

Submission to Pow of Inchaffray Drainage Commission Bill Committee: Mapping Issues

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1. Aims and objectives

I refer to my interim submission made to the committee, dated 12 December 2017. The main aim of the present submission is to assist the committee and the commissioners (promoters of the bill) in their reflections on mapping issues, with reference to issues concerning the demarcation of the area of "benefited land" over which the commission would exercise powers as proposed in the bill.

The principal objective of the present submission is to correct a small number of anomalies identified in the information contained in the interim submission. A secondary objective is to provide some detail on data sources and methods that was omitted from the interim submission. Thirdly, I have sketched the boundary of benefited land, as finally settled by the commissioners at the time of the works carried out under the Pow of Inchaffray Drainage Act 1846 ("PIDA 1846"), as far as can be ascertained from available information, on each of the six main land plans deposited with the Scottish Parliament by the promoters.

The extent of the apparent discrepancy between areas of PIDA 1846 benefited land excluded (I would argue) from the proposed benefited land in the bill, and the area of benefited lands proposed to be added (again, as I would argue), is somewhat lower than that expressed in my interim submission of 12 December 2017. In particular, some 77 acres of benefited land in PIDA 1846 that had been carried forward in the bill as proposed benefited land (land number 217), was wrongly counted as excluded land, in the total acreages reported. (The lands in question were, however, marked correctly on the accompanying sketch map as having been included as benefited land.)

In order to expedite the deposit of the present submission I have regrettably had to defer calculation of the precise extent of lands excluded or included in the bill proposals. Likewise I have not supplied a revised sketch map. Details of salient discrepancies are referred to below under each of the six subheadings dealing with the six principal "Land Plans" deposited with Scottish Parliament in 2017 by the promoters (no sub-heading is presented for Balgowan Houses). I used the Land Plans as base maps on which to annotate boundary issues, etc.

2. Work programme

Following publication on 13 December 2017 of my interim submission of 12 December 2017, I was approached by Mr Jo Guest, commissioner and promoter of the bill, who expressed an interest in my comments. I accepted Mr Guest's invitation to attend a meeting with him, held on 20 December 2017 from 10 a.m. to midday at the offices of Savills, Perth. The meeting was also attended by Stephen Cranston (McCash & Hunter), clerk to the commission, and Jonny Willett (Savills), who provided access to computer mapping facilities that enabled us to look at the details of plans in which there were issues arising.

In the meeting I was supplied with a set of numbered sheets labelled "Pow Land Areas" which show the areas assigned to landowners each with a unique reference number. I have examined these

Sheets and compared them with the Land Plans deposited with the Scottish Parliament. The boundaries of the "Pow Land Areas" depart from those shown on the Land Plans only, it would appear, in only two places. Otherwise there is no difference apart from that of scale. One difference is at the Balgowan Houses. On "Pow Land Areas" Sheet 10, only lands contained within the curtilages of individual houses and gardens are identified as "landowners"; amenity lands, roads, footways and services not assigned to an individual landowner are left "blank"; whereas the "Balgowan Houses Benefited Area" includes all such communal or amenity spaces and roads, including seemingly sections of the public road and footway.

Otherwise, the "Pow Land Areas" sheets resolve the issue of the apparent exclusion of lands numbered 90, 91 and 92 on the 1847 Plan, lying to the west of Jessie Burn at its confluence with Bachilton Pow and to the east of the road to Balgowan farm. Whereas Land Plans shows these lands as having been omitted from the benefited land in the bill, Pow Land Area Sheet 6 shows lands 90 and 91 as entirely included in the benefited land area and land number 92 as being approximately 85 per cent included in the benefited area (roughly 15 per cent of the land being excluded). All the land is assigned to Landowner Reference 65. Further related issues are discussed below. I have assumed that it is the Land Plans submitted to Scottish Parliament that are to be considered as being the key legislative documents, rather than the Pow Land Areas sheets, but refer to the latter as appropriate.

