NOTICE OF MEETING

Notice is hereby given of the Meeting of the Infrastructure and Services Committee to be held in the Council Chamber, First Floor, Civic Administration Building, 101 Esk Street, Invercargill on Monday 29 October 2018 at 4.00 pm

His Worship the Mayor Mr T R Shadbolt JP
Cr L S Thomas (Chair)
Cr I R Pottinger (Deputy Chair)
Cr A J Arnold
Cr K F Arnold
Cr A H Crackett
Cr I L Esler

EIRWEN HARRIS MITCHELL
MANAGER, SECRETARIAL SERVICES

Finance and Corporate Services Directorate
Civic Administration Building • 101 Esk Street • Private Bag 90104 Invercargill • 9840 • New Zealand
DX No. YA90023 • Telephone 03 211 1777 • Fax 03 211 1433

Council's Values:

Responsibility	Take ownership of decisions and outcomes, both collectively and individually. • We willingly share our knowledge. • We acknowledge our mistakes, work to resolve them and learn from them. • We give and receive feedback in a constructive manner to resolve issues. • We do our job with total commitment.
Respect	Everyone is important, as are their views. • We support and care for each other. • We stop to listen, learn and understand. • We communicate in an honest, up-front and considerate manner. • We maintain confidences and avoid hurtful gossip.
Positivity	Always look on the bright side of life. • We are approachable, interested and friendly. • We are open and receptive to change. • We acknowledge and praise the efforts of others. • We work together as a team to get the job done.
Above and Beyond	Take opportunities to go the extra mile. • We take the initiative to improve our work practices to get the best results. • We challenge ourselves and each other to make it better. • We take pride in providing the best possible outcomes. • We are ambassadors for our Council at all times.

Council's Vision for the City:

Enhance our City and preserve its character, while embracing innovation and change.

Council's Vision:

We are an energised, fun and innovative team that makes it better for each other and our community.

Council's Mission:

Making it better by making it happen.

A G E N D A

Moved, seconded that the public be excluded from the following parts of the proceedings of this meeting; namely

(a) Minutes of meeting held on 24 September 2018
(b) Request to Award Contract 839 – Splash Palace Carpark Extension

The general subject of each matter to be considered while the public is excluded, the reason for passing this resolution in relation to each matter, and the specific grounds under Section 48(1)(d) of the Local Government Official Information and Meetings Act 1987 for the passing of this

resolution are as follows:

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Ground(s) under Section 48(1) for the passing of this resolution
(a) Minutes of meeting held on 24 September 2018	Enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations).	**Section (7)(2)(i)**
(b) Request to Award Contract 839 – Splash Palace Carpark Extension	Enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations).	**Section (7)(2)(i)**

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DISC GOLF COURSE { IN QUEENS PARK

A LOW COST WAY FOR THE WHOLE FAMILY TO GET ACTIVE

#1 101 FUN & FAMILY FRIENDLY THINGS TO DO, IN & AROUND INVERCARGILL

98 COMPETITORS AT THE FIRST NATIONAL TOURNAMENT (BIGGEST IN THE COUNTRY)

70 DISC GOLF SOUTH CLUB MEMBERS (BIGGEST IN COUNTRY)

MARTIN CONWAY
DISC GOLF SOUTH PRESIDENT

NAMED BDO ADMINISTRATOR OF THE YEAR AT THE ILT SOUTHLAND SPORTS AWARDS 2017/2018

490+ DISC GOLF SETS SOLD AT REBEL SPORT

300+ DISC SETS HIRED AT THE HERBERT ST SHOP

200+ PEOPLE ATTENDED THE LAUNCH IN QUEENS PARK

SPORT SOUTHLAND · DGS DISC GOLF SOUTH · ILT Your City. Your Trust. Invercargill Licensing Trust · healthy families Invercargill · PARKS · Community Trust of Southland Te Pou Arataki Pounamu o Murihiku · Invercargill City Council

INVERCARGILL CITY COUNCIL ELECTED MEMBERS

INTEREST REGISTER

ELECTED MEMBERS			
NAME	**ENTITY**	**INTERESTS**	**PROPERTY**
RONALD LINDSAY ABBOTT	Invercargill City Council Kiwi-Pie Radio 88FM Invercargill Invercargill Art Gallery Invercargill Venues and Events Management	Councillor Director / Broadcaster Council Representative / Board Member Director	
REBECCA RAE AMUNDSEN	Invercargill City Council Arch Draught Ltd BP Orr Ltd Task Ltd Arts Murihiku Dan Davin Literary Foundation Heritage South Glengarry Community Action Group SMAG Board Venture Southland Southland Regional Heritage Committee	Councillor Director Director Director Trustee Trustee/Chair Contractor Events Co-ordinator (Volunteer) Council Representative Council Representative Council Representative	

INVERCARGILL CITY COUNCIL ELECTED MEMBERS

INTEREST REGISTER

ALLAN JAMES ARNOLD	Invercargill City Council Ziff's Café Bar Ltd Buster Crabb Ltd Ziff's Tour Ltd Ziff's HR Ltd Ziff's Trust NZMCA Southland Aero Club Invercargill Club Invercargill East Rotary	Councillor Executive Director Executive Director Executive Director Executive Director Trustee Administrator Member Member Member Member	
KAREN FRANCES ARNOLD	Invercargill City Council Electricity Invercargill Ltd Powernet Ltd Pylon Ltd Invercargill Creative Communities Funding Scheme Southland Warm Homes Trust	Councillor Director Director Director Trustee/Chair Trustee	
TONI MARIE BIDDLE	Invercargill City Council Invercargill Venue and Events Management Limited Southland Museum and Art Gallery Trust Board	Councillor Director Trustee	

Members Interest Register 19 October 2018

INVERCARGILL CITY COUNCIL ELECTED MEMBERS

INTEREST REGISTER

	McIntyre and Dick	Partner – Executive Team	
ALEX HOLLY CRACKETT	Invercargill City Council Ride Southland Southland Youth Futures Advisory Board Venture Southland and Sub Committee	Councillor Chair Chair Council Representative	High Street Invercargill
IRWIN LLOYD ESLER	Invercargill City Council Bluff Community Board Bluff Maritime Museum Otatara Landcare Group	Councillor Council Representative Council Representative Member	
GRAHAM DAVID LEWIS	Invercargill City Council Invercargill City Holdings Limited	Councillor Director	
DARREN JAMES LUDLOW	Invercargill City Council Radio Southland Invercargill City Holdings Limited Invercargill Venue and Events Management Southland Museum and Art Gallery Trust Board Healthy Families Invercargill	Councillor Manager Director Director / Chairman Trustee Board Member	770 Queens Drive Invercargill

Members Interest Register 19 October 2018

INVERCARGILL CITY COUNCIL ELECTED MEMBERS

INTEREST REGISTER

	Murihiku Maori Wardens Southland Community Law Centre	Board Member Board Member	
IAN REAY POTTINGER	Invercargill City Council Southland Electronics Limited Santa Parade Organiser	Councillor Director Alice Pottinger (Wife)	171 Terrace Street Invercargill 9810
TIMOTHY RICHARD SHADBOLT	Invercargill City Council Invercargill Airport Limited Kiwi Speakers Limited SIT Ambassador	Mayor Director Director Contractor	
LESLEY FRANCES SOPER	Invercargill City Council Breathing Space Southland Trust (Emergency Housing) Omaui Tracks Trust National Council of Women (NCW) Active Communities Invercargill Public Art Gallery Citizens Advice Bureau Southland ACC Advocacy Trust	Councillor Chair Secretary/Treasurer Member Chair/Trustee Board Member Board Member Employee	137 Morton Street Strathern Invercargill 24 Margaret Street Richmond Invercargill
LINDSAY STEWART THOMAS	Invercargill City Council Invercargill City Holdings Limited Invercargill City Property Limited HWCP Management Limited	Councillor Director Director Director	

INVERCARGILL CITY COUNCIL ELECTED MEMBERS

INTEREST REGISTER

EXECUTIVE STAFF			
NAME	**ENTITY**	**INTERESTS**	**PROPERTY**
PAMELA GARE	Invercargill City Council	Director of Environmental and Planning Services	
CLARE HADLEY	Invercargill City Council	Chief Executive	
CAMERON MCINTOSH	Invercargill City Council	Director of Works and Services	
RACHEL REECE	Invercargill City Council Reece Property Limited	HR Manager Sole Director	
DAVID FOSTER	Invercargill City Council	Acting Director of Finance and Corporate Services Executive Director Foster and Associates Ltd	

MINUTES OF A MEETING OF THE INFRASTRUCTURE AND SERVICES COMMITTEE HELD IN THE COUNCIL CHAMBER, FIRST FLOOR, CIVIC ADMINISTRATION BUILDING, 101 ESK STREET, INVERCARGILL ON MONDAY 24 SEPTEMBER 2018 AT 4.00 PM

PRESENT: His Worship the Mayor Mr T R Shadbolt
Cr L S Thomas – Chairperson
Cr I R Pottinger – Deputy Chairperson
Cr A J Arnold
Cr K F Arnold
Cr A H Crackett
Cr I L Esler

IN ATTENDANCE: Cr L F Soper
Cr T M Biddle
Cr R R Amundsen
Mr C A McIntosh – Director of Works and Services
Mr R Pagan – Parks Manager
Mr P Horner – Building Assets Manager
Mr A Murray – Water Manager
Mr R Keen – Manager 3 Waters
Ms H McLeod – Communications Advisor
Ms L McCoy - Building Assets Administration
Ms L Kuresa – Governance Officer

1. **APOLOGIES**

His Worship the Mayor for lateness.

Moved Cr Pottinger, seconded Cr Esler and **RESOLVED** that the apology be accepted.

2. **PUBLIC FORUM**

2.1 **Submissions on the Amendment to the Management Plan for Stead Street Reserve**

Note: His Worship the Mayor joined the meeting at 4.02 pm.

2.1.1 ***Geoff Piercy***

In addition to his submission, the submitter took the meeting through his written submission highlighting the reasons as to why he strongly opposed the amendment to the Management Plan for Stead Street Reserve.

Cr Thomas thanked Mr Piercy for taking the time to present to the Committee.

2.1.2 ***Brian McFaul***

In addition to his submission, the submitter took the meeting through his written submission and highlighted the reasons why he supported this.

Cr Thomas thanked Mr McFaul for taking the time to present to the Committee.

2.1.3 ***New Zealand Motor Caravan Association Incorporated – Ian McKay***

In addition to his submission, the submitter took the meeting through the submission and highlighted key points in their submission.

Cr Thomas thanked Mr McKay for taking the time to present to the Committee.

3. **INTEREST REGISTER**

There were no changes to the Interest Register.

