aboffice@albertabeach.com

From:

Shillam, Jennifer (Contractor) <jennifer.shillam@fortisalberta.com> on behalf of

Stakeholder Relations Team <stakeholderrelations@fortisalberta.com>

Sent:

February 1, 2021 3:05 PM

Subject:

2021 FortisAlberta Approved Rates REVISED

Attachments:

2021 FortisAlberta Approved Rates REVISED.pdf

Good Afternoon,

It has been brought to FortisAlberta's attention that the numbers for Rate 61 in the **Distribution Only** chart were incorrect. Please find attached a revised 2021 Rate letter and bill impacts for distribution only as well as the bundled bill.

I have attempted to recall the previous email sent this morning.

Apologies for any inconvenience.

Regards,

Jennifer Shillam | Contractor - Key Accounts Advisor, Key Accounts

Fortis Alberta Inc. ! 15 Kingsview Road SE, Airdrie AB, T4A 0A8 ! p: 587-775-6266





February 1, 2021

RE: Approved FortisAlberta 2021 Distribution Rates - REVISED

As a follow up to our correspondence in September 2020, FortisAlberta has received approval from the Alberta Utilities Commission (AUC) for its distribution rates, effective Jan. 1, 2021. In addition, the AUC has approved the Alberta Electric System Operator (AESO) 2021 tariff resulting in adjustments to the Base Transmission Adjustment Rider, the Quarterly Transmission Adjustment Rider and Balancing Pool Allocation. FortisAlberta collects and flows through all transmission and Balancing Pool costs billed by the Alberta Electric System Operator (AESO) as approved by the AUC.

The attached charts illustrate the estimated percentages and average changes for each rate class based on estimated consumption and demand between December 2020 and January 2021 on a distribution rate only basis and a bundled bill basis from your retailer. The bundled bill percentages indicated on the attached chart will vary slightly compared to the version you received in September, as it reflects the transmission rate rider adjustments.

We thank you for the opportunity to advise you of these updates. Please feel free to contact me or your Stakeholder Relations Manager should you have any questions or require further information.

Sincerely,

Dave Hunka, Manager, Municipalities & Key Accounts North

P: (780) 464-8311 C: (780) 868-7040

E: Dave. Hunka@Fortis Alberta.com

2021 Approved Rates Average Monthly Bill Impacts by Rate Class DISTRIBUTION ONLY

Rate	Rate Class Description	Consumption Usage	Demand Usage	Dec 2020 Bill	Jan 2021 bill	\$ Difference	% Change
		300 kWh		\$31.75	\$32.15	\$0.40	1.2%
11	Residential	640 kWh		\$39.57	\$40.07	\$0.55	1.2%
		1200 kWh		\$52.46	\$53.12	\$0.66	1.2%
		900 kWh	5 kVA	\$84.06	\$85.06	\$1.00	1.2%
21	FortisAlberta Farm	1,400 kWh	10 kVA	\$153.98	\$155.79	\$1.81	1.2%
		7,500 kWh	25 kVA	\$363.77	\$368.00	\$4.23	1.1%
		6,000 kWh	20 kW	\$781.94	\$788.22	\$6.28	0.8%
26	FortisAlberta Irrigation	14,518 kWh	33 kW	\$1,324.69	\$1,335.31	\$10.62	0.8%
	*Seasonal bill impact	45,000 kWh	100 kW	\$4,021.74	\$4,053.98	\$32.24	0.8%
31	Streetlighting (Investment)	5,144 kWh	12,500 W	\$2,288.25	\$2,327.79	\$39.54	1.7%
33	Streetlighting (Non- Investment)	7,900 kWh	12,000W	\$819.12	\$833.42	\$14.30	1.7%
38	Yard Lighting	5,000 kWh	12,000 W	\$1,436.58	\$1,462.13	\$25.55	1.7%
	Rates 31, 33 and 38 is based on 100 HPS Lights in assorted fixture wattages.						
		1,083 kWh	5 kW	\$72.76	\$73.59	\$0.83	1.1%
41	Small General Service	2,165 kWh	10 kW	\$129.04	\$130.52	\$1.48	1.1%
		10,825 kWh	50 kW	\$579.34	\$585.96	\$6.62	1.1%
		2,590 kWh	7.5 kW	\$178.57	\$180.51	\$1.94	1.1%
44/45	Oil and Gas Service	5,179 kWh	15 kW	\$333.11	\$336.72	\$3.61	1.1%
		25,895 kWh	75 kW	\$1,501.36	\$1,517.52	\$16.16	1.1%
		32,137 kWh	100 kW	\$590.52	\$589.40	-\$1.12	-0.2%
61	General Service	63,071 kWh	196 kW	\$942.62	\$940.88	-\$1.12 -\$1.74	-0.2%
OI	Certeral Set VICE	482,055 kWh	1500 kW	\$4,848.13	\$4,840.13	-\$1.74 -\$8.24	-0.2%
		824,585 kWh	2500 kW	\$9,623.97	\$9,525.10	-\$98.87	-1.0%
63	Large General Service	1,529,869 kWh	4638 kW	\$11,199.66	\$11,081.29	-\$118.37	-1.1%
		3,298,338 kWh	10,000 kW	\$15,151.44	\$14,984.13	-\$167.31	-1.1%
65	Transmission Connected Service			ent will increase f Component is the			

2021 Approved Rates Average Monthly Bill Impacts by Rate Class BUNDLED BILL Including Energy, Retail, and DT Rates & Riders

Rate	Rate Class Description	Consumption Usage	Demand Usage	Dec 2020 Bill	Jan 2021 bill	\$ Difference	% Change
	-	300 kWh		\$75.40	\$76.94	\$1.54	2.0%
11	Residential	640 kWh		\$123.68	\$126.59	\$2,91	2.3%
	1100100112101	1200 kWh		\$203.24	\$208.36	\$5.12	2.5%
		ZZGO KCF/I		7203.24	\$200.50	95.12	2.570
		900 kWh	5 kVA	\$193.79	\$200.12	\$6.33	3.2%
21	FortisAlberta Farm	1,400 kWh	10 kVA	\$321.64	\$331.74	\$10.10	3.0%
		7,500 kWh	25 kVA	\$1,237.47	\$1,286.11	\$48.64	3.8%
					N		
		6,000 kWh	20 kW	\$1,587.94	\$1,723.51	\$135.57	7.9%
26	FortisAlberta Irrigation	14,518 kWh	33 kW	\$3,234.64	\$3,558.05	\$323.41	9.1%
	*Seasonal bill impact	45,000 kWh	100 kW	\$9,886.93	\$10,888.68	\$1,001.75	9.2%
31	Streetlighting (Investment)	5,144 kWh	12,500 W	\$3,029.68	\$3,082.75	\$53.07	1.7%
33	Streetlighting (Non- Investment)	7,900 kWh	12,000W	\$1,669.39	\$1,698.42	\$29.03	1.7%
38	Yard Lighting	5,000 kWh	12,000 W	\$1,979.14	\$2,012.07	\$32.93	1.6%
	Rates 31, 33 and 38 is based on 100 HPS Lights in assorted fixture wattages.						
		1,083 kWh	5 kW	\$212.43	\$218.99	\$6.56	3.0%
41	Small General Service	2,165 kWh	10 kW	\$400.44	\$413.35	\$12.91	3.1%
		10,825 kWh	50 kW	\$1,904.50	\$1,968.26	\$63.76	3.2%
		2,590 kWh	7.5 kW	\$467.36	\$478.72	\$11.36	2.4%
44/45	Oil and Gas Service	5,179 kWh	15 kW	\$899.08	\$921.85	\$22.77	2.5%
		25,895 kWh	75 kW	\$4,284.27	\$4,394.69	\$110.42	2.5%
		22.427.	4001111	40.005.11	40.00	46151	
C4	0	32,137 kWh	100 kW	\$3,828.11	\$3,892.65	\$64.54	1.7%
61	General Service	63,071 kWh	196 kW	\$7,143.33	\$7,270.46	\$127.13	1.7%
		482,055 kWh	1500 kW	\$52,152.08	\$53,129.02	\$976.94	1.8%
		824,585 kWh	2500 kW	\$87,932.39	\$87,418.81	-\$513.58	-0.6%
63	Large General Service	1,529,869 kWh	4638 kW	\$148,716.35	\$147,831.52	-\$884.83	-0.6%
		3,298,338 kWh	10,000 kW	\$311,502.17	\$309,683.77	-\$1,818.40	-0.6%
65	Transmission Connected Service			nent will increase f Component is the			

Riders Included:

Municipal Franchise Fee (Average by Rate Class)

Municipal assessment Rider (0.73% on July 1, 2020) Average EPCOR Default Supply Rate

Average EPCOR Default Supply Rate 2020 Q4 QTAR and 2021 Q1 QTAR January 2020 BPAR and 2021 BPAR Retail/Energy Price Assumptions

Rates 11 through 44 – October 2019 to September 2020

Average EEAI RRT Rates

Rates 61 and 63 – August 2019 to July 2020-2020 Base TAR and 2021 Base TAR

CUSTOMER CONTRIBUTIONS SCHEDULES **

Table 1 Maximum Investment Levels for Distribution Facilities When the Investment Term is 15 years or more

Type of Service	Maximum Investment Level
Rate 11 Residential	\$2,638 per service
Rate 11 Residential Development	\$2,638 per service, less FortisAlberta's costs of metering and final connection
Rate 21 Farm and Rate 23 Grain Drying	\$5,984 base investment, plus \$857 per kVA of Peak Demand
Rate 26 Irrigation	\$5,984 base investment, plus \$952 per kW of Peak Demand
Rate 38 Yard Lighting	\$851 per fixture
Rate 31 Streetlighting (Investment Option)	\$3,080 per fixture
Rate 41 Small General Service	\$5,984 base investment, plus \$952 per kW of Peak Demand
Rate 45 Oil and Gas Service	\$5,984 base investment, plus \$952 per kW of Peak Demand FortisAlberta invests as required per unmetered to metered service conversion program.
Rate 61 General Service (less than or equal to 2 MW)	\$5,984 base investment, plus \$952 per kW for the first 150 kW, plus \$120 for additional kW of Peak Demand
Rate 63 Large General Service (over 2 MW) (Distribution Connected)	\$108 per kW of Peak Demand, plus \$119 per metre of Customer Extension

^{**}Alberta Utilities Commission (AUC) Decision 24843-D01-2020, Dec. 18, 2020.

Maximum Investment Levels are reduced if the expected Investment Term is less than 15 years.

aboffice@albertabeach.com

From:

Sent: To:

Cc:

Carol Gabriel <cgabriel@mackenziecounty.com>

February 1, 2021 9:26 AM

premier@gov.ab.ca

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Letter to Premier Kenney - COVID-19 Restrictions

2021-01-27 Premier of Alberta - Reopening Recreational and Business Services.pdf

Good morning,

Attachments:

Subject:

Please find attached a letter from Reeve Josh Knelsen to the Premier regarding the reopening of recreational and business services.

Thank you.

Carol Gabriel, Deputy CAO | Mackenzie County

Legislative & Support Services

PO Box 640, 4511-46 Ave. | Fort Vermilion | AB | T0H 1N0 Direct: 780.927.3719 ext. 2524 | Main Line: 780.927.3718

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www.mackenziecounty.com



Mackenzie County

January 27, 2021

The Honourable Jason Kenney Premier of Alberta 307 Legislature Building 10800-97 Avenue Edmonton, AB T5K 2B6

Dear Premier:

RE: REOPENING RECREATIONAL AND BUSINESS SERVICES

While we appreciate the work the government has done to ensure the safety of Albertans, we recognize the extreme toll the pandemic has taken on our residents, businesses and recreational centres.

We strongly urge the Provincial Government to reopen access to indoor recreational facilities, such as arenas, to the public and establish additional supportive public health guidelines. These could include allowing facility rentals for private functions.

Additionally, we urge the Provincial Government to reopen all business services as many are at risk of closing permanently and losing their livelihood. In our rural remote northern location, services such as restaurants are extremely limited. Reinstating in-person service will assist in sustainability into the future.

Again, we thank you for your efforts in keeping Albertans safe, and we look forward to having a conversation with you to discuss the specific needs of our communities. Please feel free to contact me at (780) 926-7405 or by email to josh@mackenziecounty.com.

Yours sincerely,

Josh Knelsen Reeve Premier of Alberta Page 2 January 27, 2021

c: Dr. Deena Hinshaw, Chief Medical Officer of Health
Mr. Dan Williams, MLA Peace River
Rural Municipalities of Alberta – Member Municipalities
Alberta Urban Municipalities Association – Member Municipalities
Mackenzie County Council
La Crete Chamber of Commerce
Fort Vermilion & Area Board of Trade
High Level Chamber of Commerce



January 20, 2021

Village of Alberta Beach PO Box 278 Alberta Beach, AB TOE 0A0

Attn: Mayor and Council

RE: Need for a Stronger Western Canadian Municipal Advocate

The past few years have presented convincing evidence of the continued lack of advocacy and blatant disregard at the federal level for Western Canada's needs and one of its highly significant industries that impacts us all: the natural resources industry. Our Council here at the Municipal District of Bonnyville (M.D.) is beyond frustrated with this lack of effective representation that Western Canadian municipalities receive.

Currently, our only voice at the national table is that of the Federation of Canadian Municipalities (FCM). From their website, FCM states they "...advocate for municipalities to be sure their citizens' needs are reflected in federal policies and programs. Year after year, our work benefits every municipal government and taxpayer in Canada, and our programming delivers tools that help municipalities tackle local challenges."

Question:

Do you feel that FCM advocates for the needs of your municipality or western Canada?

Question:

Does the annual FCM Conference agenda/tours provide relevant value for your

municipality?

Question:

Are the needs of western Canada different than those of eastern Canada, and if so, is it

time we entertain the idea of a WCM (Western Canadian Municipalities)?

To their credit, FCM did add a Western Economic Solutions Taskforce as one of their 15 program areas. Unfortunately, this initiative — which was created to mitigate the genuine alienation and hostility western Canadian municipalities experienced at the 2019 FCM Annual Conference held in Quebec City — has not produced any real results.

Our hope is that this letter will spark the much-needed conversation and potential solution to this long-standing issue. We sincerely request that you and your Council take the time to truly reflect on the level of service you are receiving from your current federal advocate. Are they truly the federal voice advocating for your citizens and your municipality?

RECEIVED JAN 2 5 2021



The M.D. and many other communities across Alberta and western Canada are proud supporters and partners of the oil and gas industry. We wish to be a part of a solution that supports industry competitiveness rather than be forced to absorb Ontario's and Quebec's concepts of crippling changes that impact our municipal sustainability.

Thank you in advance for your Council's reflection on this topic and we look forward to hearing any feedback you may have.

Yours sincerely,

Greg Sawchuk

Reeve

cc: Mr. Barry Morishita, President, Alberta Urban Municipalities Association

Mr. Paul McLauchlin, President, Rural Municipalities of Alberta

/eq

aboffice@albertabeach.com

From: Sent:

To: Cc: Montana Kuhar < mkuhar@mdspiritriver.ab.ca>

January 27, 2021 3:51 PM

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Subject: Attachments:

M.D of Spirit River No. 133 - Letter to Premier Kenney RE: COVID-19 Lockdowns MD Spirit River - Letter to Kenney.pdf; Rethink the Lockdown Paper.pdf

Good afternoon all,

For your perusal, please find attached a letter from Reeve Tony Van Rootselaar of the Municipal District of Spirit River No. 133 to the Honourable Premier Jason Kenney regarding the impact of COVID-19 lockdowns on Albertans, as well as a paper published by Ari R Joffe, MD, FRCPC with the Stollery Hospital.

Thank you,

Montana Kuhar **Executive Assistant** Municipal District of Spirit River #133 Box 389 Spirit River, Alberta TOH 3GO Phone: 780-864-3500 Ext: 207 Email: Mkuhar@mdspiritriver.ab.ca



Municipal District of Spirit River No. 133

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Telephone (780) 864-3500 Fax (780) 864-4303

January 27, 2021

Honourable Premier Kenney Alberta Premier

Email: premier@gov.ab.ca

Dear Honourable Premier Kenney,

Thank you for your response to our letter regarding our position on the handling of COVID-19 restrictions. We appreciate the tenuous position the government is in when making decisions surrounding the containment of COVID-19.

The MD of Spirit River appreciates the importance of preserving life, however we also recognize that the loss of lives during the shutdown will not be limited to those who die from COVID-19.

The aftermath of the lockdown as identified in the paper COVID-19: Rethinking the Lockdown Groupthink, by Ari R Joffe MD ,FRCPC with the Stollery Hospital, clearly outlines the massive cost both financially and to human lives if we continue with the lockdowns.

In the paper Joffe states, " ... lockdowns are far more harmful to human health than COVID-19 can be." We have attached a copy of his paper.

There are numerous other Physicians and papers, including the Great Barrington Declaration (gbdeclaration.org), a statement written by three public health experts from Harvard, Stanford and Oxford, that back the findings of Joffe.

Our council wishes to publicly state that we support the governments steps to reopening the economy and choosing a balanced approach to ensure a quick return to our economy and our wellbeing. We commend the leadership role you are taking.

Sincerely,

Tony Van Rootselaar, Reeve Municipal District of Spirit River

Cc: Honourable Tyler Shandro Minister of Health
Honourable Nate Glubish, Minister of Service Alberta
Honourable Doug Schweitzer, Minister of Jobs, Economy and Innovation
Todd Loewen, MLA Central Peace Notley
Dan Williams, MLA Peace River

To all RMA and AUMA Members

	To all RMA and AUMA	Members	
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COVID-19: Rethinking the Lockdown Groupthink

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Keywords: Cost-benefit analysis; COVID-19; Groupthink; Lockdowns; Public Health

Abstract: The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) has caused the Coronavirus Disease 2019 (COVID-19) worldwide pandemic in 2020. In response, most countries in the world implemented lockdowns, restricting their population's movements, work, education, gatherings, and general activities in attempt to 'flatten the curve' of 60VID-19 cases. The public health goal of lockdowns was to save the population from COVID-19 cases and deaths, and to prevent overwhelming health care systems with COVID-19 patients. In this narrative review I explain why I changed my mind about supporting lockdowns. First, I explain how the initial modeling predictions induced fear and crowd-effects [i.e., groupthink]. Second, I summarize important information that has emerged relevant to the modeling, including about infection fatality rate, high-risk groups, herd immunity thresholds, and exit strategies. Third, I describe how reality started sinking in, with information on significant collateral damage due to the response to the pandemic, and information placing the number of deaths in context and perspective. Fourth, I present a cost-benefit analysis of the response to COVID-19 that finds lockdowns are far more harmful to public health than COVID-19 can be. Controversies and objections about the main points made are considered and addressed. I close with some suggestions for moving forward.

Introduction

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) initially caused Coronavirus Disease 2019 (COVID-19) in China in December 2019, and has caused a worldwide pandemic in 2020. In response, most countries in the world implemented lockdowns, restricting their population's movements, work, education, gatherings, and general activities in attempt to 'flatten the curve' of COVID-19 cases. Even now, as the so-called 'second-wave' of COVID-19 cases is occurring, governments are considering and some implementing another lockdown to again 'flatten the curve'. The public health goal of lockdowns is to save the population from COVID-19 cases and deaths, and to prevent overwhelming health care systems with COVID-19 patients. I was a strong proponent of lockdowns when the pandemic was first declared.¹

In this narrative review I explain why I changed my mind. First, I explain how the initial modeling predictions induced fear and crowd-effects [i.e., groupthink]. Second, I summarize important information that has emerged relevant to the modeling. Third, I describe how reality started sinking in, with information on significant collateral damage from the response to the pandemic, and on the number of deaths in context. Fourth, I present a cost-benefit analysis of the response to COVID-19. I close with some suggestions for moving forward.

An important point must be emphasized. The COVID-19 pandemic has caused much morbidity and mortality. This morbidity and mortality have been, and continue to be, tragic.

1. The initial predictions induce fear

1.1 How it started: modelling

Early modeling made concerning predictions that induced fear (Table 1). Kissler et al. predicted the need for intermittent lockdowns occurring for a total of 75% of the time, even after July 2022, to avoid "overwhelming critical care capacity." 2-4 In their discussion they wrote that the response "is likely to have profoundly negative economic, social, and educational consequences... We do not take a position on the advisability of these scenarios given the economic burden..."2 On March 16, 2020, the Imperial College COVID-19 Response Team published modelling of the impact of non-pharmaceutical interventions (NPI) to reduce COVID-19 mortality and healthcare demand in the United States (US) and United Kingdom (UK).5 They wrote that suppression "needs to be in force for the majority [>2/3 of the time] of the 2 years of the simulation," without which there would be 510,000 deaths in Great Britain and 2.2 million deaths in the United States by mid-April, surpassing ICU demand by 30 times.⁵ In their discussion they wrote that "we do not consider the ethical or economic implications [page 4]... The social and economic effects of the measures which are needed to achieve this policy goal will be profound [page 16]..." The Imperial College COVID-19 Response Team extended this to the global impact of the pandemic on March 26, 2020,6 and estimated that without lockdowns there would be "7.0 billion infections and 40 million deaths globally this year." In their discussion they wrote "we do not consider the wider social and economic costs of suppression, which will be high and may be disproportionately so in lower income settings." 6 In a later publication, this group modeled that "across 11 countries [in Europe], since the beginning of the epidemic [to May 4], 3,100,000 (2,800,000 -3,500,000) deaths have been averted due to [NPI] interventions...."7 Another group similarly claimed that, in 5 countries [China, South Korea, Iran, France, US], NPIs "prevented or delayed [to April 6] on the order of 62 million confirmed cases."8

1.2 How it took off: Crowd Effects [Groupthink]

There ensued a contagion of fear and policies across the world.9-12 Social media spread a growing sense of panic.¹³ Popular media focused on absolute numbers of COVID-19 cases and deaths independent of context, with a "sheer one-sided focus" on preventing infection. 12 There was an appeal of group hysteria; "everyone got a break from their ambitions and other burdens carried in normal life", and became united in crowds, which have a numbing effect. There was talk of "acting together against a common threat", "about seeming to reduce risks of infection and deaths from this one particular disease, to the exclusion of all other health risks or other life concerns", with virtue signaling to the crowd, of "something they love to hate and be seen to fight against." A war effort analogy is apt, with the "unquestioning presumption that the cause is right, that the fight will be won, that naysayers and non-combatants [e.g., not wearing a mask] are basically traitors, and that there are technical solutions [e.g., vaccine and drugs] that will quickly overcome any apparent problem or collateral damage."9 This was associated with a "disregard and disinterest on the part of individuals in the enormity of the collateral damage, either to their own kids, people in other countries, their own futures...."9 The crisis was framed as a "war against an invisible enemy," presenting the false choice between "lives and livelihood," spreading fear and anxiety while ignoring the costs of the measures taken - this resulted in conformity and obedience. 12,13 There has been a strong positive association between new daily and total confirmed COVID-19 cases in a country and support for the heads of government, reflecting the "rally 'round the flag'" effect ["the perception that one's group is under attack and hence unity is required to defend the group"].14

The NPIs spread to ~80% of OECD countries within a 2-week period in March 2020. ¹⁵ A main predictor of a country implementing NPIs was prior adoptions of a policy among spatially proximate countries, i.e., the number of earlier adopters in the same region. ¹⁵ Variables not predicting adoption of NPIs included the number of cases or deaths, population >65 years old, or hospital beds per capita in the country. ¹⁵ It seems we were all "stuck in this emotional elevation of COVID-19 deaths and suffering above everything else that could possibly matter." ¹⁶ There was the unquestioned assumption that "there were and are no alternatives to extreme measures implemented on entire populations with little consideration of cost and consequences [externalities]." ¹⁰ Even now, how a country 'performed' is measured by COVID-19 cases and deaths without denominators, without other causes of deaths considered, without considering overall population health trade-offs "that cannot be wished away" [e.g., the future of our children from lack of education and social interaction, and "changes to our wealth-generating capacity that has to pay for future policies"], ⁹ and without considering how sustainable current policies are [protection is temporary and leaves us susceptible; "there is no exit from the pandemic; there is only an exit from the response to it" ¹⁰].

All of this, even though in October 2019 the WHO published that for any future Influenza pandemic: travel-related measures are "unlikely to be successful... are likely to have prohibitive economic consequences"; "[measures] not recommended in any circumstances: contact tracing, quarantine of exposed individuals, border closure"; social distancing measures [closures of workplace, avoiding crowding and closing public areas] "can be highly disruptive, and the cost of these measures must be weighed against their potential impact"; and "border closures may be considered only by small island nations in severe pandemics... but must be weighed against potentially serious economic consequences." Paferring to the 2009 influenza pandemic, Bonneux and Van Damme wrote that "the culture of fear" meant that "worst-case thinking replaced balanced risk assessment" on the part of influenza "experts". But "the modern disease expert knows a lot about the disease in question, but does not necessarily know much about general public health, health economics, health policy, or public

policy, which are much more about priority setting and hence resource allocation between competing priorities [because resources are limited, wise allocation saves lives]."19

Some of this crowd effect is related to cognitive biases, "the triumph of deeply human instincts over optimal policy." ²⁰ Identifiable lives bias included the identifiable victim effect [we ignore hidden 'statistical' deaths reported at the population level], and identifiable cause effect [we prioritize efforts to save lives from a known cause even if more lives would be saved through alternative responses]. Present bias made us prefer immediate benefits to even larger benefits in the future [steps that would prevent more deaths over the longer term are less attractive]. ²⁰⁻²² The proximity and vividness of COVID-19 cases (i.e., availability and picture superiority bias), and anchoring bias [we adhere to our initial hypothesis, and disregard evidence that disproves our favorite theory] affected our reasoning. ^{21,23} Superstitious bias, that action is better than non-action even when evidence is lacking, reduced anxiety. ¹² Escalation of commitment bias, investing more resources into a set course of action even in the face of evidence there are better options, made us stand by prior decisions. ²⁴ We need to take an "effortful pause", reflecting on aspects of the pandemic that don't fit with our first impressions. ²⁵ The groupthink ["the tendency for groups to let the desire for harmony and conformity prevail, resulting in dysfunctional decision-making processes... becoming less willing to alter their course of action once they settle on it"] needs to be replaced by deliberative consideration of all the relevant information.

2. Important New Information Emerging

2.1 The Infection Fatality Rate (IFR)

Based on seroprevalence data as of September 9, 2020, including 82 estimates from across 51 locations in the world, loannidis found that the median corrected IFR was 0.23% [range 0.00 to 1.54%]. Among those <70 years old the median crude and corrected IFR was 0.05% [range 0.00 to 0.31%]. He estimated that for those <45 years old the IFR was almost 0%, 45-70 years old about 0.05-0.30%, and ≥70 years old ≥1%, rising to up to 25% for some frail elderly people in nursing homes. He estimated that at that point there were likely 150-300 million infections that had occurred in the world, not the reported 13 million, most being asymptomatic or mildly symptomatic. He WHO recently estimated that about 10% of the global population may have been already infected, which, with a world population of 7.8 billion, and 1.16 million deaths, would make a rough approximation of IFR as 0.15%.

Even these numbers are most likely a large *over-estimate* of the IFR. First, in serosurveys the vulnerable [e.g., homeless, imprisoned, institutionalized, disadvantaged people], who have higher COVID-19 incidence, are more difficult to recruit. Second, there is likely a healthy volunteer bias in serosurvey studies. Third, and most importantly, there is a lack of sensitivity of serology. ²⁹⁻³⁴ Many reports now document there is often a rapid loss of antibody in COVID-19 patients that were less severely ill. ²⁹⁻³⁶ Moreover, at least 10% of COVID-19 patients never seroconvert, and many more may only develop a mucosal IgA response, ^{37,38} or only a T-cell response [which may be the case in up to 50% of mild infections]. ^{39,40} Finally, most data come from unusual epicenters where "infection finds its way into killing predominantly elderly citizens" in nursing homes and hospitals, ²⁶ and where "[in Italy, Spain, France] an underfunded, understaffed, overstretched and increasingly privatized and fractured healthcare system contribute to higher mortality rates... [Lombardy] has long been an experimental site for healthcare privatization." With "precise non-pharmacological measures that selectively try to protect high-risk vulnerable populations and settings, the IFR may be brought even lower." ²⁶

A serology-informed estimate of the IFR in Geneva, Switzerland put the IFR at: age 5-9 years 0.0016% (95% CrI 0, 0.019), 10-19 years 0.00032% (95% CrI 0, 0.0033), 20-49 years 0.0092% (95% CrI 0.0042, 0.016), 50-64 years 0.14% (95% CrI 0.096, 0.19), and age 65+ outside of assisted care facilities 2.7% (95% CrI 1.6, 4.6), for an overall population IFR 0.32% (95% CrI 0.17, 0.56). 41 Similarly, a large study from France found an inflection point in IFR around the age of 70 years [see their Figure 2D]. 42

2.2 High-risk groups

Ioannidis et al. analyzed reported deaths from epicenters, in 14 countries and 13 states in the United States, to June 17, 2020. ⁴³ They found that in those age <65 years the relative risk of death was 30-100X lower in Europe and Canada, and 16-52X lower in the USA, compared to those ≥65 years old. ⁴³ They estimated that those age 40-65 years old have double the risk of the overall <65 year old group, and females have 2X lower risk than males. ⁴³ This is compatible with a steep inflection point in the IFR around the age of 70 years old. Older adults in nursing homes accounted for at least half of the COVID-19 deaths in Europe and North America, and over 80% in Canada. ^{44,45} In nursing homes the usual median survival is ~2.2 years, with a yearly mortality rate >30%, even without COVID-19. ⁴⁶ Outbreaks of the seasonal respiratory coronavirus in adults living in long-term care facilities are common, with case-fatality rates of 8%. ⁴⁷ Ioannidis et al estimated that the average daily risk of COVID-19 death for an individual <65 years old was equivalent to the risk from driving between 12-82 miles/day during the pandemic period, higher in the UK and 8 states [106-483 miles/day], and only 14 miles/day in Canada. ⁴³

By far the most important risk factor is older age. 41-43 There is a ~1000 fold difference in death risk for people >80 years old versus children. 43 In the largest observational study I am aware of, the OpenSAFELY population in the UK, including over 17 million people with 10,900 COVID-19 deaths, compared to those age 50-59 years old, the Hazard Ratio for death from COVID-19 ranged from 0.06 for those age 18-39 years, to >10 for those age >80 years. 48 In comparison, even important co-morbidities such as severe obesity, uncontrolled diabetes, recent cancer, chronic respiratory or cardiac or kidney disease, and stroke or dementia rarely had HR approaching ≥2.48 Those co-morbidities with HR>2, including hematological malignancy, severe chronic kidney disease, and organ transplant, affected only 0.3%, 0.5%, and 0.4% of the total population. 48

A rapid systematic review found that only age had a "consistent and high strength association with hospitalization and death from COVID-19... strongest in people older than 65 years..." Other risk groups for mortality had either a low-moderate effect [obesity, diabetes mellites, male biological sex, ethnicity, hypertension, cardiovascular disease, COPD, asthma, kidney disease, cancer] and/or were inconsistently found to have an effect in the literature [obesity, diabetes mellites, pregnancy, ethnicity, hypertension, cardiovascular disease, COPD, kidney disease]. Even with these risk factors, the absolute risk may still be low, given the overall IFR in the population at that age.

2.3 Objection: Is This Age Discrimination?

An objection may be that singling out the elderly as high risk is age discrimination. This is false on two counts. First, pointing out the truly high-risk group is the elderly is only emphasizing that this is the group that requires protection from severe COVID-19 outcomes. Second, as Singer has pointed out, "what medical treatment does, if successful, is prolong lives. Successfully treating a disease that kills children and young adults is, other things being equal, likely to lead to a greater prolongation, and thus do more good, than successfully treating a disease that kills people in the 70's, 80's, and 90's." In fact, when we try to stay healthy "what we are trying to do is to live as long as we can, compatibly with

having a positive quality of life for the years that remain to us. If life is a good, then, other things being equal, it is better to have more of it rather than less." We should count every quality adjusted life year equally, whether it is in the life of a teenager or a 90-year old. This was also the conclusion of "The Fair Priority Model" for global vaccine allocation, prioritizing preventing premature death using a standard expected years of life lost metric. 2

Different from discrimination such as racism ["no one who is black was ever white"], in this case "everyone who is old was once young", i.e., there is an impartial age-neutral perspective from which we can all see that it is in everyone's interests to save the lives of younger people.⁵¹ In a thought-experiment, Singer asks us to imagine that you have just become a parent, at some stage in your child's life she is likely to be infected with a dangerous virus, and her chances of being infected and dying from the infection are the same in any year of her life. Now imagine that curative drug A, effective if <40 years old, and drug B, effective if >40 years old, are so costly that the government cannot afford both to be produced. Which drug should be produced? It is clearly contrary to your child's interests to vote for drug B: this would increase her risk of dying before her 40th birthday; to improve her chances of living a longer life, we vote for drug A.⁵¹

Veil of ignorance reasoning is a widely respected and transparent standard for adjudicating claims of fairness. A fair distribution of resources is said to be one that people would choose out of self-interest, without knowing whom among those affected they will be: what would I want if I didn't know who I was going to be? In an experimental study participants were asked to decide whether to give the last available ventilator in their hospital to the 65 year old who arrived first and is already being prepped for the ventilator, or the 25 year old who arrived moments later, assuming whoever is saved will live to age 80 years old. In the veil of ignorance condition, the participant was asked to "imagine that you have a 50% chance of being the older patient, and 50% the younger." Saked if "it is morally acceptable to give the last ventilator to the younger patient", 67% in the veil of ignorance condition vs. 53% in control answered 'yes' (odds ratio 1.69; 95% CI 1.12, 2.57); compared to younger age participants (18-30 years), older participants (odds ratio 3.98) and middle age participants (odds ratio 2.02) were more likely to agree. Asked if "you want the doctor to give the ventilator to the younger patient", 77% answered 'yes', maximizing the number of life-years saved rather than the number of lives saved.

