

SPPH 552 - Risk and Communication in Public Health
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Climate and Health Vulnerability Communication Plan

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The purpose of this communication plan is to enable the project team to:

- detail target audiences: identify their needs and knowledge relevant to the project
- communication goals: describe the different goals for each target audience and how we know the goals are achieved
- communication tools: describe the most effective media to reach the target audiences

The Mission: To convince the target audiences that health vulnerabilities should be considered as climate change programs and plans are developed, bringing attention to certain areas as a result of their health vulnerabilities



Figures of water levels along False Creek South before and during King Tides - an illustration of expected sea level rise.

Background

In 2016, Metro Vancouver developed a Climate Projections Report that detailed a number of expected climate related outcomes based on different greenhouse gas emissions scenarios. At the same time, the Lancet identified climate change response as “the greatest global health opportunity of the 21st century”(The Lancet, 2020). The combination of these two events resulted in an increased awareness around the need for public health involvement in the climate change mitigation and adaptation.

Over the last year and half, Vancouver Coastal Health (VCH) has worked with the University of British Columbia’s (UBC’s) School of Population and Public Health (SPPH) on a Vulnerability Mapping Project. This project produced a series of maps that illustrate the vulnerability of different geographic areas in the Lower Mainland to four climate change issues: heat, sea level rise, flooding, wildfire and smoke, and increased ozone levels.

Since 2009, all health authorities and regional and municipal governments in British Columbia have joined formal partnerships to facilitate working together and bringing health evidence to their decision-making and plan development. As a result, both VCH and Fraser Health (FH) are looking to share the results of the Vulnerability Mapping project with the local governments in the VCH and FH regions to help inform their climate action planning.

The Mission

The Vulnerability Mapping project outputs are very technical in nature. The maps illustrate that there are areas within VCH and FH that are more susceptible to the risks of climate change than others as a result of differences in their: exposure, sensitivity and adaptive capacity. These maps bring nuance to existing floodplain maps and sea level rise predictions, and new emphasis to new climate-related concerns that may not have garnered attention in all of the regions’ local governments. This is different from the traditional climate data that emphasizes the need to reduce greenhouse gas emissions and mitigation measures. The maps, however do not provide actionable information, nor do they indicate which map is associated with the most significant health impacts. This communication plan has identified the target audiences and defined specific processes and outcome goals to ensure that the overarching mission. To meet the mission, three specific objectives are defined:

- Illustrate that inclusion of health vulnerabilities changes or strengthens the outcome of climate planning processes and activities
- Emphasize the need to consider adaptation measures for the community (particularly the most vulnerable) and not only mitigation
- Provide local governments with the tools and information necessary to incorporate subarea health vulnerabilities in their climate mitigation and adaptation planning

Communication Plan Summary

Project Name: Climate-Health Vulnerability Maps		Project Lead: Craig Brown		
Start Date: May 2020		End Date: December 2020		
Project Mission: <i>To convince the target audiences that health vulnerabilities should be considered as climate change programs and plans are developed, bringing attention to certain areas as a result of their health vulnerabilities</i>				
Project Objectives: <ul style="list-style-type: none"> • Illustrate that inclusion of health vulnerabilities changes or strengthens the outcome of climate planning processes and activities • Emphasize the need to consider adaptation measures for the community (particularly the most vulnerable) and not only mitigation • Provide local governments with the tools and information necessary to incorporate subarea health vulnerabilities in their climate mitigation and adaptation planning 				
Audience	Communication Outcome Goal	Communication Goal Evaluation	Communication Tool	Timetable
Medical Health Officers (MHOs)	All MHOs within VCH and FH can communicate the findings of the Vulnerability Mapping project effectively to their local government partners and related groups.	Record questions from the MHOs to determine their level of comfort with the material. Identify the number of local governments who have included vulnerability in their climate change work following the MHO's presentation.	<ul style="list-style-type: none"> • Briefing note • Presentation (in-person meeting) 	May 2020 during standing MHO meeting
Local Government Council and Boards	Local government Councils / Boards understand the information given to them and provide a directive to staff to consider health vulnerabilities in their climate planning.	Determine the number and which Councils have directed staff to incorporate a health vulnerability component into their climate plans (number obtained via direct reporting from planners or publicly posted meeting minutes).	<ul style="list-style-type: none"> • Presentation (in-person meeting) with opening pitch • Fact sheet 	May 2020 to December 2020 during Committee of the Whole meetings or Council workshops as directed by local government planning staff
Local Government Planning and Associated Staff	Local government planners and staff: <ol style="list-style-type: none"> 1. Understand health vulnerabilities to climate change such that they are incorporated in their climate discussions and related work 2. Ask for information on health vulnerabilities to incorporate it into their plans 	Local government planners and staff: <ol style="list-style-type: none"> 1. Establish the number of local governments that have included health vulnerabilities as subtopics in their workshops or embedded health vulnerability language into planning discussions and engagement 2. Record the number of interactions / engagements focused on learning how to use the maps or obtain other relevant information 	<ul style="list-style-type: none"> • Presentation (in-person meeting) with opening pitch • Fact sheet • Maps instruction sheet • Briefing note (for regional governments only) 	May / June 2020 during existing community meetings

