



# TOO MANY CARS ON THE ROAD

## **AN ANALYSIS OF THE CITY OF CALGARY'S TRANSPORTATION POLICY: POLICY RECOMENDATIONS**

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### ***Problem Definition***

Transportation issues are an almost ubiquitous policy concern in many North American cities. This is one of the most publicized services a city provides. Morning shows on television and the radio have the traffic update every fifteen minutes to half an hour to let people know how their commute will be. The roads and train tracks work their way through the urban fabric like veins and arteries. Blockage of these systems can in turn cause many people heartache.

The City of Calgary's issues are quickly becoming those of other large urban centres throughout North America. The last five to six years has seen a boom in people coming to Calgary in search of the jobs the Alberta economy was producing. Within the

next five years it is expected that the city's population will grow to exceed 900,000<sup>1</sup>, even taking into account a slowing economy. A medium growth projection predicts Calgary's population to be about 1.25 million by the year 2024 – the horizon set for the latest comprehensive planning policies. Gridlock and smog seem to be an inevitable destiny for this city.

Calgary's urban development has grown such that citizens rely heavily on personal vehicles to get them around. The suburbs that are sprawling into the prairie landscape extend transportation infrastructure and transit provision to uneconomical levels. This makes it very costly for the municipal government to provide the transit services and transportation options that residents require in such a city. In addition, the municipal government's ability to gain its own sources of revenue is limited and the provincial government's support continues to be undependable.

A couple of key policy documents have been drawn up to help anticipate and direct Calgary's future. Transportation is of a prime concern in both of them. These are the *Calgary Plan*<sup>2</sup> (1998) and the *Calgary Transportation Plan*<sup>3</sup> (otherwise known as the *Go-Plan*, 1995). These two documents provide a vision statement formed by Calgarians, which envisions their desired future. A portion of that statement describes Calgary's transportation system in 2024:

“We live closer to where we work, relying less on our cars for the shorter work trip and more on transit, walking and cycling. While the car remains the dominant choice of travel for Calgarians, investment in transit has resulted in a higher level of service and usage: shorter walk times to transit

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<sup>1</sup>The City of Calgary. Department of Community and Neighbourhood Services. (2000). *Social Indicators: Population Size*. Retrieved October 10, 2001 from [www.gov.calgary.ab.ca/community/research/socialindicators/dpsize.html](http://www.gov.calgary.ab.ca/community/research/socialindicators/dpsize.html)

<sup>2</sup> This is the general municipal plan that is required of each city by the Municipal Government Act.

<sup>3</sup> This plan is required by the City Transportation Act.

and LRT stops and preferential "transit treatment" make the transit trip more attractive and convenient.”<sup>4</sup>

This same vision statement is in the Calgary Plan as well. It demonstrates the city’s acknowledgement that transportation infrastructure and service is a key aspect of making “Calgary – the best place to live”. The vision statement goes on to suggest how the service of transportation will be funded,

“We have moved towards a "user pay" system as a significant funding source for our transportation system. Whether we drive our cars or take public transit, we pay more equitably and directly for our choice of travel. In spite of more people moving around the city in more vehicles, efforts to promote efficient use of vehicular travel have helped maintain air quality standards at 1990 levels. We have moved toward "cleaner cars", and carry more people in our vehicles for the work trip. The trend toward "driving alone" to work each day has reversed. Changes in the way we work such as telecommuting and flex time have had an effect on reducing and spreading out the rush hour.”<sup>5</sup>

Today, however, the City of Calgary continues to grow and the strain on the transportation system is being felt now. The “rush hour” has many of Calgary’s main roads carrying close to double their maximum capacity<sup>6</sup>. The Short-Term Growth Management Strategy Residential Information Update released in 2001 claims that with the inevitable development of the suburbs of Calgary, if City Council does not increase the budget allotted to transportation infrastructure the system will degrade. It also identifies that at this time most intersections in Calgary are operating at capacity and failing in peak periods<sup>7</sup>.

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<sup>4</sup> The City of Calgary. Transportation Department. (1995). *The Calgary Transportation Plan*. Vision Statement.

<sup>5</sup> Ibid.

<sup>6</sup> The City of Calgary. Land Use and Mobility Department. (1998). *Average Weekday Traffic Volumes on Major Roads*. Calgary: map.

<sup>7</sup> The City of Calgary. Growth Management Technical Committee. (2001). *Short-Term Management Strategy Residential Information Update 2001-2005*. Calgary: 2.

The issue of traffic has certainly been observed in the public forum through television, newspapers, and in the election platforms of the recent mayoral candidates for Calgary in October 2001. This issue has also been revealed in surveys on citizen satisfaction with their city, the results being that Calgarians consistently express concern that the transportation system is not keeping up with the increasing traffic<sup>8</sup>. The City of Calgary's *Corporate Customer Satisfaction Survey 2000* shows that between the years 1997 and 2000, traffic issues went from seventh on a list of concerns to the first.

