

Sudbury: A Historical Case Study of Multiple Urban-Economic Transformation

OIVA SAARINEN

Sudbury serves as a relevant historical case study of a settlement that has undergone several transformations since its inception as a fledgling village in the latter part of the nineteenth century. Though changes of this kind have been frequent in Ontario, they have not normally happened to hinterland resource communities. This article suggests that Sudbury is unique in this regard, having evolved through five distinct stages: (1) a railway company village, (2) a colonial-frontier mining town and city, (3) a regional central-place, (4) a declining metropolis, and (5) a nearly self-sustaining community. The constant restructuring of Sudbury's society and economic base has been caused by a variety of external and internal forces, among which the "human dynamic" has been vital and ever present. The paper suggests that under certain circumstances a resource community can progress from a staples and boom-bust existence to a more sustainable urban economy based on local and regional influences.

A Railway Company Village

Sudbury began its existence as a company village of the Canadian Pacific Railway.¹ In 1883 it became one of the places in Northern Ontario chosen as a temporary construction centre for the railway company. Situated on the outer limit of habitable territory, the site gave no evidence whatsoever that it would ever acquire an importance beyond that of a small wayside station for the transcontinental railway. In 1884 the Commissioner of Crown Lands made land grants to both the CPR and the Jesuits. For the first few years, the population of the townsite was composed almost entirely of railway employees. The CPR initially banned private enterprise and ran all the boarding houses and other retail businesses in the village. When the company subdivided its portion of the site in 1886, it used a gridiron plan that recognized the influence of the pocketed topography and the existing rights-of-way of the railway lines. The legacy of this original layout remains to the present day. In the meantime

the Jesuits had established a parish known as Ste. Anne of the Pines.² The name referred to the existence of forests in the area before the establishment of mining; it also suggested a sharp contrast to the stark image that emerged later. For a time there was a thriving lumber industry that permitted W. J. Bell to emerge later as Sudbury's most successful lumber baron. As the decade progressed, the future of the townsite bleakened as the CPR operations were transferred to Biscotasing; with this move the era of the railway company town came to an end. Only lumbering held some limited promise for the future. Completely isolated from the centres of power except for a rail link to Montreal some 700 kilometres (420 miles) to the east via the bustling town of North Bay, Sudbury showed every indication of becoming a CPR ghost town like so many other construction camps along the mainline. Such, however, was not to be the case.

A Colonial-Frontier Mining Town and City

The assumption that Sudbury was only a temporary village began to change after mineral deposits were discovered nearby in 1883. In the following two years, prospectors such as Thomas and William Murray, Charles F. Crean, Rinaldo McConnell, Thomas Froot, and James Stobie staked numerous claims in the area. It soon became clear that the village was adjacent to a huge geological structure (now known as the Sudbury Basin) containing vast mineral deposits (see Figure 1). In her mem-

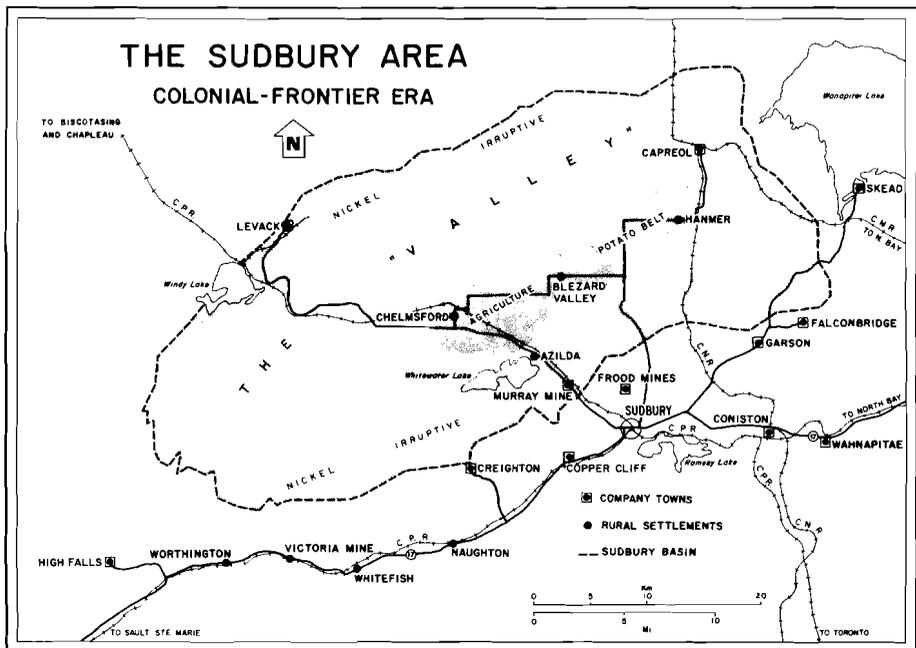


Figure 1. Geographical setting of the Sudbury area during the colonial-frontier era.

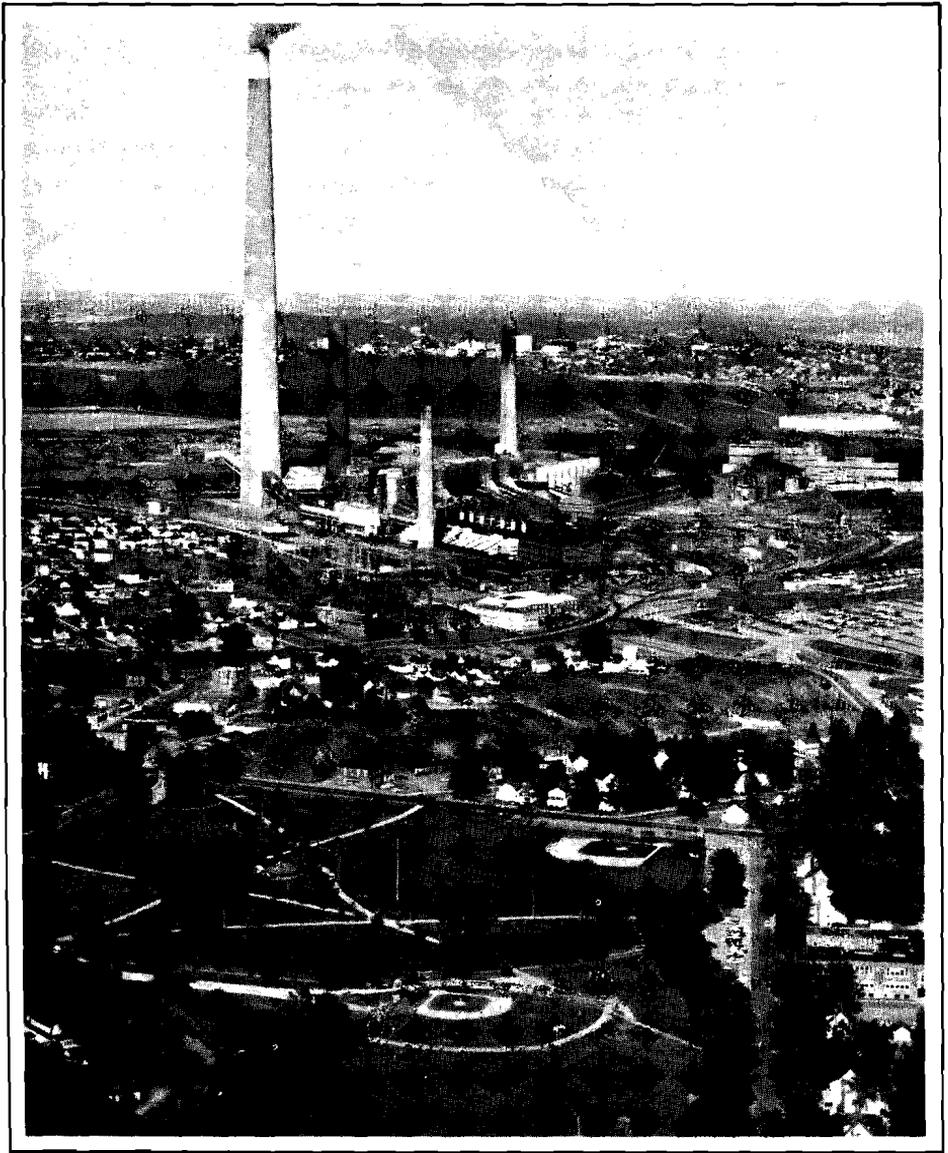


Figure 2. Aerial view of the Copper Cliff Smelter opened in 1930. The 1,250-foot (379-metre) "Superstack" became operational in 1972. The former company town of Copper Cliff lies in the foreground, and parts of the City of Sudbury in the background. (Courtesy Inco Ltd.)

oires, Florence R. Howey wrote that by the spring of 1886 "we knew Sudbury was going to be a mining town."³ This knowledge, however, did not lead to a boomtown expansion as occurred later at Cobalt; rather, the transformation from a railway to a mining community was gradual and piecemeal. This was due to the technological

difficulties in processing the complex ores and the lack of markets for copper and nickel. The first tangible expression of this new phase took place in 1886 and 1888, when mining and smelting operations were started in Copper Cliff.⁴ These operations heralded the entry of the Sudbury area into an era of export specialization based on the mineral wealth of the Sudbury Basin.⁵ The resulting optimism prompted Sudbury to become an incorporated town in 1893. The subsequent exploitation and settlement of the region was, from the outset, subjected to many outside influences. Economi-