The Message

It is essential for this project to have one singular, clear, agreed upon message as there are many players involved, and the information is very complex. A singular message ensures consistency across all messengers and that the key takeaway is consistent:

“Different populations and geographic areas of the VCH and Fraser Health regions are expected to experience the impacts of climate change differently due to differences in their exposure, sensitivity, and adaptive capacity.”

This message serves to emphasize the key values of the mission, serving as the key takeaway to be communicated by the project team and received by target audiences. While the high-level message considers a broad number of issues (see Appendix A), it is essential that it does not belittle the work already conducted by local governments and recognize that the maps provide an incomplete picture of impact as only a small number of climate hazards are evaluated.

The greatest current barrier to developing this communication plan is that the maps are not finished. This makes it difficult to determine specifics in message delivery for each target audience. For example, a series of narratives (see Appendix B) will be used to make the impacts personal, local, and easy to understand for a given area; however, it is challenging to develop when the maps are currently incomplete as the project team does not know which areas or populations are susceptible to which hazards.

Target Audiences

Two target audiences are identified to communicate the Vulnerability Mapping project: an internal group of Medical Health Officers (MHOs) and local governments. Through the local governments, there are two levels of audience: Council, and city staff and planners working in climate change work. The media selected for each audience was determined based on their locations on the Hazard x Outrage (HxO) Framework and Precautionary Adoption Process Model (PAPM), potential barriers and opportunities, and existing workplace frameworks and hierarchies.



Medical Health Officers



Local Government Councils & Boards



Local Government Planners & Staff

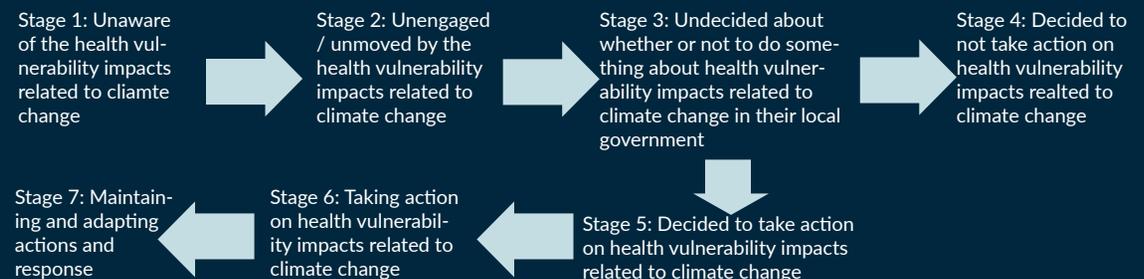


Image of the impacts related to the Chicago heatwave of 1995 where high heat and humidity resulted in hundreds of deaths were recorded and the morgues could not keep up with the volumes. Over 730 deaths were blamed (Meincke, 2015).



Satellite image of the forest fire smoke blanketing British Columbia in 2015 (NASA, 2015). The smoke resulted in a number of air quality advisories and recommendations to avoid outdoor activities (Owen, Thorne, Schmalz, and Carlowicz, 2015).

Precautionary Adoption Process Model: Health Vulnerability and Climate Change



The Internal Audience: Medical Health Officers

Medical Health Officers (MHOs) work within the health authorities and are the main points of contact to share information with the community. Only two of the 16 MHOs across both health authorities are involved in the project; therefore, those who will present information to local governments must be presented with some materials so they gain familiarity with the project so they can share accurate information using the correct messaging to the target receiving audiences. The information may also be shared by the Project Lead; however, this will depend on the community and MHOs' preference. This difference in messenger does not change the needed information as all of the MHOs will need to be briefed on the project to answer any community-based questions.

