

Item 4.3.2

To: Mike Savage, Mayor of HRM, Committee members of the Transportation Standing Committee
From: Pam Cooley
Re: Ideal Carsharing City

May 16, 2013

There are many strategies the HRM could do at this point and time in the City Plan review towards being the "Ideal CarSharing City" (meaning a "multi modal city"). Many of those are in the document "HRM on the Move" that all committee members have and have also been suggested through the CDAC process.

The following are four leading opportunities specific to carsharing the HRM could easily implement with little effort but with lasting positive effects. Many other cities have gone before us and have successfully refined their processes of implementation we can learn from to meet our mandate of reducing personal car usage and yet, not reducing convenient, affordable mobility. These strategies would be for any carsharing organization that is part of the International Carsharing Association that decides to operate in the HRM.

1) Dynamic Duo: Transit and Carsharing partnership: There is independent evidence that this partnership maintains and even increases transit ridership. The basic concept (that can be modified to suit HRM) is that CarShare members commit to a year of monthly passes and can purchase them through the carsharing organization (hence only carshare members) at a reduced rate of both. It is an incentive for people to keep out of their personal use vehicles and to enroll others to get out of their personal use cars. Metro Transit has indicated interest in a pilot for this partnership.

2) For developments - Parking space per unit ratio: Many cities have decided that having carsharing as part of a development can be an advantage to the tenants, to the developers and to the city in their efforts to "design cities with fewer cars". The developer gets relief on the ratio (or not even have to have parking if they are near transit and carsharing) if they partner with a carsharing organization. There are several bylaws already written in cities and could be used for guidance to the HRM.

3) On street parking: Parking is the number one obstacle for carshare cars to be placed in neighbourhoods where there are families and residents who could use carsharing and reduce their environmental footprint as well as savings. The concept is for carshare cars to be able to be parked on residential parking streets is an easy way for this to occur. (We have solutions for the winter months/ban).

4) To become another option of mobility for city staff, Councillors and the Mayor. There are various ways this can be done. A few examples are: have a Master contract (like the Province of NS, Capital Health, Dalhousie, etc.), everyone to

have the opportunity to become a member (like McInnes Cooper) and/or to be able to expense their personal membership use of carsharing for business use back to the city. The HRM Smart Car program could be integrated or eliminated to save the HRM money.

The proposal would be for the Standing Committee on Transportation to assign this comprehensive project (or hire a third party consultant) to bring back the viability of the four items suited to the HRM. The data exists. This could be done in time for the final version of the City Plan Review.

HRM on the Move – The Mobility Plan

September, 2012

What would happen if HRM were designed with only one question in mind – How do we move people with fewer cars?

The Vision

Mobility is the thread that knits the fabric of our lives together.

All HRM residents enjoy access to mobility options that are reliable, affordable, convenient, comfortable and fun. A seamlessly integrated, multi-modal transportation network connects people to their daily needs, including work, school, health care, shopping, recreation and entertainment. The design of our communities and the transportation system that serves them prioritizes the efficient and safe movement of people. The effect is healthier, more liveable communities that offer a high quality of life for all citizens.

Mobility is a work in progress. This document will continue to be alive and work with best practice. We humbly submit to you for your serious consideration.

Submitted by:

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More mobility options serving more people

An integrated mobility plan focused on “people first” is the key to moving the Halifax Regional Municipality (HRM) toward economic and social prosperity.

Since the 1950s, as with many North American cities, priority for moving people by private automobile has shaped the growth of our region, and the form of our communities. Building roads and highways to accommodate anticipated growth in demand and optimize the flow of vehicle traffic has been the primary consideration in our planning efforts and decisions on transportation infrastructure investments. Recent growth patterns – lower density, dispersed, single-use developments - and infrastructure investments reinforce our dependence on cars for mobility. In the absence of viable alternatives, HRM citizens continue to choose to drive because it is the fast, convenient and reliable option.

Faced with rapid urbanization, increasing energy costs, climate change, economic disruption from traffic congestion, poor air quality, aging populations, rising obesity rates and shifting economies many cities around the world are confronting the reality that further increasing reliance on the automobile to **meet the mobility needs of citizens** is not a sustainable path. Alternatives to driving must become the rational choice to meet daily mobility needs by matching and surpassing the automobile on price, convenience, comfort, speed and reliability. Where other transportation modes such as public transit, cycling and walking can move people more efficiently and effectively, we must give these modes priority over the smooth flow of car traffic. Our future transportation system must be seamlessly multi-modal, enabling easy connections between a variety of mobility options.

