ESR
Science for Communities

Achieving healthy air quality in South Invercargill:

Inter-agency programme

A report on stage one of inter-agency co-design. For use by Environment Southland and partners collaborating to improve air quality in Southland

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Prepared by

Graeme Nicholas

PREPARED FOR: **Environment Southland**

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REVIEWED BY: **Mat Walton**

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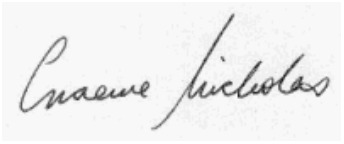
The author specially thanks Owen West and Tania McCann from Environment Southland for their input into the project, and the participants in the three workshops that form the basis of this report.

Manager	Peer reviewer	Author
		
Dr Rob Lake	Dr Mat Walton	Graeme Nicholas
Manager, Risk Assessment and Social Systems	Technical Lead, Social Systems	Senior Scientist: Social Systems

CONTENTS

EXECUTIVE SUMMARY

This report is part of a partnership between Environment Southland and ESR to establish a collaborative approach to improving air quality in Southland. It follows a decision to pilot the approach in South Invercargill, the holding of community workshops to scope the complexity of the issue, and an initial co-design workshop involving stakeholder agencies.

The report provides background to a proposed integrated programme to improve air quality from domestic activities in South Invercargill. It also documents the outputs from the inter-agency co-design workshop, and makes some suggestions about next steps.

The proposed programme is:

A collaborative, trans-organisational[1] programme

- to achieve healthy and compliant air quality in South Invercargill by 2025
    - through reducing emissions from domestic activities.

The suggested next steps involve a further inter-agency workshop, confirming levels of commitment and involvement by participating agencies, establishing a basic structure to support integration of activities across agencies through to 2025, and agreeing to some initial processes.

The recommended approach balances system viability (the necessary functions working together) with social viability (the necessary social and political acceptance and support). Specific questions and processes are suggested to ensure these complementary forms of viability.

[1] While the work described in this report is inter-agency (a range of agencies contributing to the design of a potential programme of action), the resulting programme that is envisaged is described as 'trans-organisational' to signal that the programme is intended to be more than a co-ordination between agencies. The intention is to have a programme is across agencies, is co-owned by participating agencies, and has to opportunity to propose and support initiatives of its own devising.

1. Background

1.1 THE PROJECT

Toward the end of 2017 Environment Southland (ES) entered a partnership with the crown research institute, ESR, to develop a platform for community engagement that would enable ES to work collaboratively with diverse community, business, NGO and statutory parties to improve air quality in Southland.

The project was to:

- Engage with interested parties to refine and endorse the approach, identify key outcomes, select a site and scope for a pilot, and establish core functions to oversee, resource, coordinate and learn from the pilot
- Establish a pilot that enables partners and stakeholders to co-design an initial focus, work programme and process (the provisional site for pilot was South Invercargill)
- Carry out initial community-level engagement
- Documenting processes and learning from the project and briefing ES on future options and methods.

1.2 AIR QUALITY IN SOUTHLAND

Air quality is a complex issue that is not going to be solved by regulation alone. Domestic heating, industry, traffic and outdoor burning emissions all combine dynamically in the atmosphere to pollute the air we breathe. While air quality in many areas of Southland remains very good, the urban areas of Invercargill, Gore and Winton do experience periods of poor air quality during the winter months. Cold temperatures during these months combines with the consequent use by households of solid fuel burners for heating, and stable atmospheric conditions result in emissions becoming trapped near the earth's surface.

Poor air quality contributes to adverse health outcomes, including cardiovascular disease and respiratory diseases such as asthma. Those who are most affected are often the ones who can least afford to change.[2] Environmental justice and fuel poverty are both key issues that need addressing as we work towards consistently clean, healthy, breathable air.

Environment Southland updated the Regional Air Plan in 2016 to address domestic heating emissions, but there is the now a need to focus more closely on the community and its response. A reliance on regulatory phase outs and natural attrition of solid fuel burners will not improve air quality at the rate required to meet the National Environmental Standards for Air Quality.[3]

It is clear to ESR that one organisation alone cannot make a difference, but that with the right people working together and bringing the skills, knowledge and resources to the table, it might be possible make a difference to the health of many Southlanders.

[2] See, for example: "Health impacts of air quality", http://www.mfe.govt.nz/more/environmental-reporting/air/air-domain-report-2014/impacts-air-quality/health-impacts; WHO 2013 report, http://www.euro.who.int/__data/assets/pdf_file/0020/182432/e96762-final.pdf?ua=1; Lancet Commission on air quality and health, Schluger, N. (2014). Household air quality in high-income countries: forgotten but not gone. *The Lancet Respiratory Medicine* 2(10), 781-783.

[3] http://www.mfe.govt.nz/air/air-regulations/national-environmental-standards-air-quality/about-nes

1.3 SOUTH INVERCARGILL PILOT SITE

South Invercargill was chosen by the ES and ESR team as a suitable pilot site for a collaborative approach because the threat to human health due to air quality was considered serious; within South Invercargill, improvement to air quality appeared to be intractable because of the link to domestic heating, socio-economic factors and low quality housing stock, and therefore was considered to need a new approach; and yet the area represented a describable set of communities that could be the focus of strategy, engagement and implementation.

Problem situations in which there are readily discernible causal factors can be managed through conventional methods of social change such as implementing regulations, investigating and addressing specific causes, disseminating knowledge, introducing structural change or establishing well targeted incentives.

Situations with high levels of social complexity, in which cause-and-effect relationships are not knowable, and/or there are multiple semi-independent dynamics interacting, cannot be changed by conventional interventions. In the domain of social complexity (Snowden & Boone, 2007), a problem situation is likely to be a pattern of outcomes that have resulting from multiple influences that may be only loosely related to one another. To bring about desired change in the complex domain is to attempt multiple 'safe-to-fail' interventions that, together, are likely to shift the pattern.

