Protesting Smoke: A Social and Political History of Vancouver Air Pollution

By

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B.A. (Honours), Concordia University, 1977
M.A., Simon Fraser University, 1979

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Abstract

This thesis examines social and political responses to poor air quality in Vancouver, British Columbia from the 1950s through the early 1970s. Businesses dependent on local markets, the City of Vancouver and medical health officers organized the first civic efforts to strengthen air pollution control in the early 1950s. The provincial government only engaged with the air pollution issue publicly in the early 1960s, and delayed developing clear policy until 1969. Social Credit politicians and representatives of exporting industries generally characterized pollution impacts as aesthetic rather than as harmful to health. This characterization helped justify keeping air policy implementation at the municipal level. Excepting Vancouver, this level proved incapable of dealing with the problem. Public protests of poor air quality increased over time even as visible pollutants decreased. The capitalist state's imperative to support large corporate interests helps explain the Province's consistently weak stance on air pollution policy. However, the contradictory imperative of democratic legitimation helps explain policy shifts during the Bennett administration, such as occurred during the public wave of environmental concern in the late 1960s. Vancouver's consistently stronger stand on air pollution was supported by the local market oriented business community, market shifts to liquid fuels and deindustrialization. Vancouver's policy experience and federal-provincial political rivalries best explain Greater Vancouver's retention of industrial air pollution management when the Bennett administration finally asserted control over this pollution source for the rest of the province.

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Introduction

On a beautiful day in late May 1969, dozens of journalists piled into a chartered DC-8 to fly over Howe Sound, the southeast coast of Vancouver Island and Greater Vancouver. They were looking for signs of pollution and environmental degradation. It was not hard to find. *Vancouver Province* columnist Lorne Parton described scarred hills from clear-cut logging, miles of "yellow crud" in the coastal waters, "plumes of acrid effluent pouring up and over green valleys from the stacks of pulp mills" and, approaching Vancouver from the southwest, "the city swathed in a brown, frightening halo of smog."[1]

The journalists were not alone in observing pollution and the deterioration of nature all about. The late 1960s saw the beginning of the modern environmental movement across most western countries. In Vancouver, media were filled with reporting, opinions and images reflecting local and global pollution, its consequences and possible solutions. It was not unusual for residents to demonstrate during these years against bad air quality associated with such emission sources as bulk ship loading facilities and oil refineries. Many residents spoke at local government council meetings, a few even bringing buckets of coal or mucky water in theatrical show-and-tell displays. Many attended anti-pollution meetings organized by newly formed environmental groups or older ones that expanded their focus to include the modern clean air and water concerns. One new organization was the Society for Pollution and Environmental Control, or SPEC. Its membership spread rapidly across all regions of British Columbia only months after its formation. In the fervour of the time, British Columbia's Premier W. A. C. Bennett declared the environment and pollution control to be the top priority of the election

that he called for the autumn of 1969. A few days after the election call, natural resources Minister Ray Williston announced the province's first credible air pollution policy.

But air pollution had been a public issue in the province's largest city and its suburbs since at least the early 1950s. The Vancouver Air Pollution Control Society (APCS), formed in 1952, established a reputation for itself across North America by producing two popular documentary films on the topic. In the 1950s, major newspapers regularly covered air pollution stories, while residents voiced complaints and sometimes picketed offending industrial plants. The annual British Columbia Natural Resources Conference organized an expert panel discussion on air pollution in 1954. The City of Vancouver had a very limited by-law covering air pollution dating from the 1920s, which it replaced with a much more detailed regulation in 1955. There is no question that the public significance of the air pollution issue started to peak as a major theme of the modern environmental wave at the end of the 1960s. But the roots of the air pollution issue in these two preceding decades in Vancouver and in British Columbia have not been explored and rarely draw mention in histories and analyses of the environmental movement.

The current standard history of British Columbia, Jean Barman's *West Beyond the West*, has no references to air (or water) pollution, although the environmental consequences of natural resource development are addressed.[2] David Mitchell's eulogistic history of W. A. C. Bennett's rule in British Columbia contains relatively few environmental references, and only concerning natural resource development.[3] Even the critical political history by Martin Robin, *Pillars of Profit*, has only a couple of general paragraphs on British Columbia's 1955 Pollution Control Act. It ignores, for example, the 1968 battle between Minister Williston and Health

Minister Ralph Loffmark over who would control air pollution policy.[4] Both Patricia E. Roy's *Vancouver: An Illustrated History* and Walter Hardwick's *Vancouver* do address the movement of new and existing heavy industrial facilities away from False Creek to more spacious locations. However, they do not directly discuss the distributive impact this shift had in decreasing air pollution in Vancouver, but worsening it in the southern and western suburbs.[5] It is not a surprise that other, generally growth oriented if not boosterish, histories of Vancouver omit the grimy side of the city.[6] A telling comparison by 1920s mayor C. E. Tisdall is noted in Eric Nicol's history of Vancouver. Tisdall is paraphrased as saying that air quality was worse in Vancouver than in his boyhood home in "Black Country" England. Despite this, Nicol still characterizes this situation as "merely a continuing nuisance" to Vancouver residents, a theme that will be further explored in Chapter 3.[7]

The neglect of air pollution in environmental histories of British Columbia and in Canada generally is noteworthy.[8] A long historiographic essay by Graeme Wynn in 2004 on British Columbian environmental historical writing does not include air pollution as a topic, nor any citations of specific studies.[9] Wynn and Timothy Oke's *Vancouver and Its Regions* does, however, provide some relevant essays on Vancouver's physical development with various references to air quality.[10] Doug Macdonald's *The Politics of Pollution* gives an overview of federal and provincial air pollution control policies, but with most policy examples taken from Ontario.[11] Local air pollution is treated briefly and mainly in reference to car culture in Laurel MacDowell's *An Environmental History of Canada*.[12] It seems fair to say that most British Columbian, and Canadian, environmental history writing has tended to focus on natural resource issues.[13] This focus is perhaps understandable given Canada's geographic scope, low

population density and the importance of these resources to its economic and development history. There can be an alluring quality to environmental history writing with scope for both grandeur and a sense of loss, or even tragedy, when degradation of grand vistas and appealing species is the theme. Such allure and grandeur is wholly lacking when pollution is the topic. For example, the tone of Jamie Benidickson's history of water pollution and sewage in the United States, Canada and England, *The Culture of Flushing* is ironic throughout, which seems appropriate to the topic.[14]

A point of debate in environmental literature concerns the complex relationship of human presence to the mostly socially constructed pristineness of natural areas, supposedly unaffected by economic or social activity.[15] The debate revolves around the extent to which the preservation of nature means the exclusion of mundane human concerns. The converse side of this issue, and equally problematic, is the conceptual separation of larger urban areas from nature and natural qualities. This exclusion is partly understandable. Water courses in cities are frequently channeled; "natural" areas are mostly carefully maintained parks; botanical species are planted and groomed; while animal species are niche adapted to city life. Perhaps environmental historians have tended to neglect built-up urban areas because these areas are not seen as places that include nature in any substantive way.[16]

Regardless of the common sense that nature is separate from cities, obviously no physical escape from air is possible. Urban areas contain both the main sources of polluting emissions and the populations subject to bad air quality. The emissions resulting from industrial operations, motor vehicles and household activities are mixed into the air that all people breath. Air quality is measured as the degree of dilution of these pollutants in a specific

geographic air shed. The important point is that people are directly and continuously exposed to air pollution in cities. In 1951, 47 percent of British Columbia's population lived in metropolitan Vancouver. Many other people in forestry and mining towns were also subject to smoke, soot and dust from wood burning and industrial operations. The Canadian Medical Association attributed about 300 deaths in British Columbia in 2008 to poor outdoor air quality. In addition, there were tens of thousands of hospitalizations, emergency room and doctors' office visits, and millions of minor illnesses.[17] Although I have found no studies, it seems reasonable to assume that there would have been many more deaths and illnesses--scaled by a smaller population--in the much worse air quality conditions in Vancouver and across British Columbia in the 1950s and 1960s. These impacts, however, just as they are today, were largely invisible to residents, who would attribute all heart attacks, strokes, lung cancer, asthma and bronchitis attacks and shortness of breath to other causes or naturalize them as the outcome of the human condition. Despite their hidden nature, the health impacts of air pollution were a highly contested topic in the 1950s and 1960s, as discussed in Chapter 4.

This thesis is a social and political history of air pollution policy in British Columbia, with a focus on the City of Vancouver and the Lower Mainland in general. As important as the physical impacts of air pollution are, I explore how the issue transformed from a tolerated background nuisance in people's lives to an important public and political issue. I define a public issue as a social problem that is discussed openly and widely both by people having some specialized knowledge of the topic and by those who have an interest—economic, quality of life, health and so on—in its collective resolution. In the case of air pollution in British Columbia, the public typically demanded a government response. This thesis also explores how the

owners and operators of industrial firms and businesses and the public at large interacted with state structures in attempting to resolve, or at least manage, these social problems. Both the neglect and the management of social problems by the state tell us something about the nature of government in society. Resolving problems does not mean that all manifestations of the issue necessarily disappear. Rather, there is enough agreement on appropriate responses and their implementation to generate a popular consensus on debate closure, although the issue may well still be controversial in expert communities.[18]

This thesis makes a distinction between public and political issues in the sense that certain public issues are not formally taken up at the political level. Although a public issue may be political by the very fact that it is openly important to society, certain subsets of these issues are at times ignored at the state level. These types of issues are reflected in agenda-setting authority in Steven Lukes' analysis of the "two-dimensional level" of power.[19] They are the "un-politics" of air pollution in Matthew Crenson's analysis.[20] This distinction is necessary in a history of air pollution policies in Vancouver and British Columbia since the provincial government did not begin addressing the issue—literally not speaking about it--until the early 1960s. This was the case even though the City of Vancouver had an air pollution policy and anti-smoke staff in place since the 1940s. Also, the APCS, newspapers and the public discussed and acted on air pollution from the early 1950s. Through the 1950s and 1960s there was a growing public call for air pollution to be dealt with by political entities with more scope than individual local municipalities, whether that be regional groupings of local governments or the provincial government.

Therefore, while in Vancouver the public and formal political sides of the issue largely overlapped, at the Provincial level air pollution only emerged as an acknowledged political issue years later. Not until 1966 was a short-term Provincial policy stance taken, while a longer-term one was only announced in 1969. A central question of this thesis is why Provincial Government and City of Vancouver responses to air pollution were so different.

One of the virtues of history is that it addresses the question of change over time. How did air pollution become a public issue in British Columbia? Many other branches of knowledge do not address the question of change or acknowledge the importance of history. For example, in standard economic theory pollution is an externality of the production process in an abstracted snap-shot of time. It is a cost of production not borne by a firm originating the pollution, but instead by people outside the production boundaries.[21] In economics, pollution is a given of the economic system, a natural problem that results from a failure of the market. There is some heuristic benefit in this approach to pollution, particularly in providing a justification within capitalist ideology for government intervention into the market and suggestive of certain public policy responses, but much remains unexplored as well.

In political science, pluralist explanations of policy issues assume that competing public interests, often represented by equally influential civic organizations and businesses, are brought forward to be refereed by a neutral government. Such a government weighs evidence and arguments on these issues, engages in political trade-offs, then makes decisions that determine the allocation of benefits and costs to the competing interests. A classic pluralist statement on pollution and similar problems comes from Mancur Olson, who posits a state that is highly responsive to interest groups.[22] According to this analysis, when the benefits of any

proposed governmental policy are diffused thinly across the population, but costs are concentrated on a limited number of groups, political inaction is likely to be the result. Most people hope that others will incur the costs of acting to obtain the benefits, which will then be shared by all, regardless of one's degree of activism. The consequence of this logic of free-riding, according to Olson, is a weak and unfocused demand for public goods such as clean air. On the other hand, the costs of pollution control, falling on a limited number of companies, result in a highly-motivated opposition to these controls.

Since much environmental legislation has obviously been passed in Canada and the United States, particularly since the early 1970s, political and other social sciences have generated a rich literature explaining how the motivational gap identified by Olson has been overcome. For example, a leading role is given by some to dedicated individuals who form environmental groups, which then catalyze other social and political actors.[23] Anthony Downs offers a widely-accepted theory that public opinion on many issues goes in cycles. At certain times, such as the late 1960s, general public sentiment on the need for improved environmental quality reaches a level of saliency that the state cannot ignore, which overcomes the opposition of financial cost-bearing counter-interests.[24] But the causes of these cycles remain difficult to determine. Many analysts simply fill the gap by listing a range of preceding environmental disasters receiving wide media exposure, as well as important popular and more theoretical anti-pollution publications.[25] In a classic study, Ronald Inglehart has gathered evidence of a shift towards post-material values in the 1960s, including environmentalism. But this trend explanation does not explain the wave-like peaks and troughs of public interest in the environment.[26] These environmental organization and wave theories of public involvement do

seem to offer some insight on why the Province acted in 1969, as I show in Chapter 4. However, they do not explain the City of Vancouver's earlier actions on air pollution, pre-1969 popular activism or the ineffectiveness of the APCS in achieving its objectives of regional or provincial air pollution policy in a timely manner.

Another category of theories prioritizes a managerial perspective in explaining environmental events at the organizational level. An individualistic variant of this grouping involves political and policy entrepreneurs. For example, an influential article by Daniel Farber posits that certain politicians seize the opportunity of mass public engagement in an environmental mindset to lead legislative efforts. This leadership is used to establish a reputation among environmental groups and the public that can be used to further political ambitions.[27] Other theorists emphasize the activism of civil servants—policy entrepreneurs--establishing networks of support inside and outside of government to bring forward innovative policies that politicians find appealing, but do not initiate themselves.[28] An older approach to managerial-based theories emphasizes the state's interests as a whole, associated classically with Max Weber and more recently with Theda Skocpol.[29] Here the key assumption is that the state can have interests that are independent of a pluralistic public or of classes within society. From an environmental perspective, these theories often posit a powerful administrative state that uses the complexity of these types of issues to justify its use of centralized authority, specialized knowledge and hierarchy in controlling the policies and politics of divisive issues, often at the expense of democratic participation.[30]

The political and administrative entrepreneurs' theory referenced above does not seem particularly applicable to British Columbia. In the air pollution policy history of Vancouver,

Councilor Marianne Linnell is identified as the driver of the 1969 revisions to the city smoke by-law.[31] But her undeniably important role seems to be nothing extraordinary on an issue that received Vancouver City council, administrative and public support. At the provincial level, Health Minister Ralph Loffmark became a champion of better air quality in 1968, although he ultimately failed to establish his leadership role. This role was assumed by natural resources Minister Ray Williston, but he was hardly an advocate for strong air quality regulations. The British Columbian experience does show some potential alignments with the non-individualistic state-based theories, such as advanced by Skocpol. The first is that the health ministry, as well as medical health officers in cities, tended to be strong proponents of air quality regulations. However, this was not a state interest separate from the public interest. The second potential alignment was the Ministry of Lands, Forests and Water Resources' (usually referenced as the "natural resources ministry" in this thesis) handling of air pollution policy. Its development of regulations was done in precisely the controlling and justifying manner described above, as further detailed in Chapter 4. But the control exercised by the provincial government seems less a response to the complexity of the problem than to capitalist class-based interests that could have been harmed by a more publicly inclusive, health-based approach to setting air quality standards.

Class-based analyses are important in a study of pollution policies. The power and rights inherent in private ownership of productive resources in liberal capitalist societies provide an entrance point to understanding how a social ill, emanating largely from relatively few sources, can be disposed onto non-consenting city or town residents. The owners of industrial facilities have profit and competitive interests in avoiding as many production costs as possible, whether

in the form of wages or pollution controls. Matthew Crenson, for example, describes how the differing degrees of political influence of industries in two Indiana cities determined the respective timeliness of air quality regulations.[32] There are, however, other broadly owned sources of air pollution, such as the motor vehicles, that became increasingly important in Vancouver through the 1950s and 1960s. But, their manufacture was in the hands of a handful of transnational corporations. The demand for these vehicles was also largely structured by urban land use patterns and intense advertising. As well, owners of vehicles rarely expressed opposition to pollution control devices in their cars, whereas car manufacturers almost universally protested these additional costs.

But a capitalist class interest in opposing air pollution policy is not as simple as the above paragraph might imply. Indeed, early sponsorship of air pollution policies in Vancouver and various other North American cities originated in a segment of this very class. Insight into this phenomenon is provided by urban geographers John Logan and Harvey Molotch, who characterize North American cities as "growth machines."[33] They argue that "place entrepreneurs," often working together, relentlessly promote capital investment in cities to increase property values and associated rents. A key distinction that they draw is between economic interests that are tied to sales in specific physical locations, such as real estate and newspapers, which depend on the demographic and economic attributes of their locale for financial gain and those corporate concerns whose products are shipped more widely. These latter industrial interests have less direct interest in the economic growth in their particular location and can also shift, or threaten to shift, existing production and investment to new areas in response to changing regulatory and market circumstances.

George Gonzalez extends this analysis by arguing that more locally-bound economic interests, including professionals and market retailors, have an interest in reducing air pollution. Poor air quality is viewed as a deterrent to the population growth, densification and investment in cities that drive increased rents, sales and the need for professional services. Some local industries are also directly affected by air pollution, including tourism and, if smoke and smog pollution are particularly bad, air transportation.[34] Of course, locally orientated businesses also value industrial investment and the resulting need for workers, whose housing and consumption requirements help drive up property values and retail sales. Therefore, in Gonzalez' analysis, air pollution control tends to take a technological orientation, which he argues has the least impact on large, externally focused industries (see Chapter 3 for a discussion of technology). Location bound businesses and professional service providers usually produce little air pollution themselves and thus would incur minor or no costs in its management. More externally oriented industrial firms, however, are usually opposed to the significant costs that can result from these air management efforts.[35] Gonzalez notes many examples in the United States' historical record where locally bound interests have initiated efforts to make air pollution a public concern. Owen Temby applies this analysis to Toronto in the 1950s, describing how real estate interests were pivotal in bringing about air pollution relief.[36] This urban analysis is also consistent with the pattern of events of early anti-air pollution efforts in Vancouver. The business interests represented by directors of the APCS, as well as other evidence brought forward in Chapter 2, fit into a North American pattern of support for reducing air pollution that seems largely motivated by location-based economic interests.

However, Gonzalez makes the "local growth coalition" the driving force of air quality initiatives in American cities and rejects public concerns as having any influence in the development of air pollution abatement policies. In the case of Vancouver, although this type of coalition played a leading and highly visible role, it was crucially supplemented by other players. The City of Vancouver, including medical health officers, helped constitute and staff the APCS. These combined forces drove Vancouver's air pollution policies, but at the provincial government level, they proved largely ineffective. Departing from Gonzalez' analysis, my history shows that the public's interventions at crucial points carried air pollution onto the provincial political agenda and prompted key policy responses.

At a more general level of class analysis, critical systems theory provides useful insights into pollution problems. This type of theory describes interdependent, but partially autonomous, relationships of political, economic and social subsystems. These theories emphasize the role and constraints on the state within capitalist-democratic societies. As indicated above, power is concentrated in the hands of private owners who have the capacity to externalize, or socialize, many costs of production, such as pollution and other social ills. One of the key imperatives for the state is to protect the accumulative profit process, which provides vital taxation revenue streams to the state. Since markets are always subject to competitive and random external pressures, the state undertakes coordinating functions and public investments that reduce private costs, in areas such as transportation and labour force skills. But the state is also embedded in democratic society. Government requires public legitimation and electoral support as the key representative of civil interests. Mitigating social costs, such as pollution, that are thrown off by the privately-controlled economic system is a

key legitimation function. Some systems theorists, such as Claus Offe, emphasize the inherent contradictions in the dual roles of accumulation support and public legitimation.[37] These conflicting processes cannot be fundamentally resolved, but only managed in fragmentary ways. Increased production, for example, increases air pollution, which is a social cost to the public. The financial costs of air pollution control undermine the accumulative process and state revenues, but this interference is necessary for social harmony.

At least three potential state responses are identified in systems literature to these unresolvable problems: issue displacement to other organizations; the development of uncoordinated and contradictory policy networks within the political subsystem; and insistence that problems are technical rather than political.[38] Each of these responses is represented in this history. First, the provincial government sought to keep the air pollution issue at the local government level for many years, while municipalities ineffectually demanded provincial emission standards. Secondly, as indicated above and further described in Chapter 3, the natural resources and health ministries were at loggerheads on policy and leadership during the late 1960s, with differences only papered-over by the policy grab of the former department. Finally, when the Province did take on direct responsibility for the issue, it insisted on the technocratic control of policy and regulatory development by engineering experts in the face of what it saw as emotional citizens and ill-informed social groups. However, as insightful as these systems theories are, they have been criticized as underplaying or lacking explanations for change, contingency and agency in history, while emphasizing the importance of long lasting social structures.[39] Again, public interventions in British Columbia proved to be crucial in air pollution policy developments.