Beyond the inconvenience of increased traffic, this issue affects the City's environmental health. Cars have a negative impact on air quality. This can already be seen during Calgary's temperature inversions, when the air traps the pollution and creates a brown haze over the city. They also spill fluids, such as anti-freeze and oil, on roads and parking lots that get carried into our soils and rivers by water run-off. Calgary can begin to do its small part in helping to lower world emissions by coming up with viable alternatives to today's travel preferences. The vision statement in the Calgary Plan and the Calgary Transportation Plan mentions that emissions from cars despite the growth in car ownership will be at 1990 levels. This is an attempt to address expectations that were raised in the Kyoto Protocol regarding the reduction of pollution from industrialized countries. The protocol suggests that local governments can "start designing and building better public transport systems and creating incentives for people to use them rather than private automobiles"<sup>9</sup>. Getting Calgarians to change their travel preferences is important and needs to be addressed now. With over 10,000 new people migrating to

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<sup>8</sup>Pickup, C. (2000). *Corporate Customer Satisfaction Survey 2000*. The City of Calgary. Retrieved October 15, 2001 from <http://www.gov.calgary.ab.ca/custsurvey/sld017.htm>

<sup>9</sup> United Nations Framework Convention on Climate Change. (1999). *Understanding Climate Change: A Beginners Guide to the UN Framework Convention And its Kyoto Protocol.*, 24. Retrieved October 10, 2001 from <http://www.unfccc.de/resource/beginner.pdf>.

Calgary a year, there is no longer the luxury to sit back and put off making changes<sup>10</sup>. At this time, the City of Calgary is small enough to begin making changes that will alleviate traffic and buy time to make the necessary improvements to existing transportation infrastructure and transit systems. This way, if the Federal Government ever ratifies the Kyoto Agreement, Calgary will have already begun to contribute to the process.

## **Existing Policies**

Policies have already been created to help deal with this problem of transportation. One of the prominent policies is the Calgary Transportation Plan. This policy was updated in 1995 to respond to an agenda brought to the table by the citizens of Calgary in the form of a concern over having to build more bridges over the city's rivers<sup>11</sup>. The Plan introduces a variety of strategies for encouraging other modes of travel than by single occupancy vehicle. The main focus of the Plan is on transit-friendly land-use planning. Linking land use design and transit is considered to be the "cornerstone" of the Calgary Transportation Plan, as well as the Calgary Plan. Another strategy that is introduced is that of encouraging people to use transit at certain times of the day through "congestion management", where they allow roads to reach their maximum capacity between peak hours before building new roads. This strategy forces people to choose between taking public transit and sitting in their vehicle with two to three light waits from downtown Calgary to their suburb at the city limits. The Plan also states that Calgary will continue to update and construct roadways (trying to avoid those

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<sup>10</sup> The City of Calgary. Department of Community and Neighbourhood Services. (2000). *Social Indicators: Population Size*. Retrieved October 10, 2001 from [www.gov.calgary.ab.ca/community/research/socialindicators/dpsize.html](http://www.gov.calgary.ab.ca/community/research/socialindicators/dpsize.html).

<sup>11</sup> The City of Calgary. Transportation Department. (1995). *The Calgary Transportation Plan*, 1-4.

that would require river overpasses) as well as expand the LRT<sup>12</sup> system. Another strategy was to improve pathway systems to allow people to ride their bicycles to work, or if they lived close enough, to walk. There was a brief mention of encouraging car-pooling in the beginning of the Plan, but this strategy was never fleshed out even to the extent that bicycling and walking were. Car-pooling seems to be a missed opportunity to mitigate traffic in areas that are not well served by transit.

While these initiatives seem to be helping in a minor way<sup>13</sup>, they have not changed Calgarians' travel behaviours enough to reduce the traffic on the road in any noticeable way. Another problem with these plans is that they seem to rely heavily on long-term solutions. Transit-friendly land use planning is certainly a distant future goal. The city will not be ripping out old suburbs right away to accommodate new transit-friendly designs. Construction of road ways is also a lengthy and expensive process. The Calgary Transportation Plan shows the transportation network they are working towards. In it there seems to be a gap in that there is nothing shown in the thirty year planning horizon networking the Eastern industrial parks to the general LRT system.

In order to change travel preference, the Citizens of Calgary will need to be given options that will offer them similar conveniences to that of driving their car to work. This has been achieved somewhat with people who commute to the central business district (which has 57% of the total public transit commuter rider ship, according to the *1999 Travel to Work Survey*). However, the *1999 Travel to Work Survey* has also shown that employees heading to work in the industrial parks in the north- and south-east quadrants of the city comprise 27% of the total automobile commuter traffic in Calgary.

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<sup>12</sup> Light Rail Transit

<sup>13</sup> The City of Calgary's *1999 Travel to Work Survey* indicated that the level of transit use increased 2% between 1996 and 1999 (page E-16).

It also makes up the smallest group commuting by public transit – only 11%. These areas do not have a comprehensive transit connection, as opposed to the central business district. The largest contribution to the traffic problem could be addressed by targeting Calgarians whose place of employment takes them to suburban industrial parks.

## ***Contextual Influences***

To get an idea of how policy decisions are made and how instruments are determined, it is important to look at the values of the greater society in which Calgary sits. This influences the policy cycle because it has put limits on the types of policy instruments that it will tolerate. If a city is situated within a communist milieu, then policy instruments that rely on free market enterprise will likely fail. It would not be a policy that has any institutional support. The same thing applies in a liberal democracy, such as the United States. There, policies may tend to rely more on voluntary compliance than direct regulation, due to that society's preference for limited government involvement in people's lives. The Alberta situation is similar to the United States because much of its culture is influenced heavily by American culture. This is due to the large numbers of Americans who have come to Alberta to work in the oil and gas industry. Canadian values are somewhat similar to the United States. The values of "individual freedom, equality of rights, limited government, and belief in the market economy"<sup>14</sup> are shared. One big difference is the definition of limited government. Canadians tend to be more supportive of the government providing a social net for those less fortunate in society. Americans, on the other hand, believe that each person should

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<sup>14</sup> Brooks, S. (1998). The Context of Policy Making in Canada. *Public Policy in Canada*. Oxford: Oxford University Press Canada, 45.

be more or less responsible for themselves. They do not share to the same extent the socialist notions that are a basis in Canadian culture.