An agreed outcome of the meeting was that I would supply the present updated note on mapping issues to the committee and would also circulate it to the commissioners by early January 2018. It has been a not inconsiderable challenge, to present the information contained in this submission within the timescale demanded by the bill procedure. I am well aware of my own limitations in draughtsmanship and ask that the land plans be read as sketchy and indicative, requiring scrutiny and verification, rather than as tablets of stone inscribed to the highest standards of cartographic representation. To that extent the information contained in the plans remains provisional in nature.

Comments herein are made in general support for the principles of the bill. They are not aimed at getting it ditched. While in Scotland, there is no precedent for the unique Pow of Inchaffray Drainage Commission, the commission is similar to a large number of drainage bodies in England, notably the internal drainage boards (IDBs). Guidance on the demarcation of boundaries of prescribed areas for such drainage authorities has been discussed in a number of official reports over the years. For further guidance I would refer the committee to Land Drainage in England and Wales (Report of the Land Drainage Legislation Sub-Committee of the Central Advisory Water Committee) (London: HMSO, 1951) and to the more recent Establishing New Internal Drainage Boards - Guidance (issued by Association of Drainage Authorities and the England Environment Agency) (Section 4.6, pp. 14-17).¹ As the ADA/EA Guidance makes clear, in a different policy environment, there is interest in encouraging new local drainage authorities, particularly where they may take over duties for maintenance of watercourses handed over to them by the Environment Agency.

In an effort to assist the commissioners in resolving any issues arising from the comments I have already made I have, for want of time, left out evidence I intended to include, relating to sections of the bill other than those concerned with the priority matter of geographically demarcating the area

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https://www.ada.org.uk/downloads/other/downloads_page/Establishing%20New%20Internal%20Drainage%20Boards%20National%20Guidance.pdf (accessed 08 January 2018)

of the drainage district. I hope, if it would be of use, shortly to submit separately such evidence, based on historical analysis of the accounts of the commission and showing income and expenditure of the commissioners, as I hope to show that there are lessons to be learned by considering how the organisation has performed in the past and the changing environments in which it operated.

3. Land Plans

Land Plans referred to in the Pow of Inchaffray Drainage Commission (Scotland) Bill and deposited at the Scottish Parliament, having been annotated by me so as to mark on the approximate boundary of the benefited land from information in the 1851 Book of Reference and the 1847 Plan. I used the certified "fair copy" of the 1847 Plan by the Sheriff Clerk of the County of Perth on 7th February 1848.² The 1847 Plan, and the 1851 Book of Reference, which states the finally adjusted extent and valuation of lands benefiting from the drainage works under PIDA 1846, were later transferred to the National Records of Scotland. The 1851 Book of Reference is the definitive list of "benefited lands" under PIDA 1846, whereas the 1847 Book of Reference included a number of lands that were estimated, before the works were carried out, to increase in value but which were not included as benefited lands after the works were completed and surveyed again.

The 1851 Plan accompanying the Book of Reference of lands benefiting from PIDA 1846 works is considered by National Records of Scotland as unfit for production.³ However, the land numbers and acreages are identical in both the 1847 and the 1851 Books of Reference. Some lands included in 1847 were omitted in 1851. Therefore the 1847 Plan has been taken to represent with a high level of confidence the geography of the finally adjusted and settled benefited land under PIDA 1846.

Under each of the six sub-headings below, working upstream from the outfall of the Pow of Inchaffray on the River Earn, the main anomalies are commented upon for each land plan, which are provided as separate files. Lands are numbered as on the 1847 Plan and as in the 1851 Book of Reference (not the same numbering as the Pow Land Areas landowner reference numbers).

Lands are coloured using the same shades as in the sketch plan of 12 December 2017: blue for PIDA 1846 benefited lands omitted in the Land Plans; pink for lands not included as benefited lands in PIDA 1846 but which have been included in the Land Plans as part of the benefited lands; and yellow for "Dollerie lands". The red line is the boundary of the PIDA 1846 benefited lands, as interpolated from the 1847 Plan and working from the lands numbered in the 1851 Book of Reference. Land numbers (as per 1847 Plan and 1851 Book of Reference) and place names are given where relevant.

Every effort has been made to ensure that the boundaries of the lands are traced with reasonable accuracy but it is very much practical work in progress that requires scrutiny.