The three general types of analysis described very briefly above, which focus respectively on the individual, the organization and societal levels, are not necessarily contradictory. Theories that tend to rely on single-level explanations of social phenomena are prone to downgrading non-conforming evidence and can become highly deterministic, especially as vehicles for historical explanation. Robert Alford and Roger Friedland argue that "an adequate theory of the state must incorporate all three levels of analysis."[40] My history is intended to explore influences from these different levels that help to explain the patterns of the described events. From the pluralist perspective, policy input from individuals and groups on air pollution concerns is evident in property tax challenges, letters and phone calls and participation in council meetings. Such participation, even if angrily voicing complaints, tended to validate the processes of existing institutions, as per pluralist theory. There also were challenging non-institutionalized interventions via unauthorized displays at council meetings and in public demonstrations, which were highly effective in initiating governmental action. In the managerial perspective, the City of Vancouver was active in air pollution control before it became a public issue, due to the influence of medical health officers and the demonstration effects from other North American jurisdictions facing similar problems. At the Provincial level there was no autonomous initiation of air pollution management, but when the issue was forced upon the government, it acted in contradictory ways to both centralize control over and to fragment the policy leads (among the ministries responsible for natural resources, municipal affairs and health) on a fundamentally divisive social issue.[41] In the class perspective, the Social Credit government proudly displayed its strong support for capitalist accumulation, although with a strong populist overlay. This growth orientation was electorally successful for the

decades that set historical highs for production and income increases across North America.[42] Perhaps because of this clear identification with capitalism and its profit imperatives, the provincial government found it difficult to deal with the social ills that resulted from rapid growth, including air pollution, but also on such issues as labour and women's rights and natural resource exploitation.

A final group of theories to briefly outline, helpful in understanding the events and outcomes in a history of air pollution policy in British Columbia, are those that emphasize the constructed nature of public problems. While systems analysis tends to focus on the constraints impinging on the state due to its embeddedness in capitalist relationships, social argumentation and construction emphasizes constraints from the democratic or legitimation side. To the extent that the meanings of public problems are in open question it is evident that democratic legitimation is important. Systems and discourse theories can be fully compatible. If the state faces contradictory imperatives in meeting both the needs of capitalist growth and social justification as government, then the framing and defining of these problems at the juncture of these contradictions is vital.

Murray Edelman in *Political Language* talks about the symbolic cueing of political problems:

> From subtle linguistic evocations and associated governmental actions we get a great many of our beliefs about what our problems are, their causes, their seriousness, our success or failure in coping with them, which aspects are fixed and which are changeable, and what impacts they have upon which groups of people.[43]

Maarten Hajer in the *Politics of Environmental Discourse* describes environmental conflict as not being about "predefined unequivocal problems," but rather a "complex and continuous struggle over the definition and the meaning of the environmental problem itself."[44] E. E.

Schattscheider talks about this phenomenon as the "*mobilization of bias in preparation for action*."[45] Particular ways of thinking and talking about air pollution by different organizations tended towards particular kinds of policies, which had opposing impacts on business and on the public. Different conceptualizations of the air pollution problem lent themselves to addressing the wishes and interests of one side or another of the conflict. When the provincial government took on air pollution as a political issue in the 1960s it thereby put itself into a contradictory position of pursuing incompatible objectives of unrestrained economic growth and clean air. In addition to responding to this contradiction by displacement, fragmentation and technologizing of such problems, briefly mentioned above, another way of dealing with this situation was to de-emphasize the significance of the impacts of air pollution in public discussion. Throughout the 1960s and early 1970s there were rhetorical battles over the meanings of pollution.

A history of air pollution policy in one province in Canada provides only limited evidence to support one group of theories over others. Further comparative work on other jurisdictions is warranted. My use of these tools of analysis is to shed light on the events relating to this relatively narrow policy area. It is hoped as well that some insight is gained on the more enduring economic, political and democratic structures that constrained, shaped and helped give rise to particular events. Structures and agency interact in complex ways. Chapter 2 outlines the origins of air pollution policy in Vancouver in the 1950s. Location-bound capital interests played a key role in helping to raise air pollution as a public issue, but so too did an activist City of Vancouver, which needed to expand public support for broader jurisdictional air quality management. Public activism also increased over the decade into the 1960s as people were exposed to the tools of collective action. Chapter 3 explores perceptions of air pollution,

and attempts to shape perceptions, as the British Columbian government started to engage hesitantly in air pollution policy in response to demonstrations of public frustration and anger. The Province tended to downplay health concerns, while emphasizing the aesthetic effects of air pollution. Technology was commonly viewed as the solution to the framed problem, while the Province also kept policy development and implementation largely at the local government level. Chapter 4 concludes by examining the conflict over air pollution leadership roles in the late 1960s between the ministries responsible for economic development and health. The environmental wave of public and elite concern about polluted and declining natural systems was clearly influential, providing the impetus for the provincial government's final approach to air pollution policy. This movement also challenged the government's authority and legitimacy on various fronts, including environmental management. But the limits--at least in this historical instance--of this social movement were also evident as the provincial government re-asserted its state control of policy in running a highly restricted public process in the development of air pollution regulations.

2

Air Quality as a Public and Political Issue

A person transplanted to Vancouver in the early 1950s would probably describe the usual air quality as appallingly bad. Looking back a decade, the *Vancouver Province* newspaper in 1960 described the physical setting as a world where the "sun was lost behind a blanket of black smoke" blasting from the industrial stacks of sawmills ringing False Creek and from coal steam locomotives shunting cars at the Canadian Pacific marshalling yards.[1] Grime and dust were regularly evident on windows, patios and laundry hung out to dry. The Chair of the Vancouver Metropolitan Community Planning Association told members of Vancouver's Electric Club in 1953, perhaps with some exaggeration: "Without air currents to scatter the tons of smoke, ash and gases produced weekly by the average industrial plant, people would gasp for breath and die within five to ten hours."[2] Huge particle clouds rose from bulk ship loading facilities around Burrard Inlet in Vancouver, North Vancouver and Port Moody. Smoke poured out of wood waste burners from many sawmills around the Lower Mainland. Oil refineries and metal foundries added their effluent to the mix. Visible emissions came from cars, trucks, buses, ships and trains. They also came from house chimneys in the winter, backyard rubbish fires, commercial incinerators and municipal garbage burning. In the fall, haze often covered Vancouver from the annual wood slash burning of forestry operations on the North Shore mountains and around Howe Sound.

Air quality was undoubtedly bad by today's standards, but was it was considered bad by the standards of the early 1950s? This chapter looks at the way air pollution became a public

issue in Vancouver. It also draws on examples from other parts of the province reported on by the Lower Mainland newspapers. A public issue is defined as a circumstance or problem that is openly and widely discussed as requiring some form of a collective response. A public issue is a political one by definition, but certain public issues are not placed on the decision agenda of formal political processes. I distinguish this subset of public issues since the provincial government ignored this issue of elite, professional and general public concern for more than a decade. At least, it was ignored in public. Since the Province received formal requests to take steps to address air pollution, one must assume that decisions were taken, implicitly or explicitly, not to do so. I have found no direct evidence on this in the Victoria or Vancouver archives, or in newspapers. However, the indirect evidence is telling: the British Columbia government announced no decisions and made no recorded statements until the 1960s.[3]

The actors in Vancouver's air pollution story focused much of their attention on the governments of Vancouver and British Columbia. As discussed in the Introduction, there are three general theories of the state in the social sciences reflecting three levels of analysis. Pluralist theories of government assume that the opinions of the public, revealed via voting, personal interventions and through pressure or interest group activity, are the crucial factor in defining public issues and putting them onto the political agenda.[4] This is the "people rule" premise of democracy. This view is challenged by researchers emphasizing the independent role and interests of government itself in defining public purposes and implementing policies and projects.[5] A third theory of society and the state focuses on broad systems of power. It highlights the dominant role played by class interests, such as the requirements of capital owners for growth and profits, in determining public and political issues.[6] Analysis centred at

this level assumes that the purpose of the state is to reproduce social and production relationships, but is subject to various contradictions that throw the status quo into question. These varying theories rely on different assumptions about where the wellsprings of social and historical change lie, whether at a macroscopic systems level, a mid-level of organizations or at the granular level of individuals or groups of people.[7]

As a history informed by theory, this thesis uses insights and perspectives from all three types of theories to help make sense of the air quality events in Vancouver in the 1950s and 1960s. I assume that events are not determined at a particular level of analysis out of theoretical necessity, but that relationships between the pluralistic, governmental and systemic levels are open, contingent and mutually influential.[8] This history assumes and provides evidence that these levels of analysis are embedded. Each level imposes some linkages and constraints on other levels and provides insights into the overall operation of social structures, ideologies and agency.

Distinctions within levels need to be made. The capital owners and business interests controlling physical, financial and communication resources in Vancouver were not uniform in their interests. Neither were the various levels of government of one mind, but had varying interests on the air pollution issue, different access to tax resources and distinct susceptibilities to popular and class pressures. The public too was obviously diverse, although the evidence of public attitudes on air pollution is patchy. What is clear is that the nature of public interventions and actions on air pollution changed over time.

Throughout the first half of the 20th century air pollution was typically regarded as a nuisance in North American cities.[9] It was frequently referenced in newspaper and other accounts that acutely bad air could kill, as happened in places such as Donora, Pennsylvania in 1948 and London in 1952. But the typical smoky conditions in big cities and industrial towns were most often treated as an unfortunate, but endurable impairment to the enjoyment of life. The quality of life was affected aesthetically, odor-wise and materially when soot and cinders rained down on cars, windows, summer patios and laundry drying on outdoor lines. Vancouver had a by-law dating from 1923 that restricted the density of smoke from industrial chimneys, but only for eleven minutes of any fifteen-minute period. A more general by-law in Richmond made the "fouling or contaminating the atmosphere" with "smoke, dust, effluvia, cinders, soot, charred sawdust or fumes" a municipal offense.[10] Vancouver also had a small number of smoke inspection, engineering and medical health staff by the late 1940s to administer and enforce its by-law. Vancouver City staff began measuring dust and soot falling to the ground in 1949, setting out glass jars of specified diameter on rooftops around Vancouver to collect dust particles and soot and then weighing them monthly. Multiplying by the appropriate factors resulted in the most common measure of air pollution in North American cities—fallen dust in tons per square mile per month. But, despite these early efforts and the enumeration of emission types, nuisance by-laws were too general to be of much help in combating air pollution. Who was really to tell if a factory were fouling the atmosphere, or if this was simply the inevitable emissions of a city accessing the employment and revenue benefits of industrialization.

As indicated above, a public issue is a situation or a problem that is generally acknowledged as requiring a collective response. Whether a type of issue remains private or public is a question of institutions, values and history—it is a socially contingent question, not a natural one. Air pollution became a public issue in Vancouver and British Columbia in the 1950s despite voices arguing for it to remain a private one. Some in the business community and in government contended that pollution was inevitable in modern industrial--consumerist society. If nothing can be done about something, then, like other natural human conditions, it cannot be a public issue. Some economists and Attorney General Robert Bonner in 1967 argued for air pollution to remain a private issue on the grounds that the best remedial action was a law suit launched by an injured party against the source of the pollution.[11] This decentralized, common law approach was predicated on clearly defined procedures and rights between theoretically equal parties able to reach individual case solutions in front of a referee judge. Pre-1950 by-laws in the Lower Mainland and their spotty enforcement encouraged this individualistic approach, which was used successfully on some occasions. However, most others found the essentially private remedies for the harms of air pollution to be much too limited to be effective.

One of the earliest organized responses to air pollution in Vancouver that can be found in the public record was the formation of the Air Pollution Control Society (APCS), in 1952.[12] The APCS was an outgrowth of a public affairs committee of the Kiwanis Club in Vancouver, which in the 1940s had undertaken discussion and studies of the city's air quality. The Kiwanis formed in Chicago in 1915 and rapidly spread world-wide, including Canada.[13] Kiwanis, like other service clubs, appealed to local community businessmen and professionals who wished to

increase their commercial contacts and promote local community infrastructure and services. These clubs are ideologically associated with city and town growth promotion, or the "boosting" of the local economy. It is interesting to note that in 1950 the Vancouver Kiwanis Club had been unsuccessful in sustaining the interest of the members of another advisory committee on air pollution to the City of Vancouver. This direct forerunner of the APCS rarely met and was quickly disbanded. Four of the six directors of this organization were representatives of larger corporations and trade associations that were significant sources of air pollution--National Machinery Company, Bestovall Canning Co., B.C. Sugar Refining and the B.C. Lumber Manufacturing Association. They had fewer specific community loyalties in terms of the location of their production than other sectors that depended largely on sales to Lower Mainland residents. The founding chief directors of the successor APCS represented a different category of business. They came from the engineering, insurance and accounting professional service industries, professions that had direct economic interests in the market opportunities of a growing city population and economy. In a likely reference to the earlier unsuccessful effort at forming an air pollution advisory committee, a Vancouver city councillor noted pointedly in 1952 that it was the responsibility of the Kiwanis to guarantee to maintain the APCS in exchange for vital annual operating grants from the city.[14] Vancouver city staff also provided key support in writing the constitution of the APCS and participated as ex officio members throughout its history. Vancouver politicians continued to provide annual operating grants to the organization until the late 1960s--grants that were critical to its survival.[15] The APCS was not a public grassroots organization, but the creation of both local business interests, who played little if any role in emitting pollutants, and the City of Vancouver. The earlier attempt to sustain

an anti-air pollution organization with representatives of the larger corporate sector—a sector largely responsible for air emissions—had failed.

The APCS provided speakers to other civil society association meetings, educational literature and produced documentary films, such as "Airborne Garbage" and "The First Mile Up," that were widely requested for viewing by groups around the Lower Mainland and cities around North America. The organization's early activities involved providing information on pollution and encouragement of mitigative actions by local governments, civil groups and the public generally at venues such as the Pacific National Exhibition. A large part of the APCS' message was that Vancouver residents had a responsibility both to reduce their own home heating emissions and to lobby politicians to act on the issue. There was little in its material about the responsibilities of industry itself, except for an award program that featured one company per year rewarded with good publicity for taking significant pollution control action. Although the APCS had evidence that half of total emissions came from industry, the organization considered the responsibility to induce industrial reductions to lie with government.[16] Through the 1950s and early 1960s, the APCS attempted to bring Lower Mainland regional municipalities together for joint air quality management and to lobby the provincial government to act.

As described in the Introduction, the interests of industries and businesses highly dependent on local economic conditions and those with a broader market diverged on the air pollution issue. George Gonzales has provided compelling evidence across a variety of American cities that the former, geographically constrained businesses and professionals, were

instrumental in initiating demands for air quality regulations. Industrial firms, less attached to the local market, however, are usually opposed to the significant costs that can result from these air management efforts.[17] This analysis has also been applied to Toronto in the 1950s, where real estate interests were pivotal in bringing about air pollution relief.[18] This urban pattern is certainly consistent with the evidence of who provided tangible support to anti-air pollution efforts in Vancouver. The Kiwanis origins and the local business oriented membership of the APCS fit into a North American pattern of initial and continuing support for reducing air pollution that seems largely motivated by location-focused economic interests.

Vancouver's two major daily newspapers—the *Province* and the *Sun*--also played large roles in attempting to make air pollution an important public issue. A 1950 article in the magazine section of the *Province* indicated that Vancouver, like Los Angeles, had a smog problem. While printing a picture of black smoke from a factory stack and indicating that not all industrial sites had complied with Vancouver's 1923 by-law, the article mainly focused its attention on how to improve coal burning efficiency in home heating appliances.[19] In March 1955, the *Province* ran a four-day series of articles with the message that "one of the most vital problems facing Vancouver today, from health, economic and aesthetic standpoints, is the pall of smoke which constantly hangs over the city."[20] The *Province* editorials often used emotive language, such as describing air pollution as an "active killer," "nauseating," a "deadly witches' broth," a danger "worse than atomic bomb radiation" and a "poison."[21] A regular editorial theme in the *Province*'s coverage was dismay at public apathy on the issue. The *Vancouver Sun* was slower to cover and editorialize about air pollution, but by the mid-1950s it too began regular coverage. Arnie Myers, a *Sun* medical writer, wrote a highly praised week-long series in

1965 covering the sources, impacts and controls available for water and air pollution. High demand for reprints prompted the *Sun* to re-publish the articles in booklet form.

While there is no doubt that the newspapers' coverage of the air pollution issue was sincere and publicly beneficial in the fight for cleaner air, this engagement is also fully consistent with the thesis that local-market focused business owners played a large role in initiating and sustaining air pollution as a public issue in Vancouver. The revenues of privately-owned newspapers are--or at least were--highly dependent on copy and advertising sales. Growth in these revenue sources in turn are driven by increases in population and the overall income and competition generated by the local business economy. To the extent that air pollution threatened this growth, it was also a direct threat to this business. Newspapers in other heavily polluted cities, such as Los Angeles, St. Louis and Toronto, also played significant roles in their air pollution battles.[22]

Other industries tied to the specific market in Vancouver also entered the air pollution fight. For some, air pollution entailed direct costs and risks to their operations, apart from any constraints it might impose on general market growth. For example, cleaning grime from downtown Vancouver buildings was estimated in 1955 to cost up to $750,000 annually.[23] Air transportation industry representatives in Vancouver were early complainants about the effects of air pollution on visibility. The BC Aviation Council Air Pollution Committee—a mix of municipal and aviation industry representatives—was formed in the 1960s to publicize both the risks and the cost of delays in take-offs and landings at the Vancouver International Airport due to smoke-influenced hazy conditions.[24] The importance of the tourism industry to Vancouver

and British Columbia grew over the 1950s and 1960s, as did interventions from this industry regarding the effects of air pollution on its business. As well, the Associated Boards of Trade of the Fraser Valley and the Lower Mainland, representing mainly locally producing businesses, called on municipalities in 1959 to tighten air pollution by-laws and considered lobbying the provincial government for action.[25] This evidence of support is consistent with that reported in a survey from the 1960s of 51 American cities. It found that local Chambers of Commerce, as well as newspapers and local government administrators and agencies, were disproportionately in favour of air pollution control.[26]

But the support of location bound business for air pollution policies was supplemented in a crucial way. It should not be surprising that public health staff also played a significant role in Vancouver's air quality issue. These professionals, working closely with Greater Vancouver cities, but reporting within the hierarchy of the provincial Ministry of Health, also had a stake in making air pollution a public issue in the 1950s and 1960s. The BC Health Act provided general authority to the Province of British Columbia, allowing it to take steps to prevent or abate the health impacts of various forms of pollution. But the Act was mainly used to control the introduction of sewage into streams, rivers and lakes. Municipal by-laws were the main vehicle used by public health staff to further their objectives in improving air quality. The medical health officer of Vancouver became an ex officio member of the APCS advisory board in 1952. Health professionals would provide continuous guidance to that organization over the next decade. Public health staff, including medical researchers at the University of British Columbia, carried out early air pollution health impact studies (see Chapter 3), worked closely with regional governments in monitoring and reporting on air pollution and were a loud voice for

control measures throughout the post-war decades. The involvement of these professionals, whose motivating interest was public health, complicates any attempt to make location bound economic interests the sole source of early anti-pollution efforts.

The City of Vancouver replaced its smoke by-law in late 1955 with a more specific air pollution control regulation, but one still focused on visible smoke. Prior to this replacement, city officials had complained that backyard burning of garbage and garden clippings were not covered under the existing by-law.[27] Dr. Steward Murray, Vancouver's chief medical officer at the time, visited Pittsburgh in late 1953 to study that city's anti-smoke efforts. Highly impressed with the public and industry support that city received for its strong anti-smoke by-law, he indicated on his return that he would confer with Vancouver's city engineer on improving Vancouver's by-law.[28] The City of Vancouver hired a consultants' group from Chicago the next year to provide advice on air pollution measures. The 1955 by-law required that permits be obtained from the city engineer for both the installation and the operation of any large fuel burning appliances and any associated pollution control equipment. The smoke from any chimney or open fire could not be thicker than the second level of opacity of what was called a Ringelmann chart for more than six minutes of any hour. Developed in the late 19th century, the Ringelmann chart provided an observer with six ink-modelled levels of smoke density, ranging from perfectly clear to completely black, to judge smoke densities. Vancouver also put a more rigorous weight and volume-based prohibition on particle emissions into the 1955 by-law, but it depended on equipment that was not usually in use to measure "dust, fume, solid or liquid particles."[29]

The Canadian Manufacturers Association (CMA), representing mainly larger industrial interests, opposed the by-law. A British Columbia representative, Robert McDonell, claimed that the by-law would drive some metal foundries out of business by imposing average control costs of $10,000 to $15,000 per firm.[30] In response, Vancouver initially gave the foundries an extra eighteen months to comply, and later exempted them completely. However, still feuding at a public conference in early 1958, McDonell, in a revealing choice of words, said that the air pollution controls imposed a "damaging amount of money" on business, which he now estimated generally at $40,000 per firm. He added a common corporate complaint that home heating and cars were exempt under the by-law. Another speaker at the conference added that the by-law added to business capital costs, but provided no financial return.[31] The basic point that emerged from this conference was that the CMA did not oppose the by-law completely—McDonell said that the by-law was "adequate" as far as it went. Even those corporate interests hurt by regulation could recognize limits to public and political acceptance of pollution impacts and acceded to some mitigation measures. This sector's strategy appeared to involve exerting corporate influence limiting the stringency of the pollution control efforts and the associated financial costs, while still being able to point out that pollution was being managed. Emphasizing that the singular interest of business was profit, speakers tried to shift the focus of pollution harms to that of pollution control costs, and away from pollution's physical impacts. Virtually all the reports of pollution control in the business pages of Vancouver's newspapers in the 1950s and 1960s trumpeted in headlines, and then detailed in the body of the text, the financial costs of pollution control—large in absolute dollars, but relatively small when scaled by total capital or operating costs. The message was tactical tolerance of some pollution control

in the interest of portraying corporations as good "citizens" as measured by the narrow yardsticks of money spent. Strategically, however, the metal foundries and other broad-market oriented industries in Vancouver wanted control over the stringency of pollution control.[32]

There are some seeming incongruities in the City of Vancouver's early air pollution advocacy and regulatory efforts that need to be addressed. First, Vancouver itself had the legislative tools to deal with pollution, as it showed in 1955 and earlier. It was advocating for pollution control via the APCS, while, at the same time, acting on its own regulatory capacity to deal with the issue. But governments are constrained in their actions by the presence of social and economic groups who may be opposed to particular policies, as noted above in the case of the CMA. Building a broader social support base for controversial action helps explain Vancouver's fostering of an advocacy organization such as the APCS. Another reason for the advocacy support was that Vancouver needed the help of other municipalities and the provincial government. Vancouver could not produce its own clean air through strong by-laws while smoke and smells continued to blow in from surrounding areas. As well, politicians were afraid that a patchwork of local government air pollution approaches would allow companies to move facilities to areas with the lowest control costs. Beyond striving for the cooperation of surrounding local governments, the APCS and newspapers also advocated for comprehensive provincial government legislation. Such legislation would not only cover all the territory of British Columbia, incorporated or not, but also bring senior governmental financial resources to bear on the problem.