Crafting the MHO Message

HxO framework: Low hazard X Low outrage

PAPM location: Stage 5 and moving to Stage 6

Climate change is an identified priority for VCH and FH, especially since a Health Canada grant has been awarded to investigate how the health authorities can take a more active role in combatting climate change. Considering population health vulnerabilities is a core value shared by most MHOs as their role is to diagnose the population and determine appropriate prescriptions to mend the issues. While individually, each MHO may sit differently on the HxO framework or PAPM, as part of their job, they will fall into the "sweet spot" because the health authorities have committed to climate change, and there is an acknowledgement that climate health vulnerabilities exist. Providing the information from this project to the local governments is a way that the MHOs can start moving into Stage 6 of the PAPM.

Reviewing MHO's Media

Process goal:

1. Briefing note provides sufficient information for MHOs to answer basic questions regarding the project and its implications.
2. Summary report is clear for each geographic area so MHOs understand the local and regional impacts.

Process goal evaluation:

The MHOs overseeing the project will review all materials before they are distributed to ensure that language, tone, and information is conveyed appropriately for the other MHOs.

A briefing note is will supplement the meeting discussion as it provide a high-level overview of the project, its key findings, details regarding the specific local government's current approaches to climate change, and information to be shared with the local governments.

Because there are 35 local governments to communicate with, and it is unreasonable to provide each MHO with a different briefing note as they may want to compare areas. Therefore, a summary report of each geographic area's key findings will be compiled. This will enable the MHOs to know about the impacts to their geographic area and support theneed to know about the risks across other areas. This will help establish the regional level impacts and variations across local areas.

As MHOs have a regular meeting schedule, being placed on their agenda will be an efficient way for the Project Lead to share the required information. Drafts of the materials they will be expected to present to their local governments will also be available for feedback at this time.

Outcome goal:

All MHOs within VCH and FH can communicate the findings of the Vulnerability Mapping project effectively to their local government partners and related groups.

Outcome goal evaluation:

Record questions from the MHOs to determine their level of comfort with the material. Identify the number of local governments who have included vulnerability in their climate change work following the MHO's presentation.

Barriers:

Personal – Some MHOs have invested significant time and energy into the project and may have a different vision for how and what ought to be shared.

Opportunities:

Provide opportunities for all team members to edit the key message, mission and communication objectives, to ensure that messaging is consistent.

Chosen Media:



Briefing
Note



Report
Summary



Meeting
Agenda
Item

The External Audience: Local Governments

Local governments in British Columbia include regional governments (e.g. Metro Vancouver, Fraser Valley Regional District) as well as municipalities. Indigenous communities are not explicitly included as part of this communication plan because First Nations Health Authority (FNHA) holds responsibility for communicating directly with Indigenous communities as its staff have been trained to do so respectfully. As the project moves forward, there is an intention to connect with FNHA to ensure that the information is shared with Indigenous communities as the general project findings and messaging are not isolated to VCH and FH regions.

Regional governments are significant as they often coordinate regional responses to issues such as climate change for the municipalities; this facilitates unique partnerships between the regional governments and health authorities to work together and share messaging to municipalities. Municipalities develop their own climate change plans and engage directly with the public. Local governments have long been tackling climate change with climate plans that focus on mitigation, but few have considered planning for adaptation.

As it is expected that the fight against climate change will be an uphill battle as funding will be tight following the response to the COVID-19 pandemic. The Vulnerability Mapping project may help local governments in their decision-making and priority setting, hopefully leading them to address the most vulnerable areas first.

The health authorities must understand the interplay between staff and Council or the Regional Board; these organizations follow a strict workflow and to ensure that the greatest success is generated from this project, it is important to respect the workflow. Therefore, the information must first be shared with the local government planners so they are aware of the information shared and they can present guidance on how to best approach their Councils or Boards. The health authorities have formal partnerships with the regional and municipal governments, which facilitates the sharing of information through existing meeting structures and reducing the need to “sell” the product through an elevator pitch as investment to a partnership exists.



Normal tides underneath Cambie Street Bridge compared to King Tide water levels. King Tides are used as an indicator of sea level rise impacts.

Local Government Council / Boards

Local government Councils and Boards vary in their priorities and their ideas behind what is most important to achieve for their communities. The regional boards provide guidance to the municipalities for cross-jurisdictional issues, which generally leads to region-wide adoption. This is advantageous as the municipalities vary significantly in their commitments and prioritization of climate change action and social justice. Understanding the dynamics and leanings of each local government will help the MHOs use the right tone in delivery and the project team in developing the narratives that will hit home to Council. Staff will be essential in guiding this process to determine the most effective and appropriate tailored messaging.