As was confirmed through community engagement (described below), improving air quality in South Invercargill represents a sufficiently complex social problem that a trans-organisational, multi-initiative programme can be justified (Snowden, 2005; Snowden & Boone, 2007).

1.4 COMMUNITY ENGAGEMENT

ES and ESR convened two community engagement workshops to scope the problem and understand the problem from multiple perspectives. The workshops gathered representatives of organisations working in or with South Invercargill communities. Participants included representatives from Age Concern, Invercargill Youth Council, Pacific Island Trust, primary health, Te Ao Marama Incorporated, Invercargill City Council, Venture Southland, and Public Health South.

After a brief summary of the problem from science, compliance and health perspectives, participants were invited to identify aspects of the problem from their own various perspectives. Participants were asked to describe for whom the issue of improving air quality is likely to matter, in what ways might it matter to such parties, and what would be important signs of success or progress for those affected.

Participants were then invited to discuss and document factors that may be influencing air quality in South Invercargill across the following categories: deep values or beliefs; technologies, built environment and financial factors; and capabilities or skills (or their lack).

Finally, participants were invited to contribute ideas of who to involve in working toward air quality improvement in South Invercargill.

The resulting picture of the scope and complexity of the issue is summarised in a diagram in Appendix A.

The next stage was to engage with key agencies that could be considered as having a stake in improving air quality and health outcomes in South Invercargill. The aim of this next stage was stated as: "to co-design, implement and develop some strategies for change" (see invitation: Appendix C).

2. STAKEHOLDER CO-DESIGN WORKSHOP

2.1 THE WORKSHOP

The initial co-design workshop was held on 29 January, 2019, at the Ascot Park Hotel. As the invitation (Appendix C) stated:

> One organisation alone cannot make a difference, but with the right people working together and bringing the skills, knowledge and resources to the table, we have an excellent opportunity to pilot something which, if successful, could make a difference to the health of many Southlanders.

The workshop design is detailed in Appendix D, and participants are listed in Appendix E. The vision for the workshop was stated as:

> Establish a collaborative, trans-organisational programme[4]
>
> - to achieve healthy and compliant air quality in South Invercargill by 2025
> - through reducing emissions from domestic activities.

Participants were introduced to two concepts for co-designing a programme to improve air quality in South Invercargill: the need for social viability, and the need for system viability.

Social viability refers to the need for the programme to be seen as fair, credible and relevant, and thus have sufficient 'buy-in' and social and political acceptance that it will be sustained over time. System viability refers to the need for the programme to include all the critical functions necessary to sustain an integrated, effective and efficient set of activities to address the challenge.

To focus discussion on social viability we used a framework developed by the facilitator drawing on the work of Ulrich (1994) and Cash et al. (2002). The framework involves six questions, and is illustrated in Appendix F. The questions are designed to be asked throughout a process of co-design, and are not intended to result in definitive answers. The point of the framework is to surface among participants from differing perspectives any assumptions and divergence in relation to the questions. The ultimate purpose in asking the questions from the framework is to ensure that programme design respects diverse motivations and sources of legitimacy and credibility among those for whom the programme depends for its social and political support.

The focus of discussion on system viability drew on the Viable System Model devised by Beer (1985). The five critical functions for system viability, according to this model, are activities targeted to address aspects of the perceived problem (in this case, domestic activities affecting air quality in South Invercargill), co-ordination between the activities so they work well in relation to one another, systems of resourcing and accountability, gathering and processing intelligence about how the programme is performing and what can be learned from outside the programme, and overall ownership of the programme that sets the direction, limits and purpose.

[4] While the work described in this report is inter-agency (a range of agencies contributing to the design of a potential programme of action), the resulting programme that is envisaged is described as 'trans-organisational' to signal that the programme is intended to be more than a co-ordination between agencies. The intention is to have a programme is across agencies, is co-owned by participating agencies, and has to opportunity to propose and support initiatives of its own devising.

The workshop participants worked through all these elements of social and system viability to lay a foundation for establishing a trans-organisational programme. The outputs from the various workshop activities are listed in Appendix G.

Finally, workshop participants discussed next steps. Participants were asked to seek commitment from the relevant level of their own organisation, to agree to an initial convening group to ensure that a new invitation would be issued to continue design and implementation of a programme for change, and a credible timeline was agreed for the follow-up invitation.

The following organisations agreed to co-ordinate and convene the follow-up Public Health South, Environment Southland, Fire and Emergency New Zealand, Invercargill Youth Council, Venture Southland, Te Ao Marama Incorporated, SBS Bank, Invercargill City Council, and Awarua Synergy.

2.2 SUMMARY THEMES FROM THE WORKSHOP

The raw data produced at the workshop is listed in Appendix G. What follows is a brief summary.

2.2.1 Social viability

A broad spectrum of parties need to be considered in order for a change programme to improve South Invercargill air quality to get buy-in and credibility. In summary, this includes those involved in the provision of housing, residents, those responsible for public health and air quality standards (from central and regional government), community and cultural groups, potential funders and suppliers and installers of heating and insulation technologies.

Key assumptions that would make the programme for change credible include that sufficient resources will be available to decision-makers, that central and local government will sustain commitment to the change, that all key decision-makers understand the need and are willing to change and that there are clean heating options available.

Sources of knowledge to be included in designing and implementing the proposed programme would include mātauranga Māori, understanding of policy and institutional processes and barriers, community-based knowledge, knowledge from other jurisdictions, fit-for-purpose technical knowledge on air quality, building and heating options, weather, financing and health, and political expertise.

Perspectives that would need to be honoured or given relative power include: cultural perspectives, socio-economic perspectives, compliance and regulation, commercial interests, age-related perspectives, and real estate perspectives.