Another incongruity in Vancouver's support for advocacy was that the APCS--like the newspapers--consistently urged greater public outrage over air pollution. The organization expressed frustration at the seeming passive acceptance by residents of current air quality conditions. A superficial reading might see inconsistency in representing the interests of the public, but then trying to stimulate those latent interests when they do not seem to be strongly expressed. A strictly pluralist understanding of government certainly would have a difficulty with Vancouver's stance. A way out of this inconsistency would be to recognize again the City of Vancouver's own property revenue interests, which were dependent on the financial vibrancy of local businesses and economic growth in general. To the extent that cleaner air benefitted this growth, there was a direct municipal financial interest in it as well. A fundamental insight into public "issueness" is offered by E. E. Schattschneider, who argues that the weaker parties to a conflict often try to increase their strength by socializing the problem involved in the conflict.[33] By striving to increase the number of people willing to act on pollution, the City of Vancouver, the APCS and location-bound businesses were attempting to build support for potentially controversial actions against more powerful industrialists and an indifferent provincial government. Air pollution was a public and political issue for both the locally orientated and large industrial economic sectors in the 1950s and early 1960s, as well as for the City of Vancouver. But it was not a big enough issue for the public—a situation that Vancouver and the anti-pollution business sector wanted to correct. Vancouver wanted strong public support for its own by-law, but *needed* it for broadening air pollution action to a regional or provincial level.

The City of Vancouver was not only motivated by a perceived threat to its property tax revenues in its fight against air pollution. Just as there is no evidence that public health professionals were not fundamentally interested in improving the conditions of public health, it would be hard to deny that Vancouver City staff and politicians had the same non-mediated public interest. This was in addition to the more indirect, perhaps less obvious, financial motivations. Insight into these mixed motivations of civic officials can be obtained from social analysts who put weight on the constrained, but not fully contained, role of government in struggles between social classes. As outlined in the Introduction, this paper assumes that the state in western capitalist societies has two fundamental functions. The first is to support capital accumulation in the private market. This is done by means such as subsidizing various physical infrastructure and resource costs and by providing regulatory constraints on unbridled competition in the market. The second is to seek legitimacy for the existing social order by mitigating some of the negative effects associated with private ownership and markets, such as pollution (and unemployment, income, social and gender inequalities and so on). The work of the City of Vancouver and its public health professionals in the 1950s and 1960s reflected this second function, as much as it reflected its own taxation interests and the profit focus of the location-bound business community. Unless one takes an inflexible instrumentalist view of the state as essentially controlled by capitalist interests, it is possible to see a degree of independence in the role of City staff, politicians and public health professionals. Crucially as well, as indicated above, the business community was divided on the question of air pollution control. The extent to which the City of Vancouver succeeded in its efforts to rebalance the financial and physical costs of the air pollution must be seen in an empirical historical light, as

informed, not determined, by theories of the state and the economy. Not only did Vancouver adjudicate the split interests of location and non-location bound business interests, but also those between the public, bearing the impacts of pollution, and industry and other sources of pollution. It was certainly more than a specific business interest alone in Vancouver that was responsible for raising air pollution as a public issue.

The campaign for a Greater Vancouver regional pollution authority, extending beyond the bounds of the City of Vancouver, did not prove successful in the 1950s, nor through the 1960s. Other large, dirty cities, such as Los Angeles and Toronto, had taken a metropolitan approach to drifting air pollutants that obviously did not respect political boundaries. The Chicago consultants had recommended just this step to the City of Vancouver in 1954.[34] But an exploratory meeting in 1955 on joint action on air pollution led nowhere. A survey of municipal political priorities by the *Vancouver Sun* after this meeting indicated that only representatives from Port Moody put "smoke haze" at the top of their list; Burnaby, North Vancouver, New Westminster and even Vancouver put air pollution at the bottom, behind such issues as town planning, highways, police services and sewers. The mayor of New Westminster questioned the viability of any air pollution control in indicating his belief that the cost of smoke control devices would drive most of small industry out of business.[35] In June 1957, Vancouver Mayor Fred Hume hosted a similar meeting to explore joint air pollution management with surrounding cities and municipalities. But the upshot of this meeting was to shunt the issue to municipal officials for technical analysis. The APCS hosted two further meetings of Lower Mainland municipalities in 1963 attempting again to foster a regional air pollution authority. Although being generally supportive, representatives of the local governments decided rather to lobby

the British Columbia government for a provincial approach. In December of that year, the Union of BC Municipalities approached Victoria to include air emissions in the BC Pollution Control Act, which mainly dealt with water pollution, but the Bennett administration did nothing.[36]

So far little has been said about air pollution's physical aspects. As mentioned above, dust collectors had been installed in various locations in Vancouver in the late 1940s. But the monitoring of air quality had become more sophisticated by the end of the 1950s. In addition to the numerous dust-fall collectors, haze-measuring devices--monitoring particulates that float in the atmosphere rather than falling to the ground as dust--imported from Pittsburgh were added in 1957. Ambient concentrations of sulphur dioxide (SO_2) were also being monitored at five sites. A 1959 technical report noted that the haze index was positively correlated with industrial wood burning, while SO_2 in the atmosphere tended to rise in the winter in commercial and residential areas that used oil as a heating fuel.[37] Dust and soot that fell to the ground was estimated at around 30 tons per square mile per month in 1949; this pollutant declined steadily to the 16 to 17 ton range by the mid-1950s and remained at that level for the next decade.[38] Measured haze fell about 60 per cent between 1957 and 1964, while SO_2 in the air declined 21% between 1958 and 1964. Joe Satterthwaite, Vancouver's head smoke inspector, often pointed out these trends with pride in public remarks.[39] Vancouver city engineer Ron Martin, who had regulatory authority on boilers, air pollution equipment and their operations, could claim, given the dust-fall measurements, that his city was becoming one of the cleanest in North America. Vancouver had the lowest dust-fall in 1956 compared to nine other cities keeping these kinds of records. He cited cooperative industry, city staff enforcement of Vancouver's new by-law, the replacement of heating coal by natural gas in

homes and businesses and the utilization of wood waste for energy (rather than its simple disposal by burning) as reasons for this success.[40]

However, the *Province*'s editorialists indicated that the public should not take comfort from Mr. Martin's optimism, describing his dust collecting system as "archaic" in neglecting invisible fumes from cars, for example. Moreover, any citizen could see a half mile high yellowish cloud over Vancouver from the North Shore mountains.[41] The engineer's assessment was also not necessarily shared by his political boss, Mayor Hume. He had told Council the same year that the smoke in Vancouver was so bad that some office workers could not open their windows, and that the quality of the air had not improved in the last 5 or 6 years.[42] Even the visible dust measurements were challenged. *Province* associate editor Alan Jessup wrote that city smoke inspectors dealt only with flagrant cases of pollution, "but the condition of any downtown window blind advertises the fact that the effort is far from successful."[43] January 1960 was reported by meteorologists as one of the worst months ever for air inversions and pollution-reduced visibility at city hall and at the airport.[44] Also inconsistent with scientific instruments showing improving trends, the *Vancouver Sun* stepped up its coverage and critical editorials on air quality in the early 1960s.

There is no reason to believe that Vancouver's measuring instruments were inaccurate or placed in parts of the city not representative of the general air quality conditions and trends. Monitors tended to be placed in areas where industrial activity, population density and visual reporting indicated the conditions were worse than average. There were also structural economic reasons to believe that visible pollution was decreasing. In addition to the efforts of

Vancouver's anti-smoke staff and regulations, there was, as noted by engineer Martin, a major shift through the 1950s away from two solid fuels—coal and wood--that made the greatest contribution to the smoky conditions and to the dust and soot collectors.[45] There were few coal locomotives or coal steam ships left in operation around Vancouver by the end of the 1950s, both replaced by vehicles with cleaner diesel fuel power plants. By the mid-1960s, natural gas had virtually displaced the coal and wood that had been used through the earlier 20th century to heat homes, businesses and fuel appliances for cooking and washing.[46] The number of sawmills was also diminishing in Vancouver, closing or moving out of cramped sites on False Creek to cheaper land along the Fraser River.[47] Disappearing even more quickly were beehive burners—conical, open-top structures with limited or no pollution control, used to burn bark and sawdust—associated with virtually all these mills in the earlier part of the century. New beehive burners were no longer being approved in Vancouver as of 1959 when only an estimated six remained, mainly located on the north arm of the Fraser River. By 1965 all these burners were gone from Vancouver, but still in use in North Vancouver and several other Lower Mainland communities. Joe Satterthwaite estimated that 60 percent of Vancouver's air pollution came from these remaining beehive burners, but he remained heavily focused on smoke and dust as the key constituents of Vancouver's pollution.[48]

Fueling concerns through the 1950s and early 1960s were so-called fumes, or invisible gaseous emissions, suspected to be present in increasing amounts in the air. Dr. Robert Wright of the BC Research Council—a government-subsidized organization doing contract research for the public and private sectors, located at the University of British Columbia—announced in 1960 that a new air analyzing machine had discovered fifteen "unknown" chemicals in the

supposedly clean air of the coastal campus. Breathing city air, he claimed, was like swallowing a couple of pills each day stuffed with mysterious ingredients.[49] The main suspects as the source of these transparent contaminants were motor vehicles. As the population and income increased, new and existing residents found houses in the growing suburbs of the Lower Mainland. Road construction kept pace with, or perhaps as often, led, these population flows.[50] The number of registered passenger vehicles more than tripled in Greater Vancouver between 1950 and 1964.[51] Emissions from increasingly powerful cars and trucks were uncontrolled apart from the tuning of the engine. Visible smoke came from the vehicle tailpipes, but health and air quality experts became increasing concerned about unseen vehicle emissions, such as carbon monoxide, nitrogen oxides and lead.[52] Brownish hazy air that stung the eyes and irritated the nose and lungs had been identified as photochemical (or ground-level) ozone by scientists in California in the 1950s. Ozone was a secondary pollutant formed from primary emissions of nitrogen oxides and unburned carbon from motor vehicles and oil refineries in the presence of sunlight. It was popularly, if imprecisely, called smog, a term increasingly used in Vancouver news reports to describe air conditions in the 1960s. Indications of ground-level ozone episodes are frequently reported in Vancouver through the 1950s and 1960s, often without being clearly distinguished from general smoky conditions.

Local smokestack Industry spokesmen, like the CMA's BC representative, were happy to point out the importance of vehicles as sources of pollution since it seemed to diminish industry's proportional responsibility. In the summer of 1959, after a week-long strike closed forestry mills around the Lower Mainland while the sky remained murky, smoke inspector Satterthwaite was convinced that the owners of cars, houses and commercial buildings were

mainly responsible for Vancouver's bad air.[53] But regardless of the contributions from these sources, there were many other industries contributing to air emissions, including refineries, metal smelters, metallurgical plants, waste disposal incineration and bulk loading facilities. A 1970 study of British Columbia's air quality by the BC Research Council summarized Vancouver's air pollution problem as similar to that of Los Angeles and San Francisco, but "not nearly so severe or continuous throughout the year. The impairment of air quality is evidenced by soiling [haze] index and reduced visibility and is a result of many sources, viz., industries both large and small, automobile use, fossil fuels for space heating and refuse incineration."[54]

By the early 1960s, the APCS, newspapers, location-bound industries, the City of Vancouver and health professionals had at least partly succeeded in making Vancouver's air quality a public issue. It was partly a public issue--in the self-referential sense--in that important members of the business community, elite professionals and city officials were discussing and advocating for more mitigative action in newspapers, at public meetings and in speeches. Air pollution was also a formal political issue in that Vancouver, New Westminister and Richmond had by-laws on the issue and all Lower Mainland cities participated in political meetings discussing management strategies. There is no evidence, however, that the provincial government had adopted air quality as a political issue, apart from involvement of public health staff. Without records of discussion or debate it is difficult to know why the Province did not take on the issue. Matthew Crenson in *The Un-Politics of Air Pollution*[55] addresses the question of why various city administrations in the United States failed to develop air pollution controls, despite having badly contaminated local air. He finds that the perceived governmental dominance by large industrial firms, who would bear the majority of pollution control costs,

largely explains why the issue did not come up for decision in these cities. In Steven Lukes' analysis this is the "two-dimensional view of power" in which "*decisions* are prevented from being taken on *potential issues* over which there is an observable *conflict* of (subjective) *interests*, seen as embodied in express policy preferences and sub-political grievances."[56] It may well be the case that the Bennett administration was in closer contact with large industrial firms than with location-bound industries, especially given the physical location of provincial governmental institutions in Victoria. City of Vancouver politicians certainly had closer physical proximity to a much bigger location-bound business sector than legislative members in Victoria. Chapter 3 offers more evidence from the 1960s that support the tentative hypothesis that the Provincial inaction in the 1950s was due to its support of the interests of large industrial corporations.

So far this chapter has looked at what can be called the professional response to air pollution involving business interests, medical and educational health staff, newspapers and local politicians. But what was the general public's response to air pollution? The public after all was in large part the object of professional concerns, at least in terms of garnering its support for the politically difficult task of broadening air pollution regulations. As indicated above, the public's purported apathy on the topic was the subject of much editorializing in newspapers and by health professionals. But there were gaps in newspaper coverage and likely in professional awareness of public reactions to air pollution. For example, one of the early instances of a consequential residential protest against pollutants from the Vancouver Rendering Company, located on the north arm of the Fraser River in Richmond, was not reported by the major newspapers. In the summer of 1953, a local ratepayers' association and a

veterans' group that had been provided with housing near the meat plant sent letters to the health ministry complaining of offensive smells. Despite obtaining the technological expertise of the BC Research Council the plant quickly and permanently closed after residents picketed it, although there were also (likely more important) market reasons for this closure.[57] As well, the archival record of letters of complaint, telephone logs and political or administrative discussion of public reactions is extremely patchy, particularly through the mid-1960s. Nevertheless, there are enough clues to suggest that the public was not as quiescent as elite opinion would have it. A too rigorous focus on the economic interests of local growth oriented businesses and governmental public health concerns as the starting point of air pollution policies tends to obscure the agency that residents of Vancouver and other communities across British Columbia demonstrated from the early 1950s.

APCS literature and newspaper editorials contain few if any specific recommendations about how the public was to protest bad air quality. There were few organizations to join, apart from homeowner associations, and little environmental ideology (the mid-20th century variant of the movement focussing on pollution is typically dated as starting in the 1960s) to provide guidance and channel public frustrations. However, social learning took place over time as individuals and self-formed groups tried out different tactics in response to specific situations. As word spread, by newspapers and by personal contact, about the use of these tools, the salience of various methods increased and a body of public knowledge formed regarding what worked. There is no way of knowing to what degree air pollution was an issue—a highly imprecise word—for residents of Vancouver in the 1950s, but the evidence indicates that they did not neglect the situation to the extent portrayed by the newspapers. Early efforts to

support air quality initiatives by the local business elite and health professionals do support theories of the local economic and government-centered interests, but the growing involvement of residents in Vancouver in the 1950s shows that, in this city at least, more was involved.

If the professional air quality community tended to focus on averages, trends and overall comparisons of air quality in Vancouver to other cities, the broader public revealed itself more in reaction to individual sources or episodes of pollution that caused specific problems. The expert community had the institutional means and tools to express their views, such as brochures, films, speaking engagements and editorials. The public, usually using other less verbal tools, was not passively suffering from air pollution in the 1950s. Complaints were regularly made to the City of Vancouver. In 1956, the one year for which I have found a number, 360 air quality complaints were submitted to the City.[58] Vancouver officials relied in part on these complaints to help determine priorities for an overbooked staff. Many more complaints were made in response to abnormally bad air conditions, such as a stinging smog event in January 1957 that resulted in newspaper and BC Electric phone lines being flooded.[59]

There were also other more publicly organized reactions, which involved more planning and effort. The available evidence indicates that much of this activism involved pollution sources in Vancouver suburbs and other communities in British Columbia that had weak, poorly enforced or no municipal air pollution by-laws. For example, in November 1958 a permanent injunction—ultimately unsuccessful--was sought by a couple from Duncan against the BC Forest Products pulp mill in Crofton that was producing offensive smells.[60] Paul Arens, owner of a

popular restaurant and motel in Victoria, launched a more successful suit against a nearby B.C. Forest Products mill in 1965.[61] As well, home owners initiated challenges against property assessments that did not account, it was argued, for market-based devaluations of financial worth due to pollution impacts.[62] Ratepayer associations sometimes sponsored the property tax assessment appeals on behalf of all homeowners in an area. Victory was claimed by residents when even token reductions in assessed values were awarded, indicating the importance of these objections in political, not individual financial, terms. The evidence indicates that enough residents protested the effects of bad air quality during the 1950s to reflect a general dissatisfaction with the air quality situation and willingness to act in certain situations. The charge of indifference to the situation cannot be maintained.

However, it does seem true that the early responses tended to be individualistic. An individual complaint to authorities can be understood as a natural response when a negative public event is interpreted as being episodic. But when some types of impacts are on-going they form general conditions whose attributes are anticipated and to which responses can be structured in more coordinated ways. The problem with individual complaints is that they are largely invisible to others experiencing the same issue and who may be reacting in the same way. More collective public responses to air pollution included petitions, municipal council appearances by groups, protest meetings and demonstrations. These tools of protest were used in Vancouver and other parts of British Columbia throughout my study period, but with a definite increase in frequency starting from the 1960s. They showed greater degrees of group planning and effort compared to individual complaints, law suits or challenges to specific property tax assessments. These more collective responses indicate that air pollution had

become more clearly defined as a public issue, rather than a private one. The coordination in response allowed individuals to opt into a group effort at a much higher level of social and political effectiveness than an individual complaint had. Instead of the individual's plea for redress or information, group action allowed for a stronger, more wide-spread, voice, that demanded a policy response addressing air quality's on-going characteristics.

Particularly important examples of these collective responses were the south Vancouver/Richmond and Port Alberni protests of early to mid-1960s. In 1961, residents in South Vancouver raised a petition and met with the Richmond city council to protest the heavy fall-out of soot from beehive burners on Mitchell Island. Richmond officials and politicians agreed that their by-law was being broken by two sawmills, but that the expense for the companies to correct the situation was large and employment at the mills needed to be considered.[63] In the face of a continuing problem and political inaction, the south Vancouver residents formed an air pollution control committee, which in 1963 raised $800 in small donations from hundreds of households to support a filing for a permanent injunction in the BC Supreme Court. Success was achieved when both mills settled out-of-court, agreeing to shut down their beehive burners and send their waste wood to nearby pulp mills for processing.[64]

The most sustained public protests against air pollution during the early and mid-1960s took place on Vancouver Island in the twin valley communities of Port Alberni and Alberni. These protests are significant for Vancouver since they were well covered by the city's newspapers, showed the efficacy of organized public protest and put strong political pressure on the provincial government to act. The location of the towns on a narrow inlet between two

mountain ranges led to stagnant air conditions—air inversions—that trapped heavy smoke and soot emissions from the Macmillan Bloedel Powell pulp complex. The provincial New Democratic Party representative for the area, John Squires, described the valley, including snow cover, as "black like a coal town." Residents, he told the legislature, often tracked greasy soot into their houses.[65] A *Vancouver Sun* editorial noted the physical effects of the Port Alberni air pollution on washed clothes, house paint and cars--the company provided a three-stall car wash facility free for residents of the town--but that the greater concern was potential cancer and bronchitis.[66] At a protest meeting in January 1966 a worker said he had nothing against the company--his job and wages were good--but he noted sarcastically: "I like to breathe too."[67] A poignant, silent march was held in early February to protest air emissions. Photographs of some of the hundreds walking quietly, wearing soiled clothes and carrying pollution damaged household goods, appeared in major newspapers. Also indicative of the level of the concern was a petition to the provincial government demanding air pollution action. The final signatures totaled in the thousands—a significant portion of the Port Alberni population. The local pulp complex provided the majority of employment in the community. The marchers and the petition signatories showed personal courage in opposing company financial interests.

Community organizers from Port Alberni met in the spring of 1966 with Cabinet members in Victoria and received a promise of legislation. Although they would have to wait for this policy to reveal itself, at minimum, provincial Cabinet ministers began talking about air pollution more frequently during the time of the South Vancouver and Port Alberni protests. The APCS, newspapers, local governments and health professionals had been advocating for a provincial response for years without success. Although it is impossible to definitively attribute

the adoption of air pollution as a formal Provincial political issue to these kinds of public demonstrations, they surely played a significant role. It would take almost a further decade, however, before any policy was implemented at the provincial level.

The predominantly working class protesters in Port Alberni raise the question of class status among the air pollution activists in the Lower Mainland. It is not easy to distinguish working from middle-class protesters in the public reactions to air pollution. Many of the protesters themselves would likely have had fluid definitions of their position in society during these decades of rapid income growth and reduced inequality.[68] Public protesters appear to be from all income ranges, but one can not help noticing that relatively better-off home owners are often referenced as being at the forefront of the activity. However, poorer residents of Greater Vancouver were likely more affected by air pollution, particularly in its more site-specific smoke and soot forms, than better-off residents. First, early housing patterns in Vancouver, and other cities, had workers living closer to industrialized areas, such as False Creek and Burrard Inlet, because of easier work commuting.[69] The second reason for this proximity was that the aesthetic and pollution impacts of industry lowered housing values, making these residential choices more affordable for lower income residents. Of course, winds would mix chemical and haze pollutants and carry them across Vancouver. As well, some major pollution sources, such as cars, residential heating and slash burning, had no obvious geographic and class correlations.

