There can be a little doubt that the discharge of a flood would be greatly assisted by straightening the channel of the river, and by cutting through many of the loops and bends, thereby increasing the velocity of the current. This would be an exceedingly costly work, as would also the enlarging of the channel in narrow places; though both matters would produce a beneficial result.

In order to render the area of water-way effectual between the stop-banks and the railway from Greytown downwards, it is necessary that the present stop-bank be removed, and the high portions of the river bank itself cut down and removed wherever tending to obstruct the free flow of the current over them. The soil so removed could be used for the construction of the new work. The embankments should be constructed with flat slopes of, say, to 2 or 2½ to 1, well sown with grass, and preserved from damage by cattle. No scrub or bushes of any description should be permitted to grow thereon, and everything affording cover to rabbits or other vermin should be eradicated from the existing banks. This is most important, as one rabbit-hole will be sufficient to cause a serious breach.

The position occupied by the river is exceedingly unfavourable for preserving the surrounding country from floods, as, in consequence of the river flowing upon a ridge of high grounds, its banks are raised many feet above the neighbouring land. To move the river into a new position upon lower ground would afford greater facilities for embanking it, but the enormous cost of doing so precludes our seriously considering it. It would be, moveover, extremely difficult to confine the river in a straight channel, and prevent it from adopting its natural winding course.

A deputation from the Henley Board of Conservators waited upon the Commission, and pointed out the difficulties with which they had to contend. They had continued the construction of the stop-bank made by the West Taieri Board entirely in self-defence, as, had the work been stopped at the boundary between the two districts, they would have suffered the effects of the full discharge of a flood in such volume as to most likely destroy the land. They were fully aware of the serious contraction of the flood water-way at the railway bridge near Otakia, and in consequence feared a serious increase in the depth of the floods upon the land between the railway and the river from Otakia to East Taieri Road Bridge. They advocated the construction of a stop-bank along the river side between these two points in order to shelter themselves. They also represented that high tides aggravated the effect of floods, and that the construction of storage reservoirs would have the eflect of prolonging the periods that the water would take to discharge, thereby keeping their land longer under water than would be the case if left free to cover the plain and discharge itself to sea. They seemed to consider that nothing more was necesssry than to lower the high-tide level, as a periodical high-flood would do them far less harm than a long continuance of reduced flood, which would be high enough to prevent their drains from discharging perhaps for may weeks, thereby rendering the land sour and useless. A high flood would, as is generally the case, only last a few days, when their drains would run off the water and leave the land if anything improved by the process. This argument refers entirely to the low-lying land at Henley, which is little or nothing above the level of a high spring tide. We gave these statements our earnest attention, and have carefully considered their merits, while forming an opinion as to the general treatment which we propose.

We now give the following abstract of what we recommend should be done:—

The construction of two storage reservoirs on the Upper Taieri basin.

That the existing embankments from Outram to Outram Railway Bridge be left as now constructed.

That from thence to Greytown, on the right bank, the present stop-bank be allowed to remain, and on the left bank that no works be undertaken, but that the water be allowed to find its way as usual to Greytown.

From Greytown to Taieri Railway Bridge on the right bank, the existing stop-banks be removed to the position shown on plan, giving more water-way, and that all high portions of the river bank be cut down, so as to give a free flow to the water across the bends, while on the left bank the area between the river and railway be left open as necessary flood water-way.

That immediately beyond the Taieri Railway Bridge, 20 chains of flood opening be substituted for the present embankment, which must be removed.

That the railway embankment between the two bridges be raised to the level indicated, and supplied with flood-gates at all culverts.

That from the railway embankment near Waihola Railway Bridge, the present stop-bank be raised to the level shown, and continued to the Lea Canal, or as far as is necessary in order to join high ground.

We do not recommend the raising of the railway at any other place than as above indicated.

We estimate the cost of these works approximately from such data as is at our command, as follows:—

Two storage reservoirs	£66,000	0	0
Constructing stop-bank, Greytown to Otakia, on right bank ...	10,000	0	0
Removing existing stop-bank, and cutting down high river banks	2,000	0	0
Twenty chains flood openings at Otakia	6,000	0	0
Raising railway embankment between Taieri and Waihola Bridges	9,000	0	0
Raising stop-bank round Henley, from railway to the Lea Canal	2,800	0	0
Total estimated cost	£95,800	0	0

It becomes necessary to consider whether a complete scheme of protection afforded to the Taieri Plain generally is worth the great expense that must be incurred, and also, with respect to the works already carried out, whether the plain in its original state, allowing the flood waters free scope to spread themselves more or less over the whole of it, was not preferable to any partial scheme, confining them in one locality to the detriment of another.

The former, being what we propose should be done, has a disadvantage in causing a considerable area of the best land to be exposed to the floods, which cannot possibly be avoided, unless sufficient flood water can be impounded to reduce the volume to what the channel on the plain is capable of