Crafting the Message for Local Government Council / Boards

HxO framework: any combination of High / Low hazard X High / Low outrage

PAPM location: Stage 1 OR Stage 2 OR Stage 3 OR Stage 5

Between the VCH and FH regions, local governments fall across all stages of the HxO framework and PAPM. For areas who have declared a climate emergency and acknowledge the social challenges existing in their communities, conversation using a high hazard x high outrage discussion framework will be appropriate to enable them to move from a PAPM Stage 5 to 6. Cities like New Westminster and Vancouver would fall into this category and will not need a delivery of catchy pitches, but rather data and information sharing to illustrate how adoption supplements their current visions.

Other local governments, may not have the capacity either in time or resources with other competing priorities, resulting in a high hazard x low outrage rating or a low hazard x high outrage rating, and PAPM Stage 2 or 3. For these communities, opening with a catchy story (a variation of an elevator pitch) will be needed as a hook to garner their attention to health vulnerabilities to convince them to choose to take action and move to PAPM Stage 5. It will be essential to communicate to these communities that adoption of this action will not strain their limited resources, but rather strengthen their approach.

Even still, there will be local governments who do not see climate change or health vulnerabilities as part of their responsibility or an issue for them, situating them at a low hazard x low outrage and PAPM Stage 1. These communities will require significant consultation with their staff to ensure the right approach is taken and will need the same considerations as those in PAPM Stage 2 or 3, but also additional messaging of the message to ensure speaks to working collaboratively to limit resource consumption and focus on the health-specific concerns that will impact their community in population, finances, and program offering.

Outcome goal:

Local government Councils / Boards understand the information given to them and provide a directive to staff to consider health vulnerabilities in their climate planning.

Outcome goal evaluation:

Determine the number and which Councils have directed staff to incorporate a health vulnerability component into their climate plans (number obtained via direct reporting from planners or publicly posted meeting minutes).

Barriers:

Audience – Council may have a different value system and may speak to the constituents who vote rather than react to facts and evidence.

Personal and Bureaucratic – The approach required to present effectively is stylistically dependent on each MHO and their own style.

Opportunities:

Consider ways to get Council on-board through true-story narratives, tone, style, and delivery (e.g. use an elevator pitch as a hook) to detail the negative health impacts predicted for the area.

Provide clear messages and background information on Councils with respect to their perspectives in the briefing notes to MHOs (see details on briefing note).

Local Government Council / Boards

Chosen Media:



In-Person Meeting
(as directed
by Staff)

Presentation

Fact Sheet

Process goal:

Fact sheet and presentation are easily understood by Council members, enabling them to define vulnerability, exposure, sensitivity, and adaptive capacity.

Process goal evaluation:

Provide draft materials to staff for feedback on content, clarity, tone, and option recommendations for Council members. Staff may also suggest alignment to other existing policies that could be referred to, helping to support the ask.

Reviewing Local Government Council and Boards' Media

In-person meetings will be essential to convey the information appropriately; however, health authority staff will follow the recommendations given to them by local government staff. It is likely the meetings will occur by workshop or Committee of the Whole. The meetings will consist of a presentation made by an MHO using a slide deck personalized somewhat for the community with narratives (see Appendix C). High level speaking notes will be provided; however, the MHOs will largely be responsible for conveying the information appropriately as a result of their briefing note and summary report.

The slide deck will open with a hook, using specific examples of particularly vulnerable areas in the community. It will review why health is concerned about climate change, how health is impacted by climate change in the region, what the project is about, and a high-level overview of key findings from the project specific to the area. The key findings will be presented as narratives, providing examples of how different population groups are likely to be impacted by the expected changes in the community (see Appendix B). The narrative format will help personalize the issue for Council and Board members and will include an action / non-action outcome for the main character. The presentation will conclude with slides detailing the recommended options for their consideration.

In addition to the presentation slide deck, a fact sheet / package (no more than four sheets) will be compiled that will share a background of the project, a summary of the health impacts related to climate change, an explanation of climate-health vulnerabilities, specific outcomes expected for the area, tailored contrasting narratives about the impacts, and ideas on how the organizations can work together (see Appendix D). The fact sheet will be shared across all local government audiences.

Local Government Planners and Associated Staff

Local government staff and planners have varying capacities in both knowledge, resources and time; while their work priorities are established by Council or the Board, they are experts in knowing how frame concerns to decision-makers to adapt priorities in a considerate and respectful way. To maintain the relationships that the health authorities have with the local governments the project team must touch base with staff before approaching the decision-makers so staff are aware of what might be asked of them rather than have it be a surprise.