“At full capacity, a standard 40-foot bus is about 10 times as space-efficient as a typical North American car.”¹

Integrating decision-making about how HRM will grow with planning for the future of our transportation system is also critical – building complete communities where residents can walk to work, school, shopping and services minimizes daily commuter travel, decreases infrastructure costs and increases health and vibrancy. We must consider the full, long-term costs of our land use choices and ensure that these choices advance our vision and objectives. We arrived at the current condition in HRM through a series of policy and investment decisions made over the last several decades, and we must now make decisions that will move us in a new direction. The liveability, vibrancy and economic health of our city and region depend on it. Transformative change is possible and now is the time to take action.

RECOMMENDATION: A Critical Piece of Enabling Change in HRM

We have all heard much discussion about the importance of breaking down departmental and inter-governmental silos to better integrate planning and decision-making, yet we appear to have made little progress on this front. Achieving this integration is, however, critical to successfully implementing this Plan's vision for mobility and the vision and goals of the Regional Plan. The **HRM bureaucracy must reorganize itself** by bringing together transit, traffic, engineering, planning, parks, real estate and economic development staff with a mandate to collaborate on achieving the goals of the Regional Plan. The current separation of these departments and others only reinforces compartmentalized decision-making, with decisions of one department often at complete opposite odds with those of another.

This document is prompted by the first five-year review of the Regional Municipal Planning Strategy (RMPS), but will be used in a variety of contexts. In the short term, our intent is that this document informs in the updated RMPS a significantly strengthened vision and plan for the future of mobility in HRM.

The vision, principles and actions described in this document are drawn from a large body of transportation-related work (see Appendix A) undertaken by various local organizations and governmental departments. Many of these initiatives involved significant efforts to engage citizens in the discussion about the future of our transportation (mobility) system. Much momentum has been generated around the topic and efforts to mobilize public support and action toward improved mobility options in HRM will continue. The intent of this document is to reinvigorate a people centred vision, and translate the vision to specific strategies for action.

“The Regional Plan manages development to make the most effective use of land, energy, infrastructure, public services and facilities and considers healthy lifestyles.”

Guiding Principle from HRM's Regional Municipal Planning Strategy (2006)

Some of the inspiration for this paper (for a full reference list see Appendix A)

Active Transportation 101: Bringing AT to Your Community and Developing an AT Plan (2012)
Bikeways Plan for the Urban Halifax Institutional District (2012)
Child- and Youth-Friendly Land-Use and Transport Planning Guidelines for Nova Scotia
Green Mobility Strategy (2008)
It's More Than Buses Pocket Guide to fast, frequent and reliable public transit for HRM (2012)
The Sustainable Future Of Nova Scotia: Transportation Solutions Workshop report (2012)
Municipalities for Green Mobility: A guide to action on sustainable transportation in Nova Scotia (2010)
Nova Scotia Pathways for People: Framework for Action (2006)
Our HRM Alliance: To make Halifax Regional Municipality a more liveable and more sustainable place to reside, to work and to play (2012)
Provincial Community Transit Strategy (2012)
Review of International School Travel Planning Best Practices
Shifting to Sustainable Transportation: A Sustainable Transportation Framework for HRM
Shaping Healthy Communities (2009)
School siting discussion brief (Reducing Childhood Obesity by Increasing Opportunities for Active Transportation)
Transportation Demand Management Plan For Dalhousie University (2011)
Way Forward for Transit in Nova Scotia
CarShareHFX and other carsharing research

Six and Six

To achieve the vision described above the following paper outlines 6 guiding principles for decision makers and citizens to strongly consider when evaluating future direction. It also outlines 6 priorities mobility strategies that if there is strong leadership and political willingness we can transform the HRM.

Guiding Principles

1. Consider People First
2. Mobility Guides Land Use Design
3. Accountability and Measurement
4. Innovation – Best Practise - Risk
5. Fresh Air and Affordability
6. Decision-making Integration

Priority Mobility Strategies

- #1 Plan for the Long-Term using a Comprehensive Approach
- #2 Emphasize the Integration of Land Use and Transportation Planning
- #3 Develop Comprehensive Investment Plans for Mobility Infrastructure
- #4 Build a Multi-modal Transportation System
- #5 Commit to Continuous Collaboration
- #6 Advance Mobility Goals through Innovation

“As humans we move people and things, how we do this as a city is a sign of our values and our intelligence.”