In summary, the social reaction to air pollution is made visible in large part by active protests of various kinds on the part of the general public. Location-bound industries, the City

of Vancouver and health professionals certainly initiated a public discussion and advocacy for cleaner air policies in the early 1950s. They were soon joined by the active protests of members of the public. These responses tended to become more collective over time as air pollution came to be defined as a persisting issue and the greater effectiveness of group, over individual, protest became evident. The intensity of reactions of both professional classes and the general public tended to increase over time just as the most visible and measured levels of air pollutants declined. The social meanings given to air pollution, increasing its importance, dominated any objective measurements of lower levels of physical pollution.

The extent to which the public reacted directly to its own experience of air pollution—both in its direct physicality and in the meanings it placed on this pollution—or instead reacted to the anti-pollution advocacy and meanings put forward by business interests and health advocates is not clear. That is, to what extent were popular views and actions influenced by the advocacy of the APCS and its newspaper allies? It is hard, if not impossible, to unravel public actions resulting from these two sources. There is, however, some evidence. The APCS, newspapers and health professionals tended to stress the health impacts of air pollution over the quality of life effects. There was also a fair amount of professional assessment of whether air quality progress was being made and comparisons of pollution levels to other cities. The public, on the other hand, identified a spectrum of negative impacts as important in its reactions. Many of the recorded reactions included quality of life impacts on home life, such as inability to open windows, use backyards, go for walks or enjoy mountain vistas. They also included economic impacts that demanded such costly measures—financially or timewise--as repainting houses, washing cars, patios, dirty floors, and having to do extra laundering on

clothes. People had practical health concerns about breathing air that often smelled, sometimes was acrid and typically looked impure. It is not unreasonable to suppose that the worried talk in newspapers and by medical authorities about possibly serious, but unproven, health impacts from bad air would have increased anxiety, particularly from parents of children and for those with previous breathing difficulties. However, there is little reason to suppose, and no evidence, that the expert comparisons of Vancouver to other cities, discussion of anti-pollution technologies or assessments of generalized progress resonated with the public. These aspects of the pollution discourse were too abstracted from the realities of the pollution faced by the average resident to be of much concern. Although one should probably not place too much weight on the limited evidence of the varying emphases of professional and public readings of air pollution, it still does tend to show that the location-based economic interests and health officials did not exclusively, and perhaps did not even fundamentally, shape the public reactions.

At minimum, in applying the theory of the influence of location-bound economic interests as the chronological source of air pollution as a public issue, one should not ignore the evidence of a relatively independent public. Public agency in Vancouver and British Columbia grew over time. The government of Vancouver and governmental health professionals also had significant roles to play. Although it may be less satisfying to include multiple sources of causal influence than to definitively point to one clear source, this seems to accord better with the historical record in British Columbia. This record tends to support the belief of Robert Alford and Roger Friedland that to understand any political situation requires the synthetic analysis of three levels of power: the situational level of individuals and groups influencing political

decisions; the structural level of state organizations exercising a degree of autonomy from popular and upper class pressures; and the systemic level of the societal functions of state.[70]

The functionalist theories of the contradictory roles of the state are very suggestive of fundamental tendencies, but have a hard time accommodating specific decisions or change over time. Specific social formations in Vancouver and elsewhere in British Columbia showed some independent agency that affected important political developments. As Robyn Eckersley writes: "If the state as an institution is understood merely in terms of its objective functions, and policies are understood merely as strategic responses to systemic effects, then we have no social context that can explain why and how some policies are selected over others."[71] The provincial government refused to adopt air pollution as a formal political issue even after a decade of verbal pressure from many professional and local government advocates, but did so in a contemporaneous response to community activists in different parts of British Columbia. How the provincial government, the anti-pollution professionals and public struggled to shape the meaning of air pollution is the topic for Chapter 3.

3

The Nature of Air Pollution

Speaking on the topic of air pollution at a Union of British Columbia Municipalities conference in September of 1960, Social Credit Municipal Affairs Minister Wesley Black indicated to the delegates that relying on the honour system to counter the "careless and indifferent habits of certain persons and groups" didn't work.[1] Pollution was a "highly technical subject," he said, and the Province was now studying air pollution control approaches from across Canada. Minister Black's remarks are significant because they are an early instance (the earliest I have found) of a Social Credit politician speaking publicly about air pollution. The topic had expanded from being an issue important to the public and some local municipalities to also being a Provincial political issue in the 1960s.

The remarks are also significant because they illustrate one range of meanings associated with air pollution and the neglect of others. For example, in emphasizing the source of pollution as thoughtlessness on the part of people, individually and in groups, Black was choosing not to see, or at least not to highlight, polluting activity as a demonstration of power by industry. That is, releasing pollutants also demonstrated the capacity of industrial capital to use public space for the private motives of cost minimization in the absence of effective opposition by those bearing the ill consequences of these releases. There is some inevitability that in choosing certain words to describe phenomena one tends to draw attention to certain aspects of the phenomena, especially if ways of speaking become routinized. Words do not determine reality, but they can be used as tools to shape, or attempt to shape, the collective

meanings of controversial or complex phenomena. A degree of consensus on one set of meanings can lead to a preponderance of certain kind of policies and actions, and the diminishment of others. This chapter looks at the public portrayals and arguments over two aspects of air pollution issue through the 1960s. The first involved the controversy over whether the consequences of air pollution were largely related to relatively benign quality of life impacts or whether human health was the main concern. The second was less contentious, but highly limiting: the focus on technology as the solution to air pollution. The ways of speaking and attributing meaning to pollution had tangible and wide-spread implications. One of these consequences was a series of events that concludes this chapter that had ramifications for subsequent decades of air pollution policy. This was the turf fight between the ministries responsible for natural resources and health over who had the leadership role in setting policy for air pollution in British Columbia.

Unfortunately for those local government representatives in the audience for Minister Black's remarks who hoped for timely policy proposals from the provincial government, the municipal ministry continued to indicate in 1963, and then again in 1964, that the government was still studying the issue.[2] Once air pollution was accepted as a legitimate provincial-level public issue, discussed openly by politicians and presumably analysed by staff, the obvious next step was to propose policy responses. Before these could be made, however, the problem needed definition. The events outlined in Chapter 2 have shown that air pollution was not a phenomenon that revealed itself in a naturalistic and simple way to people such that they experienced, interpreted and responded to it in a uniform fashion. People responded in different ways to this pollution, and sometimes counterintuitively. As measured emissions

declined in Vancouver, professional and public concerns and activism increased. There were also different views on the composition of emissions, their sources and the effects of deteriorated air quality on people's well-being. The definition and meaning given to air pollution, like other collective issues, were socially constructed. But how to construct these meanings was contested. Different interests were involved. The public's interest was the most straightforward in wanting to see improved air quality, perhaps with as little impingement on household activities such as backyard burning of waste as possible. The major industrial sources of air emissions wanted to control the costs of reducing air pollution, but generally recognized that some form of management was necessary to preserve social harmony. The local and provincial governments were the most divided since they internalized, at least partially, the objectives of the public and the industrial sectors. Government relied on growth in the economy--largely seen as driven by natural resource extraction and processing--for job creation and tax revenue. Government also needed to manage the ill effects resulting from the private operation of the economy, whether unemployment, income inequality or pollution, to legitimize itself as the key representative of democratic interests. From the state's point of view, before one could address the air pollution problem, it needed to be structured in a way that could offer acceptable management approaches to these conflicting objectives. Approaches deemed acceptable would be those that successfully managed social discontent and infringed as little as possible on private sector costs and government revenues. The framing and defining of social issues as particular kinds of problems was the first step in advancing solutions that were equally particularized in their consequences—the "mobilization of bias" in Schattschneider's famous formulation.

Few people in the 1950s and early 1960s questioned the priority and benefits of economic growth—manifested as resource exploitation, industrial output, profits, labour income and mass consumption.[3] Achieving this material growth and the improvement of general well-being were common objectives. Premier and Finance Minister W. A. C. Bennett and his Social Credit Party dominated British Columbia politics from 1952 through 1972. His vision of what he often called "the good life" involved a continuous expansion of material well-being for the population. The growth of private capital ownership provided the unquestioned motive force for the British Columbia economy, although the Social Credit Party was also willing to invest unprecedented amounts of public money on key infrastructure developments. Government spending on highways, ferries and hydroelectrical infrastructure would speed economic development by lowering investment and operating costs in the private sector. Some significant and direct public benefits were provided as well.

The social acceptance of economic growth—its naturalization in everyday thinking—resulted in people having to fight the ill consequences of this growth. Pure air was put into question as a basic endowment of life relative to the "natural" expansion of production, consumption and attendant pollution. Entrepreneurs and consumers did not have to fight for any right to increase their economic activities, which was the unproblematic driver of the "good life." This naturalization of economic growth—not that different in British Columbia than in other North American jurisdictions—resulted in a displacement of the onus of proof. Prove the harms was the onus on those affected by air pollution; there was no imperative for industry, politicians or consumers to show that no harms would be entailed by on-going economic expansion, or even that the benefits outweighed the costs.

Perhaps the most important question about the nature of air pollution in terms of public policy was the degree to which it was harmful to health. This was an entangled question about both the physical effects of air pollution and the social meanings ascribed to these effects. The public statements and discussions about air pollution in Vancouver frequently carried an implicit--sometimes explicit--argument about whether one should emphasize the negative aesthetic or the health impacts of emissions. Few statements highlighted anything positive about air pollution, although some commentators referenced the possibly apocryphal statement of Bennett that pulp mills emit the smell of money.[4] Aesthetic impact attributions were easy to make because of the historic legal characterization of air and other pollutants as nuisances under common law. These nuisances carried the meaning of causing inconvenience, annoyance and discomfort to people in public spaces or in the private enjoyment of their property, although they also could include more serious harms. Aesthetic attributions were broadly scoped to indicate impacts on the general enjoyment of life.

One conspicuous intrusion into this enjoyment was the generation of obnoxious smells. The BC Research Council (BCRC) had been working to find a solution to the hydrogen sulfide smells originating from the pulp mills since the 1940s.[5] In 1964, the BCRC had five scientists working on this problem.[6] Property assessment challenges were often based on the impacts of these rotten egg type of smells, which transmitted great distances from Howe Sound and Vancouver Island pulp mills to affect the tonier coastal districts of Greater Vancouver most strongly. Many editorials were given over to the smell issue. After a lengthy period of foul smelling air in the city in 1964, the *Vancouver Sun* called for "a good sustained scream….to bring pollution legislation into the twentieth century."[7] In 1970, Premier Bennett announced an

innovative policy that would award $250,000 for the development of pulp mill technology that substantially reduced associated smells and emissions.[8] The loss of long distance sight lines was also a concern. The degree of obscuration of the iconic North Shore mountains from Vancouver was often taken as a practical measure of air pollution. Reference has been made in Chapter 2 to the common complaints about soot and grit being tracked into houses and businesses, sticky dust collecting on windows that had to be kept closed, faces and pets dirtied during walks and loss of enjoyment of backyards. In a 1969 speech at the opening of a pulp mill in Houston, BC, Premier Bennett summarized his position on pollution control: "We must have jobs, but we must have beauty too."[9]

A highly regarded environmental history by Samuel Hays*, Beauty, Health and Permanence*, refers to the shift in the understanding of the natural world in the 1960s and 1970s as a search for "environmental amenities."[10] According to Hays, the environmental movement integrated three dominant concerns about nature: the compromising of aesthetic values; increasing harmful biological effects on humans; and the fear of the collapse of natural systems and loss of natural resources. Prior to the environmental wave In British Columbia both politicians and researchers frequently separated and contrasted aesthetic and health impacts, ranking the former below health concerns. Industry and political representatives, and even some medical researchers, focused on air pollution as, in effect, bad smells. In this framing, malodorous air was uncomfortable, but not really harmful in any significant way. A spokesman for a Burnaby refinery indicated that a bad smell was not of health concern, and that while industry was trying as hard as possible to suppress the smell, many residents had, in his view, adjusted to the situation.[11] In 1964, Health Minister Eric Martin wrote to the Vancouver Board

of Health to make the case that air pollution was a nuisance, but of questionable concern to health.[12] Even Dr. Donald Anderson, a professor of medicine at the University of British Columbia, argued that Vancouver did not have a serious air pollution problem, but rather annoyances in smells from pulp mills and smoke from beehive burners.[13] Commenting on the city's new diesel buses in March 1965, Vancouver Mayor Bill Rathie said city residents might as well accept the smell of diesel exhaust.[14]

If air pollution is primarily associated with smells and aesthetic impacts, then the cost of implementing pollution control comes to the fore. Spending money required trade-offs. One form of trade-off, which assumed a limited ability for companies to pass costs through to customers, was that environmental control would cost jobs. Premier Bennett had referred to this perceived dilemma in Houston. Municipal politicians were the most susceptible to these fears of footloose industries seeking to avoid or reduce all possible regulatory costs via investment decisions. But others recognized the propaganda value of the problem framed in this way. Vancouver engineer Dr. Martin Stewart indicated his view at a BC Public Health Institute meeting: "It's mostly a big game of bluff….played endlessly by municipal councils and industry."[15]

Another form of monetary trade-off was indicated by natural resource Minister Ray Williston in remarks to a construction association meeting in 1969—remarks that assumed government would bear significant pollution control costs. If pollution levels were to be reduced for nuisance or aesthetic reasons, he asked, what social spending should the government cut? As for health impacts, he continued, medical proof would determine when such hazards were excessive.[16] Williston was one of only a few powerful and highly trusted

ministers in Premier Bennett's cabinets from 1956 through 1972. His continuous responsibility over this time was the management of Crown-owned forest, land and water resources, which put him at the centre of the Social Credit's economic development agenda.[17] The implication of his remarks was that good quality air was an amenity. Amenities are desirable features, but not basic to the utility of the product. Trade-off thinking tended to commodify public goods like market products. In consuming one good, income constraints meant that something else could not be consumed. In an era of rising incomes, these trade-offs may have seemed less restrictive since a purchase of cleaner air comes at the expense of an *incremental* good--a more nebulous good than an existing one that has been habitually consumed. Rising incomes then are associated causally with a tendency for demands for higher environmental quality.[18] But associating good air quality with the features of a commodity also diminishes one's concerns about it. Responses to air pollution become dependent on individual preferences for different features of a consumer good, not amenable to the passionate feelings aroused by vital substances that are intrinsic to human well-being. Minister Williston's categorization of bad air quality as mainly a nuisance—good air being like a commodity--fit his governmental priority of avoiding constraints on capital accumulation.

Of course, there were passionate responses to air pollution in Vancouver. A common complaint of some politicians and experts in the field, particularly in the late 1960s, was that the public was too emotional about the topic. Given the necessity of breathing, the perception of bad air quality as a threat to one's health could lead to strong feelings. The APCS and the newspapers of the 1950s and 1960s regularly emphasized potential health effects and explicitly called for the public to become worked up about it. An emphasis on the health, rather than the

aesthetic, impacts of air pollution would lead, it was believed, to stronger pressure from the public for effective mitigation measures. Supporters and detractors of mitigative action were agreed on this. Rather than being conceptualized as a consumer good, healthy air was viewed by many as a fundamental birthright, not something in a basket of goods to be chosen based on preferences and income. However, the weak point of framing air pollution as a health concern was that the ill effects from long term chronic exposures were very difficult to determine. Minister Williston had put his finger on this by demanding proof of health effects. Unlike health consequences, the discomfort from smells, the obscuring of the North Shore mountains and the need for the continual sweeping of dust-fall were directly experienced and obvious.

Research on correlations between air quality and lung cancer rates in Vancouver and other urban areas compared to rural ones were regularly reported in newspapers.[19] Urban rates were consistently higher. Autopsies were also claimed to show dark grey lungs in urban corpses as opposed to the pink lungs of newly deceased rural residents.[20] But the scientific community was very careful about drawing conclusions. Dr. Murray Katz, the federal government's leading air pollution expert, told a Vancouver audience that there was no conclusive evidence that outdoor smoke directly caused physiological damage, but that it may well contribute.[21] When more systematic studies were done, however, the results were also inconclusive. Two separate studies in the 1960s used rural Chilliwack as a clean air control community to compare with dirtier communities. The residents of a pulp mill town in Berlin, New Hampshire showed no difference in respiratory illness rates from those in Chilliwack.[22] When school children in Port Alberni--a notoriously polluted mill town on Vancouver Island--were rigorously compared to their Chilliwack counterparts, again, the expected results of higher

acute respiratory disease in the former town were inconclusive, although there were more headaches, fever and nausea reported for Port Alberni first-graders.[23] Calls went out for more research.

More research, however, could prove to be a double-edged sword. Those disinclined to act on poor air quality because of the cost pollution controls imposed on business or government could be seen to be taking an active stance by calling for more research, as illustrated by Minister's Williston's remarks. Dr. Gerald Bonham, a public health officer in the North Vancouver, was aware of this danger. He argued that waiting for definitive research that presented a black and white picture of reality was standing in the way of pollution control. Enough was known, he said, about health harms. And air pollution control technology was sufficiently available to take action, even if all the health impacts had not been proven.[24] At the 1967 annual meeting of medical health officers in Vancouver, a Dr. A. S. Arneil gave a presentation indicating that those researchers who directly experienced inundations of dust and smoke "which common sense would suggest are deleterious to health, are confounded to find that recent studies carried out in B.C. do not seem to substantiate this conclusion."[25] Even Dr. Anderson, who had earlier argued the annoyance side of air pollution in Vancouver, took a more encompassing position in late 1965. He told the *Vancouver Sun* that it was difficult to prove the health harms of chronic exposures to bad air, but:

> If we await proven effects of air pollution on health, we have lost our sense of perspective...It doesn't matter whether the pollution effect is haze, odor, smoke, dust, erosion, corrosion, oxidation reduction, paint damage, eye or lung problems. If air pollution causes people to be annoyed, if it affects their happiness, their psychological adjustment or their pocketbooks, then it must be dealt with by all the mobilized forces.[26]

The hundreds of deaths that were almost certainly occurring annually in Vancouver because of chronically bad air in the 1950s and 1960s were causally invisible to both researchers and the public.[27] Heart attacks, strokes, cancer and respiratory complications had many contributing factors that the medical community was only starting to sort out. These diseases would often have occurred in older people or those with on-going health conditions, which seemed to naturalize any resulting deaths, but did not explain them. Based on current health impact models, there most likely were tens of thousands of annual hospitalizations, emergency calls and doctors' visits, as well as possibly millions of minor illnesses, attributable to smoke and chemicals in the air in British Columbia in the 1950s and 1960s.[28] But none of this could be seen at the time, although many medical health professionals suspected some linkages.

Regardless of the scientific uncertainty about the chronic health impacts of smog, smoke and invisible air pollutants in the 1950s and 1960s, the framing of the issue as a health concern put it into a different mental category than emphasizing the aesthetic or amenity attributes of air quality. Physical well-being is not as subject to transactional considerations as are more narrowly defined quality of life concerns that can more easily be traded off against other goods. Highlighting the amenity value of air quality had the effect, fully intended or not, of reducing demands for stringency in air quality management relative to an emphasis on the health effects. Another tendency of the aesthetic framing was to take attention away from invisible and non-odorous forms of air pollution, some of which would prove to be as bad for breathing and blood flow as the visible particulates and smoke in the air.

As indicated in Chapter 2, there is little evidence of the direct effects on the public of the arguments to portray the impacts of air pollution as either mainly aesthetic or mainly harmful to health. The evidence that there is supports the view that people did not seem to have strong views on "either-or" impact type of arguments. The pertinence of the distinctions that were attempted by some Provincial politicians and some in industry simply were lost on the public, as Dr. Andersen had intuited. Whether the impacts were aesthetic or health-related was not a consideration in determining the need for strong action.

There were obviously no bright lines of demarcation between aesthetic and health impacts of air pollution. All participants in the debate about effects could likely recognize, like Dr. Anderson, a continuum of impacts. But there were clear tendencies of argumentation, with provincial politicians leaning to less frightening, more trade-off orientated, quality of life impacts and with much, but not all, of the health profession on the other side. There was no conclusive problem definition, or discursive closure in Hajer's terminology, before events overtook the debate.[29] Policy needed to be formulated, but there were other complications.

Before the question of what air pollution policies could be proposed, provincial politicians needed to decide what level of government should be involved, provincial or municipal. The aesthetic categorization of the impacts of air pollution helped lean views towards the appropriateness of municipal level policy control. Edelman writes: "To place an object in one class of things rather than another establishes its central characteristics and creates assumptions about matters that are not seen."[30] The associations of quality of life impacts, both with the diminished significance of air pollution and with the historical role of local government in dealing with nuisances, promoted a continuation of local government

control. So too did the idea that quality of life and aesthetic assessments were likely to be much more variable and community-dependent than health impacts. But there was certainly nothing inevitable about this conclusion even if one believed that air pollution was harmless. Despite its conclusion that current levels of emissions were not generally hazardous, an inter-departmental committee of public servants recommended to Municipal Minister Wesley Black in 1963 that industrial emissions should be regulated by the ministry of health. The committee believed that municipalities did not have the technical resources to deal with industry and that economic competition between municipalities would undermine effective control.[31] However, the Social Credit government did not act on these recommendations.