A central methodological issue is the requirement in places to imply the line of a boundary where the 1847 Plan did not provide a broken line completely enclosing a numbered land. In such cases the approach followed here has been to cross-refer to the list of areas of lands (in acres). It is also assumed that farm houses and farm buildings, shown on the 1847 Plan, were not part of the

² The fair copy is available online at <https://scotlandsplaces.gov.uk/search/place/Madderty?id=1082> (accessed 08 January 2018) The PIDA 1846 materials are under NRS reference RHP 23904. It is a clearer version of the Plan than the copy in possession of the Commissioners.

³ A request to view it was lodged with NRS and a response is awaited at the time of writing.

benefited land, because the criterion for determining whether or not a land would or would not be included as having benefited from the drainage operations was the extent to which the productivity of the soil had increased (i.e. soil fertility and grazing capability) and not whether there was any building on it. Land rent seems to have been the criterion, seemingly exclusively for agricultural land and not development land. Farm buildings tend (then as now) to be on higher land than the more waterlogged lands adjacent to the pow. Otherwise, natural or artificial linear features, such as roads, ditches or edges of woods, help to determine lines of boundaries of lands where no such line was otherwise provided by the surveyor. Some woods were numbered lands in their own right, others may or may not have been part of an adjacent land. The importance and sensitivity of the matter of implying the boundary of benefited lands will become apparent below and there is scope for debate over the verisimilitude of some of the lines drawn as a result.

[LP1] Lower Section: Part 1 of 2

Land number 267 (Millhill) : 2.804 acres. Was marked on the 12 December 2017 sketch plan, correctly, as having been omitted from the bill Land Plan, but the area had erroneously not been added to the total area of PIDA 1846 benefited lands omitted from the bill Land Plans.

Straightening of the channel by removing meanders of on the floodplain below Millhill, to improve the outfall, was chief among the PIDA 1846 works. The drain appears to have been further straightened in this section as part of later improvement works to the outfall. This was the most fiddly part of the overall Plan to work through, with numerous small parcels of land taken for works. There appears to have been quite a bit of smoothing off of the shape of the proposed drainage district, mostly by adding pockets of land that were not in the PIDA 1846 area, but also by a certain amount of shaving of portions of PIDA 1846 lands here and there. Perhaps a lot of it is *de minimis*.

The main issue is probably the two areas of PIDA 1846 benefited land on either side of the pow at Millhills (266 and the above 267) (NN 893 198), which have not been included in the benefited area on the Land Plan. They together amount to 6.5 acres: a small proportion of the whole proposed drainage district, but near the all-important outfall and downstream of a bridge. Local inspection would reveal whether or not there has been some development on the lands.

Another issue is the proposed exclusion of Dollerie lands (see 12 December 2017 paper).

[LP2] Lower Section: Part 2 of 2

Some minor smoothing issues on north and south edges of benefited land between Auchlone bridge and the outfalls of Drumphin Burn and Ardbennie Ditch. On Ardbennie Burn, land number 2/187 (7.306 acres; assigned to landowner reference 80, Pow Land Areas Sheet 4) was excluded from the 1851 Book of Reference and not part of the PIDA 1846 benefited land. A strip of benefited land along north side of Ardbennie Burn has been omitted from the proposed benefited land area in the bill as has a small strip of land north west of Woodend. A ovoid body of land to the west of Ardbennie Ditch is marked on the 1847 Plan and whether it is or is not part of the 1851 benefited land is unclear; speculatively it may be an example of a higher lying area of land that is included in the benefited land area on the basis that it would otherwise be a stranded "island" of dry land if there had been no drainage operations.

At Dollerie, the excluded land appears to include a former lodge at Tuckethill Bridge (probably an ancient crossing point on the Crieff-Perth road).

South west of Auchlone bridge, land number 271 was erroneously included, in the 12 December 2017 submission, in the total area of PIDA 1846 benefited land omitted from the bill Land Plans. The land amounts to 77.305 acres. In fact it is shown on the sketch plan of 12 December 2017 as having been included in the bill. There is, however, uncertainty as to whether the wood lying to the north east of the land, and south west of Auchlone bridge, is part of the land number 217, or is not. A broken line running along the west edge of the wood, on the 1847 Plan, is taken to represent the implied boundary of land number 217 and hence the wood is excluded from it. Assigned to landowner reference 81 on Pow Land Areas Sheet 3.

