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ROAD IMPROVEMENTS

Town Engineer's Report

Engineer's Office,
Invercargill,
September 7, 1920.

TO HIS WORSHIP THE MAYOR AND
COUNCILLORS—

Gentlemen,—Acting on instructions from
the Works Committee, I beg to submit the
following report and estimates of cost for
improving the condition of a portion of
the town streets, and the two arterial
roadways leading into the town, work
rendered necessary, owing to the change
in the class of vehicle now in general
use.

The streets proposed to be improved and
defined by the Works Committee are apart
from the arterial roads situated within
the town area between and including Gala
and Wood streets and Leven and Deveron
streets, also Tay street to the Eastern
boundary of the Borough, and Dee street
to the Waihapai Bridge.

In recommending the best form of con-
struction to be adopted in connection with
these streets, the difficulty encountered
is to estimate what the future traffic
conditions will be, more particularly in regard
to axle loads. The rapid development that
has taken place in the adoption of motor
driven commercial vehicles, carrying heavy
loads at high speeds, and with every pro-
spect of these conditions being increased,
tends to complicate the roading problem,
as a modern roadway at moderate cost,
that will prove quite satisfactory under
present conditions, will be a failure if it
has to withstand the heavy vibrations
that will be set up if the loading is in-
creased. The experience in some towns
has proved that an improvement in the
thoroughfares has almost immediately re-
sulted in a corresponding increase in the
carrying capacity of motor waggons and
vans, with the result that a further ex-
penditure has been necessary to still fur-
ther strengthen the roads to meet these
new conditions of traffic.

The correct method to adopt would, no
doubt, be to construct the roadway of suf-
ficient strength to meet anticipated future
conditions. Although this method may
be adopted in cities with a large revenue,
it is beyond the means of smaller com-
munities and in preparing my estimates I
have provided for substantial construc-
tion on those thoroughfares at present
known to be subject to heavy traffic and
varied the construction on other streets
to meet present conditions. This prin-
ciple may lead to heavier maintenance
charges, but against this we have the
comforts of a greater length of improved
roadway, a reduction in the wear and
tear on motor tyres, and the dust nuisance
greatly reduced, than if only limited
lengths of the more expensive construction
are carried out.

Regarding the annual charges which
will have to be paid in connection with
the cost of carrying out the works pro-
vided for in the estimate. It is safe to
assume that within the next year or two
all motor driven vehicles will be taxed,
and that the revenue from this source will
greatly assist in paying interest and other
charges on the expenditure. Apart from
this it is now generally admitted that the
day of the water-bound macadam road
is past, and some more permanent form of
roadway must be constructed to meet the
changed conditions of traffic; and so long
as the present class of roadway remains in
existence so much longer will the country
continue to send tens of thousands of
pounds out of the country for motor tyres
and such like. The greater proportion of
this sum could be saved to the community
by providing more permanent roads, which
would be a benefit to all instead as at
present being a drain on the financial re-
sources of the country.

Regarding the proposed new construc-
tion. If it had not been for the fact that
the Corporation own the tar, and, that
there is a difficulty in disposing of it, I
would have strongly recommended the
adoption of one of the South American
natural bitumen products in place of tar.
It has been definitely proved by practical
experience that bitumen used as a road
binder provides a more satisfactory road
with a longer life, and less maintenance
than can be obtained with tar; particu-
larly so in a wet climate, and, apart from
this, bitumen, due to its quick setting
nature permits of a roadway being open-

ed for traffic immediately the new surface
is laid without risk of damage.

No provision is made in the estimates
for dealing with the remaining fifty-one
miles of streets in the Borough. But in
regard to these I would advise that they
be taken in their order, according to
traffic they carry, and put in good repair
during the autumn and winter months,
and in the late spring, after rolling and
bruising with hard brooms the surface to
be tarred and sanded.

In regard to surface tarring the success
or otherwise of this form of road surface
treatment depends entirely on the weather
conditions. The roadway must be dry,
and the weather fine for at least twenty-
four hours after the tar is spread. A wet
road in the first case, or rain too soon
after laying the tar, it can be taken for
granted that the work will not be a
success.

Regarding future maintenance, provision
must be made for tarring and sanding all
tarred roadways every year, and not less
than every other year, for tarred mac-
adam surfaces.

Regarding concrete roadways the main-
tenance on these will consist of a thin
coating of bitumen and sand every sec-
ond or third year, according to the
amount of traffic the roadway carries; but,
allowing for this, the annual charges under
this head will be considered lighter than
on an ordinary water bound macadam
road carrying the same class of traffic.

I am,

Yours faithfully,
(Signed) G. F. CLAPCOTT,
Town Engineer.

IMPROVEMENTS OF STREETS.
ESTIMATES.

TAR, MACADAM AND CONCRETE ON
STREETS IN TOWN BLOCKS.

—Tar Sprayed Roads.—

Gala street, Leet street, Deveron
street, £3,100.

—Tar Macadam.—

Yarrow street, Don street (3in tarred);
Eak street, (macadam); Tay street, Cres-
cent (Carpeting); Tay street shruuuuu
cent, Tay street, Kelvin street, Dee
street, Dee street, East Road (carpeting
on existing road surface), £40,811.

—Concrete and Tar Macadam.—

Spey street (centre concrete, flanks mac.
adam); Leven street (flanks macadam);
North Road (flanks concrete), £23,167.