Provincial politicians did not make explicit arguments about governmental level of pollution control using arguments about the purported predominance of quality of life impacts. Instead, some argued local governments could respond with the most appropriate by-laws that addressed different mixes of pollutants resulting from varying degrees and types of urbanization, industrialization and local fuel use. And if a competitive race to an air quality bottom resulted from industrial siting decisions, then authorizing regional groupings of municipalities would at least partially address this concern. A May 1964 internal memo from new Municipal Minister Dan Campbell to Health Minister Eric Martin explicitly rejected the inter-departmental committee's recommendation, indicating another reason for avoiding province-wide control. Acknowledging Ontario's province-wide standards, Campbell reasoned that since that province's level of air pollution was higher than British Columbia's, a regional municipal approach must be better.[32] Campbell also argued the ineffectiveness of the Ontario-wide approach with the more plausible argument that each polluting industrial facility needed

its own form of technical control, something that could not be specified by general emission standards.[33] For all these rationalizations, the basic point remains that the quality of life framing of air pollution impacts legitimated the Social Credit government's proclivity for local government control.

In February 1966, in the face of the Port Alberni march and petition, the provincial government announced the formation of a committee of the ministers of natural resources (chairing the committee), municipal affairs and health that would direct another technical study of air pollution.[34] Minister Campbell issued a policy statement that July announcing the results of this study. The pollution committee decided to abandon any attempt to define provincial air emission standards (i.e., defining maximum rates of pollutant per some measure of air volume emitted from smoke stacks per time unit), which were deemed to have failed in other parts of North America. It focused instead on requiring the use of the latest technological pollution controls by industry. The BC Research Council and the Province would provide technical support for municipalities or regional governments—groupings of contiguous municipalities—to determine what these evolving technologies were at any point in time. The policy statement indicated that in a rapidly growing economy, emission standards would simply authorize increasing amounts of pollution even with all controlled sources meeting the standards. Encouraging the latest pollution control technology to be continuously adopted provided the means to address the problem of ever growing industrialization and increasing numbers of pollution sources.[35]

Municipalities in the Lower Mainland, and elsewhere, were divided on the question of the level of control--regional versus province-wide--of air pollution management.[36] Mayor Les

Hammer of Port Alberni put his finger on a key downside of regional control in emphasizing the weakness of many communities, even grouped together, in negotiating with powerful corporations who often provided the bulk of community employment and municipal revenue.[37] It was also unclear how municipal by-laws could be written to authorize the requirement for continuous technical upgrades. How would decisions be made to determine what the latest technology was? How practical or tested would the control equipment have to be and what costs could be tolerated? The requirement for on-going upgrades quickly proved to be unworkable and was never introduced into Lower Mainland or any other municipal by-laws.

But municipal-level air policy obligations remained a constant through the 1960s, despite continuing calls by civil organizations, newspapers, local government and opposition politicians for provincial legislation on air pollution. Air pollution was a new issue for the provincial government, one that fell directly into the contradictory policy trap of states in capitalist societies. Faced with the dilemma of sustaining the privately-owned economic system and at the same time providing relief to citizens from the harms produced by this system, the Bennett administration opted for continuing municipal control, combined with an ineffectual provincial government policy statement. This was a "responsibility-displacement" strategy for an issue that could only be managed, not resolved.[38]

Air pollution had become an important social and political issue at the provincial level by the mid-1960s, catching up, at least rhetorically with water quality management. The provincial government dealt with sewer systems and water pollution via a Pollution Control Act (PCA) dating from 1955, administered by a Pollution Control Board (PCB) of appointed officials.[39] In February 1965, the water provisions of the PCA were strengthened and the PCB was moved

from the ministry of municipal affairs to the Water Resources Department in the ministry of natural resources. The ministries of health, municipal affairs and natural resources all had roles to play in managing the human uses of water, but this move ensured that power lay in the hands of pro-development Minister Williston. Opposition members of the legislative assembly (MLAs), and some Social Credit MLAs, wanted a revised definition of pollution to include air contaminants in the 1965 updates to the PCA, but were voted down. Williston re-iterated his view in the legislature that province-wide air pollution control did not work, and that pulp mills in British Columbia were adopting the latest technology for smell control. Focusing the conversation on technology and smells, he stated his belief that the Crown Zellerbach pulp complex in Elk Falls was on the verge of a breakthrough in eliminating the last 5 percent of odors from the pulping process. But until the Province knew how to control air pollution generally, he stated, legislation was pointless.[40]

If there was significant debate about the nature of air pollution impacts, there was much more agreement about the solution to air pollution. Technology was the answer. The standards versus technology debate was relatively short-lived since it was quickly understood that it was a false choice. Standards could be chosen to reflect what existing technologies could deliver, while still offering more flexibility for industry than specifying particular pieces of control equipment. Standards embedded technological assumptions. Some of these assumptions rested on what the technology historian Thomas Hughes calls the modern values of "order, system and control."[41] A technological focus in response to concerns about air pollution was a natural one for the highly managerial Social Credit government.[42] In the managerial worldview, government bureaucratic characteristics, such as centralized control,

process rationality and nested functionality, are also the virtues of industrial organization and society at large.[43] A technological orientation fit smoothly into these views. Technology was protean, expanding growth opportunities and offering ingenious responses to many of the issues of the 1960s. The government and professional dialogue on pollution technology, however, was particularly narrow, focusing on control equipment or industrial processes that intervened close to the point of venting pollutants. In terms of Edelman's ideas on categorization and Hajer's story-line approach, the intellectual spotlighting of this kind of technical solution entailed associated meanings and implications that became baked into contemporary thinking and action.

One of these meanings was that pollution control policy was the domain of engineers and scientists, marginalizing involvement for residents, workers and activists. Dr. Frank Murray of the BC Research Council wrote a letter to the *Vancouver Sun* indicating that pollution—pulp smells were the particular concern of his letter—was a technical problem best approached with surveys of pollution sources and research.[44] He argued, as did others who naturalized the issue, that some pollution was inevitable. Activists were seeking, according to Dr. Murray, a complete answer to pollution, a response that was emotional, irrational and quite impossible.[45] The provincial government sent Dr. Murray to Port Alberni in early 1966 to assess the air pollution problem. To the frustration of many residents, after only one day interviewing mill managers, he declared air pollution in the Port Alberni valley alleviated "as far as possible." Port Alberni's mayor, Mike Hammer, responded with resignation: "Who am I, a layman, to refute it. We must accept what Dr. Murray says."[46] But others rejected the technical premise that limited debate. A co-sponsor of a Port Alberni protest meeting, George Mcknight, asserted that it was a mistake

to engage in technical talks with the company: "We're not interested in why [the pollution] happens and why a certain machine is not actively curbing fall-out. We are mad because it is happening and it is up to the people to demand the problem be solved."[47]

Another implication of the technocratic focus on equipment that stripped pollutants out of exhaust chambers was a susceptibility to deterministic thinking and a narrowing of the scope of possible solutions. Asserting that pollution was an inevitable consequence of human productive activity served as an intellectual club to beat down anti-pollution activists, as demonstrated by Dr. Murray. If technology is viewed to be the unique source of mitigation, then the limits of technological development also constrain pollution control. Just as more research on pollution's health impacts--as the alternative to immediate ameliorative action rather than a parallel activity--became a barrier to reducing pollution, so too did the call for more technical development. This call for more technology blocked thinking about other applicable approaches to pollution. In the spring of 1964 Vancouver mayor Bill Rathie said that residents needed to "hold their noses" against a bad episode of pulp mill smells—described by the *Vancouver Sun* as "eye stinging," so perhaps mixed with some ground-level ozone. He continued: "Until [these smells] can be overcome scientifically, there is no possibility of government action. What are we going to do in the meantime, close down the pulp mills and throw the whole provincial economy out of whack?"[48] Continuing this line of thinking natural resource Minister Williston said in 1970: "Until we get some answers at the technical level, my only act, if there is pollution trouble, is to close up a mill," which he had no intention of doing.[49]

But there were more systemic methods of pollution control. These included such broader approaches as fuel switching to natural gas; electrification; alterations to production

processes; product mix changes; the use, rather than disposal, of formerly waste products; siting evaluations on the local impacts of new industrial proposals and changes of location for existing ones; and temporary reduction of production rates. Most ideas of this kind were barely part of the anti-pollution discussion until the late 1960s. Newspapers and the expert community in general rarely got into details about possible policies, such as the relative merits of those that would encourage pollution reduction through fiscal measures versus those that would legally require it via emission standards. Only later in the 1960s were voices raised on the potential for putting taxes on emissions, although industry and some provincial government representatives regularly called for tax relief on pollution equipment expenditures. The anti-pollution prize of $250,000 for a breakthrough development of anti-pollution controls was an example of the Social Credit government trying to force technological development. This prize was innovative in that it encouraged technical development rather than simply relying on market forces. However, it too was rigorously targeted at narrow technical solutions. In general, the focus on technology blinded many to the social choices that could be made about pollution control. If control equipment was deemed unavailable, the choice was reduced in a non-credible fashion to living with pollution or closing industry.

George Gonzales argues that the technological focus of air pollution management across jurisdictions in the United States during the 20th century reflected the interests of the urban growth coalitions. His case is that technological approaches, while indeed producing cleaner emissions, do so with the minimum interference with rates of local economic growth and investor confidence.[50] But an argument beyond that provided by Gonzales is needed since there were important seats for industrial emitters at policy tables around North America. As

indicated in Chapter 2, these industries were not so focused on local economic growth opportunities. George Hays argues that corporate industrial leaders resented any interference within their managerial domain. He contends that control over the choice of anti-pollution processes in large firms was the most important consideration. More technically oriented solutions were, in most cases, less disruptive to these business interests than encompassing a broader range of potential mitigative measures, such as process changes or production rate, type or siting questions. This was particularly the case if control or influence over these broader choices were to come from outside industry. As noted above, a technical focus limited the scope of non-expert participation in clean air discussions, and thus helped ensure stronger influence for the business community.[51]

The 1966 British Columbian policy statement on air pollution issued by the ministry of municipal affairs had specified the principle of continuous pollution control upgrades on the part of industrial firms as engineering knowledge progressed. This was wholly consistent with a technological focus. But this policy was irreconcilable with the corporate interest of minimal interference with production decisions. The Social Credit government showed a willingness to fill what it saw as private market investment gaps with public spending in areas such as transportation and electricity generation. There is no evidence, however, that it intended such an interventionist stance on clean air, as was also indicated by the long delay in acknowledging or formulating policy on the issue. A sympathetic interpretation of the contradiction in the policy statement was that it reflected inexperience, lack of staff or ambivalences in a new policy area for the government. This tentativeness is also perhaps seen in the shifting debates over governmental level of policy control and later in the fight over which provincial ministry had the

policy lead. However, a more critical interpretation is warranted. The government did not seem to be serious about the implementation of such a policy. Given the almost complete lack of staff and expertise at the local government level and the economic dependence of many communities on a narrow range of industries, the technologically focused and interventionist policy would be nearly impossible to implement, even with the support of the BCRC. Also, the policy indicated governmental intent and guidance, but no assertion of legal authority. In the end, the policy was never carried out at the local level and was quietly dropped by the provincial government.

An irony of the focus on technology as the solution to air pollution In Vancouver was that a large part of the improvement of air quality in the city was the result of other economic developments. Chapter 2 has indicated the important contributions of fuel switching from coal to diesel and natural gas and the closing of beehive burners in improving Vancouver's air quality. These changes were driven mainly by market forces, although the role of South Vancouver activists has been noted in the case of the Mitchell Island beehive burners. There was also a slow movement of industrial facilities from crowded sites around False Creek to more spacious and cheaper sites along the north arm of the Fraser River in the southern suburbs.[52] The implementation of Vancouver's 1955 by-law also played a significant role in cleaning the city's air. However, greater improvement could have been made more quickly if there had been a regulatory focus on a wider range of systemic approaches to air quality to augment the market forces pushing towards cleaner fuels, better waste utilization and industrial siting shifts.

Speaking in Port Alberni just before the September 1966 provincial election, Premier Bennett promised clean air, water and land policies, since "pollution is one of the greatest problems of this period we live in."[53] The 1967 Throne Speech contained a first ever reference to preserving "clean air," as well as "pure water, and fertile soil," in the face of the "onrush of industrial development."[54] However, the Provincial policy approach, the agency in charge, and the level of ambition in fulfilling these promises were very much in question over the next few years. Natural resources Minister Williston revealed the government's stance when he publicly accepted a recommendation from the forestry lobbying group, the Council of Forest Industries, that no pollution equipment would be forced on industry until it was economically feasible and its efficacy had been proven beyond a reasonable doubt.[55] The question of setting emission standards or specifying the latest technologies became formally moot in February 1967 when Williston spoke in the Legislature of anticipated legislation that would specify flexible emission standards varying across the province, depending on industry and population mix.[56] As to the agency in charge, there were three provincial players--the ministries of health, municipal affairs and natural resources--but there seemed little doubt that the latter ministry in chairing the coordinating committee, and with an aggressive minister, had the upper hand. Although the 1967 Throne Speech had also committed to establishing an air pollution section within the ministry of health, the Pollution Control Board and its supporting legislation were also in the ministry of natural resources.[57] There was little to concern industry when a March 1967 amendment to the Pollution Control Act again failed to include air pollution in its ambit.[58] In a speech in June to a conference on the environment at the University of British Columbia, Minister Williston said that "we must achieve the happy medium between over enthusiastic

demands of the unrealistic people and the concern of the industrialist over the mounting costs of pollution control…..We cannot sacrifice progress and its benefits to complete idealism."[59] Williston then announced a new three-year study of the "causes of and remedies for air pollution" to be directed by a newly constituted Pollution Control Board, which was to focus on policy, and a new Pollution Control Branch in his ministry that would administer this policy.[60]

The frustration of public medical health officers over air pollution policy emerged at their (closed) annual meeting in May 1967. Biting references were made about the Pollution Control Board's unwillingness to take responsibility for setting a clear air pollution policy and its "exceeding apathy" on the issue. The role of the Health Branch itself on air pollution issues was described as "very obscure," and debate arose as to the extent to which provincial medical health officials could even work with municipalities in the face of formal policy control by the natural resources ministry.[61] Public health officers again expressed frustration over conflict and duplication in air pollution authority at their 1968 annual meeting.[62] Were the health impacts of pollution on the public at large to play a secondary role to the cost impacts of these controls on the industrial sectors?[63]

In August 1968, newly appointed Health Minister Ralph Loffmark met with his ministry's air pollution advisory committee to discuss the history of the health department in the field of air pollution and the barriers to further action. The minister "outlined the problem as he saw it and requested the Advisory Committee to draft air pollution regulations to be enforced under the Health Act."[64] A large part of his motivation in acting was most likely to address the confusion and resentment that his health officers were expressing in the face of Minister Williston's aggressive stance on his ministry's control of air pollution policy, but passive

approach to meaningful health content in the policy. For example, Loffmark worried in public about the health effects of the combination of industrial emissions and smoke from the slash burning of forestry field waste. Even Herb Capozzi, a Social Credit MLA from Vancouver Centre, told Minister Williston that his policies were smoking constituents out of their homes and heightening lung cancer concerns.[65] However, Minister Williston, supported by Forest Service staff and the UBC School of Forestry, indicated that any harm from slash smoke was "infinitesimal" compared to the invisible fumes from car exhausts.[66] On the positive side, he said, such burning avoided the dangers of bigger fires when forestry waste built up in logging areas, provided silviculture benefits for the growing forest and was the only economic means of forestry waste control. He reminded the Legislature that fifty cents of every dollar earned in British Columbia came from forestry.[67]

Undeterred, in September Minister Loffmark announced publicly his intent to issue new standards. By chance perhaps, his statement was issued during an episode of intense drifting smoke in the Lower Mainland from surrounding slash-burning operations. The health-based air pollution standards—which he said were to be released the next week--would encompass all British Columbia. These standards, authorized under the Health Act, would be a "frontal attack" on air pollution and be as stringent as those in any state in the Pacific Northwest. If industry did not meet the standards, which would include smoke from slash forestry burns, its operations would either be shut-down or forced to adopt new pollution controls. Provincial medical health officers would enforce the standards. Lower Mainland medical health offices had already sent out 25 to 30 letters to industrial firms that were thought to have potential problems meeting the not-yet-released standards.[68]

But with Premier Bennett on an investment mission to Great Britain and no release of standards in the following weeks, newspaper editors suspected Cabinet conflict and confusion.[69] Minister Williston denied this, but added pointedly during an interview that any health standards adopted by the Pollution Control Board must be "reasonable." He also denied a reporter's suggestion that as resource minister he had any conflict in promoting industry and preventing pollution—these duties were complementary, he said.[70] With the health standards still not released in mid-January 1969, the *Victoria Times* announced that Minister Loffmark had lost a Cabinet fight with Williston. Williston offered some indirect evidence for this in an interview by expressing skepticism of the legal basis for any province-wide health-based air standards not adopted under the Pollution Control Board authority. He also re-iterated his responsibility for maximum resource development with what he termed the minimum "economic disruption" from any pollution controls.[71] When the health standards finally emerged in the latter part of January, they did so not as enforceable regulations, but only as policy guidelines to local medical health officers.[72] Their only legal force would be activated if adopted into specific municipal by-laws. This reflected the private advice to the health ministry by its legal counsel that the Health Act's nuisance provisions were not strong enough to stand up to court challenges, re-enforcing Williston's view.[73] Substantive air pollution policy control remained at the local government level. The health guidelines—as they were now termed--were nonetheless innovative in specifying maximum ambient air quality conditions for the first time in British Columbia (as opposed to maximum emission levels) for dust-fall, particulates and SO_2.[74] Emission guidelines were also set for smoke, particulates and SO_2.[75] In the end, it was the actual quality of the atmosphere that was important, with pollution emissions being a key

determinant and point of control for this quality. Controls on emissions could still lead to deteriorated air conditions if the controls were not stringent enough, or if, over time, growth of emission sources outweighed the effects of emission reductions on individual pollution sources. Ambient standards, if a way were found to enforce them, were not subject to these limitations. But the health guidelines episode was interpreted in the newspapers as a sign of conflict and confusion in the Social Credit Cabinet on air pollution. The production of the guidelines themselves was considered by opposition politicians as a meaningless gesture--a "snow job" according to the New Democratic leader Robert Strachan.[76]

Based on the evidence from the medical health meetings, there is little doubt that the health and natural resource ministry conflict was real. It certainly also reflected and caused confusion. It was not a feint or a meaningless gesture as the opposition politicians would have it. As described above, there was a rhetorical divide, entailing significant consequences, through the late 1950s and the 1960s about the impacts of air pollution: were the impacts mainly deleterious to one's non-essential enjoyment of life or did they also have serious health implications. The interpretative battle would continue, but the policy control struggle was done. This outcome would have tangible policy consequences for the degree of stringency of pollution regulations—and consequential implications for the allocation of financial costs to industry and physical harms to residents.

There were also implications for the governmental level of control. An explicit decision had been made in 1966, now confirmed in early 1969, to keep air pollution control as a municipal responsibility. The conflict in interpreting air pollution impacts had a correlate fight within the provincial government about organizational responsibilities and who had the lead

role in setting policy that presumably would guide municipal councils. The ministry of natural resources, also chairing the coordinating committee on air pollution and housing the Pollution Control Act, was definitively in charge. The mandate of the ministry was to support the exploitation of the forests and waters of British Columbia and the growth of industrial capacity. The vaunted ability of the Social Credit government to balance its budget depended in large part on the revenues brought in directly and indirectly by this ministry. Despite Williston's denial, there was an obvious conflict of interest within his ministry in both fostering these objectives and being responsible for setting water quality, and now--although not yet committing to any specifics--air quality guidance or standards. Such environmental standards would impose direct costs on industry, decreasing government tax revenues and increasing government's direct expenditures on its own pollution policy staff. Presumably the judgements involved in setting environmental standards, and thus the stringency, costs and the incidence of impacts, by an natural resources ministry would reflect its key objectives of promoting economic growth. The health ministry would have been much better positioned to set such standards in keeping with its main objective of promoting citizen health. One ministry was providing regulatory services to the economic system, while the other was providing welfare services to the democratic system.

Although the task of the provincial government in setting environmental policy could be described as a balancing act, with the two ministries having different views on the fulcrum point locations to better accomplish their specific objectives, it is perhaps better to describe the state task as an exercise in contradictory imperatives.[77] Policies tending towards promotion of economic growth, capitalist profits and state revenues directly undermined the state interest in

protecting citizens from the consequences of this economic expansion.[78] The first organizational response to such contradictory objectives was to maintain responsibilities at the junior level of government, which, apart from the City of Vancouver, showed little capacity to implement any significant policies. The second response was to place governmental functions in different horizontal governmental departments to allow, in theory, independent policy development. Such a horizontal differentiation in function is what the ministry of health had attempted by setting health-based air quality standards. If it had been successful, the balance of costs from air pollution would most likely have shifted more onto the industrial side from the human health side. But the fundamental contradiction or irrationality of the governmental objectives—their irreconcilability--would have remained.

Various voices were being heard at this time from opposition politicians and the expert community about creating a "neutral" ministry devoted to the environment. Such a ministry would not be created until 1976, but neither would this be a solution to the fundamentally contradictory coordinating task of setting environmental standards and promoting heavy industrial expansion. It is noteworthy that the ministry of municipal affairs became much more reticent about air pollution through the 1960s, and played an unimportant role during the dispute between the resource and health ministries. Although air regulation was to be carried out by local government, the senior ministry responsible for this governmental level had no direct mandate interest in the issue. It expressed no formal views on the question of the stringency of air quality regulations and thus the allocation of costs, tending more to industry or more to the public. If the pluralist idea of government as a neutral referee of conflicting public interests were in fact the dominant structuring feature of the institution, then the municipal

affairs ministry would have been the obvious player in leading the balancing of interests involved in regulating air quality. The fact that this ministry was not involved, although it had the previous lead in issuing a policy statement on air quality management, may well have reflected political and situational dynamics in the British Columbia government. But it is also consistent with a view of the state itself as having fundamentally divided interests in supporting both capital accumulation and democratic legitimacy. That the natural resource ministry's interests predominated was likely, but not inevitable. The state in British Columbia had imperatives in supporting capitalist interests, but also in justifying itself democratically. Although the debate about the aesthetic versus the health impacts of air pollution was far from resolved, the government of British Columbia had decided against allowing the health ministry to lead air quality policy development. Chapter 4 explores the events relating to air quality management in Vancouver and in British Columbia when the public voice strongly re-asserted itself as part of the environmental wave of the late 1960s.