Beyond a societal value system, the history of the institutions themselves lend to the types of policies they prefer to implement. In Canada, governments were based on the British parliamentary system. This form of governance encouraged top-down approaches, and until recently “discouraged popular participation in politics”<sup>15</sup>. Then, with the signing of the Canadian Charter of Rights and Freedoms in 1982, the floor began to open up to public participation (mainly in the form of interest groups) in policy formulation<sup>16</sup>. So policy instruments that are created by this government would likely follow the regulatory or mixed versions. This form of governance has also been relevant to municipal governments as well. Lately though, this has begun to change as the idea of public participation has gained popularity. Provincial laws have directed municipalities to work public input into their planning processes.

Municipal governments are creatures of the province. Their ability to come up with policy solutions is fairly limited in terms of how much power or responsibility the provinces have passed down to them. In Alberta, there are a few resources that the municipal governments are able to tap into. They have control over property and business taxes, user fees, and they can institute local improvement taxes. Beyond this, cities do not have many options that can generate revenue. Although Calgary sets aside a large proportion of the annual budget to infrastructure maintenance and transit service (about 25% in 1999 and 29% in 2000<sup>17</sup>), major improvements in road networks and

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<sup>15</sup> Ibid., 46.

<sup>16</sup> Ibid., 50.

<sup>17</sup> The City of Calgary. Financial Business Unit. (2001) *2000 Annual Financial Report*. (p. 10) and The City of Calgary. Financial Business Unit (2000) *1999 Annual Financial Report*. (p. 10).



transit systems generally need to come from provincial and federal grants. These grants are a fairly undependable source of income. Recently in Alberta, the government cut back on its spending for 2002 because oil and gas prices dropped below what the provincial government had originally budgeted for, due perhaps to a number of unforeseeable events. The municipal governments need to find a way to improve the transportation system without having to depend on provincial sources.

Division of responsibilities and powers hinders the municipal policy maker's ability to deal with issues quickly and efficiently. Often, issues have solutions that are outside their jurisdiction, yet the issue remains on the public's agenda. This also acts to reduce the policy options available to local governments. In order to open the range of policy instruments, municipal governments have to look to other sectors and institutional bodies, such as the private sector and the Provincial and Federal Governments.

One aspect of Calgary's municipal government that contributes to the ability to plan comprehensively is that it governs on a unicity principle. That is, the city is controlled by one legislative body, rather than several separate towns. This city has demonstrated this in that they have always chosen annexation of small towns that became part of its urban fringe, rather than trying to create a partnership. This means that Calgary has a larger tax base from which it can spend on the transportation needs deemed most necessary.

## ***Actors and Institutions***

### **The City of Calgary**

The City of Calgary forms one of the key institutions in the policy making for transportation and transit issues. As a corporation, the City pursues the agenda of making

“Calgary - the best place to live”. Their policies must reflect the interests of Calgarians. However, they must balance this responsibility with local and international businesses as well as special interest groups, such as trade unions.

The main role for the City of Calgary, as set out by the Municipal Government Act, is that of service provider. The City is responsible for providing sewers, roads, street lighting, electricity (for now), and other infrastructure. They also provide several social services. With all these responsibilities, money for new initiatives is scarce. So the City will tend to choose policies that will not be too expensive to operate.

Although the City of Calgary feels that it is a service provider, they are open to sharing this responsibility with those in the private sector. The City has been working on such transportation infrastructure as overpasses and extensions with firms from the private community. This allows the City to provide the necessary upgrades and additions, even though they do not have enough money to do it themselves.

### **The Citizens of Calgary**

The citizens of Calgary are another actor in the policy environment. However, their voice is not as strong as others due to the fact that it is such a diverse group. There are many different people with various and often mutually exclusive views of how cities should be run, and what the responsibility of every citizen is to the larger whole. This is one of the main groups that any policies concerning changing travel behaviour would be directed to, which tends to make implementation difficult.

### **Trade Unions**

The Amalgamated Transit Union is another possible actor in this policy cycle. However, their cooperation will be determined by the types of policies that are

recommended to help improve transit or other transportation systems. This is a highly organized group and their position on policy issues is generally clearly articulated through the media. The strength of this group of actors is that its stance on public policy issues would be backed up by other similar union groups. One such group that supported the workers in the recent Calgary transit strike was the Canadian Union of Public Employees. CUPE, in principle, opposes vehemently the creation of public-private partnerships. They claim that it leads to a compromise on the quality of services, a decrease in the accountability of government to people, a threat to jobs and job security, and ultimately privatization of the public realm<sup>18</sup>. This position indicates that a mixed instrument policy or a voluntary policy that may affect the transit employees would likely not be supported.

## **Private Sector**

A new role for private business has recently come into the policy environment. Government bodies are increasingly relying on the private sector to help finance and execute government projects. This has been demonstrated by the number of private-public partnership projects that have occurred in Calgary. Many of the new municipal overpass intersections have been a cooperative venture between the City of Calgary and Stantec Consulting Ltd. Projects are being done with private companies which would never have been done because the finances were not available. In this respect, the private sector acts as a tool for governments to use in implementing policy.