It is expected that the target planners and staff will have a fairly high baseline understanding of climate change mitigation and adaptation measures and implications. However, they may lack knowledge of health-specific language (e.g. “exposure” or “sensitivity” or “vulnerability”) and the connections between climate change and health outcomes. It is therefore essential to define health jargon clearly to avoid confusion and to be explicit about what the health authorities hope to achieve by being included in this process.

Notably, contract or consultant planners will be used for lower capacity local governments. Consultants bid on contracts for specific jobs based on a request for proposal; therefore, it is expected that consultants will have investment and in the topic. The request for proposal would be written by local government staff, which strengthens the argument to ensure that the message is well received by local government staff.

Crafting the Message for Local Government Staff

HxO framework: any combination of High / Low hazard X High / Low outrage

PAPM location: Stage 1 OR Stage 2 OR Stage 3 OR Stage 5

As local government staff must respond to the request of Council, they must align their professional priorities with their Council. This means that the degree of prioritization and recognition of climate and social justice issues will vary significantly even across planners. Similar to engaging with Councils, therefore, the efforts required will require customization to the local government’s position. Staff themselves will also hold their own biases and beliefs, which may assist or hinder engagement; it is essential that the health authorities bring a clear sense of what they are hoping to accomplish in their communication and read the body language of their audience to respond appropriately.

Local government staff working for governments that perceive high risk x high outrage frameworks and are at Stage 5 of the PAPM will rely on existing relationships to largely share information and perspectives via a brief presentation during a standing meeting and delivery of a fact sheet. These local governments are ones who have likely been engaged already on this project, so the information is not brand new. The health authorities will seek their recommendations and guidance on how to best approach Council or Board.

Outcome goal:

Local government planners and staff:

1. Understand health vulnerabilities to climate change such that they are incorporated in their climate discussions and related work
2. Ask for information on health vulnerabilities to incorporate it into their plans

Outcome goal evaluation:

1. Establish the number of local governments that have included health vulnerabilities as subtopics in their workshops or embedded health vulnerability language into planning discussions and engagement
2. Record the number of interactions / engagements focused on learning how to use the maps or obtain other relevant information

Barriers:

Organizational – Insufficient resources for the local government to incorporate a new topic area to their planning

Opportunities:

Identify shared key priorities to identify health vulnerability concerns for specific areas

Identify new ways of partnership and working together, perhaps through shared personnel

Local Government Planners and Associated Staff

VCH and FH must understand the circumstances for local government staff working in high hazard x low outrage rating or a low hazard x high outrage, and PAMP Stage 2 or 3 communities. Consideration of health vulnerabilities may require a realignment of resources and priorities that may not be adopted without Council or Board approval. To reach these communities, emphasizing the specific areas that are expected to be negatively impacted in a way aligns with their existing priorities will be important.

For local government staff working in low hazard x low outrage, and PAMP Stages 1 or 2, significant persuasion may be required. This must be done in a way that does not undermine the work already being completed, but stresses why the health authorities are particularly concerned and address ways to merge resources to minimize impact to budgets.

Chosen Media:



In-Person Meeting



Presentation



Fact Sheet



Map Instruction Sheet



Briefing Note (for regional governments)

Process goal:

1. Vocabulary, tone, and style used during in-person meeting are appropriate for the audience and garner support from local government planners
2. Fact sheet and presentation are worded in a way that is easy to understand such that local government planners are able to provide a high-level definition of vulnerability, exposure, sensitivity, and adaptive capacity
3. Local government planners are able to identify some of the vulnerabilities existing in their communities

Reviewing Local Government Staff's Media

As regional governments often convene and engage with local governments on a variety of climate-related issues, they will be the priority groups with whom the health authorities will engage. Because different departments of the regional governments will engage differently, a briefing note will be provided during an in-person meeting to articulate why health data is an important consideration and how it can support existing work (see Appendix E).

Engaging with municipal government planners requires recognition that they are not decision-makers and are technical experts in their field. A presentation slide deck will therefore be presented to both municipal and regional government staff to provide background context to the project, technical findings, and explicit recommendations of how the key findings may influence the work together. Providing technical background and explicit examples will allow the planners to consider how the information fits within their own role and can be used to sway decision-makers' opinions. The presentation will serve as information, as well as a conversation starter, asking staff to guide the health authority on their recommendations on how to best approach Council or Board with the information.

The same fact sheet developed for Council members will be shared with local government staff. In addition to this, a map instruction sheet will also be developed to explain how to use the maps and what the maps can and cannot do – in order for the planners to incorporate the maps into their work, they will need to understand how to use them. Consultants will receive identical materials with minimal-to-no change (e.g. some presentation slides may be removed because consultants will not need to be convinced of its importance).