2.4 The Herd Immunity Threshold

The classical herd immunity level is calculated based on the basic reproduction number (Ro) as (1 – 1/Ro), and is the proportion of the population that must be immune to a virus before the effective reproduction number (Re) is <1, and thus the virus cannot perpetuate itself in the population. This calculation assumes a homogeneously mixing population, where all are equally susceptible and infectious. For Ro 2.5, the threshold is ~60% of the population. However, the assumption is not valid, as there is heterogeneity in social mixing and connectivity, with higher and lower levels of activity and contacts. One model incorporating heterogeneity of social mixing found the threshold, for Ro 2.5, to be 43%, and likely lower as other heterogeneity in the population was not modelled [e.g., sizes of households, attending school or big workplaces, metropolitan versus rural location, protecting the elderly, etc.].⁵⁴ A model that incorporated variation in connectivity compatible with other infectious diseases found that for Ro 3, the threshold is 10-25% of the population developing immunity.⁵⁵ Another model that "fit epidemiological models with inbuilt distributions of susceptibility or exposure to SARS-CoV-2 outbreaks" calculated "herd immunity thresholds around 10-20% [because]... immunity induced by infection... [contrary to random vaccination] is naturally selective." ⁵⁶ In support of this heterogeneity,

it is now known that there is overdispersion of transmission of SARS-CoV-2, with 80% of secondary infections arising from just $^{\sim}10\%$ of infected people. $^{57-59}$

2.5 Objection: consider Sweden

It has been claimed that Sweden's strategy of achieving herd immunity failed, with excess deaths and a suffering economy. However, that is not clear. First, cases and deaths fell consistently in later July/August, with deaths continuing at a very low level into October despite no lockdown. ⁶⁰ Second, serosurveys in mid-July found 14.4% of the population may be seropositive; thus, with 5761 deaths as of August 1, in a population of 10.23 million, the crude IFR may have been 0.39%, and even lower considering the sensitivity of serology discussed above. ⁶¹ Early on, Sweden did not adequately protect those in nursing homes, a failing that also inflates the IFR. ⁶² The excess all-cause mortality per 100,000 up to July 25, 2020 in Sweden was 50.8, lower than in England and Wales, Spain, Italy, Scotland, Belgium, Netherlands, France, and the US. ^{62,63} Third, in a globalized world, with entangled webs of supply, demand, and beliefs, "what we do here will devastate people not just here, but also elsewhere and everywhere." ⁶⁴ Compared to Denmark, with an economy heavily dependent on pharmaceuticals, Sweden's recession looks bad. However, compared to the European Union, Sweden looks good; the European Commission forecasts a better 2020 economic result for Sweden (GDP -5.3%) than many other comparable European countries (e.g., France -10.6%, Finland -6.3%, Austria -7.1%, Germany -6.3%, Netherlands -6.8%, Italy -11.2%, Denmark -5.2%). ⁶⁵

2.6 The Exit Strategy

Herd immunity appears to be the only exit from the response to COVID-19. This can be achieved naturally, or through vaccine. For the reasons given here, it is very possible that the lockdowns are only delaying the inevitable.

There are problems with the natural herd immunity approach involving the currently projected and implemented waves of lockdowns. First, this will take years to occur, causing economic and social devastation. This also assumes immunity is long-lasting such that cycles of shutting down can be successful over 2 or 3 years, and without which it is more likely COVID-19 will be an annual occurrence. Second, the less devastating test-trace-isolation/quarantine strategy seems not feasible. In the United States it was estimated that there would be a need to train an extra 100,000 public health workers, and to do >5 million SARS-CoV-2 tests per day, necessitating the building of many new very large testing factories. Countries would still need to keep borders closed and maintain physical distancing (e.g., no large events) in order to make contact tracing feasible; this would be for years, during which people may become very reluctant to be tested. Modeling suggests that to be successful, because asymptomatic and pre-symptomatic individuals may account for 48-62% of transmission (even in nursing home residents), contact tracing and quarantine would have to occur within 0.5 days for >75% of contacts, necessitating mobile app technology that has its own feasibility and ethical problems.

Vaccine induced herd immunity involves many assumptions. First, there will be the discovery of an effective and safe vaccine that does not cause antibody-dependent (or other immune) enhancement; this, even though the problem in severe COVID-19 may be the host response, especially in the elderly and children. 71-73 Second, the immune response will be durable, not last for only months, and have little immunosenescence [reduced response to vaccine with rapid decline of antibody levels] in the elderly. 72,74 Third, that mass production and delivery of the vaccine will occur very soon, and be done equitably to all humans on Earth; otherwise, there is the risk of conflict, war, and terrorism in response

to gross inequity in vaccine distribution. ⁵² In response to the 2009 pandemic of H1N1 Influenza the United States achieved a weekly vaccination rate of only 1% of the population. ⁷² Vaccine refusers may include 30% of the population in North America and globally, ^{72,75} and if they have "increased contact rates relative to the rest of the population, vaccination alone may not be able to prevent an outbreak." ⁷² There is already competition among high income countries, and likely crowding out of low-income countries that represent about half of the human population. ⁷⁶ The only globally eradicated human disease is smallpox, which took "30 years to achieve", and the "fastest historical development of a [new] vaccine was 4 years (Merck: mumps), while most take 10 years."

3. Reality Sinking In

3.1 latrogenic Collateral Harms: lockdown as a 'drug' with dangerous side-effects when its use is prolonged

The COVID-19 response has threatened to make, and likely has already made, several Sustainable Development Goals for the most vulnerable among us in low-income countries out of reach. The numbers involved are staggering, and in the many millions (Table 2). The response has had major detrimental effects on childhood vaccination programs, education, sexual and reproductive health services, food security, poverty, maternal and under five mortality, and infectious disease mortality. The effect on child and adolescent health will "set the stage for both individual prosperity and the future human capital of all societies." The destabilizing effects may lead to chaotic events (e.g., riots, wars, revolutions). P5,96

In high-income countries, the collateral damage has also been staggering (Table 3), affecting visits to emergency departments and primary care for acute (e.g., myocardial infarction, stroke) and 'non-urgent' ('elective' surgery, and cancer diagnosis and treatment) conditions, intimate partner violence, deaths of despair, and mental health. ^{12,97-112} Of excess deaths occurring during the pandemic in high-income countries, 20-50% are not due to COVID-19. ^{62,113-115} There was an unexplained 83% increase of 10,000 excess deaths from dementia in England/Wales in April, and an increase in non-COVID-19 Alzheimer disease/dementia deaths in the US, attributed to lack of social contact causing a deterioration in health and wellbeing of these patients. ^{115,116}

COVID-19 "Is a disease of inequality and it also creates even more inequality." Unequal structural determinants of health meant that disadvantaged minorities have experienced a greater toll from the COVID-19 "Great Lockdown", twith contributors including lower income (e.g., economic and job insecurity), homelessness or crowding at home (and in transportation), worse health care (and preexisting health disparities), and inability to work from home (e.g., for essential, manual, and temporary workers). 45,95,118,119 COVID-19 policing has involved "racial profiling and violence, crippling punishments for those living in poverty, and criminalization of mental health." Refugees are particularly vulnerable, undertaking "arguably the most essential form of travel... with little access to water, space or health care." The effect on the health of women and girls is particularly severe, disproportionately affecting sexual and reproductive health services, income, and safety. 121,122

3.2 Numbers in Context

Numbers without denominators and without context are deceiving. Some data in this section may put the COVID-19 pandemic numbers in perspective.

Assuming all deaths with COVID-19 are deaths from COVID-19, in the USA as of August 22, 2020, COVID-19 was the cause of 9.24% of overall deaths; this means that >90% of deaths are not a focus of our attention (ETable 1, see Additional file 1). Similarly, in Canada, COVID-19 was the cause of 5.96% of estimated deaths over the first 6 months of 2020, again meaning >94% of deaths are not a focus of our attention, and not being reported daily in the press as are COVID-19 deaths (ETable 2, see Additional file 1). A similar analysis in the UK found that, during 16 weeks of the pandemic, the risk of death was "equivalent to experiencing around 5 weeks extra 'normal' risk for those over [age] 55, decreasing steadily with age, to just 2 extra days for schoolchildren... [and in those] over 55 who are [detected as] infected with COVID-19, the additional risk of dying is slightly more than the 'normal' risk of death from all other causes over one year." 126

Across the world in 2019 there were 58,394,000 deaths, >4.87 million deaths/month and >159,983 deaths/day; COVID-19 deaths are shown relative to these underlying deaths in Table 4. ^{127,128} The number of deaths is highly unequal, with far more deaths at earlier ages in low-income countries and Sub-Saharan Africa. ¹²⁷ If all countries were to achieve the Sustainable Development Goal of Under 5 Mortality Rate <25 deaths/1000 by 2030, from the year 2015 this would avert 12.8 million deaths. ¹²⁹ From 2000-2017, if all units had an Under 5 Mortality Rate that matched the best performing unit in each respective country, this would have averted 58% of deaths in those under 5 years, that is, 71.8 (68.5 to 74.9) million deaths. ¹³⁰ A realistic projection was that if the pandemic takes 5 years for "full cycling", 60% of the global population is infected, and the IFR is 0.19%, COVID-19 will account for 2.9% of global deaths. If only 10% of the high-risk population are infected, COVID-19 will account for 0.6% of global deaths over 5-years. ⁹⁵

Some causes of death in the world are given in Table 5; COVID-19 deaths (~3500/day up to September 4, 2020) are also shown. Table 5; COVID-19 deaths (~3500/day up to September 4, 2020) are also shown. For example, there are an estimated 4110 deaths/day from Tuberculosis, 333 3699 deaths/day from motor vehicle collisions, 331 21,918 deaths/day due to use of tobacco, 332 >3400 deaths/day from Under 5 cases of pneumonia or diarrhea, 337,138 and 30,137 deaths per day from dietary risk factors. 39 The WHO has estimated that if all people would adopt a vegan diet this would avert 13.7 M (95% CI 7.9, 19.4) deaths by 2030. 45 Some of these deaths are preventable if we were to take appropriate action, and some we as a society have decided we are willing to accept in trade-off for our freedom and wellbeing.

4. An Informed Cost-Benefit Analysis of Lockdowns

4.1 The Corona Dilemma

The economist Paul Frijters has asked us to consider "The Corona Dilemma" (Figure 1a and 1b) modelled after the so-called "Trolley Problem" in philosophy. He asks us to imagine "you are the decision maker who can pull the lever on the train tracks to avoid the coming train from going straight. He our options are to divert the train or not. If you do not divert the train – you are letting the virus rage unchecked [i.e., COVID-19 deaths]. He other hand, if you pull the lever – the diverted train will put whole countries into isolation, destroying many international industries and thus affecting the livelihood of billions, which through reduced government services and general prosperity will cost tens of millions of lives [i.e., COVID-19 reaction]. The world pulled the lever, and the unintended health consequences of these measures did not play a part in modelling or policy.

4.2 Cost-Benefit Analysis

Medical and Public Health experts are not expert in this type of analysis. ^{18,19} Health resources are finite. We all take health risks to ensure a better future for ourselves, family, children, and society. "Wellbeing of the population is the ultimate goal of government." ^{145,146} To compare outcomes of policies we need a common single metric of measurement to weigh trade-offs and make rational decisions. The goal is to maximize the sum of years lived by the population, ⁵² weighted by the health quality of those years [i.e., Quality Adjusted Life Years, QALY] or the wellbeing quality of those years [i.e., Wellbeing Years, WELLBY]. The QALY misses some important things that are valued by individuals, including joy, status, and things that give fulfillment like jobs. The WELLBY measures the value of anything that makes life enjoyable, and captures almost everything that is important to people. It is measured by life satisfaction, asking "overall, how satisfied are you with your life nowadays?" and rated on a Likert Scale from 0 ["not at all"] to 10 ["completely"]; the usual healthy level is '8', and those indifferent between living on or not at all score '2' – 1 regular year of happy life (1 QALY) is worth 6 WELLBY. ^{145,146} Despite some limitations, cost and benefit should be measured in terms of human welfare in the form of length, quality, and wellbeing of lives, and "to make no assessment is just to make policy in a vacuum." ¹⁴⁷

First, consider the benefits of lockdown, preventing COVID-19 deaths. Using the age distribution of deaths and comorbidities, in the UK the average person who died due to COVID-19 had 3-5 healthy years left to live; that is, 3-5 QALY, or 18-30 WELLBY. 95,144,147 This number was even lower in Italy. 144 We can calculate that lockdowns 'saved': 50% infected to herd immunity X 0.3% IFR X 7.8 Billion people X 5 QALY lost per death = 11.7 million deaths, 58.5 million QALY, or 360 million WELLBY. The number is likely much lower than this for several reasons: it is likely <40% to herd immunity, the IFR is likely <0.24%, some deaths would occur even with lockdowns [that might prevent at most 70% of deaths; in Sweden it was estimated lockdown could have prevented one-third of deaths], 148 with focus on retirement and nursing homes we might avoid many of the excess deaths, and we cannot stay locked down forever [if no 'exit strategy' exists, then lockdown is not really a 'strategy' 10]. A more realistic number is at least 2X lower, well fewer than 5.2 million deaths 'saved'. It is also worth mentioning that the efficacy of lockdown has been questioned in several studies, reducing the benefit of lockdown potentially markedly further (ETable 3, see Additional file 1). 149-155

Second, consider the costs of lockdown. 144,156-158 An important point must be made here. We are not comparing COVID-19 deaths vs. economy as prosperity. Rather, it is COVID-19 deaths vs. recession deaths – it's lives versus lives, as the economy is about lives. "It's horrible either way... [we're] advocating for the least people to die as possible." 159

Expected costs of the recession in lives can be calculated based on two methods. One uses historical evidence of a strong long-run relation between government spending [economic development] and life expectancy. 144,156-158 Government expenditures on healthcare, education, roads, sanitation, housing, nutrition, vaccines, safety, social security nets, clean energy, and other services determines the population wellbeing and life-expectancy. 144 If the public system is forced to spend less money on our children's future, there are statistical lives lost [people will die in the years to come]. The social determinants of health, including conditions of early childhood, education, work, social circumstances of elders, community resilience (transportation, housing, security), and fairness (economic security) determine lifespan. 160 As a general rule, US\$10K/year GDP buys an additional 10 years of life, so in a life of 75 years, US\$750K buys 10 years in life expectancy = US\$75K/QALY. 144,156-158 This is a maximum cost; in India US\$25K/QALY is appropriate [most effect occurs for vulnerable and marginalized groups]. 144 The other method is based on government numbers that are used to estimate how much health and life expenditures buy. Since the lockdown is a government public health policy, "it is saving lives which is what the lockdown was for... we are treating decisions on how to face COVID-19 in the same way as

decisions... are made about resources to apply to the treatment of cancer, heart disease, dementia, and diabetes."147 Based on research on how costly it is to save people from illness (how government services maintain health), in the UK it is US\$20K/QALY, and using consumer willingness to pay it is US\$80K/QALY. 144-146 This again is a maximum cost, as this is for Western countries, who are at least 3X wealthier than the average country in the world; you can save a life in poor countries with US\$2-3K, and lives are saved more cheaply with the first few billions spent. 144,161 It is estimated that in 2020-2021 the world economy will shrink by at least US\$8-9 trillion (about 6% of GDP), and this will take many years to recover (Figure 2). 144,156,157,162,163 The loss in terms of GDP will be "easily US\$50 trillion over the coming decade", 144,156 with lockdowns ordering businesses and workplaces to stop functioning, ports closed, business bankruptcies, and resultant disrupted supply and demand chains. 64,164,165 We can calculate that the recession resulting from lockdowns 'cost': US\$50 trillion X 40% as government expenditure ÷ US\$100K/QALY = 200 million QALY, or 1.2 billion WELLBY. This is an underestimate, and the actual figure is likely at least 12X higher for several reasons: the number US\$100K/QALY was used when it is far less than this for half the world population residing in low-income countries and may be much lower even in high-income countries, and a conservative estimate of world GDP loss during the pandemic was used, particularly if there is another prolonged period of lockdown.

Another cost of lockdown is the loneliness and anxiety effect on individuals. It is estimated that loneliness from isolation costs 0.5 WELLBY/person/year. ^{145,146} If lockdowns last for 2 months to 4 billion people, this results in a cost of 333 million WELLBY. ¹⁵⁶ The cost is likely far higher, as this assumes only 2 months of lockdown, and does not include the effect of loneliness on life-span (i.e., early mortality) and disease that occurs particularly to young people. ¹⁶⁶⁻¹⁷²

The last cost considered here is the effect of unemployment. It is estimated that unemployment costs 0.7 WELLBY/unemployed person/year. 145,146 Since it is estimated there will be 400 million additional unemployment years due to the lockdowns, the cost is 280 million WELLBY/year. 156,173 The cost is likely at least 3X higher, as recovery from unemployment will occur over several years, we do not consider the effect on wellbeing to the families of the unemployed, and we do not consider the effect on deaths of despair in young people or on loss of health insurance.

The effects of loneliness and unemployment on life-expectancy are not considered in the costs above, only the loss of life-satisfaction in WELLBYs. Recent literature has summarized the major effect of individual income, social network index (i.e., integration in a social network), and adverse childhood experiences on life-span, early mortality, risk of chronic diseases (including heart disease, diabetes, kidney disease, stroke, cancer, lung disease, Alzheimer's, substance use, depression), and suicide rates. 166-172 Recent financial difficulties, history of unemployment, lower life satisfaction, and history of food insecurity are associated with mortality in the United States. 167 Actual or perceived social isolation is one of the top 3 risk factors for death due to cardiovascular disease, increases risk of death in the next decade by 25-30%, and "risks creating cohorts of individuals who are less socially functional." 168,174 Unemployment is associated with a mean adjusted hazard ratio for mortality of 1.63.¹⁷⁵ Life stress is associated with development and exacerbation of asthma, rheumatoid arthritis, anxiety disorders, depression, cardiovascular disease, chronic pain, HIV/AIDS, stroke, certain types of cancer, and premature mortality. 176 Especially concerning are the effects on children during "the early years" of life, increasingly recognized as the period of greatest vulnerability to, and greatest return on investment from, preventing adverse long-term outcomes that can have lasting and profound impacts on future quality of life, education, earning potential, lifespan, and healthcare utilization. 169-172 The early years of life are a critical period when a child's brain develops from social interaction and experiences, thus providing the foundation for their entire future life potential. During the pandemic children are being

exposed to increased intimate partner violence, family financial crises, disrupted education, an increasing achievement gap (i.e., low-income families who do not have access to computer, internet, space, food, and parental support cannot participate in online learning), loneliness, physical inactivity, lack of support services (e.g., school lunches, access to early childhood services and aids for those with disability), etc. 87,88,104,107,177-179 These adverse childhood experiences have permanent impacts that cannot be compensated for by later improvements in social situations.

The cost-benefit analysis is shown in Table 6, finding on balance the lockdowns cost a minimum of 5X more WELLBY than they save, and more realistically, cost 50-87X more. Importantly, this cost does not include the collateral damage discussed above [from disrupted healthcare services, disrupted education, famine, social unrest, violence, and suicide] nor the major effect of loneliness and unemployment on lifespan and disease. Frijters and Krekel have estimated that "the [infection] fatality rate should be about 7.8% to break-even and make a radical containment and eradication policy worthwhile, presuming that would actually eliminate the disease."180 A similar cost-benefit analysis for Canada is shown in ETable 4 (see Additional file 1), with the cost at least 10X higher for lockdowns than the benefit. A different analysis for Australia is shown in Table 7, estimating the minimum cost is 6.6X higher than the benefit of lockdown. 181,182 Another cost-benefit analysis for the UK used National Institute for Health and Care Excellence guidelines for resource decisions, that 1 QALY should cost no more than US\$38.4K. Assuming lockdown could save up to 440K people [although more likely at most: 66.65 million population X 40% to herd immunity X 0.24% IFR = 64K people] of 5 QALY each, and a minimum GDP loss of 9% [i.e., assuming lost output comes back quickly, and not including any health costs of unemployment or disrupted education], "the economic costs of the lockdown... is far larger than annual total expenditure on the UK national health service... the benefits of that level of resources applied to health... would be expected to generate far more lives saved than is plausibly attributable to the lockdown in the UK... The cost per QALY saved of the lockdown looks to be far in excess... (often by a factor of 10 and more) of that considered acceptable for health treatments in the UK."147 The authors estimated the benefit of easing restrictions for over the next 3 months outweighs the cost by 7.3-14.6X.¹⁴⁷ "A cost-benefit analysis of 5 extra days at COVID-19 alert level 4" for New Zealand found that the cost in QALY was 94.9X higher than the benefit. 183 Finally, a cost-benefit analysis for the US is shown in Table 8, finding the cost of lockdown would be at least 5.2X the benefit. 184,185

4.3 Objection: the economic recession would happen without lockdown

This is unlikely, particularly if the fear is appropriately controlled with clear communication on risk, numbers with denominators and context, and important trade-offs, as this information becomes available. The resources and attention should be directed towards protecting the most vulnerable (i.e., the elderly). The evidence for policy impact on total human welfare should be based on a wide range of expertise, including economists, and not only health experts. The CIDRAP group published suggestions for communication during a crisis, which included advice to not over-reassure (i.e., be realistic about the course post-lockdown — cases and deaths will climb), to express uncertainty (i.e., explain the difficult dilemmas and trade-offs, and why we choose which course; explain that the initial reaction was temporary, buying time to figure out next steps); to validate emotions (i.e., admit waves of disease will occur and there may be economic devastation); and to admit and apologize for errors (i.e., we must resurrect a devastated economy in order to save lives). ¹⁸⁶

The severity of mandated lockdowns was directly linked with the severity of the economic collapse. 147,181,187-191 These were direct commands to halt work, restrict travel, restrict the number of people inside dwellings, close factory floors, stay at home, etc. Economic activity, GDP loss, and

unemployment were temporally, within weeks, related to lockdown orders. ¹⁸¹ There was a dramatic decline in employment, consumer spending, and economic outcomes largely accounted for by different degrees of restrictions in different countries. ^{181,188,189} The consensus, for example by the Bank of England, the Reserve Bank of Australia, the Organization for Economic Co-operation and Development, the International Monetary Fund (e.g., the "calamitous Great Lockdown"), and the Chief Medical Officer of Health in Canada (e.g., "the extensive slowdown in the Canadian economy as a result of public health emergency measures" on p. 29), is that the economic recession is a result of the lockdowns. ^{45,117,190,191,192}

4.4 Objection: consider the 'long-haulers'

The long-term effects of COVID-19 illness need to be studied and clarified. Much of the current information is based on anecdotes (i.e., single cases) in the press. It may be expected that survivors of ARDS due to COVID-19 will have significant quality of life sequelae similar to ICU survivors from other causes of ARDS, or even lower given the lower cytokine levels in COVID-19.193,194 It may also be expected that some survivors of COVID-19 that did not require hospitalization will have significant lingering symptoms for months similar to what occurs with other causes of community acquired pneumonia. 195 The few studies reported to date do not well quantify the severity and duration of long-term symptoms such as fatigue, breathlessness, 'foggy thinking', etc., making it difficult to interpret the impact on costbenefit analyses. 196-200 The highest rates of 'long-COVID-19' are from crowdsourced online data where there is likely a strong selection bias in participation. 201-203 In addition, most of these reports do not compare to contemporary controls during the pandemic, controls who are often experiencing social isolation, unemployment, and loneliness. For example, one survey of people without COVID-19 in the United States found a high prevalence of anxiety (25.5%), depressive (24.3%), and trauma and stressor related (26.3%) disorders, with 13.3% who started or increased substance use to cope, and 10.7% who seriously contemplated suicide in the last 30 days.²⁰⁴ The Household Pulse Survey in the US found that in 2019 11% of adults had symptoms of anxiety or depressive disorder, while in April-August 2020 35-40% did. 205 Another survey in US adults found the prevalence of depression symptoms was more than 3-fold higher during COVID-19 than before, and worse for those with lower social and economic resources. ²⁰⁶ A survey in Australia found worse exercise (47.1%), mental wellbeing (41%), weight gain (38.9%), screen time (40-50%), and life satisfaction (down by an average of 13.9%) during the pandemic. 207 In Canada, 57% of children 15-17 years old reported their mental health was "somewhat worse" or "much worse" than it was prior to physical distancing measures during the pandemic, and Canadians ≥15 years old had a 23% decrease in reported "excellent or very good self-perceived mental health". 177,208 Although there will likely be many 'long-haulers', the incidence, severity, and duration of long-term symptoms would need to be very high to change the cost-benefit balance. Given that at a generous minimum the costbenefit balance is at least 5X against lockdowns, the sequelae of COVID-19 would need to cost well over 200 million QALY worldwide, and likely >10X that number, to make the cost-benefit analysis in need of reconsideration.

4.5 Objection: Low-income countries are particularly susceptible and need protection

The Imperial College COVID-19 Response Team modeled the effect on low-income countries. ²⁰⁹ These countries were hypothesized to be more susceptible to COVID-19 deaths, even with markedly lower population over age 65 years (about 3%), due to several factors: larger size of households [i.e., more homogeneous contact patterns], far fewer hospital and ICU beds, lower quality of health care, and unique co-morbidities [e.g., HIV in >1%, tuberculosis in >25%, and malnutrition in >30% of the population]. ²⁰⁹ For suppression to have benefit, it was estimated to need to be in force 77% of the time [compared to 66% in high-income countries] over the 18 months of modeling [and "well beyond the

time window of our simulations"]. ²⁰⁹ However, modeling inputs were overestimated, with >90% of the population infected, and baseline IFR at in high-income countries 1.03%. Moreover, low-income countries are more vulnerable to lockdown adverse effects for several reasons: lower ability to work from home, more household based transmission (when confined to home), economic vulnerability [a higher degree of informal labor markets, and marginal capacity to provide support for ensuring livelihoods], slower build-up of herd immunity [given limited health care capacity], little testing capacity, wider health risks from diverting all attention to a single disease, and future health system failure once suppression measures are lifted (also see Table 1). ^{209,210} The effects of a recession on government spending is magnified when this spending was already insufficient to improve the social determinants of health. In India, the desperation is leading to an increase in child trafficking. ²¹¹ Surveys in Africa indicate a very low IFR; for example, in Kenyan blood donors 5% were seropositive yet the country reported only 100 deaths, in Bantyre, Malawi, a serosurvey found 12.3% of healthcare workers were seropositive yet only 17 deaths were reported, and in two cities in Mozambique seropositivity was 3% and 10% yet only 16 deaths were reported. ²¹² It is extremely likely the cost-benefit analysis is even more against lockdown in low-income countries for these reasons.

5. Discussion:

5.1 What to do now: change the trolley track

5.1.1 Other calls for a change in response priorities

Several other groups and individuals have made calls for a change in COVID-19 response priorities (Table 9). 213-220 In an open letter on July 6, 2020, to the Prime Minister and Premiers of Canada signed by many former deputy ministers of health, chief public health officers, and medical deans, the authors called for "A Balanced Response." 213 They write that the current approach "carries significant risks to overall population health and threatens to increase inequalities... Aiming to prevent or contain every case of COVID-19 is simply no longer sustainable..."213 In an open letter to the National Cabinet in Australia signed by many economists and medical experts with the Australian Institute for Progress, the authors make similar points.²¹⁴ They write that "to analyze the COVID-19 effect it is necessary to understand it as shortening life. But the lockdowns and the panic have also had a cost in shortening life for others."214 loannidis called for evidence to guide policy, noting many of the collateral and recession effects discussed above.²¹⁵⁻²¹⁹ "Shutdowns are an extreme measure. We know very well that they cause tremendous harm."216 A resignation letter by an economist in the Australian Treasury wrote that "the pandemic policies being pursued in Australia... are having hugely adverse economic, social and health effects... The need for good policy process does not disappear just because we face a public health crisis..."220 The "Great Barrington Declaration" written on October 4, 2020, by infectious disease epidemiologists and public health scientists recommends "Focused Protection." The declaration writes that "current lockdown policies are producing devastating effects on short and long-term public health... leading to greater excess mortality in years to come..."221

A caveat to quoting these open letters is that "petitions cannot and should not be used to prove that the positions of the signatories are scientifically correct," as this would be based on the fallacies of 'argument ad populum' and 'invoking authority', and have other drawbacks. 222 These open letters are used only to show that many have expressed views similar to those expressed here, and this might open the door to serious consideration of the empirical evidence and arguments presented above.

5.1.2 Objection: Herd Immunity Is a Dangerous Idea

There are several objections that have been made to the idea of opening up society to achieve natural herd immunity. 223-226

First, an objection is that natural herd immunity assumes the immunity is long lasting, and this may not be the case. ²²³⁻²²⁶ If immunity is short-lived, then COVID-19 may become an endemic and likely yearly viral infection as predicted by Kissler. ² In the event of short-lived immunity it will still be important to achieve natural herd immunity to protect the high-risk groups (i.e., the elderly) now and yearly (until a vaccine is widely available) without recurrent and prolonged lockdowns that devastate the economy and thus population life-expectancy and wellbeing. Notably, if immunity is not long-lasting this will be a problem for possible vaccine induced herd immunity as well, as the world population will need vaccines to be produced and delivered everywhere at least each year.

Second, another objection is that the costs in deaths, mental and physical health and suffering, socioeconomic inequities, and harming the economy will be too high. ^{223,224} This objection ignores the discussion above of the trade-offs involved that include not only COVID-19 direct effects, but also indirect effects of the response to COVID-19, the collateral damage and cost-benefit analysis where it was shown that the costs of all these effects is in fact much higher with lockdowns.

Third is the objection that uncontrolled transmission in younger people would inevitably result in infections in high-risk groups with high mortality. 223-226 The ability to successfully shield continuing care facilities and hospitals from COVID-19 is questioned. 223,224 Prolonged isolation of high-risk groups is said to be "unethical". 223 The objection is odd, as if we cannot protect those in nursing homes nor hospitals, why are we using personal protective equipment at all? In addition, prolonged isolation of *all* groups is what has occurred now, and based on the cost-benefit analysis this is what is unethical by causing far more harm to all, including the high-risk elderly. Of course, infection *can* still spread to high-mortality populations; however, the goal is to reduce this risk. Moreover, <10% of the population is at high-risk, accounting for >90% of potential deaths; surely we can focus on protecting this subgroup of people. 219 Monitoring in Europe shows that despite increasing COVID-19 cases, excess mortality has only shown a slight increase, suggesting protection of the most vulnerable may be feasible. 227 Modelling has also suggested that social distancing of those over 70 years of age would prevent more deaths than a fixed duration of social distancing of the entire population. 228

Fourth is the objection that healthcare systems will be overwhelmed by uncontrolled spread. ^{223,224} This is a worrisome possibility, as health-care providers may be forced to make painful rationing decisions. If a healthcare system is overwhelmed, the effects would have to be extreme to make the benefit of lockdowns to save ICU capacity comparable to the long-term costs. There are several ways to minimize this possibility, including a focus on protecting those at high-risk (see below), information dissemination to cause fast awareness of voluntary sensible self-imposed use of handwashing and (in crowded areas) masks, ^{229,230} limiting very large gatherings, and expanding critical care capacity when necessary. Forecasting of healthcare capacity needs in the short or medium term, even when built directly on data and for next day predictions, has consistently failed, and most healthcare systems were not overwhelmed despite sometimes being stressed with high peaks of cases. ^{219,231} Forecasting failure led to elderly patients being discharged to nursing homes (where there was high mortality), and largely empty wards (unnecessarily affecting hospital utilization for other serious conditions); in Canada "overall ICU occupancy rates did not exceed 65% (p. 12)". ^{45,219} Lockdowns in anticipation of forecast healthcare incapacity should not be done, especially if based on forecasting that is not released for public scrutiny nor repeatedly fit to real-time data to verify accuracy. In addition, if there are insufficient ICU beds for

the population due to underfunding, the effects of the recession on government healthcare spending in the future will markedly adversely worsen this situation in the long-term.

