
Pow of Inchaffray Drainage Commission (Scotland) Bill

Explanatory Report to the Pow of Inchaffray
Drainage Commission (Scotland) Bill Committee

Pow of Inchaffray Drainage Commission

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POW OF INCHAFFRAY DRAINAGE COMMISSION (SCOTLAND) BILL COMMITTEE

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COMMITTEE MEMBERS

Mary Fee (West Scotland) (Lab) Alison Harris (Central Scotland) (Con)

CLERK TO THE COMMITTEE

Nick Hawthorne

New Land Plans Methodology

Introduction

Following the meeting of the Pow of Inchaffray Drainage Commission (Scotland) Bill Committee (“Committee”) on 7 March 2018 the Committee noted the Promoter’s intention to commission Savills to redraw the land plans for the Bill, and agreed to invite the Promoter to submit an explanatory report, as set out in Committee Paper POI/S5/18/2/1, alongside the new land plans.

The new land plans aim to replicate as far as is reasonably practicable, the boundary of benefitted land as identified on the 1850 plan which was drawn up in terms of section XLIV of the Pow of Inchaffray Drainage Act 1846 (“1846 Act”). The 1850 plan was prepared following completion of the works authorised by the 1846 Act to improve the Pow and its side ditches when the beneficial effects of the works to the adjacent land could be determined and recorded.

The 1850 plan was the final version of three plans prepared under the 1846 Act. The first plan prepared in 1846 plan showed the works to be carried out and also surveyed the land which might potentially benefit. The 1846 plan was accompanied by a Book of Reference dated 1847. The estimated benefitted area is shown on the 1850 plan as numbered parcels of land. The numbers are linked to a schedule of areas contained in the Book of Reference also authorised by the 1846 Act. The Book of Reference details the estimate of the increased value of the lands benefitted by the works executed under the 1846 Act. The book details the parcel reference number, name of owner, measurement of affected land, rate per acre and an increased value. This information was the basis for apportioning the budgeted cost of the work among the heritors.

The 1848 plan was a copy of the 1846 plan prepared on completion of the works to identify the land which had benefitted from the works.

The final 1850 plan is in effect a fair copy of the 1848 plan which omits details of the works and simply shows the benefitted land. The 1850 plan is docketed (fig.1) by the surveyor and the then chairman of the commissioners as the definitive plan. The 1850 plan is accompanied by the 1851 Book of Reference which comprises a schedule of all the numbered parcels of land on the 1850 plan with the increased annual value due to the works.

In order to complete the process of replicating the area of land benefitted as defined by the 1850 plan, we have utilised three methods:

- Geo-referencing,
- Visual comparison, and,
- Cross-reference with the Book of Reference (1851).

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Fig. 1 Docket on the 1850 plan

Geo-referencing

Geo-referencing is a way of spatially enabling historic maps so that they can be overlaid and combined with modern mapping data to allow visualisation, comparison, analysis and searching.

Geo-referencing of historical map images involves assigning spatial information so that they align with real world geography. The essential process typically consists of adding control points to an historic map that have a real-world location; once there are sufficient control points, the historic map can be transformed so that it correctly aligns with geographic reality. The choice of coordinate system, the type of transformation method, and the method of resampling pixels in the image will all affect the end result.

Whilst geo-referencing is one of our chosen methods, there are a number of challenges in relation to this process:

- The historical map, in this case the 1850 plan, pre-dates the first Ordnance Survey maps
- The 1850 plan is a scanned copy of an original document. This results in minor distortions.
- There are a reduced number of spatial relationships between the historical data and the modern data
- All maps have inherent position errors, which depend on the methods used in the construction the map