Questions of relevance and validity need to be decided with reference both to relevant expertise and the need to build and retain public trust.

2.2.2 System viability

Overall ownership, setting direction limits and purpose

Various agencies were named, ranging from central government to local organisations. However, suggestions also included having a governance group made up from various organisations.

Activities targeted to address aspects of the perceived problem

Activities that were identified spanned educative efforts, air quality monitoring, programmes specific to particular organisations, investigation of barriers, compliance, and establish finance options.

Co-ordination between activities

Participants identified the need for good communication, workplans, reporting and clarity of responsibilities. They also proposed the importance of a shared vision and having ‘everyone on the same page’. A comprehensive evaluation framework was suggested.

Systems of resourcing and accountability

Among the suggestions were: regular contact between initiatives, a dedicated administrator, a project manager, planning and commitment through business plans, creating key performance indicators, and budget commitments.

Gathering and processing intelligence

Participants suggested the need for data analysis, appropriate expertise, a measurement programme to monitor progress and monitoring and evaluation.

3. SUGGESTED NEXT STEPS

3.1 SYSTEM VIABILITY

3.1.1 Convene follow-up co-design workshop

All participants at the initial co-design workshop, and those who have expressed interest need to be invited to a facilitated follow-up workshop. The outputs from the initial workshop (Appendix G) provide a platform on which to build.

3.1.2 Confirm range and levels of commitment from key organisations

Organisations and other stakeholders need to clarify what level of commitment and involvement they are able to offer. As a general suggestion, it is likely to be important to have shared ownership of the programme of change (i.e., broader ownership than ES), and it would be good if this shared ownership included the regulator, health, property owners, and potential funders. Other levels of commitment and involvement are possible and desirable (e.g., organisations may wish to be actively involved in developing and implementing specific initiatives, or may choose to simply co-operate with the programme rather than identify fully with it).

3.1.3 Design structure to cover the core functions for viability

The structure would involve specific answers to the following questions (from the VSM):

- Who is the programme 'owner' that provides the function of holding and promoting the vision, direction and scope of the programme. This function needs to be inter-agency, but may have a secretariat function hosted in one agency. The structure to carry out this function needs to be credible to all affected parties, and be decided in a way that is seen as fair and legitimate.
- What are the range of projects, programmes and activities that already exist that can be seen as relevant and contributing to the 2025 vision of the programme? These activities need to be listed and then mapped to discover where possible relationships, dependencies and gaps might exist.
- How will the diverse projects, programmes and activities that are owned by a range of agencies be co-ordinated or linked in such a way that will minimise wastage and maximise synergies?
- How will the diverse activities and co-ordination functions report and be resourced enough so that they are more likely to contribute effectively to achieving the 2025 vision of the programme? How can accountabilities of the various activities to their host agency be balanced with reporting and responsiveness to the 'umbrella' programme to improve air quality in South Invercargill?
- How will insights and innovations from other regions (nationally and internationally) inform the programme? And, how will developments within the programme be gathered and considered in ways that will lead to improvements?

3.1.4 Design initial process to maintain momentum, and next check-in for system and social viability review

The second co-design workshop is envisaged as open to all participating and interested agencies. However, from that stage on, there needs to be some agreement about how communication will flow, and who will meet when, in order to sustain momentum and give stakeholders confidence that they are part of a viable programme.

3.2 SOCIAL VIABILITY

3.2.1 Who else needs to be invited, consulted, advised?

At the follow-up co-design workshop, and at regular intervals subsequently, it is important to ask again: who else needs to be invited to involvement, consulted or advised of this programme. This process of keeping the boundaries of involvement open and responsive is to ensure that those who have a stake in either the problem being addressed or possible solutions to the problem are being considered. Inclusion or involvement is for both pragmatic reasons (how can they help?) and legitimacy reasons (because something may affect a party that has not otherwise been considered). We note that mana whenua needs to be assured a credible place ‘at the table’, and that other cultural groups may need to engaged.

3.2.2 What sources of knowledge do we need to include, to do be seen as credible and legitimate?

The answer to this, as with other questions, will change over time. Sources of knowledge include mātauranga Māori, Western science, social systems analysis, business experience, policy expertise, financial expertise, community experience, medical and health system knowledge, political wisdom, and more.