4. **MINUTES OF THE MEETING HELD ON 20 AUGUST 2018**

Moved Cr K Arnold, seconded Cr Pottinger and **RESOLVED** that the minutes be approved.

5. **MONITORING OF SERVICE PERFORMANCES**

5.1 **Levels of Service**

Moved Cr Crackett, seconded Cr K Arnold and **RESOLVED** that the report be received.

6. **MINERVA**

The report had been circulated and Mr Horner took the meeting through it.

Moved Cr K Arnold, seconded Cr Esler and **RESOLVED** that the report be received.

7. **TEMPORARY ROAD CLOSURES**

The report had been circulated.

Moved Cr Thomas, seconded Cr Crackett and **RESOLVED** that it be **RECOMMENDED** to Council that Council agrees that the proposed events as listed in the report will not impede traffic unreasonably

AND THAT

As permitted under the Local Government Act 1974 (Section 342 and Schedule 10) Council approves the temporary closure of roads for these events for the times, dates and locations as specified.

8. **SURREY PARK GRANDSTAND INITIAL SEISMIC ASSESSMENT REVIEW AND CONDITION ASSESSMENT**

The report had been circulated and Mr Pagan took the meeting through it.

Moved Cr Pottinger, seconded Cr K Arnold and **RESOLVED** that it be **RECOMMENDED** to Council that a combined repair works and seismic strengthening scheme be developed to remediate durability issues with the structure using appropriate detailing that achieves a score of greater than 67% NBS;

AND THAT

This report be brought back to Council for consideration along with costs of the repairs and strengthening.

9. **SUBMISSION ON THE AMENDMENT TO THE MANAGEMENT PLAN FOR STEAD STREET RESERVE**

The report had been circulated.

Mr Pagan said that the cost of the lease would be assessed by a registered valuer. The NZMCA did ask if the land was available for purchase. The consent requirements for the reserve was not required if it was allowed for in the Management Plan. Under Council's current plan, the activity for 383 would require resource consent.

In response to questions, the following answers were given:

1. The initial approach was for the reserve area. The other parcel of land adjacent to the reserve and landlocked could be incorporated into the reserve in the future. The reserve area will still be useful on its own for the Campervan Association. The reserve land alone will be adequate for the start.
2. Iwi has not been notified regarding the lease. It has been practice to discuss when disposal of land is being considered.

The Committee discussed this item at length and voiced their concerns about the non-reserve land at 383 Bond Street, and the need for a consent and Cr Amundsen pointed out that the recommendations did not relate to that area but only to the Stead Street Reserve land. Mr Pagan informed the Committee that the 383 Bond Street land was industrial and would need to have a consent before other activities could use it, that would be applied for at staff level but with the Committee's concerns he agreed that whatever activity was planned for that land in the future, a report would come back to the Committee.

Moved Cr Crackett, seconded Cr Esler and **RESOLVED** that it be **RECOMMENDED** to Council that the submissions be received;

AND THAT

The Management Plan is amended to allow for the leasing of a part of Stead Street Reserve for camping by the NZ Motor Caravan Association;

AND THAT

All costs associated with setting up and running the area is at the Association's cost;

AND THAT

A lease agreement be in place before any work commences.

Note: Cr A Arnold abstained from voting.

10. **URGENT BUSINESS**

Nil.

11. **PUBLIC EXCLUDED SESSION**

Cr Thomas informed the meeting that the in committee item with regard to Contract 742 – Mersey Street Foulsewer Renewal would now be deferred to the next Committee Meeting.

Moved Cr K Arnold, seconded Cr Crackett and **RESOLVED** that the public be excluded from the following parts of the proceedings of this meeting, namely:

(a) 2018/2019 Programme for Renewal of Asbestos Cement Water Mains Contract 838 Eldon, Tanner and Mersey Streets
(b) 'Contract 840 Streetlight LED Upgrade 2018/2019
(c) Disposal of Stopped Road Land

General subject of each matter to be considered	Reason for passing this resolution in relation to each matter	Ground(s) under Section 48(1) for the passing of this resolution
(a) 2018/2019 Programme for Renewal of Asbestos Cement Water Mains Contract 838 Eldon, Tanner and Mersey Streets	Enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)	**Section (7)(2)(i)**
(b) Contract 840 – Streetlight LED Upgrade 2018/2019	Enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)	**Section (7)(2)(i)**

(c)	Disposal of Stopped Road Land	Enable any local authority holding the information to carry on, without prejudice or disadvantage, negotiations (including commercial and industrial negotiations)	**Section (7)(2)(i)**

There being further business, the meeting finished at 5.30 pm.

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TO: **INFRASTRUCTURE AND SERVICES COMMITTEE**

FROM: **RUSSELL PEARSON – ROADING MANAGER**

MEETING DATE: **MONDAY 29 OCTOBER 2018**

UNSEALED ROADING ISSUES

SUMMARY

A public forum presentation was made by residents requesting the existing unsealed road surface in Staunton and Fowler Roads be upgraded utilising an Otta seal technique. This is a service level improvement request.

The approved Roading Activity Management Plan (AMP) does not have any planned service level improvements for unsealed roads either as seal extensions or Otta seals. The AMP suggests that resident funded projects could occur.

The cost of the proposed project works is consistent with Council's estimate at $250,000 for an Otta seal.

Otta seals, whilst lower cost, do have shorter lives and require further large investment at about eight years.

Otta seals have not yet been proven in Invercargill conditions but should be successful.

If the project was approved then funding (from a Low Cost Low Risk budget) for such a project would require deferring other safety projects which have a higher priority and are better aligned to the AMP.

Council has a number of areas where improvements could be undertaken and having selection criteria would assist in prioritising the best location for projects.

RECOMMENDATIONS

That this report is received

AND

That given the approved Roading Activity Management Plan has not made provision for service level improvements for unsealed roads, this request for Staunton and Fowler Roads be declined.

IMPLICATIONS

1.	*Has this been provided for in the Long Term Plan/Annual Plan?* No.
2.	*Is a budget amendment required?* No based upon the recommendation.

3.	*Is this matter significant in terms of Council's Policy on Significance?* No.
4.	*Implications in terms of other Council Strategic Documents or Council Policy?* Yes. If Council wishes to take a different approach to unsealed roads, the Roading Activity Management Plan may need to be reviewed.
5.	*Have the views of affected or interested persons been obtained and is any further public consultation required?* Not at this stage.
6.	*Has the Child, Youth and Family Friendly Policy been considered?* No. This report is the first stage of a decision process.

FINANCIAL IMPLICATIONS

No funding has been specifically allocated within the Long Term Plan for seal extensions or similar works to unsealed roads. Any funding support would be from budgets which are currently allocated to other safety projects. The NZ Transport Agency (NZTA) subsidy would need to be confirmed. Seeking assistance from residents may be an option as a shared approach.

BACKGROUND

At the Infrastructure and Service Committee meeting in June 2018, a public forum presentation (attached as ***Appendix 1***) was made by residents from Staunton Road requesting Council act in a manner consistent with valuing their customers, be solution focused and champion of the concerns raised by the West Plains community in relationship to the level of service they are afforded from the less than satisfactory roading assets.

Staunton and Fowler Roads are Access Roads within the roading hierarchy and are situated in the West Plains area. This area has seen a number of subdivisions requested and approved over the last few years and with this an increase in the actual and potential vehicle movements along these roads. The roads are unsealed roads and are maintained via Contract 812 Unsealed Road Maintenance. They are graded and have had maintenance metal (new gravel) added to them. The road area is relatively flat and side drainage is not that good. This leads to the road surface becoming saturated and potholes forming when heavy rain occurs. The residents have lodged regular service requests for maintenance and improvements.

The approved 2018-2021 AMP does not make any provisions for any seal extensions to the existing network. In earlier plans through the early 2000's, budgets were presented which included a sum of $100,000 per year which was to be placed into reserve and accumulated, and then work undertaken. However, each year during the review process, this was one of the early savings taken and no funding set aside for such work. For the last five or more years the AMP has been quite clear that no seal extensions would be considered.

The AMP is also a strategic document which could or should signal if Council looks to invest in areas such as service level improvements. It would be expected if such investment were required then this direction would be clear in the AMP and the 'problem' to be improved clearly identified. The approved plan does not signal service level improvements in these roads or other unsealed areas.

Is there a case for an improvement?

Part of the fundamentals of considering such a request is to establish if there is a sufficient case to justify investment. Typically a business case approach is taken to consider this.

At a strategic level the potential issues could be:

- Inappropriate road widths for the hierarchy of the location (currently an Access Road in the One Network Road Classification (ONRC) hierarchy) to serve the increase in traffic volumes from subdivision
- Inappropriate speed (either limits or operating speed)
- Unsafe intersections or longitudinal alignment
- Dust generation reducing visibility
- Dust contamination issues
- Maintenance and operational issues from the road materials or other inputs such as drainage
- Lack of amenity and access for other user modes (e.g. the presence of cyclists or pedestrians)
- The relevance of the road within the road hierarchy (currently ONRC) or in the future
- Location of the houses with respect to the road surface

District Plan Inputs

There have been a number of subdivisions lodged on Staunton and Fowler Road over the last 10 years. These subdivisions have now created approximately 51 properties which use these roads directly.

Council has historically considered a Development Contributions Policy (which could have sought applicants to contribute to road upgrading) but decided that it was not appropriate to require such a policy. Consequently developments which occur in many areas such as this means the developer is not required to make any financial contribution to the road improvement unless they so wish. Council has no other funding sources other than rates to pay for improvements and typically this style of improvements cannot attract NZTA subsidy. This also means that with the effects based legislation of the Resource Management Act, for roading, the only components in a subdivision where conditions can be applied relates to the location and layout of vehicle access and not the capability of the road, the surface or any potential additional dust generated. The effects based approach suggests that if you live and buy on an unsealed road you understand and are aware of that impact. Where the subdivision is permitted by the District Plan, then other residents within the area are not parties and their input (or requirements) considered.

The District Plan is not prescriptive of where a house can be built in respect to the road. If dust was a known potential issue then subdividing in such a way that building occurs away from the road would reduce inconvenience and nuisance but is only viable and controllable at the time when the house is built.

This however does not stop Council deciding to undertake service level improvements for any road.

Technical Options

If strategically an improvement was to be considered then the range of potential options evaluated would include:

- Status quo - ongoing maintenance

- Improve surface metals - use better gravels with better performance (e.g. less potholing or dust)
- Use dust suppressant - oil or other product on areas outside houses
- Use dust palliatives treatment (multi applications) on majority of road
- Advance treatments such as an Otta seal
- Construct and seal (seal extension)

A number of the options are less desirable from a performance, cost and risk approach.