Pam Cooley, CarShareHFX

Guiding Principles

How HRM decides who makes decisions and how they are made regarding mobility is crucial to the Municipality's success. The following Principles should guide the implementation of the Vision:

1. Consider People First
2. Mobility Directs Land Use Design
3. Plan with Vision – Measure Success and Failure
4. Innovation – Best Practice - Risk
5. Decision-making Integration
6. Commitment to Predictable Funding

1. CONSIDER PEOPLE FIRST

- Move people, not just cars, trucks and buses. Prioritizing where and how people move is the lens through which we must plan our communities and the transportation system that serves them.
- Equity: Focusing on car movement instead of people movement demonstrates our values where those who have cars have priority of opportunity over people who do not have cars.
- Multi Modal - More options, more opportunity: Invest in and design cost effective options using a multi modal approach where walkways and streets are shared, the options are more convenient, frequent and reliable than cars. for citizens.
- Accessibility: Build a system that is accessible at the broadest level. There are no physical, financial or social barriers.
- Neighbourhoods: focus on the protection of neighbourhoods from the impacts of traffic, increase safety through public realm initiatives and increased health through multi modal options.

2. MOBILITY DIRECTS LAND USE DESIGN

- Multi modal mobility options directs land-use planning, not the other way around.
- Design and develop complete and holistic communities (e.g. schools, shopping, retail, etc., all within walking, biking, transit distance)
- Shorter vehicle trips, infrastructure sustainable and more transit rides, walking and biking – where is the downside?

“Our roads and streets are for everyone, not just the people who can afford cars. It is an issue of social democracy”

Enrique Penalosa, former mayor of Bogota, Colombia

3. PLAN WITH VISION – MEASURE SUCCESS AND FAILURE

- Develop a plan with specific initiatives (see below) measure shifting of modal use targets present day – 2020 using: Auto Driver, Auto passenger, transit, bike, walk, other use of auto (rideshare, carshare, etc) in each district.
- Measure shift in vehicle use - vehicle km driven, vehicle trips and where.
- Put processes for consistent measuring to know progress and failures
- Adopt full cost accounting of transportation and effects of choices (development infrastructure and impacts of car usage).

4. INNOVATION – BEST PRACTISE – RISK

- Seek out, prioritize, invest and implement viable best practices for sharing the road.
- Attempt alternatives to evaluate success or failure and adapt or refine.
- Make the most out of existing infrastructure while incorporating and inventing new technologies, management practices and models of success.

DECISION MAKING INTEGRATION

- Restructure process to mandate collaboration amongst government departments, citizens, decision makers, businesses, planners, etc.
- The legal framework governing transportation needs to support the shift to a more sustainable system.
- Engage citizens in an on-going, open, and informed dialogue to identify mobility options that meet local community needs and contribute to a strong regional transportation system.

COMMITMENT TO PREDICTABLE FUNDING

- Plan and budget for long term and predictable funding for the development of the infrastructure of the multi modal system.

The net social benefit obtained through bicycle use is \$0.22 per kilometer, as opposed to the net social loss of \$0.12 per kilometer that occurs when vehicles are used.¹

Study from the Copenhagen City of Cyclists Bicycle Account, 2012

The Mobility Plan

The residents of HRM deserve strong leadership from both government and staff in planning for their mobility future.

Priority Mobility Strategies

Along with the above six Guiding Principles, we submit the following six Priority Mobility Strategies to the Halifax Regional Municipality. This is a comprehensive plan to address the challenges and take transformative steps toward achieving the Vision.

- #1 Long-Term Plan Facilitating a Comprehensive Approach and Collaboration
- #2 Land Use and Transit Oriented Communities
- #3 Investment Plans for Mobility Infrastructure
- #4 Multi-modal Transportation System
- #5 Commit to Continuous Collaboration
- #6 Advance Mobility Goals through Innovation

1. Plan for the Long-Term using a Comprehensive and Collaborative Approach

Actions

- Combine the five transportation Functional Plans described in HRM’s Regional Municipal Planning Strategy (MPS) into one comprehensive, integrated 30-year Mobility Plan that supports the goals of the Regional MPS and transit oriented communities.
- As public transit is key to any plan, develop a 10-year transit plan that identifies the programs and projects over the next decade that will move HRM toward the goals identified in the 20-year Mobility Plan. The plan must be fully funded, showing the amount and sources of the funding necessary to pay for it.
- Create a body such as a “Transportation Authority” or a similar configuration that permits all relevant decision makers to integrate land use, transportation of people and transportation of goods. This will decrease duplication of effort, increase communication and understanding of vision and plans, definition of roles and accountability and reduce the ‘silo syndrome’ of compartmentalized decision-making. It will strengthen inter-governmental ties and cooperation between all levels to more efficiently implement mobility strategies in the region.
- Review the Motor Vehicle Act and other relevant legislation to ensure current barriers to implementing the Mobility Plan are removed or revised.