3.2.3 What processes and structures will help us assess the validity and relevance of facts and claims?

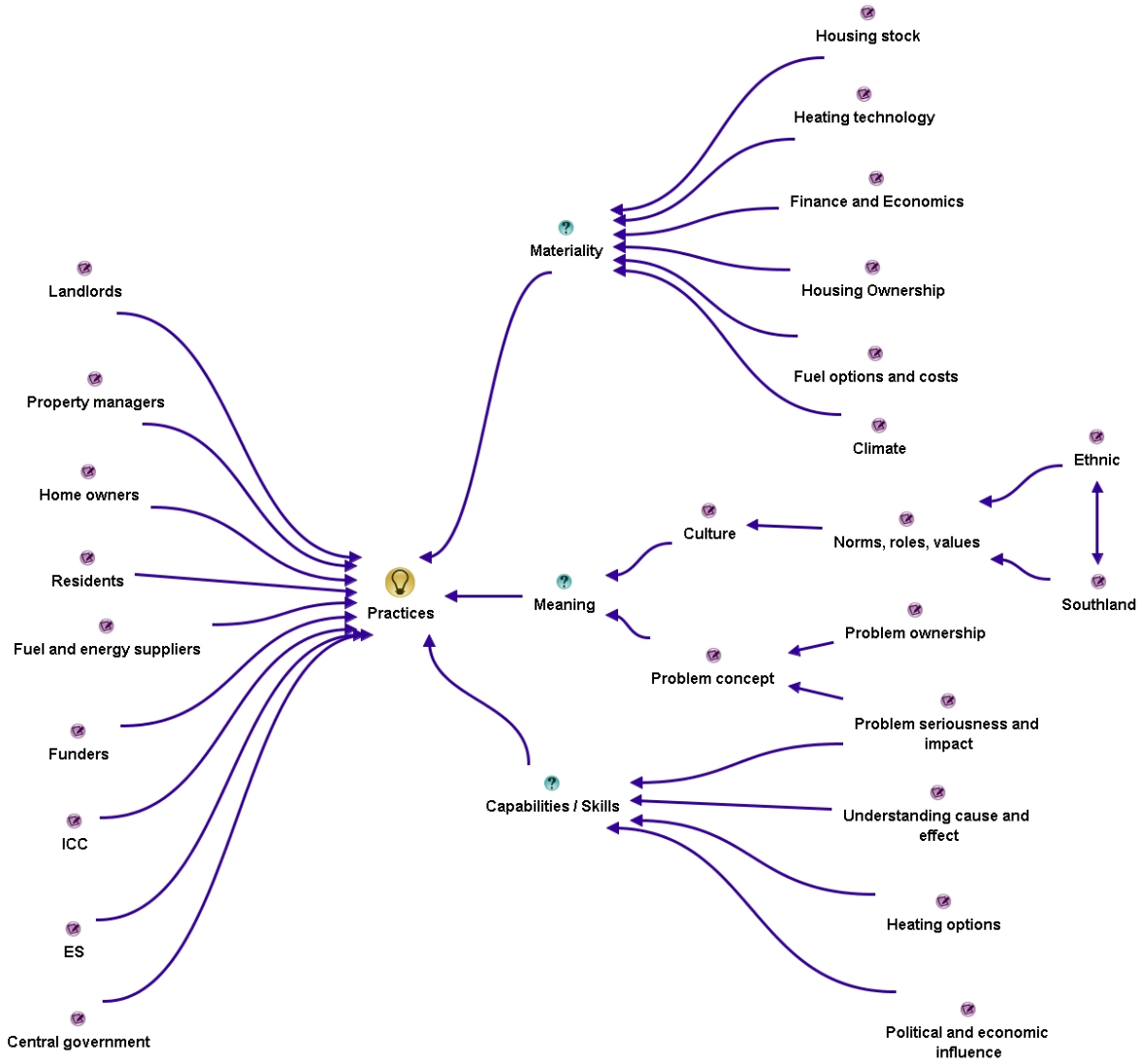
While there is no final answer to this question, it is important to keep the question alive. Decisions about what is deemed valid and what is not can be an expression of power or convention, and may alienate key parties or avoid a challenge to some embedded assumption that may be blocking progress.

3.2.4 Schedule six monthly workshop to ensure social viability

We recommend that, in addition to an oversight group and other functional groups, the wider constituency of stakeholders, including the affected community, be given a chance to hear and review progress at regular intervals, probably six monthly.

APPENDIX A: AIR QUALITY AS SOCIAL COMPLEXITY

This diagram represents a simplification of the multiple decision-makers and factors that contribute or could contribute to air quality outcomes in South Invercargill. The right-hand side of the diagram focuses on human practices, and follows social practice theory (Shove, Pantzar, & Watson, 2012) in seeing practices as combinations of material circumstances, how people construct meaning, and relevant capabilities and skills. The left-hand side identifies some of the diverse decision-makers who embody practices and are affected by the practices of others. When the range of actors is combined with the range of factors that shape practices affecting air quality, improvement in air quality will require methods of influencing a high level of social complexity.



APPENDIX B: SUMMARY FROM COMMUNITY ENGAGEMENT

This is a summary of insights gained through two community workshops.

3.3 KEY SOCIAL DIMENSIONS TO IMPROVING AIR QUALITY - COMPLEXITY

- Appreciating the extent and nature of the problem, and problem ownership
- Embedded practices and belief systems
- Appreciating requirements and options
- Affordability of options
- Dynamics of rental housing (including government and council housing)– economic, political, decision-making, problem owning
- Cultural history and perspectives
- Current state and availability of stock (housing, heating, fuel)
- Social and economic role of coal industry
- Sense of intractability or enormity paralysing action

3.4 WHAT TO WORK ON

There are many complementary transformations that could contribute to the big transformation of bringing about year-long healthy and compliant air quality in South Invercargill. These possible transformations are expressed as movement from a current state to a desired state. These transformations are distilled from stakeholder engagement. They all assume that the focus of transformation is all or some of south Invercargill.

- From the current proportion of houses that are hard to heat and keep dry – to a greater proportion of houses that are well insulated and dry.
- From the current proportion of houses that do not have an affordable, efficient, effective and clean source of heat – to a greater proportion of houses that have affordable, efficient, effective and clean source of heat.
- From current levels of winter sickness and absence from work and schooling – to reduced levels of winter sickness and absence from work and schooling.
- From current levels of bronchiolitis – to reduced levels of bronchiolitis
- From air quality being a constraint to healthy outdoor activity – to not needing to consider air quality when deciding to do things outdoors.
- From residents and house owners viewing air quality as a compliance issue, with attendant fear, resentments and/or resistance – to residents and house owners viewing air quality as a quality of life and health issue to which they can contribute.
- From landlords treating improved insulation and heating as an added cost – to landlords accepting that meeting standards of insulation and heating is basic to being a landlord.
- From air quality being seen as a complex, confusing and/or abstract problem that is beyond the ability or responsibility of individuals to understand or solve – to air quality being an outcome of individual decisions, and something that everyone can contribute to.
- From the current proportion of people who do not know what contributes to poor air quality, and/or the effects of poor air quality – to a greater proportion of people who understand the factors and behaviours that contribute to poor air quality and the effects of poor air quality.