Fifth is the objection that natural herd immunity is not achievable. 223-226 This is based on the few case reports of re-infection, the Brazilian city of Manaus where seroprevalence was up to 66% yet there is currently a resurgence of COVID-19 cases, and the claim that natural herd-immunity has never occurred. The seven published case reports of re-infection, four with symptoms [one requiring hospitalization, and one death in an immunocompromised 89 year old with few details reported], when 10% of the world population has likely been infected over the past 10 months cannot yet provide evidence that severe reinfection and contagion is at all common.²³²⁻²³⁷ Regarding Manaus, the high seroprevalence likely reflected the special situation of a relatively homogeneous cohort of people in overcrowded low socioeconomic urban situations, with reliance on crowded long riverboat travel; now there seems to be a different demographic cohort of young wealthy individuals being exposed. 238-240 In addition, the peak seroprevalence in blood donors in Manaus was 51.8% in June, while another study of household seroprevalence in Manaus on May 14-21 found this to be 12.7% [the respective numbers for Sao Paulo were closer, at 6.9% and 3.3% in the two serosurveys]. ^{240,241} Even correcting for a possible lower sensitivity of capillary blood used in the household survey does not explain the difference, as the corrected seroprevalence might be up to 19.3%. 242 Regarding historical natural herd-immunity, it is likely that this was achieved for several infections, with outbreaks that occurred as births added sufficient numbers of new susceptible young individuals (e.g., for Measles, Mumps, Rubella).

Finally, an important point to emphasize is that the information in this review does *not* depend on natural herd immunity being achieved. The collateral damage, and the cost-benefit analysis showed that lockdowns are far more harmful than a risk-tailored population specific response. "Public health is the science and action of promoting health, preventing disease, and prolonging life... ensuring that Canadians can live healthy and happier lives (p. 59-60);" some suggestions for how to do this is discussed below.

5.1.3 Some suggestions: What can we do?

5.1.3.1. Focus on protecting those at high risk: A risk-tailored, population-specific response.²⁴³ This starts with better public understanding of the risks and trade-offs involved.¹⁸⁶ Protection should focus on high-risk groups: those hospitalized [e.g., prevent nosocomial infection], ²¹⁶ in nursing homes [e.g., staff work in only one facility, adequate personal protective equipment supply, more staff, equitable pay], ²⁴⁴ prisons, homeless shelters, and certain demographics [e.g., age ≥70 years, those with multiple severe co-morbidities]. ²⁴³ There should be investment in improving the social determinants of health [e.g., "invest in strategies that address health inequities and better serve the elderly, people experiencing homelessness, and those living with limited means" ²⁴³]. ^{45,160,245} Don't lock everyone down, regardless of their individual risk, as this will cause more harm than benefit. ²¹⁶ It is not true that "no one is protected until everyone is protected." ⁴⁵

5.1.3.2. Open schools for children:^{87,246} School provides essential educational, social, and developmental benefits to children.²⁴⁷ Children have very low morbidity and mortality from COVID-19,¹⁷⁴ and, especially those ≤10 years old, are less likely to be infected by SARS-CoV-2^{57,249-251} and have a low likelihood to be the source of transmission of SARS-CoV-2.^{178,252} Children account for 1.9% of confirmed cases worldwide.²⁴⁸ School closures don't seem to have an impact on community outbreaks.^{178,253} Modelling predicted that school and university closures and isolation of younger people would increase the total number of deaths [postponed to a second and subsequent waves].²²⁸ Modelling also predicted that

school closures alone would prevent only 2-4% of deaths.²⁵⁴ We need to educate parents and teachers regarding their low risk, and focus teachers with greater vulnerability due to age or multiple comorbidity on remote learning. Until schools open, education is lacking especially for those with the fewest opportunities, worsening social disparities that education systems are intended to level. Similarly, allow visitation in children's hospitals and pediatric long-term care facilities, where the risk even with co-morbidities is so low as to not warrant the tragedy of sacrificing our most vulnerable in the false hope of protecting them. ^{43,48,49,178}

5.1.3.3. Build back better: Maybe we have learned that the "government can intervene decisively once the scale of an emergency is [or seems] clear and public support is present." 255 Maybe we can "recalibrate our sense of omnipotence seeing the ability of 'natural' forces to shock the global economy.²⁵⁵ Maybe we can tip "energy and industrial systems towards newer, cleaner, and ultimately cheaper modes of production that become impossible to outcompete."255 This would involve investment in clean technologies [e.g., renewable energy, green construction, natural capital, carbon capture and storage technologies], and conditional [on measurable transition] bailouts. This is because climate change, like the COVID-19 response, will involve market failures, externalities, international cooperation, and political leadership: the devastation is just in slow motion and far graver. The aggregate fiscal stimuli aimed at alleviating the consequences of the COVID-19 crisis for 149 countries amount to US\$12.2 trillion.²⁵⁶ Climate experts have estimated that "the additional investment needed to shift low-carbon energy investment onto a Paris-compatible pathway thus amounts to about US\$300 billion per year globally over the coming 5 years... 12% [of total pledged stimulus to date] when considered over the entire 2020-2024 period..."256 Moreover, "subtracting divestments from highcarbon fossil fuels... indicates that the overall increase in net annual investments to achieve an ambitious low-carbon transformation in the energy sector are notably small... 1% [of the total announced stimulus to date] over the 2020-2024 period."256 A green recovery may be a driver of employment, spur innovation and diffusion of technologies, reduce stranded assets, and result in a more sustainable and resilient society. 117,256

5.2. Some Research Priorities

More information will help to optimize responses to the pandemic. This particularly applies to possible prevention, prophylaxis, and treatment of COVID-19. How effective cloth masks are at preventing infection, or at reducing severity of infection needs more study. ^{257,258} The safety, efficacy, and durability of protection from vaccines, particularly in high-risk groups, must be determined in large Phase III randomized controlled trials. ²⁵⁹ Novel treatments are in clinical trials, with dexamethasone having benefit on mortality in those with severe COVID-19 requiring oxygen treatment. ²⁶⁰ Research is also required to determine the frequency and severity of reinfections. ²⁶¹ The frequency, duration, and severity of 'long-COVID' requires better study. The impact of influenza on COVID-19 morbidity and mortality requires study, as both viruses may compete for the same susceptible individuals. ²⁶¹ Importantly, research on "the impending authoritarian pandemic... [the] toll being inflicted on democracy, civil liberties, fundamental freedoms, [and] healthcare ethics..." (e.g., due to those responses that were not strictly necessary nor proportionate, largely copied from the "authoritarian example of others") is required to prevent regression and "erosion of rights-protective democratic ideals and institutions" ²⁶² across the globe. ²⁶²⁻²⁶⁴

6. Conclusion

"The destruction of lives and livelihoods in the name of survival will haunt us for decades." ¹⁰ The decisions we made entailed "trade-offs that cannot be wished away." ¹⁰ The most affected by the pandemic response are "the poor, the marginalized, and the vulnerable," while we in high-income countries have shifted "negative effects... to places where they are less visible and presumably less serious." ¹⁰ We must open up society to save many more lives than we can by attempting to avoid every case (or even most cases) of COVID-19. It is past time to take an effortful pause, calibrate our response to the true risk, make rational cost-benefit analyses of the trade-offs, and end the lockdown groupthink.

Abbreviations

COVID-19: Coronavirus Disease 2019

GDP: Gross Domestic Product IFR: Infection Fatality Rate ICU: Intensive Care Unit

NPI: Non-pharmaceutical Intervention QALY: Quality Adjusted Life Years

SARS-CoV-2: Severe Acute Respiratory Syndrome Coronavirus 2

UK: United Kingdom US: United States

WELLBY: Wellbeing Adjusted Life Years

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Figure Titles and Legends

Figure 1(A). The Trolley Dilemma using numbers compatible with the Corona Dilemma.

Legend: Modified with permission from Frijters P, reference 144.

Figure 1(B). The Corona Dilemma choices explicitly explained.

Legend: Modified with permission from Frijters P, reference 144.

Figure 2. Explanation of how acute GDP loss of 6-7% will accumulate over the decade to a loss of at least US\$50 trillion.

Legend: Reproduced with permission from Frijters P [Personal Communication].

Additional Files

Additional file 1.pdf

Title: ETables

ETable 1. Total and COVID-19 deaths in the USA, as of August 22, 2020

ETable 2. COVID-19 deaths in Canada as of August 30, 2020 compared to deaths in 2018.

ETable 3. Studies suggesting that the efficacy of nonpharmaceutical interventions to prevent spread of COVID-19 are not as high as some predicted.

ETable 4. Cost-benefit analysis in WELLBYs for Canada's response to COVID-19.

References

- 1. Kumar A, Qureshi S, Reynolds S, Light RB, Sligl W, Bates A, et al. Opinion: All levels of government must take decision, co-ordinated action now before it's too late: a group of physicians trained in both infectious diseases and critical care medicine discuss what Canadian governments must do to prevent this country from finding itself in a similar situation to what Italy and Spain are experiencing. The National Post (March 17, 2020). https://nationalpost.com/opinion/opinion-all-levels-of-government-must-take-decisive-co-ordinated-action-now-before-its-too-late. [Accessed October 11, 2020].
- 2. Kissler SM, Tedijanto C, Goldstein E, Grad YH, Lipsitch M. Projecting the transmission dynamics of SARS-CoV-2 through the postpandemic period. Science (2020) 368:860-868.
- 3. Kissler SM, Tedijanto C, Goldstein E, Grad YH, Lipsitch M. Projecting the transmission dynamics of SARS-CoV-2 through the post-pandemic period. doi: https://doi.org/10.1101/2020.03.04.20031112 medRxiv [Preprint] (March 6, 2020). Available at:
- https://www.medrxiv.org/content/10.1101/2020.03.04.20031112v1 [Accessed October 11, 2020].
- 4. Kissler SM, Tedijanto C, Lipsitch M, Grad Y. Social distancing strategies for curbing the COVID-19 epidemic. Doi: https://doi.org/10.1101/2020.03.22.20041079 medRxiv [Preprint[(March 24, 2020). Available at: https://www.medrxiv.org/content/10.1101/2020.03.22.20041079v1 [Accessed October 11, 2020].
- 5. Ferguson NM, Laydon D, Nedjati-Gilani G, Imai N, Ainslie K, Baguelin M, et al., on behalf of the Imperial College COVID-19 Response Team. Report 9: Impact of non-pharmaceutical interventions (NPIs) to reduce COVID-19 mortality and healthcare demand. (16 March 2020). Available at: https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/covid-19/report-9-impact-of-npis-on-covid-19/ [Accessed October 11, 2020].
- 6. Walker PGT, Whittaker C, Watson O, Baguelin M, Ainslie KEC, Bhatia S, et al., on behalf of the Imperial College COVID-19 Response Team. Report 12: The global impact of COVID-19 and strategies for mitigation and suppression. (26 March 2020). Available at:
- https://www.imperial.ac.uk/media/imperial-college/medicine/sph/ide/gida-fellowships/Imperial-college-COVID19-Global-Impact-26-03-2020v2.pdf [Accessed October 11, 2020].
- 7. Flaxman S, Mishra S, Gandy A, Unwin HJT, Mellan TA, Coupland H, et al. Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe. Nature (2020) 584:257-261.
- 8. Hsiang S, Allen D, Annan-Phan S, Bell K, Bolliger I, Chong T, et al. The effect of large-scale anticontagion policies on the COVID-19 pandemic. Nature (2020) 584:262-267.
- 9. Frijters P. What kind of crowd are we now seeing? The 5 surprises in this pandemic. Club Troppo (June 17, 2020). Available at: https://clubtroppo.com.au/2020/06/17/what-kind-of-crowd-are-we-now-seeing-the-5-surprises-in-this-pandemic/ [Accessed October 11, 2020].
- 10. Caduff C. What went wrong: Corona and the world after the full stop. Medical Anthropology Quarterly (2020) In Press. doi: 10.1111/maq.12599. Available at:
- https://anthrosource.onlinelibrary.wiley.com/doi/epdf/10.1111/maq.12599 [Accessed October 11, 2020].
- 11. Ogbodo JN, Onwe EC, Chukwu J, Nwasum CJ, Nwakpu ES, Nwankwo SU, et al. Communicating health crisis: a content analysis of global media framing of COVID-19. Health Promotion Perspectives (2020) 10(3):257-269.
- 12. Schippers MC. For the greater good? The devastating ripple effects of the Covid-19 crisis. Front Psychol (2020) 11:577740. DOI: 10.3389/fpsyg.2020.577740.
- 13. Wicke P, Bolognesi MM. Framing COVID-19: how we conceptualize and discuss the pandemic on Twitter. PLoS One (2020) 15(9):e0240010
- 14. Yam KC, Jackson JC,, Barnes CM, Lau J, Qin X, Lee HY. The rise of COVID-19 cases is associated with support for world leaders. PNAS (2020) 117(41):25429-25433.

- 15. Sebhatu A, Wennberg K, Arora-Jonsson S, Lindberg SI. Explaining the homogeneous diffusion of COVID-19 nonpharmaceutical interventions across heterogeneous countries. PNAS (2020) 117(35):21201-21208.
- 16. Irvine J. Are the costs of lockdown worth the pain? Economists weigh in. The Sydney Morning Herald (August 8 2020). Available at: https://www.smh.com.au/business/the-economy/are-the-costs-of-lockdown-worth-the-pain-economists-weigh-in-20200807-p55jkp.html [Accessed October 11, 2020].
- 17. World Health Organization. Non-pharmaceutical public health measures for mitigating the risk and impact of epidemic and pandemic influenza. (2019) Available at:
- https://apps.who.int/iris/bitstream/handle/10665/329438/9789241516839-eng.pdf?ua=1 [Accessed October 11, 2020].
- 18. Bonneux L, Van Damme W. Health is more than influenza. Bulleting World Health Organization (2011) 89:539-540.
- 19. Bonneux L, Van Damme W. Preventing iatrogenic pandemics of panic. Do it in a NICE way. BMJ (2010) 340:c3065.
- 20. Halpern SD, Truog RD, Miller FG. Cognitive bias and public health policy during the COVID-19 pandemic. JAMA (2020) 324:337-338.
- 21. Halpern SD, Miller FG. The urge to build more intensive care unit beds and ventilators: intuitive but errant. Ann Internal Med (2020) 173:302-303.
- 22. Singer P, Plant M. When will the pandemic cure be worse than the disease? Project Syndicate (April 6, 2020). Available at: https://www.project-syndicate.org/commentary/when-will-lockdowns-be-worse-than-covid19-by-peter-singer-and-michael-plant-2020-04?barrier=accesspaylog [Accessed 11 October 2020].
- 23. Brooks B, Curnin S, Owen C, Bearman C. Managing cognitive biases during disaster response: the development of an aide memoire. Cognition Technology & Work (2020) 22:249-261.
- 24. Schippers MC, Van Jaarsveld GM. Optimizing decision-making processes in times of Covid-19: using reflexivity to counteract information processing failures. SSRN [Preprint] (May 15, 2020). Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3599939 [Accessed October 31, 2020].
- 25. Restrepo D, Armstrong KA, Metlay JP. Annals clinical decision making: avoiding cognitive errors in clinical decision making. Ann Internal Med (2020) 172(11):747-751.
- 26. Ioannidis JPA. Infection fatality rate of COVID-19 inferred from seroprevalence data. Bulletin World Health Organization (2020) In Press. Available online:
- https://www.who.int/bulletin/online_first/BLT.20.265892.pdf [Accessed October 26, 2020]
- 27. Claus P. Up to 300 million people may be infected by Covid-19, Stanford Guru John Ioannidis says. Greek USA Reporter (June 27, 2020). Available at: https://usa.greekreporter.com/2020/06/27/up-to-300-million-people-may-be-infected-by-covid-19-stanford-guru-john-ioannidis-says/ [Accessed October 11, 2020].
- 28. DW News. Coronavirus: WHO estimates 10% of global population infected with COVID-19. (October 5, 2020). Available at: https://www.dw.com/en/coronavirus-who-estimates-10-of-global-population-infected-with-covid-19/a-55162783 [Accessed October 26, 2020].
- 29. Long QX, Tang XJ, Shi QL, Li Q, Deng HJ, Yuan J, et al. Clinical and immunological assessment of asymptomatic SARS-CoV-2 infections. Nature Medicine (2020) 26(8):1200-1204.
- 30. Ibarrondo FJ, Fulcher JA, Goodman-Meza D, Elliott J, Hofmann C, Hausner MA, et al. Rapid decay of anti-SARS-CoV-2 antibodies in persons with mild Covid-19. NEJM (2020) 383:1085-1087.
- 31. Seow J, Graham C, Merrick B, Acors S, Steel KJA, Hemmings O, et al. Longitudinal evaluation and decline in antibody responses in SARS-CoV-2 infection. medRxiv [Preprint] (July 11, 2020). Available at: https://www.medrxiv.org/content/10.1101/2020.07.09.20148429v1 [Accessed October 11, 2020].
- 32. Bastos ML, Tavaziva G, Abidi SK, Campbell JR, Haraoui LP, Johnston JC, et al. Diagnostic accuracy of serological tests for covid-19: systematic review and meta-analysis. BMJ (2020) 370:m2516.

- 33. Robbiani DF, Gaebler C, Muecksch F, Lorenzi JCC, Wang Z, Cho A, et al. Convergent antibody responses to SARS-CoV-2 in convalescent individuals. Nature (2020) 584:437-442.
- 34. Burgess S, Ponsford MJ, Gill D. Are we underestimating seroprevalence of SARS-CoV-2? Current antibody tests fail to identify people who had mild infections. BMJ (2020) 370:m3364.
- 35. Prevost J, Gasser R, Beaudoin-Bussieres G, Richard J, Duerr R, Laumaea A, et al. Cross-sectional evaluation of humoral responses against SARS-CoV-2 Spike. Cell Reports Medicine (2020) In Press. doi: https://doi.org/10.1016/j.xcrm.2020.100126.
- 36. Ward H, Cooke G, Atchison C, Whitaker M, Elliott J, Moshe M, et al. Declinicn prevalence of antibody positivity to SARS-CoV-2: a community study of 365,000 adults. medRxiv [Preprint] (October 27, 2020). Available at: https://www.medrxiv.org/content/10.1101/2020.10.26.20219725v1 [Accessed October 30, 2020].
- 37. Faustini SE, Jossi SE, Perez-Toledo M, Shields A, Allen JD, Watanabe Y, et al. Detection of antibodies to the SARS-CoV-2 spike glycoprotein in both serum and saliva enhances detection of infection. medRxiv [Preprint] (June 18, 2020). DOI: https://doi.org/10.1101/2020.06.16.20133025. Available at: https://www.medrxiv.org/content/10.1101/2020.06.16.20133025v1 [Accessed October 25, 2020].
- 38. Cervia C, Nilsson J, Zurbuchen Y, Valaperti A, Schreiner J, Wolfensberger A, et al. Systemic and mucosal antibody secretion specific to SARS-CoV-2 during mild versus severe COVID-19. bioRxiv [Preprint] (May 23, 2020). Available at: https://www.biorxiv.org/content/10.1101/2020.05.21.108308v1 [Accessed October 11, 2020].
- 39. Gallais F, Velay A, Wendling MJ, Nazon C, Partisani M, Sibilia J, et al. Intrafamilial exposure to SARS-CoV-2 induces cellular immune response without seroconversion. medRxiv [Preprint] (June 22, 2020). Available at: https://www.medrxiv.org/content/10.1101/2020.06.21.20132449v1 [Accessed October 11, 2020].
- 40. Sekine T, Perez-Potti A, Rivera-Ballesteros O, Stralin K, Gorin JP, Olsson A, et al., for the Karolinska COVID-19 Study Group. Robust T cell immunity in convalescent individuals with asymptomatic or mild COVID-19. Cell (2020) 183(1):158-168.e14.
- 41. Perez-Saez J, Lauer SA, Kaiser L, Regard S, Delaporte E, Guessous I, et al. Serology-informed estimates of SARS-CoV-2 infection fatality risk in Geneva, Switzerland. Lancet Infect Dis (2020) In Press. DOI: https://doi.org/10.1016/S1473-3099(20)30584-3
- 42. Salje H, Kiem CT, Lefrancq N, Courtejoie N, Bosetti P, Paireau J, et al. Estimating the burden of SARS-CoV-2 in France. Science (2020) 369:208-211.
- 43. loannidis JPA, Axford C, Contopoulos-Ioannidis DG. Population-level COVID-19 mortality risk for non-elderly individuals overall and for non-elderly individuals without underlying disease in pandemic epicenters. Environmental Research (2020) 188:109890.
- 44. Coletta A. Canada's nursing home crisis: 81 percent of coronavirus deaths are in long-term care facilities. The Washington Post (May 18, 2020). Available at:
- https://www.washingtonpost.com/world/the_americas/coronavirus-canada-long-term-care-nursing-homes/2020/05/18/01494ad4-947f-11ea-87a3-22d324235636_story.html [Accessed October 11, 2020].
- 45. The Chief Public Health Officer of Canada's Report on the State of Public Health in Canada 2020. From risk to resilience: an equity approach to COVID-19. Ottawa: Public Health Agency of Canada, 2020. Available at: https://www.canada.ca/en/public-health/corporate/publications/chief-public-health-officer-reports-state-public-health-canada/from-risk-resilience-equity-approach-covid-19.html [Accessed October 30, 2020].
- 46. Vossius C, Selbaek G, Benth JS, Bergh S. Mortality in nursing home residents: a longitudinal study over three years. PLoS One (2018) 13(9):e0203489.
- 47. McIntosh K. Coronaviruses. UpToDate (2020) Available at: https://www.uptodate.com/contents/coronaviruses [Accessed October 27 2020].

singer-2020-06?barrier=accesspaylog [Accessed October 11, 2020].

- 48. Williamson EJ, Walker AJ, Bhaskaran K, Bacon S, Bates C, Morton CE, et al. Factors associated with COVID-19-related death using OpenSAFELY. Nature (2020) 584:430-436.
- 49. Erdman R, NcRae A, MacKay E, Hicks A, Norris C, Saini V, et al. COVID-19 Scientific Advisory Group Rapid Evidence Report. Topic: What risk factors (such as age, medical conditions, or lifestyle factors) are associated with the development of severe outcomes in COVID-19? Alberta Health Services, COVID-19 Scientific Advisory Group. Available at: https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-covid-19-sag-risk-factors-for-severe-covid-19-outcomes-rapid-review.pdf [Accessed October 11, 2020]. 50. Singer P. Is age discrimination acceptable? Project Syndicate (June 10, 2020). Available at: https://www.project-syndicate.org/commentary/when-is-age-discrimination-acceptable-by-peter-
- 51. Singer P, Winkett L The duel: is it more important to save younger lives. Prospect (May 4, 2020). Available at: https://www.prospectmagazine.co.uk/magazine/the-duel-is-it-more-important-to-save-younger-lives-peter-singer-debate-coronavirus-medicine-ethics-philosophy [Accessed October 11, 2020].
- 52. Emanuel EJ, Persad G, Kern A, Buchanan A, Fabre C, Halliday D, et al. An ethical framework for global vaccine allocation. Science (2020) 369(6509):1309-1311.
- 53. Huang K, Bernhard R, Barak-Corren N, Bazerman M, Greene JD. Veil-of-Ignorance reasoning favors allocating resources to younger patients during the COVID-19 crisis. PsyArXiv [Preprint] (May 27, 2020). Available at: file:///C:/Users/My-PC/Downloads/VOI-COVID-19-Manuscript-0520%20(1).pdf [Accessed October 11, 2020].
- 54. Britton T, Ball F, Trapman P. A mathematical model reveals the influence of population heterogeneity on herd immunity to SARS-CoV-2. Science (2020) 369(6505):846-849.
- 55. Gomes MGM, Corder RM, King JG, Langwig KE, Souto-Maior C, Carneiro J, et al. Individual variation in susceptibility or exposure to SARS-CoV-2 lowers the herd immunity threshold. medRxiv [Preprint] (May 21, 2020). Doi: https://doi.org/10.1101/2020.04.27.20081893. Available at:
- https://www.medrxiv.org/content/10.1101/2020.04.27.20081893v3 [Accessed October 11, 2020].
- 56. Aguas R, Corder RM, King JG, Goncalves G, Ferreira MU, Gomes MGM. Herd immunity thresholds for SARS-CoV-2 estimated from unfolding epidemics. medRxiv [Preprint] (August 31, 2020). Available at: https://www.medrxiv.org/content/10.1101/2020.07.23.20160762v2.full.pdf [Accessed October 11, 2020].
- 57. Meyerowitz EA, Richterman A, Gandhi RT, Sax PE. Transmission of SARS-CoV-2: a review of viral, host, and environmental factors. Ann Internal Med (2020) In Press. DOI: https://doi.org/10.7326/M20-5008.
- 58. Adam D. The limits of R. Nature (2020) 583:346-348.
- 59. Althouse BM, Wenger EA, Miller JC, Scarpino SV, Allard A, Hebert-Dufresne L, Hu H. Stochasticity and heterogeneity in the transmission dynamics of SARS-CoV-2. arXiv.org [Preprint] (May 27, 2020). Available at: https://arxiv.org/abs/2005.13689 [Accessed October 10, 2020].
- 60. Worldometer. (Oct 02, 2020). https://www.worldometers.info/coronavirus/country/sweden/. [Accessed October 2, 2020].
- 61. 14% of coronavirus antibody tests positive in Sweden in July. The Local (July 23, 2020). Available at: https://www.thelocal.se/20200723/14-of-antibody-tests-positive-in-sweden [Accessed October 25, 2020].
- 62. Kontis V, Bennett JE, Rashid T, Parks RM, Pearson-Stuttard J, Guillot M, et al. Magnitude, demographics and dynamics of the effect of the first wave of the COVID-19 pandemic on all-cause mortality in 21 industrialized countries. Nature Med (2020) In Press. DOI: https://doi.org/10.1038/s41591-010-1112-0.
- 63. Bilinski A, Emanuel EJ. COVID-19 and excess all-cause mortality in the US and 18 comparison countries. JAMA (2020) In Press. DOI: 10.1001/jama.2020.20717.

- 64. Baldwin R, di Mauro BW. "Introduction". In: Baldwin R, DiMauro BW, editors. Economics in the Time of COVID-19. A CEPR (Center for Economic Policy Research) Press VoxEU.org eBook (2020). p. 1-31.
- Available at: https://cepr.org/sites/default/files/news/COVID-19.pdf [Accessed October 11, 2020].
- 65. Foster G. Material that further addresses themes of questions at Professor Gigi Foster's PAEC testimony on Covid-19, August 12, 2000. (2020). Available at:

https://parliament.vic.gov.au/images/stories/committees/paec/COVID-

- 19 Inquiry/Tabled Documents Round 2/PAEC Foster othermatters.pdf. Based on:
- https://ec.europa.eu/info/business-economy-euro/economic-performance-and-forecasts/economic-performance-country_en [Accessed October 11, 2020].
- 66. Allen D, Block S, Cohen J, Eckersley P, Eifler M, Gostin L, et al., for the Edmond J. Safra Center for Ethics at Harvard University. Roadmap to pandemic resilience: massive scale testing, tracing, and supported isolation (TTSI) as the Path to Pandemic Resilience for a Free Society. (April 20, 2020). Available at: https://ethics.harvard.edu/files/center-for-
- ethics/files/roadmaptopandemicresilience updated 4.20.20 1.pdf [Accessed October 11, 2020].
- 67. White EM, Santostefano CM, Feifer RA, Kosar CM, Blackman C, Gravenstein S, Mor V. Asymptomatic and presymptomatic severe acute respiratory syndrome Coronavirus 2 infection rates in a multistate sample of skilled nursing facilities. JAMA Internal Med (2020) In Press. DOI:
- 10.1001/jamainternalmed.2020.5664.
- 68. Ferretti L, Wymant C, Kendall M, Zhao L, Nurtay A, Abeler-Dorner L, et al. Quantifying SARS-CoV-2 transmission suggests epidemic control with digital contact tracing. Science (2020) 368(6491):eabb6939.
- 69. Peak CM, Kahn R, Grad Y, Childs LM, Li R, Lipsitch M, Buckee CO. Individual quarantine versus active monitoring of contacts for the mitigation of COVID-19: a modelling study. Lancet Infect Dis (2020) 20:1025-1033.
- 70. Moghadas SM, Fitzpatrick MC, Sah P, Pandey A, Shoukat A, Singer BH, Galvani AP. The implications of silent transmission for the control of COVID-19 outbreaks. PNAS (2020) 117(30):17513-17515.
- 71. Arvin AM, Fink K, Schmid MA, Cathcart A, Spreafico R, Havenar-Daughton C, et al. A perspective on potential antibody-dependent enhancement of SARS-CoV-2. Nature (2020) 584:353-364.
- 72. Saad-Roy CM, Wagner CE, Baker RE, Morris SE, Farrar J, Graham AL, et al. Immune life history, vaccination, and the dynamics of SARS-CoV-2 over the next 5 years. Science (2020) In Press. doi: 10.1126/science.abd7343
- 73. Mathew D, Giles JR, Baxter AE, Oldridge DA, Greenplate AR, Wu JE, et al. Deep immune profiling of COVID-19 patients reveals distinct immunotypes with therapeutic implications. Science (2020) 369(6508):eabc8511 DOI: 10.1126/science.abc8511
- 74. Grubeck-Loebenstein B, Bella SD, Iorio AM, Michel JP, Pawelec G, Solana R. Immunosenescence and vaccine failure in the elderly. Aging Clin Exp Res (2009) 21(3):201-209.
- 75. Lazarus JV, Ratzan SC, Palayew A, Gostin LO, Larson HJ, Rabin K, et al. A global survey of potential acceptance of a COVID-19 vaccine. Nature Med (2020) In Press. DOI: https://doi.org/10.1038/s41591-020-1124-9.
- 76. Callaway E. The unequal scramble for Coronavirus vaccines. Nature (2020) 584:506-507.
- 77. Lee A, Thornley S, Morris AJ, Sundborn G. Should countries aim for elimination in the covid-19 pandemic? BMJ (2020) 370:m3410
- 78. Time to revise the Sustainable Development Goals. Nature (2020) 583:331-332.
- 79. Naidoo R, Fisher B. Reset Sustainable Development Goals for a pandemic world. Nature (2020) 583:198-201.
- 80. The United Nations. The Sustainable Development Goals Report 2020. Available at: https://unstats.un.org/sdgs/report/2020/The-Sustainable-Development-Goals-Report-2020.pdf [Accessed October 11, 2020].