Process goal evaluation:

1. Check in with local government planners with whom there are close relationships to ensure that the presentation is well-received
2. Send draft fact sheet and presentation slides to local government planners with whom there are close relationships to determine if there are any missing gaps of information or if wording and messaging is unclear
3. Review how to use information sheet with users of the maps; review and edit sheet as questions arise particularly if they are similar

Implementing and Deploying the Communication Plan

Prior to implementation of the communication it must be:

1. approved by the Project Lead and ensure that there are sufficient resources to develop the said materials (e.g. fact sheets). Work must also be done to ensure that any materials in the process of being developed align with the communication plan.
2. approved by the Project Team
3. approved by the Project Team members' individual Management Teams

The success of this plan relies heavily on existing relationships to help spread the knowledge (particularly through regional governments) and key leaders in local government who have already acknowledged differences in vulnerabilities across population groups when it comes to climate change. The communication plan will be led by the project team lead (Craig Brown) and facilitated by an Environmental Health Officer (Laura Chow) to help coordinate across teams to the local governments, MHOs, and other key contacts.

References

Meincke, P., & Wls. (2015, July 10). Deadly heat wave 20 years ago taught valuable lessons. Retrieved from <https://abc7chicago.com/news/deadly-heat-wave-20-years-ago-taught-valuable-lessons/841287/>

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The Lancet. (2020). Health and climate change. Retrieved March 19, 2020, from <https://www.thelancet.com/climate-and-health>

Icons:

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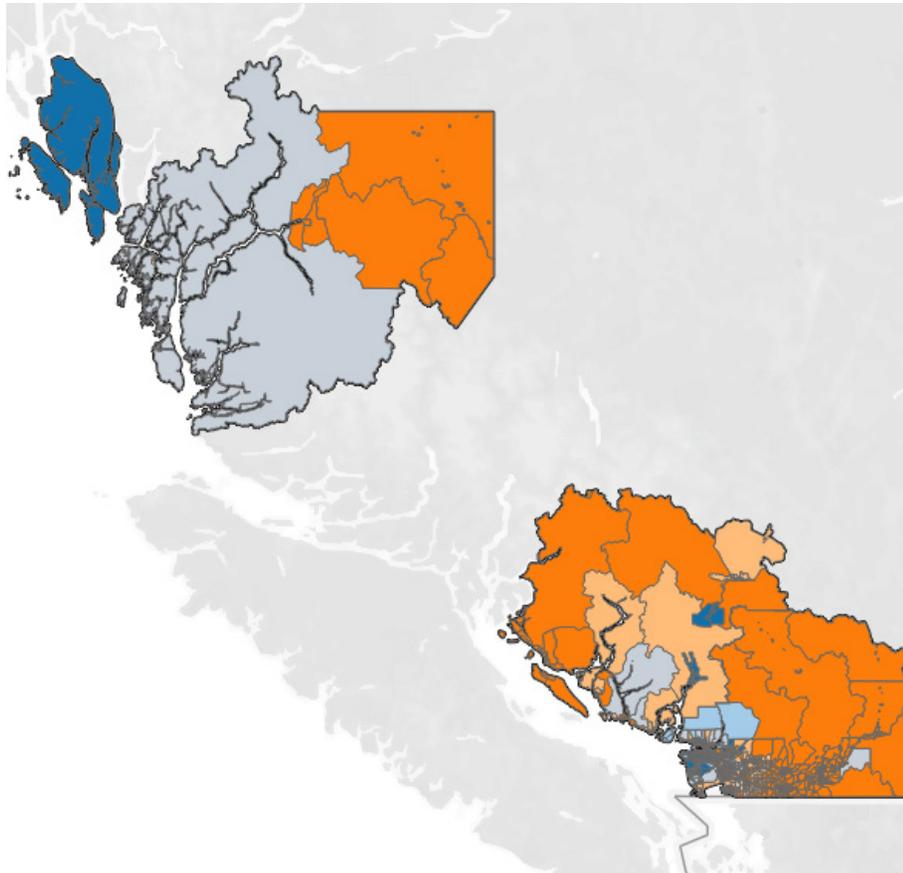
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"symbol building parliament orange" icon by Pixabay, from <https://svgsilh.com/image/25061.html>.

"table meeting round conference" icon by Pixabay, from <https://svgsilh.com/image/1705092.html>.