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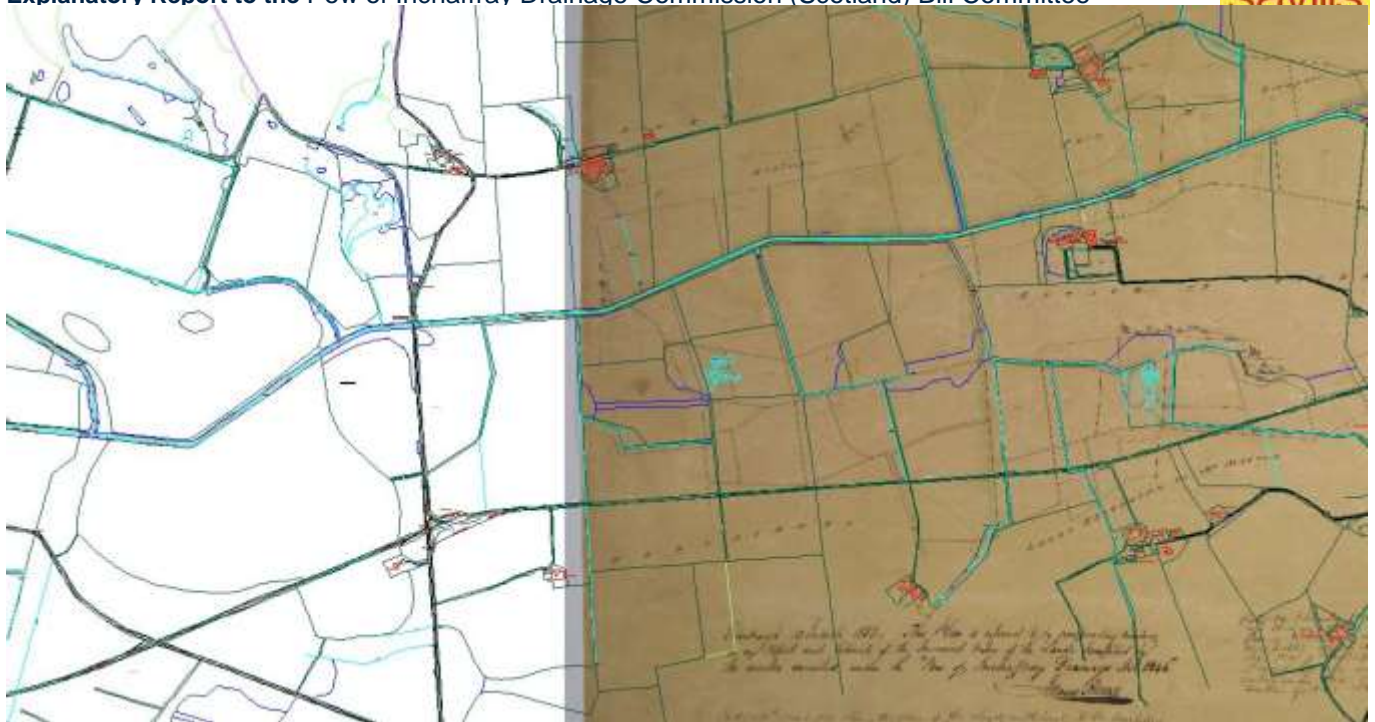


Fig. 2 Overlaid georeferenced 1850 plan

Visual Comparison

Following the geo-referencing process, a visual 'sense check' was completed to ensure no obvious errors were evident. This included the 'stretching' of the boundaries where obvious errors had occurred. As there is a slight deviation in the boundaries of a geo-referenced plan, in rare instances it is deemed appropriate for a boundary line to be 'stretched' to fit in with the modern data. This can be seen below in Figure 3 which shows the red line as per a direct copy of the 1850 plan deviating slightly from the modern boundary shown in grey. In this instance, we would consider 'stretching' the red line boundary to follow the route of the modern data.

When visual comparison and sense checking has been necessary to determine the boundary of the benefitted land, the process has been assisted by the meticulous research carried out by Peter Symon to arrive at the best fit of the 1850 plan and the 1851 Book of Reference with modern digital OS map data.