- 81. Zetzsche DA, Consiglio R. One million or one hundred million casualties?-The impact of the COVID-19 crisis on the least developed and developing countries. Law Working Paper Series; Paper number 2020-008. (2020) Available at: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3597657 [Accessed October 26, 2020].
- 82. Buheji M, da Costa Cunha K, Beka G, Mavric B, do Carmo de Souza YL, da Costa Silva SS, et al. The extent of COVID-19 pandemic socio-economic impact on global poverty. A global integrative multidisciplinary review. Am J Economics (2020) 10(4):213-224.
- 83. Hoffman J, Maclean R. Slowing the Coronavirus is speeding the spread of other diseases. The New York Times (June 14, 2020). Available at:
- https://www.nytimes.com/2020/06/14/health/coronavirus-vaccines-measles.html. Accessed October 11, 2020].
- 84. FAO, IFAD, UNICEF, WFP and WHO. The state of food security and nutrition in the world 2020. Transforming food systems for affordable health diets. Rome, FAO (2020). 320 p. Available at: http://www.fao.org/3/ca9692en/CA9692EN.pdf [Accessed October 25, 2020].
- 85. Laborde D, Martin W, Swinnen J, Vos R. COVID-19 risks to global food security. Science (2020) 369(6503):500-502.
- 86. Chanchlani N, Buchanan F, Gill PJ. Addressing the indirect effects of COVID-19 on the health of children and young people. CMAJ (2020) 192(32):e921-e927.
- 87. Silverman M, Sibbald R, Stranges S. Ethics of COVID-19-related school closures. Can J Public Health (2020) 111(4):462-465.
- 88. Robertson T, Carter ED, Chou VB, Stegmuller AR, Jackson BD, Tam Y, et al. Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study. Lancet Glob Health (2020) 8(7):e901-e908.
- 89. Sherrard-Smith E, Hogan AB, Hamlet A, Watson O, Whittaker C, Winskill P, et al., for the Imperial College COVID-19 Response Team. Report 18: The potential public health impact of COVID-19 on malaria in Africa. (May 1, 2020). Available at: https://www.imperial.ac.uk/mrc-global-infectious-disease-analysis/covid-19/report-18-malaria/ [Accessed October 11, 2020].
- 90. World Health Organization. The potential impact of health service disruptions on the burden of malaria: a modelling analysis for countries in sub-Saharan Africa. Geneva: World Health Organization (2020). Available at: file:///C:/Users/My-PC/Downloads/9789240004641-eng%20(1).pdf [Accessed October 11, 2020].
- 91. Stop TB Partnership. The potential impact of the COVID-19 response on Tuberculosis in high-burden countries: a modelling analysis. (2020). Available at:
- http://www.stoptb.org/assets/documents/news/Modeling%20Report 1%20May%202020 FINAL.pdf [Accessed October 11, 2020].
- 92. Jewell BL, Mudimu E, Stover J, ten Brink D, Phillips AN, Smith JA, et al., for the HIV Modelling Consortium. Potential effects of disruption to HIV programmes in sub-Saharan Africa caused by COVID-19: results from multiple mathematical models. Lancet HIV (2020) 7:e629-e640.
- 93. Karim QA, Karim SSA. COVID-19 affects HIV and tuberculosis care. Science (2020) 369(6502):366-368.
- 94. GBD 2017 Child and Adolescent Health Collaborators. Disease, Injuries, and Risk Factors in child and adolescent health, 1990 to 2017: findings from the Global Burden of Diseases, Injuries, and Risk Factors 2017 study. JAMA Pediatrics (2019) 173(6):e190337.
- 95. loannidis JPA. Global perspective on COVID-19 epidemiology for a full-cycle pandemic. European J Clin Investigation (2020) In Press. DOI: https://doi.org/10.1111/eci.13423.
- 96. United Nations World Food Programme. World Food Programme to assist largest number of hungry people ever, as coronavirus devastates poor nations. (2020). https://www.wfp.org/news/world-food-programme-assist-largest-number-hungry-people-ever-coronavirus-devastates-

- poor#:~:text=To%20tackle%20the%20rising%20tide,record%2097%20million%20in%202019 [Accessed October 27, 2020].
- 97. Rosenbaum L. The untold toll the pandemic's effects on patients without Covid-19. NEJM (2020) 382:2368-2371.
- 98. Solomon MD, McNulty EJ, Rana S, Leong TK, Lee C, Sung SH, et al. The COVID-19 pandemic and the incidence of acute myocardial infarction. NEJM (2020) 383:691-693.
- 99. Sud A, Jones ME, Broggio J, Loveday C, Torr B, Garrett A, et al. Collateral damage: the impact on outcomes from cancer surgery of the COVID-19 pandemic. Annals Oncology (2020) 31(8):P1065-1074.
- 100. Kaufman HW, Chen Z, Niles J, Fesko Y. Changes in the numbers of US patients with newly identified cancer before and during the Coronavirus Disease 2019 (COVID-19) pandemic. JAMA Netw Open (2020) 3(8):e2017267.
- 101. Urbach DR, Martin D. Confronting the COVID-19 surgery crisis: time for transformational change. CMAJ (2020) 192(21):E585-E586.
- 102. Zyznian JZ. Tallying the toll of excess deaths from COVID-19. JAMA Health Forum (2020) 1(7):e200832.
- 103. UNFPA. Impact of the COVID-19 pandemic on family planning and ending gender-based violence, female genital mutilation and child marriage. Interim Technical Note (27 April 2020). Available at: https://www.unfpa.org/sites/default/files/resource-pdf/COVID-
- 19 impact brief for UNFPA 24 April 2020 1.pdf [Accessed October 11, 2020].
- 104. Roesch E, Amin A, Gupta J, Garcia-Moreno C. Violence against women during covid-19 pandemic restrictions. BMJ (2020) 369:m1712.
- 105. Petterson S, Westfall JM, Miller BF. Projected deaths of despair during the Coronavirus recession. Well Being Trust (May 8, 2020). WellbeingTrust.org. Available at: https://wellbeingtrust.org/wp-content/uploads/2020/05/WBT_Deaths-of-Despair COVID-19-FINAL-FINAL.pdf [Accessed October 11, 2020].
- 106. Stanley M. Why the increase in domestic violence during COVID-19? Psychology Today (May 9, 2020). Available at: https://www.psychologytoday.com/ca/blog/making-sense-chaos/202005/why-the-increase-in-domestic-violence-during-covid-19 [Accessed October 11, 2020].
- 107. Bradley NL, DiPasquale AM, Dillabough K, Schneider PS. Health care practitioners' responsibility to address intimate partner violence related to the COVID-19 pandemic. CMAJ (2020) 192(22):E609-E610.
- 108. Moser DA, Glaus J, Frangou S, Schechter DS. Years of life lost due to the psychosocial
- consequences of COVID-19 mitigation strategies based on Swiss data. Eur Psychiatry (2020) 63(1):e58.
- 109. Meredith JW, High KP, Freischlag JA. Preserving elective surgeries in the COVID-19 pandemic and the future. JAMA (2020) In Press. doi:10.1001/jama.2020.19594.
- 110. Canadian Medical Association. Clearing the backlog. The cost to return wait times to pre-pandemic levels. (October 2020). Available at: https://www.cma.ca/sites/default/files/pdf/Media-Releases/Deloitte-Clearing-the-Backlog.pdf [Accessed October 26, 2020].
- 111. Wang J, Vahid S, Eberg M, Milroy S, Milkovich J, Wright FC, et al. Clearing the surgical backlog caused by COVID-19 in Ontario: a time series modelling study. CMAJ (2020) In Press. DOI: 10.1503/cmaj.201521.
- 112. Bhambhvani HP, Rodrigues AJ, Yu JS, Carr JB, Gephart MH. Hospital volumes of 5 medical emergencies in the COVID-19 pandemic in 2 US medical centers. JAMA Internal Med (2000) In Press. DOI: 10.1001.jamainternal med.2020.3982.
- 113. Docherty K, Butt J, de Boer R, Dewan P, Koeber L, Maggioni A, et al. Excess deaths during the Covid-19 pandemic: an international comparison. medRxiv [Preprint] (May 13, 2020). DOI:
- https://doi.org/10.1101/2020.04.21.20073114. Available at:
- https://www.medrxiv.org/content/10.1101/2020.04.21.20073114v3 [Accessed October 11, 2020].

- 114. Postill G, Murray R, Wilton A, Wells RA, Sirbu R, Daley MJ, Rosella LC. An analysis of mortality in Ontario using cremation data: rise in cremations during the COVID-19 pandemic. medRxiv [Preprint] (August 28, 2020). DOI: https://doi.org/10.1101/2020.07.22.20159913. Available at:
- https://www.medrxiv.org/content/10.1101/2020.07.22.20159913v3. [Accessed October 11, 2020].
- 115. Woolf SH, Chapman DA, Sabo RT, Weinberger DM, Hill L, Taylor DDH. Excess deaths from COVID-19 and other causes March-July 2020. JAMA (2020) 325(15):1562-1565.
- 116. Devlin H. Extra 10,000 dementia deaths in England and Wales in April. The Guardian (June 5, 2020). Available at: https://www.theguardian.com/world/2020/jun/05/covid-19-causing-10000-dementia-deaths-beyond-infections-research-says [Accessed October 11, 2020].
- 117. International Monetary Fund. Transcript of October 2020 World Economic Outlook Press Briefing. (October 13, 2020). Available at: https://www.imf.org/en/News/Articles/2020/10/13/tr101320-transcript-of-october-2020-world-economic-outlook-press-briefing [Accessed October 29, 2020].
- 118. Cooper LA, Williams DR. Excess deaths from COVID-19, community bereavement, and restorative justice for communities of color. JAMA (2020) 324(15):1491-1492.
- 119. Tasker JP, CBC News. Opioid deaths skyrocket, mental health suffers due to pandemic restrictions, new federal report says. (October 28, 2020) https://www.cbc.ca/news/public-health-annual-report-opioid-deaths-skyrocket-1.5780129 [Accessed October 30, 2020].
- 120. Khare N, Shroff F, Nkennor B, Mukhopadhyay B. Reimagining safety in a pandemic: the imperative to dismantle structural oppression in Canada. CMAJ (2020) 192:e1218-e1220.
- 121. Medecins Sans Frontieres. Women and girls face greater dangers during COVID-19 pandemic. (July 2, 2020). https://www.msf.org/women-and-girls-face-greater-dangers-during-covid-19-pandemic [Accessed October 27, 2020].
- 122. Marie Stopes International. Resilience, adaptation and action. MSI's response to COVID-19. (2020). https://www.mariestopes.org/resources/resilience-adaptation-and-action-msis-response-to-covid-19/ [Accessed October 27, 2020].
- 123. Centers for Disease Control and Prevention. Weekly updates by select demographics and geographical characteristics: provisional death counts for Coronavirus Disease 2019 (COVID-19). (2020) Available at: https://www.cdc.gov/nchs/nvss/vsrr/covid_weekly/index.htm [Accessed October 10, 2020].
- 124. Statistics Canada. Deaths and mortality rates, by age group. (2020) Available at:
- https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1310071001 [Accessed October 10, 2020].
- 125. Government of Canada. Coronavirus disease 2019 (COVID-19): epidemiology update. (2020) Available at: https://health-infobase.canada.ca/covid-19/epidemiological-summary-covid-19-cases.html [Accessed October 10, 2020].
- 126. Spiegelhalter D. Use of "normal" risk to improve understanding of dangers of covid-19. BMJ (2020) 370:m3259.
- 127. United Nations, Department of Economic and Social Affairs, Population Division. World Mortality 2019: Data Booklet (ST/ESA/SER.A/436). (2020). Available at:
- https://www.un.org/en/development/desa/population/publications/pdf/mortality/WMR2019/WorldMortality2019DataBooklet.pdf [Accessed October 10, 2020].
- 128. World Health Organization. Coronavirus disease (COVID-19) weekly epidemiological update and weekly operational update: situation reports. (2020). Available at:
- https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports [Accessed October 11, 2020].
- 129. You D, Hug L, Ejdemyr S, Idele P, Hogan D, Mathers C, et al. Global, regional, and national levels and trends in under-5 mortality between 1990 and 2015, with scenario-based projections to 2030: a systematic analysis by the UN Inter-agency Group for Child Mortality Estimation. Lancet (2015) 386(10010):2275-2286.

- 130. Burstein R, Henry NJ, Collison ML, Marczak LB, Sligar A, Watson S, et al. Mapping 123 million neonatal, infant and child deaths between 2000 and 2017. Nature (2019) 574:353-358.
- 131. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Road traffic injuries and deaths a global problem. (Dec 18, 2019).

https://www.cdc.gov/injury/features/global-road-

- safety/index.html#:~:text=Each%20year%2C%201.35%20million%20people,on%20roadways%20around %20the%20world.&text=Every%20day%2C%20almost%203%2C700%20people,pedestrians%2C%20mot orcyclists%2C%20and%20cyclists [Accessed October 11, 2020].
- 132. World Health Organization. Tobacco. (27 May 2020). https://www.who.int/news-room/fact-sheets/detail/tobacco [Accessed October 11, 2020].
- 133. Global tuberculosis report 2019. Geneva: World Health Organization (2019). Available at: $\frac{\text{https://apps.who.int/iris/bitstream/handle/10665/329368/9789241565714-eng.pdf?ua=1}{\text{October 11, 2020]}}.$
- 134. Centers for Disease Control and Prevention. Malaria's Impact Worldwide. (Feb 25, 2020). https://www.cdc.gov/malaria/malaria worldwide/impact.html [Accessed October 11, 2020].
- 135. World Health Organization. More than 140,000 die from measles as cases surge worldwide. Press Release (5 Dec 2019). https://www.who.int/news-room/detail/05-12-2019-more-than-140-000-die-from-measles-as-cases-surge-worldwide [Accessed October 11, 2020].
- 136. UNAIDS. Global HIV & AIDS statistics 2020 fact sheet. https://www.unaids.org/en/resources/fact-sheet [Accessed October 11, 2020].
- 137. GBD 2017 Diarrhoeal Disease Collaborators. Quantifying the risks and interventions that have affected the burden of diarrhoea among children younger than 5 years: an analysis of the Global Burden of Disease Study 2017. Lancet Infect Dis (2020) 20(1):37-59.
- 138. GBD 2017 Lower Respiratory Infections Collaborators. Quantifying the risks and interventions that have affected the burden of respiratory infections among children younger than 5 years: an analysis for the Global Burden of Disease Study 2017. Lancet Infect Dis (2020) 20(1):60-79.
- 139. GBD 2017 Diet Collaborators. Health effects of dietary risks in 195 countries, 1990-2017: a systematic analysis for the Global Burden of Disease Study 2017. Lancet (2019) 393(10184):1958-1972.
- 140. Paget J, Spreeuwenberg P, Charu V, Taylor RJ, Iuliano AD, Bresee J, et al. Global mortality associated with seasonal influenza epidemics: new burden estimates and predictors from the GLaMOR Project. J Glob Health (2019) 9(2):020421.
- 141. Wong JY, Kelly H, Ip DKM, Wu JT, Leung GM, Cowling BJ. Case fatality risk of influenza A (H1N1pdm09): a systematic review. Epidemiology (2013) 24(6):830-841.
- 142. Wang X, Li Y, O'Brien KL, Madhi SA, WiddowsonMA, Byass P, et al. Global burden of respiratory infections associated with seasonal influenza in children under 5 years in 2018: a systematic review and modelling study. Lancet Glob Health (2020) 8(4):e497-e510.
- 143. Viboud C, Simonsen L, Fuentes R, Flores J, Miller MA, Chowell G. Global mortality impact of the 1957-1959 Influenza pandemic. J Infect Dis (2016) 213:738-745.
- 144. Frijters P. The Corona Dilemma. Club Troppo. (March 21, 2020). Available at:
- https://clubtroppo.com.au/2020/03/21/the-corona-dilemma/ [Accessed October 11, 2020].
- 145. Frijters P, Clark AE, Krekel C, Layard R. A happy choice: wellbeing as the goal of government. Behavioural Public Policy (2020) 4(2):126-165.
- 146. Frijters P, Krekel C. "Chapter 1: the case for wellbeing as the goal of government in the context of constraints on policy-making." In: Frijters P, Krekel C, editors. A handbook for Wellbeing Policy-Making: history, theory, measurement, implementation, and examples. London: Oxford University Press (2020). In Press.
- 147. Miles D, Stedman M, Heald A. Living with Covid-19: balancing costs against benefits in the face of the virus. National Institute Economic Review (2020) 253:R60-R76. Available at:

https://www.cambridge.org/core/journals/national-institute-economic-review/article/living-with-covid19-balancing-costs-against-benefits-in-the-face-of-the-

virus/C1D46F6A3118D0360CDAB7A08E94ED22 [Accessed October 20, 2020].

- 148. Born B. Dietrich A, Muller GJ. The lockdown effect a counterfactual for Sweden. Center for Economic Policy Research Discussion Papers 14744 (July 2020).
- 149. Luskin DL. The failed experiment of Covid lockdowns: new data suggest that social distancing and reopening haven't determined the spread. Wall Street Journal (Opinion) (September 2, 2020).
- 150. Atkeson A, Kopecky K, Zha T. Four stylized facts about COVID-19. National Bureau of Economic Research (NBER) Working Paper No. 27719. (August 2020). Available at:

https://www.nber.org/papers/w27719.pdf [Accessed October 15, 2020].

- 151. Chaudhry R, Dranitsaris G, Mubashir T, Bartoszko J, Riazi S. A country level analysis measuring the impact of government actions, country preparedness and socioeconomic factors on COVID-19 mortality and related health outcomes. EClinicalMedicine (2020) 25:100464.
- 152. Wood SN. Did COVID-19 infections decline before UK lockdown? arXiv [Preprint] (Sept 17, 2020). Available at: https://arxiv.org/abs/2005.02090 [Accessed October 11, 2020].
- 153. Chin V, Ioannidis JPA, Tanner MA, Cripps S. Effects of non-pharmaceutical interventions on COVID-19: a tale of three models. medRxiv [Preprint] (September 13, 2020). Available at:

https://www.medrxiv.org/content/10.1101/2020.07.22.20160341v2 [Accessed October 27, 2020].

- 154. Homburg S, Kuhbandner C. Comment on Flaxman et al. (2020, Nature): The illusory effects of non-pharmaceutical interventions on COVID-19 in Europe. Advance [Preprint] (June 17, 2020). Available at: file:///C:/Users/My-PC/Downloads/2020-Comment-Flaxman%20Preprint.pdf [Accessed October 27, 2020].
- 155. Islam N, Sharp SJ, Chowell G, Shabnam S, Kawachi I, Lacey B, et al. Physical distancing interventions and incidence of coronavirus disease 2019: natural experiment in 149 countries. BMJ (2020) 370:m2743. 156. Frijters P. On Corona/Covid-19, herd immunity, and WELLBY tradeoffs key predictions and numbers. Club Troppo (May 14, 2020). Available at: https://clubtroppo.com.au/2020/05/14/on-corona-covid-19-herd-immunity-and-wellby-tradeoffs-key-predictions-and-numbers/ [Accessed October 25, 2020].
- 157. Frijters P. Has the Coronavirus panic cost us at least 10 million lives already? Club Troppo (March 18, 2000). Available at: https://clubtroppo.com.au/2020/03/18/has-the-coronavirus-panic-cost-us-at-least-10-million-lives-already/ [Accessed October 11, 2020].
- 158. Frijters P. COVID strategies for Australia: herd immunity or quarantine land? Club Troppo (May 28, 2020). Available at: https://clubtroppo.com.au/2020/05/28/covid-strategies-for-australia-herd-immunity-options-or-quarantine-land/ [Accessed October 11, 2020].
- 159. Johnson P. Heated Q+A discussion sees economist Gigi Foster deny she is 'advocating for people to die'. ABC News (27 July 2020). Available at: https://www.abc.net.au/news/2020-07-28/gigi-foster-accused-advocating-for-covid-19-deaths-q+a/12497442 [Accessed October 11, 2020].
- 160. Berwick DM. The moral determinants of health. JAMA (2020) 324(3):225-226.
- 161. Singer P. The Life You Can Save. Random House Trade Paperbacks. (2010).
- 162. Corcoran T. The price of life: lockdown costs are real. But are the benefits? Financial Post (May 15, 2020). Available at: https://financialpost.com/opinion/terence-corcoran-the-price-of-life-lockdown-costs-are-real-but-are-the-benefits [Accessed October 11, 2020].
- 163. Sullivan R, Chalkidou K. Urgent call for an Exit Plan: the economic and social consequences of responses to COVID-19 pandemic. Center for Global Development (March 31, 2020). Available at: https://www.cgdev.org/blog/urgent-call-exit-plan-economic-and-social-consequences-responses-covid-19-pandemic [Accessed October 11, 2020].

164. Fernandes N. Economic effects of coronavirus outbreak (COVID-19) on the world economy. (April 2020). IESE Business School Spain. Available at:

https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3557504 [Accessed October 11, 2020].

- 165. Bartik AW, Bertrand M, Cullen Z, Glaeser EL, Luca M, Stanton C. The impact of COVID-19 on small business outcomes and expectations. PNAS (2020) 117(30):17656-17666.
- 166. Snyder-Mackler N, Burger JR, Gaydosh L, Belsky DW, Noppert GA, Campos FA, et al. Social determinants of health and survival in humans and other animals. Science (2020) 368:eaax9553.
- 167. Puterman E, Weiss J, Hives BA, Gemmill A, Karasek D, Mendes WB, Rehkopf DH. Predicting mortality from 57 economic, behavioral, social, and psychological factors. PNAS (2020) 117(28):16273-16282.
- 168. Bzdok D, Dunbar RIM. The neurobiology of social distance. Trends in Cognitive Sciences (2020) 24(9):717-733.
- 169. Johnson SB, Riley AW, Granger DA, Riis J. The science of early life toxic stress for pediatric practice and advocacy. Pediatrics (2013) 131:319-327.
- 170. Garner AS, Shonkoff JP, Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, Section on Developmental and Behavioral Pediatrics. Early childhood adversity, toxic stress, and the role of the pediatrician translating developmental science into lifelong health. Pediatrics (2012) 129:e224-e231.
- 171. Campbell F, Conti G, Heckman JJ, Moon SH, Pinto R, Pungello E, Pan Y. Early childhood investments substantially boost adult health. Science (2014) 343:1478-1485.
- 172. Walhovd KB, Krogsrud SK, Amlien IK, Bartsch H, Bjornerud A, Due-Tonnessen P, et al.

Neurodevelopment origins of lifespan changes in brain and cognition. PNAS (2016) 113:9357-9362.

- 173. Joint Statement by ILO, FAO, IFAD, and WHO.. Impact of Covid-19 on people's livelihoods, their health and our food systems. (October 13, 2020). https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people's-livelihoods-their-health-and-our-food-systems [Accessed October 31, 2020].
- 174. Holt-Lunstad J, Smith TB, Baker M, Harris T, Stephenson D. Loneliness and social isolation as risk factors for mortality: a meta-analytic review. Perspectives Psychological Science (2015) 10(2):227-237.
- 175. Roelfs DJ, Shor E, Davidson KW, Schwartz JE. Losing life and livelihood: a systematic review and meta-analysis of unemployment and all-cause mortality. Social Science Med (2011) 72:840-854
- 176. Slavich GM. Life stress and health: a review of conceptual issues and recent findings Teach Psychol (2016) 43(4):346-355
- 177. Raising Canada 2020. Top 10 threats to childhood in Canada and the impact of COVID-19. Children First Canada, O'Brien Institute for Public Health, Alberta Children's Hospital Research Institute. (2020). Available at:

https://static1.squarespace.com/static/5669d2da9cadb69fb2f8d32e/t/5f51503d5ceab254db134729/15 99164484483/Raising+Canada+Report Final Sept.pdf [Accessed October 11, 2020].

- 178. Carroll A, Hicks A, Saxinger L. COVID-19 Scientific Advisory Group Rapid Evidence Report. Topic: What role might children play in community SARS-CoV-2 transmission? What measures might mitigate potential additional risk of transmission of COVID-19 related to school and daycare reopening? Alberta Health Services, COVID-19 Scientific Advisory Group (August 7, 2020). Available at:
- https://www.albertahealthservices.ca/assets/info/ppih/if-ppih-covid-19-sag-role-of-children-in-community-transmission-rapid-review.pdf [Accessed October 16, 2020].
- 179. The education revolution must be equalized. Nature (2020) 585:482.
- 180. Frijters P, Krekel C. "Chapter 5: Applying wellbeing insights to existing policy evaluations and appraisals". In: Frijters P, Krekel C, editors. A handbook for Wellbeing Policy-Making: history, theory, measurement, implementation, and examples. London: Oxford University Press (2020).

- 181. Foster G. Cost-benefit analysis executive summary. Presented to Victorian Parliament in Australia. (August 2020). Available at: https://parliament.vic.gov.au/images/stories/committees/paec/COVID-
- 19 Inquiry/Tabled Documents Round 2/CBA Covid Gigi Foster.pdf [Accessed October 11, 2020]. 182. Foster G. Early estimates of the impact of COVID-19 disruptions on jobs, wages, and lifetime
- earnings of schoolchildren in Australia. Australian J Labour Economics (2020) 23(2):129-151.
- 183. Heatley D. A cost benefit analysis of 5 extra days at COVID-19 alert level 4. New Zealand Productivity Commission. (2020). Available at:
- https://www.productivity.govt.nz/assets/Documents/cost-benefit-analysis-covid-alert-4/92193c37f4/A-cost-benefit-analysis-of-5-extra-days-at-COVID-19-at-alert-level-4.pdf [Accessed October 10, 2020].
- 184. Cutler DM, Summer LH. The COVID-19 pandemic and the \$16 Trillion virus. JAMA (2020) 324(15):1495-1496. Details given in Appendix to "The COVID-19 Pandemic and the \$16 Trillion Viru
- 324(15):1495-1496. Details given in Appendix to "The COVID-19 Pandemic and the \$16 Trillion Virus" (2020) Available at: https://scholar.harvard.edu/files/cutler/files/cs appendix.pdf [Accessed October 29, 2020].
- 185. Congressional Budget Office. An update to the economic outlook: 2020 to 2030. (July 2020). https://www.cbo.gov/publication/56517 [Accessed October 30, 2020].
- 186. Sandman PM, Lanard J. COVID-19: The CIDRAP (Center for Infectious Disease Research and Policy, University of Minnesota) Viewpoint. Part 2: Effective COVID-19 crisis communication. (May 6, 2020). Available at: https://www.cidrap.umn.edu/sites/default/files/public/downloads/cidrap-covid19-viewpoint-part2.pdf [Accessed October 10, 2020].
- 187. Deb P, Furceri D, Ostry JD, Tawk N. The economic effects of Covid-19 containment measures. COVID Economics, CEPR (2020) 24:32-75. Available at:
- https://cepr.org/sites/default/files/news/CovidEconomics24.pdf#Paper2 [Accessed October 10, 2020]. 188. Bonadio B, Huo Z, Levchenko AA, Pandalai-Nayar N. Global Supply Chains in the Pandemic. (May 2020) NBER Working Paper 27224; National Bureau of Economic Research Inc. Available at: https://www.nber.org/papers/w27224.pdf [Accessed October 10, 2020].
- 189. Coibion O, Gorodnichenko Y, Weber M. The cost of the COVID-19 crisis: Lockdowns, macroeconomic expectations, and consumer spending. IZA Institute of Labor Economics Discussion Paper, COVID Economics (2020) IZA DP No. 13224. Available at: http://ftp.iza.org/dp13224.pdf [Accessed October 10, 2020].
- 190. Bank of England May Monetary Policy Report. (2020) https://www.bankofengland.co.uk/-/media/boe/files/monetary-policy-report/2020/may/monetary-policy-report-may-2020. See Pages 6-7 and Table 1A. [Accessed October 10, 2020].
- 191. Reserve Bank of Australia Projections. Statement on Monetary Policy May 2020 6. Economic Outlook. (2020) https://www.rba.gov.au/publications/smp/2020/may/economic-outlook.html [Accessed October 9, 2020].
- 192. OECD. Evaluating the initial impact of COVID-19 containment measures on economic activity. OECD.org (June 10, 2020). https://www.oecd.org/coronavirus/policy-responses/evaluating-the-initial-impact-of-covid-19-containment-measures-on-economic-activity-b1f6b68b/ [Accessed October 10, 2020].
- 193. Herridge MS. Fifty Years of Research in ARDS: Long-term follow-up after Acute Respiratory Distress Synrome. Insights for managing medical complexity after critical illness. Am J Respir Crit Care Med (2017) 196(11):1380-1384.
- 194. Kox M, Waalders NJB, Kooistra EJ, Gerretsen J, Pickkers P. Cytokine levels in critically ill patients with COVID-19 and other conditions. JAMA (2020) 324(15):1565-1567.
- 195. Girard TD, Self WH, Edwards KM, Grijalva CG, Zhu Y, Williams DJ, et al. Long-term cognitive impairment after hospitalization for community-acquired pneumonia: a prospective study. J Gen Intern Med (2018) 33(6):929-935.

- 196. Halpin SJ, McIvor C, Whyatt G, Adams A, Harvey O, McLean L, et al. Postdischarge symptoms and rehabilitation needs in survivors of COVID-19 infection: a cross-sectional evaluation. J Med Virology (2020) In Press. DOI: 10.1002.jmv.26368
- 197. Garrigues E, Janvier P, Kherabi Y, Le Bot A, Hamon A, Gouze H, et al. Post-discharge persistent symptoms and health-related quality of life after hospitalization for COVID-19. J Infection (2020) In Press. DOI: https://doi.org/10.1016/j.jinf.2020.08.029
- 198. Carfi A, Bernabei R, Landi F. Persistent symptoms in patients after acute COVID-19. JAMA (2020) 324:603-605.
- 199. Tenforde MW, Kim SS, Lindsell CJ, Rose EB, Shapiro NI, Files DC, et al. Symptom duration and risk factors for delayed return to usual health among outpatients with COVID-19 in a multistate health care systems network United States, March June 2020. MMWR (2020) 69(30):993-998.
- 200. Arnold DT, Hamilton FW, Milne A, Morley A, Viner J, Atwood M, et al. Patient outcomes after hospitalisation with COVID-19 and implications for follow-up: results from a prospective UK cohort. medRxiv [Preprint] (August 14, 2020). Available at:
- https://www.medrxiv.org/content/10.1101/2020.08.12.20173526v1 [Accessed October 10, 2020].
- 201. Vaes AW, Machado FVC, Meys R, Delbressine JM, Goertz YMJ, Herck MV, et al. Care dependency in non-hospitalized patients with COVID-19. J Clin Med (2020) 9(9):2946. DOI: https://doi.org/10.3390/jcm9092946.
- 202. Cirulli ET, Barrett KMS, Riffle S, Bolze A, Neveux I, Dabe S, et al. Long-term COVID-19 symptoms in a large unselected population. medRxiv [Preprint] (October 24, 2020) Available at:
- https://www.medrxiv.org/content/10.1101/2020.10.07.20208702v2.full [Accessed Nov 2, 2020];
- 203. Sudre CH, Murray B, Varsavsky T, Graham MS, Penforld RS, Bowyer RC, et al. Attributes and predictors of Long-COVID: analysis of COVID cases and their symptoms collected by the Covid Symptoms App. medRxiv [Preprint] (October 21, 2020) Available at:
- https://www.medrxiv.org/content/10.1101/2020.10.19.20214494v1 [Accessed November 2, 2020].
- 204. Czeisler ME, Lane RI, Petrosky E, Wiley JF, Christensen A, Njai R, et al. Mental health, substance use, and suicidal ideation during the COVID-19 pandemic United States, June 24-30, 2020. MMWR (2020) 69(32):1049-1057.
- 205. Centers for Disease Control and Prevention. Mental Health: Household Pulse Survey (2020) https://www.cdc.gov/nchs/covid19/pulse/mental-health.htm [Accessed October 26, 2020].
- 206. Ettman CK, Abdalla SM, Cohen GH, Sampson L, Vivler PM, Galea S. Prevalence of depression symptoms in US adults before and during the COVID-19 pandemic. JAMA Netw Open (2020) 3(9):e2019686
- 207. Brindal E. A wellbeing survey of CSIRO Total Wellbeing Diet database during the COVID-19 pandemic. Commonwealth Scientific and Industrial Research Organization (CSIRO) Australia's National Science Agency (2020). Available at: file:///C:/Users/My-PC/Downloads/COVID-Survey-Summary-of-Results-June-2020%20(7).pdf [Accessed October 11, 2020].
- 208. Statistics Canada. Canadian's mental health during the COVID-19 pandemic. (2020) https://www150.statcan.gc.ca/n1/daily-quotidien/200527/dq200527b-eng.htm [Accessed October 31, 2020].
- 209. Walker PGT, Whittaker C, Watson OJ, Baguelin M, Winskill P, Hamlet A, et al. The impact of COVID-19 and strategies for mitigation and suppression in low- and middle-income countries. Science (2020) 369:413-422.
- 210.Sethi R, Siddarth D, Holland A, Archibong B, Annan F, Somanathan R, Cardenas JC. COVID-19 Rapid Response Impact Initiative. White Paper 11: Towards Global Pandemic Resilience. Edmond J Safra Center for Ethics (April 23, 2020). Available at: https://ethics.harvard.edu/files/center-for-ethics/files/safracenterforethicswhitepaper11d.pdf [Accessed October 10, 2020].