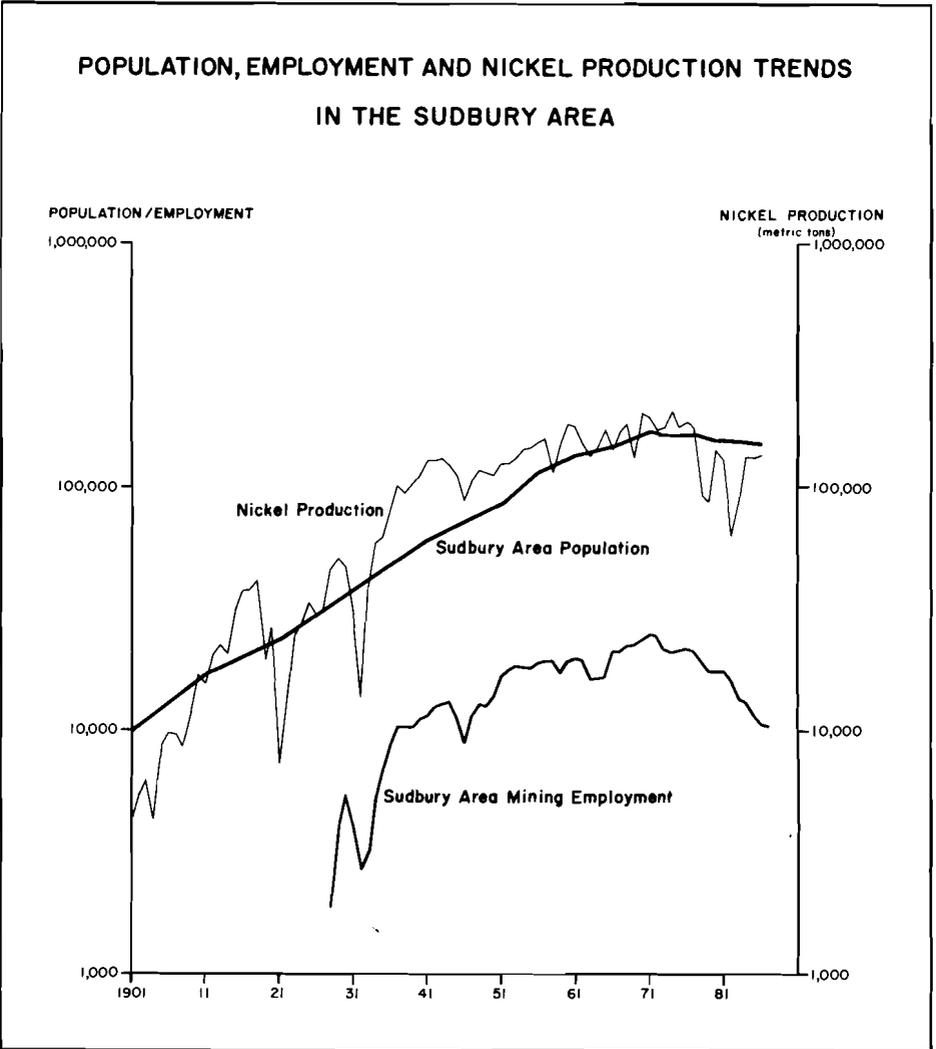


Figure 3. Development trends in the Sudbury area. Sources: Ontario Ministry of Northern Development and Mines, Ontario Mineral Score, Toronto; Statistics Canada, Census of Canada 1901-1986, Ottawa; and information provided by Inco Ltd. and Falconbridge Ltd.

cally, the mining sector fell under the control of American and British entrepreneurs who brought with them outside capital, management, and technology.

The history of foreign economic domination began with the formation of the Canadian Copper Company in Cleveland by Samuel J. Ritchie in 1886.⁶ Encouraged by the Canadian and Ontario governments, Ritchie managed to acquire the most promising mining properties from prospectors who lacked the money to exploit their claims. In 1902 his enterprise became part of International Nickel, a new giant controlled by the well-known steel industrialist J. P. Morgan and headquartered in New Jersey.⁷ The clear superiority of the nickel-plated U.S. warships in the Spanish-American War of 1898 inspired British interests to form the Mond Nickel Company in 1900; by 1901 its smelter was shipping processed nickel and copper to Great Britain. By the turn of the century, therefore, Sudbury had emerged as an integral and vital part of the Canadian staples network serving international military needs. The local dominance of Inco and Mond soon came to be matched by the global dominance of the Sudbury Basin in the world's nickel industry. In Canada and Ontario, the image of Sudbury as a mining town took firm root in the public mind.

The power and influence of Inco expanded when the company absorbed Mond in 1928; in the same year, Inco was "Canadianized" in order to avoid the anti-monopoly sentiment in the United States.⁸ In 1930 Inco opened its gigantic new smelter at Copper Cliff (see Figure 2). These events firmly set the stage for the reshaping of Sudbury's image to that of an "Inco" town. Simultaneous with these events was the creation of another major corporation, Falconbridge Nickel. Encouraged by these developments, Sudbury became a city in 1930.

Another strong outside influence was the international market. As Figure 3 reveals, the demand for nickel fluctuated widely in a highly cyclical fashion. During the 1920s nickel production declined substantially as the metal made its transition from a strategic military material to a consumer product. The boom of the late 1920s collapsed with the onset of the Great Depression. World War II and its aftermath brought about yet another pattern of expansion and decline. These boom-and-bust cycles contributed to a constant feeling of uncertainty about the long-term economic future of Sudbury, which for many became simply a place of transition rather than home. External influences in the form of provincial mining policies also left their mark: indeed, here could be found typical examples of colonialism, for provincial policies as they affected the Sudbury area were designed solely to attract foreign capital and divert development benefits from the local to the provincial treasuries. Free rein was given to the mining industry regarding the local environment and working conditions, little thought being given to the harmful aspects of the exploitation process, which were borne entirely by the local residents and communities.⁹ Sudbury's geographical location too remained on the fringes of mainstream Ontario until two railway lines were completed to Toronto in 1908-09. Local retailers and wholesalers were thus faced with strong competition from Toronto, as they were again a few years later from North Bay, which emerged as the main point of road

entry into northern Ontario after Highway 17 was completed west to Sudbury and Sault Ste. Marie in 1912.¹⁰ This highway network gave North Bay a powerful advantage over Sudbury until the 1950s.¹¹

The local consequences of those influences were profound: environmental degradation, a punitive system of mining assessment and taxation, the formation of a network of company towns, and a low level of socio-cultural well-being. Because of the high sulphur content of the Sudbury Basin mineral deposits, it proved necessary at the time to roast the ores before smelting, using open heaps which burned for months and sent dense sulphurous clouds over the surrounding landscape. These infamous roastyards, along with slag and mine tailing zones, gave rise to impressions of the area as a barren and treeless landscape.¹² Even though the last of the roastyards was abandoned in 1929, the visual legacy of this early technology remained for decades in the form of soil erosion, blackened hilltops, and stunted vegetation. Not surprisingly, this degradation evoked images in the press such as “death valley” and the “surface of the moon.”¹³ As this environmental pollution was limited to the Sudbury Basin, there was little public interest elsewhere in the province in the possible alleviation of these effects.

Even though the Sudbury area was strongly represented in the provincial cabinet by Frank Cochrane and Charles McCrea, this did not deter the province from exempting the mining companies from paying property taxes like industrial operations in southern Ontario. This policy, devised when the mining industry was in its infancy, was given formal acknowledgement in 1910, when the Assessment Act was revised to make buildings, plants, and machinery on mineral lands non-assessable by municipalities.¹⁴ Although this act came under constant attack by Sudbury politicians throughout the century, this political pressure did not bring about any favourable results until W. S. Beaton, mayor of Sudbury during the 1940s, helped persuade the province to devise a special revenue for mining communities to compensate them for their inability to tax the mining companies. The compensation, introduced in 1952, came in the form of mining revenue payments which permitted municipalities with mining properties within their boundaries to tax profits up to prescribed limits. A different form of revenue assistance was created for the City of Sudbury, which did not have any mines within its boundaries. This came in the form of a provincial grant in lieu of a mining tax.¹⁵ Studies by the city in the 1950s concluded that these mining payments were the equivalent of only one-half the revenue that Sudbury would have received if it had been a typical heavy-industrial city in southern Ontario.¹⁶ The inequity inherent in this system was a cause of the low level of municipal infrastructure in most of the Sudbury Basin communities. The continuing references to Sudbury after World War II in the national press as a “slum” or “a smaller version of Katowice, Poland” bore apt testimony to the legacy of this provincial assessment and taxation policy.¹⁷

The colonial-frontier atmosphere was intensified by the long distances between towns and by the fact that many of them existed only as company towns. Copper

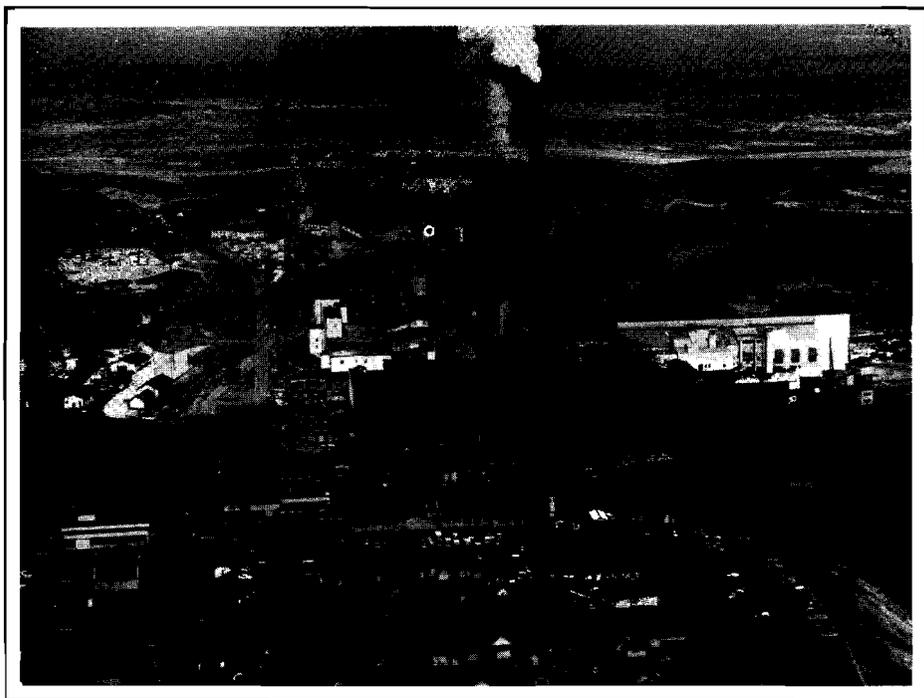


Figure 4. The Falconbridge townsite and treatment plants, 1977. (Courtesy Falconbridge Ltd.)

Cliff, just to the west of Sudbury, emerged as the Inco “showcase” with comfortable houses appropriately segregated to conform with the employees’ status in the company, well-kept streets and parks, and numerous recreational facilities.¹⁸ A highly paternalistic attitude prevailed in the Inco company towns, where all the essential services and even political representation were firmly controlled by Inco. The Falconbridge townsite similarly emerged as the community showcase for Falconbridge Nickel (see Figure 4). The company-town phenomenon continued as late as the 1950s, as evidenced by the creation of townsites at Lively and Onaping Falls by Inco and Falconbridge Nickel respectively. Although these company towns provided pleasant physical surroundings, their effect on the socio-cultural and political development of the area was less beneficial. In fact, the company towns expressed the philosophy that segregation by class and race was not only desirable but necessary.¹⁹ In the Sudbury Basin company towns, internal ghettos evolved which were occupied by immigrant workers. In Levack the periphery was known as Little Warsaw; in Coniston, two immigrant areas developed, one dominated by Italians and another by Poles. At Copper Cliff, a district known as Little Italy emerged beneath the smokestacks; other areas to the south were occupied by east Europeans and Finns. The francophone population never even made it to the company town; these workers settled either in the agricultural heart of the Sudbury Basin known as the “Valley” or simply went to Sudbury. For all practical purposes, Sudbury served as the exter-

nal “fringe town” for both Inco and Falconbridge Nickel,²⁰ a fact confirmed by population figures: in 1901 Sudbury embraced some 21 per cent of the region’s population; even as late as 1951, only 50 per cent of the regional inhabitants could be found within its boundaries.²¹ As the company towns attracted virtually all the white-collar employees of the mining sector, Sudbury lacked a middle and upper class aside from a few doctors, lawyers, and clergymen. This demographic imbalance greatly skewed the local political system and fostered a blue-collar dominance of community tastes and demands. It is not surprising that the local daily newspaper, the *Sudbury Star* (known to some as the “Inco Star”) acquired an inordinate amount of local power, which it used to influence politics and protect the interests of the mining companies.