- From the current proportion of people with beliefs that support heating sources that emit high levels of particulate matter – to a greater proportion of people in the community that are open to clean forms of heating.
- From perception that responsibility for air quality is a burden that is unfairly falling on certain part of the community – to a perception that the burden of improving air quality is being shared justly.
- From health professionals not connecting health outcomes, air quality and housing quality – to health professionals being active in educating and advocating for better housing and clean heating.

3.5 PROBLEM OWNERS

- Those suffering from poor air quality
    - Elderly
    - Young
    - Sports people
    - Employers
- Those who implicated in changes to improve air quality
    - House owners (own homes and rentals)
    - Residents
    - Energy/fuel suppliers
    - Insulation and heating suppliers
    - Building sector
    - Health sector
    - Regional Council
    - City Council
- Others with interest in outcomes
    - Schools
    - Employers
    - Health professionals

3.6 ACTORS

- Regional council
- City council
- Landlords (Landlords Association)
- Homeowners
- Heating suppliers
- Fuel and energy suppliers
- Insulation suppliers
- Health professionals
- Schools
- Central government
    - MBIE
    - MSD – WINZ - OT
    - MfE
    - MoH
    - Housing NZ
- Neighbourhoods
- Cultural communities
- Community leaders
- Sports groups
- Venture Southland

- Tenancy services
- NGOs
- Trade training
- Environmental advocates

3.7 WHO TO WORK WITH

- Health professionals – clinical and public health
- Housing providers – Government, Council and private landlords
- Heating suppliers and installers
- Community leaders – incl. ES councillors and ICC councillors
- Funders for subsidies and assistance – Southland Warm Homes Trust; ILT; Venture Southland …
- Advisors – budget, health, cultural
- Age Concern
- Youth Council
- Council departments (ICC and ES)
- Awarua Synergy

APPENDIX C: INVITATION TO STAKEHOLDER CO-DESIGN WORKSHOP

Dear ,

Poor air quality is an issue that affects us all but has the biggest impact on our most vulnerable – the young, the elderly and those with existing medical conditions.

As a community, we have a responsibility to take ownership of the problem and find ways to improve our air quality and ensure warm homes to achieve better health outcomes for everybody.

As a key stakeholder in the community of South Invercargill, we are now asking for your input and your commitment to making a difference.

Environment Southland has been working with ESR (a Crown Research Institute) to trial a new approach to improving air quality, with an initial focus on South Invercargill. We've worked with a large number of organisations and interested parties through two workshops to build a rich picture of the main challenges in reducing the emissions from domestic solid-fuel burners, which we know are the main source of air pollution in this area.

The next stage is to co-design, implement and develop some strategies for change. We need the right people to be on board to ensure change happens and we believe you are one of those people. You may also have somebody else within your organisation who you think could be key to this project and you are welcome to invite them along either as your representative or to accompany you.

We are holding a workshop on Tuesday 29 January 2019 from 1.00pm until 4.00pm in the Oreti Room at the Ascot Park Hotel (Corner of Tay Street and Racecourse Road) and we really want your commitment to being there.

ESR will bring specialist facilitation and co-design expertise to ensure this is a productive session, with the goal to make a strong plan for change.

One organisation alone cannot make a difference, but with the right people working together and bringing the skills, knowledge and resources to the table, we have an excellent opportunity to pilot something which, if successful, could make a difference to the health of many Southlanders.

If you have any further queries or would like to discuss, don't hesitate to get in touch with Owen West, Air Quality Scientist - 021 411 305 or email owen.west@es.govt.nz.

Please RSVP to owen.west@es.govt.nz or tania.mccann@es.govt.nz by Friday 25 January 2019 to confirm your attendance. Afternoon tea will be provided.

APPENDIX D: STAKEHOLDER WORKSHOP DESIGN

Project	Air Quality improvement from domestic activities in South Invercargill
Workshop Title	Stakeholder co-design workshop
Purpose	To establish a collaborative, trans-organisational programme to achieve healthy and compliant air quality in South Invercargill by 2025, through reducing emissions from domestic activities.
Participants	Invited stakeholders
Date and Times	Tuesday 29 January, 2019. 13:00 – 16:00
Venue	Ascot Park Hotel, Invercargill
Facilitators	Graeme Nicholas
Resources	Activity templates, Sharpie pens, Discussion tables, Flip charts, whiteboard and pens. Tea and coffee available throughout.
Data collection and required outputs	Data collection is self-documented group activity; plenary note taking by ES staff; photos of all data sources and whiteboard. Principle output will be: requirements for social viability of programme; requirements for system viability of programme; commitment to seek stakeholder commitment to programme; establishment of initial convening group and initial timeline.
Notes:	This workshop of stakeholders lays the foundations for a more formal collaboration between key actors to shape and enact a programme to achieve healthy and compliant air quality in South Invercargill by 2025, through reducing emissions from domestic activities.

A: Enter

Time	Task	Instructions and process	Facilitator and Resources
13:00	Welcome Purpose and scope Housekeeping; H & S briefing	Showing ES commitment to a collaborative approach to air quality improvement To establish a collaborative, trans-organisational programme to achieve healthy and compliant air quality in South Invercargill by 2025, through reducing emissions from domestic activities. Toilets; tea and coffee arrangements; exits and emergency procedure	ES Director Graeme N *[Purpose statement on chart]*

	Introductions	'My role; my owner' (who do I need to get approval from or satisfy before making a major commitment?)	