- 211. Yeung J, Sur P. The pandemic has created a second crisis in India the rise of child trafficking. CNN World. (October 26, 2020) Available at: https://www.ctvnews.ca/world/the-pandemic-has-created-asecond-crisis-in-india-the-rise-of-child-trafficking-1.5160828 [Accesses October 31, 2020].
- 212. Nordling L. Africa's pandemic puzzle: why so few cases and deaths? Science (2020) 369(6505):756-757.
- 213. Bell R, Butler-Jones D, Clinton J, Closson T, Davidson J, Fulford M, et al. Dealing with COVID-19: an open letter to Canada's prime minister and provincial and territorial premiers. (July 9, 2020). Available at: https://healthydebate.ca/opinions/an-open-letter-to-pm-covid19 [Accessed October 11, 2020].
- 214. Newman C, McFarlane I, Frijters P, Foster G, Swan P, Zimmerman A, et al. Open up our country sign the open letter: To The National Cabinet. https://aip.asn.au/2020/06/open-up-our-country-signthe-open-letter/ [Accessed October 16, 2020].
- 215. Melnick E, loannidis J. Should governments continue lockdown to slow the spread of covid-19? BMJ (2020) 369:m1924.
- 216. loannidis J. Another shutdown would do more harm than good. National Post (August 15, 2020). Available at: https://nationalpost.com/opinion/john-ioannidis-another-shutdown-would-do-more-harmthan-good [Accessed October 11, 2020].
- 217. Jha S. Commentary: John Ioannidis explains his COVID views. Medscape Infectious Diseases. (July 15, 2020). Available at: https://www.medscape.com/viewarticle/933977 [Accessed October 11, 2020].
- 218. Ioannidis JPA. The totality of the evidence. Boston Review. (May 26, 2020). Available at: http://bostonreview.net/science-nature/john-p-ioannidis-totality-evidence [Accessed October 11, 2020].
- 219. Ioannidis JPA, Cripps S, Tanner MA. Forecasting for COVID-19 has failed. International J Forecasting (2020) In press. DOI: https://doi.org/10.1016/j.iforecast.2020.08.004
- 220. Sabhlok S. Why I quit rather than be silenced: Vic Treasury insider. Financial Review (Sept 16, 2020). Available at: https://www.afr.com/policy/economy/victoria-has-locked-itself-into-a-lockdown-blunder-20200916-p55w1z [Accessed October 16, 2020].
- 221. Kullforff M, Gupta S, Bhattacharya J, et al. Great Barrington Declaration. (October 4, 2020). https://gbdeclaration.org/ [Accessed October 25, 2020].
- 222. Ioannidis JPA. Scientific petitions and open letters in the covid-19 era. BMJ (2020) 371:m4048.
- 223. Alwan NA, Burgess RA, Ashworth S, Beale R, Bhadelia N, Bogaert D, et al. Scientific consensus on the COVID-19 pandemic: we need to act now. Lancet (2020) In Press. DOI:
- https://doi.org/10.1016/S0140-6736(20)32153-X
- 224. Alberta Chief Medical Officer of Health. Herd immunity and the Great Barrington Declaration. (2020) Available at: https://www.alberta.ca/herd-immunity-and-the-great-barrington-declaration.aspx [Accessed October 29, 2020].
- 225. News Feature. The false promise of herd immunity for COVID-19. Nature (2020) In Press. Available at: https://www.nature.com/articles/d41586-020-02948-4 [Accessed October 26, 2020].
- 226. Omer SB, Yildirim I, Forman HP. Herd immunity and implications for SARS-CoV-2 control. JAMA (2020) In Press. DOI: 10.1001/jama.2020.20892.
- 227 EuroMOMO. EuroMOMO Bulletin, week 44, 2020. (2020) https://www.euromomo.eu/ [Accessed October 29, 2020].
- 228. Rice K, Bynne B, Martin V, Ackland GJ. Effect of school closures on mortality from coronavirus disease 2019: old and new predictions. BMJ (2020) 371:m3588.
- 229. Teslya A, Pham TM, Godijk NG, Kretzschmar ME, Bootsma MCJ, Rozhnova G. Impact of self-imposed prevention measures and short-term government-imposed social distancing on mitigation and delaying a COVID-19 epidemic: a modelling study. PLoS Medicine (2020) 17(7):e1003166. DOI: 10.1371/journal.pmed.1003166.

- 230. Jones NR, Qureshi ZU, Temple RJ, Larwood JP, Greenhaigh T, Bourouiba L. Two metres or one: what is the evidence for physical distancing in covid-19. BMJ (2020) 370:m3223.
- 231. Chin V, Samia NI, Marchant R, Rosen O, Ioannidis JPA, Tanner MA, Cripps S. A case study in model failure? Covid-19 daily deaths and ICU bed utilisation predictions in New York State. Eur J Epidemiol (2020) 35:733-742.
- 232. Prado-Vivar B, Becerra-Wong M, Guadalupe JJ, Marquez S, Butierrez B, Rojas-Silva P, et al. COVID-19 re-infection by a phylogenetically distinct SARS-CoV-2 variant, first confirmed event in South America. SSRN [Preprint]. (Sept 9, 2020) Available at:
- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3686174 [Accessed October 29, 2020].
- 233. Van Elslande J, Vermeersch P, Vandervoort K, Wawina-Bokalanga T, Vanmechelen B, Wollants E, et al. Symptomatic SARS-CoV-2 reinfection by a phylogenetically distinct strain. Clinical Infectious Dis (2020) In Press. DOI: https://doi.org/10.1093/cid/ciaa1330. Milder symptoms.
- 234. To KKW, Hung IFN, Ip JD, Chu AWH, Chan WM, Tam AR, et al. Coronavirus disease 2019 (COVID-19) re-infection by a phylogenetically distinct severe acute respiratory syndrome Coronavirus 2 strain confirmed by whole genome sequencing. Clinical Infect Dis (2020) In Press. DOI: 10.1093/cid/ciaa1275.
- 235. Gupta V, Bhoyar RC, Jain A, Srivastava S, Upadhayay R, Imran M, et al. Asymptomatic reinfection in 2 healthcare workers from India with genetically distinct severe acute respiratory syndrome Coronavirus 2. Clinical Infect Dis (2020) In Press. DOI: 10.1093/cid/ciaa1451.
- 236. Tillett RL, Sevinsky JR, Hartley PD, Kerwin H, Crawford N, Gorzalski A, et al. Genomic evidence for reinfection with SARS-CoV-2: a case study. Lancet Infect Dis (2020) In Press. DOI:
- https://doi.org/10.1016/S1473-3099(20)30764-0. More severe- hospitalized
- 237. Mulder M, van der Vegt DWJM, Munnink BBO, GeurtsvanKessel CH, van de Bovenkamp J, Sikkema RS, et al. Reinfection of SARS-CoV-2 in an immunocompromised patient: a case report. Clinical Infect Dis (2020) In Press. DOI: https://doi.org/10.1093/cid/ciaa1538
- 238. Harris B, Pulice C, Cookson C, Burn-Murdoch J, Kazmin A, Cotterill J. Hotspots of resurgent Covid erode faith in 'herd immunity'. Financial Times (2020). Available at:
- https://www.ft.com/content/5b96ee2d-9ced-46ae-868f-43c9d8df1ecb [Accessed October 26, 2020].
- 239. Boadle A. In Brazil's Amazon a COVID-19 resurgence dashes herd immunity hopes. National Post (2020) Available at: https://nationalpost.com/pmn/health-pmn/in-brazils-amazon-a-covid-19-resurgence-dashes-herd-immunity-hopes [Accessed October 26, 2020].
- 240. Buss LF, Prete Jr CA, Abrahim CMM, Mendrone Jr A, Salomon T, de Almeida-Neto C, et al. COVID-19 herd immunity in the Brazilian Amazon. medRxiv [Preprint] (September 21, 2020). Available at: https://www.medrxiv.org/content/10.1101/2020.09.16.20194787v1 [Accessed October 26, 2020].
- 241. Hallal PC, Hartwig FP, Horta BL, Victora GD, Silveira MF, Struchiner C, et al. Remarkable variability in SARS-CoV-2 antibodies across Brazilian regions: nationwide serological household survey in 27 states. medRxiv [Preprint] (May 30, 2020). Available at:
- https://www.medrxiv.org/content/10.1101/2020.05.30.20117531v1 [Accessed October 26, 2020].
- 242. dos Santos VA, Rafael MM, Sabino EC, da Silva Duarte AJ. Sensitivity of the Wondfo One Step COVID-19 test using serum samples. Clinics (2020) 75:e2013.
- 243. Mishra S, Kwong JC, Chan AK, Baral SD. Understanding heterogeneity to inform the public health response to COVID-19 in Canada. CMAJ (2020) 192(25):e684-e685.
- 244. Holroyd-Leduc JM, Laupacis A. Continuing care and COVID-19: a Canadian tragedy that must not be allowed to happen again. CMAJ (2020) 192(23):e632-e633.
- 245. Williams DR, Cooper LA. COVID-19 and health equity a new kind of "herd immunity." JAMA (2020) 323(24):2478-2480.
- 246. Esposito S, Principi N. School closure during the Coronavirus Disease 2019 (COVID-19) pandemic: an effective intervention at the Global level? JAMA Pediatr. (2020) In Press. DOI:
- https://doi.org/10.1001/jamapediatrics.2020.1892.

- 247. Levinson M, Cevik M, Lipsitch M. Reopening primary schools during the pandemic. NEJM (2020) 383(10):981-985.
- 248. Forbes MB, Mehta K, Kumar K, Lu J, Le Saux N, Sampson M, Robinson J. COVID-19 infection in children: estimating pediatric morbidity and mortality. medRxiv [Preprint] (May 8, 2020). DOI: https://doi.org/10.1101/2020.05.05.20091751. Available at:
- https://www.medrxiv.org/content/10.1101/2020.05.05.20091751v1 [Accessed October 11, 2020].
- 249. Davies NG, Klepac P, Liu Y, Prem K, Jit M, CMMID COVID-19 working group and Eggo RM. Age-dependent effects in the transmission and control of COVID-19 epidemics. Nature Med (2020) 26:1205-1211.
- 250. Viner RM, Mytton OT, Bonell C, Melendez-Torres J, Ward J, Hudson L, et al. Susceptibility to SARS-CoV-2 infection among children and adolescents compared with adults. A systematic review and meta-analysis. JAMA Pediatr (2020) In Press. DOI: 10.1001/jamapediatrics.2020.4573.
- 251. Snape MD, Viner RM. COVID-19 in children and young people. Science (2020) 370(6514):286-288.
- 252. The National Collaborating Centre for Methods and Tools. Rapid Review Update 6: What is the specific role of daycares and schools in COVID-19 transmission. (Sept 14, 2020). Available at: https://www.nccmt.ca/uploads/media/0001/02/98cc589e2c1db4996ba0cb5d52daef448b175f24 <a href="https://www.nccmt.ca/uplo
- 253. Lewis Y. Why schools probably aren't COVID hotspots. Nature (2020). In Press. Available at: https://www.nature.com/articles/d41586-020-02973-3 [Accessed October 31, 2020].
- 254. Viner RM, Russell SJ, Croker H, Packer J, Ward J, Standsfield C, et al. School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. Lancet Child Adolesc Health (2020) 4(5):397-404.
- 255. Hepburn C, O'Callaghan B, Stern N, Stiglitz J, Zenghelis D. Will COVID-19 fiscal recovery packages accelerate or retard progress on climate change? Oxford Review of Economic Policy (May 8, 2020) Smith School Working Paper No. 20-02. ISSN 2732-4214 (Online). Available at:
- https://www.smithschool.ox.ac.uk/publications/wpapers/workingpaper20-02.pdf [Accessed October 11, 2020].
- 256. Andrijevic M, Schleussner CF, Gidden MJ, McCollum DL, Rogelj J. COVID-19 recovery funds dwarf clean energy investment needs. A modest fraction of current global stimulus funds can put the world on track to achieve Paris Agreement goals. Science (2020) 370(6514):298-300.
- 257. Gandhi M, Rutherford GW. Facial masking for Covid-19 potential for "variolation" as we await a vaccine. NEJM (2020) In Press. DOI: 10.1056/NEJMp2026913
- 258. Chou R, Dana T, Jungbauer R, Weeks PHC. Update Alert 3: Masks for prevention of respiratory virus infections, including SARS-CoV-2, in health care and community settings. Annals Internal Med (2020) In Press. DOI: 10.7326/L20-1292.
- 259. Krammer F. SARS-CoV-2 vaccines in development. Nature (2020) 586;516-527.
- 260. Lamontagne F, Agoritsas T, Macdonald H, Leo YS, Diaz J, Agarwal A, et al. A living WHO guideline on drugs for covid-19. BMJ (2020) 370:m3379.
- 261. Shaman J, Galanti M. Will SARS-CoV-2 become endemic? Science (2020) 370(6516):527-529.
- 262. Thomson S, Ip EC. COVID-19 emergency measures and the impending authoritarian pandemic. J Law Biosci (2020) In Press. DOI: 10.1093/jlb/Isaa064
- 263. Frijters P. The descent into Darkness in the UK and Victoria. Quo Vadis? Club Troppo (September 10, 2020). Available at: https://clubtroppo.com.au/2020/09/10/the-descent-into-darkness-of-the-uk-and-victoria-quo-vadis/ [Accessed October 27, 2020].
- 264. Timotijevic J. Society's 'new normal'? The role of discourse in surveillance and silencing of dissent during and post Covid-19. SSRN [Preprint] (2020) Available at:
- https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3608576 [Accessed October 31, 2020].

Table 1. Initial modeling predictions that induced fear and crowd-effects

Reference	Statements and Predictions from the modeling
Kissler et al. ²⁻⁴	"prolonged or intermittent social distancing may be necessary into 2022 [to avoid overwhelming critical care capacity] expanded critical care capacity would improve the success of intermittent distancing and hasten the acquisition of herd immunity"
	"projected that recurrent wintertime outbreaks of SARS-CoV-2 will probably occur after the initial, most severe pandemic wave [if immunity wanes over 40 weeks]"
	With a baseline reproductive number (Ro) 2.5, no seasonality to viral transmission, and the current intensive care capacity of the USA they projected the need for intermittent lockdowns occurring for a total of 75% of the time, even after July 2022.
Imperial College modeling of non- pharmaceutical	"suppression [effective reproductive number (Re)<1] will minimally require a combination of social distancing of the entire population, home isolation of cases and household quarantine of their family members. This may need to be supplemented by school and university closures [and] Will need to be maintained until a vaccine becomes available."
interventions in USA and UK ⁵	"we show that intermittent social distancing – triggered by trends in disease surveillance – may allow interventions to be relaxed temporarily in relative short time windows[Suppression] needs to be in force for the majority [>2/3 of the time] of the 2 years of the simulation."
	The modeling assumed an IFR of 0.9%, hospitalization rate of 4.4%, and that 81% of the population would be infected before herd immunity, resulting in 510,000 deaths in Great Britain and 2.2 million deaths in the United States by mid-April, surpassing ICU demand by 30X, if lockdowns did not occur.
Imperial College modeling of non- pharmaceutical	"we estimate that in the absence of interventions, COVID-19 would have resulted in 7.0 billion infections and 40 million deaths globally this year healthcare demand can only be kept within manageable levels through the rapid adoption of public health measures to suppress transmission sustained, then 38.7 million lives could be saved."
interventions globally ⁶	"[Suppression] will need to be maintained in some manner until vaccines or effective treatments become available."
Imperial College estimate of lives saved so far in	Used a "model [that] calculates backwards [infections] from observed deaths [and] relies on fixed estimates of some epidemiological parameters [Ro 3.8; attack rates in different age groups from 60-99%; infection fatality rate in different countries of 0.91-1.26%]"
Europe ⁷	Concluded that "we find, across 11 countries [in Europe], since the beginning of the epidemic [to May 4], 3,100,000 (2,800,000 – 3,500,000) deaths have been averted due to [NPI] interventions"
Hsiang et al. ⁸	In 5 countries [China, South Korea, Iran, France, US], using "reduced-form economic methods", NPIs "prevented or delayed [to April 6] on the order of 62 million confirmed cases, corresponding to averting roughly 530 million total infections we estimate that all policies combined slowed the average growth rate of infections [from 43%/day, a doubling time ~2 days] by -0.252 per day"

Table 2. Some effects of the COVID-19 response that put Sustainable Development Goals out of reach.

Sustainable Development Goal	Effect of COVID-19 Response: some details
Childhood vaccination	Programs stalled in 70 countries [Measles, Diphtheria, Cholera, Polio]
Education	School closures: 90% of students (1.57 Billion) kept out of school
	-Early primary grades are most vulnerable, with effects into adulthood: effects on outcomes of intelligence,
	teen pregnancy, illicit drug use, graduation rates, employment rates and earnings, arrest rates,
	hypertension, diabetes mellites, depression
	-Not just education affected: school closures have effects on food insecurity, loss of a place of safety, less
	physical activity, lost social interactions, lost support services for developmental difficulties, economic
	effects on families
Sexual and reproductive health	Lack of access: estimated ~2.7 Million extra unsafe abortions
services	For every 3 months of lockdown: estimated 2 Million more lack access to contraception, and over 6
	months, 7 Million additional unintended pregnancies
Food security	Hunger pandemic: undernourished estimated to increase 83-132 Million (>225,000/day; an 82% increase)
,	-from disrupted food supply chains [labor mobility, food transport, planting seasons] and access to food
	[loss of jobs and incomes, price increases]
End poverty	Extreme poverty (living on <us\$1.90 day):="" estimated="" increase="" to="">70 Million</us\$1.90>
	-Lost "ladders of opportunity" and social determinants of health
Reduce maternal and U5M	Estimated increase of 1.16 Million children (U5M) and 56,700 maternal deaths, if essential RMNCH services
	are disrupted (coverage reduction 39-52%) for 6 months in 118 LMIC
	-mostly (~60%) due to affected childhood interventions [wasting, antibiotics, ORS for diarrhea]; and
	childbirth interventions [uterotonics, antibiotics, anticonvulsants, clean birth]
Infectious Disease Mortality	Tuberculosis: in moderate and severe scenario, projected excess deaths (mostly from reduced timely
,	diagnosis and treatment) 342,000-1.36 Million over 5 years (an increase of 4-16%)
	Malaria: in moderate and severe scenario, projected excess deaths (mostly from delayed net campaigns
	and treatment) 203,000 to 415,000 over 1 year (an increase of 52-107%, with most deaths in children
	<5vo).
	HIV: in moderate projected excess deaths (mostly due to access to antiretrovirals) 296,000 (range 229,000-
	420,000) in Sub-Saharan Africa over 1 year (an increase of 63%). Also would increase mother to child
	transmission by 1.6 times.

LMIC: low- and middle-income countries; ORS: oral rehydration solution; RMNCH: Reproductive Maternal Newborn and Child Health; U5M: under 5 mortality.

References: 78-93

Table 3. Some effects of the COVID-19 response on public health in mostly high-income countries.

Effect of COVID-19 Response	Some Details		
Delayed/avoided/disrupted medical	Visits to emergency departments for myocardial infarction or stroke declined in USA by ≥20-48%		
care	Delayed cancer care and 'non-urgent' procedures -weekly presentations with cancer diagnoses down 46% in USA and UK -90% reduction in non-cancer surgeries in Ontario in March/April -surgery backlog in Ontario March 15 to June 13: 148,000; clearance time estimated to take 84 weeks -in Canada at least \$1.3 billion additional funding is required to return to pre-pandemic wait times for six procedures (CABG, cataract surgeries, hip and knee replacements, MRI and CT scans) within 1 year		
	Of excess deaths in high-income countries during pandemic, 20-50% are not from COVID-19		
	Unexplained 83% increase (10,000 excess) deaths from dementia in England/Wales in April [lack of social contact causing a deterioration in health and wellbeing]		
Violence against women [household stress; disrupted livelihoods, social/protective networks, support services]	Intimate Partner Violence: estimated effect from 3 months lockdown is 20% increase_[>15 Million additional cases] Female Genital Mutilation: 2 Million more cases over next decade Child Marriages: 13 Million more cases over next decade		
	Increased police reports [France, UK, Ontario] and support line calls [China, Italy, Spain, Vancouver, Alberta] by 20-50%		
Deaths of despair	In USA alone: 68,000 (from 27,000 – 154,000) suicide deaths predicted		
[related to unemployment, and due to drugs, alcohol, and suicide]	Mental Health effects of 3 months [suicide, depression, alcohol use disorder, childhood trauma due to domestic violence, changes in marital status, social isolation]: Years of Life Lost in USA 67.58 Million, Canada 7.79 Million, UK 13.62 Million, etc.		
	Surge in Canada in opioid deaths (by 40-50%), alcohol consumption (by 19%), cannabis use (by 8%), tobacco smoking (by 4%), and suicidal thoughts.		

References: 97-119

Table 4. World mortality data 2019, with COVID-19 mortality to Sept 4 in 2020 for comparison.

Region	Annual deaths in thousands (per day)	Infant mortality Rate/1000	Under 5yo mortality Rate/1000 (% of deaths)	Age 15-60 mortality Rate/1000 (% of deaths)	Age 65+ (% of deaths
World	58,394 (160)	28	38 (10%)	140 (32%)	(57%)
COVID-19 on Sept 4, 2020	865 (3.5)	(0%)	(0.06%)	(26%)	(74%)
High-income	11,161	4	5 (1%)	81 (19%)	(80%)
Middle-income	41,551	27	35 (9%)	144 (36%)	(55%)
Low-income	5,665	46	68 (31%)	234 (42%)	(27%)
Sub-Saharan Africa	9,052	49	74 (31%)	281 (46%)	(23%)
Canada	291	4	5 (1%)	62 (17%)	(82%)

References: 127,128. Effect of COVID-19 is in bold for emphasis.

Table 5. Selected causes of death in the world, with deaths per year and day, compared to COVID-19 in 2020.

Cause of death	Deaths/year (/day)	Case Fatality Rate	Age Group predominant
COVID-19 on Sept 4, 2020	864,618 (3500)	0.24%	≥65-70 years old
Malaria	405,000 (1110)	0.2%	Children
Tuberculosis	1,500,000 (4110)	<15%	•
Measles	140,000 (384)	1.46%	Children
Influenza	389,213 (range 294-518K) ^a	0.01-0.02% for pH1N1	Children 34,800 [13-97K], and ≥65 years old. Respiratory deaths only
HIV	690,000 (1890)	-	Access to treatment for 67%
Motor Vehicle Collisions	1,350,000 (3699)	-	Young 5-29 years old, mostly in Low- to Middle-Income Countries
Tobacco	>8,000,000 (21918)	-	-
Childhood (USM) pneumonia	808,920 (2216)	-	<5 years old
Childhood (U5M) diarrhea	533,768 (1462)	0.08% U5M	<5 years old
Dietary risk factors	11,000,000 (30137)	-	•

a. The 1957-1959 Influenza pandemic, when the world population was 2.87 billion, was estimated to cause 4 deaths/10,000 population totaling 1.1 million excess deaths due to respiratory disease, with the greatest excess mortality in school-aged children and young adults. If COVID-19 is of similar severity, given the world population of 7.8 billion, we would expect ~3 Million deaths, mostly in the elderly. K: thousands; USM: under 5 mortality. Effect of COVID-19 in bold for emphasis. References: 131-143

Table 6. Cost-Benefit analysis in WELLBYs for the world's response to COVID-19

Factor in World	Benefit	Cost
COVID-19 deaths	360M WELLBY	•
Recession	-	1.2B WELLBY
Unemployment	-	280M WELLBY
Loneliness	-	333M WELLBY
Disrupted health services, disrupted education, famine, social unrest, violence, suicide		Not counted
TOTAL	360M WELLBY	1.813B WELLBY
BALANCE		5X [minimum]-87X [maximum]

B: Billion; M: Million; WELLBY: wellbeing years. See text for details of the calculations.

Maximum: benefit reduced in half; recession effect increased 12X, unemployment effect increased 3X, and still not counting the disruption of health services, education, life-span effects of loneliness, etc.

Table 7. Cost-benefit analysis in Quality Adjusted Life Years for Australia's response to COVID-19

Consideration	Cost/month	Benefit overall	Comment
Wellbeing (immediate)	83,333 QALY	-	Attributes half of reduction (of 0.5 WELLBY) to lockdown
Reduced economic activity (government services)	25,812 QALY	-	Attributes half of yearly 6% loss in GDP to lockdown, and only government expenditure (not private) buys welfare (36% of GDP), at \$100,000/QALY
Increased suicides	600 QALY	-	Expected to rise 25% over next 5 years, and attributes only 40% of this to lockdown
Disrupted non-university schooling	740 QALY	-	Foregone wages of children: each year of schooling yields approximately 9% more future earnings; assumes 80-90% equivalence of disrupted to normal school days
Disrupted health services, future mental stress and violence	-	-	Not included. Also does not consider bad habits inculcated (reduced physical activity, increased weight gain (for 40%), increased alcohol intake)
Reduced COVID-19 deaths		50,000 QALY	This is for lockdown 'ad infinitum' (not per month); 0.04% of population saved
Total over 3 months of lockdown	331,485 QALY	50,000 QALY	Minimum cost is 6.6X any benefit

QALY: Quality Adjusted Life Years; WELLBY: Wellbeing Years. References: 181,182

Table 8. A cost-benefit analysis for lockdown in the US, modified from Cutler & Summer. 184,185

Factor	Quoted ¹⁸⁴	Revised	Explanation of revision	
COST				
GDP loss	\$7.592 Trillion	\$7.592 Trillion ^a	No revision made. Note that, as the US accounts for 15% of world GDP, this translates to the global loss of \$50.6 Trillion (as estimated in Table 6).	
Mental Health	0	\$0.8 Trillion	Assuming that 50% of the mental health effect is from lockdowns	
BENEFIT				
Deaths avoided	\$4.4 Trillion	\$0.3125 Trillion	Assuming the 625,000 deaths lose 5 QALY each at \$100,000 per QALY. This is better than assuming each death, regardless of age or comorbidity, is the loss the entire value of a statistical life. This is also how the cost on mental health valued.	
Health impairment	\$2.6 Trillion	\$0.4875 Trillion	Assuming 35% of quality of life is lost for the remaining years left [likely 15 remaining years of 80 on average in a statistical life].	
Mental Health	\$1.6 Trillion	\$0.8 Trillion	Assuming 50% of the mental health effects are due to not having lockdowns to prevent COVID-19 cases.	
Cost-benefit balance	Benefit 1.3X Cost	Cost 5.2X Benefit	A minimal estimate: the GDP loss will likely be higher; willingness to pay for QALY is usually <\$100,000/QALY, and NICE uses \$30,000/QALY; not all deaths could be avoided by lockdown; at least 20% of excess deaths are not due to COVID-19 (i.e., are more likely from the response); severe cases (i.e., those that do not need intensive care, and may only need oxygen) likely have lower risk for health impairment of the severity modeled.	

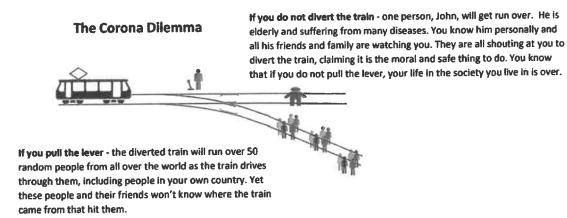
a. If the Value of a Statistical Life is accepted as used in the reference at \$7 million, and the US economy will lose \$7.592 Trillion in GDP over the decade, that is equivalent to the loss of 1,084,571 whole (statistical 80-year duration) lives = 86,765,680 years of lost life; that is equivalent to (assuming 5 QALY lost per COVID-19 death) 17,353,136 COVID-19 deaths.

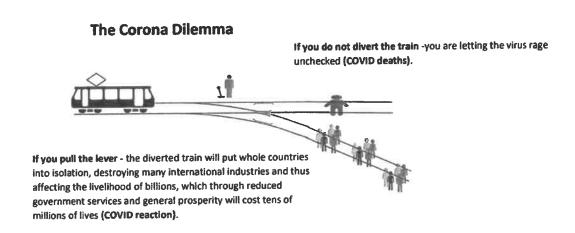
Table 9. Other calls for a change in COVID-19 response priorities

Reference	Content of the call for adjusting COVID-19 response priorities
Open letter on July 6,	The current approach "carries significant risks to overall population health and threatens to increase inequalities
2020, to the Prime	Aiming to prevent or contain every case of COVID-19 is simply no longer sustainable We need to accept that
Minister and Premiers	COVID-19 will be with us for some time and to find ways to deal with it."
of Canada ²¹³	The response risks "significantly harming our children, particularly the very young, by affecting their development, with life-long consequences in terms of education, skills development, income and overall health."
	Suggest that we need "to focus on preventing deaths and serious illness by protecting the vulnerable while
	enabling society to function and thrive While there is hope for a vaccine to be developed soon, we must be realistic about the time We need to accept that there will be cases and outbreaks of COVID-19."
	"Canadians have developed a fear of COVID-19. Going forward they have to be supported in understanding their
	true level of risk while getting on with their lives – back to work, back to school, back to healthy lives and vibrant, active communities"
	COVID-19 "is not the only nor the most important challenge to the health of people in Canada The fundamental
	determinants of health – education, employment, social connection and medical and dental care – must take
	priority" "exposure to COVID-19 is only temporarily avoidable"; "to analyze the COVID-19 effect it is necessary to
Open letter to National Cabinet of Australia ²¹⁴	understand it as shortening life. But the lockdowns and the panic have also had a cost in shortening life for others."
Capillet of Australia	Some of these costs include that the lockdown: "will decrease national income and this will have a measurable effect on the length of the average lifespan", "[has] disrupted normal health services estimated an increase in cancer deaths over the next 12 months of 20%", [and will cause] future suicides by the unemployed and others whose lives have been ruined."
	Urge for "a cost-benefit analysis, including lives saved versus lives lost, both directly and consequentially [and] weekly or daily non-epidemic death figures should be posted as well as deaths from the epidemic"
Ioannidis, JPA95,215-219	Called for evidence to guide policy, noting many of the collateral and recession effects discussed above.
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	"Shutdowns are an extreme measure. We know very well that they cause tremendous harm."
	"the excess deaths from the measures taken is likely to be much larger than the COVID-19 deaths learning to live with COVID-19 and using effective, precise, least disruptive measures is essential to avoid such disasters and to help minimize the adverse impact of the pandemic" before the pandemic of
	"When major decisions (e.g., draconian lockdowns) are based on forecasts, the harms (in terms of health,
	economy, and society at large) and the asymmetry of risks need to be approached in a holistic fashion, considering the totality of the evidence." ²¹⁹

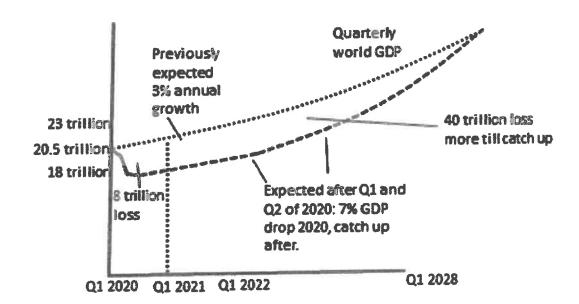
	the state of the s
Resignation letter by	"the pandemic policies being pursued in Australia are having hugely adverse economic, social and health effects
economist in Victorian	The need for good policy process does not disappear just because we face a public health crisis the elderly are
Treasury ²²⁰	many times more vulnerable to a serious outcome than the young. It was necessary, therefore, to work out a
,	targeted age-based strategy The direct and indirect costs imposed by regulatory approaches may not be
	immediately obvious. Risk regulation that is poorly targeted or costly will divert resources from other priorities
	needed to commission a cost-benefit analysis of alternative policy options"
	Governments should have realized "they are hostage to chronic groupthink and actively sought alternative advice
	instead of performing its taxpayer-funded duty of providing forthright analysis of alternatives can (even now) be
	managed by isolating the elderly and taking a range of voluntary, innovative measures."
The Great Barrington	"current lockdown policies are producing devastating effects on short and long-term public health leading to
Declaration ²²¹	greater excess mortality in years to come keeping students out of school is a grave injustice The most
Deciaration	compassionate approach that balances the risks and benefits of reaching herd immunity, is to allow those who are
	at minimal risk of death to live their lives normally to build up immunity to the virus through natural infection,
	while better protecting those who are at highest risk."

Figure 1a and 1b





Previously projected GDP and later projected GDP: one-year loss versus cumulative loss



ETable 1. Total and COVID-19 deaths in the USA, as of August 22, 2020.

Age group	COVID deaths in 6 months to Aug 22	Deaths from all causes to Aug 22	COVID as % of deaths in 2020
0-14	57	14679	0.39%
15-24	280	18594	1.51%
25-44	4558	93066	4.90%
45-54	8648	100926	8.57%
55-64	20655	231983	8.90%
65-74	34980	351806	9.94%
75-84	43392	430582	10.08%
85+	51710	537185	9.63%
TOTAL	164280	1778821	9.24%

Assumes all deaths with COVID-19 are deaths from COVID-19.

Reference: 123

ETable 2. COVID-19 deaths in Canada as of August 30, 2020 compared to deaths in 2018.

Age group	COVID deaths in 6 months of 2020	Deaths in all of 2018	COVID as % of deaths over 6 months of 2020
0-19	1	3092	0.06%
20-29	9	3273	0.55%
30-39	15	4455	0.67%
40-49	50	7287	1.35%
50-59	211	19959	2.07%
60-69	651	40231	3.13%
70-79	1635	60143	5.16%
80+	6420	146266	8.07%
TOTAL	8992	283706	5.96%

In 2018 there were 23642 deaths/month and 777 deaths/day in Canada.

References: 124, 125

ETable 3. Studies suggesting that efficacy of nonpharmaceutical interventions to prevent spread of COVID-19 are not as high as some predicted.