Land number 222 on 1847 Plan (north west of Auchlone bridge and south of Mindstretchers Auchlone Nature Kindergarten building) is excluded from the proposed benefited land in the bill.

Two large lands, numbered 241 and 242 on the 1847 Plan (34 acres in total), lying to the south of the body of water on the southern side of the "policies" of Abercairny House, are excluded from the benefited land proposed in the bill. A parcel of land numbered 243 (19.345 acres) was included in the 1847 Plan but omitted from the 1851 Book of Reference and does not form part of either the PIDA 1846 benefited land or the benefited land area proposed in the bill.

A strip of land between Kintocher farm and Drumphin farm, running parallel with the north bank of the pow, has been omitted (1847 Plan land numbers 206, 207, 213 and 216; approximately 21.5 acres); whereas some land has been added south west of Drumphin.

[LP3] Middle Section: Part 1 of 2

An amendment to the sketch plan of 12 December 2017 is needed to adjust the boundary of land numbered 160 so as to exclude the part of the field lying to the east of the line marked on the 1847 Plan running in a south south-easterly direction away from the building marked on the plan on the site of present day Carsehead Farm Cottage (NN 956 231). Acreage of land number 160 (21.84 acres) is too small to include the easterly part of the field, which is therefore assumed to be outwith the PIDA 1846 benefited land. It is difficult to imply the line of the land boundary, in the north east corner of land number 160, where is clearly marked a building on the 1847 Plan. The building on the 1847 Plan sits exactly in line with the continuation of the linear feature taken to represent the east boundary of land number 160, occupying a gap between the end of the boundary line and the public road. For reasons elsewhere stated, farm buildings or farm houses (including farm workers' residences) are assumed to have been disregarded for the purposes of valuation of lands benefiting from drainage works. It is nevertheless possible that some of the land within the present-day curtilage of Carsehead Farm Cottage may have been on PIDA 1846 benefited land. The buildings shown on the Land Plan, and particularly on Pow Land Areas Sheet 5, are situated entirely to the west of the said linear feature and its implied continuation to the public road, in which case they would be more likely than not to be situated within the benefited land. It has not been possible to ascertain whether the said presumed field boundary feature is on the same line as the present day field boundary shown on the Land Plan nor to plot the 21.84 acres extent of the land number 160 on the present day Land Plan.

Nethermains of Gorthy (NN 960 232): formerly West Mains of Gorthy, on 1847 Plan. The 1847 Plan shows clearly marked boundaries, relieving any need to imply the boundaries of the benefited land. West Mains farm is shown as a broken U-shaped building in two parts. All buildings lie within and are bounded continuously by linear features on all four sides: to the north, by a field boundary; to the east, by Carsehead Mill Burn (present-day Carsehead Mile); and to the south and west by a farm track running parallel with and on the northerly side of a minor ditch. The farm buildings are outwith the benefited land as is the land lying to its north. To the east of the Carsehead Mill Burn (or Mile) lies land number 119, which is bounded on its south side by a ditch labelled Gorthy Mill Burn on the 1847 Plan. To the south of West Mains (Nethermains) of Gorthy lies land number 130. The boundary between it and land number 131 is a continuous line formed by a drainage ditch running parallel with and to the west of Carsehead Mill Burn (or Mile) and continued by a broken line on the plan to the ditch and farm track forming the south boundary of the farm.

If it is accepted that the Gorthy Mill Burn marked on the 1847 Plan is in the same geographical position as the present day ditch shown on the Land Plan and joining Carsehead Mill Burn (or Mile) at an oblique angle a short distance south of the farm, and that the former farm buildings marked on the 1847 Plan are in the same position as those presently on that site, then it strongly suggests that the three residential buildings and gardens lying to the south of the former farm buildings are more likely than not to be situated entirely within the PIDA 1846 benefited land area. The row of three residential properties is bisected more or less north-to-south by the boundary line between land numbers 130 and 131 on the 1847 Plan (assigned to landowner reference 68 on Pow Land Areas Sheet 5). Properties occupying the former farm buildings, on the other hand, would appear to be situated entirely outwith the PIDA 1846 benefited land, consistent with the argument set out above.