B: Engage

Time	Task	Instructions and process	Facilitator and Resources
13:15	Background	Outline of work to-date Role of ES and quick into to monitoring and data Summary of the social complexity of improving air quality – presented as a rich picture/schematic The vision: **healthy and compliant air quality in South Invercargill by 2025, through reducing emissions from domestic activities**	Graeme N Owen West Graeme N *[schematic of social complexity]* Graeme N
13:25	Fleshing out the picture	Using the schematic stakeholders suggest any additional complexity factors that would be necessary for planning a comprehensive response. Invite stakeholders to locate their own role (or that of their organisation) on the schematic.	Graeme N

C: Explore

Time	Task	Instructions and process	Facilitator and Resources
13:35	Building a viable programme	Introduce concepts of 'system viability' and 'social/political viability'	Graeme N
13:40	Developing social viability requirements	In groups of three or four – mixed perspectives: • For whom does a programme to achieve the vision need to be relevant? • What would make the programme relevant in their eyes?	Graeme N *[Framework for establishing social viability;* *Template with two columns]*
13:55		Compare findings between groups	
14:00		In groups of three or four: • What are we assuming about the world that makes such a programme credible: ○ – to us?	Graeme N *[Template for two lists]*

		○ – to key stakeholders?	
14:15		• What sources of **knowledge** need to be included in designing and implementing such a programme – for social/political viability? • Which diverse **perspectives** need to be honoured or given power? • By whom, and how, are decisions to be made about what **facts and claims** are relevant and valid?	Graeme N *[Template for lists]*
14:45	Developing system viability requirements	In new groups of three or four – mixed perspectives: • Who will be responsible to own, guide and nurture the vision for the South Invercargill air quality programme 2025? • What work streams – if they worked together and were adequately resourced – will be needed to deliver the South Invercargill air quality 2025 vision? ○ Which of these already exist? ○ Which need boosting? ○ Which need establishing?	Graeme N *[Templates for each of the five questions]*
15:05		Compare notes with other groups – steal key ideas	
15:10		In groups: • What will be needed to ensure the workstreams avoid tripping over one another, doubling up, or leave critical gaps, but achieve desirable synergies. • What will be needed to ensure that the workstreams and their co-ordination are resourced and accountable (for use of resources and to the over-arching vision and purpose of the programme)? • What will be needed to progressively gather, document and analyse progress and insights from the programme and from	

		outside sources so they can be used for learning and programme improvement?	

D: Express

Time	Task	Instructions and process	Facilitator and Resources
15:40	Develop action plan	• Outline when particpants will receive a synthesis of the workshop outputs. • Invite discussion and planning for how to get stakeholder 'buy-in'. • Invite nomination of a small convening group to take responsibility for follow-up and convening phase two of the stakeholder collaboration. • Create a plausable timeline for next steps.	Graeme N *[Whiteboard]*

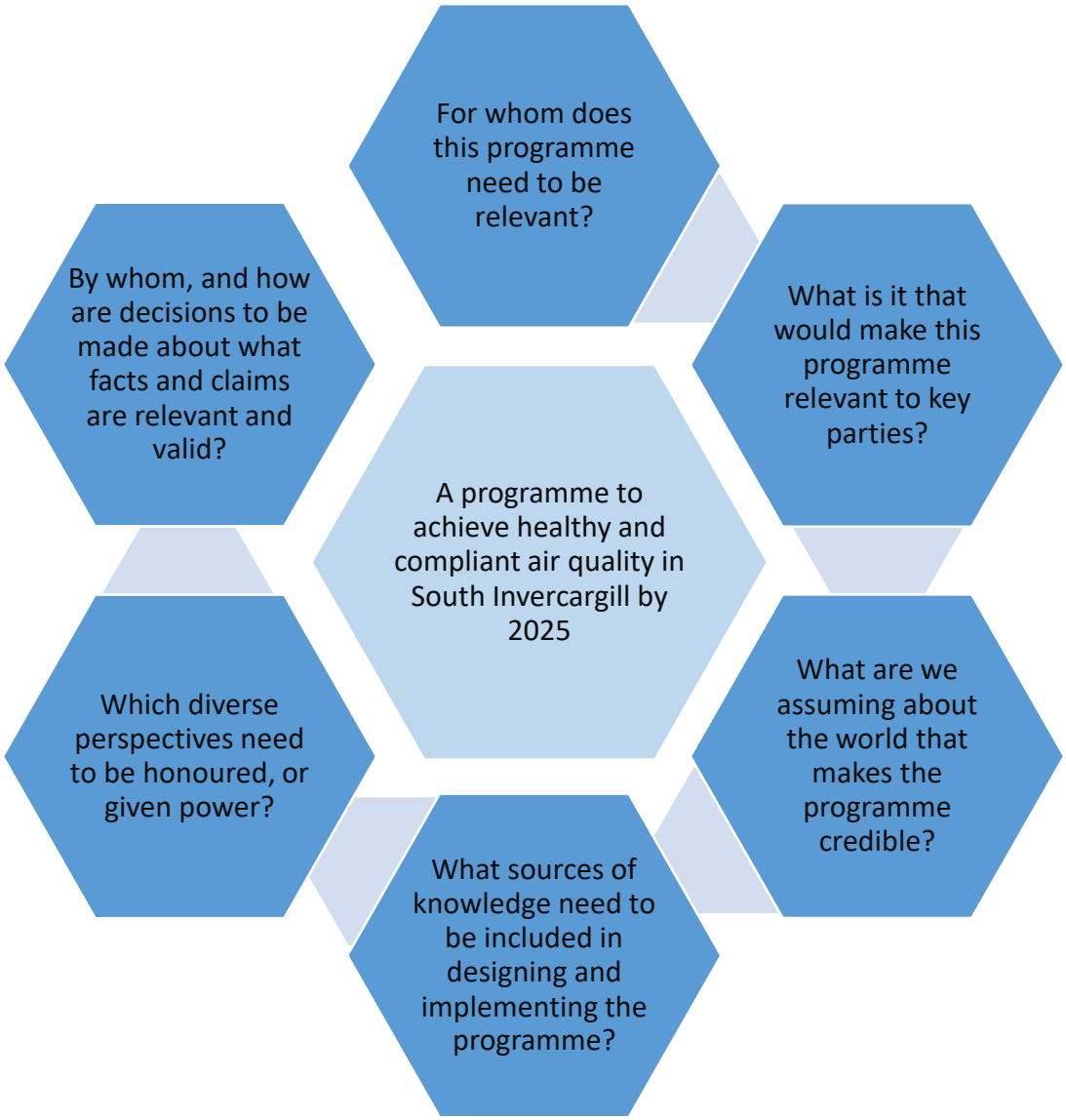
E: Exit

Time	Task	Instructions and process	Facilitator and Resources
15:55	Final remarks and thanks		Graeme ES Director