The private sector businesses, however, will not be content to remain as “tools”. They want to influence the public policy process. The Calgary Chamber of Commerce is

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<sup>18</sup> Canadian Union of Public Employees. (1998). *Problems with public private partnerships*. Ottawa. Retrieved October 14, 2001 from [www.cupe.ca/campaigns/publicworks/showitem.asp?id=2426](http://www.cupe.ca/campaigns/publicworks/showitem.asp?id=2426).

one organization that “constantly evaluates and formulates policy and positions on a vast array of business issues based on [their] members needs”<sup>19</sup>. This group claims that they are becoming more active in the realm of social policy in such areas as “education, human relations, and environmental, cultural, and governmental concerns”<sup>20</sup>.

The business group is one that the governments should look to for help in providing the services the citizens in their jurisdiction need. Innovation needs to be nurtured and developed. There is evidence that the business community is supportive of public-private initiatives. There are groups in Canada and the United States that promote the advantages of such arrangements. The Canadian Council for Public Private Partnerships is one such group<sup>21</sup>. The mandate this organization aims to fulfill is one of educating the various levels and institutions of government. They try to demonstrate to the government that by using these partnerships, the government body can spend less money on service provision, yet get as good as or better service than what the government can provide alone<sup>22</sup>. Board Members on this council represent the multiplicity of actors involved in the public-private partnership initiative, including “government, the private sector and labour”<sup>23</sup>.

The City of Calgary provides a justification for using public private partnerships on their many infrastructure projects: “The sheer magnitude of the dollars involved, the complexity of the projects and a continuing commitment to innovation, all lead to The City's decision to enter into a joint venture with private companies that have world class

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<sup>19</sup> Calgary Chamber of Commerce. (1996-2001). To Lead and Serve the Calgary Business Community section, para 2. Retrieved October 23, 2001 from [www.chamber.calgary.ab.ca/about/index.cfm](http://www.chamber.calgary.ab.ca/about/index.cfm).

<sup>20</sup> Ibid. What Does a Chamber of Commerce Do section, para. 2. Retrieved October 23, 2001 from [www.chamber.calgary.ab.ca/about/faq.cfm](http://www.chamber.calgary.ab.ca/about/faq.cfm).

<sup>21</sup> The Canadian Council for Public Private Partnerships. (n.d). Retrieved October 24, 2001 from [www.pppcouncil.ca](http://www.pppcouncil.ca).

<sup>22</sup> Ibid.

<sup>23</sup> Ibid.

credentials in designing and building major transportation infrastructure projects”<sup>24</sup>. This demonstrates the City’s willingness to try policy instruments that may rely more on private industry to carry out.

## **The Provincial and Federal Governments**

The provincial and federal governments form another institution that may be able to assist with policy implementation. Although reliance on financial transfers should not be encouraged, these two levels of government have more options available to them in policy levers that could assist the municipality in a program to reduce single occupancy vehicle trips. In the past, Calgary has been a city that was overlooked by the federal arm of government. This was likely a result of the voting patterns of the citizens of Calgary in federal politics. The attitude of the federal government may be more receptive to helping Calgary as a result of the latest municipal election. The person elected mayor was known to have run for the Liberal Party in the last federal election.

## **Conclusions**

The main problem that has been identified in this policy analysis is that travel behaviours for non-downtown workers has not been modified enough to bring about a noticeable decrease in vehicles on the roads. It has been shown that vehicular traffic has many negative impacts, and that it is in our interests environmentally and economically to reduce traffic in our cities as much as possible.

Within the existing Calgary Transportation Plan (1995), an opportunity has been identified in the form of carpooling programs: an opportunity that the City did not fully

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<sup>24</sup> The City of Calgary. Transportation Project Office. (2001). Why has The City of Calgary chosen to form this public-private partnership section, para.1. Retrieved October 24, 2001 from [http://www.calgarytpo.com/quick\\_answers/index.htm](http://www.calgarytpo.com/quick_answers/index.htm)

develop in this document. Looking at different ways carpooling programs can be implemented and monitored will be the focus of the second part of this policy analysis.

This policy analysis also looked at possible institutions and actors whose influence and contributions could be valuable to further policy formulations. The most significant actors to this cause would be the private sector, citizens of Calgary (specifically commuters), and the City of Calgary. These actors could perhaps engage in some form of partnership that would act to respond to the problem discussed in this paper.

## ***Summary of Policy Context***

The car dependent nature of North American culture has contributed to an increase in “negative environmental consequences”<sup>25</sup>. A key cause of air quality concerns are the emissions released from vehicles<sup>26</sup>. The most problematic being the private automobile, simply due to its ubiquity. Along with this issue, increasing numbers of vehicles on city streets leads to traffic problems. These traffic issues are felt by commuters going to work in the mornings and evenings, parents trying to get their children to school or extra-curricular events, by couriers who use their vehicles for work, by truckers trying to deliver their loads in time to pick up the next, and by individuals who become exhausted at the thought of leaving their home to drive to the store. In Calgary, these issues combined with an expected population increase of 500 000 people

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<sup>25</sup> Nijkamp, Peter. (1994). Roads Toward Environmentally Sustainable Transport. Transportation Research A. Great Britain: Elsevier Science Ltd. p.266.