Study	Details of efficacy of non-pharmaceutical intervention
Luskin DL ¹⁴⁹	Using "highly detailed anonymized cellphone tracking data provided by Google tabulated by the University of Maryland's Transportation Institute into a 'social distancing index'", it was found that lockdown severity correlated with a greater spread of the virus, even when excluding states with the heaviest caseloads, and not with population density, age, ethnicity, prevalence of nursing
	homes, or general health, suggesting that "[heavy] lockdowns probably didn't help."
	This analysis also found that states that subsequently opened-up the most tended to have the lightest caseloads, suggesting that "opening up [a lot] didn't hurt."
Atkeson A, et	An analysis across 23 countries and 25 states each with >1000 deaths by July 22 found that the growth rates of daily deaths from
al. ¹⁵⁰	COVID-19 fell rapidly [from a wide range of initially high levels - doubling every 2-3 days] within the first 30 days after each region
	reached 25 cumulative deaths, and has hovered around zero or slightly below since.
	Epidemiological models found that this implied both the Re and transmission rates fell rapidly from widely dispersed initial levels
	[Re≥3], and the Re has hovered around 1 after the first 30 days of the epidemic virtually everywhere in the world.
	The authors suggest that there must be "an omitted variable bias" accounting for this finding [and similar findings in previous
	pandemics], that the role of region-specific NPI's implemented in the early phase of the pandemic is likely overstated, and that the
	removal of lockdown policies has had little effect on transmission rates.
Chaudhry R,	A study using data from the top 50 countries ranked by number of cases found that "rapid border closures, full lockdowns, and
et al.151	wide-spread testing were not associated with COVID-19 mortality per million people."
Wood SN ¹⁵²	A mathematical model using "a Bayesian inverse problem approach applied to UK data on COVID-19 deaths and the disease
	duration distribution" suggested that "infections were in decline before the full UK lockdown (March 24), and that infections in Sweden started to decline only a day or two later."
Chin V, et	The model for Europe used in [7] was based on circular reasoning [i.e., having modelled Re "as a step function and only allowed to
al. ¹⁵³	change in response to an intervention"]. Using a model allowing for gradual changes over time and better fitting the data, complete
	lockdown had "no or little effect, since it was introduced typically at a point when Rt was already low." For example, when
	lockdown was adopted in the UK, "Rt had already decreased to 1.46." In fact, "lockdown and event ban had similar effect sizes on
	the reduction of Rt". Overall, "one cannot exclude that the attribution of benefit to complete lockdown is a modelling artefact."
Homburg S,	The model in [7] used circular reasoning ["the purported effects are pure artefacts"] by "using as an a priori restriction that Rt may
Kuhbandner	only change at those dates where interventions become effective." In the UK "the growth factor had already declined strongly
C. ¹⁵⁴	suggests that the UK lockdown was both superfluous and ineffective." In addition, the attribution of the decline in Sweden's Rt to
	banning of public events is odd because that was an "NPI that they found ineffective in all other countries."
Islam N, et	Implementation of any physical distancing intervention [including lockdown] was associated with an overall reduction in COVID-19
al. ¹⁵⁵	incidence of only 13% [IRR 0.87, 95% CI 0.85 to 0.89] in 149 countries. There was no effect on this estimate of days since the first
	reported case of COVID-19 until the first implementation of physical distancing policies.

ETable 4. Cost-benefit analysis in WELLBYs for Canada's response to COVID-19

Factor in Canada	Benefit per month	Cost per month	
COVID-19 deaths	37.59M X 0.5 for herd X 0.003 IFR X 5 QALY/ 12 months = 23,494 QALY = 140,963 WELLBY	-	
Recession	-	(1.713T GDP/12 months X 0.15 GDP loss X 0.4 government spending)/100K = 85,650 QALY = 513,900 WELLBY	
Unemployment	-	2M X 0.7/12 months = 116,667 WELLBY	
Loneliness (if we end half of lockdown)	-	37.59M/2 X 0.5/12 months = 783,125 WELLBY	
Disrupted health services, disrupted education	-	Not counted	
TOTAL	0.141M WELLBY	1.41M WELLBY	
BALANCE	10X [minimum]		

IFR: infection fatality rate; K: thousands; M: Million; QALY: quality adjusted life years; WELLBY: wellbeing years

Alberta Beach Village Office

rs: Council

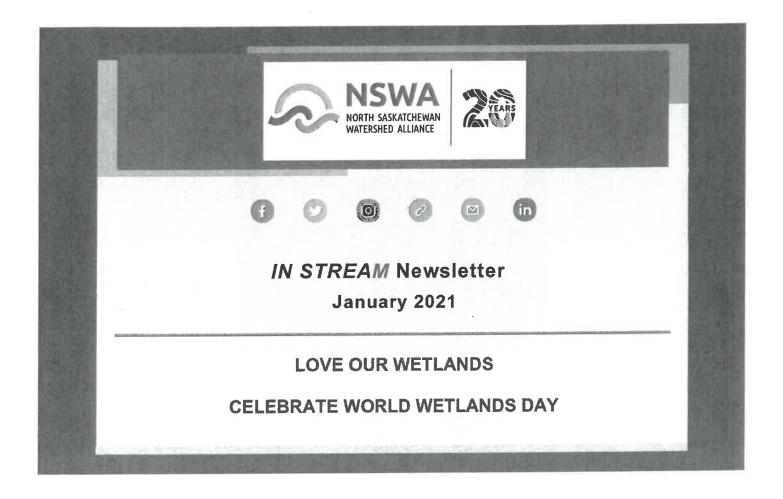
From: Sent:

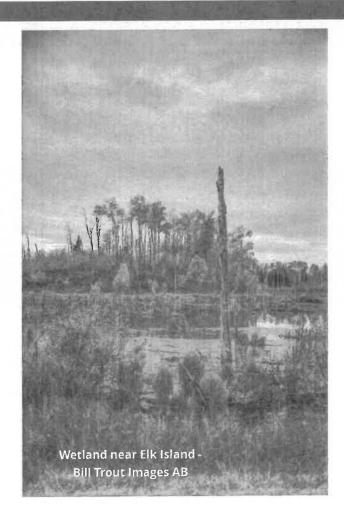
NSWA <water@nswa.ab.ca> January 28, 2021 2:45 PM

To:

Subject:

our Wetlands!





<u>World Wetlands Day</u> on February 2 reminds us to conserve and value wetlands globally. Wetlands are one of the most significant ecosystems for improving water quality and quantity in our watersheds, and a habitat for many species of birds and animals. There are 37 wetlands of International Importance in Canada, four in Alberta and one in the North Saskatchewan River Watershed (Beaverhill Lake).

More information on Alberta wetlands can be found on the <u>Alberta Wetlands</u> website and on the Government of Alberta <u>website</u>. Love a wetland today!

As 2021 begins, we look forward to opportunities to connect with you. We will continue to have updates in our newsletters, will hold online workshops, work on our ongoing projects like the Riparian Web Portal and plan for summer activities. If you have suggestions for us, let us know at water@nswa.ab.ca.

WATERSHED WEDNESDAYS



Join NSWA for a new **Speaker Series** to be held on the fourth Wednesday of each of the following months:

- February 24
- March 24
- April 28
- September 22
- October 27
- November 24

Each lunchtime workshop (12-1pm) will showcase speakers working on watershed planning projects in the watershed.

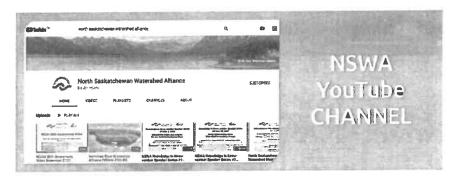
On February 24th, NSWA will highlight the <u>Sturgeon River Watershed Management</u>

<u>Plan</u>. The <u>Sturgeon River Watershed Alliance</u> completed over eight technical studies in the last five years to inform the Watershed Management Plan

Watch our social media and website for more information.

REGISTER NOW

Check out the **NEW NSWA YouTube Channel!**



Discover our 20th Anniversary video, the Knowledge in Know-vember speaker presentations, an introduction to the restoration work in the Vermilion River watershed and more! Subscribe to our channel to receive notices of new recordings.

NSWA YouTube CHANNEL

HEADWATERS ALLIANCE UPDATE



The **Riparian Web-Portal**, is almost ready to be launched! Over the summer of 2020, the NSWA worked with partners (Battle River Watershed Alliance, GOA, Cows and Fish) to add great content to enable landowners to steward their riparian areas! We'll be beta-testing this spring and hope to launch in the summer.

The Riparian Web-Portal is a website designed to encourage Albertans to conserve and improve riparian health today for a better tomorrow. The web-portal provides access to riparian data as well as information and resources needed to meet this goal. The web-portal has two main audiences: landowners who can take direct action, and administrators who work with landowners by providing guidance and/or financial support.

The Riparian Web-portal will:

- Provide access to riparian data and summary tools
- Provide a location to share projects in real-time
- Provide resources such as BMPs and links to grants

The Riparian Web-portal will showcase data from the Riparian Intactness Project. The expansion phase of the Riparian Intactness Project will be completed by Fiera Biological Ltd. in May 2021.

VERMILION RIVER WATERSHED ALLIANCE

Are you a local landowner, concerned citizen or nature lover?

Check out the Vermilion River Watershed Alliance's monthly blog which features stories and projects relating to healthy water and landscapes.

JANUARY'S BLOG:

Graphic summary of the Vermilion River Water Quality Study





To learn more, go to: https://vrwa.ca/blog/



Vermilion River

The VRWA just posted a new blog on their website.

This month's article provides an overview of water quality monitoring conducted in the Vermilion subwatershed.

The full report can be viewed on the VRWA website.

HAVE YOUR OPINIONS HEARD!!

The Government of Canada announced the launch of public consultations to help establish the new Canada Water Agency and improve freshwater management across Canada. They invite participation in this process. For more information on this consultation and to participate follow this link.

Canada Water Agency

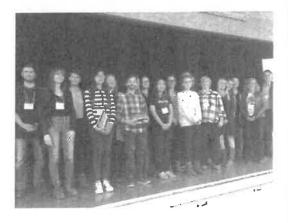
The Government of Alberta is asking for your input into its Sports fishing survey. Check out the link for more information and to access the survey.

Sportfishing Survey

GET TO KNOW THE NSWA BOARD



Our Board members come from unique backgrounds and experiences - in 2021,we



Favorite NSWA memory: Educational Forum with NAIT students- Clymont Hall,

will 'introduce' you to our NSWA Board members.

Laurie Danielson is our first featured Board member. He has served on the NSWA Board since 2009.

Work: Laurie is the Executive Director of the Northeast Capital Industrial Association, a not-for-profit entity, made up of 23 industrial members in Alberta's Industrial Heartland area. His primary role is to engage with government (municipal, provincial and federal) and partner organizations.

October 2019 (pictured above)

Favorite place in the watershed: River Valley trails by Fort Saskatchewan

Interesting Hobby: Collecting antique slide rules

Quote: "The NSWA Board and staff are comprised of dedicated people who care about the North Saskatchewan Watershed and work to ensure that those who use it can enjoy it for years to come. NSWA has been very successful working within subwatersheds to understand and improve the functionality of those watersheds for all to enjoy. That commitment to knowledge and boots on the ground has made NSWA the success it is today."

OTHER WATERSHED RESOURCES

Several **Working Well** workshops are scheduled over the next few months. For more information check out the Working Well website.

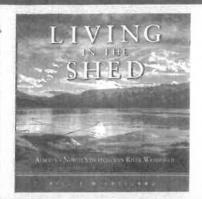
Ducks Unlimited has several webinars coming up in their **Wetland Knowledge Exchange** series. In February, the presentation will be on Conservation Begins at Home: Understanding personal, commercial and conservation values of landowner stewardship on the family farm.

Beaver Hills Biosphere and the Land Stewardship Center will be holding an online workshop Tackling Invasive Plants Through Community Engagement. The Beaver Hills Biosphere and Elk Island National Park want to engage the community on this issue and are seeking input from people that will contribute to a collaborative approach to identify, manage and share best practices to tackle invasive plants on a regional scale within the biosphere. Please register for this workshop in advance.

The **Environmental Law Center** has posted several new articles on Climate Change and the Forest Act which are definitely worth reading.

The **Land Stewardship Center** has opportunities for acreage owners to apply to fund eligible cost-shared stewardship initiatives on their properties. For more information check their <u>website</u>.

Check out the NSWA <u>DISCOVER</u> section on our website with watershed resources and activities for adults and children. There are many activities to encourage watershed learning for your family.



SUPPORT THE WORK OF NSWA

Living in the Shed is a great gift for all of the nature lovers on your list. Priced at \$20 per copy they can be ordered at our <u>SHOP</u>.

NSWA is a registered charity. For information on supporting our watershed projects go to our <u>DONATE</u> webpage.













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Our mailing address is: 202 9440 49 Street Edmonton, Alberta Email water@nswa.ab.ca

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North Saskatchewan Watershed Alliance · Unit 202 9440 49 street · Edmonton, AB T6B2M9 · Canada



aboffice@albertabeach.com

ca: Jim/Angela.

From: Michelle Gordy <michelle.gordy@nswa.ab.ca>

Sent: February 2, 2021 11:14 AM

To: aboffice@albertabeach.com

Subject: Invitation to participate in a study on municipal watershed planning

Good day Ms. Skwarchuk,

Because municipal governments have a significant bearing on the management of land and water, they play a crucial role in Watershed Planning and Advisory Councils' (WPACs) ability to carry out their mandate. Indeed, the success of WPAC initiatives hinges on the working relationships between WPACs and municipal governments.

We wish to better determine the effect of WPAC-municipal working relationships on municipal planning in creating sustainable communities. We are therefore partnering with the University of Lethbridge in a survey-based study. This study aims to enhance our knowledge and understanding of the working relationship between WPACs and municipalities, identify challenges and/or barriers to effectiveness and make recommendations for improvements where needed.

The survey is voluntary. It is easy to follow and will only take about five to ten minutes of your time to complete. It is completely anonymous and if you choose, you can opt out of the survey at any point.

We are seeking multiple perspectives for this study and therefore, in addition to your own participation, ask that you please share this survey with one member of your council and one staff member as well.

We greatly appreciate your participation in the survey. The survey will be available until February 28, 2021.

Please click here to begin the survey---- https://uleth.qualtrics.com/ife/form/SV blb4LAnVJzQc7Yh

Best,

Michelle A. Gordy, Ph.D.
Watershed Planning Coordinator | NSWA (office) 587.525.6829 (cell) 587-990-5520
NSWA.AB.CA



Alberta Beach Village Office

Ca: Council

From:

Senator Doug Black < Doug.Black@sen.parl.gc.ca>

Sent:

February 4, 2021 11:17 AM

To:

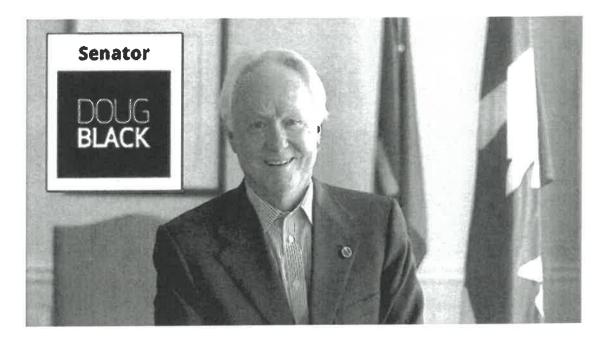
Jim

Subject:

Vaccines, Virtual Tour, and Keystone

A message from Alberta Elected Senator Doug Black

View this email in your browser



Vaccines, Virtual Tour, and Keystone

Dear Jim

These last few months have been stressful, challenging, and filled with uncertainty for all of us. Despite the difficulties brought about by this pandemic and our economic challenges, Albertans remain resilient and compassionate. I have seen it time and time again on both legs of my Alberta Virtual Tour. As I have said: Albertans aren't giving up, they are getting up.

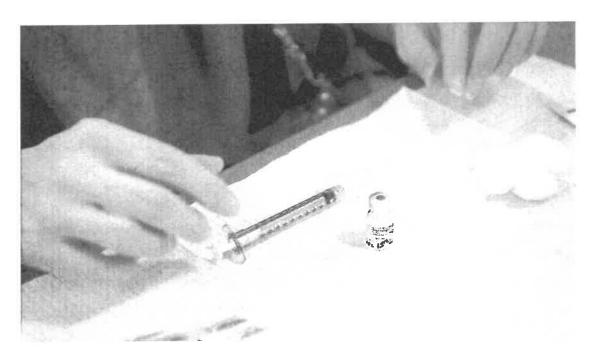
We will defeat COVID-19 and its variants. But the federal government needs to move from defence to offence. They have been behind the eight ball since the

beginning on tests, PPE, and vaccines. I will continue doing everything I can to push for proactive actions and transparency in procurement so we can end this pandemic and put Canada on the fastest and most robust possible road to recovery.

As we navigate the year ahead, I hope that you are taking time to check in on yourself and your loved ones. Let's continue to prioritize health – mental and physical.

Sincerely,





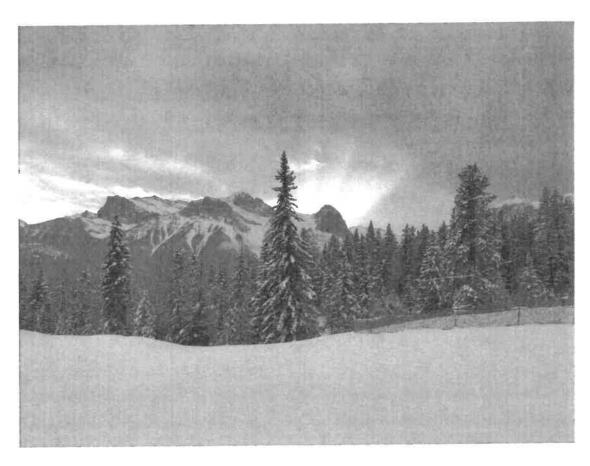
Vaccines and the Federal Pandemic Response

Vaccines are the light at the end of the pandemic tunnel. We need them to return to a state of normalcy. Unfortunately, Canada has fallen to 33rd in the world in vaccinations administered because of supply delays. I have very real concerns about the federal government's management of the pandemic response, including on vaccine procurement.

I started calling for a made-in-Canada solution months ago and was met with crickets from the federal government, despite knowing that we could manufacture a vaccine right here in Alberta and possibly other places in Canada as well by the summer of 2021. Instead of pursuing Canadian development and production, the federal government partnered with a Chinese firm who blocked shipment of the product to Canada.

I've also been pushing the federal government to release vaccine contract details. Canadians deserve the full picture of what we can expect and when. It is my worry that the contracts are not being released publicly because there are no definite delivery commitments, but rather indefinite "targets".

Whether it is tests, PPE, or vaccines, the federal government has remained consistently behind the curve and Canadians are paying the price. It's time to be proactive rather than reactive. Let's get rapid testing right. Let's build on this week's positive (if very late) Novavax announcement. Let's do whatever it takes to get Canadians vaccinated and our economy humming again.



Alberta 2021 Virtual Tour

When I was elected as a Senator-in-Waiting, I committed to Albertans that I would travel the province extensively and remain connected to folks from every corner of our great province. Since then, I have always made an effort to travel the province, listen to Albertans, and take their concerns to Ottawa.

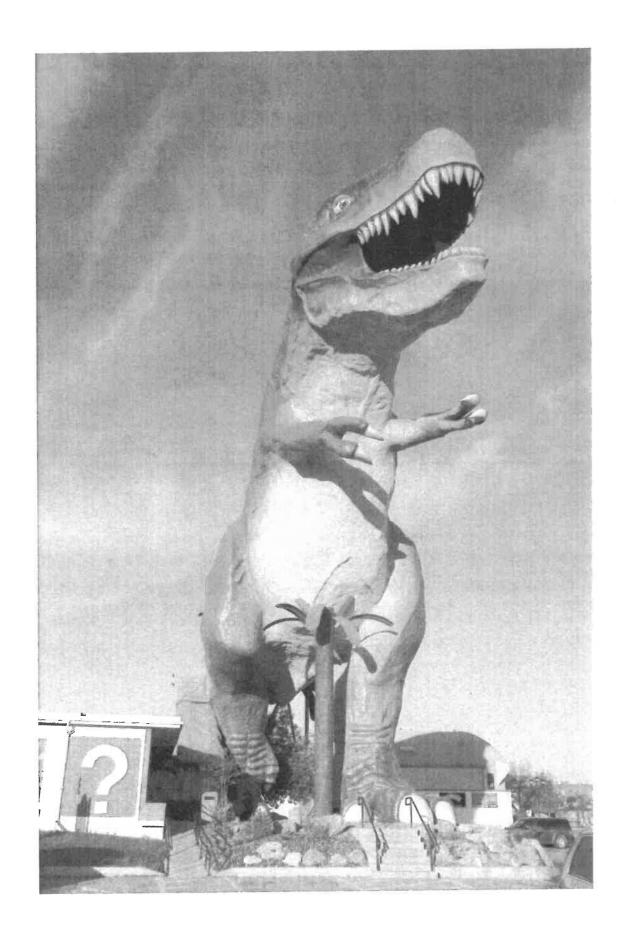
In the fall of last year, given the realities of the pandemic, my office team and I decided to get in our virtual car for a different kind of tour. After a successful first leg of the tour hitting 10 different communities, I got back on the virtual road again and have now visited several leaders in Slave Lake, Drumheller, and Lacombe. Calgary is up next.

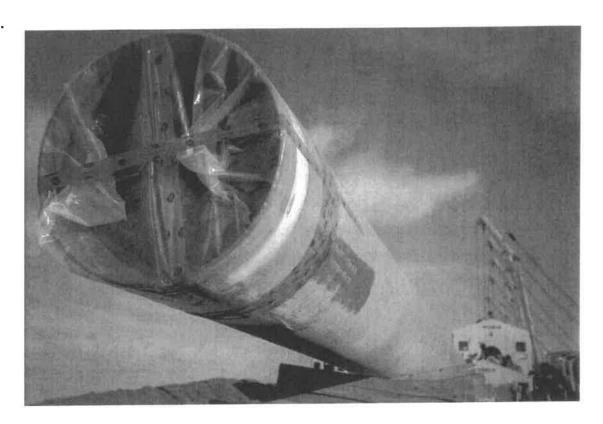
The tour has been informative and productive and covered issues from pandemic to potholes, mental health to rural broadband, and Keystone to hiking trails. For more on each of my round 2 stops thus far, here are the articles from

Slave Lake, Drumheller, and Lacombe.

Thanks to the local media in each community for taking the time to speak with me about my experiences and observations, and thanks to the wonderful community leaders who have welcomed me and shared their thoughts and concerns so openly.

My key takeaways of this tour leg have thus far been mental health, rural broadband, the focus on recovery, and the intimately linked need for enhanced vaccine supply. I look forward to using what I have learned to make a difference and continue advocacy on these issues and others.





The Keystone Cancellation

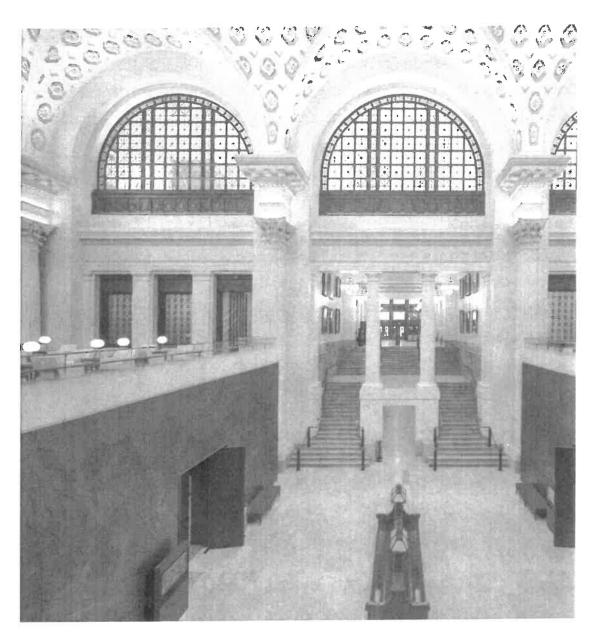
I was deeply disappointed earlier this month when the incoming Biden administration revoked the presidential permit for Keystone XL. I may not have been surprised with the outcome, but I was surprised that Canada was not given an opportunity to make its case. After all, the Keystone XL of today is not the Keystone XL of ten years ago. Unfortunately, we were not given that opportunity and I am not going to sugarcoat the prospects for revival.

Going forward, we need to monitor the Enbridge Line 5 situation and take it very seriously. It is essential for both Canada and the US. We also need the Enbridge Line 3 replacement finished and TMX built. Further, it may now be time to accelerate conversations with First Nations and others to review the prospects of an Alberta-BC pipeline and removing the politically motivated tanker ban.

While oil and gas demand will eventually peak, it is not going to evaporate overnight or in the next decade. We may not even see peak demand for

another decade or longer. If Alberta's oil and gas assets remain stranded, it will impede our economic prospects even as we aggressively and prudently pursue our opportunities in alternative energy forms like hydrogen, geothermal, and others.

Bottom line: pipelines remain important for Alberta and I will continue in my advocacy to get our resources to market. I will do this while deepening my engagement on maximizing opportunities for Alberta in the energy transition. I will also continue my outreach to stakeholders affected by the Keystone decision.

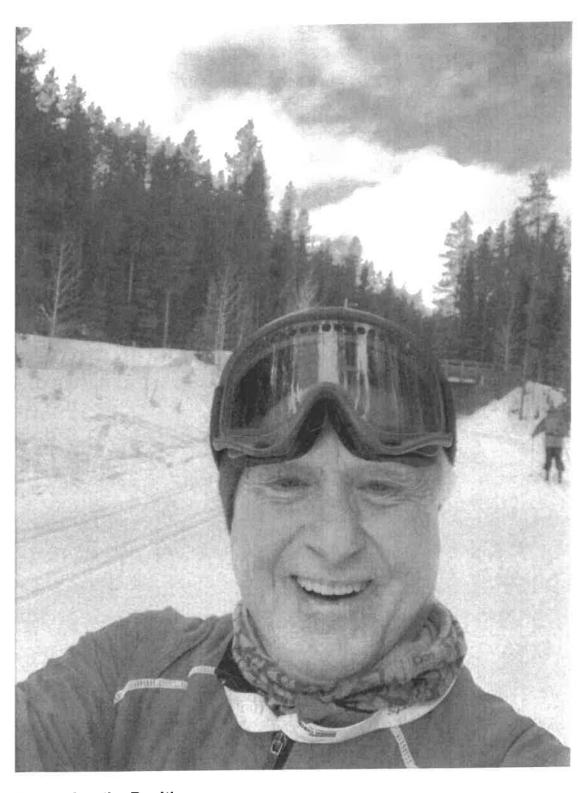


Senate Look-Ahead

The Senate is set to return from its recess next week and I will be participating virtually from my home in Alberta. There are several issues on the agenda, but the one that is top of mind for senators is Bill C-7 (medical assistance in dying). I have concerns with the legislation, as I indicated in my Second Reading speech back in December, and I have been giving thoughtful consideration to amendment options. This is a serious matter and we need to get it right. To that end, I would like to offer my thanks to all the Albertans who took the time to reach out to me to express their thoughts on this bill.

In my committee roles on Foreign Affairs and Trade, as well as Energy, the Environment, and Natural Resources, we will have government bills to consider. The next one up is Bill S-3 (offshore health and safety). I also expect us to promptly examine Bill C-18 (Canada-UK trade continuity agreement) and work with stakeholders to ensure Canada-UK trade can flourish for years to come.

A quick note of thanks as well to all the stakeholders I have met with on various files recently from agriculture to electricity to diabetes to tourism to post-secondary and beyond. You help me do my job and play a key role in informing important policy decisions.



Remember the Positives

- Bell Let's Talk Day set new records with 159,173,435 messages of support and \$8m donated towards mental health initiatives. Let's end the stigma.
- The Olds College Smart Farm is a game-changer in advancing AI in Alberta's agriculture industry. Great things continue to happen at Olds College!
- A BC tech company is relocating its HQ to Alberta. Welcome to the province, mCloud Technologies!
- There are growing opportunities for Alberta in lithium development. It's time to capitalize on our Alberta advantage of existing oil and gas operations and technologies.
- Alberta's film industry is set to boom and I couldn't be more excited to start seeing our beautiful province as the backdrop in more shows and movies.



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aboffice@albertabeach.com

From: Louise Albert <LAlbert@highriver.ca>

Sent: February 3, 2021 11:37 AM

To: aboffice@albertabeach.com

Subject: Reinstatement of the 1976 Coal Development Policy

Attachments: PDFMailer.pdf

Good Morning,

Please see attached letter with respect to the Reinstatement of the 1976 Coal Development Policy

If you have any questions please contact our Manager of Legislative Services, Kara Rusk (krusk@highriver.ca or 403.603.3652)

Thank you, Louise Albert on behalf of Mayor Craig Snodgrass

Executive Assistant to the CAO
Town of High River
309B MacLeod Tr SW, High River, AB T1V 1Z5
Direct: 403.603.3434 Fax: 403.652.2396
www.highriver.ca

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February 3, 2021

309B Macleod Trail SW High River, Alberta Canada T1V 1Z5 P: 403.652.2110 F: 403.652.2396 www.highriver.ca

OFFICE OF THE MAYOR

VIA E-MAIL: aboffice@albertabeach.com

Office of the Mayor, Alberta Beach PO Box 278 Alberta Beach, AB TOE 0A0

Attention: Mayor Jim Benedict

RE: Reinstatement of the 1976 Coal Development Policy

Dear His Worship:

In June of 2020, the Government of Alberta rescinded the Coal Development Policy (Coal Policy) without adequate consultation with First Nations, environmental groups, residents, property owners and local governments. This policy was originally developed with the intended purpose to guide coal extraction along the eastern slopes of the Rockies based upon a land use classification system and dictated where and how coal leasing, exploration and development could occur.

The Coal Policy introduced in 1976, guided coal extraction in one of the most important landscapes in Alberta and Canada. The Eastern Slopes provides water to users from the Rockies to the Hudson Bay. For 44 years, the policy provided essential protection of valuable water resources, ensuring downstream communities had access to clean drinking water, that farmers had access to irrigation water to protect their livelihoods and that ecosystems that tourists come to experience remained in their pristine state.

The rescindment of any policy that affects public lands and/or water resources, requires public consultation with First Nations, environmental groups, residents of Alberta, property owners and local municipalities. Without that consultation, our democratic processes are undermined.

In response to the Government of Alberta's action, the Town of High River's Council adopted the following resolution at its Regular Meeting of Council on January 11, 2021:

BE IT RESOLVED THAT Council direct Administration to draft a letter to Premier Jason Kenney, requesting the immediate reinstatement of the 1976 Alberta Coal Policy which was rescinded on June 1, 2020;

AND THAT the letter requests that the Government of Alberta begin public consultation with Indigenous groups, environmental groups and all stakeholders in Alberta on any proposed revisions or replacement to this policy;

AND FURTHER THAT this letter be sent to the Minister of Environment & Parks Honorable Jason Nixon, Minister of Energy Honourable Sonya Savage as well as the MLA for Livingstone-Macleod Roger Reid.

This letter was sent to the Premier and Ministers on January 12, 2021 and a meeting has been requested with the Premier. To date, the Town of High River has neither received a response to our letter nor a meeting with the Premier.

Other local governments, public officials and Albertans have called upon the Government of Alberta to reinstate the Coal Policy. In response, the Government of Alberta has cancelled some of the coal leases but this is not adequate in order to protect water resources for downstream communities, such as High River.

Therefore, at the February 1, 2021 Special Meeting of Council, the following resolution was adopted:

WHEREAS Council adopted resolution #RC 14 -2021 requesting the Province of Alberta immediately re-instate the 1976 Coal Development Policy;

AND WHEREAS coal exploration and open pit mining will impact water resources for downstream communities affecting businesses, residents, ranchers, farmers and ecosystems;

AND WHEREAS coal exploration is causing irreparable damage to the landscapes and watersheds as well as adversely affecting the public's access, use and enjoyment of Crown lands on the Eastern Slopes of Alberta;

AND WHEREAS local First Nations groups, municipalities, landowners and ranchers are legally challenging the Province's rescindment of the 1976 Coal Policy in the Courts;

BE IT RESOLVED THAT Council request all coal exploration be immediately ceased on the Eastern Slopes of Alberta and cease issuance of any new exploration permits on the Eastern Slopes of Alberta until public consultation has taken place regarding the future of coal mining on the Eastern Slopes of Alberta;

AND THAT Council request the Government of Alberta & Premier Jason Kenney issue an immediate stop work order for all existing coal exploration permits on the Eastern Slopes of Alberta and cease issuance of any new exploration permits on the Eastern Slopes of Alberta until public consultation has taken place regarding the future of coal mining on the Eastern Slopes of Alberta;

AND THAT Council direct Administration to investigate legal options relating to the damage caused due to exploration on Alberta's Eastern Slopes.

AND FURTHER THAT Council direct Administration to prepare a letter with a copy of this resolution to all members of the Federation of Canadian Municipalities, Alberta Urban Municipalities Association, Rural Municipalities of Alberta, Municipalities of Saskatchewan, Saskatchewan Association of Rural Municipalities and Association of Manitoba Municipalities requesting their support to re-instate the 1976 Coal Development Policy.

In light of this resolution, the Town of High River is respectfully requesting that you consider drafting a letter of support to the Government of Alberta for the immediate Exploration Stop Work Order as well as the reinstatement of the Coal Policy.