APPENDIX E: LIST OF PARTICIPANTS

Michael Harstonge	Invercargill City Council – Team Leader Building Services	Michael.hartstonge@icc.govt.nz
Scott Taylor	Invercargill City Council – Vetting Officer	scott.taylor@icc.govt.nz
Bridget Rodgers	Well South – Primary Health	bridget.rodgers@wellsouth.org.nz
Rapunzel De Leon	Ministry for the Environment	Rapunzel.deleon@mfe.govt.nz
Gavin McCullagh	Environment Southland	gavin.mccullagh@es.govt.nz
Gemma Crawford	Invercargill City Council	gemma.crawford@icc.govt.nz
Brooke Brown-Ogilvy	Youth Council	brookebogilvy@gmail.com
Hebe Gibson	Public Health South	hebe.gibson@southerndhb.govt.nz
Scott Lindsay	Fire and Emergency New Zealand	scott.lindsay@fireandemergency.nz
Linda Robertson	Public Health South	linda.robertson@southerndhb.govt.nz
Bruce Campbell	Ministry of Social Development	bruce.campbell002@msd.govt.nz
Marion Poore	Public Health South	marion.poore@southerndhb.govt.nz
Tom Scott	Public Health South	tom.scott@southerndhb.govt.nz
Jitender Arora	Public Health South	jitender.arora@southerndhb.govt.nz
Stuart McKinnon	SBS	stuart.mckinnon@sbsbank.co.nz
Danielle Servant	Public Health South	danielle.servant@southerndhb.govt.nz
Sumaria Beaton	Awarua Synergy	sumaria@awarua.org.nz
Isabel Huther	Venture Southland	isabel@venturesouthland.co.nz
Eva Hendriks	Te Ao Marama Inc.	eva@tami.maori.nz
Lyndal Ludlow	Environment Southland	Lyndal.ludlow@es.govt.nz
Elaine Moriarty	Environment Southland	Elaine.moriarty@es.govt.nz
Tania McCann	Environment Southland	Tania.mccann@es.govt.nz
Graham Sevicke-Jones	Environment Southland	Graham.sevicke-jones@es.govt.nz
Owen West	Environment Southland	Owen.west@es.govt.nz

APPENDIX F: FRAMEWORK FOR SOCIAL VIABILITY



APPENDIX G: STAKEHOLDER WORKSHOP OUTPUTS

The following tables have been transcribed as accurately as possible from the hand-written responses from the workshop activities (Appendix D). This record is intended for the use of the original workshop participants and those who advance the programme. These tables provide some initial responses to core questions. The task of those who take responsibility for on-going design and implementation of a programme of change will be to interpret and supplement these initial data, and to re-use the questions periodically throughout the programme as a way to check the assumptions and precepts on which it is being developed and carried out.

G.1 Social Viability

For whom does a programme to achieve the vision need to be relevant?	What would make the programme relevant in their eyes?
Home owners and landlords	Legislation and local policy, cost and effectiveness complexity of consenting process, satisfaction with heating system
Agency responsible for ensuring Air Quality standards are met	Statutory obligation – RMA; responsibility to respond effectively to complaints enquiries; meet building codes and consents
Health sector providers	Less admissions to hospitals, fewer days off work and school
Everyone – all need heating, all need air	Appealing to pet owners
Politicians need to be up to speed	Appealing to parents
Real Estate agents at time of sale	Make the healthy choice easy
Tenants	Know the why
Residents of Southland and South Invercargill	Benefits: Health and realisation of health improvements; mentoring around cause and effect to promote understanding
Home owners	Making house environmentally friendly
Children	School curriculum, education
Legislators	Agile policy writing
People needing warmth/people paying the bills	Ease of alternative, awareness, affordability, trusted expertise, funding
Installers and suppliers	Profitability, social responsibility, compliance and legislative requirements
Vulnerable groups	Affordability
Funders and lenders	Profitability
Indirect stakeholders/health providers	Profitability, social responsibility
Councils	Social responsibility, compliance and legislative requirements

Ministry of Environment	Benchmarking global standards
Tourist	Available education
Regulatory agencies	Positive media
Families, community groups, schools	Social media, visual impacts, need to connect cause and effect
General public	Incentives eg Clean Air loan scheme; they need to believe the problem is real; proof that the project can work in conjunction with other home improvements eg batts; education the public that they have a responsibility; educate that respiratory and other health issues due to air quality will improve
Cultural	Education reflects their cultural needs; consent cost removed; show the benefits of change; system to cope when multiple changes need made in a home; assistance with cost for everyone
Finance companies/financing	Needs to be interest free, no prerequisites
Generally	The process needs to be straight forward; educate that people can make a difference
Government	Assumption that government/councils will be stable and processes put in place will stay in place (no financial surprises for the public)

What are we assuming about the world that makes such programmes credible:	
To us	**To key stakeholders**
Personal resources are available	They believe the problem is real
The project can work	That people have the financial resources to make changes
That domestic sources are the key problem	That they have a responsibility
Assuming that current support (loans) will work in a reasonable timeframe	Again – assuming that current support (loans) will work ina reasonable timeframe
Stability in central and local government	They care
Fear of non-compliance with insurers	Very relevant
The will to change	Education, collaboration, understanding
Recognition and visibility	Transparency and communication
People are well informed enough to make the right decisions	Focus on health education

Advances in building technology	Keeping up with global technological and heating advances – clean emissions
We can make a difference as individuals and as organisations	Public buy in
The need for change to happen	Enforcement
Cost	Health benefits bonus of spending the money
Effects on the environment	Education, public buy in

What sources of knowledge needs to be included in designing and implementing such a programme – for social/political viability?