Nevertheless, a number of desirable features did develop on the local scene.²² A compact downtown emerged with streetcar lines to both Lake Ramsey and Copper Cliff (see Figure 5). For the majority of male residents, sports became a passionate recreational activity, and both Inco and Falconbridge Nickel sponsored numerous hockey and baseball teams. Owing to the vigorous efforts of the Finnish community, a widespread interest developed in wrestling, skiing, and track and field.²³ The residents of Sudbury were also fortunate in having two large parks, thanks to the visionary parkland philosophy of W. T. Bell, a municipal parks official during World War I, who was not only responsible for acquiring land in the downtown which eventually became Memorial Park, but was instrumental in obtaining land fronting Lake Ramsey. Later, Bell donated additional land to form present-day Bell Park.²⁴ Another distinctive socio-cultural force was Local 598 of the International Union of Mine, Mill and Smelter Workers. Certified as the bargaining agent for the workers at Inco and Falconbridge in 1944, this local became the largest trade union in Canada. It also gave Sudbury some of its most dynamic personalities, such as Nels Thibault, Mike Solski, and Weir Reid. In the years following certification, the union established itself as a powerful social force by building union halls and a children’s camp and by founding popular programs involving the theatre, sports, music and feature films.²⁵

A Regional Central-Place

After World War II Sudbury began to shed some of its colonial-frontier character and image, thanks initially to a significant expansion of the mining economy. This expansion, however, included neither the broadening of the mining economy to include new products nor the strengthening of forward or backward linkages; rather, the Sudbury area provided ample support for the contention that staple economies often lead to just more of the same.²⁶ The extension of the staple economy into the post-war era could be attributed directly to the influence of the American “military-industrial complex,” for it was the American government, in response to the military needs of the Korean and Cold Wars, that deliberately set the stage for a mining

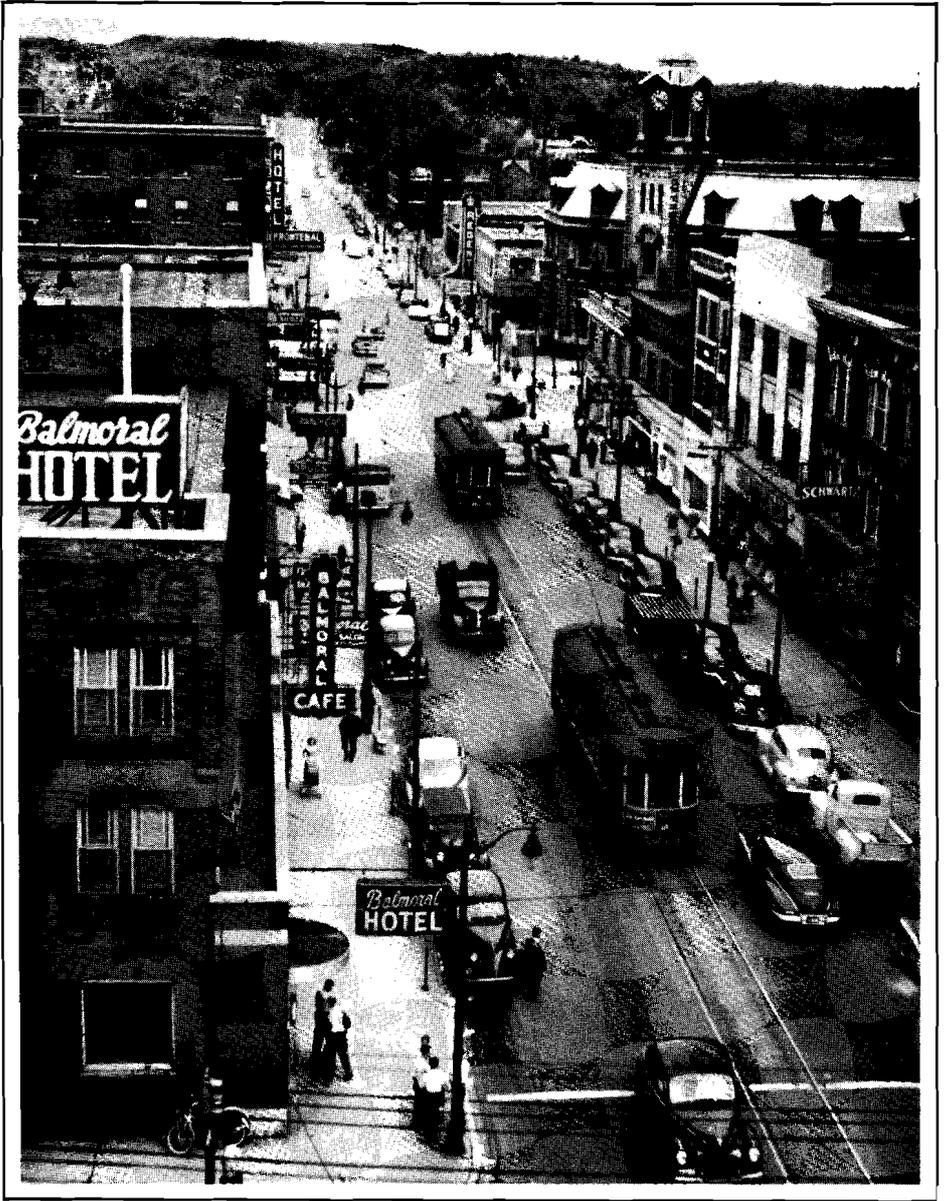


Figure 5. Downtown Sudbury, 1948. The streetcars linked Sudbury with the town of Copper Cliff. (Courtesy Sudbury Public Library)

boom in the Sudbury and Elliot Lake areas during the 1950s. This economic expansion in turn enabled the Sudbury Basin communities collectively to attain the critical population of a metropolis. A related event was the passing of the region's remoteness and hinterland status in relation to other parts of Ontario and Canada. The

acquisition of these new population and geographical attributes supported the transition of the area towards a more mature, service-oriented economy, and by the late 1960s Sudbury had acquired some of the characteristics of a regional central-place. The community was also changing internally: land-use planning was introduced, and a white-collar class was emerging. Unfortunately, many aspects of the transition went unnoticed because of the inordinate attention given to the struggle between Inco and Local 598 during the 1950s and 1960s.

The explosive growth of the Sudbury Basin communities in the 1950s was a direct outcome of the decision by the United States government to encourage international competition for strategic minerals and to break up monopolies like Inco in order to contain communism and to promote global stability.²⁷ As a consequence of this policy the United States spent \$789 million between 1950 and 1957 to diversify the non-communist supply of nickel and other metals through stockpiling and special purchase agreements.²⁸ Although both Inco and Falconbridge Nickel were parties to these arrangements, the latter proved to be the main beneficiary. By the end of the decade this enterprise had become a major producer and competitor to Inco as a result of an expansionary mining program in the northwestern part of the Basin. Sudbury likewise benefited economically from an agreement signed in 1954 between Eldorado Mining and Refining Ltd. and the United States government for the purchase of more than \$1 billion worth of uranium ore from Elliot Lake from 1957 to 1962.²⁹

The effect on Sudbury was immediate and profound. The city was transformed from a local distribution and residential centre to a rapidly growing city exhibiting metropolitan features. Both the labour force and the population grew rapidly; between 1951 and 1957 new jobs resulted in a net migration of some 27,000 persons into the Sudbury District.³⁰ Whereas in 1951 the population of the Sudbury Basin communities was only about 115,000, by 1961 and 1971 it had increased to 138,000 and 170,000 respectively.³¹ By 1951 the City of Sudbury had a population density greater than that of any other Canadian settlement of the same size.³² Outside of Sudbury, the distribution of population was fundamentally reshaped. In the "Valley" numerous farms were subdivided in ad hoc fashion to accommodate the new demand for housing; urban sprawl also appeared to the west and south of Sudbury. The construction in 1956-59 of Elliot Lake, a resource community of 25,000 lying 160 kilometres (100 miles) west of Sudbury, brought new economic opportunities, particularly in retailing and wholesaling, to a larger geographical area. Sudbury's role as a regional central-place was assisted greatly by improvements in transportation and communication, especially opening of the Sudbury – Parry Sound – Gravenhurst stretch of road in 1952-56.³³ This completion of Highway 69 to Toronto enabled Sudbury to serve as an alternative gateway into northern Ontario and set the stage for a battle with North Bay for urban supremacy in northeastern Ontario.³⁴ Also important was the establishment of the Sudbury Airport and the introduction of regular flights by Trans Canada Airlines (TCA) between 1952 and 1954.

Sudbury's sphere of influence was extended in 1953 when the city became the site of Canada's first privately owned commercial television station, and by 1957 three radio stations were in existence.³⁵ The geographical expansion of the *Sudbury Star's* circulation market was another indicator of the city's improving territorial and hierarchical position. As early as 1940 Sudbury began to replace Toronto's newspaper dominance locally, and by the 1950s it was displacing Toronto's previous control over Manitoulin Island. In fact, the city's position in the provincial hierarchy gradually improved so much that by 1960, it was exceeded only by Toronto, London, Ottawa, Waterloo, Hamilton, and St. Catharines in the number of newspapers delivered.³⁶ Medicine and education too helped extend the city's sphere of influence. The construction of three hospitals between 1950 and 1956 made Sudbury the undisputed medical centre for northeastern Ontario, and by the late 1960s, eminent surgeons led by Dr. Paul Field had brought the city to national prominence in the field of heart surgery. The creation of Laurentian University in 1960 and Cambrian College of Arts and Technology in 1966 brought the community into Ontario's web of post-secondary institutions (see Figure 6).³⁷ By the beginning of the 1970s, therefore, the foundations for Sudbury as a central-place had been laid.