Thank you for considering our request,

Sincerely,

Craig Snodgrass

Mayor

CS/cp/kr

Cr. Shelley

aboffice@albertabeach.com

From:

Arlene Wright <Arlene.Wright@gov.ab.ca>

Sent: February 11, 2021 10:21 AM

To: Arlene Wright

Cc: karenrosvold@gmail.com; krosvold@countygp.ab.ca; Debbie Wood; Dimitri

Dimopoulos; Duane Didow; evan.woolley@calgary.ca; Evan Woolley; George Glazier; Gordon Thomas; Janet Wilkinson; Judy Smith; lisa.hannaford@greenviewfcss.ca; Lorraine Berry; Michelle McKenzie; Jamaly Murtaza; Randy Ell; Vicki Van Vliet Vaitkunas; Mellissa Kraft; Colleen Burton Ochocki; Judy Macknee; Ken Dropko; Joyce Mellott;

Nicole Nowakowski; Connor Gaughan

Subject: 2021 FCSS Update

Sent on behalf of Ken Dropko.

Good morning to all our FCSS colleagues,

The previous year was a challenge for many of us. Thankfully, a key focus of FCSS is building resiliency for individuals and the community, and FCSS has once again demonstrated leadership and agility in quickly adapting to the new normal. As we transition to 2021, our resilience and adaptability will continue to be required.

Like the fresh start with a new year, I want to provide some program updates and points to consider for the upcoming FCSS year:

2020 FCSS Annual Program Report/Outcomes

- We will continue to use the existing report templates for 2020 reporting while work on the combined annual/outcome report template continues.
- The 2020 report templates will be posted on the FCSS online system soon and are due four months after posting.
- We will notify all programs once the reports are available for completion.
- With the shift from an annual to a three-year funding agreement, the requirements for assurance (review engagements and audits) have changed. We strongly recommend programs continue to perform annual review engagements and or audits as opposed to waiting until after the third year of the agreement in 2023. If a program performs a review engagement/audit only after the third year, our understanding is you will still be charged for a review engagement/audit for each of the three years of the agreement.
- There will also be an adjustment on the requirements for assurance. Previously if a program received more than \$100,000 in FCSS funding from the province, the program was required to provide a review engagement with their annual report.

- The Ministry level of assurance for requirement to perform a review engagement is currently set at
- \$250,000. The FCSS requirement will be raised to \$250,000 for consistency and the Regulation will be adjusted accordingly.
- Programs receiving \$500,000 or more and required to provide an audited financial statement will have the option of either performing an audit every year or performing a review engagement for each of the first two years and then an audit of the total three-year period.
- If you have any questions about the reporting requirements and level of assurance, please contact Connor (connor.gaughan@gov.ab.ca).
- If you have any questions on outcome reporting, please contact Nicole (Nicole.Nowakowski@gov.ab.ca)

• 2020 FCSS Funding used for COVID Support/Relief

- The temporary suspension of the FCSS regulation allowed programs to spend FCSS funding on food security. For reporting purposes, any FCSS funding spent on food security in 2020 should be labelled as: COVID – food security

Program Advice Inventory Listing (PAIL)

- We are continuing to work on updating the program advice inventory listing (PAIL). The PAIL is currently found in the FCSS handbook.
- Work on the PAIL is underway in consultation with the Directors' Network Committee and the intent is to align with changes to the new combined financial/outcomes report template.

• 2020 FCSS Surpluses

- With 2020 being a year with many programs and services being reduced and or paused, it is likely there will be more surpluses from FCSS programs than in previous years. Each participating FCSS municipality has to account for internal programming surpluses as well as surplus from external programs. If an external program did not utilize all of the funding provided, the amount recorded on the annual report should just be the funds the external program spent on FCSS eligible expenditures in the year. If a municipal program has a surplus of FCSS funding at the end of 2020 there are two options:
 - Have the provincial portion of the program's surplus deducted from the next FCSS funding release;
 OR
 - 2. Request to retain the surplus. If a program wishes to request a surplus, write an email to Ken (Ken.Dropko@gov.ab.ca) and Joyce (Joyce.Mellott@gov.ab.ca) and cc Connor (Connor.Gaughan@gov.ab.ca) stating:
 - The total amount of surplus.
 - The reason for the surplus (example closure of a program)?
 - Expenditure plans for the surplus FCSS funds to attain a zero balance at the end of 2021

• Allocating Program Costs and Administration Expenditures

 Ideally, 90% of expenditures should be used for programming with up to 10% being used for administration costs.

- When accounting for salaries and other program expenditures, resources utilized to provide a program
- should have the resource's cost allocated to that program.
- Administration costs will be expenditures that cannot be reasonably allocated to a program.

• Program Reviews

Due to the pandemic, we were unable to perform as many program reviews as we targeted last year.
 As it appears that in-person restrictions will be in place for awhile, we will start performing virtual FCSS program reviews. If any program wishes to have a program review, please contact Connor.

In January, I announced my plans to retire at the end of March 2021 and begin a new chapter in my life journey. I am truly honored to have been a part of such an inspiring and impactful program. Thank-you for all your hard work and ongoing commitment to prevention and social issues in your communities.

If you have questions or concerns on the 2021 FCSS year, please feel free to contact me directly or any of the staff in our office.

Ken Dropko, MEd

Executive Director, Civil Society and Community Initiatives Branch Preventive Community Services Division Ministry of Community and Social Services

3rd Floor, 44 Capital Blvd. 10044 108 Street Edmonton, Alberta T5J 5E6

Tel 780 644 2485 Cell 780 903 4712 Ken.Dropko@gov.ab.ca

Classification: Protected A

(berta=

aboffice@albertabeach.com

ca: Shelley

From: Arlene Wright <Arlene.Wright@gov.ab.ca>

Sent: February 11, 2021 2:36 PM

To: Arlene Wright

Cc: Debbie Wood; Dimitri Dimopoulos; Duane Didow; karenrosvold@gmail.com;

krosvold@countygp.ab.ca; evan.woolley@calgary.ca; eaward8@calgary.ca; George Glazier; Gordon Thomas; Janet Wilkinson; Judy Smith; lisa.hannaford@greenviewfcss.ca; Lorraine Berry; Michelle McKenzie; Jamaly Murtaza; Randy Ell; Vicki Van Vliet Vaitkunas; Mellissa Kraft; Colleen Burton Ochocki; Judy Macknee; Ken Dropko; Joyce Mellott;

Nicole Nowakowski; Connor Gaughan

Subject: 2021 FCSS Update - Assurance Requirements

Sent on behalf of Ken Dropko.

Hello FCSS directors

We have had several inquires referring to the proposed assurance changes in the FCSS Regulation. To clarify, these are proposed changes and have NOT been finalized. If approved, the change would go into effect once the regulation is updated. The current FCSS Regulation remains in effect and was in effect for the 2020 reporting year.

For the sake of simplicity, for now, we will ask any FCSS program that currently receives more than \$100,000 from the province in FCSS funding annually to submit a review engagement ONLY. This would mean that if a program receives \$500,000 or more, the program would only be required to submit a review engagement, not an audit which was previously required.

We will address the 2021, 2022 and the 2020-2022 FCSS assurance requirements once a decision on the proposed regulation changes are finalized.

We thank all the programs for their diligence in this matter and we apologize for any confusion this may have caused.

Stay warm,

From: Arlene Wright < Arlene. Wright@gov.ab.ca>

Sent: February 11, 2021 10:21 AM

To: Arlene Wright < Arlene. Wright @gov.ab.ca>

Cc: karenrosvold@gmail.com; krosvold@countygp.ab.ca; Debbie Wood <dwood@athabascacounty.com>; Dimitri

Dimopoulos <<u>d.dimopoulos@gmail.com</u>>; Duane Didow <<u>duane.didow@mdgreenview.ab.ca</u>>;

evan.woolley@calgary.ca; Evan Woolley < Eaward8@calgary.ca >; George Glazier < gglazier@countypaintearth.ca >;

Gordon Thomas <gordon11503@yahoo.ca>; Janet Wilkinson <ghanajanet@yahoo.com>; Judy Smith

< judy.smith@edmonton.ca>; lisa.hannaford@greenviewfcss.ca; Lorraine Berry < lberry47@outlook.com>; Michelle

McKenzie <michelle.mckenzie@cypress.ab.ca>; Jamaly Murtaza <miamaly@westlock.ca>; Randy Ell

Alberta Beach Village Office

From: Exec. Assistant on behalf of Dan Rude <EA_DRude@auma.ca>

Sent: February 12, 2021 1:13 PM

To: Kathy Skwarchuk

Subject: Register Now for AUMA's Budget Webinar on February 26th

Dear Mayors, Councillors, and CAOs,

On February 25, the Government of Alberta will release its budget for the 2021-22 fiscal year. As usual, AUMA will dive into the numbers and release a report with our analysis of how the provincial budget will impact municipalities. In addition, we will also host a webinar where we will walk through the numbers, share our perspectives, and provide you the opportunity to ask questions.

The webinar will be held on **Friday, February 26 from 2 to 3:30 p.m.** and is exclusive to elected officials and employees of Alberta municipal governments. Share with your municipal colleagues and <u>register today</u>.

AUMA's input on Budget 2021 priorities

Leading up to Alberta's 2021-22 Budget, AUMA sent a letter and met with the Honourable Travis Toews, President of Treasury Board and Minister of Finance, to communicate our priorities for the upcoming budget year. Our communication covered many topics that are important to members. A few examples include:

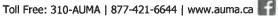
- AUMA's appreciation of the province's support in 2020 through the Municipal Stimulus Program and Municipal Operating Support Transfer (MOST);
- the importance of stable and predictable funding, particularly during the end of the Municipal Sustainability Initiative and the start of the Local Government Fiscal Framework;
- the need for the province to establish an Extended Producer Responsibility (EPR) program for plastics and packaging;
- the value of partnering with municipalities in striving for economic growth, including appropriate funding for Regional Economic Development Alliances; and
- stopping the transfer of costs and responsibilities onto municipalities.

We look forward to hosting our webinar to share how those priorities are reflected in the 2021 Budget.

Sincerely,

Dan Rude | Chief Executive Officer
ALBERTA URBAN MUNICIPALITIES ASSOCIATION

D: 780.431.4535 | C: 780.951.3344 | E: drude@auma.ca Alberta Municipal Place | 300-8616 51 Ave Edmonton, AB T6E 6E6







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Alberta Beach Village Office

From:

Angela Duncan <duncan.angela.ad@gmail.com>

Sent:

January 19, 2021 11:39 AM

To:

Alberta Beach Office

Subject:

Fwd: In-kind donation letter for Land Stewardship Centre's Watershed Stewardship

Grant

Here is the follow up up email in regards to LILSA's letter, based on a few questions that I asked.

Thanks,

Angela Duncan

Deputy Mayor, Alberta Beach Vice President & Director, AUMA 780-868-5103 duncan.angela.ad@gmail.com

----- Forwarded message ------

From: Candis Scott < candis1972@gmail.com>

Date: Tue, 19 Jan 2021 at 11:29

Subject: Re: In-kind donation letter for Land Stewardship Centre's Watershed Stewardship Grant

To: Angela Duncan < duncan.angela.ad@gmail.com >

Hi Angela,

Great questions.

We would like the response when we can. The grant application doesn't even open until February so I'm sure it can wait until the next meeting. We plan to build mailing costs into our grant. We are hoping that most people will fill the survey out through the link we provide but we know that not everyone likes technology so we would like to provide printed copies to the communities so that people can either pick up (we will provide a return envelope) or if someone needs them to be mailed to them then we will pay for that as well.

We honestly just need help getting out the survey then educational packages to the residents. We are going to build all costs into the grant so the only burden is essentially time.

I guess that was the long way to state just a letter of support.

Thanks Candis

On Tue, Jan 19, 2021 at 11:10 AM Angela Duncan < duncan.angela.ad@gmail.com > wrote:

Hi Candis, "

I will absolutely pass this onto Council!

I don't know if I can get it onto tonight's agenda, but I can definitely get it onto the next one. When do you need a response by? Also, regarding the mailout, would you be looking for the village to pay for the mailout or just to use our address list (I know that council will ask this question)? Also, do you need an in-kind dollar value for the grant application, or just a letter of support?

Thank you,

Angela Duncan

Deputy Mayor, Alberta Beach Vice President & Director, AUMA 780-868-5103 duncan.angela.ad@gmail.com

On Tue, 19 Jan 2021 at 10:31, Candis Scott < candis1972@gmail.com/ wrote: Hi Angela,

Kelsey, Dustin, and I have finally got a stronghold on our project wishes and are now looking for in-kind donations to supplement our grant.

I thought if I could get the letter to you that you could pass it along to Alberta Beach. Is this okay?

Thanks Candis

Alberta Beach Village Office

From:

Angela Duncan <duncan.angela.ad@gmail.com>

Sent:

January 19, 2021 11:39 AM

To:

Alberta Beach Office

Subject:

Fwd: In-kind donation letter for Land Stewardship Centre's Watershed Stewardship

Grant

Attachments:

2021_Jan_19_LILSA_BG Algae Committee_In Kind Letter.docx

Hi Kathy,

Please see the attached letter from LILSA, I will also forward another email with a few more comments. We don't need to add this to tonight's agenda, the February meeting will suffice.

Thanks,

Angela Duncan

Deputy Mayor, Alberta Beach Vice President & Director, AUMA 780-868-5103 duncan.angela.ad@gmail.com

----- Forwarded message -----

From: Candis Scott < candis1972@gmail.com>

Date: Tue, 19 Jan 2021 at 10:31

Subject: In-kind donation letter for Land Stewardship Centre's Watershed Stewardship Grant

To: Angela Duncan < duncan.angela.ad@gmail.com >

Hi Angela,

Kelsey, Dustin, and I have finally got a stronghold on our project wishes and are now looking for in-kind donations to supplement our grant.

I thought if I could get the letter to you that you could pass it along to Alberta Beach. Is this okay?

Thanks Candis



To whom it may concern,

My name is Candis Scott, I am contacting you on behalf of the Lake Isle & Lac Ste. Anne Water Quality Management Society (LILSA). We have established a Blue Green Algae Committee that will be applying to the Land Stewardship Centre's Watershed Stewardship Grant for their 2021 call for applications.

Our draft plan at the moment is, rather than to start with a demonstration site which was proposed last year, to elevate education/knowledge sharing in the watershed first. Our project name is the Lake Water Quality Education Project. Our target audience is shoreline owners, backlot residents, councilors and agriculture producers which reside in or around Lake Isle and Lac Ste Anne. Lake quality is affected not only from lakefront properties but various actions occurring throughout the watershed. Our proposed first step is to release a survey in order to gain more insight on what landowners in the areas current and/or lack of knowledge is around lake health, along with what their main concerns are. The second step is to gather the survey content and cater an educational package to each that requests one, ultimately filling knowledge gaps. As a last step, we'd like to create a digital narrative that captures the story of the Lake Isle and Lac Ste. Anne watershed. Covering various topics such as riparian health, nutrient run-off, and blue-green algae while having residents and experts contribute to this educational video.

To that end, LILSA is asking for Alberta Beach to provide in-kind support to the Lake Water Quality Education Project in several ways: outreach support in form of advertising/distributing our survey via social media, mailout, newsletter and website, contributing/distributing educational resources to residents, and if possible expert volunteer time towards the digital story.

Please let me know if you require more information for our in-kind contribution ask. Your support will not only help us be successful in the grant application but will also boost awareness not only of our small organization but yours as well!

Thank you for your time and consideration, I look forward to hearing your response.

Sincerely,

Candis Scott Vice-Chair, LILSA 780-717-6201 candis1972@gmail.com

aboffice@albertabeach.com

From: Gasparini, Jeannette (Soroka, Gerald - MP) <jeannette.gasparini.734@parl.gc.ca>
Sent: February 11, 2021 10:16 AM

To: aboffice@albertabeach.com; svseba@telusplanet.net; bguyon@brazeau.ab.ca;

vbreton@telusplanet.net; burnstick8@gmail.com; info@villageofcaroline.com; divisionsix@clearwatercounty.ca; mayor@draytonvalley.ca; mayor@edson.ca; Dale.Smith@mdgreenview.ab.ca; Mayor@hinton.ca; rireland@town.jasper.ab.ca; kbyrne@town.jasper.ab.ca; emily@milestonemunicipalservices.ca; jblakeman@lsac.ca;

lsac@lsac.ca; svseba@telusplanet.net; janet.jabush@mayerthorpe.ca;

rshaigec@parklandcounty.com; thomtom@telus.net; tburke@rockymtnhouse.com;

louis.belland@yahoo.com; svseba@telusplanet.net; bpoulin@xplornet.com; administration@wildwillowenterprises.com; ann.morrison@sunsetpoint.ca; rodraymond@thorsby.ca; csmylie@wabamun.ca; mayor@warburg.ca; lwstamand@gmail.com; svwestcove@outlook.com; d.evans@valquentin.ca; swassing@yellowheadcounty.ab.ca; administration@wildwillowenterprises.com;

russforyellowstone@yahoo.com; sylvia.roy@svofficepl.com; information@svofficepl.com; jeglinski@yellowheadcounty.ab.ca

Subject: Requesting Your Support for a 988-suicide hotline

Attachments: National 3-digit suicide prevention hotline.tiff; Motion for 988 be passed -- Feb 11

2021.docx

Good day,

Please find attached letter from MP Gerald Soroka seeking your support in passing a motion regarding the use of a 988-suicide hotline. Several municipalities across Canada have already passed similar motions.

Would appreciate that your CAO also receives this email.

Please let me know if you will be putting the motion forward and if you do, was it passed?

Your assistance is appreciated in securing a 988-suicide hotline.

Thank you.

Regards,

Jeannette

Jeannette Gasparini

Chief of Staff/Executive Assistant

Office of Gerald Soroka, MP Yellowhead

613-992-1653 Gerald.soroka@parl.gc.ca



Gerald Soroka Member of Parliament

viember of Parliameni Yellowhead geraldsorokamp.ca



OTTAWA February 11, 2021

Dear Mayors/Reeves/CAOs:

On December 11th, 2020, the House of Commons passed a motion introduced by Conservative MP Todd Doherty, through unanimous consent, to bring a national 3-digit suicide prevention hotline line to Canada.

That, given that the alarming rate of suicide in Canada constitutes a national health crisis, the House call on the government to take immediate action, in collaboration with our provinces, to establish a national suicide prevention hotline that consolidates all suicide crisis numbers into one easy to remember three-digit (988) hot-line that is accessible to all Canadians.

We're asking all municipalities across Canada to consider passing a motion similar, to the one attached. In order to make 988 a reality, we must continue to put pressure on the government and the Canadian Radio-television and Telecommunications Commission (CRTC).

Personally, you can support the cause by signing our electronic petition at: https://petitions.ourcommons.ca/en/Petition/Details?Petition=e-2772

The past year has been a challenging year. Lives and livelihoods have been lost. We have begun to see the devastating impacts that COVID has had, through isolation, on the mental health of Canadians. The rates of suicide continue to rise. As elected officials and as leaders, and especially during this period of difficulty as a nation, Canadians are counting on all of us to make a difference.

Please consider passing this motion as soon as possible.

Sincerely,

Gerald Soroka, MP Yellowhead

Encl.

Draft	motion

Support for 988 Crisis Line

WHEREAS the Federal government has passed a motion to adopt 988, a National three-digit suicide and crisis hotline;

AND WHEREAS the ongoing COVID-19 pandemic has increased the demand for suicide prevention services by 200 per cent;

AND WHEREAS existing suicide prevention hotlines require the user to remember a 10-digit number and go through directories or be placed on hold;

AND WHEREAS in 2022 the United States will have in place a national 98S crisis hotline;

AND WHEREAS	Town Council/M	Iunicipality/City recognizes that it is a significant and
important initiative to er	nsure critical barriers are re	emoved to those in a crisis and seeking help;
NOW THEREFORE BE IT R		Town Council/Municipality/City endorses
this 988 crisis line initiati	ve:	

and that Staff be directed to send a letter indicating such support to the local MP, MPP, Federal Minister of Health, the CRTC and local area municipalities to indicate our support.

Alberta Beach Village Office

From: Soroka, Gerald - M.P. <Gerald.Soroka@parl.gc.ca>

Sent: February 12, 2021 2:34 PM

To:aboffice@albertabeach.com; svseba@telusplanet.net; bguyon@brazeau.ab.ca;
vbreton@telusplanet.net; burnstick8@gmail.com; info@villageofcaroline.com;
divisionsix@clearwatercountv.ca; mayor@draytonvallev.ca; mayor@edson.ca;

divisionsix@clearwatercounty.ca; mayor@draytonvalley.ca; mayor@edson.ca; Dale.Smith@mdgreenview.ab.ca; Mayor@hinton.ca; rireland@town.jasper.ab.ca; kbyrne@town.jasper.ab.ca; emily@milestonemunicipalservices.ca; jblakeman@lsac.ca;

lsac@lsac.ca; svseba@telusplanet.net; janet.jabush@mayerthorpe.ca;

rshaigec@parklandcounty.com; thomtom@telus.net; tburke@rockymtnhouse.com;

louis.belland@yahoo.com; svseba@telusplanet.net; bpoulin@xplornet.com; administration@wildwillowenterprises.com; ann.morrison@sunsetpoint.ca; rodraymond@thorsby.ca; csmylie@wabamun.ca; mayor@warburg.ca; lwstamand@gmail.com; svwestcove@outlook.com; d.evans@valquentin.ca; swassing@yellowheadcounty.ab.ca; administration@wildwillowenterprises.com;

russforyellowstone@yahoo.com; sylvia.roy@svofficepl.com; information@svofficepl.com; jeglinski@yellowheadcounty.ab.ca

Subject: Please note: Typo in English Draft 988 Motion

Attachments: 988 Municipal Council Motion - EN.docx

Good day,

It has been brought to my attention that there is a typo in the draft 988 Motion.

On the second page, line nine, the sentence should read:

AND WHEREAS in 2022 the United States will have in place a national 988 crisis hotline;

In the previous version the numbers was incorrectly written as: 98S

Updated version is attached to this email.

Once again, please forward a copy of this to your CAO.

Sorry for the inconvenience.

Regards,

Gerald Soroka, MP

Yellowhead

613-992-1653

Gerald.soroka@parl.gc.ca

Address
Address
Address
Address
By email:
Dear
On December 11 th , 2020, the House of Commons passed a motion introduced by Conservative MP Todd Doherty, through unanimous consent, to bring a national 3-digit suicide prevention hotline line to Canada.
That, given that the alarming rate of suicide in Canada constitutes a national health crisis, the House call on the government to take immediate action, in collaboration with our provinces, to establish a national suicide prevention hotline that consolidates all suicide crisis numbers into one easy to remember three-digit (988) hot-line that is accessible to all Canadians.
We're asking all municipalities across Canada to consider passing a motion similar, to the one below. In order to make 988 a reality, we must continue to put pressure on the government and the Canadian Radio-television and Telecommunications Commission (CRTC).
Personally, you can support the cause by signing our electronic petition at: https://petitions.ourcommons.ca/en/Petition/Details?Petition=e-2772
The past year has been a challenging year. Lives and livelihoods have been lost. We have begun to see the devastating impacts that COVID has had, through isolation, on the mental health of Canadians. The rates of suicide continue to rise. As elected officials and as leaders, and especially during this period of difficulty as a nation, Canadians are counting on all of us to make a difference.
Please consider passing this motion as soon as possible.
Sincerely,
MP Name

Riding

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Dr:	атт	m	OTI	Or	1:

Support for 988 Crisis Line

WHEREAS the Federal government has passed a motion to adopt 988, a National three-digit suicide and crisis hotline;

AND WHEREAS the ongoing COVID-19 pandemic has increased the demand for suicide prevention services by 200 per cent;

AND WHEREAS existing suicide prevention hotlines require the user to remember a 10-digit number and go through directories or be placed on hold;

AND WHEREAS in 2022 the United States will have in place a national 988 crisis hotline;

AND WHEREAS ______ Town Council/Municipality/City recognizes that it is a significant and important initiative to ensure critical barriers are removed to those in a crisis and seeking help;

NOW THEREFORE BE IT RESOLVED THAT ______ Town Council/Municipality/City endorses this 988 crisis line initiative;

and that Staff be directed to send a letter indicating such support to the local MP, MPP, Federal Minister of Health, the CRTC and local area municipalities to indicate our support.

Alberta Beach Village Office

toswald'

From:

Sent:	February 9, 2021 4:39 PM
To: Subject:	aboffice@albertabeach.com RE: Our File: 012767 JR/ Village of AB Beach
Julijeet.	Ne. out the orzhor mage or no beden
occurrence should be looked at t that are on village property that I come down. The other still remai village stands in regards to their of of record. Should you need any a	at the council should review this incident. I think that not only this particular here is still a remaining tree that is in immediate danger of falling. There were 2 trees I marked and notified the village as to needing attention. One obviously has already ins. If possible I would like to address the council pertaining to both and where the obligations are concerned. Feel free to use any or all of my correspondence as a matter dditional information feel free to contact me. I would like any inquiries and or done by written notice rather than verbal notice.
Original message From: aboffice@albertabeach.com Date: 2021-02-09 8:52 a.m. (GMT To: Subject: RE: Our File: 012767 JR/	Γ-07:00)
Good Morning Mr. Oswald,	
I have received your email in resp your gazebo due to the windstorr	oonse to our insurance adjuster's letter of January 29, 2021 regarding the damage to m.
The next regular Council Meeting Council Meeting?	is February 16, 2021, would you like your correspondence to be included in the
Thank you,	
Kathy Skwarchuk,	
CAO	
Alberta Beach	
Box 278	
Alberta Beach, AB	

TOE OAO .

Phone: 780-924-3181

Fax: 780-924-3313

aboffice@albertabeach.com

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From: _ toswald

Sent: February 2, 2021 3:09 PM **To:** aboffice@albertabeach.com

Subject: Fwd: Our "Calibri", sans-serif'>big t <toswald!

Date: Tue., Feb. 2, 2021, 2:49 p.m.

Subject: Re: Our "mailto:Joel.Ramcharan@priddlegibbs.com">Joel.Ramcharan@priddlegibbs.com>

I have reviewed the attached letter. I would suggest that the village take another look at this matter. I think that all the circumstances surrounding this claim should be addressed. The tree in question was in distress. The tree was clearly marked. The village was notified of the situation. The villages inaction does not releive them of some liability. A reasonable person could foresee that this tree would fall eventually. In this case it was aided by a stong wind but could of easily fallen of its own accord. I feel that I am being more than fair in this matter. I am asking for the cost of material only. There is also demolition, disposal and reconstruction which I am not asking for any compensation. While I don't concider myself to be a litigious person it is something that I am considering. I await your review of this matter.

On Fri., Jan. 29, 2021, 1:15 p.m. Joel Ramcharan, < Joel.Ramcharan@priddlegibbs.com > wrote:

Dear Mr. Oswald

Please see enclosed letter as it relates to the claim captioned above.

Regards,

Joel Ramcharan, B Admin, FCIP, CRM | Priddle Gibbs Adjusters

17313 - 107 Ave, Edmonton, AB T5S 1E5

Tel: (780) 489-3310, Ext. 208 | Fax: (780) 489-3320 | Email: joel.ramcharan@priddlegibbs.com

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From: Joel Ramcharan < Joel.Ramcharan@priddlegibbs.com>

Sent: January 29, 2021 1:09 PM
To: aboffice@albertabeach.com

Subject: Re: Tony Oswald/ Our Claim: 012767 JR

Attachments: 012767 -Letter.pdf

Good Afternoon Kathy

Enclosed please find a copy of the letter we will be emailing to Mr. Oswald this afternoon.

Regards,

Joel Ramcharan, B Admin, FCIP, CRM | Priddle Gibbs Adjusters

17313 - 107 Ave, Edmonton, AB T5S 1E5

Tel: (780) 489-3310, Ext. 208 | Fax: (780) 489-3320 | Email: joel.ramcharan@priddlegibbs.com



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January 29, 2021

Tony Oswald

Our File No:

012767 JR

Our Insured: Your Reference: Village of AB Beach

Your Reference Date of Loss:

Damaged Gazebo

Date of Loss.

January 19, 2021

Dear Mr. Oswald,

As you may recall, we are the adjusters appointed to represent the Village of Alberta Beach under the Genesis Reciprocal Insurance Exchange in conjunction with RMA Insurance. I appreciated the opportunity to speak with you last week regarding the damage to your gazebo.

We have spoken with the representatives of the Village of Alberta Beach regarding this incident and have confirmed the tree that came down on your backyard gazebo was a tree that was originally situated on village property.

We have determined that the cause of the felled tree was related to a severe weather event on January 19, 2021 (windstorm) and as such we do not believe there has been any negligence on the part of the Village of Alberta Beach.

As the damage to your gazebo is directly related to an "Act of God" we must respectfully deny all liability surrounding this matter on behalf of the Village of Alberta Beach and their liability insurers. You may wish to submit a claim for the damages to your own property insurers.

We are required to remind you that the Fair Practices Regulation, under the Alberta Insurance Act, requires me to inform you that all claims relating to this matter must be finalized within two years of the date that the cause of action arose, as outlined in the Alberta Limitations Act. Failure to comply with the above will result in your claim being statute barred.

Our File: 012767 JR

Yours truly,

Joel Ramcharan, B Admin, FCIP, CRM Phone: 780-489-3310 Ext 208

Email: joel.ramcharan@priddlegibbs.com



From:

Joel Ramcharan < Joel.Ramcharan@priddlegibbs.com>

Sent: To: January 27, 2021 2:27 PM aboffice@albertabeach.com

Subject:

Our Claim: 012767 JR/ Claimant: Tony Oswald

Attachments:

Letter-Village of Alberta Beach.pdf

Hello Village of Alberta Beach

Please see enclosed our Critical path letter which explains the claim process.

Regards,

Joel Ramcharan, B Admin, FCIP, CRM | Priddle Gibbs Adjusters

17313 - 107 Ave, Edmonton, AB T5S 1E5

Tel: (780) 489-3310, Ext. 208 | Fax: (780) 489-3320 | Email: joel.ramcharan@priddlegibbs.com



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January 27, 2021

Via email: aboffice@3web.com

VILLAGE OF ALBERTA BEACH Box 278 Alberta Beach, Alberta T0E 0A0

Re:

Our File #:

012767

Claimant: Date of Loss: Tony Oswald Jan 19, 2021

Circumstances:

Strong Winds / Damage to Gazebo

As you recall, we are the adjusters appointed to represent your liability insurers, the Genesis Reciprocal Insurance Exchange ("Genesis"), in conjunction with RMA Insurance. Thank you for taking the time to discuss this claim.

Claim Process

The role of the adjuster is to investigate the claim to determine policy coverage for the claim, assess your potential exposure to liability, and to quantify the value of the claim. We then seek instructions from Genesis on how they want to address the claim. The process and timeline for investigating a liability claim varies significantly, depending on the circumstances and severity of the claim.

Status Updates

We will provide you with routine status updates as the matter progresses, including when the following milestones are reached:

- Coverage confirmation, if any coverage issues have been identified
- Liability assessment
- Assignment of defence counsel, if applicable
- Claim resolution Third party settlement or liability denial, as applicable

Deductible

Your policy with Genesis has the following deductible that may apply to this claim:

17313 - 107 Avenue NW, Edmonton, AB T5S 1E5 contact@priddlegibbs.com

OFFICE 780 489 3310 FAX 780 489 3320

Our File: 012767

Deductible: \$1,000.00 (deductible being confirmed for new policy year)

Please note the deductible is only applicable if a claim is paid under your policy. The deductible does not apply to investigation or defence costs, or to bodily injury claims. We will provide you with instructions at such time that the deductible is payable, if applicable.

Genesis is taking steps to investigate coverage. Our ongoing handling of the matter is not to be construed as a confirmation of coverage. Genesis reserves all rights under the policy. We will update you once Genesis is in a better position to advise on coverage.

Action Required on Your Part

If additional information or documentation is required from you to assist in the investigation of this claim, we will advise at such time.

Going Forward

While we recognize this matter has been an inconvenience for you, we thank you for your assistance to date. We look forward to working with you and will keep you apprised of claim developments as outlined above.

If at any time including you have any questions or concerns, please do not hesitate to contact the writer to discuss.

Sincerely,

JOEL RAMCHARAN, B ADMIN, FCIP, CRM

Priddle Gibbs Adjusters

Phone: 780-489-3310 Ext 201

Email: joel.ramcharan@priddlegibbs.com



From:

aboffice@albertabeach.com

Sent:

January 26, 2021 9:56 AM

To:

'Joel Ramcharan'

Subject:

RE: Tony Oswald/ Our Claim: 012767 JR

Attachments:

SKM_C36821012609480.pdf

Good Morning Joel:

Thank you for the email.