Clear dates
Mātauranga Maori
Understanding of policy and barriers
Literature and evidence translated into layman's terms
Community and neighbourhood knowledge
Other regional councils (e.g., Timaru issued 4,000 heater consents)
International trends – what's happening worldwide?
Link in with weather reporting
NIWA
Political knowledge and political awareness from councillors
Environmental impact – air pollution and climate change
Health issues for individuals – comparing air pollution and hospital data to map health issues
Cost benefits overall of updating burners/heating sources
Present to people that they have options and promote the heating choices available
Knowledge of building code compliance for installation
Knowledge of the problem
Knowledge of acceptable solutions
Knowledge of environmental conditions
Finance options

Which diverse perspectives need to be honoured or given power?

Compliance
Cultural and multicultural perspectives
Social economic perspective
Emerging technologies
Elderly, high risk people, low resources people, people conditioned to a way of doing things (need to respect that everyone has an opinion and everyone has the right to be heard)
Those most affected by pockets of air pollution
Migrants
Commercial interests
Young people and children– it's their future

Educators/Relevant researchers
Homeowners and landlords and real estate agents
Compliance authorities
Financiers
Community Engagement groups
Local marae and Iwi
Environment Southland

By whom and how, are decisions to be made about what facts and claims are relevant and valid?

Everyone from their expert field such as DHB, ES, cultural groups and banks
Involvement of the community in the process
Testimonies backed up by science
People need to be able to make their own decisions e.g., not feel under pressure where they may make a decision they can't afford or are not completely happy with, with a heating choice
Decision making needs to be transparent to promote and ensure there is public trust
City leaders, people with community influence
Media
Health industry staff
Frontline staff who see things first hand
Grey Power and other interest groups
Use WHO and UN statistics

G.2 System Viability

Who will be responsible to own, guide and nurture the vision for the South Invercargill air quality programme 2025?

End User
Environment Southland
Public Health South
Ministry of Health
South Alive
MBI
Local councils/councillors
Tourism Industry
Support from Awarua Synergy
Te Ao Marama
Ministry for the Environment
A Governance Group made up of various organisations/Multi agency collective

What workstreams – if they worked together and were adequately resourced – will be needed to deliver the South Invercargill air quality 2025 vision?

Court/Council/MPI
Consumer
South Alive
Health organisations
Suppliers/Installers [of heating and insulation]
Landlords/Real Estate agents
Clean heating loan schemes
Air Quality monitoring programme
Public education programmes
An engagement stream – building champions in the community
A financial stream tailored to people's individual needs
Compliance
Wood education, moisture meter availability
Identify known and unknown barriers

What will be needed to ensure the workstreams avoid tripping over one another, doubling up or leave critical gaps, but achieve desirable synergies?

Good communication
Rating scheme
Universal scale/National Standards
Education – everyone on the same page
Social media presence – targeted ads that are vibrant and relevant, images that people can relate to, targeting the right demographic
Not working in silos
A clear:

- workplan
- responsibilities
- links between organisations
- charters within workstreams
- accountability of reporting
- established process at the start

A comprehensive evaluation framework
Group coordination – shared visions and clear responsibility
Central governance direction
Collaboration of stakeholders (engagement and commitment)

What will be needed to ensure that the workstreams and their co-ordination are resourced and accountable (for use of resources and to the over-arching and purpose of the programme)?

Social campaign
Multiple logos
Coordination of workshops for compliance
A representation from all involved organisations

Central point of contact
Regular focused meetings
A dedicated administrator/minutes
Sworn commitment
Project Manager
Definitions of legislation we need to work within
Planning commitment through business plans
Accountability in providing feedback and completing tasks/steps
Creating KPI's for accountability
Mandate
Budget commitment and prioritisation over and/or aligned to other social needs

What will be needed to progressively gather, document and analyse progress and insights from the programme and from outside sources, so they can be used for learning and programme improvement?

Data Analysis
A robust plan
Experts in the field
Champions and ambassadors in the community
Measuring air quality levels and publishing on social media/provide the scientific information in simple terms to the public
Include the Youth Council
An appropriate measurement programme that can be reported on and backed up with clear results
Continuous analysis of inputs and outputs
Monitoring and evaluation – a six monthly evaluation that is reported on
A dedicated website

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INSTITUTE OF ENVIRONMENTAL SCIENCE AND RESEARCH LIMITED

Kenepuru Science Centre
34 Kenepuru Drive, Kenepuru, Porirua 5022
PO Box 50348, Porirua 5240
New Zealand
T: +64 4 914 0700 **F:** +64 4 914 0770

Mt Albert Science Centre
120 Mt Albert Road, Sandringham, Auckland 1025
Private Bag 92021, Auckland 1142
New Zealand
T: +64 9 815 3670 **F:** +64 9 849 6046

NCBID – Wallaceville
66 Ward Street, Wallaceville, Upper Hutt 5018
PO Box 40158, Upper Hutt 5140
New Zealand
T: +64 4 529 0600 **F:** +64 4 529 0601

Christchurch Science Centre
27 Creyke Road, Ilam, Christchurch 8041
PO Box 29181, Christchurch 8540
New Zealand
T: +64 3 351 6019 **F:** +64 3 351 0010

www.esr.cri.nz