The economic transformation wrought numerous sociological changes in Sud-

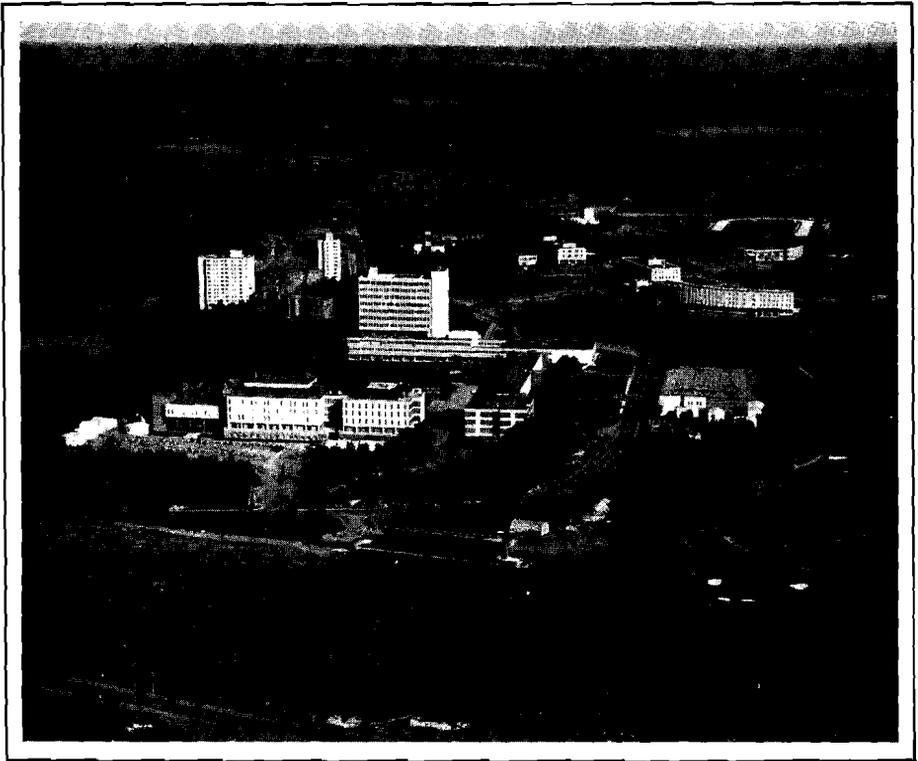


Figure 6. Laurentian University, opened in 1964. (Courtesy Inco Ltd.)

bury. Planning was grudgingly accepted as a development tool, and the laissez-faire attitude of the pre-war era slowly faded. The first land use planner was hired by the city in 1955, and by 1959 an official plan had been formally approved. Other planning measures included the formation of the Sudbury and District Health Unit in 1956, the Junction Creek and Whitson Valley Conservation Authorities in 1958 and 1959, and the Sudbury and District Industrial Commission in 1957.³⁸ Planning proved to be a boon. Under the direction of K. Dembek, one of Canada's most successful urban renewal programs transformed the downtown and fulfilled the long-felt need for a more functional and attractive downtown. Other achievements included improvements to the city's roads, the elimination of flooding, and the provision of water mains and sewers to the suburbs. Meanwhile, the broadening of the economic base to include tertiary employment brought to the city for the first time the influence of both white-collar workers and women. Interest in the theatre grew, and steps were taken to form a symphony orchestra. In 1951 male dominance in local politics was challenged when Dr. Faustina Cook and Grace Hartman won aldermanic seats, and in 1967, Hartman became Sudbury's first woman mayor.³⁹

The steady improvement in the city's physical and socio-cultural amenities in the post-war era, however, was not fully appreciated at the time because of the overriding attention given to the struggle between Inco and Local 598. A long strike at Inco in 1958 split the community and inspired descriptions of the Sudbury area as a "hotbed of unionism and communism."⁴⁰ The attention of the media was again drawn to Sudbury in 1961, when the United Steelworkers of America began an aggressive campaign to replace Mine Mill as the bargaining agent for the Inco workers.

Nevertheless, it is clear that by the beginning of the 1970s Sudbury had in fact become a markedly different city from the one that had emerged from World War II. While natural resources were still the cornerstone of the local economy, new central-place functions had come into being.

A Declining Metropolis

The post-war transformation of Sudbury was abruptly halted in the 1970s by problems both urban and economic which threatened the future viability of the city and the Sudbury Basin. Headlines shouted that Sudbury had "hit bottom" and was "struggling to stay alive."⁴¹ By the early 1970s, it had become evident that a political restructuring was needed to meet the region's growing need for water, sewage disposal, transportation, and planning. The inability of local municipalities to deal with these issues can be attributed partly to the urban sprawl that had begun as far back as the 1950s, extreme parochialism, and the weakness of the tax base outside the company towns. Attempts by the city to rectify the situation were continuously thwarted by the province until 1960, when Sudbury was allowed to absorb the large population which had settled on its periphery.⁴² The change in municipal boundaries, however, did little to solve regional problems or the inequities in the sharing of

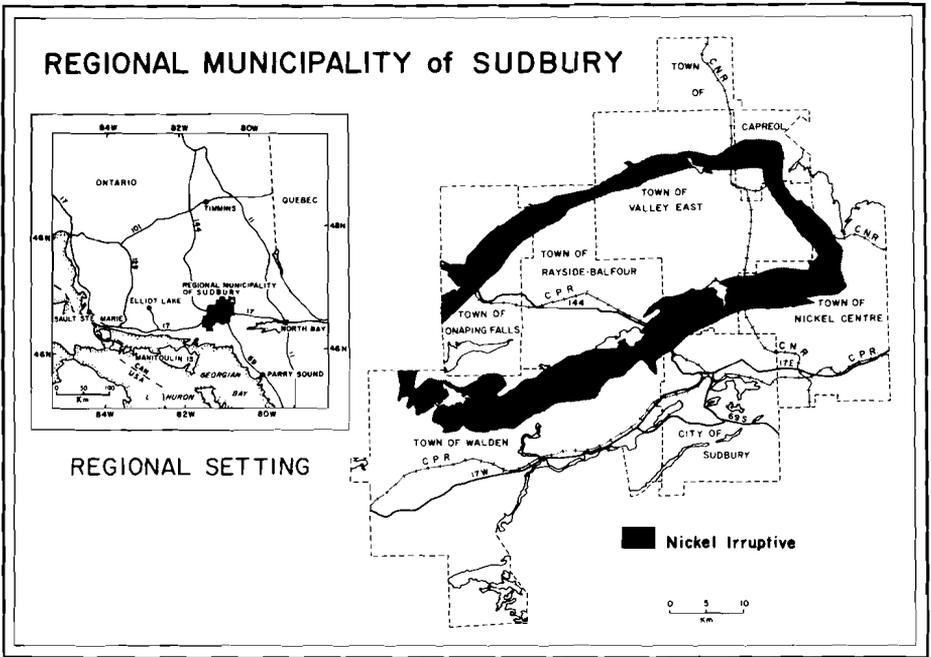


Figure 7. The Regional Municipality of Sudbury.

mining assessment between the province and the municipalities. Sudbury's continued growth in the 1960s caused considerable financial stress, and, as one observer remarked, public funds were used to make the city only "fit to live in" rather than a "pleasant place to live in."⁴³ Municipal studies were undertaken which claimed that city residents paid one-fifth more taxes than the average Ontario urban resident while at the same time receiving fewer services.⁴⁴

This unsatisfactory state of affairs continued until 1968, when the province unveiled its Design for Development program. As part of this program, the *Sudbury Area Study* (Kennedy Report), which was released in 1970, recommended the establishment of a regional government.⁴⁵ A period of intense local debate ensued. The province eventually intervened with Bill 164, which created the Regional Municipality of Sudbury on January 1, 1973 (see Figure 7).⁴⁶ Although this event was a milestone in the political and planning development of the Sudbury area, it also brought with it a decade of such intense internal dissension about services and planning that it was five years before the regional official plan could be passed.⁴⁷ Regional government too came under criticism for its unbalanced representation which favoured the outlying communities rather than Sudbury, the cost of the new bureaucracy, and the continuation of high municipal taxes.⁴⁸ On the other hand, the persuasive leadership of various regional chairmen such as Doug Frith, George Lund, Delki Dozzi and Tom Davies did eventually bring about a stronger measure of political support for

the concept of regional government.

The second reason for the turbulence of the 1970s was the drastic decline in the global demand for mineral products and the consequent reduction in Sudbury's employment. The origins of this decline can be traced back to the 1960s, when Inco and Falconbridge Nickel lost their positions as the world price leaders for nickel. Whereas in 1950 only four countries in the world produced nickel, by the beginning of the 1980s there were twenty-six producers, many of them in Third World countries with low wages and minimal environmental regulations.⁴⁹ By 1982 the Sudbury Basin accounted for only slightly more than 10 per cent of the world's nickel production.⁵⁰ It had become evident to all that the glory days of the mining era had come to an irrevocable end.

The effect of this unsettled economic environment on the Sudbury area was traumatic. In 1971 the Regional Municipality of Sudbury (using its 1973 boundaries) had a population of 170,000; by 1976 this figure had dropped to 167,000 and by 1981 to 159,000. The Sudbury Census Metropolitan Area had the distinction of being one of the only two metropolitan areas in Canada to lose population between 1971 and 1981.⁵¹ The population decline was paralleled by a reduction of jobs at Inco and Falconbridge Nickel by more than 7,900 – from a high in 1971 of 25,600 to a low of 17,700 in 1981 (and eventually down to 10,000 by 1988). It was within this troubled framework that a growing awareness developed of the need to give Sudbury a more solid economic base.

Towards a Self-Reliant Community

In 1984 Sudbury was chosen by the Organization for Economic Co-operation and Development (OECD), the Government of Canada, and the Ontario Ministry of Municipal Affairs as an international case study of a declining metropolis that had made a successful urban-economic adjustment after a period of decline. The study confirmed that the Sudbury region had overcome many of the obstacles it had inherited from the 1970s and was on the path towards a more sustainable future.⁵² The report, however, dealt largely with events that had taken place during the previous decade and devoted considerable attention to political factors. This paper asserts that other long- and short-term factors need to be emphasized as well if the basis for this transitional phase is to be more fully appreciated. In fact, many of the fundamental preconditions for this rapid adjustment from decline towards revitalization and sustainability already existed as far back as the 1950s. For example, after 1951 the size of the region's population was unique among Canadian resource-based economies. The foundations for the City of Sudbury as a central-place, already well established during the 1950s and 1960s, were strengthened considerably in the ensuing decade. The post-war birth of a white-collar class and its growing influence stimulated fundamental changes to the economic, political, and socio-cultural order. These three long-term preconditions were complemented by four more recent impulses: creative

political leadership at the local and regional levels, financial assistance from the two senior levels of government, increases in productivity by Inco and Falconbridge, and finally, the creation of forward and backward linkages within the mining industry.