Appendix A - Message Development

The message for this project serves a long-range vision, and while in response to a climate crisis, this is a long-term strategy and is not part of what we would typically consider to be crisis and emergency communication (which would be more representative of the COVID-19 response, for example). Two frameworks were used to determine how to best frame the message for each target audience – target audiences are assessed based on their alignment with the Hazard x Outrage (HxO) framework and their stage with the Precaution Advocacy Process Model (PAPM). Most of the target audiences have acknowledged a need to tackle climate change issues, however, addressing population and area vulnerabilities is a current issue for some, but not for others. The message was also developed with consideration of the ethics around

the data shared. The data for the project itself has been anonymized, and is provided to only give users a sense of the areas of vulnerability. The greater concern around ethics will be around the actions selected by local governments and ensuring that no further harm is brought to the communities in question. This may include additional concerns around data collection of harmful policies – this can be mitigated with preparation to assist in conducting rapid desktop health and social impact assessments with consideration of the greater health impacts for particular communities.

Appendix B - Sample Narratives

The narratives used for this project will use an adapted “and, but therefore” format that may look like the following:

1) Suzie and Jane both live in Vancouver and are pregnant. But Suzie lives close to [a neighbourhood susceptible to sea level rise], is single, and lives with low income, while Jane lives in [a neighbourhood not susceptible to sea level rise], is married, makes more than median income. Suzie’s neighbourhood is susceptible to sea level rise, and her apartment may be flooded regularly in the coming years, while Jane’s home will be unaffected by sea level rise. Suzie’s living location and socio-economic situation makes her more vulnerable to the negative impacts of climate change than Jane. Therefore, adaptation measures must be considered for Suzie in climate planning to ensure that she and others like her can have safe places to live and raise their families.

2) Frank and Ned both live in Maple Ridge. Fred is 45 years old, has no pre-existing medical conditions, has a strong social network and many friends, and lives in [neighbourhood] in an apartment with air conditioning. Ned is 62 years old, and lives with diabetes and a pre-existing heart condition; his wife lives in a long-term care facility and many of his friends live elsewhere in the province; he is living on his own in [neighbourhood] in an old apartment with no air conditioning and poor ventilation. During heatwaves, Fred is able to turn on his air conditioning, but Ned does not have access to air conditioning. Ned is susceptible to negative health outcomes related to overheating in his apartment. Therefore, adaptation considerations must be given to people like Ned in climate planning so that they better cope with the increasing number of hot days expected as the climate changes.

Appendix C - High Level Slideshow Framework

Slide # and intent*	Slide purpose	Slide contents / high level speaking notes
Slide 1. Hook	Provide a localized picture of the community life as we know it	<ul style="list-style-type: none"> e.g. Vancouver regular tide
Slide 2. Hook	Provide an after picture of a climate impact seen in the community seen	<ul style="list-style-type: none"> e.g. Vancouver King Tide
Slide 3. Title slide	Description of the presenter and presentation	<ul style="list-style-type: none"> Who is the presenter What is the purpose of the presentation today
Slide 4. Project background	Why is health interested in climate change	<ul style="list-style-type: none"> At a high-level, what are some of the health impacts we've seen around the world <ul style="list-style-type: none"> E.g. heat waves in Chicago (1995) and France (2003) E.g. California droughts (2014) E.g. Australia wildfires (2020) What are the financial or service cost burdens associated with these impacts
Slide 5. Project background / Mission	What VCH hopes to achieve through today's presentation [project purpose]	<ul style="list-style-type: none"> Emphasize that different populations and geographic areas of the VCH and Fraser Health regions are expected to experience the impacts of climate change differently due to differences in their exposure, sensitivity, and adaptive capacity Because of this, some populations require more attention than others to reduce their spatial inequities
Slide 6. Project background	Why VCH undertook a climate project	<ul style="list-style-type: none"> description of the Lancet declaration of "climate change is the biggest global health threat of the 21st century" identification of existing and similar regional efforts (e.g. Metro Vancouver Climate Projections Report 2016) American Public Health Association's focus on climate and health impacts
Slide 7. Project background	Evidence of climate change impacts locally	<ul style="list-style-type: none"> Some examples of climate impacts that are either in the local government presented to or near by <ul style="list-style-type: none"> E.g. Sunshine Coast level 4 droughts (2017, 2018) E.g. Air quality impacts from Interior wildfires (2017, 2018) E.g. Increasing heatwaves and heat records set (2018, 2019) E.g. 30-day precipitation streak across Metro Vancouver (January 2020)
Slide 8. Alignment with existing policies	Local government's current work on climate change and social justice policy	<ul style="list-style-type: none"> Identification of the work that the local government is already pursuing that aligns with the intent of the project (may not be perfect)
Slide 9. Project background	Which climate health hazards VCH considered	<ul style="list-style-type: none"> Forest fire smoke Heat Air quality Sea level rise