Oil on roads, although currently an approved method, may in the future be unacceptable. This currently is permitted, at the residents' costs and resource consent has been granted to a local contractor to undertake the work. This is typically undertaken on short sections outside the houses and lasts typically for one summer. This also has the potential for reduced traction where the oil application is not undertaken correctly.

Dust palliative (suppressant) applications are not well proven in Southland but internationally they have had some success. There are a number of products on the market, and some care and testing is essential to ensure that the product does deliver the results expected. This approach needs ongoing application and has short term effectiveness (relative to the new seal life of 15^{+} years or an Otta seal of eight years).

All councils look to use a balance of available gravel materials at a reasonable cost. This is the economic balance and, given that the better gravels (for unsealed roads) have good binding properties (so they resist potholing), these materials can generate more dust due to the presence of the clay silts in the gravel matrix.

Otta seals are a technique developed as a cost effective, environmentally friendly and sustainable alternative to oil where a service level improvement is justified. It is recognised as a low cost seal option but has a shorter life and needs further investment earlier. The methodology uses a low application rate of bitumen into which is rolled with a new gravel layer. It has been used and trialled by some councils and some success has been achieved. Our Council has not trialled this approach on local materials. The Southland District has had limited use of the approach. Some concerns exist as to the life of the surface, and is seen as around eight years maximum and more importantly what the next methodology (at the end of the first lifecycle) would be. The current thinking is that the next treatment is again another Otta seal or a chip seal be applied but the expected life of this approach has not been tested. Otta seals are treated as an unsealed surface and if potholing occurs then they are patched much the same way an unsealed road is.

A construct and seal approach is the best solution but is the most expensive, potentially 2½-3 times that of the Otta seal. This is a proven technique with a longer life and is easily maintained.

Funding Options

The Otta seal when completed is still considered by NZ Transport Agency (NZTA) as an unsealed surface.

Funding for a seal extension is not likely to receive an NZTA subsidy unless a specific issue was being solved and could be justified. Council (and or residents) would need to expect to meet the full cost of a seal extension.

Otta seals, where they are shown to have good strategic alignment to the GPS and the AMP may be eligible for funding from the Low Cost Low Risk (LCLR) work category. The LCLR allocation is currently focused on safety related issues. Any competing project would need to have better justification over other projects held in the deficiency database (i.e. would a roundabout or signalised intersection with a safety improvement be a better build than an

Otta seal). Additionally the AMP has identified that road safety is a key issue and the current direction of the AMP looks to invest in intersection improvements.

The funding options which could be considered for an Otta seal are:

- Invercargill City Council (ICC) fully funds 100%
- NZTA – ICC joint funding (currently NZTA 57 % and ICC 43%)
- Resident funded (either cash or targeted rate)

Other Impacts

One of the important considerations for Council will be how to actually select the road for improvement where there are a number of locations which could equally have a similar request for improvements. A selection (or filter) criteria would be needed.

It is unlikely that Council would be able to consider and fund the number of requests made once this approach has been accepted and the first area undertaken.

What is the case for change in Staunton and Fowler Road?

The issues which were highlighted by residents from their submissions are:

- Narrow road width with difficult passing of vehicles
- Historical dust problems back to 1980
- Subdivision still happening
- Increase in number of properties and the amount contributed in rates (Staunton: 36 properties - $54,000 per year in rates, Fowler: 12 properties - $15,000 per year in rates)
- Better breaking performance through increased friction allowing motorists to stop within a safe stopping distance when our many children are cyclists or pedestrians
- Defect free trafficable surface, away from existing corrugations, potholes and minor shear failures
- No bald spots or significant changes in texture
- No wind rows of loose aggregates to throw cars around
- The many health implications with airborne dust particles
- ICC involved in Any Number is Too Many
- Residents have indicated the cost of the work is around $250,000 for an Otta seal and the Council share would be $130,000

Council Information (provided by Roading Manager)

The Rates Team has provided this information:

Road	Capital Value Total ($000)	Total Rates	Total Roading Rates	Number of Properties
Staunton	$19,394	$64,137	$13,489	39
Fowler	$ 3,860	$16,066	$ 2,923	12

ICC estimates (excluding additional water tabling required of $50,000) the Otta seal would be in the order of $250,000 for 3,200 metres of Staunton and Fowler Roads.

There would not appear to be any road safety records in the Crash Analysis System (CAS) suggesting safety issues.

The area has an increase in dust issues during the summer months which are typically November to March.

The road is an access road and whilst it links to others in the area it does not form any strategic network linkages.

A road width of six metres would be appropriate. The amenity expectation for cyclists and pedestrians in a rural environment from the One Network Road Classification (ONRC) are limited in terms of the levels of service required.

The cost of a construction and seal extension is approximately $600,000 (to a similar width of six metres).

A Net Present Value (NPV) calculation, which looks at testing the value of investing in a project over its lifetime, has been run for the Otta seal option. This tests the appropriate investment approach for many projects in roading, and it would be expected that a positive result would occur meaning that the work planned is more beneficial than continuing to undertake ongoing maintenance. The calculation is prepared over the whole of life period (i.e. 40 years) and this project has a NPV of -$581,236 (for the Otta seal and then chipsealing). This suggests that the investment has limited economic benefits using the roading economic evaluation approach (but does not value issues of dust or health).

CONCLUSION

The proposal for a service level improvement for Staunton and Fowler Roads needs to be carefully considered by Council. Planned improvements such as this should align to the AMP and be included in the future planning if they are required by the community.

The approved AMP does not have any planned service level improvements for unsealed roads either as seal extensions or Otta seals. The AMP suggests that resident funded projects could occur.

The cost of the proposed project works is consistent with Council's estimate at $250,000.

Otta seals, whilst lower cost, do have short lives and does require further commitment and investment within eight years. Otta seals have not yet been proven in Invercargill conditions but should be successful.

If the project was approved then funding (from a LCLR budget) for such a project would require deferring other safety projects which have a higher priority and are better aligned to the AMP.

Council has a number of areas where improvements could be undertaken, and having agreed and suitable selection criteria would assist in prioritising the best location for projects.

****

APPENDIX 1

25 May 2018

Russell Pearson

ICC Roading Manger

Re Staunton Road Sealing Options

Dear Russell

Further to your draft proposal and subsequent discussion, given the cost implications to local ratepayers contained within your option letter dated February 2016, this has forced us to investigate more fiscally palatable alternatives, whilst still achieving the outcomes of a safer, more environmentally responsible road surface for the people most affected, the residents.

This has led resident's to promote a treatment for our road we consider to be far better value for money with a higher ratio of benefits relative to its costs, "Bitumen Dust Suppression Solution" commonly referred to as " Otta Seal" or "Nota seal"

Background

The New Zealand road network includes many kilometres of unsealed pavement controlled by Local Authorities. As residential 'life-style' developments spread into rural areas, horticultural activities expand and agricultural production rapidly increases, the effects of airborne dust particles created by traffic using unsealed roads is seen as hazardous and unpleasant. Road Science and Downer New Zealand have a proven and cost effective solution that minimises dust from unsealed roads while avoiding environmental risks associated with a number of other dust suppression products.

This solution involves regular maintenance grading, rolling and aggregate application, followed by a capping layer including an emulsified binder. This treatment suppresses dust while preserving the surface shape of the pavement over the medium term, allowing traffic and cyclists to safely use the road without encountering or creating clouds of dust.

Many examples exist where this solution has successfully been used to treat unsealed roads, Queenstown Lakes District Council region. Roads in this region provide access to adjacent life style properties, vineyards and tourist attractions and dust has been a constant issue. Previously waste oil was applied to the unsealed roads to suppress dust but this method can provide a relatively short period of relief and it can have serious environmental consequences with run-off polluting nearby water-ways. New Zealand civil construction companies have developed a modified bitumen emulsion that binds the capping layer of aggregate over the unsealed pavement formation. This provides a measure of waterproofing that prevents the creation of pot-holes during periods of rain. The re-sheeting or addition of aggregates or road aggregate is also restricted to the initial application of the capping layer, and minimal aggregate losses are experienced in the years following the treatment

Southland District Council have been using this treatment successfully in our conditions and climate, including Borland Lodge, Sinclair Rd Te Anau due to lifestyle development and more demand on the unsealed pavement and Slope point due to increased tourist numbers. Residents of Sinclair Rd have attested to a profound change in level of service with the change away from unsealed to "capped"

METHOD FOR CONSTRUCTION OF DUST SUPPRESSION SOLUTION

1. The dust suppression solution is most cost effective if undertaken at the time of a routine unsealed road maintenance cycle. Typically unsealed roads receive regular grading, shaping and compaction including metal application. This is to replace the pavement materials thrown into side drains and berms by traffic or lost by breaking down into fine particles that create airborne dust that is blown onto adjacent land. Regular grading reinstates the shape or cross-fall of the pavement that encourages drainage. The modified bitumen binder that holds the surface aggregate in a capping layer and suppresses dust is applied at the completion of the routine maintenance shaping and grading sequence.
2. The equipment required includes a grader suitable for maintenance grading, trucks for spreading pavement aggregate, vibrating rubber-tyred or combination steel and rubber-tyred roller, a drag broom and water cart, and a bitumen emulsion sprayer.
3. After the installation of appropriate traffic management, the grader will commence shaping the surface of the unseal road, dragging excess aggregate from the shoulders and side drains, and restoring the shape and cross-fall of the pavement. Typically a cross-fall of 4% - 6% will be targeted; ensuring rain fall will quickly run off into side drains. Culverts and side drains will also be checked for adequacy and clearance during this phase.
4. Following initial shaping, additional aggregate may be required to restore strength in the pavement. The amount of additional aggregate required will be based on the standard unsealed pavement design for the anticipated traffic volumes. Delivery trucks will spread the aggregate as determined by the grader operator. Survey control could be used to establish final levels, but it is more likely that the grader operator's eye for a satisfactory alignment will be effective. The surface will be graded to achieve a smooth ride, and if required water will be added by the water cart to aid compaction.
5. Compaction of the pavement will be performed with a vibrating roller. Rolling will continue until the materials are compacted as determined by the operators experience, proof rolling, or the use of a compaction testing tool such as a Clegg Hammer or Nuclear Density Meter. The finished compacted surface shall be hard, even, and dry before the application of the capping materials.
6. The capping materials that will create a running surface will waterproof the surface and prevent the generation of dust. The modified bitumen emulsion is sprayed onto the pavement surface at an application rate of 3.0l/m2. A 15mm – 20mm layer of clean AP27 aggregate material from a quarry producing a hard rock product shall be applied to the emulsion surface using a chip spreader or roller spreader. Once spread the aggregate material shall cover the entire surface of the traffic lanes, and there will be no gaps or 'windows' with the underlying surface showing through.
7. The characteristics of the emulsion allow it to permeate the layer of AP27 before the emulsion completely breaks. Rolling and brooming the AP27 surface assists with the penetration of the binder into the capping layer and promotes curing of the emulsion. The finished capping layer acts like a waterproof mastic membrane over the pavement base. The texture on the surface looks like a chip seal completed with large chip that has been infilled with a fine aggregate material. There may be some loose chip during the first few weeks following the application of the capping layer, but after this settling-down period, there will be very little loose chip or dust.
8. The water-proofed and textured capping layer created in this process is very effective at minimising dust issues on low volume unsealed roads for a period of years. The life of this solution will be limited by increasing traffic volumes and heavier vehicles as the capping layer will start to break up under shear forces. Steep and windy sections of road will also result in shorter life for this solution.