In the dynamics of the current metamorphosis phase, community size has been of paramount importance. According to the 1986 census, the Regional Municipality of Sudbury supported a population of more than 152,000. While this figure does not approach the 250,000 often proposed as the minimum for community sustainability, it nevertheless acted as a brake to slow down the decline. The fact that Sudbury was a declining metropolis gave it considerable influence with the provincial and federal governments. Arguing that “no nation is so affluent that it can afford to throw away a major city,” Sudbury used this political leverage to its fullest advantage.⁵³ At the federal level representations were made for special assistance by James Jerome (Speaker of the House of Commons), Doug Frith, Judy Erola (Minister of State for Mines with responsibility for the Status of Women), and John Rodriguez. Similar pleas were made to the provincial government by Bud Germa, Floyd Loughren, Elie Martel, and Jim Gordon. In addition, the population was large enough for import substitution in food processing, printing and design, sportswear manufacturing, and restaurant franchising.⁵⁴ The fact that the population included a sizeable number of retired people was also significant. Since more than 90 per cent of the former employees of Inco and Falconbridge Nickel chose to remain in the region, their numbers came to equal the size of the mining labour force. And since many of them had fairly high incomes, they helped the process of revitalization and contributed significantly to the renovation of houses now apparent in some neighbourhoods. As a result of this retirement phenomenon, the population of the Sudbury area had one of the highest rates of urban “aging” in Canada between 1971 and 1981.⁵⁵

The second long-term influence is the growing importance of Sudbury as a central-place in northeastern Ontario. The contemporary manifestation of this change can be linked to the change in Sudbury’s status from that of a regional to a sub-provincial central-place and the rise of urban functions as the main driving force in the economy.⁵⁶ Sudbury’s enlarged sphere of influence, underlain by improvements in transportation and communication in the 1950s and again in the 1970s, resulted in the city’s becoming a dominant force in financial services and wholesaling and distributional facilities for all of northeastern Ontario. The spread of Sudbury’s influence into places formerly dominated by North Bay was made possible by the opening of Highway 144 to Timmins in 1970 and its subsequent extension to the Smooth Rock Falls – Cochrane district via Highway 655.⁵⁷ At the same time the transportation network in and around the area was improved by the construction of bypasses and ring roads. These changes were paralleled by improvements in air transportation. Until the 1970s, Sudbury served essentially as the nodal point for a north-south air corridor joining Timmins with Toronto; but the arrival of jet service and the introduction of Norontair flights in 1971 made the community a growing focal point for air traffic for all of northeastern Ontario. After a modern air terminal

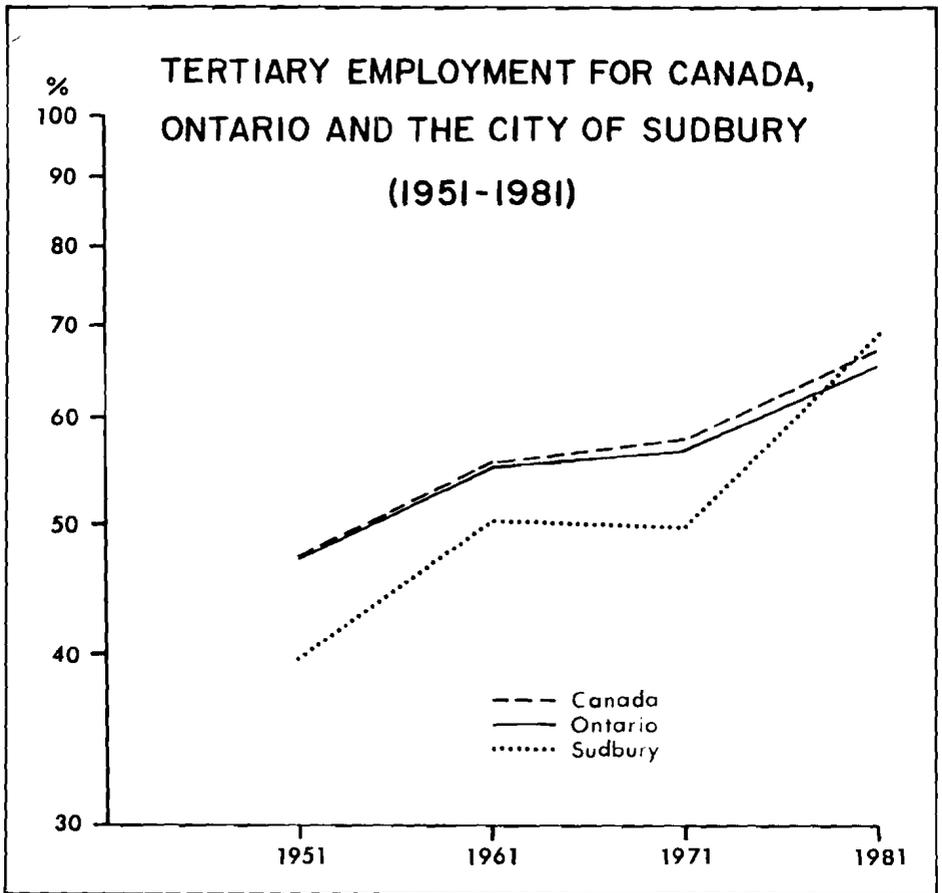


Figure 8. Comparative levels of tertiary employment. Source: Statistics Canada, Census of Canada, 1951-1981, *Labour Force by Industries*.

was built in 1974, a new, east-west air network gave Sudbury direct flights to Winnipeg, Ottawa, and Montreal. Similar advances occurred in communications.⁵⁸ In 1972 Bell Canada moved its district office from North Bay to Sudbury, and in 1979 Sudbury was designated as Bell's regional headquarters for the territory from Peterborough in the south to Thunder Bay and Hudson Bay in the north.⁵⁹ By this time, Sudbury was established as the northeastern Ontario headquarters for CBC radio broadcasting in both English and French. In publishing, Sudbury's position was enhanced by the formation of Laurentian Publishing by a local entrepreneur, Michael Atkins, in 1973. Atkins now owns twenty-five community newspapers and three business tabloids in Ontario and New Brunswick; they include the monthly *Northern Ontario Business*.⁶⁰

These developments in transportation and communication fostered the growth of tertiary employment. Sudbury's rise as a regional financial centre became evident

in the 1970s with the widespread establishment of regional bank headquarters, trust and loan companies, investment dealers, credit unions, and the Federal Business Development Bank in the downtown. A wide variety of wholesaling and distributional enterprises were similarly attracted to the serviced industrial parks created in the 1970s. By 1981 the cumulative effect of these changes was such that Sudbury was considered as a “service-administrative” centre.⁶¹ Figure 8 shows that the relative importance of tertiary employment to the city by this year exceeded the average for Canada and Ontario.

The third element was the rise of the white-collar sector as the dominant influence on the urban mentality and internal power base and the parallel rise of what geographers have referred to as a “sense of place.”⁶² This white-collar sector gradually transformed Sudbury’s socio-cultural, political, and economic environment.⁶³ The demand for higher quality in culture and recreation resulted in a number of distinctive achievements. Sudbury acquired what the Ontario Arts Council regards as the best volunteer symphony in Ontario. Another significant development was the formation of the Sudbury Theatre Centre, which has had more subscribers per capita than any other theatre in Canada.⁶⁴ The Grand Theatre – rebuilt on its original site – began to attract world-renowned entertainers. More recently, the city has adopted a leisure and recreational plan developed by citizens, reflecting the “aging” and “white-collar” aspects of the population.⁶⁵

Political life was also reshaped by the changed population. Beginning in the early 1970s, populists began to be defeated by more professional candidates,⁶⁶ and white-collar interests began to affect the city’s decisions in issues such as building heights, spaces, and portable signs.⁶⁷

Perhaps the most noteworthy example of the new outlook was the creation of Sudbury 2001. In 1977 a number of citizens, led by the planner Narasim Katary and the businessman Michael Atkins, began to meet informally with representatives of the business, academic, mining, and union sectors to discuss ways of alleviating the effects of mining layoffs in the area; the result was the formation of the Sudbury Committee, which, in 1978, held a conference on economic development involving the entire community under the name of Sudbury 2001 in 1978.⁶⁸ A formal organization was then established with the goal of making the Sudbury region a self-sustaining metropolis by the turn of the century. Assisted by venture capital provided by the provincial government, Sudbury 2001 set out to initiate new business ventures, support the expansion of existing businesses, foster innovative community projects, and make long-term strategic plans based on sustainability. The organization eventually foundered, however, as a result of a discredited economic project which left it with a reputation for impracticality and mismanagement, and in 1987 it was officially disbanded.⁶⁹ Nevertheless, in historical terms 2001 was remarkable, for it had heralded the transition from the old-fashioned type of purely reactive planning to one that looked ahead; equally important, it reflected a new attitude toward Sudbury as a permanent home for its residents. It started the process of discarding

the tradition of confrontation and divisiveness in favour of co-operation and community consensus. Though the short-term physical accomplishments of the body were few, its longer-term influence has been substantial. It raised the level of planning consciousness to heights hitherto thought impossible. This strategic approach to urban-economic development eventually bore fruit, as events in the 1980s later demonstrated. One authority regards 2001 as one of the most important innovations of its kind, and one deserving serious consideration by other communities that are under stress.⁷⁰

The fourth influence on the transitional phase was the political and planning creativity associated with the Regional Municipality of Sudbury. In fact, the very formation of the regional municipality in 1973 was a catalyst for the development of the Civic Square complex that provided offices for the Province of Ontario, the Regional Municipality of Sudbury, the City of Sudbury, and Bell Canada (see Figure 9). Despite a shaky start in the middle 1970s, the regional municipality managed to take a series of actions promoting environmental improvement, regional economic development, fiscal responsibility, and job creation. One of the first steps was to implement a strategy for improving the physical environment. This decision was dictated in part by the choice by the United States government of the Sudbury area