4

Air Quality and the Environmental Wave

British Columbia was very open to influences from the United States and around the world in the 1960s. The march protesting bad air quality in Port Alberni, conducted in silence in 1966, was evocative of the same shaming tactic used in civil rights protests in the United States. Later, in 1969, the demonstration of hundreds of Cloverley Elementary School students and adults protesting grain dust pollution in North Vancouver was emblematic of the groundswell of the environmental movement sweeping Western democracies.[1] Measured air emissions continued to decline in Vancouver in the 1960s, but pockets of visible pollution kept springing up. The eye-watering and throat irritating effects of ground level ozone—not measured at the time--were likely increasing as well since car traffic continued to rise.[2] The Air Pollution Control Society (APCS) and the major Vancouver newspapers kept up a drum beat of reporting and advocacy on the air pollution issue. Chapter 2 has chronicled the efforts of these two institutions, along with health professionals and the City of Vancouver, in stirring up the public. Chapter 3 has detailed the interpretative struggles and dominant ways of thinking about the significance of air pollution impacts and technical solutions. These debates had culminated--at least organizationally--in an open feud between the ministries of natural resources and health over which agency would have the policy lead on air pollution. The definitive leadership role had been seized by the former ministry, responsible now for both industrial development and water and air pollution policy. But by the late 1960s there was still no clear policy direction from the provincial government to local governments on air pollution control. Vancouver had a

by-law controlling air emissions from most sources dating from the 1950s, while Richmond, Port Moody, Burnaby, New Westminster and North Vancouver City and District also had by-laws, but limited or no enforcement staff.[3]

This chapter ties together the air quality events at the municipal level in Vancouver and at the provincial government level. Both levels of government were affected by the up-swelling of environmental sentiment and activism in the late 1960s. For Vancouver City Council, however, strong public input on air pollution was generally welcomed; for the Province, it was a threat. The Bennett administration contained the threat posed by environmental activism—one of several social movements at this time—by formulating a province-wide air pollution policy, with one large exception. The Greater Vancouver Regional District was allowed to set its own policy on industrial emissions for reasons explored below. In the early 1970s, the Province reasserted its control of the policy process with regulatory hearings that limited public input and focused on expert technical advice. The resulting regulations favoured the containment of industry costs over public quality of life and health impacts, although implementation practices would probably be more important for determining this incidence of costs than the details of the rules.[4] In the end, the public protests occurring in the late 1960s were instrumental in inducing a policy response at the provincial level for an issue that had been neglected for decades. This policy, even if weak from a health perspective, would still make a tangible difference in people's lives. However, the effectiveness of the environmental movement diminished rapidly through the 1970s.[5] The air pollution history of Vancouver and British Columbia from the 1950s through the early 1970s set the direction of related governmental policy for the succeeding decades. This history illustrates the causal importance and

explanatory potential of analysis at the societal, organizational and civil levels. This history reveals both the independence and interdependencies between these levels. In the end, the environmental protests did influence events and produce some real public benefits, but they did not fundamentally alter the entrenched structural relationships that gave capital the power to pollute public spaces and to set limits on the content and application of remediating laws.

In the late 1960s, smoke from slash burning operations on forestry lands on the North Shore mountains, around Howe Sound and in the Fraser Valley was particularly galling for those municipalities that were implementing air pollution by-laws. Efforts to control smoke from small sources, including a backyard residential burning ban in Vancouver dating from 1968, were overwhelmed by forestry smoke when the wind was blowing towards urban areas. Even a forest industry association spokesman termed the slash burning as an annual "festival of autumn madness."[6]

Bulk product loading industries associated with the Port of Vancouver also caused major problems for the municipalities and residents around Burrard Inlet. Although dust-fall continued to decrease in the Lower Mainland through the 1960s as the use of coal and beehive burners diminished to negligible levels, bulk loading dust countered these trends. The quantity of grain exported out of Vancouver's ports increased as Canada began major wheat exports to China in 1962. The area around the Alberta Wheat Pool terminal in Vancouver was particularly subject to repeated complaints from residents. Park commissioners complained of dust sitting like a cloud above the neighbouring New Brighton Park.[7]

In North Vancouver, the fire chief's annual report for 1967 noted increased complaints about dust from bulk loading facilities and smoke from land clearing and slash burning.[8] Neptune Terminals on Burrard Inlet was the centre of air pollution controversies during the 1960s as it sought National Harbours Board and North Vancouver Council approvals for adding potash, coal, and sulphur exports to its port facilities. At one council meeting on a permitting application, a representative of an Anti-Coal Petitioners group, noting the 4,000 tons of coal Nepture proposed to move per hour, dumped coal from one bucket into another, raising a 12-foot high dust cloud that temporarily shut-down council business.[9] A later proposal to add sulphur exports to the mix was countered by the Cloverley Residents' Association, which pointed out that the newly constructed Robert's Bank bulk terminal in Delta was a better fit for a dust-creating activity.[10] The rhetoric of the economy versus the environment was central in the Neptune controversy. The company noted the thousands of jobs it supported, with some aldermen threatening increased taxes on homeowners if this waterfront industry disappeared.[11] In the end, technical anti-pollution controls satisfied the BC Research Council, newspaper editorialists and enough council members that loading dust could be controlled and permits issued.[12] The public protesters, however, could at minimum take credit for the stringency of dust control demanded by the North Vancouver Council for the expanded terminals.

These air quality events in the Lower Mainland coincided with the rise of the modern environmental movement in British Columbia, represented most famously by the formation of Greenpeace in Vancouver in 1971. However, as shown in this thesis, concern about air pollution, as well as natural resource use and water quality, preceded this new movement by

decades. Different in the late 1960s was the dramatic increase in the intensity and scope of environmental concerns. Back-of-the-mind doubts became active worries, especially regarding new, or newly discovered, dangers to ecosystems and human health, the deteriorating interconnections between natural and human systems and the existential meanings attached to these dangers.

Stories and editorials about air quality in Vancouver newspapers multiplied in the late 1960s.[13] Expert discussion continued about the impacts of monitored pollutants such as smoke, particulates, dust-fall and sulphur dioxide, but apprehensions were now raised about pollutants released mostly by motor vehicles, such as carbon monoxide, nitrogen oxides and hydrocarbons. Smog took on the more precise definition that scientists in California had given it as resulting mainly from these vehicle emissions.[14] Starting from 1968, recorded public references to pollutants frequently expanded to include relatively new toxic substances and dangers such as asbestos, lead, DDT, nuclear radiation, and the global warming effects of carbon dioxide. None of these substances, except potentially lead, which the federal government started to phase out of gasoline in 1970s, involved wide-spread or immediate exposure dangers for people in the Lower Mainland. Although air pollution experts in Vancouver had visited, invited speakers and drawn lessons from other jurisdictions for decades, now local environmental concerns were more generally cross-referenced with broader problems further afield. Newspaper editorials and columnists referenced emotionally charged processes and images such as the near biotic death of Lake Erie, gas mask wearing children in Tokyo and scary estimates for rising sea levels because of carbon-induced global warming.

The nature of the discussion about pollutants also changed. Although the debate about the aesthetic versus health impacts of air pollution continued, now public discourse on pollution increasingly mixed in concerns about global population increase, food shortages, natural resource depletion and nuclear holocaust. And the content was often vivid, excitable and apocalyptic. Dr. Michael Shaw, the dean of agriculture at the University of British Columbia, told the Vancouver Institute in November 1968 that human activity was threatening photosynthesis. With "mankind running out of space and time," he said, "our future is in the hands of botanists and ecologists."[15] A *Province* editorial put it that "mankind was busily destroying [the planet] with all of the mindless complacency of an idiot child let loose in the Louvre with a pair of scissors."[16] Dr. RobIn Hargen of the University of British Columbia warned of irreversible pollution potentially crossing life system thresholds, creating a "game over" scenario.[17] A Vancouver radio station, CKNW, ran a newspaper ad setting up an appeal for the public to write to Premier Bennett with the preface: "Pollution's a grave problem. It's killing us all. In the span of our lifetime, if not sooner, the human race will poison and choke itself to death—unless we stop polluting our environment <u>now</u>."[18] John Hayward of the Amalgamated Transit Union told an annual organizing meeting: "UNESCO says that within twenty years life on our planet will be showing the first signs of succumbing to pollution."[19] A *Vancouver Sun* editorial from early 1970 paraphrased Harvard biologist George Wald giving "mankind a possible 15 – 30 year lease on life."[20] A University of California ecologist speaking at Simon Fraser University gave humans 5 to 50 years to change course and predicted thousands of daily deaths in Los Angeles from bad air "in a few years."[21]

The environmental movement in British Columbia also generated new organizations and re-vitalized some older ones, such as the Sierra Club of BC and the BC Wildlife Federation. The most significant new civic anti-pollution organization was the Society for Pollution and Environmental Control, commonly known as SPEC, which formed in January 1969. Prior to SPEC's formation, the most important civic air pollution organization was the Vancouver APCS, discussed in previous chapters. But APCS, composed of local businessmen and upper income professionals in technical fields, was floundering in the latter 1960s due to declining funding from the City of Vancouver and perhaps because of its narrow mandate to promote air quality education and a regional approach to air management.[22] SPEC, initiated at Simon Fraser University during a period of intense intellectual and counter-culture fervor at that institution, was dominated initially by academics and students. But its geographic and compositional scope expanded rapidly. By November 1969, it covered most of British Columbia with eight regional groups. Derrick Mallard, President of SPEC, noted in mid-1970: "Surprisingly, housewives are our most active group. They're becoming more militant than the students."[23] SPEC's mandate covered air, water, and land pollution, as well as resource use. While one of APCS' main claims to success was the distribution of the film, "Airborne Garbage," SPEC took more direct action by organizing rallies against emissions from the Lower Mainland's oil refineries; monitoring air quality in Port Moody and at a lead-emitting metal processing plant in Richmond; taking water quality samples in Burrard Inlet and the lower Fraser River; organizing and participating in public meetings; fighting for access to environmental monitoring data; and submitting evidence to governmental committees and enquiries.[24] SPEC also worked at aligning with labour groups,

many of which supported the environmental movement, particularly its clean water and air components.[25]

There were many different forms of union organizations in British Columbia in the 1960s, but union members consistently spoke and acted for stronger air and water pollution control. For example, United Fisherman and Allied Workers Union organizer Tom Parks in Port Alberni pointed to the problem of pollution fines being cheaper for companies than purchasing control equipment.[26] A brief of the United Steelworkers of America, BC Branch, to the three-minister pollution committee on March 19, 1969 called pollution control at mines a "farce" and argued that the Pollution Control Branch could not independently pursue enforcement while answering to Cabinet ministers.[27] The International Brotherhood of Pulp, Sulphite and Paper Mill Workers advocated for the public blacklisting of pulp mills causing pollution and for easier access to environmental quality data.[28] Pat O'Neal of the same union made some of the clearest public statements on pollution at a Pollution Control Branch enquiry in the summer of 1970, arguing that there was little point in fighting for higher wages and shorter hours if the surrounding air and water quality was such as to diminish recreational enjoyment. He told of plant environmental control committees run by labour union members that investigated and reported on pollution, but often were neglected by management.[29] One of the labour movement's most intriguing initiatives was BC Federation of Labour's mandate to negotiate funding from plant owners during union contract talks to set up and run conjoint union – community anti-pollution and conservation groups.[30] The only evidence I have found of early differences between labour and environmental groups on the air pollution issue resulted when suggestions were made to close operations or advocate for zero growth to combat pollution.

The environmental movement had changed the terms of the public debate about the nature of air pollution. Prior to the late 1960s, the social constructs were largely about aesthetic or nuisance impacts versus troubling, but unsubstantiated, health concerns. Technical solutions to emissions were counterpoised with the drastic alternative of shutting down mills. But now demonstrators, council protesters and many community members were even less interested than previously in these narrow bilateral trade-offs. Aesthetic and quality of life concerns remained important, as were health impacts, but these now were often conflated with existential anxieties about the collapse of natural systems, running out of natural resources and people dying in the streets. The limited individualized risks of the past were now merged into a narrative of unlimited collective risk. One of the sources of the environmental movement was the fear raised by the nuclear weapons competition between the United States and the Soviet Union.[31] Radiation exposure stories from the United States were well-reported, as was news of the preparation of a nuclear test site on the Aleutian Islands.[32] BC Hydro head Dr. Gordon Shrum added to anxieties by committing the corporation to exploring nuclear power generation at Duncan on Vancouver Island.[33] Local concerns about formerly unconnected impacts to air and water quality were now conjoined to globally interconnected fears of unseen toxic pollution and environmental collapse.

Many activists were also openly questioning narrow technical solutions to pollution. The youth movement, starting in the mid-1960s in Vancouver, critiqued and mocked what it believed to be a fetishizing of the material underpinnings of provincial life. There was some direct involvement of groups from this diffuse movement, particularly of students, in anti-pollution battles in Vancouver in the late 1960s. But its bigger influence may have been the

open questioning, in words and behaviour, of economic growth and the value of the latest model cars and household goods. A highly-educated generation, raised in continuous affluence and exposed to many media reports and photos of environmental accidents and degradations, moved easily towards post-material values.[34] If the risks were now perceived as potentially life-threatening, then why not be open to moving Neptune bulk loading activities to Robert's Bank, slowing production and questioning economic growth.

The City of Vancouver easily absorbed this greatly increased level of environmental concern as it related to air quality. But then the City had been involved in efforts to stimulate a bigger public response to poor air quality since the early 1950s in its hopes for a regional municipal or a provincial approach to air pollution. Already described are the market forces helping improve Vancouver's air quality, such as the shift away from solid to liquid fuels and the move of False Creek industry to Fraser River locations. Compensating the job and revenue impacts of this loss of heavy industry was the rapidly increasing importance of Vancouver as a corporate and banking headquarters for industrial operations around the province.[35] Vancouver's growing population also increased the size and importance of the service and lighter industrial sectors for whom this population was a market, and, as described in Chapter 2, generally supported clean air policies. All these factors made it easier for Vancouver to take a relatively strong stance on air pollution control.

Officials from the City of Vancouver had taken some pride in developing and running their own air pollution program since the late 1940s. A fundamental source of satisfaction continued to be the improvement in air quality, at least as measured by city monitoring stations, through the 1960s. Average dust-fall in 1968 of 8.3 tons per square mile per month

had fallen steadily from a level of 12.2 tons in 1963. The soiling index, measuring smoke and particulates in the air, showed an even greater improvement: in 1968 there were only 188 hours of bad air quality compared to 956 hours in 1963.[36] The staff of four, supported by other City personnel, also provided some analytical and inspection services to the surrounding municipalities that had air pollution by-laws, but which had no air pollution staff.

But despite the measured improvement in air quality and the confidence of Vancouver's smoke inspectors and politicians in their dealings with industry, the City continued to field a steady stream of complaints from residents and the press about air quality. The councilors and staff of the City of Vancouver were aware by 1967 that the city's 1955 air pollution by-law did not contain sufficiently stringent standards for dust emissions like those from grain elevators. Not all elevators were installing economically feasible bag filters, which achieved much better grain dust control than existing cyclone collectors. Metal foundries, which had eventually been exempted from the 1955 by-law because Vancouver officials had been convinced that no cost-effective air pollution control was possible for them, were also a source of problems. As well, most apartment blocks burned their waste without any controls or by-law requirements. And fines at a maximum of $100 per infraction were considered to be too low. Vancouver officials also were frustrated by the amount of expertise needed to set standards for multiple pollutants and the lack of pollution control at some nearby municipalities.

Asked by Council to address these shortcomings with a revised by-law, Vancouver air pollution staff consulted with air pollution authorities from several other Canadian and U.S. cities and the provincial and federal governments. The new draft was passed into law in May 1969 after extensive industry and business consultation. The only major concession made by

Vancouver to industry requests was to delay compliance for new requirements on grain elevators and foundries until June 1, 1971, and the requirement for cleaner multi-chamber burners for apartment and commercial business incinerators until June 1, 1970.[37]

However, the newly formed regional government, the Greater Vancouver Regional District, was not ready to take on air pollution control. At a November 1968 meeting, its Board of Directors agreed to undertake governmental functions that involved existing forms of regional cooperation or joint administration, such as parks, water, sewerage and draining, and planning, but they hedged about whether air pollution management should be "Regional, Provincial or even Federal." More information was sought, particularly it seemed, to find out if the Province would take on the function.[38] The consistent municipal preference was for province-wide pollution control standards.

The Province of British Columbia, however, had yet to define its policy on air pollution. The health guidelines issued in early 1969 had been sidelined in importance; no evidence has been found that they were adopted in any local government by-laws governing air pollution. But the environmental movement in British Columbia in the late 1960s presented a serious challenge to the Province's management of pollution. It is reasonable to believe that the overwhelming and sudden increase in public and expert anxieties about air pollution and the environment, merging into generalized fears of decline and death, seriously alarmed the Social Credit government. The previous limits in the debate about air quality and environmental well-being had been breached. Many now were questioning the fundamental economic rationale and modernization drive that underpinned the government's ideology. Social Credit politicians expressed their own anxieties and lack of depth in the new terms of the debate, making

frequent accusations of emotionalism and hysteria on air pollution and environmental issues.[39] During a legislative debate municipal Minister Campbell charged teachers with "unethical and completely intolerable" behavior in their classrooms, for spending too much time on pollution, making their students "uptight" about the topic.[40] Premier Bennett invoked the old binary trade-off between good environmental quality and industrial jobs by indicating to residents in Quesnel, frustrated by fly-ash from local beehive burners, that he would not hesitate to shut-down polluting pulp mills threatening what he called the beauty of the province.[41] The insincerity, and perhaps scare-tactic nature, of this statement was indicated by the lack of any clear legal means to accomplish such threatened closures. More importantly, the closure threat was dramatically overwrought since various beneficial uses were being found for wood waste in British Columbia that allowed for closing beehive burners, not whole pulp complexes. This would reduce smoke emissions and could save on corporate costs. The Premier soon afterward reverted to the personal responsibility narrative in indicating there was no need to even fine polluters since they would do the right thing once they knew what it was.[42] Perhaps the clearest indication of the governing fears was Bennett's assertion that the number one priority in the campaign for the August 1969 provincial election would be "environmental or pollution control."[43] This was a surprising top priority for a government devoted to economic growth via natural resource exploitation, which had failed to move on air pollution policy for decades and was involved in various environmental controversies. The choice of priority, even if it was not fully reflected in the later campaign rhetoric, can be explained as a legitimation response by a government frightened by the heightened environmental activism in the late 1960s.