- 1. Check your records to see if you have any communication with Tony Oswald regarding the dead trees behind his property?
 - I have checked for any correspondence or emails from Mr. Oswald and have not come across any, although he may have dealt directly with the past Public Works Manger at that time.
- 2. Kindly confirm whether the tree that came down on the Gazebo was one of the trees marked with a orange ribbon.
 - I have spoken with our Public Works Manager and the tree was NOT one of the ones marked.
- 3. Provide any other information you have on this incident.
 - I have no other information.
- 4. Provide Mr. Oswald's written claim once received in your office.
 - Please see attached email received from Mr. Oswald.

Thank you.

Kathy Skwarchuk, CAO Alberta Beach Box 278 Alberta Beach, AB TOE 0AO

Phone: 780-924-3181 Fax: 780-924-3313

aboffice@albertabeach.com

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From: Joel Ramcharan < Joel.Ramcharan@priddlegibbs.com>

Sent: January 22, 2021 3:36 PM **To:** aboffice@albertabeach.com

Cc: Joel Ramcharan < Joel. Ramcharan@priddlegibbs.com>

Subject: Tony Oswald/ Our Claim: 012767 JR

Hi Kathy.

It was a pleasure to speak with you this afternoon.

Can you please provide the following?

- 1. Check your records to see if you have any communication with Tony Oswald regarding the dead trees behind his property?
- 2. Kindly confirm whether the tree that came down on the Gazebo was one of the trees marked with a orange ribbon.
- 3. Provide any other information you have on this incident.
- 4. Provide Mr. Oswald's written claim once received in your office.

FYI: I spoke to Mr. Oswald 30 minutes ago.

Regards,

Joel Ramcharan, B Admin, FCIP, CRM | Priddle Gibbs Adjusters

17313 - 107 Ave, Edmonton, AB T5S 1E5

Tel: (780) 489-3310, Ext. 208 | Fax: (780) 489-3320 | Email: joel.ramcharan@priddlegibbs.com



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From: aboffice@albertabeach.com <aboffice@albertabeach.com>

Sent: Friday, January 22, 2021 10:35 AM
To: Phil Gibbs < phil.gibbs@priddlegibbs.com>
Subject: Re: Damage from Wind Storm

Good Morning Phil,

On Tuesday, January 19th Alberta Beach experienced a winter snow squall with very high winds, many people had shingles blown off etc. One of the residents in Alberta Beach had a tree come down on his gazebo. This tree was on Village property and broke in the windstorm, and, landed on his gazebo and damaged it. He has called our office to request the Village reimburse him for his gazebo. He said he paid \$1,200.00 for his gazebo and it is on sale right now for \$900.00. He would like to purchase it now while it is on sale. I have asked him to submit information and we would forward to our insurance Adjuster. His name is Tony Oswald, his address is 4307-47 Avenue and phone number is 780-721-8246. Once he sends in his information and request, then I will forward to you. I have attached pictures that our public works took. I am not sure the best way to handle this, can you please call him. If you have any further questions.

Kathy Skwarchuk, CAO Alberta Beach Box 278 Alberta Beach, AB **TOE 0A0**

Phone: 780-924-3181 Fax: 780-924-3313

aboffice@albertabeach.com

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From:

aboffice@albertabeach.com

Sent:

January 22, 2021 10:35 AM

To:

'Phil Gibbs'

Subject:

Re: Damage from Wind Storm

Attachments:

#4.jpg; Gazebo Damage #1.jpg

Good Morning Phil,

On Tuesday, January 19th Alberta Beach experienced a winter snow squall with very high winds, many people had shingles blown off etc. One of the residents in Alberta Beach had a tree come down on his gazebo. This tree was on Village property and broke in the windstorm, and, landed on his gazebo and damaged it. He has called our office to request the Village reimburse him for his gazebo. He said he paid \$1,200.00 for his gazebo and it is on sale right now for \$900.00. He would like to purchase it now while it is on sale. I have asked him to submit information and we would forward to our insurance Adjuster. His name is Tony Oswald, his address is 4307-47 Avenue and phone number is 780-721-8246. Once he sends in his information and request, then I will forward to you. I have attached pictures that our public works took. I am not sure the best way to handle this, can you please call him. If you have any further questions.

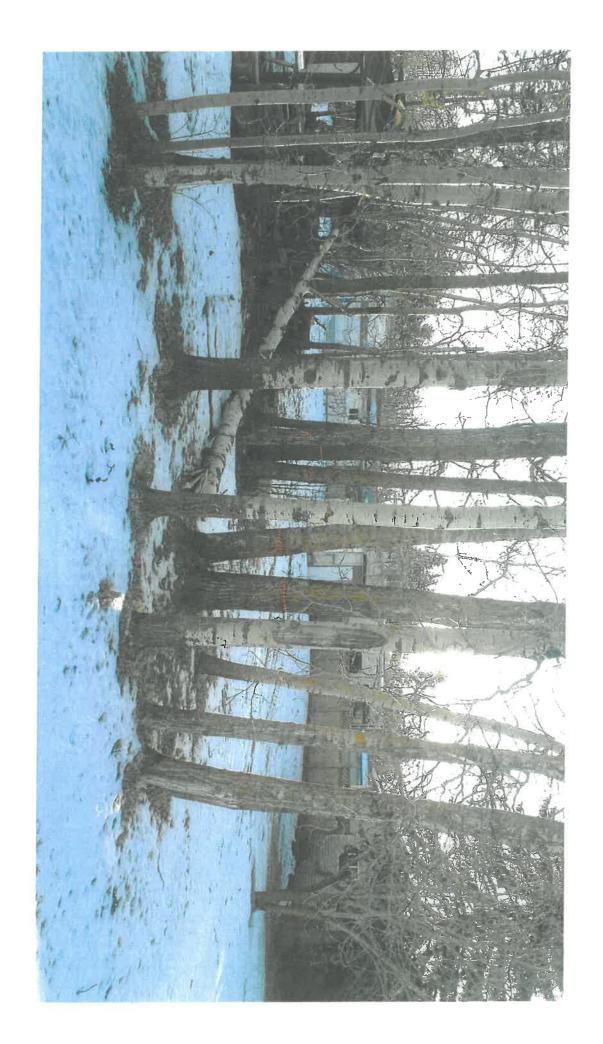
Kathy Skwarchuk, CAO Alberta Beach Box 278 Alberta Beach, AB TOE 0AO

Phone: 780-924-3181 Fax: 780-924-3313

aboffice@albertabeach.com

This email is intended for the use of the recipient or entity to which it has been addressed. This email may contain information that is privileged confidential, and/or protected by law and is to be held in strict confidence. Please contact us immediately if you are not the intended recipient of this communication, and do not copy, distribute or take action relying on it. Any communication received in error, or subsequent reply should be deleted or destroyed.





From:

toswald

Sent:

January 25, 2021 1:53 PM

To:

aboffice@albertabeach.com

Subject:

property damage

Attachments:

20210122_141606_resized.jpg; Resized_20210120_083932_resized.jpeg; 20210122_

141619_resized.jpg

I received a text message from my neighbor last week indicating that a tree had fallen onto my gazebo. My address is 4307 47 ave alberta Beach. I had contacted the village sometime in the last year to let them know that there were trees on their property that were dying or dead and were in danger of falling. I marked the trees in question with ribbon. Since I am not a full time resident I do not know if anyone looked at the trees. During a wind storm that occured January 19th, 2021 one tree split and fell. The portion that split fell directly onto a gazebo on my property. The tree that fell was one that was previously ribboned. Because the village had prior knowledge of the danger I feel that they should be liable for the damage. The gazebo cannot be salvaged. I purchased an identical one at Canadian tire. The cost was \$944.93 including GST. I have attached a photo of the damage.

Sent from my Galaxy





From: Richard Barham <richard.barham@crasc.ca>

Sent: February 10, 2021 1:02 PM aboffice@albertabeach.com

Cc: Archie Grover

Subject: CRASC ARB AGREEMENT 2021 - PARTICIPANT - ALBERTA BEACH

Attachments: ARB Agreement 2021 - PARTICIPANT - BASE - FINAL - 210210.pdf; ARB Agreement

2021 - PARTICIPANT - LETTER - FINAL - 210210.pdf

VILLAGE OF ALBERTA BEACH

Kathy:

Please find attached an electronic copy in PDF format of CRASC's Service Agreement to provide Assessment Review Board Services to your municipality for the year 2021, along with an important explanatory letter.

Please open and follow the instructions in the letter.

Thank you for your attention to this matter and we look forward to serving your ARB needs in 2021.

Regards,

Richard Barham

Richard Barham
Finance Officer
Capital Region Assessment Services Commission (CRASC)
11810 Kingsway
Edmonton, AB T5G 0X5

Tel: 780 482 1451

CAPITAL REGION ASSESSMENT SERVICES COMMISSION

11810 Kingsway, Edmonton, Alberta, T5G 0X5 TEL: 780 482 1451 EMAIL: richard.barham@crasc.ca

10 February 2021

Dear CRASC ARB PARTICIPANT:

Please find attached an electronic copy in PDF format of CRASC's Service Agreement to provide Assessment Review Board Services to your municipality for the year 2021.

Would you please follow the instructions below:

- 1. Print out ONE copy of the Agreement.
- 2. Complete the following sections of the Agreement:
 - Page 1, Print the Name of your municipality on the line immediately above (the "Participant").
 - Page 8, Complete all information lines under PARTICIPANT'S SERVICE ADDRESS.
- 3. Make a copy of the above, semi-completed Agreement.
- 4. For BOTH Agreements Page 6, Complete all sections under the heading THE PARTICIPANT. This will result in both copies bearing ORIGINAL signatures.
- 5. Return BOTH Agreements by mail to Richard Barham, Finance Officer, at the mailing address above.

On receipt of your signed Agreements, the Commission will sign both Agreements and return one to you for your records and retain the other on our files for our records.

Please direct any questions to me at richard.barham@crasc.ca.

Thank you for your attention to this matter and we look forward to serving your ARB needs.

Richard Barham Finance Officer CRASC Capital Region Assessment Services Commission

C.R.A.S.C.

PARTICIPANT MEMORANDUM OF AGREEMENT 2021

LOCAL ASSESSMENT REVIEW BOARDS and COMPOSITE ASSESSMENT REVIEW BOARDS

MEMORANDUM OF AGREEMENT

made between

CAPITAL REGION ASSESSMENT SERVICES COMMISSION

(the "Commission")

and



WHEREAS the Commission will provide specific administrative and financial services relating to Assessment Review Boards to the Participant;

AND WHEREAS the Commission and the Participant have reached agreement with respect to the terms and conditions under which the Commission will provide such administrative and financial services to the Participant;

NOW THEREFORE the Commission and the Participant agree as follows:

1. **DEFINITIONS**

- a. "Board" means the Board of Directors of the Capital Region Assessment Services Commission.
- **b.** "Commission" means the Capital Region Assessment Services Commission.
- c. "Fiscal Year" means 1st of January to 31st of December.
- d. "Participant" and "Municipality" mean a municipal authority NOT listed in the Appendix to Alberta Regulation 77/96, as amended from time to time; and which has engaged the services of the Commission to provide specific administrative and financial services relating to Assessment Review Boards.

- e. "Panellist" means an individual who is accredited by the Alberta Municipal Government Board to hear Assessment Complaints.
- f. "Assessment Review Board" and "ARB" mean either the Local Assessment Review Board ("LARB") or the Composite Assessment Review Board ("CARB").
- **g.** "Assessment Clerk" means an individual who is accredited by the Alberta Municipal Government Board to perform assessment clerk services.
- h. "Term" means the term of this agreement as set forth in Section 2.

2. TERM

The term of this agreement is as specified in Schedule "A" hereto. The Term may be extended by an agreement in writing between the parties hereto before the end of the Term, failing which the agreement shall terminate at the end of the Term without notice by either party to the other and without additional compensation from the Participant to the Commission.

3. OBLIGATIONS of the COMMISSION

The Commission will provide a full ARB administration service from receipt of Complaint forms through to distribution of the hearing decisions, including, but not limited to:

- a. receiving Complaint forms from the Participant, acknowledging their receipt, setting up hearings, preparing and distributing Notices of Hearings, attending each hearing and distributing the decision.
- b. maintaining a Panellist pool sufficient to respond to the Participant's requirements for Assessment Review Board hearings.
- **c.** annually providing the Participant with:
 - i. a list of Commission approved Panellists to be approved by the Participant as the designated pool of Panellists from which the Commission can draw from to fill its hearing needs;
 - ii. the name of the chair of the LARB and CARB;
 - iii. the name of the Assessment Clerk of the LARB and CARB.

- d. apprising the Participant of such information relevant and necessary for the performance of its legislated duties and responsibilities with respect to Assessment Review Boards.
- e. providing an Assessment Clerk at Assessment Review Board hearings, unless the Participant informs the Commission of its wish to provide its own Assessment Clerk.
- f. assisting the Panellists to prepare a written decision from each hearing and distributing the decision to the appropriate parties. NOTE The decisions, reasons therefore and the writing of the decision are the responsibility of the hearing panellists. The clerk will provide only administrative and clerical assistance to this function.
- g. preparing, and distributing to the Participant, appropriate administrative and operating policies and procedures relating to Assessment Review Boards.
- h. annually meeting with the Panellists to review activities and ensure that the Panellists are current with respect to Assessment Review Board hearing information.

Panellist Nominations:

While it is the policy of the Commission to, wherever possible, draw its pool of panellists only from its members; from time to time the Commission may contact Participants seeking nominations of suitable individuals who may be appointed as potential Panellists so that an acceptable pool of accredited Panellists can be maintained. The determination of the Panellist pool rests solely with the Commission.

Should the Commission decide to accept the Participant's nominee, the Commission will contact the Participant's nominee to outline the requirements for being considered as a Panellist and inform the nominee of pending training and accreditation requirements and opportunities. Upon successful accreditation, the nominee will be entered on the Commission's Panellist pool registry as maintained by the Commission.

4. OBLIGATIONS of the PARTICIPANT

The Participant will cooperate with the Commission to ensure the smooth running of the Commission's ARB practices and procedures, including, but not limited to:

- a. at the commencement of each year of this agreement (and no later than the 15th of February of each year), the Participant will provide to the Commission its total parcel count as at the 1st of January of each year.

 NOTE This parcel count will be used to calculate the total per parcel fees due in accordance with Schedule "A" to this agreement.
- b. annually appointing the list of Commission Panellists, the name of the chair of the LARB and CARB and the name of the Assessment Clerk, provided to the Participant by the Commission each year. NOTE The Commission draws from only its own designated pool of Panellists to sit on Commission administered hearings.
- c. providing to the Commission immediate notification by email when a completed Assessment Review Board Complaint has been filed with the Participant.
- d. for each complaint, promptly scanning and emailing the following to the Commission: (IMPORTANT Where the following documentation contains colour, the document should be scanned in colour.)
 - Assessment Review Board Complaint form
 - Assessment Complaints Agent Authorization form if appropriate
 - Proof of payment of applicable complaint fee
 - All other documentation provided by the complainant accompanying the ARB Complaint form
 - Copy of the assessment notice or combined assessment/tax notice that is the subject of the complaint
 - Confirmation of the date that the complaint was received by the Participant and that the complaint was received within the deadline for submission of complaints.
- e. when requested by the Commission, providing a suitable meeting room for the Assessment Review Board hearing without charge to the Commission.

5. FEES and EXPENSES

Each year the Board will review the budget for Assessment Review Board services and will establish such fees as it deems appropriate. Annually, the Participant will be informed as to what the forthcoming year's fees will be. Effective at the commencement of this Agreement, these approved fees and expenses are as shown in Schedule "A" and they will remain in effect for the remaining years of this agreement unless changed by the Board.

The Commission will invoice each Participant for the applicable fees and expenses listed in Schedule "A" and the Participant will pay those invoices in a timely manner.

6. PARTICIPANT INFORMATION

All Participant information relating to the Assessment Review Board complaints is deemed the property of the Participant.

Other than for the proper functioning of the Assessment Review Board process, the Commission will not disclose or make known to any person the Participant information or any matter or thing which comes to the knowledge of or is disclosed to the Commission by reason of this Agreement and shall retain all such knowledge as confidential, unless the Commission is required by law, or is expressly authorized by the Participant in writing, to disclose or make known the knowledge.

Where Participant information, whether paper or electronic, is in the temporary possession or control of the Commission, the Commission will ensure the security and safety of all data and allow only authorized access to the Participant information.

7. TERMINATION

A Participant shall be entitled to terminate this agreement upon six (6) months written notice together with payment of the annual fees for the balance of the Term.

The Commission reserves the right to terminate this agreement upon twelve (12) months written notice to the Participant.

8. SURVIVAL

The provisions of this agreement, which by their context are meant to survive the expiry or earlier termination of this agreement, shall so survive for the benefit of the party relying upon the same.

9. NOTICE

Whether or not so stipulated herein, all notices, communication, requests and statements required or permitted hereunder shall be in writing.

10. ASSIGNMENT

This agreement or any rights arising out of this agreement shall not be assigned by either party hereto without the other party's prior written consent, which consent shall not be arbitrarily withheld.

11. ENTIRE AGREEMENT

This agreement represents the entire agreement between the parties with respect to the subject matter hereof.

12. AMENDMENTS

This agreement can be modified, amended or assigned only by a written instrument duly executed by the parties.

IN WITNESS WHEREOF the parties hereto have executed this agreement by the hands of their respective, properly authorized officers, on their behalf.

THE COMMISSION:	CAPITAL REGION ASSE	SSMENT SERVICES	
Per: Authorized Signature	Name		1
THE PARTICIPANT:	Name of Participant		_
Per: Authorized Signature	Name		L

SCHEDULE "A"

TERM of AGREEMENT

The Term of this agreement is for the period from 1 January 2021 to 31 December 2021.

FEES and EXPENSES

The compensation payable by the Participant to the Commission for its performance of this agreement is as follows:

1. Annual Fees per Participant - Per Fiscal Year

- a. Core fee of \$800, plus;
- b. Per parcel fee of \$0.30, based on the number of Participant's parcels on file with the Commission as at 1 January of each year of the agreement.

2. Hearing Fees - Per Hearing

Assessment Review Board Hearing Fees are chargeable to the Participant for each hearing and depend on the services provided to the Participant for each hearing. Not all fees may be chargeable for every hearing.

a. Hearing Fees: \$400 for each LARB.

\$400 for each CARB.

b. Panellist Fees: \$200 per Panellist for each hearing day or part day and

associated travel that do not exceed four (4) hours.

\$300 per Panellist for each hearing day or part day and

associated travel that exceed four (4) hours.

c. Assessment Clerk: \$650 for each hearing day or part day where the

Commission provides an Assessment Clerk.

3. Hearing Expenses

Travel and subsistence expenses are chargeable to the Participant for each hearing. These are based on the rates established from time to time by the Government of Alberta for its Boards, Agencies and Commissions.

COMMISSION'S SERVICE ADDRESS

The Commission's address for service of notices is:

Capital Region Assessment Services Commission 11810 Kingsway Edmonton, Alberta T5G 0X5

Telephone: 780-451-4191 Email: info@crasc.ca

PARTICIPANT'S SERVICE ADDRESS

The Participant's address for service of notices is:

Name of munic	ipality Alberta Beach
Contact name_	Kothy Skwarchuk, cAO
Address 1	30× 278
Address 2	
City	Alberto Beach AB
Postal Code	TOE OAO
Telephone:	780-924-3181
Email:	aboffice@albertobeach.com

COMMUNITY PEACE OFFICER SERVICES AGREEMENT ENTERED INTO THIS ___ DAY OF _____, A.D. 2021.

BETWEEN

ALBERTA BEACH
A Municipal Corporation in the Province of Alberta
(hereinafter referred to as "Alberta Beach")
OF THE FIRST PART

-and-

THE SUMMER VILLAGE OF SUNSET POINT
A Municipal Corporation in the Province of Alberta
(hereinafter referred to as "Sunset Point")

OF THE SECOND PART

WHEREAS, Alberta Beach has entered into an employment agreement with a Community Peace Officer(s) to supply Community Peace Officer Services, Bylaw Enforcement and Animal Control to Alberta Beach;

AND WHEREAS, Sunset Point desires to enter into an agreement with Alberta Beach to obtain the Community Peace Officer, Bylaw Enforcement and Animal Control services of the Community Peace Officer(s) within the boundaries of Sunset Point;

AND WHEREAS, the Community Peace Officer(s) has been appointed by the Alberta Solicitor General as having jurisdiction to enforce within the boundaries of Alberta Beach and Sunset Point the Traffic Safety Act, the Animal Protection Act, the Dangerous Dogs Act, the Environmental Protection and Enhancement Act Part 9 Division 2, the Gaming, Liquor and Cannabis Act Sections 83/84/87/89/107/108 section 115 subject to section 53 of the Police Act (Gaming, Liquor and Cannabis Regulation AR 143/96 section 87.1), the Innkeepers Act, the Petty Trespass Act, the Provincial Offences Procedure Act, the Tobacco and Smoking Reduction Act and the Trespass to Premises Act;

AND WHEREAS, the Peace Officer Act, Statutes of Alberta, 2006, Chapter P-3.5, and amendments thereto, requires that an agreement be entered into between Alberta Beach and Sunset Point with respect to the provisions of Community Peace Officer Services through the employment of a Community Peace Officer(s);

NOW THEREFORE THIS AGREEMENT WITHNESSETH, that in consideration of the terms, conditions, covenants and provisos contained herein to be observed and performed, the parties hereto agree as follows:

- 1. The term of this Agreement shall commence on January 1, 2021 and terminate on December 31, 2021.
- Alberta Beach agrees to supply Community Peace Officer, Bylaw Enforcement and Animal Control services through the Community Peace Officer(s) employed by Alberta Beach to Sunset Point. The Community Peace Officer, Bylaw Enforcement and Animal Control services provided to Sunset Point shall include the following:

COMMUNITY PEACE OFFICER SERVICES AGREEMENT PAGE 2

- a) Enforcement of the Animal Control By-law #235, the Noise Control Bylaw #287, the Off Highway Vehicle Bylaw #273, the Parking Bylaw #259, the Traffic Bylaw #245, the Fireworks Bylaw #302 and the Untidy and Unsightly Premises Bylaw #140 of the Summer Village of Sunset Point within the boundaries of Sunset Point;
- Enforcement of the Traffic Safety Act, the Animal Protection Act, the Dangerous Dogs Act, the Environmental Protection and Enhancement Act Part 9 Division 2, The Gaming, Liquor and Cannabis Act Sections 83/84/87/89/107/108 section 115 subject to section 53 of the Police Act (Gaming, Liquor and Cannabis Regulation AR 143/96 section 87.1), the Innkeepers Act, the Petty Trespass Act, the Provincial Offences Procedures Act, the Tobacco and Smoking Reduction Act and the Trespass to Premises Act within the boundaries of Sunset Point.
- 3. Sunset Point agrees to pay Alberta Beach the sums for the Community Peace Officer, Bylaw Enforcement and Animal Control services supplied pursuant to this agreement as stated in Schedule "A".
- 4. Alberta Beach acknowledges that Sunset Point is to receive all fines relating to the enforcement of Provincial Statutes received by Sunset Point as generated from the Community Peace Officer services supplied by the Community Peace Officer(s) pursuant to this agreement. Sunset Point agrees to cover all court or legal costs incurred from enforcing provincial statutes and local bylaw violations in Sunset Point.
- 5. Sunset Point agrees to insure Alberta Beach's Community Peace Officer(s) under its general liability insurance policy to cover the performance of the Community Peace Officer, Bylaw Enforcement and Animal Control services by the Community Peace Officer(s) for Sunset Point pursuant to this Agreement. This insurance coverage shall be maintained by Sunset Point in full force and effect throughout the term of this agreement.
- 6. Sunset Point agrees to be liable for the actions of the Community Peace Officer(s) while the Community Peace Officer is on duty or otherwise supplying Community Peace Officer, Bylaw Enforcement and Animal Control services to Sunset Point pursuant to this agreement.
- 7. Sunset Point agrees to supply the Community Peace Officer(s) with a copy of the local bylaws as mentioned in item 2.a) above. Sunset Point also agrees it is the responsibility of Sunset Point to advise and forward to the Community Peace Officer(s) a copy of any revised or amended bylaw.
- 8. Sunset Point shall receive from the Community Peace Officer(s) reports on all Community Peace Officer Services supplied by the Community Peace Officer(s) to Sunset Point upon their request.
- 9. Sunset Point acknowledges that any written complaints received by it with respect to the provision of Community Peace Officer, Bylaw Enforcement and Animal Control services by the Community Peace Officer(s) pursuant to this agreement shall be immediately forwarded to the C.A.O. of Alberta Beach. Any disciplinary action taken against the Community Peace Officer(s) as a result of these complaints shall be the responsibility of Alberta Beach.

COMMUNITY PEACE OFFICER SERVICES AGREEMENT PAGE 3

- 10. If the appointment of the Community Peace Officer(s) from the Alberta Solicitor General for the jurisdiction of Sunset Point is terminated, then this agreement shall similarly immediately be terminated. Notwithstanding the foregoing, either party may terminate this agreement by providing three months notice in writing to the other. This agreement can be amended by mutual agreement with two months written notice.
- 11. This agreement will be renewed annually. Alberta Beach agrees to provide Sunset Point with CPO Services as per the terms of the current agreement on a month to month basis for the 1st quarter of the following year while the renewal agreement is being finalized.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

Per:
Mayor
Per:
Chief Administrative Officer
SUMMER VILLAGE OF SUNSET POINT
Per:
Mayor
Per:
Chief Administrative Officer

ALBERTA BEACH

COMMUNITY PEACE OFFICER SERVICES AGREEMENT PAGE 4

SCHEDULE "A"

Alberta Beach will provide "Community Peace Officer", "Bylaw Enforcement" and "Animal Control" services to the Summer Village of Sunset Point on a cost sharing basis of 80/20 split. The cost sharing will be based on the patrol department 2021 estimated budget of \$118,500.00 less contracted revenue. (the contracted revenue for 2021 is estimated at \$9,360.00)

The following sums are due and payable by the Summer Village of Sunset Point to Alberta Beach for "Community Peace Officer", "Bylaw Enforcement" and "Animal Control" services on the dates specified:

2021

Fee for service \$21,828.00

Due Quarterly upon receipt of invoice

COMMUNITY PEACE OFFICER SERVICES AGREEMENT ENTERED INTO THIS ____ DAY OF ______, A.D. 2021.

BETWEEN

ALBERTA BEACH
A Municipal Corporation in the Province of Alberta
(hereinafter referred to as "Alberta Beach")
OF THE FIRST PART

-and-

THE SUMMER VILLAGE OF VAL QUENTIN

A Municipal Corporation in the Province of Alberta
(hereinafter referred to as "Val Quentin")

OF THE SECOND PART

WHEREAS, Alberta Beach has entered into an employment agreement with a Community Peace Officer(s) to supply Community Peace Officer Services, Bylaw Enforcement and Animal Control to Alberta Beach;

AND WHEREAS, Val Quentin desires to enter into an agreement with Alberta Beach to obtain the Community Peace Officer, Bylaw Enforcement and Animal Control services of the Community Peace Officer(s) within the boundaries of Val Quentin;

AND WHEREAS, the Community Peace Officer(s) has been appointed by the Alberta Solicitor General as having jurisdiction to enforce within the boundaries of Alberta Beach and Val Quentin the Traffic Safety Act, the Animal Protection Act, the Dangerous Dogs Act, the Environmental Protection and Enhancement Act Part 9 Division 2, the Gaming, Liquor and Cannabis Act Sections 83/84/87/89/107/108 section 115 subject to section 53 of the Police Act (Gaming, Liquor and Cannabis Regulation AR 143/96 section 87.1) the Innkeepers Act, the Petty Trespass Act, the Provincial Offences Procedure Act, the Tobacco and Smoking Reduction Act and the Trespass to Premises Act;

AND WHEREAS, the Peace Officer Act, Statutes of Alberta, 2006, Chapter P-3.5, and amendments thereto, requires that an agreement be entered into between Alberta Beach and Val Quentin with respect to the provisions of Community Peace Officer Services through the employment of a Community Peace Officer(s);

NOW THEREFORE THIS AGREEMENT WITHNESSETH, that in consideration of the terms, conditions, covenants and provisos contained herein to be observed and performed, the parties hereto agree as follows:

- The term of this Agreement shall commence on January 1, 2021 and terminate on December 31, 2021 unless automatically renewed as per clause 11.
- 2. Alberta Beach agrees to supply Community Peace Officer, Bylaw Enforcement and Animal Control services through the Community Peace Officer(s) employed by Alberta Beach to Val Quentin. The Community Peace Officer, Bylaw Enforcement and Animal Control services provided to Val Quentin shall include the following:

COMMUNITY PEACE OFFICER SERVICES AGREEMENT PAGE 2

- a) Enforcement of the Animal Control By-law, the Noise Bylaw, the Off Highway Bylaw and the Fireworks Bylaw of the Summer Village of Val Quentin within the boundaries of Val Quentin;
- b) Enforcement of the Traffic Safety Act, the Animal Protection Act, the Dangerous Dogs Act, the Environmental Protection and Enhancement Act Part 9 Division 2, the Gaming, Liquor and Cannabis Act Sections 83/84/87/89/107/108 section 115 subject to section 53 of the Police Act, Act (Gaming, Liquor and Cannabis Regulation AR 143/96 section 87.1) the Innkeepers Act, the Petty Trespass Act, the Provincial Offences Procedure Act, the Tobacco and Smoking Reduction Act and the Trespass to Premises Act within the boundaries of Val Quentin.
- 3. Val Quentin agrees to pay Alberta Beach the sums for the Community Peace Officer, Bylaw Enforcement and Animal Control services supplied pursuant to this agreement as stated in Schedule "A".
- 4. Alberta Beach acknowledges that Val Quentin is to receive all fines relating to the enforcement of Provincial Statutes received by Val Quentin as generated from the Community Peace Officer services supplied by the Community Peace Officer(s) pursuant to this agreement. Val Quentin agrees to cover all court or legal costs incurred from enforcing provincial statutes and local bylaw violations in Val Quentin.
- 5. Val Quentin agrees to insure Alberta Beach's Community Peace Officer(s) under its general liability insurance policy to cover the performance of the Community Peace Officer, Bylaw Enforcement and Animal Control services by the Community Peace Officer(s) for Val Quentin pursuant to this Agreement. This insurance coverage shall be maintained by Val Quentin in full force and effect throughout the term of this agreement.
- 6. Val Quentin agrees to be liable for the actions of the Community Peace Officer(s) while the Community Peace Officer is on duty or otherwise supplying Community Peace Officer, Bylaw Enforcement and Animal Control services to Val Quentin pursuant to this agreement.
- 7. Val Quentin agrees to supply the Community Peace Officer(s) with a copy of the local bylaws as mentioned in item 2.a) above. Val Quentin also agrees it is the responsibility of Val Quentin to advise and forward to the Community Peace Officer(s) a copy of any revised or amended bylaw.
- 8. Val Quentin shall receive from the Community Peace Officer(s) reports on all Community Peace Officer Services supplied by the Community Peace Officer(s) to Val Quentin upon their request.
- 9. Val Quentin acknowledges that any written complaints received by it with respect to the provision of Community Peace Officer, Bylaw Enforcement and Animal Control services by the Community Peace Officer(s) pursuant to this agreement shall be immediately forwarded to the CAO of Alberta Beach. Any disciplinary action taken against the Community Peace Officer(s) as a result of these complaints shall be the responsibility of Alberta Beach.

COMMUNITY PEACE OFFICER SERVICES AGREEMENT PAGE 3

- 10. If the appointment of the Community Peace Officer(s) from the Alberta Solicitor General for the jurisdiction of Val Quentin is terminated, then this agreement shall similarly immediately be terminated. Notwithstanding the foregoing, either party may terminate this agreement by providing three months notice in writing to the other. This agreement can be amended by mutual agreement with two months written notice.
- 11. This agreement will automatically renew at the end of each term for a further term of one year unless either party gives the other written notice of termination of at least 90 days prior to the end of the current term.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the day and year first above written.

Per:
Mayor
Per:
Chief Administrative Officer
SUMMER VILLAGE OF VAL QUENTIN
Per:
Mayor
Per:

Chief Administrative Officer

ALBERTA BEACH

COMMUNITY PEACE OFFICER SERVICES AGREEMENT PAGE 4

SCHEDULE "A"

Alberta Beach will provide two (2.0) hours per week "Community Peace Officer", "Bylaw Enforcement" and "Animal Control" services to the Summer Village of Val Quentin.

The following sums are due and payable by the Summer Village of Val Quentin to Alberta Beach for "Community Peace Officer", "Bylaw Enforcement" and "Animal Control" services on the dates specified:

2021

Fee for service

\$110.00 per hour

Due

Quarterly - upon receipt of invoice

Additional hours at a rate of \$110.00 per hour.