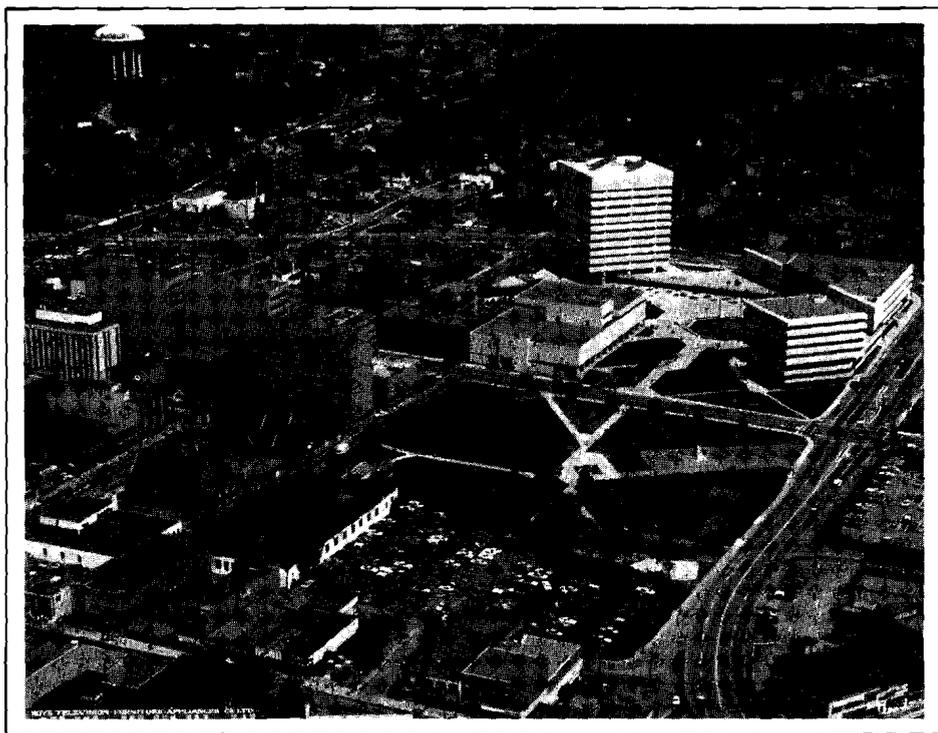


Figure 9. The Civic Square Complex and Memorial Park, 1986. The complex has helped to revitalize Sudbury's downtown core. (Courtesy Inco Ltd.)

as a site for its Apollo training missions in 1969-70 and the resulting resurrection of the “lunar landscape” image by the international media.⁷¹ The timing of the Region’s ecological initiative was fortuitous. The recent closure of Inco’s smelter at Coniston and Falconbridge Nickel’s pyrrhotite plant and the completion in 1972 of Inco’s “Superstack” had already set the stage for a greatly improved air quality and more favourable conditions for natural regeneration of vegetation.

A formal planning approach to environmental improvement began in 1973 with the formation of the Technical Tree Planting Committee.⁷² Spurred on by high student unemployment and the passage of an environmentally sensitive official plan, the committee began one of the world’s largest community land-reclamation projects in 1978. Under the Regional Land Rehabilitation Program, steps were taken to revegetate the barren lands along the main highway, using student labour. In 1982 the project was expanded to include short-term jobs for laid-off miners. By the end of 1984, 2,636 hectares of barren area were reclaimed, 980 hectares of damaged area visually improved, and 387,580 trees planted. The total cost of the program throughout this period was \$12,320,500.⁷³ The results have been spectacular. In 1984 the *Hamilton Spectator* was moved to comment that “birch trees, lakes and grass – sprouting out of once black hills – now form a beautiful backdrop to the city.”⁷⁴

Another innovative action taken by the regional municipality was the establishment in 1974 of the Sudbury Regional Development Corporation (SRDC) as an autonomous body made up of representatives from the business and industrial community, accountable to council, but with its own staff and budget.⁷⁵ Sudbury thus became one of the first municipalities in Ontario to recognize the need for a specialized co-ordinating agency to promote economic development. In addition to offering advice, guidance, and practical help to existing businesses and potential entrepreneurs, the SRDC, under the firm leadership of Spike Hennessey, became active in transforming Sudbury’s image. The efforts of the SRDC were assisted by the regional official plan, which stated the intention to attract new industry, develop suitable sites, identify suitable industries, and promote incentive programs. These policies were later adopted by the City of Sudbury in a creative economic planning statement that serves as an addendum to the city’s 1987 official land-use plan.⁷⁶ In an attempt to promote fiscal responsibility, the regional official plan adopted special policies to limit urban sprawl by designating specific growth centres. And during the early 1980s the regional council decided to undertake major capital projects essentially on a “pay-as-you-go” basis. These policies were deemed necessary because of the high debt load assumed by the regional municipality and the reduction in tax revenues resulting from the mining layoffs. Through these measures the proportion of taxes used to reduce the regional debt fell steadily during the 1980s; by 1988 no new debentures were being permitted at the regional level. The policies have been extended to include capital lot levies and a greater application of the “user-pay” principle.⁷⁷ In the city, fiscal efficiency has been encouraged by promoting residential infilling, rehabilitation of existing buildings, and a larger residential component in

the downtown. A complementary downtown strategy is being envisaged which intends to bring about a more attractive and functional setting through projects involving private-public entrepreneurial agreements.⁷⁸

Political leadership likewise appeared in the form of eight sectoral task forces on mining, government, business, industry, finance, health, agriculture, and education and training. In addition, the Short-Term Job Creation Task Force was created by the regional municipality, and an idea bank was established by the SRDC. These efforts culminated in thirty-eight proposals that were sent to the two senior levels of government after close liaison with government officials. The projects that were related to health and short-term job creation proved to be the most fruitful. The success of the former can be attributed to a previous tradition of co-operation among the local hospitals dating back to the 1970s. The latter managed to use existing programs to obtain nearly sixteen weeks of paid work for some 4,600 persons; it also generated more than \$31 million for the local economy. Though the short-term employment projects did little to diversify the economy, they succeeded in cushioning the financial and psychological effects of the layoffs. Equally important, the interim jobs enabled many workers to remain eligible for unemployment insurance. As a backup to the economic measures, the regional municipality formed a Help Committee to ensure that social services were provided to those who needed them most. When the mandate of these task forces came to an end, it was felt that Sudbury still lacked one of the keys to long-term economic diversification, namely a pool of creative entrepreneurship. It was to this end that the Sudbury Community Adjustment Project (SCAP) was formed in 1986. Conceived locally as a joint-action pilot project involving both the government and private sectors, SCAP was funded by the governments of Canada and Ontario and by Inco and Falconbridge. It evolved, however, as a private-sector, non-profit corporation with a mandate to develop innovative labour-adjustment and economic-development programs in the Sudbury area; in many respects, it could be regarded as a philosophical offshoot of Sudbury 2001. Considered the only entity of its kind in Canada, SCAP was created with a three-year mandate that extended to 1989.⁷⁹ Since its inception this body has been instrumental in creating more than seven hundred jobs.

A fifth aspect of the recovery phase was the physical investment made by the two senior levels of government towards diversifying the economy and creating permanent jobs. These investments were part of a national and provincial trend to decentralize the civil service. After the 2001 Conference of 1978, the Government of Ontario erected a new provincial building in the downtown Civic Square complex; and in 1984 it opened Science North, a tourist attraction whose outstanding architecture has helped to create a new community image (see Figure 10). The facility has also served as a stimulus for the hospitality industry. And more recently, other steps towards decentralization taken by the province bode well for the future sustainability of the region, for they will bring some 750 tertiary jobs to Sudbury.⁸⁰ Not to be outdone, the Government of Canada in 1982 aided the local economy by building

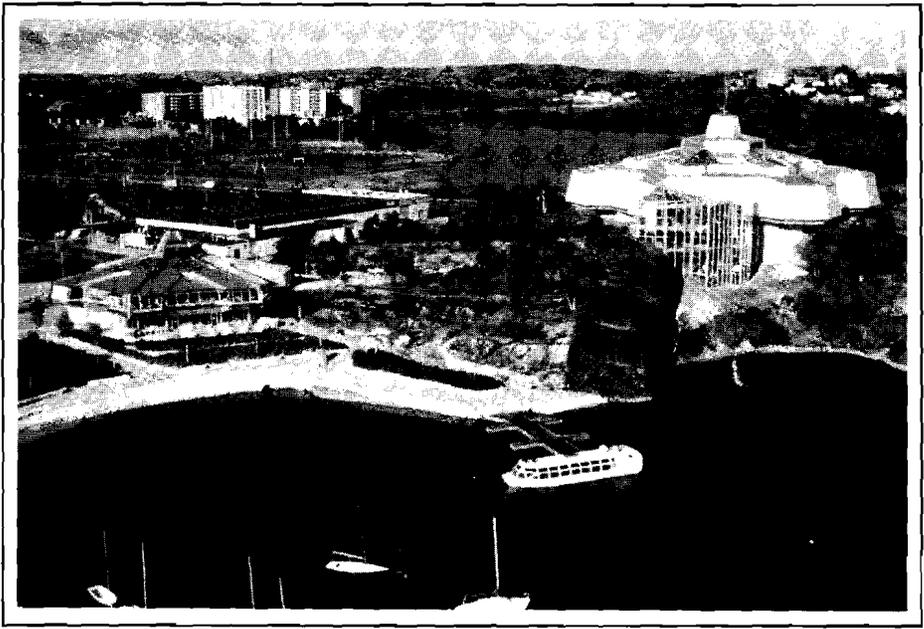


Figure 10. Science North, 1988. This tourist attraction consists of two snowflake-shaped buildings linked by an underground rock tunnel. (Courtesy Science North)

the Sudbury Taxation Centre, which provides 625 full-time and 1,500 part-time jobs. This relocation did much to lessen the long-standing problem of unemployment and underemployment among women. In 1988 the federal government announced the addition of yet another 120 jobs for the Taxation Data Centre.⁸¹

The sixth transitional factor was the corporate responses of Inco and Falconbridge to the depressed environment of the 1970s. For Inco, the post-OPEC period was extremely difficult because it had previously diversified and established mines in the tropics that were based on cheap energy. The altered state of the global mining economy by 1977 forced the company to reduce its costs by laying off workers, cutting production, and selling some of its operations. In 1982 Inco made a crucial decision to set up a formal productivity-improvement program as part of its long-term corporate strategy.⁸² In line with this policy, the Copper Cliff North Mine was reactivated in 1984 as a mining research facility using advanced automated equipment and computerized controls. Two years later the Crean Hill Mine was opened as an all-electric operation and the Copper Refinery was modernized. Another advance in 1987 was the first appearance of continuous mining operations. In order to meet provincial acid rain regulations, large investments have been made in the upgrading of its milling, smelter, and acid plants; upon completion in 1994, these facilities will be among the most technically advanced and pollution-free in the world. Falconbridge, too, introduced advanced mining technologies that use mechanized mining equipment, automated systems, electrified operations, and con-

tinuous mining techniques; the Onaping Mine was used as a test facility (see Figure 11).⁸³ As a result of this modernization, productivity at Inco and Falconbridge rose by 70 and 100 per cent respectively during the 1980s.⁸⁴ Another important consequence has been the dramatic improvement observed in the quality of the surrounding air, soil, and vegetation. Since the late 1960s, Inco's emissions have been reduced by 70 per cent, which represents by far the largest tonnage reduction by any organization in North America.⁸⁵ The innovative technology that made the reductions possible has also improved working conditions and quality of the labour force.