In late August 1969, to prepare the ground for this election priority and fill one obvious policy hole, natural resource Minister Williston announced the first Province-led air pollution policy for British Columbia: new industrial operations would require air emission permits from the Pollution Control Branch by January 1, 1971, while existing operations would need to submit applications for permits by January 1, 1972. New cars would require pollution control devices by the beginning of 1971 and beehive burners and slash burning would be banned as of the beginning of 1975.[44] Domestic, commercial and institutional sources of air emissions would be left in the hands of local governments. This policy re-enforced the ministry of natural resources' control of the commanding heights of air pollution policy, as it applied to industry, not the ministries of health or municipal affairs, or local governments. However, after the election was won by the Social Credits, Williston soon began to lower expectations on what his air pollution program would entail. He told a construction association meeting that high costs and lack of capital and technology made "perfect" pollution control difficult. As referenced in Chapter 3, Williston also rhetorically forced a trade-off on his audience between pollution and social expenditures, based on his understanding that health impacts were difficult to prove.[45]

Public hearings to set air and water emission standards for different industrial sectors began in 1970. The Pollution Control Branch tightly scripted these meetings to prioritize the input of industry, government and academic experts on pollution technology. Branch Director W. N. Venables demanded that all public submissions be technical in nature. Incoming public briefs from environmental and other organizations were edited and excised by Branch staff for falling short of this technical standard before being introduced as public testimony.[46] What remained of the briefs was at times publicly vilified by Venables. For example, he referred to a

mining brief prepared by the Regional District of East Koontenay as "inept and inadequately researched."[47] The final report indicated the Director's view that only a few submissions contained his desired technical information. He denigrated the majority as dealing only with "aspects of pollution which are of a sensory nature, and which constitute a social or aesthetic nuisance."[48] By mid-1972, sets of numerical emission objectives had been finalized for the forestry sector. These objectives were to act as guidelines to the Director for issuing industrial operating permits, but they were couched in highly general language. For example, the highest level of objectives was to be achieved in the following manner: "Ultimately, it is recommended that, where feasible within the limits of available technology, all existing discharges be upgraded by means of planned stage improvement to Level A."[49] Although industrial groups complained of the potential for unproductive costs being added to their operations, most other commentators noted that the guidelines were weak.[50]

The provincial government's motor vehicle emission regulations, introduced in 1971, were largely irrelevant. New cars sold in the United States and Ontario were already required to install anti-pollution devices of the kind specified by the British Columbia regulations. Since all North American cars were manufactured in these jurisdictions, the British Columbian regulations had little supplemental effect. Attorney General Leslie Peterson--who was charged with developing the car emission standards—publicly committed to drafting regulations for used vehicles, but these never saw the light of day.[51]

In late October 1969, a few days after Williston's construction association speech that downgraded expectations about the provincial government's environmental approach, the Greater Vancouver Regional District (GVRD) announced that it had decided to go it alone on air

pollution control. It noted that the provincial government had little funding, staff or adequate policies on air pollution control.[52] Vancouver's 1969 by-law provided the template for a GVRD draft by-law and Vancouver's air quality personnel formed the core of the new GVRD staffing. After completion of a costing study, the GVRD formally asked for Letters Patent from the Provincial Government in early 1971 to exercise this regional function. This was granted for all air pollution sources in the district, including industry, in March 1972.[53]

The provincial government introduced a fundamental irregularity into British Columbia air pollution management by allowing the GVRD to keep air pollution policy for industry. It also took an important control lever over anti-pollution costs for Lower Mainland industry out of the hands of Minister Williston and his staff. However, there is some evidence of a possible rationale. In August 1970, Minister Williston got into a public battle with federal fisheries Minister Jack Davis (a British Columbia Member of Parliament, who was also Canada's spokesperson on the environment at this time) over regulatory authority for water effluent and air emissions. The combative Davis threatened to close pulp mills in British Columbia for failing to adequately control water and air pollutants. Davis also went out of his way to laud SPEC, which was loudly challengingly the environmental stance of the Social Credit government. He stated: "We'll try to work along with groups like SPEC. We need SPEC and I hope we are doing some of the things SPEC would like us to do."[54] An outraged Williston charged that Davis was "making chaos out of the [provincial] government's air pollution efforts."[55] A month later Williston would make his telling statement, referenced in Chapter 3, that until technology developed his only option in reducing pollution was to close industry. This was a rhetorical club for him, but it clearly frightened him when used by the federal government.[56] In an interview

with the *Vancouver Sun* in early 1971, Minister Williston again expressed his concern that the federal government would take unilateral action on air quality in British Columbia. He indicated that since the provincial government's regulatory emission standards for industry were still under development, the GVRD could incorporate provincial health guidelines into its by-laws as a pilot regulatory function.[57] The implication was that he could potentially forestall the dreaded federal intrusion into British Columbia's industrial operations by showing some quick action. In the end the GVRD chose to adopt the Vancouver by-law, rather than the health guidelines, although the two were consistent.[58]

Federal legislation on the environment was also passed during this period of activism. A federal bill was introduced into the House of Commons in February 1971 setting national air quality objectives. Despite the provincial government's fears about federal interventions, the objectives were only guidelines that defined minimally acceptable, tolerable and desirable levels of pollution concentrations in the atmosphere, and imposing no regulatory obligations on industry. However, these ambient air quality standards did help to define nebulous distinctions between clean and dirty air, and to determine if progress was being made. Finally, Canada's first national vehicle emission standards were passed in Ottawa in 1972.

The North American environmental movement was one of the more successful of the new social movements initiated in the 1960s.[59] Its short-term effectiveness was seen in the burst of new environmental legislation enacted at the federal levels in United States and Canada, and at sub-national levels, such as in British Columbia. The fact that the timing of more carefully considered air quality policy in British Columbia, after decades of neglect, coincided with environmental legislation in many other jurisdictions helps reinforce the causal

importance of the public protests. The common factor across all the jurisdictions was the environmental movement. Similarly, the idea of a regional municipal air pollution response had been advocated for over 15 years. The GVRD acted in late 1969 after years of waiting for an adequate provincial government response. Vancouver too updated its air pollution by-law during this time, providing the template and most of the resources for the GVRD efforts.

However, the disjunction between the intensity of the rhetoric on environmental deterioration and the gradualism of the policy content of air regulations by governments at all levels in British Columbia is striking. The environmental movement in the province had various components. Many of the most extreme statements were made by experts from the academic ecological community, although this rhetoric was picked up by the media and sometimes in individual letters to public officials.[60] The organized activities of SPEC and other environmental groups were more practical, largely focused on tangible pollution problems and solutions. The public demonstrations against bad air quality at this time were a continuation, albeit augmented, of similar tactics from earlier in the 1960s and even the 1950s. The provincial government reacted to the breadth and the depth of this environmental activism by deploying typical bureaucratic exercises in containment. During the regulatory hearings on air pollution, it methodically exercised control over the threats to its ideology from this movement. These events of the late 1960s and early 1970s showed the efficacy of strong public activism in changing governmental policies. However, the limits of this activism were also demonstrated. The provincial government had displayed its own power reflecting its interests. These interests were structured by the contradictory imperatives of industry support and democratic

legitimation. But the Province had clearly chosen in organizational structures, in policy processes and in policy content to align more closely with the industrial side of the equation.

5

Conclusion

This thesis has taken a critical theory approach that posits the state as being embedded in contradictory capitalist/revenue and democratic/legitimation relationships. The early social history of air pollution in Vancouver clearly shows that a segment of capitalist interests—location-constrained businesses with low air emissions--took the lead in promoting air quality against the opposition of large industrial corporations exporting well beyond the bounds of Vancouver. The City of Vancouver was also instrumental in seeking public support for wider regional and provincial control of air pollution. It successfully implemented and updated an air pollution program during the 1950s and 1960s. This was made easier with business interests divided, industrial production becoming relatively less important than cleaner economic sectors and strong public support. However, the provincial government, perhaps closer in outlook to large industry than to its local-market bound counterparts, did not put air pollution on its policy agenda until the 1960s. When this topic did become a formal political issue, most specific air pollution policy development and implementation were kept at the local government level, where they proved to be almost completely ineffectual, with the key exception of Vancouver. But It is hard to make the case, as Gonzalez does for American sub-national jurisdictions, that the advocacy of location-bound industries in Vancouver was successful in achieving wider geographic control over pollution given that it took over two decades to achieve this result. This is particularly so since the Vancouver APCS, the main vehicle for this advocacy, was not important during the late 1960s.

Local government politicians often expressed their fears that air pollution control costs would drive industry and jobs away from their jurisdictions. The structured interests of large corporations play a strong role in explaining why more geographically effective regional and provincial policies on air pollution were so long in coming. But things did change over time. Strict structural theories have a hard time explaining these changes. If contradictory imperatives are in place to maintain both capitalist economic workings and democratic legitimacy, it is hard to explain on those grounds alone how or why policies take the particular shape and timing that they do. This thesis maintains that public interventions need to be taken into account as explanations for significant moments in provincial air pollution policies, although not as singular determinants of events. The public demonstrations in the early and mid-1960s forced air pollution onto the Bennett administration agenda, and the populous environmental wave of the late 1960s induced clear province-level action. Some of the public activism and interventions by SPEC and other environmental groups went beyond the norms and practices that are ordinarily countenanced by pluralist theories of government. The activists at times challenged the neutrality of decision-makers and, to some extent, especially in the late 1960s, the rules of the game. The results of this extraordinary participation in public life were significant even if the challenges to the meaning of the good life and the structures of governance were ultimately rebuffed. The provincial regulatory process of the early 1970s reasserted the economistic ideologies of growth, technology and control, while continuing the capitalist state dependencies on large scale private production. However, the shock to state-capital structures in the 1960s indicate at least a potential source of opportunity for more fundamental change.

The continuous emphasis on public opinion by the APCS, newspapers and the City of Vancouver provide some support to the view of the efficacy of civil agency. This air pollution history has tried to show that the effects of public inputs were significant and beneficial to many people, even if ultimately limited. The public struggles over the fundamental meaning to be given to air pollution impacts—aesthetic or health related--also indicate the importance of democratic legitimacy. The public did not respond in any straightforward fashion to the decline in the most salient forms of air pollution during the 1950s and 1960s. General concern and levels of response tended to increase regardless of the trends for either visible or invisible pollutants. There is evidence of social learning, not only about the effects of different forms of air pollutants, but perhaps more significantly about the efficacy of coordinated oppositional responses to this pollution. In the late 1960s, the socialized fears of the breakdown of natural systems combined with the countercultural challenges to economic growth and material consumption to induce a policy reaction from the provincial government. Interests at the state-economy level provide a broad context for the events of this history. The managerial interests of the provincial government also are helpful in explaining the focus on technology and expertise, particularly revealed during regulatory development in the early 1970s. But decisive public and civil society group inputs into the discourses about the meaning and significance of environmental impacts dominated the turning points of air pollution policy at the provincial level in British Columbia. These inputs and the battles for governmental legitimacy provide some hope that more fundamental change is possible despite the powerful constraints imposed by structural interests at the state and societal levels.[1]

The current air quality in Vancouver and in most parts of British Columbia is considered as good by Environment Canada.[2] Air quality is no longer a general public or political issue. However, as indicated earlier, the Canadian Medical Association estimates that in 2008 there were still about 300 deaths in British Columbia that could be attributed to outdoor air pollution, as well as thousands of emergency department visits and millions of instances of minor illnesses.[3] But these estimates are hard to interpret. Relative to Canada-wide and world assessments of outdoor air-related deaths and illnesses, the British Columbia rates are low.[4] As well, as in the 1950s and 1960s, the mortality and morbidity in British Columbia's population is largely hidden since individual deaths and illness are rarely attributed to poor air quality. Epidemiological and molecular health models must be used to relate air quality levels to these outcomes. There are currently approximately the same number of annual traffic accident deaths in British Columbia as air quality related deaths, but these accidents are highly visible and reported in the local media. Apart from a few low-profile advocacy groups, the current health and mortality consequences of both air pollution and traffic accidents seem to be well-tolerated in our society.

Scientists and other researchers are generally more careful today than in the late 1960s about predicting natural system collapse. The irony is that evidence—vigorously tested--for global natural system trends and potentially catastrophically negative consequences is much more robust today than in the 1960s and 1970s. Climate change, species loss and disruption to natural chemical cycles are identified as key threats.[5] Currently, the most important environmental issue for British Columbia in terms of governmental policy investment, public and media interest is climate change. The state-capitalist-democratic structures today in British

Columbia remain the same as they were in earlier decades. An optimistic learning from this thesis is that legitimation concerns for government can be dominated, in the short-term at least, by large scale public and civil society activism, which can lead to significant policy shifts. A negative learning—more speculative—is that the state is so deeply embedded in the larger capitalist production systems that the fundamental and structural policy changes necessary to address current environmental and other social ills are unlikely to occur any time soon.

Notes

1 Introduction

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[3] David J. Mitchell, *W.A.C. Bennett and the Rise of British Columbia* (Vancouver: Douglas & McIntyre Ltd, 1983.
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[15] William Cronon, "The Trouble with Wilderness; or, Getting Back to the Wrong Nature," in *Uncommon Ground: Rethinking the Human Place in Nature*, ed. William Cronon (New York: W. W. Norton & Co., 1995), 69 – 90.
[16] There are some important American counterexamples, such as Adam Rome, *The Bulldozer in the Countryside: Suburban Sprawl and the Rise of American Environmentalism* (Cambridge: Cambridge University Press, 2001; and Richard A. Walker, *The Country in the City: The Greening of the San Francisco Bay Area* (Seattle: University of Washington Press, 2007). Also see Julia C. Frankenbach, "Sensing

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[19] Steven Lukes, *Power: A Radical View*, 2nd ed. (New York: Basingstoke, Hants, 1995), 15 – 16.
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[37] Claus Offe, *Contradictions of the Welfare State,* ed. John Keane (London: Hutchinson, 1984).
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2. Air Quality as a Public and Political Issue

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[4] See, for example, J. Clarence Davies III and Barbara S. Davies, *The Politics of Pollution*, 2nd ed., (Indianapolis: Bobbs-Merrill Company, Inc., 1975), 80 – 102.
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[10] City of Vancouver Archives (hereafter CVA), City Clerk's Office, Box 29-D-7, Folder 54, "Smoke Nuisance By-law," 1923.
[11] Reel 564, "'Fines Not Answer' To Pollution," *Vancouver Sun*, February 14, 1967, 2.
[12] A short history is provided in the CVA, Air Pollution Control Society, Box 146-A-4, Folder 2, Chas. T. Hamilton, *A Synoptic History of the Air Pollution Control Society*, Vancouver, B.C. (n.d.). The APCS was known as the Kleneair Society for its first few years.
[13] See Jeffrey A. Charles, *Service Clubs in American Society: Rotary, Kiwanis, and Lions* (Urbana: University of Illinois Press, 1993).
[14] CVA, Hamilton, *Air Pollution Control Society*, 2 – 3.
[15] CVA, Air Pollution Control Society, Box 146-A-4, Folder 2, Letter from Iian Davidson to Mayor Tom Campbell, May 6, 1968.
[16] CVA, Hamilton, *Air Pollution Control Society*, 3.
[17] On industry, see Samuel P. Hays, *Beauty, Health, and Permanence: Environmental Politics in the United States, 1955 – 1985* (Cambridge MA: Cambridge University Press, 1987), 73 – 74.
[18] Temby, "Trouble in Smogville."
[19] Reel 357, A. C. Monahan, "Air Pollution Must Decrease," *Vancouver Province*, October 28, 1950, Magazine section, 8.
[20] Reel 412, Michael Blags, "Filthy Air Flows On," *Vancouver Province*, March 12, 1955, 27.
[21] See reel 412, "The Cloud Under Which We Live," *Vancouver Province,* March 15, 1955, 6; reel 458, "Auto Fumes Threaten Public Health," *Vancouver Province*, February 12, 1957, 6; reel 458, "A Menace

We Can Handle Ourselves," *Vancouver Province*, June 7, 1957, 6; and reel 476, "Air Poisoning—Not Pollution," *Vancouver Province*, March 10, 1958, 6.

[22] For Los Angeles, see Chip Jacobs and William J. Kelly, *Smogtown: The Lung-Burning History of Pollution in Los Angeles* (Woodstock: The Overlook Press, 2008), 28 – 29; for St. Louis, see Tarr, *Search for the Ultimate Sink*, 257: for Toronto, see Temby, "Trouble in Smogville," 679 – 680.

[23] Blags, "Filthy Air Flows On."

[24] Reel 412, Michael Blags, "Annual Dust-fall Causes Staggering Damage," *Vancouver Province*, March 14, 1955, 21.

[25] Reel 506, "Tougher By-Laws Sought to Curb Air Pollution," *Vancouver Province*, June 2, 1959, 29.

[26] Crenson, *The Un-Politics of Air Pollution*, 89.

[27] Reel 396, "'Smog Is Here To Stay' Declares Ald. Shawler," *Vancouver Province*, November 12, 1953, 9.

[28] Reel 396, "Pure Food, Pure Water, And Pure Air," *Vancouver Province*, November 26, 1953, 6.

[29] CVA, PUB-: PDS 7-38, "Air pollution control by-law - no. 3548," December 1955.

[30] Reel 316, "Air Pollution By-Law Held Up for Month," *Vancouver Sun*, November 9, 1955, 32.

[31] Reel 476, "Industry Not the Only Air Pollution Threat," *Vancouver Province*, March 3, 1958, 12.

[32] A historical sketch of metal foundries in Vancouver is provided by Bryce Tarling, "History of Vancouver Foundries," http://www.vancouverhistory.ca/foundries.htm (accessed 27 May 2017).

[33] Schattschneider, *Semisovereign People*, 1 – 19.

[34] Reel 403, "Metropolitan Control of Air Pollution Urged," *Vancouver Province*, June 17, 1954, 8.

[35] Reel 300, "Air Pollution Drive Not Crying Need," *Vancouver Sun*, February 11, 1955, 21.

[36] CVA, Pamphlet Collection, AM 1519-: PAM 1964-152, Chas. T. Hamilton, "A Lower Mainland Area Regional Air Pollution Control Board, *Clean Air* 7, no. 1 (Vancouver: Air Pollution Control Society, March 1964), 2.

[37] CVA, City Clerk, Box 72-E-3, "Air Pollution Monitoring in Vancouver," Air Pollution Control Branch, no date, but data provided for 1959.

[38] Data in this paragraph are from *Air Quality in British Columbia* (Vancouver: B.C. Research, 1970), tables VIII-1, VIII-2, VIII-3 .

[39] Reel 461, "Finance: Industry 'Minor Culprit' in Pollution," *Vancouver Province*, July 19, 1957, 19.

[40] Reel 470, "We're Cleaner Says Engineer," *Vancouver Province*, December 5, 1957, 18.

[41] Reel 471, "We Don't Need Any Smog-Meters," *Vancouver Province*, December 16, 1957, 4.

[42] Reel 464, "Action On Smoke Planned By City," *Vancouver Province*, September 4, 1957, 19.

[43] Reel 454, Alan Jessup, "Dirty City Air Can Kill You," *Vancouver Province*, April 13, 1957, Feature section, 6.

[44] Reel 520, "Worst January Smog Here," Vancouver Province, January 23, 1960.

[45] The information in this paragraph is based on reel 535, Bud Elsie, "City Winning Old Battle to Get Rid of Smoke Pall," *Vancouver Province*, October 22, 1960, 17.

[46] Joy Parr, *Domestic* Goods: *The Material, the Moral, and the Economic in the Postwar Years* (Toronto: University of Toronto Press, 1999), 258 – 263.

[47] Patricia E. Roy, *Vancouver: An Illustrated History* (Toronto: James Lorimer & Company, 1980), 134 – 136; Walter G. Hardwick, *Vancouver* (Don Mills: Collier-Macmillan Canada, Ltd., 1974), 94 – 97.

[48] Elsie, "City Winning," 17.

[49] Paddy Sherman, "Breath of Air is Hard to Find," *Vancouver Province*, February 22, 1960, Second section, 15.

[50] On road-building leading suburban development, see Kenneth T. Jackson, *Crabgrass Frontier: The Suburbanization of the United States* (New York: Oxford University Press, 1985), 266 – 271; on expansion of the Vancouver road system, see Graeme Wynn and Timothy Oke, eds., *Vancouver and Its Regions*, 72 – 75.

[51] Archival Records of the British Columbia Motor Vehicle Branch,

http://www.bcpl8s.ca/BC-Registration-Data.htm (accessed 11 February 2017).
[52] Thad Godish, *Air Quality*, 2nd ed. (Chelsea MI: Lewis Publishers, 1991), 281 – 306.
[53] Reel 508, "Now We Know Who Makes All That Smog," *Vancouver Province*, July 13, 1959, The Province section, 4.
[54] *Air Quality in British Columbia* (Vancouver: B.C. Research, 1970), vii.
[55] Crenson, *The Un-Politics of Air Pollution*.
[56] Lukes, *Power*, 24 – 25.
[57] British Columbia Archives (hereafter BCA), Department of Health and Welfare, GR 132, Box 1, File 11, Mr. Bowering, "Report on Inspection of Richmond Rendering Company, Richmond Municipality ," 16 July 1953. The Report indicates that there was a distinct trend of rendering plant consolidations and closures across North America at this time.
[58] Reel 449, Jim Fairley, "Machine Gulps Smoke," *Vancouver Province*, January 26, 1957, 26.
[59] Reel 448, "Smog Not Dangerous, Doctors Assure Public," *Vancouver Province*, January 11, 1957, 1.
[60] Reel 405, "Pulp Smell Causes Court Suit," *Victoria Daily Colonist*, November 20, 1958, 1.
[61] Reel 428, Jim Hume, "Firm Promises $100,000 Ash Solution," *Victoria Daily Times*, March 16, 1966, 13.
[62] One of the earliest of these assessment challenges is described in reel 450,"'Rotten Eggs' Fight Going to Victoria," *Vancouver Province*, February 13, 1957, 13.
[63] Reel 639, "Persuasion is Keynote to Control of Pollution," *Vancouver Province*, May 9, 1961, 3.
[64] Reel 490, "5 Couples Seek Injunction to End Ash, Soot Nuisance," *Vancouver Sun*, January 13, 1964, 1.
[65] Reel 414, Jim Hume, "'Fighting Chance' Asked in Smudge Belt," *Victoria Daily Times*, January 29, 1965, 16.
[66] Reel 520, "To the Albernis' Rescue," *Vancouver Sun*, April 2, 1965, The Sun section, 4.
[67] Reel 426, "Valley 'Angry'; Pollution Worse," *Victoria Daily Times*, January 22, 1966, 14.
[68] On reduced income inequality in Canada, see Thomas Piketty, *Capital in the Twenty-First Century*, trans. Arthur Goldhammer (Cambridge MA: The Belknap Press, 2014), 316.
[69] Hardwick, *Vancouver*, 15, 65; James E. Randall, *Metropolitan Vancouver: Industrial Decentralization and Port Activity on the Lower Fraser River*, working paper No. 12 (Toronto: University of Toronto/York University, 1983).
[70] Alford and Friedland, *Power of Theory*, 1 – 14.
[71] Eckersley, *The Green State*, 62.

3. The Nature of Air Pollution

[1] Reel 534, "Strong Measures Against Pollution Needed, Says Black," *Vancouver Province*, September 22, 1960, 17.
[2] Reel 498, "Outsiders Blamed for City Smog," *Vancouver Sun*, August 6, 1963, 8; and reel 499, "B.C. To Probe Air Pollution," *Vancouver Sun*, May 6, 1964, 2.
[3] For overviews of government ideology and economic developments, see Mitchell, *W.A.C. Bennett*, 255 – 297; and Barman, *West Beyond the West*, 270 – 296.
[4] Some positive historical associations of factory smoke with material security are provided in Stephen Mosley, "Public Perceptions of Smoke Pollution in Victorian Manchester," in *Smoke and Mirrors: The Politics and Culture of Air Pollution*, ed. E. Melanie DuPuis (New York: New York University Press, 2004), 51 – 76.
[5] Reel 409, R. J. Moore, "Odorless Pulp Mill Sought by Industry," *Vancouver Province*, December 20, 1954, Business Today section, 21.
[6] Reel 493, Al Fotheringham and Stew McNeill, "Token Tax Slash Hailed As Dollar-Scents Victory," *Vancouver Sun*, February 26, 1964, 3.
[7] Reel 497, "Raise Our Own Stink," *Vancouver Sun*, April 18, 1964, The Sun section, 4.