Financials

Total project cost of $246,855. The cost per sq meter for dust suppression has been quoted to us $12.03 m² for full construction preparation, TTM requirements and application of the suppressant treatment outlined in the methodology above.

This treatment option is less than 50% of the full chip seal costs quoted in your options letter. We firmly contest that the benefits associated with this treatment are significant, and would provide a more acceptable level of service to the residents with this escalating traffic environment.

We are proposing the ICC and NZTA fund the improvements in total

Staunton Road Sealing costs												
Cost per M2	(A) Stauton Road only Area M²	(B) Stauton + Fowler Area M²	Intrest Rate %	# properties A	# properties A+B	0 Yr per property A	ICC / NZTA Fund 50%	5 Yr per property A	10 Yr per property A	0 Yr A+B	5 yr A+B	10yr A+B
12.03	14520	20520	5	30	47	5822.52	0%	1320 Pa 6600 OA	744 pa 7440 OA		5252.25	1188 Pa 5940 OA	672 pa 6720 Oa

ICC and NZTA share the costs. Your letter states that funding via NZTA is not permitted under the current funding rules however our enquires have concluded the contrary. ICC Funding assistance rate (FAR) of 53% is projected for 2018-19, and the information we have received is that dust suppression treatment and or seal extension can be funded under "minor Improvements" when a safety element can be justified within the annual plan submission to the Agency.

Conclusion

We request the Invercargill City Council act in a manner consistent with valuing their customer's, be solutions focused and champion of the concerns raised by the West plains community and residents in relationship to the level of service they are afforded from the less than satisfactory roading asset.

To give effect to this request above requires the support of the Council and application or amendment to the NZTA annual plan funding request for $130,833 under "minor improvements"

The safety justification for the funding submission includes,

- Increased breaking performance through increased friction, allowing motorists to stop within a safe stopping distance when our many children are cyclist or pedestrians
- Defect free trafficable surface, away from existing corrugations potholes and minor shear failures
- No bald spots or significant changes in texture
- No windows of loose aggregate to throw cars around
- The many health implications with airborne dust particles

We note that ICC are supporters of Any number is to many campaign", we are asking you to put this support into action

ANY NUMBER IS TOO MANY

Regards

West Plains Rep's

Nick McCleery

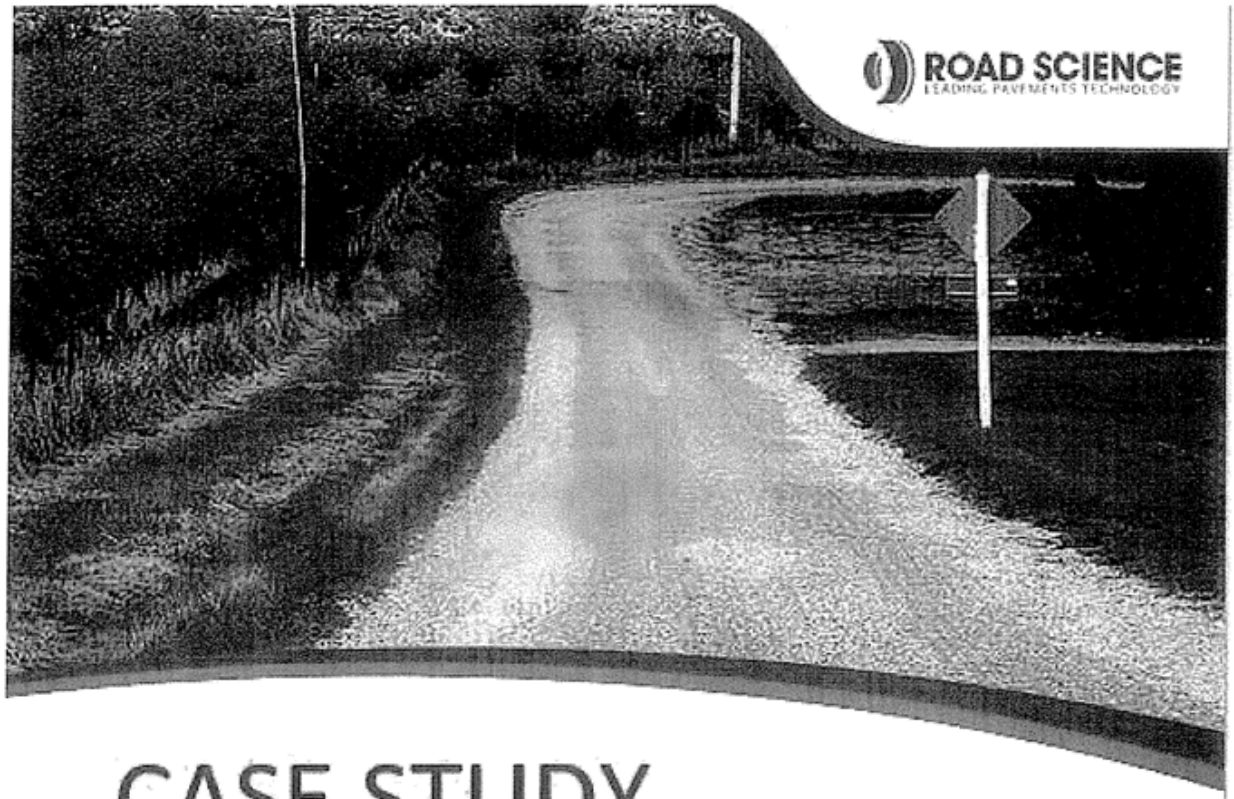
Jonathon Duffy

Ron Giles

Financial analysis

I29

	A	B	C	D	E	F	G	H	I	J	K	L	M
1					Staunton Road Sealing costs								
2	Cost per M2	(A) Stauton Road only Area M²	(B) Stauton + Fowler Area M²	Intrest Rate	# properties A	# properties A+B	10 Yr per property A	ICC / NZTA Fund 50%	5 Yr per property A	10 Yr per property A	0 Yr A+B	5 yr A+B	10yr A+B
3	12.03	14520	20520	5	30	47	5822.52	0%	1320 Pa 6600 OA	744 pa 7440 OA		5252.25 1188 Pa 5940 OA	672 pa 6720 Oa
4							2736.58	53%	624 Pa 3120 OA	349pa 3496 OA		2468.56 558 Pa 2791 OA	315 pa 3158 OA
5													
6													
7													



CASE STUDY

QUEENSTOWN LAKES DISTRICT

Queenstown Lakes District Council faces considerable pressure to improve the environmental quality of their gravel road network. The District is experiencing rapidly spreading communities in lifestyle living, horticultural development and dust sensitive industries such as viticulture.

Downer is the road network maintenance contractor for Queenstown Lakes District Council, and has in the past carried out an expensive program of oiling gravel roads in an attempt to settle and control dust.

In recent times Downer in conjunction with Road Science has developed a gravel road dust suppression treatment.

The treatment is a bitumen based product that offers value for money with environmental benefits.

THE PRODUCT

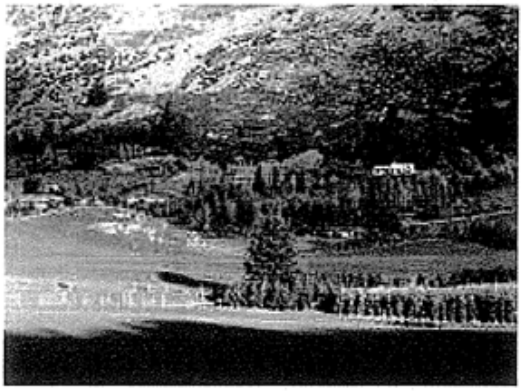
The treatment uses a modified bitumen emulsion to bind maintenance metals to form a strong, pliable mastic capping on the surface of a gravel road. With traffic use the excess fine aggregate has worn away, and a mosaic of larger stone remains as a dust free wearing course. The treatment minimises dust and provides cost savings because potholes, grading, and re-metaling are significantly reduced and travel disruption is minimised.

The modified bitumen emulsion binder is applied cold and therefore is safe to use avoiding the hazards associated with applying hot bitumen products.

ROAD SCIENCE
LEADING PAVEMENTS TECHNOLOGY

PROJECT 1

BASE SLOPES OF MOUNT BARKER - LIFESTYLE BLOCKS AND VINEYARDS



PROBLEMS BEING ENCOUNTERED:

- A SELDOM USED GRAVEL ROAD TURNED INTO A BUSY ACCESS ROUTE DUE TO LIFESTYLE BLOCKS
- THE PREDOMINANT NORTHERLY WIND SMOTHERED THE NEW HOUSES, VINEYARDS AND PROPERTIES IN DUST
- GRADING AND RE METALING COST ROSE SHARPLY

THE DUST SEAL SOLUTION PROVIDED:

- SIGNIFICANTLY REDUCED DUST • STABILISED AN EXISTING ROAD
- RESIDENTS WERE GIVEN QUALITY, RELIABLE ACCESS THROUGH-OUT THE YEAR

ROAD SCIENCE
LEADING PAVEMENTS TECHNOLOGY

PROJECT 5

COALPIT ROAD IS A GRAVEL ROAD SERVICING A HIGHLY SPECALISED GRAPE GROWING AREA OF THE GIBBSTON VALLEY, NEAR QUEENSTOWN

PROBLEMS BEING ENCOUNTERED:

- TRAFFIC WAS CREATING SIGNIFICANT DUST ISSUES • WINTER MAINTENANCE ISSUES
- CORRUGATIONS ON THE STEEP INCLINE REQUIRED INTENSIVE MAINTENANCE GRADING

▪ DUST WAS EFFECTING POLLINATIONTHE DUST SEAL SOLUTION PROVIDED:

- REDUCED MAINTENANCE GRADING • IMPROVED ACCESS RELIABILITY • IMPROVED VINE FRUITING

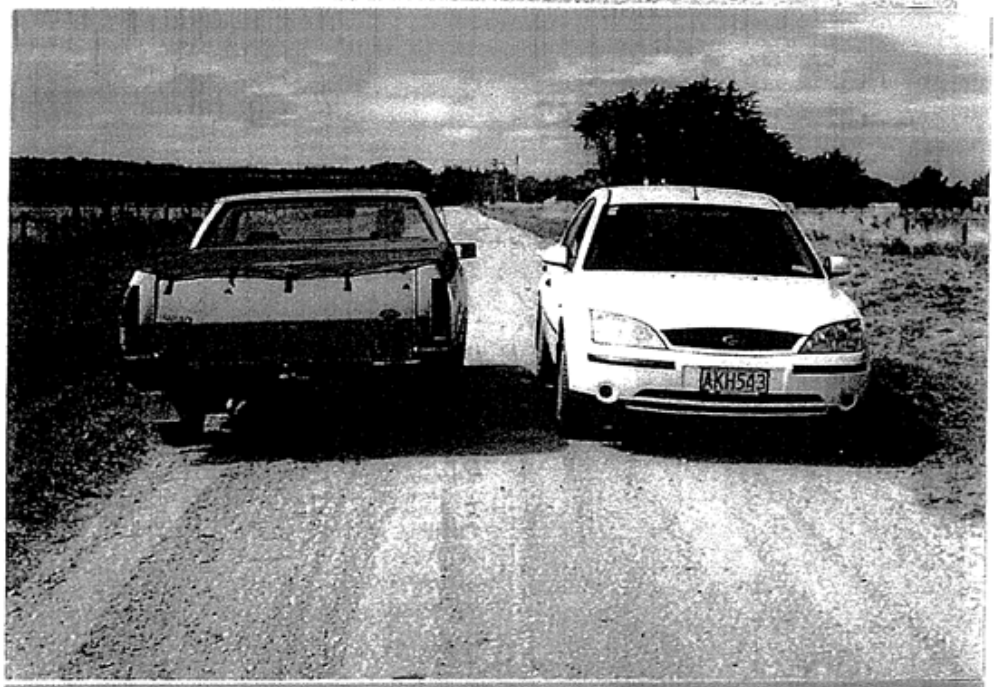
Staunton Road Properties		Fowler Road Properties	
Address	**Rates Per Annum**	**Address**	**Rates Per Annum**
240	$2,067.45	77	$1,852.71
226	$1,888.50	61	$1,190.61
158	$1,441.13	51	$1,416.06
110	$677.68	37	$2,121.21
346	$680.86	30	$880.41
93	$1,524.18	48	$880.42
43	$813.21	70	$1,002.11
3	$918.63	16	$2,121.12
270	$1,548.50	99	$1,673.77
280	$2,425.35	19	$800.56
227	$1,512.72	17	$1,297.98
321	$1,763.25	79	Not Displayed
329	$904.29	**Total # Properties**	**Total Annual Rate Contribution**
293	$2,049.55	**12**	15K
295	$1,763.25		
297	$1,154.81		
209	$1,405.33		
193	$2,496.92		
183	$2,568.50		
175	$1,201.34		
333	$1,083.23		
341	$886.40		
343	$1,977.98		
251	$975.85		
229	$1,315.88		
208	$2,389.56		
212	$1,512.72		
250	$1,960.09		
252	$1,977.98		
264	$1,298.30		
127	$1,602.17		
148	$993.76		
336	$657.33		
294	$1,673.77		
298	$1,591.45		
210	Not Displayed but 1.7m valuation		
Total # Properties	**Total Annual Rate Contribution**		
36	$54K		

**The Total amounts shown in both columns have been rounded up to the closet thousand on 05/07/2018*

Nick McCleery 0273912562

Nick.McCleery@kiwirail.co.nz


AKH543


AKH543


AKH543

12-4-80

ably on orders.

And all this in less than 18 months! Come the next election and only Stewart Island will remain New Zealand owned. That is, if "Reds under the Bed" Rob condescends to allowing another election. He has had it his own way for too long.

M. R. Loan

[Abridged. — Ed.]

West Plains Roads

Sir, — I am writing in full support of the two previous letters you have received on the inadequacy of the Southland County Council to properly maintain the roads — Bay road — Forde road corner — to West Plains road. I would like to extend the area to include Staunton road to New River Ferry.

I have resided in the West Plains area for the past 11 years and in all that time there has been no upgrading of our roads at all and the volume of traffic has increased fourfold, as have our rates to the council.

About two years ago I did call at the Southland County office to make my dissatisfaction known, and duly signed a written complaint, but was never favoured with the courtesy of a reply.

My original complaint was, from memory, that the roads Staunton road to New River Ferry were too narrow, so much so that to pass another vehicle you have to steer your car on to the grass verge or wait in a driveway for the other vehicle to pass. It's really quite exciting to meet a sheep truck or similar vehicle on the road. The judders and pot-holes are like something from the 1940s but alas our cars are not as sturdy as those of that period. The condition of all roads in the area is similar to the above.

In the area we have a stud horse establishment whose stallions pay court which are permitted by God are those which a person does, privately, to, or in relationship with, his or her partner in a true marriage and remembering that in every audience there are many who are not in a true marriage if in any marriage at all.

Let's Clean Up

Sir, — In support of the letter signed "Fed Up" and in disappointment at our city fathers attitude to the staging of "Further Confessions of a Window Cleaner", I would like to draw attention to what the Bible says in regard to this. Romans 13, versus 11-14, Good News Bible.

Christian

Hoax Radio Call

Sir, — After hearing a mayday call on a citizen band radio on Monday night, then reading in the paper on Wednesday that it was a hoax, it really made me wonder what people are.

One of these days there will be a real mayday call and no one will do anything about it, which could mean someone's life would be in danger.

I think a lot of other C. Bers would feel the way I feel.

C. Ber

Bronze A: Mesdames J. Smith 33, Proctor 32.
Bronze B: Mrs J. Small 33.
Competition: Mrs H. Dobbie.
Handicaps: Mrs J. Small gained 7 handicap of 36.
Hostesses: Mesdames V. Proctor, Peters.

Photo Taken of stationary vehicles.

Road measured at that point 4.3mt

Subdivisions in area increased. Still happening.

Staunton & Fowler Rds occupation rate.

Fowler Rd — 7 Permanent houses.

Staunton Rd — 13 " "

Subdivisions still happening.

Grading of Road not effective

Signatures being gathered.

Been a resident for 37 years
No change in all that time
but rates do!

10 February 2016

Re Staunton Road Sealing Options

Further to our discussions I have looked at options to how this type of project could get some traction.

At present Council in its long term planning does not make any allowance for seal extensions and consequentially no specific budget is available to directly contribute to this project as has been previously conveyed to you. Some years ago a budget was allowed annually but this was regularly removed and in the 2014 Asset plan it was a specific change to indicate seal extensions were not planned. Also you will be aware that the New Zealand Transport Agency (NZTA) who provides funding assistance for some type of roading currently has no categories where your roading area would be eligible for assistance funding to help reduce the costs.

As Council has no policy on this type of proposal (ie self-funding), you will have to be aware that the information following is conceptual and would need specific consideration by Council before you would want to proceed. There could be impacts on Council borrowing policy where significant loans were needed which could limit the extent Council may wish to support such activities.

One difficulty for Council will be deciding how many projects such as this to support, even only if as the organisation to raise the loans and then recover them. There are ongoing administrative costs (such as maintaining targeted rating areas) with such schemes and future owner's willingness to want to pay as properties change ownership. All these factors are consideration at a political level as to whether Council would be interested in participating.

The assumptions I have made are:

The roads which would be sealed would be both Fowler Road (1km) and Staunton Road from No 127 to the bridge by West plains School Road (approximately 2.42Kms).

This provides access to both West plains and West Palins School roads on a sealed surface. I have deliberately not added the section from Ferry Road to reduce the cost as much as possible.

The road would be formed and sealed to a 6m width which is appropriate for an access road. It would also have mail box bays etc sealed (which are not a high cost). We typically use a budget figure of around $170,000 per kilometre. This rate is seen as a reasonable rate for this concept and includes preparation, some shaping gravel and sealing. The cost implication and recoveries are based on this rate.

My observations are that there are approximately 47 properties with 30 houses (ie some are not developed or are farm land) along both Fowler and Staunton which would directly benefit from this project.

The concept is to find a way to pay for this work and the costs be shared over time.

It is assumed Council would be able to raise a loan for any works and this would be recovered (all or some) from owners or households via a targeted rate over the loan period, (20 years). It is anticipated this is would be a charge against the property rather than the current owners. Council has not used this approach previously for roading and this would be a political decision if the approach is acceptable.

It is also assumed that the owners would have ALL agreed how to fund this and where a capital injection is provided this is prepaid to Council by all parties.

If further development occurs some predetermined agreement would exist which shares costs back and reduces future payments potentially. Council does not have a formal policy (such as a development contribution policy) and I have not researched if legally this could be enforced but the principle is that further development should contribute as they gain the value by having a sealed road.

Base data (all ex GST)

Length of works
Flower 1 km Staunton 2.43 Km

Cost of Project	$ 583,000
Loan terms	20 year
Interest rate	5% or 6.5%
Other party Contributions	10% or 15% (from reserves but sources unknown?)
No of Properties	47
No of Hoses	30

Also we have looked at the cost of maintenance over an evaluation period of 40 years (as this gives the an initial seal and two reseals over life cycle) and is the economic period NZTA utilises for projects)

Unsealed Roads	$105,000 (for 40 years
Sealed road	$ 150,000 (for 40 years).

Please see attached spreadsheet for detail.

I see that the analysis suggests that:

Based on properties an annual extra cost of $1000 per 47 properties, or alternatively $1600 per existing house based on 5 % interest rate. ($1100 and $1800 if rate is 6.5%)

If a one off capital contribution is made this could change the annual additional charge.

There are a range of solutions to pay for such a scheme but the real issue is the ability to reach agreement with all parties to contribute and this to be agreed as a legal mechanism to administer such a scheme.

The impact of the maintenance costs is not considered significant as once it is sealed Council would generally maintain that surface. It is not likely that any adjustment to the rate levied on properties would fund the sealing.

Conclusions

The significant issues are:

- Ability to get agreement of all property and or house owners to participate
- Agreeing the terms of the split of costs if not evenly spread, what rationale would be used
- Agreement of Council to be willing (and legally) able to participate as a funder/ recovery agent
- Interest rate variability over the 20 year term and what that might do to repayments
- Risk of costings of work. Conceptual budget figures have only been used
- Mechanism to get future house owners who build to contribute

As previously noted, Council has no plans to fund seal extensions.