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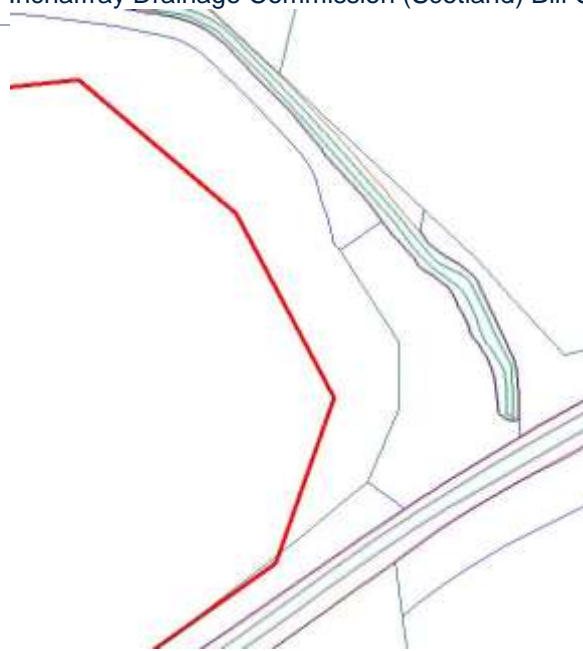


Fig. 3 'Stretching' of data

Cross-reference with the Book of Reference

As previously mentioned, the 1850 plan and the 1851 Book of Reference must be used in conjunction so as to identify as accurately or as is reasonably practicable the benefitted land.

The Book of Reference holds the area calculation and a monetary valuation of the area assessed as benefitted. This can be seen in Figure 4 below.

Number Plan	Reputed Owner	Lease rate	Measurement of land affected	Rate per acre	Increased Annual Value
36	James Blair Cliphart Esq.	James Moncrie	9833	2/ 1/2	19 7
37	do	do	5000	2/	10 -
38	do	do	4902	2/	9 9
39	do	do	3783	4/	15 1
40	do	do	600	1/	2 6

Fig. 4 Extract from the Book of Reference

The 1851 Book of Reference also detailed those parcels of land shown on the plan but not assessed to have benefitted. In cases such as these there was no monetary valuation placed in the 'Increased Annual Value' column. These parcels have been removed from the updated land plans so as to ensure they are viewed as 'unbenefitted' land.

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Areas of Question

The process of transferring data from historical maps on to modern data is known to be difficult and does result in some areas of uncertainty. While it is acknowledged that there are variances and differences between the processes of mapping in the 1800s and current time, we consider that in our redrawing of the land plans we have identified benefitted land representing as close to the area of benefitted land shown on the 1850 plan as it is reasonably practicable to achieve.

In areas in uncertainty we sought to use all tools available to us to ascertain the best way to proceed. This included:

- Comparison of the area measurements as per the Book of Reference and areas taken from the modern OS map data
- Utilisation of historical mapping data available from the National Library of Scotland
- Advice from Counsel that buildings constructed pre-1846 would be outwith the benefitted land
- Site inspection
- Consideration of the map contours which have a strong relationship to the boundary of the benefitted area
- Review of satellite imagery
- Expert input from Mr Peter Symon

Land at Dollerie

The 1850 plan shows land at Dollerie as being benefitted, however the 1847 Book of Reference records the agreement with Mr Murray, the then owner of Dollerie, that Dollerie would not contribute to the cost of the 1846 works or pay any subsequent assessment.

Following a request from the Committee, the continuance of this agreement under the present Bill was reviewed at the Commissioners' meeting on 7 March 2018 when it was decided that Dollerie should not continue to be exempt from the annual assessment.

The new land plans therefore include the benefitted land at Dollerie extending to 8.55 acres.

Sourcing of Data

The following documents were used to assist in the replication, as far as is reasonably practicable, of the boundary of benefitted land as per the 1850 plan:

- The Pow of Inchaffray Drainage Act 1846
- Plan of the lands to be benefitted by the drainage of the Pow and of the works proposed to be executed (1847)
- Book of Reference for drainage of the Pow of Inchaffray, Madderty, Perthshire (1847)
- Estimate of the increased value of drained lands at Pow of Inchaffray, Madderty, Perthshire (1851)
- Plan of lands benefitted by the drainage of Pow Affray under Pow of Inchaffray Drainage Act, 1846 (1850)

In addition to the above documents, reference was made to the documents available from the National Records of Scotland and the National Library of Scotland. This included:

- 1st edition 6 inch Ordnance Survey (1843 – 1882)
- 2nd edition 6 inch Ordnance Survey (1892 – 1960)
- 1st edition 25 inch Ordnance Survey (1855 – 1882)
- 2nd edition 25 inch Ordnance Survey (1892 – 1949)

- 1:25,000 Ordnance Survey

The Librarian at Innerpeffray Library carried out a search for other relevant documents but found none.