A new era began in 1988 when Inco, for the first time since 1979, again began to hire miners.⁸⁶ The dramatic turnabout in the fortunes of Inco and Falconbridge by the late 1980s lends support to Schumpeter's claim that an era of economic turbulence is often followed by a period of innovative corporate responses.⁸⁷ The changed situation also minimized the fears of the early 1980s that the mineral industry's life-cycle was shifting from maturity to decline.⁸⁸ On the contrary, it appears that both corporations have undergone many of the transformations required for free trade and the competitive environment of the 1990s.

The final transitional element was the belated emergence of forward and back-



Figure 11. The central control room at the new Falconbridge Smelter, 1988. The intense use of technology in today's mining industry enables the operator in this room to monitor and control almost every stage of the smelting process. (Courtesy Falconbridge Ltd.)

ward linkages related to the mining sector. Indeed, recent trends suggest that the Sudbury area may finally be about to develop into a true mining complex based on more than the physical extraction of minerals. An example of the broadening of the resource base to include technological development is the formation of Continuous Mining Systems (CMS). The purpose of this company, which was established in 1984 with Inco as its majority shareholder, is to design, manufacture, and market innovative mining equipment (see Figure 12). By 1987 CMS had made its first export sales.⁸⁹

Backward linkages have also intensified. This development has featured greatly expanded business for local and international enterprises in wholesaling and distribution and the fabrication and assembly of machine parts. Many of these enterprises have been attracted to the industrial parks found in the regional municipality. The pivotal location of Sudbury in this connection is made evident by the fact that some



Figure 12. A Continuous Osciloader, built by Continuous Mining Systems in Sudbury, 1988. This loader makes it possible to remove ore continuously from a production stope onto conveyor belts or into haulage vehicles. (Courtesy Inco Ltd.)

ninety mines can be found situated within three hundred kilometres (180 miles).⁹⁰ Many of the new wholesaling and distribution businesses have come into being which serve not only the Sudbury Basin, but all of Northern Ontario as well, as local and foreign manufacturers have capitalized on the regional potential for the assembly of machine parts and specialized mining equipment.

Conclusion

This paper suggests that the history of Sudbury may offer lessons for resource communities victimized by the “staples” trap. While it is true that Sudbury’s size and location are unique, it is nevertheless clear that the “human dynamic” in the form of individual initiative, political leadership, community action, and entrepreneurial creativity can shape the urban economy. Sudbury’s experience also shows that large changes can be made in a dramatically short time. As recently as 1982, Sudbury was considered to be a dying community; two years later it was chosen as a world urban case study of successful adjustment. Evidence that some progress was being made with regard to this pathway to the future came in 1988 with the apparent halt of population decline and the acknowledgement that Sudbury had one of the most dynamic economies in Canada.⁹¹ This changing historical perspective suggests that it may be wise to devote more attention to the contemporary aspects of urban history. By doing so, historians and others could perhaps help troubled communities and regions by offering insight gained from similar experiences elsewhere.

- 1 Sudbury’s early development as a company town of the CPR is traced in Gilbert A. Stelter, “The Origins of a Company Town: Sudbury in the Nineteenth Century,” *Laurentian University Review*, 3, no. 3 (1971), 3-21. Refer also to E. G. Higgins and F. A. Peake, *Sudbury Then and Now: A Pictorial History of Sudbury and Area, 1883-1973* (Sudbury: Sudbury and District Chamber of Commerce, 1977), 9-26, and Graeme S. Mount, *The Sudbury Region: An Illustrated History* (Burlington: Windsor Publications, 1986), 11-21.
- 2 Gaetan Gervais, “Sudbury, 1883-1914,” in Sudbury Centennial Foundation, *To Our City: A Notre Ville* (Sudbury: Sudbury Centennial Foundation, 1983), 17.
- 3 Florence R. Howey, *Pioneering on the C.P.R.* (Toronto: J. V. Salmon, 1938), 139.
- 4 The International Nickel Company of Canada, *History of Nickel Extraction from Sudbury Ores, Part I: 1846-1920* (Copper Cliff: Inco, 1956), 5 and 8.
- 5 This era conforms with Wilbur Thompson’s “Stage of Export Specialization.” See Wilbur Thompson, *A Preface to Urban Economics* (Baltimore: Johns Hopkins Press, 1965), 15.
- 6 The early years of Inco’s development are traced in John F. Thompson and Norman Beasley, *For the Years to Come: A Story of International Nickel in Canada* (Toronto: Longmans, Green, 1960); Robert Stephenson *et al.*, *A Guide to the Golden Age: Mining in Sudbury, 1886-1977*, (Sudbury: Laurentian University, Dept. of History, 1979) and O. W. Main, *The Canadian Nickel Industry: A Study in Market Control and Public Policy* (Toronto:

- University of Toronto Press, 1955).
7. Executive and Operating Staffs, "The Operations and Plants of International Nickel Company of Canada Limited," *Canadian Mining Journal*, 67, no. 5 (1946), 313.
 8. Jamie Swift and The Development Education Centre, *The Big Nickel: Inco at Home and Abroad* (Kitchener: Between the Lines, 1977), 24.
 9. This theme has been dealt with in H. V. Nelles, *The Politics of Development: Forests, Mines & Hydro-electric Power in Ontario, 1849-1941* (Toronto: Macmillan, 1974), and "An Alternatives Interview with Elie W. Martel," *Alternatives*, 2, no. 3 (1973), 10-17.
 10. "Hub of the North Since Early in the Century," *Sudbury Star*, Sudbury Centennial Edition, May 31, 1983.
 11. Sudbury's relationship with the northern highway network is outlined in Neil Alexander Wilson, *Evolution of Network Configurations and Optimal Link Additions in the Northern Highway Network*, M.A. thesis, Queen's University, 1975, 33, 111, and 116-17.
 12. See Keith Winterhalder, "Environmental Degradation and Rehabilitation in the Sudbury Area," *Laurentian University Review*, 16, no. 2 (1984), 18-19; and Claude Laroche et al., *Early Roasting and Smelting Operations in the Sudbury Area: An Historical Outline* (Sudbury: Ontario Ministry of the Environment), 1979.
 13. Cf. "Real Sudbury Please Stand Up," *Globe and Mail*, Jan. 7, 1977; and "The New Image of Sudbury - A Diversified Economy and a Nice Place to Stay," *Globe and Mail*, Mar. 22, 1977.
 14. Aspects of the Act are dealt with in "Wants Provincial Law Changed to Give Municipalities Right to Tax Mines," *Sudbury Daily Star*, Jan. 16, 1958. See also "Residents, Province Pay More to City - But Not Industry," *Sudbury Daily Star*, The Saga of Sudbury Edition (1930-1954), Nov. 2, 1954; "Loss of Assessment Challenge to Region," *Sudbury Star*, Jan. 21, 1989; and *Statutes of Ontario*, 10 Edward VII 1910, c. 88, 36(3).
 15. "Tax Revenue Available for Nickel Belt Needs Without Amalgamation," *Sudbury Daily Star*, Jan. 16, 1958; and Province of Ontario, *Ontario Committee on Taxation*, Vol. 2, 1967, 46.
 16. Clarkson, Gordon and Company, *City of Sudbury Report in Connection with Amalgamation Proceedings* (Sudbury: City of Sudbury, 1957), 18-19.
 17. Cf. Walter Stewart, "Mister Stewart Goes to Washington," *Maclean's*, Sept. 1975, p. 4, and "The Driver is Low Man on the Totem Pole," *Globe and Mail*, Nov. 4, 1981.
 18. A history of Copper Cliff can be found in Eileen Alice Goltz, *Genesis and Growth of a Company Town: 1886-1920*, M.A. thesis, Laurentian University, 1983. For a review of the company town around the turn of the century see R. B. Baine, *The Settlement of the Sudbury Basin*, M.A. thesis, University of Toronto, 1952.
 19. J. A. Walker, "Planning of Company Towns in Canada," *The Canadian Engineer*, July 19, 1927, p. 147.
 20. Oiva W. Saarinen, "Single-Sector Communities in Northern Ontario: The Creation and Planning of Dependent Towns," in Gilbert A. Stelter and Alan F. J. Artibise (eds.), *Power and Place: Canadian Urban Development in the North American Context*, (Vancouver: University of British Columbia Press, 1986), 87.
 21. Calculated from Statistics Canada, *Censuses of Canada 1901-1951*, Ottawa.
 22. Judith E. Harris, "Well-being in Sudbury, 1931-1971: A Social Indicator Analysis," M. Sc. thesis, University of Guelph, 1977, 167.
 23. For a review of some of the Finnish contributions, see Jim Tester (ed.), *Sports Pioneers: A History of the*