<sup>26</sup> United Nations Framework Convention on Climate Change. (1999). *Understanding Climate Change: A Beginners Guide to the UN Framework Convention And its Kyoto Protocol*, p 21. Retrieved October 10, 2001 from <http://www.unfccc.de/resource/beginner.pdf>.

over the next 22 years<sup>27</sup>, has led the City of Calgary to re-examine the way they manage and provide transportation service.

In the first part of this policy analysis, it was discovered that an opportunity existed to strengthen Calgary's policy approach to transportation demand management with regard to reducing the number of vehicles on the road as a way to address the problem briefly outlined above. The concept of transportation demand management (TDM) is becoming increasingly popular. It has been around for a few decades already. According to the Victoria Transport Policy Institute, TDMs are "strategies that result in more efficient use of transportation resources"<sup>28</sup>. These TDM strategies can be in the form of "changes in trip scheduling, route, destination or mode. Others reduce the need for physical travel through more efficient land use, or transportation substitutes."<sup>29</sup> The effectiveness of TDMs is really only realized when they are combined in a comprehensive package of different strategy targets<sup>30</sup>.

The burden of dealing with city transportation issues falls within the jurisdiction of municipal governments. This informs the realm of policy making in that it places constraints on what types of policy instruments can be used in a particular situation. Municipal governments have very limited access to revenue. The major sources come from property taxes, business taxes, and user fees. In Calgary's case, the low density nature of the urban fabric suggests that the property taxes are too diluted to contribute

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<sup>27</sup> The City of Calgary. Transportation Department. (1995). *The Calgary Transportation Plan*. Calgary: City of Calgary, 2-4.

<sup>28</sup> Victoria Transport Policy Institute. Why Manage Transportation Demand? TDM Encyclopedia, para. 1. Retrieved November 10, 2001 from <http://www.vtpi.org/tdm/tdm51.htm>.

<sup>29</sup> Ibid.

<sup>30</sup> Ibid.

substantially to the City's budgetary needs. This will make any type of fiscal policy instrument difficult to implement.

Another restriction on the policy environment of municipal governments involves the political will of politicians. They are unlikely to support policy recommendations that may lead to their demise in the following civic election. Therefore radical policy changes are not a likely scenario.

The citizens of Calgary are also actors in the policy realm. This group is so diverse that policies will need to specify which portion of the population they are directed at in order to make implementation possible and even remotely successful. Another consideration when making policy for this group is the extent to which the policy limits or is perceived to limit personal freedom. In this, a democratic and mostly liberal society, any policy that is seen as restricting freedom of choice will be hard to garner support for. A policy aimed at Calgary commuters, for example, would need their cooperation in order for the policy to have any effect.

Private business can have an important role in augmenting traffic demand. Their cooperation must be attained through policy makers demonstrating benefits businesses would receive from any such collaboration. In general, private industries have more resources available to help with implementation of policy instruments than the municipal governments.

The Calgary Transportation Plan was approved May 29, 1995. It is the dominant transportation policy document for the City of Calgary. This document outlined some of the City of Calgary's strategies for dealing with the ever increasing traffic concerns. Some of these strategies dealt with the supply side of transportation, including such



things as the provision of roads and increased frequency of public transit. Other policy recommendations addressed the demand side of transportation, which includes congestion-management, and reducing the supply of long stay parking in the downtown core.

In order to further understand the context of the policy environment, it is useful to construct a SWOT (Strengths, Weaknesses, Opportunities, and threats) analysis. This will help in knowing what the limitations and opportunities are within this realm.

**Table 1 SWOT Analysis**

<b>Strengths</b>	The policies of Calgary's municipal government already support actions to influence Calgarians' travel behaviours
<b>Weaknesses</b>	The city of Calgary has been developed such that it is perceived as hard to get around without a personal vehicle Calgary's winter climate acts as a disincentive for using more efficient travel methods
<b>Opportunities</b>	The Calgary Transportation Plan (1995) was silent on influencing travel behaviour in a direct way, assuming that a changing lifestyle will accomplish this goal alone
<b>Threats</b>	Attempting to change consumer behaviour can be really difficult due to the many factors that are involved with consumer decision-making

This summary of contextual influences and policy actors will be used to analyze the policy recommendations in order to determine they are appropriate for influencing the travel behaviours of Calgarians.

## **Policy Formulation**

The policy goal that was identified at the beginning of this paper was to reduce demand on the existing roadway infrastructure. In this way, the policy recommendations

would be expected to further augment the travel behaviour of (certain) Calgarians to some form that would be considered more sustainable<sup>31</sup>.

In order to suggest policy solutions aimed at reducing the number of vehicles on the road it is important to understand the nature of these trips in order to narrow the scope of the target group. Then it will be necessary to specify clear objectives that the policy recommendations need to address. This will lead to a couple of ideas that could achieve these objectives. Then they will need to be framed in terms of policy instruments that could be used to carry them out.

## **Target Group**

According to a City of Calgary press release, a pre-test of a travel survey the transportation planners are going to undertake revealed that on an average day households will make approximately 2 million vehicle trips out of an average of 3.5 million person trips.<sup>32</sup> Calgarians own about 1.7 vehicles per household, of which 63% own two or more vehicles. These statistics help show how much a part of life Calgarians' personal vehicles are.

The types of vehicle trips made by a household include commuting to work and school, getting groceries, driving children to various activities, and driving for recreational purposes. People making shopping trips would be a more difficult group to target because it can result in a person having to transport large numbers of parcels.