No other funding is likely from NZTA and the most likely methodology would be a self-funded approach.

R W Pearson
Roading Manager

In
1000's $

Capital		Interest Rate	Term - Years	Other Non-Owner Funding	Resident Funding	Net Funding from Loan	Annual Repayment of Principal and interest	Annual Cost per property (47 props) Princ + Interest - 1000's	One Off Capital per Property	Annual Cost per house (30 houses) Princ + Interest	One Off Capital per House
583		5	20	0	0	583	47	1.0	0.0	1.6	0.0
583		5	20	0	100	483	39	0.8	2.1	1.3	3.3
583		5	20	0	150	433	35	0.7	3.2	1.2	5.0
583		5	20	87.5	0	495.5	39.8	0.8	0.0	1.3	0.0
583		5	20	87.5	100	395.5	32	0.7	2.1	1.1	3.3
583		5	20	87.5	150	345.5	27	0.6	3.2	0.9	5.0
583		5	20	58.3	0	524.7	42	0.9	0.0	1.4	0.0
583		5	20	58.3	100	424.7	34	0.7	2.1	1.1	3.3
583		5	20	58.3	150	374.7	30	0.6	3.2	1.0	5.0
583		6.5	20	0	0	583	53	1.1	0.0	1.8	0.0
583		6.5	20	0	100	483	44	0.9	2.1	1.5	3.3
583		6.5	20	0	150	433	39	0.8	3.2	1.3	5.0
641	Cost +10%	5	20	0	0	641	52	1.1	0.0	1.7	0.0
641	Cost +10%	5	20	58.3	0	582.7	47	1.0	0.0	1.6	0.0
641	Cost +10%	5	20	58.3	100	482.7	39	0.8	2.1	1.3	3.3
641	Cost +10%	5	20	58.3	150	432.7	35	0.7	3.2	1.2	5.0

	Cost												
641	+10%	6.5	20	0	0	641	58	1.2	0.0	1.9	0.0		
	Cost			58.3									
641	+10%	6.5	20		0	582.7	53	1.1	0.0	1.8	0.0		
	Cost			58.3									
641	+10%	6.5	20		100	482.7	44	0.9	2.1	1.5	3.3		
	Cost			58.3									
641	+10%	6.5	20		150	432.7	39	0.8	3.2	1.3	5.0		
	Cost												
700	+20%	6.5	20	0	0	700	63	1.3	0.0	2.1	0.0		
	Cost			58.3									
700	+20%	6.5	20		0	641.7	58	1.2	0.0	1.9	0.0		
	Cost			58.3									
700	+!0%	6.5	20		100	541.7	49	1.0	2.1	1.6	3.3		
	Cost			58.3									
700	+!0%	6.5	20		150	491.7	45	1.0	3.2	1.5	5.0		
				15%			Max	1.3		2.1			
				10%			Min	0.6		0.9			

Nick McCleery

From: nick mccleery <cleeryz@gmail.com>
Sent: Monday, 9 July 2018 8:23 a.m.
To: Nick McCleery
Subject: Fwd: Staution Road

Forwarded conversation

Subject: **FW: Staution Road**

From: **Russell Pearson** <russell.pearson@icc.govt.nz>
Date: Fri, Nov 20, 2015 at 7:36 AM
To: "cleeryz@gmail.com" <cleeryz@gmail.com>

Cost for the last 5 years:

2010/2011	8 grades - $1152 gravelling
2011/2012	14 grades
2012/2013	11 grades
2013/2014	7 grades
2014/2015	8 grades - $27780 dunite gravelling (including water cart & roller)

Based on length of Staunton Rd as a portion of the total unseal network, based the annual average costs for grading, potholes, drainage inspections etc it is approximately $2308 per year.

We would be suggesting a " fit for purpose" seal width of 6.0m would be required for an Access Road – Low Volume (that's it's classification). Current gravel width is a little under 5m.

Hope this helps.

If you wish to make a presentation to the Public Forum at the Infrastructure and Services Meeting (30 November) you will need to advise us by next Wednesday please.

Russell Pearson | Roading Manager | Invercargill City Council

1

TO: **INFRASTRUCTURE AND SERVICES COMMITTEE**

FROM: **RUSSELL PEARSON, ROADING MANAGER**

MEETING DATE: **MONDAY 29 OCTOBER 2018**

NATIONAL LAND TRANSPORT PROGRAMME FUNDING

SUMMARY

The funding requested by Council through the National Land Transport Programme (NLTP) has been generally approved in line with the Roading Activity Management Plan (AMP) request.

Funding allocation for cycling is requested.

Footpaths are now a subsidised activity and Council will receive additional subsidy from New Zealand Transport Agency (NZTA).

RECOMMENDATIONS

That this report is received

AND

That Council approves an allocation of $25,000 per year to cycling from the Roading budget

AND

That Council notes that Roading will receive additional subsidy from New Zealand Transport Agency (NZTA) which will require reinvestment into transport related projects.

IMPLICATIONS

1.	*Has this been provided for in the Long Term Plan/Annual Plan?* No
2.	*Is a budget amendment required?* No
3.	*Is this matter significant in terms of Council's Policy on Significance?* No
4.	*Implications in terms of other Council Strategic Documents or Council Policy?* No
5.	*Have the views of affected or interested persons been obtained and is any further public consultation required?* No. The Local Government Act 1974 Section 342 does not require consultation.

6.	*Has the Child, Youth and Family Friendly Policy been considered?* Yes. The events support this policy function.

FINANCIAL IMPLICATIONS

Additional subsidy from New Zealand Transport Agency (NZTA) is available for footpaths but they have indicated that any savings must be reinvested into transport. Reallocation of Council's funding is requested such that the Cycling Strategy can be delivered.

BACKGROUND

The NZTA has announced the allocations available for Council for the next three year period of 2018 - 2021 and attached is a summary table (refer to ***Appendix 1***).

Generally the funding requested which forms part of the Roading AMP has been approved but a small number of variations have occurred.

The Maintenance and Renewal sections, there are two important variations:

- Footpath maintenance and renewals will now receive a subsidy whereas in the past this work was fully funded by Council. This subsidy to Council is approximately $1,040,000 per year.
- Drainage renewals (kerb and channels) planned in the 2021 year has been reduced, compared to the AMP which had planned to increase the level replacement. (The work reduction is approximately $500,000 in total ($240,000 of ICC's share) over the 2020 and 2021 years). Future decisions may be required if this work is undertaken without subsidy.

The Low Risk Low Cost category of work request included two projects – Lake Street improvements (potentially the ICC section) and the Bluff to Invercargill cycleway. Both of these projects did not have Council local share allocated within the Long Term Plan process and it was anticipated these would be funded by others but needed to be within the Invercargill City Council (ICC) programme to ensure that the NZTA subsidy was provided. Both projects have been included in the programme.

Cycling and access is a key element of the Government Strategy for Transport (GPS previously reported to Council) and together with the Ride Southland Strategic Plan it sets out the key objectives to increasing cycling and safety in Southland. As part of the NLTP process, a bid was made for funding of a Safe and Sustainable Transport Advisor to be employed to work with and coordinate how the strategy was delivered. This work stream was included within the NZTA work category 432 being promotion, education and advertising. This work area also includes the Road Safety Southland projects.

This report seeks approval to allocate $25,000 of funding to Cycling from the additional subsidy provided by NZTA (from footpaths).

NZTA have indicated that where footpath work content is not increased, the additional funding being invested into footpaths would need to be reinvested within the transport area; otherwise the subsidy may not be provided. These conditions are still being clarified.

CONCLUSION

The funding requested by Council has been generally approved in line with the AMP.

Additional subsidy is now being provided by NZTA for footpaths.

Funding allocation is sought for delivering the walking and access component of the AMP.