2. Land Use and Transit Oriented Communities

Tax structure, zoning, bylaws and capital costs contribution are the main tools with which to design our future communities and transit oriented communities.. The design of our communities, and where we concentrate growth and development within the HRM plays an important role in determining our mobility options and travel choices. A regional mobility strategy for HRM should recognize the intrinsic value of building more compact and transit-oriented communities, underscoring the intense relationship between transportation and land use.

At present, there is approximately 60 years worth of land parcels approved which will serve the HRM for many generations. Land continues to be sold by HRM for new developments in the sub urban areas creating sprawl. The cost of providing infrastructure creates a net loss to HRM and taxpayers.

Actions

New Developments

Use development charges or Capital Costs Contributions (CCC) for all new developments outside growth zones to finance the construction of new growth related capital infrastructure such as libraries, community centers and roads.

Commercial Tax Restructuring

To encourage development and density in designated growth areas and the downtown cores restructure the commercial tax assessment to a significantly reduced rate compared to suburban and rural areas. As well, base commercial taxes on square footage rather than market value. This will create more opportunity for developers who are willing to “fill in” the growth areas and discourage sprawl that is unsustainable.

Parking spaces per unit ratio

At present in all areas except for the downtown core there is a parking space per unit ratio requirement for developments. This is making cars the determinant for the development decreasing the option to have a car free development and encouraging a car free existence. In result is: cars determine the size of the units reducing innovation and creativity! This goes against many other goals the HRM has in its density and GHG reduction. Most cities now are leaving this up to the market and the developer to decide how many parking stalls.

Actions:

- Eliminate the parking stall per unit ratio and leave it up to the market.
- Create incentives for developers to develop mixed residential and commercial building with innovations and along the transit corridors.

Reduce number of growth centres

There are currently approximately 50 growth centres identified in the Regional Plan for the HRM. The municipal plans should adopt stricter growth management strategy, reducing sprawled development.

In order to concentrate growth in the region, and ultimately facilitate the mobility of people, an absolute development restriction zone needs to be established for areas outside the HRM's core areas to encourage compact new developments and intensification of existing centres. Ontario's greenbelt plan and the Places to Grow act might help developing this growth management strategy (see case study of Places to Grow and Metrolinx initiatives, Ontario). The Province of Nova Scotia should take lead in this regard.

Growth Centres – Mixed Development - Mobility Hubs

- Land use mix describes the degree to which different types of land uses (e.g., residential, commercial, institutional, light industrial, entertainment) are located within close proximity to one another. A higher degree of mixing of compatible land uses increases the likelihood that a desired destination is nearby in the neighbourhood making it easier for people to access it by walking or cycling. In such neighbourhoods, multiple errands can be accomplished on foot on the way to transit, over the lunch hour, or on the way home from work. A rich mix of pedestrian-friendly uses also facilitates more street-level activity throughout the day and evening resulting in greater personal security from the natural surveillance of "eyes on the street."
- Identify a reasonable number of key growth and mobility hubs within the growth boundary in order to focus integrating land use and transportation plans.
- Development of these hubs should be guided by the principals of transit-oriented development, connected by a multi-modal network of higher-order transit alternatives
- Potential growth centres and mobility hubs: Downtown Dartmouth; Halifax Peninsula; Lacewood Clayton Park, Spryfield, Bedford; Portland Hills; Burnside; Cole Harbour/Woodside, Lower Sackville, Fall River and Tantallon.

Self Sustaining Districts

Each district should be encouraged to engage the community in how to accomplish the above goals of transit-oriented communities and be self-sustaining. If the districts choose to have new developments, they need to find a way to finance them rather than depend on the tax base of the whole HRM.