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<sup>31</sup> Sustainability is such a commonly used term that it seems to have lost a good deal of its meaning. Hence, the use of the term requires an explicit definition. Sustainability, in this context, refers to a behaviour of which the impact of it remains manageable within the existing and future resources available to Calgary's municipal government.

<sup>32</sup> Brodsky, Peter. (Wednesday, August 22, 2001). *Travel Survey to Study Transportation Patterns of Calgarians*. CityBeat. City of Calgary press release.  
[http://www.gov.calgary.ab.ca/citybeat/public/2001/08/release.20010822\\_084337\\_20256\\_0](http://www.gov.calgary.ab.ca/citybeat/public/2001/08/release.20010822_084337_20256_0)

Extra-curricular activities may be undertaken by many members of the household and the personal vehicle would be the only viable option. Recreational trips are not very regular, and may actually include “taking a drive” in the country, which would not provide a good opportunity for targeting this group. These trip types would need to be looked at in different ways to perhaps reduce the incidence of personal automobile trips. The commuter group would likely be the best to target in this case because they have the most regularly occurring trips.

## Existing Policy

The Calgary Transportation Plan (1995) outlines some of its policies that are intended to influence travel behaviour. These include to “Strategically manage congestion in the system to encourage other mode choices”<sup>33</sup>, “Develop transportation demand management strategies (TDM) where appropriate, e.g. inclusion of high occupancy vehicle lanes, transit pre-emption measures, etc”<sup>34</sup>, “The supply of long-stay parking [downtown] will be reduced gradually, e.g. by absorbing peripheral surface lots for development”<sup>35</sup>, and “The City will pursue with the Provincial Government the concept of a fuel tax dedicated to transportation”<sup>36</sup>. These policies indicate ways in which the City plans on influencing the choices travelers make. Letting congestion build, reducing the availability of parking downtown, using a fuel tax to create a type of user fee all work towards the goal of reducing single occupancy vehicle trips. These policies, however, only address three of the four “key travel behaviour directions” set out in the

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<sup>33</sup> City of Calgary. Transportation Department. (1995). *The Calgary Transportation Plan*. Calgary: City of Calgary, 2-10.

<sup>34</sup> Ibid.

<sup>35</sup> Ibid., 2-15

<sup>36</sup> Ibid., 2-20

Calgary Transportation Plan (1995). They neglect to address “Vehicle Occupancy”. The direction of “Vehicle Occupancy” includes the ideas of “public and private initiatives like car pooling and other ride-sharing programs”<sup>37</sup>, however, these programs are not addressed in the actual policies set out in the Plan.

“Transit Service” was another travel behaviour direction the City wants to work on. In this direction, they plan to improve service and expand the network. However, another opportunity exists to help improve this behaviour direction without affecting the supply. Gordon Price suggests that part of the reason people do not take various modes of transportation is simply that they are not aware of what is involved in doing so<sup>38</sup>. They experience uncertainty regarding the transit routes, transit times, and how much transit fees are. This makes getting into the car and driving somewhere a lot more appealing. If transit information was more widespread, perhaps it would lead to an increase in ridership.

## **Case Studies**

TDM strategies in other cities involve commuter trip reduction initiatives as an important piece of their overall strategy. Portland, Oregon has management areas that divide up the Portland region into three groups. Within these groups, employers who have more than 50 employees are required to set up incentives to reduce the number of employee work trips. This initiative is supported by the Employee Commute Options Rule, a regulation brought in on July 12, 1996 by the Environmental Quality Commission. The goal of the program is to reduce work related car trips by 10% in three

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<sup>37</sup> Ibid., 1-13

<sup>38</sup> Price, Gordon. (February 2001) *A Local Politician's Guide to Urban Transportation*. Draft 5.2. Vancouver. Retrieved November 8, 2001 from [www.vtpi.org/localpol.htm](http://www.vtpi.org/localpol.htm)

years<sup>39</sup>. This program has been successful in that “over 500 employment sites have reduced 10 770 weekday auto trips to and from the worksite region-wide”<sup>40</sup>.

CH2M Hill, an engineering firm in Bellevue, Washington, ran its own commuter trip reduction program to offset their lack of available parking. The company offered its employees \$40 per month if they decided to use alternative transportation (to the single occupant vehicle) to commute to work. If their employee decided to drive to work alone, they would be able to park for free (no change to the status quo). This form of incentive was fairly successful in achieving its goal. The percentage of employees driving to work alone dropped from 89% before the program was put in place, to 54% afterward. Meanwhile, bussing, and cycling and walking all increased from 1% of the employees choosing these modes to 17%<sup>41</sup>. Carpooling, as a commuting option, also increased as a transportation alternative, although not as dramatically as the others.

These examples demonstrate a couple of factors that researchers feel are necessary to the success of these types of transportation demand management tools. According to Michael Meyers (1999), ridesharing and other TDM actions require “some level of incentive or disincentive” in order to influence travel behaviour on an individual level. On an employer support level, regulations mandating their participation in employee trip reduction programs are really the way to guarantee positive results<sup>42</sup>.

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<sup>39</sup> Oregon DEQ. *Employee Commute Options(ECO) Program*. Retrieved November 21, 2001 from [www.deq.state.or.us/nwr/ECO/eco.htm](http://www.deq.state.or.us/nwr/ECO/eco.htm)

<sup>40</sup> Tri-Met Market Information. (September 2000) *Transportation Demand Management in the Portland Metropolitan Region (Progress Report Through February 2000)*. Portland, p 37.