- Finnish-Canadian Amateur Sports Federation 1906-1986* (Sudbury: Alerts AC Historical Committee, 1986).
- 24 Matt Bray, "Sudbury, 1914-1945," in *To Our City: A Notre Ville*, 40.
- 25 The socio-cultural contributions of Local 598 are described in Mike Solski and John Smaller, *Mine Mill: The History of the International Union of Mine, Mill and Smelter Workers in Canada Since 1895* (Ottawa: Steel Rail Publishing, 1985).
- 26 The term "backward linkage" refers to the designing, assembling, or manufacturing of products used by the principal industry (in this case, mining). "Forward linkage" refers to the further refining or developing of the product of the principal industry, and the export of mining equipment.
- The contention that staple economies frequently remain the same is supported in Mel Watkins, "The Staple Theory Revisited," *Journal of Canadian Studies*, 12, no. 5 (1977), 86-87, and Pierre L. Bourgeault, *Innovation and Structure of Canadian Industry* (Ottawa: Science Council of Canada, Special Study No. 23, 1972), 42 and 51.
- 27 Val Ross, "The Arrogance of Inco," *Canadian Business*, 52, no. 5 (May, 1979), 122.
- 28 Swift, *The Big Nickel: Inco at Home and Abroad*, 30; and John Deverell, *Falconbridge: Portrait of a Canadian Multinational* (Toronto: James Lorimer, 1975), 43-46.
- 29 L. Carson Brown, "Elliot Lake: The World's Uranium Capital," *Canadian Geographical Journal*, 75, no. 4 (1967), 125.
- 30 O. W. Saarinen, "A Geographical Basis for Regional Planning in the Sudbury Area," M.A. thesis, University of Western Ontario, 1966, 116.
- 31 These figures refer to the population now encompassed by the Regional Municipality of Sudbury.
- 32 John Bland and Harold Spence-Sales, *A Report on the City of Sudbury and Its Extensions* (Sudbury: City of Sudbury, 1950), 5.
- 33 Charles Dorian, *The First 75 Years: A Headline History of Sudbury, Ontario* (Ilfracombe: A. H. Stockwell, 1959), 270.
- 34 The concept and importance of the "gateway" is discussed in A. Burghardt, "A Hypothesis about Gateway Cities," *Annals of the Association of American Geographers*, 61, no. 2 (1971), 269-85.
- 35 Sudbury Centennial Foundation, *To Our City: A Notre Ville*, 65-66 and 75-76.
- 36 Richard E. Preston, "The Recent Evolution of Ontario Central Place Systems in the Light of Christaller's Concept of Centrality," *The Canadian Geographer*, 23, no. 3 (1979), 201-21.
- 37 Gwenda Hallsworth, *A Venture into the Realm of Higher Education* (Sudbury: Laurentian University, 1985), 17, and Mount, *The Sudbury Region*, 126.
- 38 Saarinen, "A Geographical Basis for Regional Planning in the Sudbury Area," 89-92. The Junction Creek and Whitson Valley Conservation Authorities later merged as the Nickel District Conservation Authority after the incorporation of the Regional Municipality of Sudbury in 1973.
- 39 Dorian, *The First 75 Years*, 79; and Sudbury Centennial Foundation, *To Our City: A Notre Ville*, 43.
- 40 See, for example, "Boudreau Blames Ignorance for Red Control of Mine-Mill," *Sudbury Daily Star*, Dec. 10, 1959, and "Must Prove Sudbury Not Communist Area," *Sudbury Star*, Oct. 10, 1959.
- 41 "Canadian Mining Town Hits Bottom," *New York Times*, Aug. 14, 1982, and "Sudbury: A City Struggling to Stay Alive," *Toronto Star*, Aug. 23, 1982, p. A1 and A4.
- 42 Ontario Municipal Board, *P. F. M. - 5143-56*, Nov. 12, 1959.

- 43 Harris, "Well-being in Sudbury," 133.
- 44 Mayor's Committee on Sudbury's Financial Problems, *The City of Sudbury: 1964 Year of Dilemma* (Sudbury: City of Sudbury, 1964), 1.
- 45 Province of Ontario, *Design for Development Phase Two* (Toronto: Legislature of Ontario, 1968), and J. A. Kennedy, *Sudbury Area Study* (Toronto: Department of Municipal Affairs, 1970). Refer also to [Ontario] Department of Municipal Affairs, *Sudbury: Local Government Reform Proposals* (Toronto: Department of Municipal Affairs, 1971). For a background on regional government see Oiva Saari-nen, "Municipal Government in North-ern Ontario: An Overview," *Laurentian University Review*, 17, no. 2 (1985), 5-25.
- 46 Province of Ontario, *Bill 164: An Act to Establish the Regional Municipality of Sudbury*, Toronto, 1972.
- 47 Regional Municipality of Sudbury, *Official Plan for the Sudbury Area* (Sudbury: Regional Municipality of Sudbury, 1978).
- 48 A review of the political situation in the Sudbury area during the 1970s is found in Carl Wallace, "Sudbury: The North-ern Experiment with Regional Govern-ment," *Laurentian University Review*, 17, no. 2 (1985), 87-101.
- 49 Energy, Mines and Resources, Canada, *Canada's Nonferrous Metals Industry: Nickel and Copper - A Special Report* (Ottawa: Energy, Mines and Resour-ces, Canada, 1984), 8.
- 50 Community Planning Programs Divi-sion, Ontario Ministry of Municipal Affairs and Housing, *Project Group on Urban Economic Development Case Study Report: Sudbury, Ontario, Can-ada* (Paris: OECD, 1985), 10. Cited hereafter as *Project Group Case Study*.
- 51 Statistics Canada, *Census of Canada 1981* (Ottawa: Statistics Canada, 1982).
- 52 *Project Group Case Study*.
- 53 Thompson, *A Preface to Urban Eco-nomics*, 23.
- 54 Information provided by the Sudbury Regional Development Corporation.
- 55 James Simmons and Brian Speck, *Spatial Patterns of Social Change: The Re-turn of the Great Factor Analysis*, Re-search Paper No. 160 (Toronto: Centre for Urban and Community Studies, Uni-versity of Toronto, 1986), 35 and 37.
- 56 The importance of urban-based func-tions to the contemporary economy is affirmed in Peter Hall and Paul Che-shire, "The Key to Success for Cities," *Town and Country Planning*, Feb. 1987, 51.
- 57 "Opening of Sudbury-Timmins High-way," *Sudbury Star*, Sept. 25, 1970.
- 58 Information provided by O. Myers, Manager, Sudbury Airport, May 13, 1987.
- 59 "Bell to Move District Office to Sud-bury," *Sudbury Star*, Sept. 23, 1971; and "Sudbury Hub of Bell Works, 60 More Jobs," *Sudbury Star*, Feb. 19, 1979.
- 60 Information provided by Laurentian Publishing Ltd.
- 61 Wieslaw Michalak, "Economic Changes of the Canadian Urban Sys-tem 1971-1981," *The Alberta Geogra-pher*, 22 (1986), 65.
- 62 The significance of the white-collar class in reshaping the urban environ-ment is discussed in Kent Gerecke, "New Directions for City Planning," *City Magazine*, 7, no. 1 (1984), 37, and Richard V. Knight, "City Development in Advanced Industrial Societies," in Gary Gappert and Richard V. Knight, (eds.), *Cities in the 21st Century* (Be-verly Hills: Sage Publications, 1982), 60. For an appreciation of the geogra-pher's sense of place, see Yi-Fu Tuan, "Place: An Experiential Perspective," *Geographical Review*, 65 (1975), 151-65, and *Topophilia: A Study of Envi-ronmental Perception, Attitudes and Values* (Englewood Cliffs, N.J.; Prentice-Hall, 1974).

- 63 The importance of such entrepreneurship as an agent of transformation is outlined in Peter F. Drucker, *Innovation and Entrepreneurship* (New York: Harper and Row, 1985).
- 64 See A. Kallmann, *et al.*, eds., *Encyclopedia of Music in Canada* (Toronto: University of Toronto Press, 1981), 898; Sudbury and District Chamber of Commerce, *Business Update*, Feb. 1986, 12, and "Sudbury Theatre Centre a Success Story with Humble Beginnings," *Toronto Star*, Apr. 19, 1986.
- 65 Community Leisure Plan Steering Committee, *The City of Sudbury Community Leisure Plan: Phase I Report* (Sudbury: City of Sudbury, 1988).
- 66 Wallace, "Sudbury: The Northern Experiment with Regional Government," 99.
- 67 Witness, for instance, the controversies regarding the scenic view of the downtown by Brebeuf Street residents, the attempt to establish a shopping centre in the Lily Creek area opposite Science North, and the reaction to the erection of portable commercial signs supported by concrete blocks along the highways.
- 68 The history of Sudbury 2001 can be traced in Sudbury 2001, *Proceedings, A Conference on Economic Development: April 6, 7 and 8, 1978* (Sudbury: Sudbury 2001, 1981); and *Project Group Case Study*, 30-32.
- 69 "Notice of Intention to Dissolve," *Sudbury Star*, Jan. 22, 1987.
- 70 *Project Group Case Study*. This study was written by Nigel H. Richardson.
- 71 Christopher Hume, "The Greening of Sudbury," *Landmarks*, Summer, 1983, 26.
- 72 The history of land reclamation in the Sudbury area is outlined in William Lautenback, *Land Reclamation Program 1978-1984* (Sudbury: Regional Municipality of Sudbury, 1985) and Winterhalder, "Environmental Degradation," 15-17.
- 73 Lautenback, *Land Reclamation Program 1978-1984*, 41.
- 74 "Sudbury Likes New Look," *Spectator*, Oct. 10, 1984. Refer also to "Sudbury's Clean Air Boosts Local Vegetable Farmers," *Inco Triangle*, 47, no. 4 (1986), 14.
- 75 *Project Group Case Study*, 20.
- 76 Regional Municipality of Sudbury, *Amendment No. 26 to the Official Plan for the Sudbury Planning Area Being the Secondary Plan for the Settlement of Sudbury* (Regional Municipality of Sudbury, Sudbury: 1987); and *Draft Strategic/Corporate Plan of/by/for the City of Sudbury* (Sudbury: Regional Municipality of Sudbury, 1987).
- 77 Cf. "Region Considers Plan to Increase Lot Levies by 560%," *Sudbury Star*, Mar. 13, 1989.
- 78 City of Sudbury, *Downtown Development Action Program: Phase I and II* (Sudbury: City of Sudbury, 1988).
- 79 "The Sudbury Community Adjustment Project: It Works!" *Matrix*, 1, no. 1 (1988), 1.
- 80 "Welcome Growth Calls for Planning," *The Sudbury Star*, June 2, 1988.
- 81 Saarinen, "Sudbury (1945-1983)," in Sudbury Centennial Foundation, *To Our City: A Notre Ville*, 49.
- 82 These productivity improvements are outlined in Inco, *Annual Reports 1982-1987* (Toronto: International Nickel Company of Canada, 1983-88).
- 83 Falconbridge Ltd., *Annual Reports 1986-1987* (Toronto: Falconbridge Ltd., 1987-89).
- 84 Inco, *Annual Report 1987* (Toronto: Inco, 1988), 7, and information obtained from Falconbridge Ltd.
- 85 Information provided by Inco.
- 86 "Fortunes High, Inco to Hire 160 Full-Timers," *Sudbury Star*, Mar. 17, 1988, 1.
- 87 Joseph E. Schumpeter, *Capitalism, Socialism and Democracy* (New York: Harper and Row, 1962), 81-86. For a similar perspective, see R. D. Norton,

- "The Once and Present Urban Crisis," *Urban Studies*, 24, no. 6 (1987), 482.
- 88 The concept of the mineral industry life-cycle is found in Margot J. Wojciechowski, "International Trends in Mineral R & D," *CRS Perspectives*, no. 29 (Nov. 1988), 3-4.
- 89 Inco, *Annual Report 1987* (Toronto: Inco, 1988), 18.
- 90 Information provided by the Sudbury Regional Development Corporation.
- 91 The halt in population decline can be inferred from unpublished migration statistics derived from tax records for the post-1981 period; they are available from the Small Area and Administrative Division of Statistics Canada, March, 1984. For an indication of economic performance see the Hemson Group, *The Hemson Report*, 5, no. 3 (Aug. 1988).