The reasons why such a large area of PIDA 1846 benefited land has been excluded from the proposed benefited land in the bill, should be explored with the promoters.

[LP4] Middle Section: Part 2 of 2

Some issues to do with minor smoothing of the boundary, but mostly the issues relate to the omission of lands to the north of the proposed boundary of benefited land, which were included within the PIDA 1846 benefited lands (lands numbered 81, 89 and 92, on the north side; and 147 on the south side). Conversely, there is also the inclusion of lands that were on the 1847 Plan but omitted from the 1851 Book of Reference (numbers 74, 94).

The land around present-day Newrow Ditch appears to have undergone reconstruction of the historical arterial drainage system (viz Old Newrow Burn - not a Commission-maintained ditch). Related reparation of the land may have complicated the picture.

The most significant anomaly is the large-scale exclusion of PIDA 1846 benefited lands around Newrow Lodge, shading into the previously discussed major exclusion of lands lying to the west.

[LP5] Upper Section: Part 1 of 2

Main issue here is the addition of three areas of land that was not part of the PIDA 1846 benefited land. In a clockwise direction around the junction of Redhills farm road and the public road to the south west of Balgowan, Pow Land Area Sheet 9 assigns these additional lands to Landowner References 67, 91, 61, 60, and 63. These areas are quite sizeable.

The additional land lying between Redhills farm road and Balgowan houses, assigned to Landowner Reference 67, was numbered 64 in the 1847 Plan and 1847 Book of Reference. However, it was omitted from the 1851 Book of Reference, not having been included within the finally adjusted benefited land in terms of PIDA 1846.

It is noted that the aggregate base of increased annual value of the lands benefiting from the drainage operations of the commission was altered from its original amount of £661.95 (decimal equivalent) to £681.83 with the addition of two extra heritors with effect from financial year 1962-63, then again to £689.13 with effect from financial year 1989-90 (when the number of heritors increased by one). The commissioners might be able to provide clarification of the reasons for these increases in overall valuation.

[LP6] Upper Section: Part 2 of 2

Here at the upper end of the drainage district, nearest to the watershed with East Pow at Methven Moss SSSI, there appear to be several things going on. Areas of PIDA 1846 benefited land lying south and east of Bachilton farm have not been included in their entirety (lands numbered 1, 2 and 13; roughly 22.5 acres excluded). Conversely, a roughly equivalent amount of land, that was not part of PIDA 1846 benefited land, has been added to the proposed drainage district. Part of the explanation is perhaps that lands numbered 26 (9.94 acres) and 20 (16.5 acres) in PIDA 1846 (landowner reference 56/59 and 58 respectively) appear on the 1847 Plan but they were omitted in the 1851 Book of Reference final reckoning.

A triangular plot of land has been included as proposed benefited land, lying south west of Bachilton farm, but it was not PIDA 1846 benefited land. It is wrongly coloured blue on the sketch plan of 12 December 2017 (as "excluded benefited land") whereas it should have been pink (land added).

A further complication is the discrepancy between the present Parliamentary Land Plan and the Pow Land Areas Sheet 7. As mentioned above, this Land Plan omits lands included in the PIDA 1846 benefited lands, to the extent of approximately 31 acres in total. These lands (90, 91 and 92, assigned to landowner reference 65) are nevertheless marked on the above Sheet 7 (correctly, in terms of PIDA 1846) as proposed benefited land. However, a further strip of lands, lying to the north of Jessie Burn, including land numbered 93 on the 1847 Plan but extending further north east to as far as the bend in Jessie Burn, were not included in the PIDA 1846 benefited land (number 93 was omitted in the 1851 Book of Reference), are not marked on the Land Plan submitted to Scottish Parliament but are shown as proposed benefited land on Pow Land Areas Sheet 7 (landowner reference 65). Such lands are indicated on the annotated Land Plan through discontinuous shading.