

## WEST DUNBARTONSHIRE COUNCIL

Report by Director of Housing, Regeneration and Environmental Services

Community Safety and Environmental Services Committee : 3 May 2006

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**Subject: Flood Prevention – Knowle Burn and Gruggies Burn Update**

### **1. Purpose**

- 1.1** To update the Committee on the progress of the ongoing work to develop flood prevention schemes for Knowle Burn and Gruggies Burn, Dumbarton.

### **2. Background**

- 2.1** There is a history of flooding in Dumbarton, due to extreme rainfall events leading to Gruggies and Knowle Burns over-topping and flooding adjacent land and properties. This is partly associated with high tides in the Clyde Estuary.
- 2.2** The worst flooding in recent years occurred on 17 August 2004 when considerable areas around Netherbog Road were seriously affected, along with extensive flooding of land around Dumbarton East and along the A82 corridor. Before this in July 2002, an event of similar intensity resulted in considerable flooding of property in the Silverton and Castlegreen areas. During 2005 there were less serious events but these have seriously affected the confidence of the local communities.
- 2.3** The property damage in the 2004 event was caused by the restricted capacity of Knowle Burn, whilst the land and road flooding generally came from capacity restrictions on Gruggies Burn. Localised flooding elsewhere was caused by a lack of capacity in the underground drainage systems (generally the responsibility of Scottish Water).
- 2.4** Both Gruggies and Knowle Burns are known to be very susceptible to 'flash flooding' where extreme intensities of rainfall occur over short time periods.
- 2.5** During 2003, a programme of monthly inspections of watercourse screens / grids (on culverted sections) was introduced. The adjacent open watercourses are also inspected on a regular frequency and material considered likely to affect water flow is removed, primarily in areas where the Council is riparian owner.
- 2.6** In July 2003, Scott Wilson Ltd. was commissioned to undertake an investigation into flooding along Gruggies and Knowle Burns.

- 2.7** Recognising the timescales involved in the statutory flood procedures, and to minimise the severity of flooding from extreme rainfall events in the next few years, a programme of twice-yearly inspections of the urban sections of both burns has been introduced. Additional works to remove vegetation without compromising the stability of the banking and detritus from the burns has been carried out particularly at Knowle Burn and riparian owners advised of their responsibilities.
- 2.8** Reports entitled “Gruggies Burn, Dumbarton Flood Prevention Schemes, Options Report Executive Summary” and “ Knowle Burn, Dumbarton Flood Prevention Schemes, Options Report Executive Summary” were received by the Council on 15 August 2004 as an interim statement of findings and initial recommendations and costings. Given the nature and severity of recent events, it was considered appropriate to report these initial findings to Committee in October 2004. It was agreed at that time that further update reports would be submitted as progress continues.

### **3. Main Issues**

**3.1** The following section highlights the progress since the last report :-

#### **3.2 Knowle Burn**

- 3.2.1** In accordance with recommendation 5.1(b) of the October 2004 report, Knowle Burn Flood Prevention Order Scheme is now well underway with Jacobs Babbie taking over from Scott Wilson as principal consultant to take the scheme forward to Flood Prevention Order (FPO) Stage.
- 3.2.2** In order to engage the local community early in the scheme development, public meetings were held on 9 November 2005 and 21 February 2006, attended by over 130 local residents.
- 3.2.3** Detailed proposals for preventing flooding to the urban areas of East Dumbarton from the Knowle Burn have been investigated and have been discussed with local residents including:-
- ◆ Direct defences in the form of walls and embankments along the banks of the burn
  - ◆ Construction of flood storage at the land adjacent to Council Offices at Garshake Road
  - ◆ Removal of most restricting culverts
  - ◆ Improving the capacity of the culvert under the railway line
  - ◆ Widening / deepening the existing burn to increase capacity
  - ◆ Construction of piped storage at Round Riding Road area

- 3.2.4** A submission of draft FPO documentation has been made to the Scottish Executive in April 2006 and the Executive are currently considering the submission.
- 3.2.5** A Planning Application will be lodged once the Executive are satisfied with the FPO proposals, to allow the FPO and Planning procedures to progress at the same time.
- 3.2.6** The estimated costs of the works previously ranged from £2.77M to £3.52M (including Garshake storage area). This has been re-assessed at £3.5M. Cost benefit analyses (CBA) have been evaluated at greater than one, so the scheme will be eligible for Scottish Executive support. CBA compares the costs of flood prevention works against the assessed costs of damages due to flooding. Damage costs are assessed using national guidelines and standard values, but these consider only property costs and not the 'social' costs of flooding. Where the cost of implementing defence works can be shown to be less than the potential value of damage (i.e. a CBA>1) then the Executive can be approached to provide 80% of the funding required for the works.
- 3.2.7** Should all procedures progress without objections, and the Executive and Council are able to provide the funding required, work could commence by 2008.