3. Budget for Investment Plans for Mobility Infrastructure

A mobility plan for HRM must include a strategy that considers both short- and long-term investment in supporting infrastructure. Stable and predictable capital and operating funding will support the implementation of system improvements. The efficient allocation of financial and human resources for sustainable transportation initiatives from all levels of government will ensure the execution of best practice strategies within HRM.

Actions

Long-term, measurable plan:

- Articulate and communicate an explicit, long-term vision for the mobility system in HRM that includes the above initiatives.
- Goals should be established and measured against predetermined mode split and vehicle kilometers travelled (VKT) targets.
- Establish short-term goals which require minimal investment or political risk but yield a substantial and immediate return (see Metrolinx's 2007 \$744 million investment in "quick wins" for the GTHA)
- Establish medium-term goals, prioritized and set for completion over the next 10 years
- Establish long-term goals, prioritized and set for completion within the next 20 years
- Project prioritization is done through an objective *benefits case analysis* process, removing the subjective and politicized nature of municipal transportation investment

Investment Strategy Options

- Develop an investment strategy outlining a plan for long-term and stable funding for the mobility infrastructure improvements outlined above -- with a timeline.
- Establishment of new, and augmentation of existing, *dedicated* revenue and financing tools:
- Government grants and subsidies (status quo) from all tiers of government
 - Operating subsidies
 - Traditional capital improvement grants, loans, etc. often granted on an annual basis in the budget of each the respective governments
- Beneficiary fees
 - property tax, development charges, mutual investment/contribution by developer, land value capture, sales tax, payroll tax
- User fees and taxes
 - increase bridge toll prices in peak hours, congestion pricing (long-term)
 - dedicate revenue from such an increase to the mobility strategy; toll collection specific 100 series provincial highways; toll collection at other peninsular entry points (long term)
 - regional sales tax for the HRM
 - regional gas tax for the HRM
 - driver license and vehicle registration fees
 - all parking meters and parking tickets and other fees related to vehicles

- Debt instruments: borrowing against assets and other dedicated revenues
- Negotiate a strategy with CN rail for the long-term shared usage of the railway corridor. In order to make it more attractive, frequent daily service would increase the number of passengers willing to utilize the train as a potential commuting transportation mode
- Funding schemes for such infrastructure upgrades is available from all levels of government, and could be integrated through the collaboration with many different stakeholders (including public-private partnership, see Canada Line, Vancouver, BC)

Case Study: CANADA LINE – VANCOUVER, B.C.

The Canada Line was built under the Canada Strategic Infrastructure Fund and completed in August 2009, 6 months prior to the start of the Vancouver Olympic Games. The Canada Line runs from Waterfront Centre in downtown Vancouver to the YVR Airport and Richmond centre and is an important link in the regional transportation network.

Funding for the project came from both the federal and provincial governments, TransLink and the Vancouver International Airport Authority, with support from the cities of Vancouver and Richmond. The total project cost was \$2.1 billion, with \$450 million in federal contribution.

The light rail line is managed by Canada Line Rapid Transit Inc. (CLCO), which is a subsidiary of Translink. In 2005, the CLCO and Translink jointly entered into a 35-year public-private partnership (P3) through a contract with InTransit BC, a joint venture company owned equally by SNC-Lavalin (SNC), the British Columbia Investment Management Corporation (bcIMC) and the Caisse de Dépôt et Placement du Québec (CDPQ). This is the first light rail P3 in North American and the largest P3 implemented in Canada.

InTransit BC raised equity from its three shareholders and negotiated a debt financing over a 28-year period. The joint venture company is in charge of designing, constructing, partially financing, operating, and maintaining the Canada Line over the course of the signed agreement.

Sources:

<http://www.thecanadaline.com/about.tsp>

http://www.tc.gc.ca/eng/programs/surface-transit-projects-canada_line-223.htm

4. Build an Integrated Multi-modal System

(transit, cars, walking, biking, water ways, rail)

The goal is to create transit oriented communities using the land use plan (zoning), bylaws and a convenient mobility system that offers a variety of choices to citizens that flow from one to another from rural areas to growth centres and within growth centres. A successful system incorporates an integrated network of diversified modes, which provide people with mobility options that discourage the use of single-occupant vehicles.

Transit

Transit service needs to improve significantly to keep the HRM livable. Reliability, accessibility, frequency and shorter routes will increase ridership.

At present there is only one bus line that takes less time than car travel. The development of a regional rapid transit network is crucial in order for transit to offer travel times that are competitive with the automobile.