****

APPENDIX 1

Work category code	Phase Name	Work category name	2018-21 Total requested	2018-21 Total Allocated	3 Year Variation		2018/19 Total cost	2018/19 Total cost for approval	2019/20 Total cost	2019/20 Total cost for approval	2020/21 Total cost	2020/21 Total cost for approval		2018/19 FAR	2019/20 FAR	2020/21 FAR
3	Programme business case	Activity management planning improvement	115,000.00	115,000.00	-		15000	15000	50000	50000	50000	50000		57	56	54
3	Programme business case	Activity management planning improvement	25,000.00	25,000.00	-						25000	25000				54
3	Programme business case	Activity management planning improvement	115,000.00	115,000.00	-		15000	15000	50000	50000	50000	50000		57	56	54
			255,000.00	255,000.00	-											
111	Local Roads - Work category 111	Sealed pavement maintenance	3,567,900.00	3,550,000.00	17,900.00		1160000	1160000	1189100	1183200	1218800	1206800		57	56	54
112	Local Roads - Work category 112	Unsealed pavement maintenance	538,300.00	535,500.00	2,800.00		175000	175000	179400	178500	183900	182000		57	56	54
113	Local Roads - Work category 113	Routine drainage maintenance	919,700.00	915,000.00	4,700.00		299000	299000	306500	305000	314200	311000		57	56	54
114	Local Roads - Work category 114	Structures maintenance	215,300.00	214,200.00	1,100.00		70000	70000	71800	71400	73500	72800		57	56	54
121	Local Roads - Work category 121	Environmental maintenance	799,900.00	795,700.00	4,200.00		260000	260000	266600	265200	273300	270500		57	56	54
122	Local Roads - Work category 122	Traffic services maintenance	2,195,900.00	2,192,200.00	3,700.00		770000	770000	704100	704100	721800	718100		57	56	54
123	Local Roads - Work category 123	Operational traffic management	344,400.00	342,700.00	1,700.00		112000	112000	114700	114200	117700	116500		57	56	54
124	Local Roads - Work category 124	Cycle path maintenance	76,900.00	76,500.00	400.00		25000	25000	25600	25500	26300	26000		57	56	54
125	Local Roads - Work category 125	Footpath maintenance	5,596,534.00	5,596,534.00	-		1824904	0	1865211	0	1906419	0		57	56	54
131	Local Roads - Work category 131	Level crossing warning devices	95,600.00	95,500.00	100.00		28000	28000	28700	28600	38900	38900		57	56	54
140	Local Roads - Work category 140	Minor events	-	-	-		0	0	0	0	0	0		57	56	54
151	Local Roads - Work category 151	Network and asset management	1,844,800.00	1,809,900.00	34,900.00		591400	591400	621500	603200	631900	615300		57	56	54
211	Local Roads - Work category 211	Unsealed road metalling	461,400.00	459,000.00	2,400.00		150000	150000	153800	153000	157600	156000		57	56	54
212	Local Roads - Work category 212	Sealed road resurfacing	6,458,800.00	6,426,800.00	32,000.00		2100000	2100000	2152500	2142000	2206300	2184800		57	56	54
213	Local Roads - Work category 213	Drainage renewals	3,363,000.00	2,843,100.00	519,900.00		929000	929000	1106000	947600	1328000	966500		57	56	54
214	Local Roads - Work category 214	Sealed road pavement rehabilitation	3,998,300.00	3,978,500.00	19,800.00		1300000	1300000	1332500	1326000	1365800	1352500		57	56	54
215	Local Roads - Work category 215	Structures component replacements	246,900.00	214,200.00	32,700.00		70000	70000	71800	71400	105100	72800		57	56	54
221	Local Roads - Work category 221	Environmental renewals	-	-	-		0	0	0	0	0	0		57	56	54
222	Local Roads - Work category 222	Traffic services renewals	1,707,100.00	1,698,500.00	8,600.00		555000	555000	569000	566100	583100	577400		57	56	54
	SUBTOTAL		32,430,734.00	31,743,834.00	686,900.00											
324	Construction	Road improvements	1,450,757.00	1,450,757.00	-		1082657	1082657	368100	368100				70	70	
324	Construction	Road improvements	2,344,130.00	2,344,130.00	-		2344130	2344130						85		
341	Local Roads	Low cost / low risk improvements	3,794,400.00	3,794,400.00	-		1199000	1199000	965000	965000	1630400	1630400		57	56	54
357	Implementation	Resilience improvements	507,016.00	507,016.00	-		507016	507016						57		
432	Implementation	Promotion, education and advertising	1,481,450.00	1,481,450.00	-		485000	485000	493750	493750	502700	502700		57	56	54
	SUBTOTAL		9,577,753.00	9,577,753.00	-											
511	Work category 511	Bus services	3,072,857.00	2,958,000.00	114,857.00		964940	965000	989064	984000	1118853	1009000		57	56	54
512	Work category 512	Passenger ferry services	-	-	-		0	0	0	0	0	0		57	56	54
514	Work category 514	Public transport facilities operations and maintenance	478,604.00	479,000.00	- 396.00		263590	264000	106180	106000	108834	109000		57	56	54
515	Work category 515	Passenger rail services	-	-	-		0	0	0	0	0	0		57	56	54
517	Work category 517	Total mobility operations	1,552,480.00	1,489,000.00	63,480.00		514320	470000	512512	503000	525648	516000		60	60	60
519	Work category 519	Wheelchair hoists	112,080.00	112,000.00	80.00		55000	55000	28188	28000	28892	29000		60	60	60
521	Work category 521	Total mobility wheelchair hoist use payments	397,955.00	398,000.00	- 45.00		129390	129000	132625	133000	135940	136000		100	100	100
522	Implementation	SuperGold trip payments	23,348.00	23,348.00	-		23348	23348						100		
524	Work category 524	Public transport information supply, operations and maintenance	879,197.00	639,000.00	240,197.00		281810	232000	295006	200000	302381	207000		57	56	54
524	Implementation	Public transport information supply, operations and maintenance	45,000.00	45,000.00	-		15000	15000	15000	15000	15000	15000		57	56	54
524	Implementation	Public transport information supply, operations and maintenance	163,581.00	163,581.00	-		49255	49255	57163	57163	57163	57163		65	65	65
531	Implementation	Public transport infrastructure and major renewals	58,627.00	58,627.00	-		58627	58627						65		
532	Public Transport	Low cost / low risk public transport improvements	321,134.00	321,134.00	-		15000	15000	290375	290375	15759	15759		57	56	54
	SUBTOTAL		7,104,863.00	6,686,690.00	418,173.00											

TO: **INFRASTRUCTURE AND SERVICES COMMITTEE**

FROM: **ALISTER MURRAY – WATER MANAGER**

MEETING DATE: **MONDAY 29 OCTOBER 2018**

UNDERGROUND WATER SUPPLY EXPLORATION FOR EMERGENCY WATER SUPPLY UPDATE

SUMMARY

A report to inform Councillors of the progress on this project was presented to the August committee. The August report dispelled any expectation that the aeromagnetic survey undertaken by Venture Southland was absolute in its self in locating underground water supplies. The report recommended that Venture Southland report to the November meeting "on the presence of deep aquifer resources in the Southland Plains". At the time of preparing the August report it was anticipated that a review of all current data sources on the subject would have been completed by October. Unfortunately this has not been accomplished but is expected to be completed by 31 October 2018.

A report, best viewed as an interim report, has been submitted by Venture Southland (refer to ***Appendix 1***).

In summary, the Venture Southland report indicates:

1. There is potential for a ground water supply from a deep strata known as the 'Chatton Formation'. Likely depth will be 160-200 metres below ground level.
2. It is important to note that the work to date is at a very early stage and that further investigatory works are required to quantify the resource and better understand the potential of the 'Chatton Formation'.
3. The analysis of data for the wider Southland area will not be completed until July 2019.
4. After the review (to be completed by 31 October) will come a series of recommendations to assist Council to focus its ground water investigations.

RECOMMENDATIONS

That this report be received

AND

That the recommendations made following the Venture Southland review on the presence of deep aquifer resources in the Southland Plains be reported to Council at its December meeting.

IMPLICATIONS

1.	*Has this been provided for in the Long Term Plan/Annual Plan?* Yes

2.	*Is a budget amendment required?* Not at this stage
3.	*Is this matter significant in terms of Council's Policy on Significance?* No
4.	*Implications in terms of other Council Strategic Documents or Council Policy?* None
5.	*Have the views of affected or interested persons been obtained and is any further public consultation required?* N/A
6.	*Has the Child, Youth and Family Friendly Policy been considered?* N/A

FINANCIAL IMPLICATIONS

The budget for exploration into underground water to act as an emergency supply may need to be increased as further information comes to hand.

BACKGROUND

This report follows that presented in August, which has been appended to this report as ***Appendix 2***.

The August report recommended that Venture Southland report back to Council on the presence of deep aquifer resources in the Southland Plains. Venture Southland has commenced a review of all available data sources and reports on underground water supplies in the southern region. That review was expected to be completed by October. Unfortunately that has not been accomplished but is expected to be so by the end of October. A report, best viewed as an interim report, has been submitted by Venture Southland and is adhered as ***Appendix 1***.

To recap, from the earlier August report to Council it is apparent that the aeromagnetic survey undertaken by Venture Southland on behalf of the Southland councils (including the Invercargill City Council) is not on its own a totally definitive exercise in locating underground water supplies. There may be the expectation that this was so, but this is not correct.

Also that the way forward is likely to be in the form of more investigative works, each with its own cost, that will need consideration by Council before commitment. In short, there will be more cost to come in the form of investigation before any alternative water supply can be developed.

In summary, the appended Venture Southland report indicates:

1. There is potential for a ground water supply from a deep strata known as the 'Chatton Formation'. Likely depth will be 160-200 metres below ground level.

2. It is important to note that the work to date is at a very early stage and that further investigatory works are required to quantify the resource and better understand the potential of the 'Chatton Formation'.

3. The analysis of data for the wider Southland area will not be completed until July 2019.

4. After the review (to be completed by 31 October) will come a series of recommendations to assist Council to focus its ground water investigations.

CONCLUSION

Await receipt of the recommendations from Venture Southland's review.

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APPENDIX 1

Venture Southland
Business • Tourism • Community • Events

To: **Invercargill City Council**

Date: **4 October 2017**

Subject: **Progress Report on the Southland Airborne Survey Interpretation and Ground Water Assessment Work**

Author: Stephen Canny – GM Business and Strategic Projects

RECCOMMENDATION:
THAT INVERCARGILL CITY COUNCIL RECEIVES THIS REPORT AND ENDORSES THE ACTIONS BEING TAKEN TO IDENTIFY POTENTIAL GROUNDWATER SOURCES FOR INVERCARGILL

REPORT

As previously reported, Venture Southland allocated $100,000 to assist with the detailed analysis of the airborne survey work which is currently underway and involves the search and collation of all known soils, geological, hydrogeological and bore data as well as the analysis of the recently completed airborne surveys. This work has been augmented by a separate but complementary Sustainable Farming Fund project for the development of a Spatial Physiographic Information Platform for Farmers. The total additional investment being in excess of $600,000.

Two phases of work have been committed to:

Phase 1 Information gathering and collation of all known information - *this work is underway and will be completed by the 31st of October.*

As mentioned above this involves gathering all known information and recent airborne survey work which is relevant to the search area and environs. The program will involve inputs from a range of parties ICC, ES, GNS, MBIE, VS, drilling contractors and will be coordinated by Land and Water Science. A 'Deep Aquifer Water' working group has been formed and the first meeting of this group was held at Venture Southland on the 17th of September 2018 and further meetings will be held as the investigation work progresses. The purpose of this group is to draw together a range of experts and drillers to triangulate data and ground truth information.

The initial analysis will focus on the Invercargill and environs in the Invercargill and Southland District areas and the areas North and North West of Gore. The analysis of the wider Southland area will be completed when MBIE has finished the 2018/19 airborne survey

Phase 2 Analysis of the collated data for the wider Southland area – *this work is to be completed by July 2019.*

Phase 2 is currently underway and will be finalised following the completion of this summer's MBIE airborne survey work and the formulation of resource use and possible water prospectivity target area/s and a range of recommendations will also be made. A peer review will also be built in to the contract work.

Progress to date

To date, early stage analysis of the collated data undertaken by Land and Water Science Limited has identified that suitable aquifer opportunities for emergency water supplies are reasonably scarce. However, some of the best aquifer potential has been identified in the Cenozoic geology that underlies the Gore Lignite Measures and overlies older basement rocks[1]. The prospective subset formation which is of interest is known as the 'Chatton Formation'. The Chatton Formation is regionally extensive albeit discontinuous and is thought to extend beneath Invercargill City at approoximately 160 – 200 m below ground level[1-4].

Previous investigations, including pump tests, indicate that significant abstraction rates, greater than those encountered in the Gore Lignite Measures, have been achieved from the Chatton Formation[1]. A high yielding groundwater source is required if it is to meet the requirements for a municipal supply. Although longer term testing has not been undertaken, surficial and downhole geophysical measures of porosity and bulk density are promising and well correlated with geological logs[1]. Issues of water hardness would need to be addressed.

The question of the water source within the Chatton Formation and the recharge and hydraulic relationship of the Chatton to the Gore Lignite Measures remains unanswered. Several possible recharge sources exist but are unsubstantiated at this early stage of the investigation.

Where to from here

The Phase 1 investigation is expected to be completed by the 31st of October and from this report will come a series of recommendations to assist Council to focus its ground water investigations with a view towards the identification of a possible ground water source situated as close as possible to Invercargill.