—Heavy Bitumen Macadam.—

Wood street, £2, 093.
Contingencies five per cent. £3,458 10s.
Total £72,629 10s.

Estimated cost as per schedule £72,629
10s. Plant, etc. £1,250; cost of raising
loan £750; total cost £74,629 10s.

Total cost say—£74,700; 1st year's in-
terest and sinking fund 7½ per cent.
£5,602 10s. Total estimate £80,302 10s.

GARDEN NOTES.

THE VEGETABLE GARDEN.

This month is a very busy one in the
vegetable garden, as almost every kind of
vegetable seed may be sown.

Make successive sowings of peas where
early-sown ones are well up.

Sow also French and runner beans on a
warm and sunny piece of ground, but if
the position is a cool one defer sowing
for a week or so.

Sow parsnips. For these the ground
should not be too rich with fresh manure,
nor should it be too loose. In either case
they are likely to form side roots, which
is a bad point in them. They like good
ground, but it should be moderately firm.
Sow thinly in drills 12in apart, and thin
them to 4in or 5in in the row.

Spring-sown onions require to be put in
rich ground. If the ground has been dug
and manured in the winter, so much the
better; if not, lose no time in trenching
or deeply digging the ground. Place good
rotted manure well down, and, if possible,

spread wood ashes or burnt soil on the
ground, working it well in. Tread and
rake the ground two or three times over
until the bed is as smooth as a table, then
sow the seeds in drills. Sow very shallow
—4in will do—and 12in between the rows,
covering the seed very carefully. I may
here tell you that sowing onions on loose
ground, and also sowing them too deep,
means long necky things like leeks, in-
stead of fine tubers which one might be
proud of.

Sow carrots of the Early Horn type,
and in a fortnight or so sow the main crop
—that is, the Intermediate.

Turnips, spinach, and lettuce should also
be got in, choosing a sunny day after a
good rain for this and all seed sowing.

Plant cabbage and cauliflower as soon as
possible after or during showery weather.

Seakale should now be ready for cover-
ing with pans or boxes to come in after
those that have been lifted for forcing.

Asparagus—a very fine vegetable—will
grow on any soil that is well cultivated,
but that which suits it best is a rich sandy
loam. It may be grown from seed sown
in drills 18in apart, and thinned out to
15in in the drills. In this case it will
not be fit for cutting in less than three
years. The best variety to get is the
Giant French. But to have asparagus
the second year and for many years from
the same bed it is best to prepare a bed
or beds in a proper way. Open out tren-
ches 3ft wide and 18in deep. Fill in the
bottom 6in with broken bricks. Cover these
with manure. Place some soil over this.
Get the two-year-old plants, and place one
row up the centre, and one on either side,
6in from the outer edge, spreading out
their roots evenly all round. Cover with
4in to 6in of soil. The heavier the soil
the shallower they should be planted. A
dressing of fresh stable manure should be
added in two or three weeks' time. This
is the best of all seasons for making a
bed of asparagus, just as the crowns are
on the move in the spring.

Where marrows, pumpkins, tomatoes,
and cucumbers are required no time
should be lost in getting them in. If
possible, give them a nice warm bed to
start them on. A hot-bed is easily
made if good stable manure be available.
For a good double light frame, three loads
will not be too much for a good, lasting
cucumber bed. A hot-bed is very useful
not only for the production of a good crop
of cucumbers, but for bringing on the
above-mentioned seeds, and also for start-
ing nearly all kinds of tender annuals.
It often occurs that old seeds germinate
fairly well on a nice warm bed where
they would fail if sown without bottom
heat.

TOMATOES.

The season for planting this appetising
and refreshing fruit is now around again.
There are one or two points of interest
that I should like to draw attention to.
Do not be in too great a hurry to plant
out unless you are pretty sure that in
your house you will be able to keep a
fairly warm temperature during very cold
changes in the weather. If you have
heat, well and good. If you are placed
in a position where late frost is not likely
to affect the temperature much, is all
right. But if these conditions cannot be
assured, take my advice and hold over
the planting for a week or two yet. Buy
good strong sturdy plants. It is a waste of
money, time, and labour to plant weakly
drawn plants, as it is ten chances to one
that they will not grow or will make a
very poor return even if they do grow.
If a plant measures as much across—that
is, from tip to tip—as it is long, you may
be sure it is not drawn and that it is all
right. The tomato is a tender plant,
but not a tropical plant, and it requires a
moderately high temperature, free access
of air, and, above all, a full flow of solar
light to bring it to perfection. Almost
any house or any shaped house will grow
them where these conditions can be se-
cured, and if the soil has been prepared
as advised in my previous notes, nothing
will be required but to give it a raking
down and a good treading before plant-
ing. On no account plant in loose soil.
Place the plants well down to make them
firm and steady. From 12in to 15in in
the row and 2ft 6in from row to row will
be a good distance apart.

"The Southland Daily News" is a very
appreciative journal; in a recent edition
the following heading appeared to a pa-
graph which indicated that the Session
was half over:—"The Session's Work,"
"Real Business to Begin." If real business
is just beginning now that the Session is
half over, we're wondering what they were
doing during the previous half of the ses-
sion. No wonder Adam Hamilton has been
quiet.

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