Slide 10. Project background	How VCH determined “vulnerability” for the climate hazards	<ul style="list-style-type: none"> • Describe: <ul style="list-style-type: none"> • Exposure • Sensitivity • Adaptive capacity • Provide examples of populations that are at most risk (e.g. pregnant people, people living with disabilities or pre-existing medical conditions, children)
Slide 11. Key findings	Narrative example	<ul style="list-style-type: none"> • Pick two or three of the most vulnerable areas (as per the maps) and provide: <ul style="list-style-type: none"> • Real-life stories (obtained with assistance from local government staff) that expresses the current challenges of the climate hazards already experienced • Hypothetical stories that provide an idea of what these challenges might be
Slide 12. Recommendations	Series of recommended actions or options for work together	<ul style="list-style-type: none"> • Not incorporate a health vulnerability lens to their climate work • Incorporate a health vulnerability lens to their work without assistance from the health authorities • Work along side the health authorities to incorporate a health vulnerability lens to the work as a partnership

*True slides may consist of more than one slide. The purpose of the slide layout is to provide an overarching idea of what would be covered by each slide group.

Appendix E - Briefing Note for Regional Governments (e.g. Metro Vancouver)

FOR ACTION

BRIEFING NOTE FOR METRO VANCOUVER CLIMATE 2050 PROJECT TEAM

Subject: Climate health vulnerability maps

Purpose: This briefing note informs Metro Vancouver's (MV's) Climate 2050 Project Team about Vancouver Coastal Health (VCH) and University of British Columbia's (UBC's) School of Population and Public Health's (SPPH's) climate health vulnerability maps. It also outlines how these maps could be used in the development of Climate 2050 and other municipal climate change strategies.

Background: Since 2018, VCH has worked with UBC'S SPPH to produce a series of maps that illustrate the relative vulnerability of people in different geographic areas in the Lower Mainland to different climate change issues. The climate change issues evaluated are: heat, sea level rise, flooding, wildfire and smoke and ozone levels. MV may use the maps to identify key areas of concern and determine if it may help overcome the vulnerability; overlay its own areas of concern to see if there are commonalities to support its own initiatives; or use the data to assist in the development of its own communication materials regarding climate change, health, and equity.

Current Status: Interactive maps are published in Tableau. Relative health vulnerabilities are identified to the Census Dissemination Area scale for all local governments in the Fraser Health and VCH regions.

Options:

- A) Not use the maps or partner with VCH in the development of MV's Climate 2050 "Health and Well-being Roadmap"** – In absence of these maps, MV may pursue different climate-related health concerns from VCH. As VCH is developing its own climate adaptation strategy that will engage local governments, unsynchronized messages may cause confusion.
- B) Use the maps to inform MV's Climate 2050 "Health and Well-being Roadmap"** – MV is in the process of scoping this document that provides an overview of the health implications related to climate change. Relative vulnerabilities can inform materials developed for specific municipalities as well as contribute to narrative development when addressing equity.
- C) Work in partnership with VCH to advocate to member municipalities to use the maps to inform their own climate change planning** – Both MV and VCH provide a role of oversight to municipalities, are pursuing their own climate planning processes, and are seeking to embed equity to their work. Developing co-branded materials and aligning messages may strengthen the messages shared with municipalities and create opportunity for cohesive understanding and joint capacity building between VCH and MV staff.

Considerations: Data limitations of the project may result in some misclassification of exposures to climate hazards for under-represented Census blocks. Collaboration between MV and VCH may provide qualitative support to the findings where existing quantitative data is lacking. The project only considers flooding from sea level rise and neglects extreme rainfall events. The maps provide relative vulnerabilities, meaning that some areas are less vulnerable than others, and not that they are not vulnerable to a given climate hazard. VCH would assist MV in interpreting the maps. The maps are also a new tool that may not fit existing MV planning workflows, which may make them challenging to adopt and incorporate into existing work.

Recommendations: Common interests in pursuing climate change and equity presents an opportunity for collaborate in information dissemination and production. Adoption of only option B will help inform MV's internal processes, but will not help in enabling municipalities in embracing or adopting this perspective – this will challenge Metro Vancouver's own goal to incorporate equity into their processes. Adoption of only option C will focus attention to engagement with more external bodies, rather than also strengthening the relationship between VCH and MV. This said, VCH therefore suggests that MV adopt options B and C, enabling common messaging to municipalities and contributing to more efficient and effective incorporation of health and equity in municipal climate planning.