In conclusion there are some positive, albeit preliminary indications that a suitable volume of supply of groundwater may be available and likely from a series of bores. It is important however to recognise that the work to date is at a very early stage and that further investigatory works are required to quantify the resource and better understand the potential of the Chatton Formation as an emergency groundwater source.

A further update will be provided upon completion of the current contract.

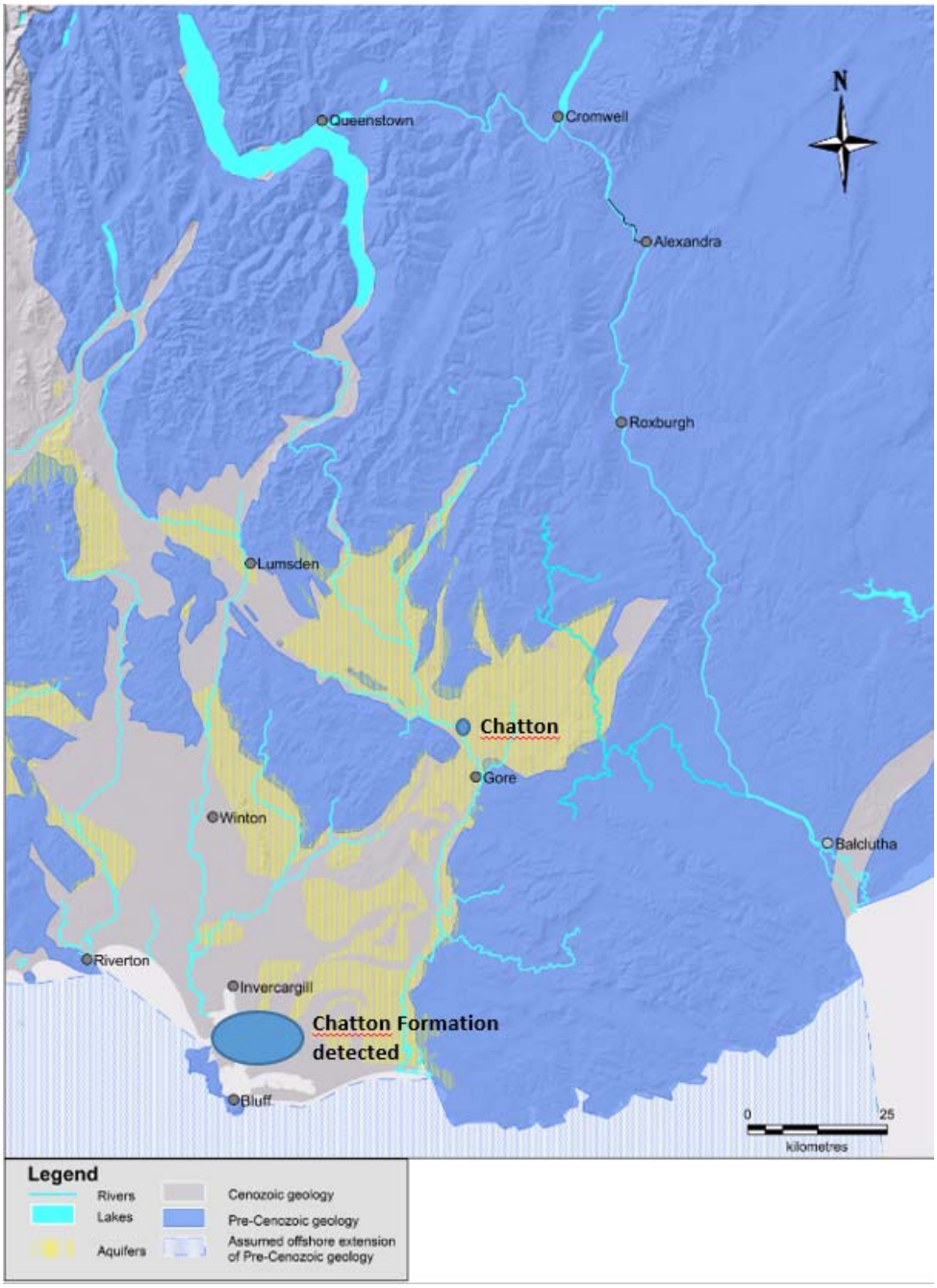
The attached map shows the inferred extent of the Chatton formation across the Southland Region. This information will be further refined as the work progresses.

Sources:

Morrison Cooper & Partner, (1986); Isaac, and Lindqvist, (1990;) Lindqvist et al., (2014); Gard, (2017). Figure modified from Lindqvist et al., (2014). References available upon request.

3

Phase 1 Investigations – Inferred Extent of the Chatton Formation (provisional)



«Record No.»

APPENDIX 2

TO: **INFRASTRUCTURE AND SERVICES COMMITTEE**

FROM: **ALISTER MURRAY – WATER MANAGER**

MEETING DATE: **MONDAY 20 AUGUST 2018**

UNDERGROUND WATER SUPPLY EXPLORATION FOR EMERGENCY WATER SUPPLY

SUMMARY

Venture Southland have arranged an aeromagnetic survey of the Southern region. These works were agreed to and partially funded by the Invercargill City Council. This report updates Councillors on the progress of that work and its relevance towards the search for an underground water supply.

i. Aeromagnetic data is used to enable understanding of the geological structure with application towards mineral and petroleum potential, seismic faulting and potential for water. It is not by itself a definitive means of locating underground water resources.

ii. The collection of aeromagnetic data in the southern region has been completed.

iii. The Invercargill City Council has paid $125,000 as its contribution towards the collection of aeromagnetic data.

iv. The analysis of the data is the responsibility of Venture Southland and is partially complete.

v. Venture Southland are conducting an exercise using the expertise of Land and Water Science to review several data sets including that from the aeromagnetic survey with the specific intent to examine the potential for the presence of deep water aquifer resources in the Southland Plains. That exercise will be undertaken at Venture Southland's cost with the expectation of completion by October this year.

vi. Further detail around cost and timing in the search for an underground water supply will not be known until after the exercise as per v. above.

vii. Further works as recommended in v. above will be at the choice and cost of the relevant local council and not Venture Southland.

viii. There will be more costs, yet to be quantified, to come in regard to the identification of a suitable underground water source to act as an emergency water supply.

RECOMMENDATIONS

That this report be received

AND

That Venture Southland be asked to report to Council at the November meeting on the presence of deep water aquifer resources in the Southland Plains.

IMPLICATIONS

1.	*Has this been provided for in the Long Term Plan/Annual Plan?* Yes
2.	*Is a budget amendment required?* Not at this stage
3.	*Is this matter significant in terms of Council's Policy on Significance?* No
4.	*Implications in terms of other Council Strategic Documents or Council Policy?* None
5.	*Have the views of affected or interested persons been obtained and is any further public consultation required?* N/A
6.	*Has the Child, Youth and Family Friendly Policy been considered?* N/A

FINANCIAL IMPLICATIONS

The budget for exploration into underground water to act as an emergency supply may need to be increased as further information comes to hand.

INTRODUCTION

The purpose of this report is to:

- Update Councillors on the progress of the work undertaken by Venture Southland
- Advise the means to progress the search for an underground water supply

BACKGROUND

In December 2014 central government announced its intention to acquire new aeromagnetic data to develop the understanding of geological structures. Their application was to review the mineral potential of certain regions of New Zealand. Southland was to be included but not the full area. Venture Southland recognised the opportunity to 'piggy back' on this exercise to extend down into the southern region and were successful in doing so, thus avoiding meeting the full cost of setting up the exercise independently. Venture Southland received advice from New Zealand Petroleum and Minerals that airborne geophysics surveys are used to identify sub surface geological structures, seismic faults, geological hazards, mineral and petroleum potential, and location of water resources. This Council along with the Southland District Council, Gore District Council and Environment Southland entered into an agreement with Venture Southland as the lead agency to extend the exercise "to obtain new geophysical data across the region to increase knowledge and stimulate planning relating to water, seismic faulting and minerals, and increase the level of geological information available over the region." The agreement stipulated that each council's financial contribution collectively funded the obtaining of data and that Venture Southland, while not contributing to data acquisition, would contribute up to $100,000 towards the interpretation of the aeromagnetic data.

Aeromagnetic data is obtained by aerial survey. There were delays in completing the survey due to bad weather and limitations of flying restrictions within the Queenstown Airport controlled airspace. This incurred delays in interpretation of the data as the intention was to review / interpret the data as a complete set rather than piecemeal.

Progress to date:

i. The aerial survey has been completed and aeromagnetic data received in April 2018
ii. This Council has contributed $125,000 (GST exclusive) towards data acquisition
iii. Data interpretation is partially complete

RELEVANT POINTS TO NOTE

- Data from the aeromagnetic survey and its analysis is not a totally definitive exercise by itself in locating underground water supplies but it is a tool that can assist towards that endeavour. Given the elapse of time since committing to the agreement (i.e. November 2015) coupled with last summer's drought, an expectation that the location of an underground water supply would result from that exercise may have formed. This is not correct.
- Analysis of aeromagnetic data is expensive.
- There will be more costs, yet to be quantified, to come in regard to the identification of a suitable underground water source to act as an emergency water supply.
- $202,000 was the budget allocation set aside for exploration for an underground water supply. There remains $77,000 unexpended.

WHERE TO FROM HERE?

Venture Southland now propose (at their own cost as part of their agreement with local council's to engage the services of the local consultancy Land and Water Science) to review / analyse data not just from the aeromagnetic study but many available data sets to "undertake a desk top study of the potential for a suitable aquifer resource hosted within the deeper aquifer systems of the Southland Plains." That exercise is underway, the progress on which will depend on time taken to receive data from various sources. The expectation is that study will be completed by October and will provide recommendations as required for any additional work to better understand the status of deep groundwater resources in the Gore and Invercargill Districts. The cost of any further works as recommended by Land and Water Science will be undertaken by the relevant local council and not Venture Southland. At this stage, timing and cost details cannot be determined until after the study has been completed.

Finding an underground water supply is like prospecting for any underground resource insomuch as before committing to any drilling it is best to conduct the most thorough investigation into all available sources of information. This will involve interpretation by experts which brings its own cost but can be well justified in terms of the overall cost of developing an underground water supply. The exercise in locating an underground water supply is likely to be iterative in terms of cost and timing rather than being absolutely precise in terms of cost and timing at this point in time. Each iteration will involve advice of cost and timing as to how to proceed.

An invitation to this committee meeting has been extended to Venture Southland to answer any questions Councillors may have.

CONCLUSION

All available data, including that of the recent aeromagnetic survey, needs to be collated and be subject to expert review as to how or indeed if the search for an underground water supply is to proceed.

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