<sup>41</sup> Victoria Transport Policy Institute. *Examples and Case Studies*. TDM Encyclopedia. Para.26. Retrieved November 10, 2001 from [www.vtpi.org/tdm/tdm8.htm](http://www.vtpi.org/tdm/tdm8.htm)

<sup>42</sup> Meyer, M.D. (1999) *Demand management as an element of transportation policy: using carrots and sticks to influence travel behavior*. Transportation Research Part A 33: Pergamon, p 590.

## **Policy Recommendations**

The policy recommendations that will be made are simply additions to the existing policies developed within the Calgary Transportation Plan. They are not policies intended to stand on their own, and they should not be. According to Peter Nijkamp (1994), successful transport-environment policies need to be packaged in groups since implementing just one action will not go far in influencing household behaviours which are based on multiple interconnected factors.

The overall goal for this policy initiative is that of reducing demand on Calgary's existing roadways. Having analyzed the existing transportation policy in Calgary and researched other transportation demand management techniques and theory, the following policy recommendations are made:

- 1. Encourage the development of commuter trip reduction programs by employers**
- 2. Promote the use of other modes of transportation available for commuter travel**

These policy recommendations in conjunction with the other demand management tools the City has pursued will help to create a more balanced policy package by addressing the users of the transportation system and their knowledge of the system.

## **Choice of Policy Instruments**

There are a variety of instruments that could possibly be used to implement the two policy recommendations made above. Hawlett & Ramesh (1995) list three basic categories of policy instrument types: voluntary, mixed instrument, and regulatory. The choice of policy instrument is usually determined through an analysis of a combination

the political and societal contexts and the financial leverage of a policy making body. Voluntary instruments require no government intervention. It relies on the community, non-government organizations, and the private markets to bring about the desired public policy initiative. Mixed instruments are a combination of government involvement with some amount of voluntary action. The regulatory instrument is one in which the government is fully involved in the implementation of the policy.

In the case of the City of Calgary municipal government, financial leverage is not that strong. This means that the type of instrument chosen can not incur high costs. As well, Calgary commuters are fairly happy driving to work alone, which indicates that at this stage there would not be much public support for these initiatives. This means that using only voluntary instruments to implement the commuter trip reduction policies would really not have a high chance of success. Meanwhile, the City's desire to portray a business-friendly environment will mean that too many regulations could be bad for business.

Some regulations, however, need to be in effect in order to influence travel demand initiatives. Along with carrots, there must be sticks. If the regulations do not impose too much on business and the constituency, they may be accepted easier, although there will certainly be some debate incurred. In order to achieve the goal of reducing demand on Calgary roads, the city should provide high occupancy lanes in strategic travel corridors, such as they have already done on Centre Street N. This would help to push people to think about carpooling or taking public transit and act as an incentive mechanism.

This exploration suggests that the instruments should be mixed with as few regulatory mechanisms as possible. Information and exhortation instruments will be a key aspect of implementing both of the policy recommendations put forward. Education has been shown to have an effect on people's behaviours, although the process is slow. For example, thirty years ago most people did not think about what they threw out. Today, there are bins provided across the city that people use to recycle bottles, cans, and papers.

Another instrument that should be used in the encouragement of commuter trip reduction programs is that of a tax incentive. This could be given to businesses that help to decrease the number of people who drive to work alone. The research on other demand management programs showed that unless there were incentives or regulations there was less chance of those programs succeeding. Tax incentives could come in the form of reductions on business taxes or from a lower utilities rate (because the companies are contributing to an overall savings in energy expenditure).

So the action plan that has developed is as follows:

## **1. Encourage the development of commuter trip reduction programs by employers**

### *Implementation:*

- 1.1. Use tax incentives to encourage businesses to implement incentive-based alternative transportation programs
- 1.2. Develop a multi-stakeholder educational program that promotes the commuter trip reduction programs (eg. benefits and cost savings that result from ridesharing)



- 1.3. Encourage businesses to provide and promote facilities that support alternative transportation choices

## **2. Promote the use of other modes of transportation available for commuter travel**

### *Implementation:*

- 2.1. Increase public awareness of other forms of transportation through informational campaigns
- 2.2. Increase public awareness of benefits and usage of alternative transportation through educational marketing
- 2.3. Convert existing lanes in strategic travel corridors to high occupancy vehicle lanes

## ***Monitoring and Evaluation***

Two steps that are necessary for policy implementation is that of monitoring and evaluating the level of success or failure that the policies have. If policies are put in place and never analyzed as to their successes or failures, they could never be improved upon and the problems will be allowed to continue unabated. The Calgary Transportation Plan (1995) has a monitoring system in place already and the City does seem to be following it to an extent. This is indicated in the various citizen surveys that ask specific questions addressed in the monitoring plan, as in the City of Calgary's *Community and Corporate Performance Measures Report* (2002 Preliminary Budget)<sup>43</sup>. A monitoring discussion of the Calgary Transportation Plan was also completed in 1998.

The monitoring stage is the first after the implementation of policy. This stage analyses on a continuing basis whether the action items (policy instruments) are actually

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<sup>43</sup> Retrieved November 20, 2002 from [www.gov.calgary.ab.ca/finance/2002\\_performance\\_measures.pdf](http://www.gov.calgary.ab.ca/finance/2002_performance_measures.pdf)

being employed. On a longer term, the outputs will be compared with the policy objectives to see if the implementation plan is or is not succeeding. So the monitoring process requires some short term measures and some longer term measures.