Outcome/Consequence of the New Land Plan and Impact of the New Land Plan on Heritors

A plan showing the redefined benefitted area overlaid on the plan originally submitted to the committee is located at **Appendix B**.

The consequences of the new plan and the impact it will have on the heritors can be measured in a number of ways, namely the area which is benefitted; the financial implications of the new land plan and whether any areas (and heritors) have been added or removed.

- The area of benefitted land has increased by 96 acres from 1,951 acres to 2,047 acres.
- There are five new residential properties, three of which are owned by new heritors.
- The Old Crossing House near Balgowan has been removed from the schedule of benefitted properties.
- The 8.58 acres of benefitted land at Dollerie has been included.
- The overall change to financial assessments has been marginal.
 - Residential assessments now total £7,614 shared between 79 heritors rather than the previous assessment of £7,166 shared between 75 heritors (an average increase of £0.84 per property)
 - Agricultural assessments now total £12,082 shared between 21 heritors rather than the previous assessment of £12,087 shared between 19 heritors (an average decrease of £61 per heritor)

New Residential Properties

The five new residential properties are as follows:

- 12 - Nethermains of Gorthy Farmhouse (New Heritor)
- 13 - Centre Cottage (New Heritor)
- 14 - Burnside Cottage (New Heritor)
- 207 - Holiday Lodge, Milhills (Existing Heritor, Milhills Farms)
- 208 - Lodge House, Milhills (Existing Heritor, Milhills Farms)

Removed Residential Property

- 86 – The Old Crossing House

9 - Inchaffray Abbey

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Appendix C – Schedule of Heritors (plot value) shows Inchaffray Abbey's assessment increase from £276 to £1,379. This is due to the calculation being based on the plot size, which for Inchaffray Abbey is very large (2.81ac). The original assessment discounted this plot size but when following the methodology detailed above there was found to be minimal justification for this action.

Appendix D – Schedule of Heritors (5x building footprint) shows the alternative assessment method which results in a reduction in the assessment for Inchaffray Abbey down from £276 to £162.

New Agricultural Heritors

The **three** new agricultural heritors are as follows:

1 – Tuckethill – 4.85 acres (£63.25)

2 – Dollerie – 8.58 acres (£35.75)

11 – Olecrose Ltd* – 92.71 acres (607.50)

*This new heritor represents an area of land which has changed hands in the period since the original schedule. This does not represent a new area.

Heritor Engagement Methodology

The Commission would intend to write to all heritors inviting them to a public meeting to be held in the Gask Hall to update them on the progress of the Bill including in particular the revising of the land plan resulting in the inclusion of 5 "new" heritors and the increase of benefitted land by 96 acres. This letter would also include the Annex and Tables 1 and 2 (worked examples) in the Consultation Paper updated to take into account the consequences of the plan having been revised.

They also propose to write to each of the new heritors explaining the background to the Bill and the reason for the proposal that they now be included as heritors, enclosing a copy of the Consultation Paper and the updated Annex and Tables as previously mentioned, signposting the Parliament's website, and inviting them to the public meeting. Comment and objections would be invited.

These letters could also make reference to the proposed timetable for the Committee including a new 2 month period for objections.

Updated List of Heritors

Two versions of the updated list of heritors can be seen at **Appendix C & D**.

Version 1 (**Appendix C**) shows the calculation for residential heritors being based on their plot size.

Version 2 (**Appendix D**) shows the calculation for residential heritors being based on building footprint x 5.

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The schedule of agricultural heritors has been simplified by merging multiple assessments payable by a single heritor. There is also one area of land (Nether Mains of Gorthy) that has recently changed hands.

New Land Plans

The New Land Plans are located at **Appendix A**.

These are organised into Sections which correspond to location of Commissioners.

Appendix A

New Land Plan

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Appendix B

Overlaid Original Plan v New Benefited Land

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Appendix C

Update Schedule of Heritors (plot value)

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Appendix D

Updated Schedule of Heritors (5x building footprint)
