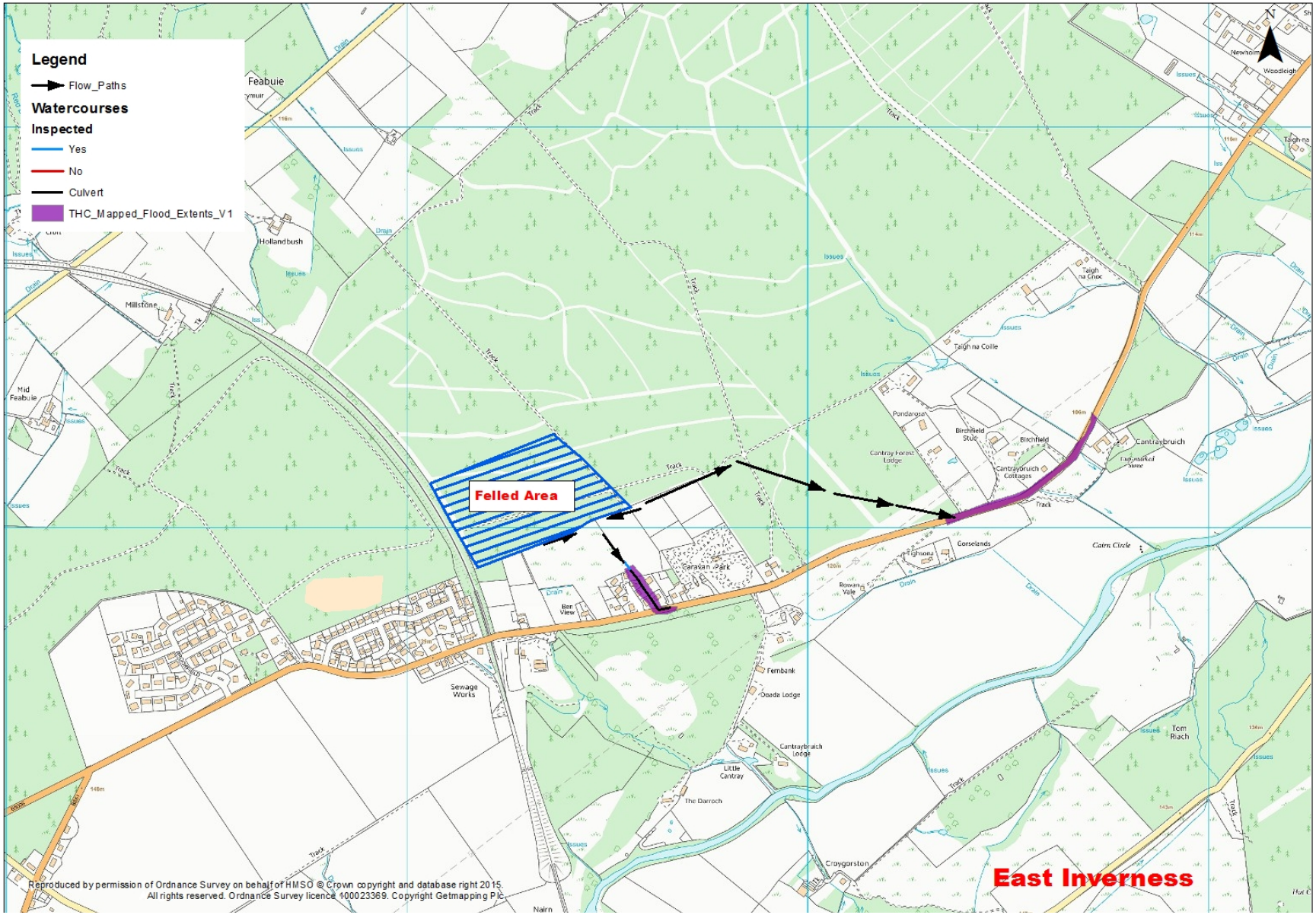
Rural Flooding



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Rural Flooding

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Rural Flooding

Development/ Change	• **Housing development; felling and drainage upstream**
Cause	• Development permitted without due consideration of upstream catchment- inadequate capacity of culverts taking upstream ditch; • Felling and drainage progressed using existing discharge locations which did had adequate capacity, *but* downstream culverts did not. • Inadequate planning for water environment, assessment of flood risk or neighbouring land uses
Effect	• Flooding from culvert inlet (insufficient capacity to take upstream flows) affecting roads & property= people suffering
Participation	• Forestry Commission/ THC/ Scottish Flood Forum/ land managers
Solutions	• Significant efforts by FC to divert flows, create natural attenuation areas, reduce runoff.
Improvements	• Assessment of the downstream impact of discharges extending beyond your next door neighbour • Planning Service considering neighbouring land uses, wider water environment, future pressures. • Developers assessing neighbouring land uses and including culverts with sufficient capacity. • Land Managers engaging more in neighbouring housing plans and ensuring infrastructure (culverts/ flow paths) for future drainage operations is considered • Consideration and Implementation of NFM where possible

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General Questions:

- How far should consideration of downstream impacts (from discharges) extend?

- Should land managers be considering the potential for NFM and implement it where possible?

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Any help appreciated!