[8] Reel 648, Alex Young, "Rotten-Eggs Beater to Get Bonanza," *Vancouver Province*, February 12, 1970, 1.
[9] Reel 619, Iain Hunter, "Curb Pollution, Bennett Warns," *Vancouver Sun*, May 23, 1969, 44.
[10] Hays, *Beauty, Health, and Permanence*, 22.
[11] Reel 557, Dick Dolman, "Burnaby Tackles Ash, Smoke, But Not Odors," *Vancouver Province*, July 12, 1962, 12.
[12] Reel 493, "Marten Told to Resign On Air Issue," *Vancouver Sun*, Februray 21, 1964, 3.
[13] Reel 509, "Muck and Brass," *Vancouver Sun*, October 23, 1964, The Sun section, 4.
[14] Reel 589, "Diesel Buses, Yes; Air Pollution, No…," *Vancouver Province*, March 15, 1965, The Province section, 4.
[15] Reel 498, "Air Pollution Ban Urged by Engineers," *Vancouver Sun*, May 15, 1964, 6.
[16] Reel 644, Art McKenzie, "Anti-Pollution Funds Scarce, Says Minister," *Vancouver Province*, October 24, 1969, 27.
[17] See references throughout Mitchell, *W.A.C. Bennett,* for an overview of Williston's role, and pages 299 and 374 for specific examples of his power and the trust put in him.
[18] Inglehart, *Silent Revolution*, 6 – 11; and Hays, *Beauty, Health, and Permanence*, 33.
[19] For example, see Blags, "Filthy Air Flows On."
[20] Reel 454, "Vancouver's Poisoned Atmosphere," *Vancouver Province*, April 13, 1957, 6.
[21] Reel 523, Paddy Sherman, "Breath of Air is Hard to Find," *Vancouver Province*, February 22, 1960, Second section, 15.
[22] Reel 597, "Mill Pollution Idea Rejected," *Vancouver Province*, November 17, 1965, 8.
[23] Reel 560, Arnie Myers, "Air Pollution Study Called Inconclusive," *Vancouver Sun*, December 14, 1966, 41.
[24] Reel 534, Arnie Myers, "Specialist Raps Sawmill 'Teepees,'" *Vancouver Sun*, November 3, 1965, 17; and reel 597, "Pulp Firms Action Defended in Fight Against Air Pollution," *Vancouver Province*, November 3, 1965, 27.
[25] BCA, Department of Health Services and Hospital Insurance, Executive Records, GR 2698, Box 409, File 20, "Air Pollution," *Minutes of Meeting of Full-Time Medical Health Officers, Vancouver*, Appendix 5, 17 & 18 May 1967.
[26] Reel 531, Arnie Myers, "B.C. Can End Air Pollution," *Vancouver Sun*, September, 22, 1965, 1.
[27] For a brief overview of some of the issues, see British Columbian researcher David V. Bates, "Ambient Ozone and Mortality," *Epidemiology* 16, no. 4 (July 2005), 427 – 429.
[28] *No Breathing Room*, 35 – 36.
[29] Hajer, *Environmental Discourse*, 62.
[30] Edelman, *Political Language*, 23
[31] BCA, Ministry of Municipal Affairs records, GR 0238, Box 4, File 12, Memorandum to W. D. Black, "Re-Air Pollution-control," October 1, 1963.
[32] BCA, Ministry of Municipal Affairs records, GR 0238, Box 4, File 12, Memorandum from Dan Campbell to Eric Martin, "Re: Air Pollution," May 26, 1964.
[33] Reel 541, "New Controls Sought on Pollution of Air," *Victoria Daily Times*, November 18, 1964, 21.
[34] Reel 541, "Gov't Probes Air Pollution," *Vancouver Sun*, February 26, 1966, 10. An article in the *Victoria Daily Times* attributes the formation of the committee directly to the Port Alberni petition: see reel 432, "Province to Back Regional Boards on Air Clean-Up," July 26, 1966, 13.
[35] Reel 551, "Ian MacAlpine, "B.C. Gov't Gets Tough Pure Air Policy, *Vancouver Sun*, July 26, 1966, 2.
[36] Reel 604, "Federal Air Pollution Study, Solution Urged," *Vancouver Province*, June 8, 1966, 27.
[37] Reel 605, "Pollution Control Plan Branded Political Gimmick," *Vancouver Province*, July 27, 1966, 1.
[38] Eckersely, *The Green State*, 54 – 64.

[39] A history of Vancouver's sewage system policies is provided by Arn Keeling, "Sink or Swim: Water Pollution and Environmental Politics in Vancouver, 1889 – 1975," *BC Studies*, no. 142/143 (Summer/Autumn 2004): 69 – 101.
[40] Reel 588, "B.C. Defers Action On Air Pollution," *Vancouver Province*, February 27, 1965, 1.
[41] Thomas P. Hughes, *American Genesis: A Century of Invention and Technological Enthusiasm 1870 – 1970* (New York: Viking, 1989), 4.
[42] Mitchell, *W. A. C. Bennett*, 255 – 259.
[43] Alford and Friedland, *Powers of Theory*, 161 – 183.
[44] Reel 510, Frank Murray, "Control, Not Cure For Air Pollution," *Vancouver Sun*, November12, 1964, Letters To the Editor section, 5.
[45] Reel 540, "Squire 'Emotional,'" *Vancouver Sun*, February 3, 1966, 10.
[46] Reel 542, "Pollution Licked 'Far As Possible,'" *Vancouver Sun*, March 11, 1966, 62.
[47] Reel 515, "Two Mayors Shun Pollution Meeting," *Vancouver Sun*, January 24, 1966, 24.
[48] Reel 496, "Hold Your Nose, Rathie's Advice," *Vancouver Sun*, April 13, 1964, 25.
[49] Reel 655, Bob McMurray, "Forest Industry Outlook Bleak," *Vancouver Province*, September 9, 1970, Business – Finance section, 19.
[50] Gonzalez, *The Politics of Air Pollution*, 7 – 8.
[51] Hays, *Beauty, Health, and Permanence*, 324 – 327, 477 – 479.
[52] Hardwick, *Vancouver*, 94 – 97.
[53] Reel 607, Ian Street, "Bennett: Promises," *Vancouver Province*, September 8, 1966, Final Home edition, 1 – 2.
[54] British Columbia, Legislative Assembly, *Throne Speech*, January 24, 1967, 13, http://archives.leg.bc.ca/civix/document/id/leg_archives/legarchives/233637754 (accessed October, 21, 2016).
[55] Reel 564, "Williston Hails Pollution Brief," *Vancouver Sun*, February 8, 1967, Third section, 29.
[56] Reel 612, Ian Street, "Get-Tough Pollution Law Coming: Board To Get Wider Power," *Vancouver Province*, February 17, 1967, 1.
[57] British Columbia, *Throne Speech*, January 24, 1967, 13.
[58] CVA, J. J. MacDonald, "Report on the B.C. Pollution Act," *Clean Air* brochure (Vancouver: Vancouver Air Pollution Control Society, June 1967).
[59] Reel 572, "Pollution Control Forecast," *Vancouver Sun*, June 8, 1967, 2.
[60] Reel 578, "Gov't Fights Air Pollution," *Vancouver Sun*, September 6, 1967, 7.
[61] BCA, Department of Health Services and Hospital Insurance, Executive Records, GR 2698, Box 409, File 20, "Air Pollution," *Minutes of Meeting of Full-Time Medical Health Officers, Vancouver*, 17 & 18 May 1967, Appendix 5.
[62] BCA, Department of Health Services and Hospital Insurance, Executive Records, GR 2698, Box 409, File 20, "The Role of Medical Health Officer and Pollution Control Branch and Pollution Control Board," *Minutes of Meeting of Full-Time Medical Health Officers*, 1, 2 & 3 October 1968, Appendix 3.
[63] *Ibid*. At this meeting the Health Act was described as being sidelined in favour of the Pollution Control Act in regard to water quality control.
[64] BCA, Department of Health Services and Hospital Insurance, Executive Records, GR 2698, Box 409, File 20, Dr. J.H. Smith, "Report of Activities – Health Branch Advisory Committee on Air Pollution," *Minutes of Meeting of Full-Time Medical Health Officers*, 1,2 & 3 October 1968, Appendix 1.
[65] Reel 626, "Capozzi Raps Slash Burning," *Vancouver Province*, March 28, 1969, Legislative section, 15.
[66] Reel 626, "Slash Burning Backed by Forests Minister," *Vancouver Sun*, September 4, 1969, 7.
[67] Reel 631, "City Faces Several Haze Days," *Vancouver Province*, September 9, 1968, Third section, 23; and reel 631, "Don't Smoke Out the Tourist," *Vancouver Province*, September 10, 1968, The Province section, 4.

[68] Reel 602, "Loffmark Readies Pollution Code," *Vancouver Sun*, September 6, 1968, 28.
[69] Reel 631, Alex Young, "New Rules Clear the Air on Pollution," *Vancouver Province*, September 14, 1968, 9; also see reel 610, "Pollution Rules for B.C. Held Up," *Vancouver Sun*, January 14, 1969, Third section, 23.
[70] Young, "New Rules Clear Air on Pollution."
[71] Reel 462, John Mika, "Loffmark Loses Fight on Pollution Standards," Victoria Daily Times, January 14, 1969, 1; and reel 463, "Still Waiting," *Victoria Daily Times*, editorial, January 18, 1969, 6.
[72] CVA, City Clerk files, Box 146-B-1, Folder 8, "Press Release by the Honourable Ralph Loffmark," January 22, 1969, attachment to Board of Administration memo to Vancouver City Council, 10 March 1969.
[73] CVA, Medical Health Officer's files – Air Pollution, Box 146-B-1, Folder 8, K.I.G. Benson memorandum to Health Unit Directors, "Health Standards in Respect to Air Quality in the Province of British Columbia," 4 February 1969.
[74] Reel 611, Iain Hunter, "Air Pollution Regulations For B.C. Set by Loffmark," *Vancouver Sun*, January 22, 1969, 23.
[75] CVA, City Clerk files, Box 146-B-1, Folder 8, "Press Release by the Honourable Ralph Loffmark," 22 January 1969.
[76] Reel 635, "Air Pollution Curbs Sought," Vancouver Province, January 23, 1969, 25.
[77] Offe, *Contradictions of the Welfare State,* 52.
[78] Yeager, *The Limits of the Law*, 44 – 47.

4. Air Quality and the Environmental Wave

[1] Reel 619, "Children March to Protest Possible Coal Dust Pollution," *Vancouver Sun*, May 29, 1969, 19.
[2] *Air Quality in British Columbia*, B.C. Research, Vancouver, 1970, tables VIII-1, VIII-2, VIII-3.
[3] *Ibid*., 17; on staffing, see CVA, City Clerk files – Air Pollution Box 81-A-1, Folder 2, F. R. Bunnell and D. L. Mackay, "Air Pollution in the Greater Vancouver Area," 2 December 1968.
[4] On the importance of how regulations are implemented, see Yeager, *Limits of the Law*. The completion and implementation of the air emission regulations fall beyond the time frame of this thesis.
[5] Kathryn Harrison, *Passing the Buck: Federalism and Canadian Environmental Policy* (Vancouver: UBC Press, 1966), 81 – 82.
[6] Reel 633, "Slash Fire Policy Hit By Loggers," *Vancouver Province*, November 7, 1968, 21.
[7] Reel 570, "Residents Back Park Dust Fight," *Vancouver Sun*, May 4, 1967, 38. An Alberta Wheat Pool representative remarked to a newspaper reporter: "If they put a park where it is surrounded by an asbestos plant, the railroad and grain elevators….they can expect nothing but air pollution problems," reel 573, "Grain Men Act," *Vancouver Sun*, June 26,1967, 24. New Brighton Park, in fact, is the oldest in Vancouver, dating from the 1860s, contemporary with the establishment of the old Hastings saw mill, but predating all other industry. See Hardwick, *Vancouver*, 8 – 10.
[8] Reel 564, "Waterfront Bulk Loadings Pollution Factor, Says Chief," *Vancouver Sun*, February 8, 1967, 24.
[9] Reel 622, "Police Clear N. Van Council Gallery As Hecklers Protest Neptune Permit," *Vancouver Sun*, July 3, 1969, 12.
[10] Reel 653, "'Dust-Less' Sulphur Fails Public Try-Out," *Vancouver Province*, July 21, 1970, 14.
[11] Reel 623, "Neptune Pledges to Follow City Rules on Dust Control, *Vancouver Sun*, July 18, 1969, 28.
[12] Reel 665, "$16 Million Neptune Plant Lauded by Williston, Others," *Vancouver Province*, September 10, 1970, 26.
[13] One crude measure of this increased coverage is a greater than five-fold increase in the number of articles in the *Sun* and *Province* combined when comparing 1969 to 1964.

[14] For a history of California's air pollution and policies, see James E. Krier and Edmund Ursin, *Pollution and Policy: A Case Essay on California and Federal Experience with Motor Vehicle Air Pollution 1940 – 1975* (Berkeley: University of California Press, 1977).
[15] Reel 633, "Pollution Solution Urged," *Vancouver Province*, November 25, 1968, 5.
[16] Reel 641, "Earth and Air…Fire and Water…We're Polluting Them All…," *Vancouver Province*, July 12, 1969, The Province section, 4.
[17] Reel 642, "Pollution Warning: Danger Point," *Vancouver Province*, August 27, 1969, 11.
[18] CKNW/98, "Raise a Stink About Pollution: Write Here! Right Now," *Vancouver Province*, November 4, 1969, full page advertisement, 13. Underlining in the original.
[19] Reel 645, "'Hell Raising Time' On Pollution Issue, *Vancouver Province*, November 5, 1969, 8.
[20] Reel 636, "Too Many Cooks…Too Little Broth," *Vancouver Sun*, February 11, 1970, The Sun section, 4.
[21] Reel 637, "Nuclear Energy, Birth Curb Key to Mankind's Survival," *Vancouver Sun*, May 23, 1970, 25.
[22] CVA, Air Pollution Control Society, Box 146-A-4, Folder 2, Letter from Iian Davidson to Mayor Tom Campbell, May 6, 1968.
[23] Reel 640, "Housewives Militant in Pollution Protest," *Vancouver Sun*, July 13, 1970, 15.
[24] Reel 619, "Credit Card Boycott Urged to Fight Refinery Pollution," *Vancouver Sun*, May 28, 1969, 14; and reel 614, "Pollution Tests Start, *Vancouver Sun*, March 3, 1969, 41. For the story of lead poisoning around the Metalix facility, see reel 641,"Plant Stops Smelting," *Vancouver Sun*, July 24, 1970, 1 -2; and reel 641, "Worried Residents Air Lead Concerns," *Vancouver Sun*, July 28, 1970, 27.
[25] Reel 630, "Gov't Sluggish on Pollution," *Vancouver Sun*, November 7, 1969, 13.
[26] Reel 564, "Pollution Fines Cheaper Than Control, Says Unionist," *Vancouver Sun*, February 13, 1967, 15.
[27] Reel 637, "Pollution Enforcement a Farce, Says Union," *Vancouver Province*, March 19, 1969, 11.
[28] Reel 640, "B.C., Quebec Spurn Pollution Data Bid," Vancouver Sun, July 10, 1970, 22.
[29] Reel 643, "Pulp Firms, Gov't Rapped On Pollution," *Vancouver Sun*, August 20, 1970, 19.
[30] Reel 673, "Anti-Pollution Fund Sought in Labor Union Contracts," *Vancouver Sun*, November 17, 1971, 17.
[31] Nicholas Freudenberg and Carol Steinsapir, "Not in Our Backyards: The Grassroots Environmental Movement," in *American Environmentalism: The U.S. Environmental Movement, 1970 – 1990*, ed. Riley E. Dunlap and Angela G. Mertig (Washington DC: Taylor & Francis, 1992), 28.
[32] Reel 641, "Earth and Air…Fire and Water…We're Polluting Them All…," *Vancouver Province*, July 12, 1969, The Province section, 4.
[33] Reel 641, Pat Moan, "Shrum Hits At Pollution Doom," *Vancouver Sun*, September 23, 1970, 38. This proposal was rejected by the Social Credit government in July 1970, but Dr. Shrum continued advocacy for the option. He predicted that there would be a nuclear reactor under Vancouver's West End within 25 years.
[34] Inglehart, *The Silent Revolution*. Also see Doug Owram, *Born at the Right Time: A History of the Baby-Boom Generation* (Toronto: University of Toronto Press, 1996), 159 – 215.
[35] For the growth of importance of Vancouver as a corporate metropole to British Columbia, see L.J. Evenden, ed., *Vancouver: Western Metropolis* (Victoria: University of Victoria, 1978).
[36] CVA, City Clerk, Box 81-A-1, Folder 2, Dr. H.L.Bryson, Office of Permits and Licences, "Result of Air Pollution Monitoring" memo, February 17, 1968.
[37] Reel 639, "Tougher Air Law for City," *Vancouver Province*, May 21, 1969, 1 – 2.
[38] *Air Quality in British Columbia* (Vancouver: B.C. Research, 1970), tables VIII-1, VIII-2, VIII-3.
[39] Reel 624, "'NDP Pollution Hysteria' Criticized," *Vancouver Sun*, August 15, 1969, 12.
[40] Reel 476, "'Unethical' Pollution Teaching Hit," *Victoria Daily Times*, March 24, 1970.
[41] Reel 639, Alex Young, "We'll Shut Polluters For Sure," *Vancouver Province*, May 26, 1969, 9.
[42] Reel 642, "Premier Says Polluters Want To Do Right thing," *Vancouver Province*, August 13, 1969, 5.

[43] Reel 623, Iain Hunter, "Bennett Lays His Good Life on the Line," *Vancouver Sun*, July 22, 1969, 1.
[44] BC Water Resources Service, "Pollution Control in British Columbia," (Victoria: Department of Lands, Forests and Water Resources, April 1970).
[45] Reel 644, Art McKenzie, "Anti-Pollution Funds Scarce, Says Minister," *Vancouver Province*, October 24, 1969, 27.
[46] Reel 680, Moira Farrow, "Mining Pollution Briefs Cut," *Vancouver Sun*, March 2, 1972, 39.
[47] Reel 680, Ron Rose, "'Preserve Environment's Balance,'" *Vancouver Sun*, March 9, 1972, 29.
[48] Department of Lands, Forests, and Water Resources, *Report on Pollution Control Objectives for the Forest Products Industry of British Columbia* (Victoria: Water Resources Service, September 1971), 8.
[49] *Ibid.*
[50] See a report on the forestry pollution objectives, reel 662, Scott Honeyman, "Forest Industry Cleanup Proposed," *Vancouver Sun*, June 24, 1971, 1 – 2; and reporting on the proposed mining industry objectives, reel 680, Ron Rose, "'Stump the Experts' At Pollution Inquiry," *Vancouver Sun*, March 8, 1972, 10.
[51] Reel 655, "Older Vehicles to Control Fumes," *Vancouver Sun*, February 20, 1971, 8.
[52] Reel 644, "Go-It-Alone Pollution Fight Planned," *Vancouver Province*, October 30, 1969, 8.
[53] Reel 680, "Regional District Seeks 'Air Power,'" *Vancouver Sun*, March 3, 1971, 2.
[54] Reel 646, "Davis Says Skagit 'Must Be Stopped,'" *Vancouver Sun*, October 10, 1970, 1 – 2.
[55] Reel 684, "Williston Slaps Davis Over Pollution Remarks," *Vancouver Province*, August 19, 1970, Third section, 19.
[56] Reel 655, Bob McMurray, "Forest Industry Outlook Bleak," *Vancouver Province*, September 9, 1970, Business – Finance section, 19. The earlier reference to Williston's remarks is on page 67.
[57] Reel 653, "Regional Pollution Control Aim," Vancouver Sun, January 20, 1971, 14.
[58] CVA, City Clerk files, Box 81-A-1, Folder 2, Letter from John Smith to Dr. H. L. Bryson, 11 February 1969.
[59] Gottlieb, *Forcing the Spring*, 121 – 168.
[60] Examples of letters with strong assertions of environmental and health impacts are scattered through files in both the British Columbia and City of Vancouver archives.

5. Conclusion

[1] On new social movements and assessments of their capacity to fundamentally challenge structured capitalist – state interests, see Ralph Miliband, *Divided Societies: Class Struggle in Contemporary Capitalism* (Oxford: Clarendon Press, 1969), 95 -114; Clause Offe, "New Social Movements: Challenging the Boundaries of Institutional Politics," *Social Research* 52, no. 4 (Winter, 1985): 817 – 868; and Martin Janicke, *State Failure: The Impotence of Politics in Industrial Society*, trans. Alan Braley (University Park, PA: Pennsylvania State University Press, 1990), 28 – 30.
[2] Government of Canada, "British Columbia - Air Quality Health Index - Provincial Summary," https://weather.gc.ca/airquality/pages/provincial_summary/bc_e.html (accessed 10 May 2017).
[3] *No Breathing Room*, 35 – 36.
[4] The World Health Organization (WHO) estimates 3 million annual deaths worldwide from ambient air pollution in 2012, a rate approximately seven times higher than estimates for British Columbia. See WHO, "Ambient (Outdoor) Air Quality and Health," http://www.who.int/mediacentre/factsheets/fs313/en/ (accessed 10 May 2017).
[5] Johan Rockström, *et. al*., "A Safe Operating Space for Humanity," Nature 461, no. 24 (September, 2009): 472 – 475.

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