### **3.3** Gruggies Burn

- 3.3.1** In accordance with recommendation 5.1(c) of the October 2004 report, further studies and investigations have been completed to determine the suitability of creating upstream storage in the Crosslet Estate.
- 3.3.2** Several measures for preventing flooding to the urban areas of East Dumbarton from Gruggies Burn have now been fully investigated including:-
- ◆ Direct defences in the form of walls and embankments along the banks of the burn;
  - ◆ Construction of flood storage dam in the upstream catchment;
  - ◆ Increasing of flow capacity of the bridges that cross the burn;
  - ◆ Improving the flood storage capacity of East End Park;
  - ◆ Widening / deepening the existing burn to increase capacity.
- 3.3.3** The estimated cost of the preferred option is some £8M (including an upstream dam). Cost / benefit analysis has been carried out and the result is greater than 1.0, so again, this work would be eligible for Scottish Executive support.
- 3.3.4** It had been expected (subject to funding availability) to take the preferred option to FPO stage during 2006/2007 with a target of submitting the required FPO documentation to the Scottish Executive in early 2007. This is now being re-considered due to funding constraints.

**3.3.5** Regular communication links to the local community have now been established, most recently a meeting with residents around the Park Avenue area on 21 March, where residents recognised the long term timescales involved in this type of project and were proposing carrying out works in the interim at their own expense. WDC are assisting in such initiatives giving professional advice and verifying the suitability of any proposals.

#### **4. Personnel Issues**

**4.1** There are no Personnel issues

#### **5. Financial Implications**

**5.1** Initial discussions with the Scottish Executive have confirmed that, on the basis of the above cost / benefit analyses, both schemes will be eligible for financial support (currently 80% of scheme costs).

**5.2** Although the Scottish Executive will normally part fund this type of project, it should be noted that the Council will be required to fund the full value of the FPO preparatory work in advance, to claim match funding retrospectively once the Order is confirmed and site works commence.

**5.3** To date some £80,000 has been spent on bringing the scheme to FPO stage which has included detailed ground, topographic and contamination surveys, an environmental study and extensive hydrological modelling and design.

**5.4** It is estimated that for budget purposes, a sum of approximately £80,000 will be required for Knowle Burn for detailed design to construction stage (£60,000 has been committed in 2006/2007 and £20,000 will be requested for 2007/2008).

**5.5** For Gruggies Burn it is estimated that some £100,000 will be required for FPO preparation. This will be considered as part of the budget process for 2007/2008 General Services Capital Plan.

#### **6. Conclusions**

**6.1** The extensive work undertaken to date confirms that flood alleviation schemes for Knowle Burn and Gruggies Burn are technically feasible and financially viable. However, further work is required to bring these schemes to fruition under the Flood Prevention (Scotland) Act.

**6.2** The local communities involved will be kept up to date with the ongoing work and assistance is being offered as and when required.

**6.3** Future funding requires to be allocated to allow the Gruggies Burn project to be progressed.

## **7. Recommendations**

### **7.1 The Committee is invited to note:-**

- (a) the substantial progress made in taking Knowle Burn forward to FPO submission stage and approve the ongoing financial commitments;**
- (b) the slower progress with Gruggies Burn to phase the scheme to follow Knowle Burn, and to approve the recommendation to take the project to FPO Stage starting in 2007/2008 (subject to capital funding being confirmed); and**
- (c) the considerable improvements made to watercourse inspection and maintenance introduced since the end of 2004.**

**David McMillan**

**Director of Housing, Regeneration and Environmental Services**

**Date: 18 April 2006**

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**Wards Affected:** Wards 11,12, 13, 14, and 15

**Background Papers:** Summary Reports on Gruggies Burn and Knowle Burn.  
Previous Committee Reports on flood events.

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