The monitoring process of the Calgary Transportation Plan (1995) has prescribed targets that are expected to be met at three year intervals (1997, 2000, 2003) for each of its performance indicators. In 2004, a major review is to take place. Presumably, if the targets are being met, the three year interval reviews will be continued until 2024, with the creation of new targets to be met. Otherwise, if the plan is not meeting its objectives, changes should be made accordingly.

In order to monitor the two policy recommendations, implementation outputs and targets need to be indicated for each. The outputs will follow closely with the action items that were specified in the implementation stage:

### **1.1 Use tax incentives to encourage businesses to implement incentive-based alternative transportation programs**

#### *Outputs:*

- Tax incentives are set up by the City of Calgary Assessment Unit
  - Business tax incentive
  - Utility rate reduction
- Task force set up to study other methods of providing incentives to businesses

#### *Monitoring Targets:*

The target for this output are to develop a membership count of businesses participating in the employee rideshare program. A second target is to pursue other

avenues of creating incentives for businesses to run ridesharing programs to relieve the strain on the City of Calgary due to the reduction in tax revenue.

**1.2 Develop a multi-stakeholder educational program that promotes the commuter trip reduction program (eg. benefits and cost savings that result from ridesharing)**

*Outputs:*

- A Commuter Trip Reduction Committee is established by City of Calgary to be composed of the various stakeholders
- Educational materials are created and distributed by the committee to the Calgary Chamber of Commerce and other business organizations
- Pamphlets describing the new program and program contacts are mailed out with tax assessment notices

*Monitoring Targets:*

Continual monitoring of these policy outputs should be measured in both qualitative and quantitative terms. The qualitative would include a survey of employee opinions regarding their experience or lack of experience with transportation alternatives and their desire to pursue them in the future.

**1.3 Encourage businesses to provide and promote facilities supporting alternative transportation choices**

*Outputs:*

- Businesses supplying locker rooms and showers on site
- Companies allowing later workday start

*Monitoring Targets:*

If the facilities are provided, hopefully more people would take advantage of them and there would be an increase in carpooling and the walk/cycle components of the transportation modal split.

The next three implementation tools will have the following targets:

### **2.1 Increase public awareness of other forms of transportation through information campaigns**

#### *Outputs:*

- Establish a “Transportation Awareness Week”
  - Work with the Calgary School Board and Separate School Board to encourage their participation
  - Invite transportation researchers, transportation businesses, and alternative transportation interest groups to set up informational displays in City Hall
- Send informational pamphlets in utilities statements describing different types of transportation modes and where there are support services available (ie bike racks, locker rooms and shower facilities)

### **2.2 Increase public awareness of benefits and usage of alternative transportation through educational marketing**

#### *Outputs:*

- Provide a transit route map and schedule at every bus shelter
- Create public information commercials describing how to use different modes of transportation

#### *Monitoring Targets:*

These targets will also have qualitative and quantitative measurements. The qualitative measurement would be obtained through a public awareness survey. This survey would ask people about the different modes of transportation available, what they know of those services, and how often they make use of them. Quantitative measurements would also use the modal split.

### **2.3 Convert existing lanes in strategic travel corridors to high occupancy vehicle (HOV) lanes**

#### *Outputs:*

- Create a strategic planning committee to study travel corridors for most effective HOV lane locations
- Begin a program that converts lanes to HOV over a period of five years

Quantitatively, the success of this program should be measured in the change of the Calgary Transportation Plan's measure of "modal split". If the program is successful, there should be an increase in the number of "vehicle passengers"<sup>44</sup> and a comparative decrease in the number of "vehicles" in the Home-To-Work Trips performance indicator.

Evaluation of the policies should take place at longer intervals (about every ten years). This will evaluate whether the level of inputs (money, time, and other resources) is acceptable considering the quality of outcomes. In the case of these policy recommendations, this means the number of cars on the road during the rush hour, number of people making use of transit, number of people bicycling, walking, or taking taxis, and awareness among commuters of their transportation choices.

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<sup>44</sup> City of Calgary. Transportation Department. (1995). *Calgary GoPlan*. Phase 5 Report. Calgary, Appendix "C".

The evaluation should answer the questions, “is this program actually reaching its targets?” and “are there better ways to do this?” The evaluation should look at whether the objectives of the policies are being met. This evaluation would compare the targets that are being met or not being met with the objectives of businesses creating more commuter trip reduction programs and increased public awareness of their transportation choices. Together these objectives will hopefully be working towards the goal of reducing demand on the existing transportation infrastructure and leading to an overall accomplishment of the GoPlan’s vision statement. If the outputs are not contributing to the objectives or goals, then an analysis should be done as to which of the parts will require adjusting, modifying, or whether the policies should be discontinued.

## ***Conclusion***

The creation of these policies is important to contributing to the success of Calgary’s TDM actions. Small regulatory changes in addition to various tax incentives will hopefully address Calgary’s unwillingness to impose restrictions on its constituency and business groups. Knowledge and awareness of the issues is the other aspect of TDM strategy that has been addressed through the policy recommendations. This will hopefully help Calgarians to “think globally and act locally” by letting them know in what small ways they can contribute to being environmentally responsible. With a comprehensive transportation demand management package, addressing the issue of travel behaviour on many different fronts, Calgary should begin to see some successes, in addition to what they are seeing now.

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