Actions

Allocate more road space to transit. Additional buses are needed to provide 5-minute frequencies on existing routes. Light rail transit is needed in between communities where corridors cannot accommodate this such as between Bedford and the peninsula. Also, streets in the network can be fine-tuned so certain streets and sections of streets assume a more clearly defined transit role like Barrington St. and Spring Garden Rd.

Expansion of MetroLink Transit Network (aka, Bus Rapid Transit)

Bus rapid transit, such as the existing MetroLink service, can provide more time-efficient transit service from the suburbs into downtown Halifax. The network could also be expanded to serve clustered development, such as Clayton Park and Bedford West. An expansion to the existing MetroLink service could include more transit priority treatments and the use of technology to increase customer convenience.

Priority Corridors

Planning and implementation of transit priority corridors on the Peninsula and other growth areas.

Technology/Fares/Incentives

- A ‘zone system’ for transit fares could generate more revenue for new municipal mobility initiatives and encourage riders to view transit as an option for shorter trips.
- Smart cards: facilitates flexibility for frequent users as well as occasional users and rewards the frequent user. The concept is no different than “MacPass” where cards/fobs are used to pay and payment is discounted according to increase usage.
- Discounted transit passes for employer-sponsored initiatives will encourage use of alternative modes of transportation (in exchange for free/reduced parking provisions)
- Partnerships between private sector options and transit (i.e. discounted carshare membership and yearly passes)
- Free MacPass for the use of shared vehicles (e.g. CarShare and carpooling)

- Intelligent Transportation Systems (see below in “innovation section” to enhance the convenient, reliability and comfort of the user as well as measurement capacity for planning and progress reports.

Cars - Rethinking how we use them

The automobile is the most widely used mobility mode, and has come to dictate the size, shape, and appearance of nearly every city. Not only do cars present an environmental risk, but cars present a challenge to the movement of people. As such, it is important to rethink the ways in which we use cars, and the ways people think about cars.

There are many examples of ways in which cars can be used more effectively and more efficiently. The following is an outline of some of the technologies, best practices, and initiatives that have been developed to re-think the use of the automobile.

Actions

High Occupancy Vehicle (HOV) Lanes:

Dedicated lanes for buses and high-occupancy vehicles (HOV) during peak hours could relieve traffic congestion at the five main entry and exit points connecting the Peninsula to surrounding areas

HOV lanes are designated lanes running along roadways that are exclusive to buses and vehicles with more than one passenger. These lanes provide incentives for commuters to use transit or carpool by providing a faster commute along a lane with fewer cars. The outcome of HOV lanes is that the number of cars on the road is reduced for every commuter who carpools, reducing congestion along non-HOV lanes.

Park and Rides:

Enrol parking lots owners of large malls outside HRM core with excessive parking space to develop the park and rides

Then implement smaller , more frequent buses coming to and from downtown in HOV lanes.

Carsharing:

Car sharing is an automobile service that replaces private vehicle ownership. A fleet of vehicles is provided to users/members that pay on a per-use basis, in addition to membership fees. Carsharing is not for daily commuting, it provides access to a vehicle when necessary for when walking, biking, or transit does not suit the activity. For every carshare car that is used takes (or keeps off) anywhere from 10-15 cars

Actions

- Facilitate and encourage CarShare through public and private initiatives (for instance, providing free designated parking spaces at public building sites and parking meters)
- Work to change the liability insurance to be with the driver, not the car. This way, people can share cars more easily and make room for a Peer-to-Peer network of carsharing.
- “Dynamic Duo” - Combine transit fee reduction with a carshare membership reduction.

Carpooling:

Carpooling is the most basic form of improving the efficiency of a vehicle trip. By increasing the number of passengers in a vehicle, the number of cars on the road is decreased, and the impact of the trip is reduced to a single vehicle trip.

Carpooling can be formal or informal. Formal carpooling such as HRM’s “SmartTrip” and “Park and Ride” can be accompanied by incentives such as access to parking spaces and “Guaranteed Ride Home”, etc.

Informal carpooling initiatives exist in some North American cities, and occur when individuals gather in a designated area and wait for a motorist to stop and pick them up. Informal carpooling is less predictable than formal carpooling, but it provides flexibility for individuals who are unable to establish a schedule or plan. Informal carpooling has proven to be effective in places where there are tolls, such as bridges and highways, as well as where High Occupant Vehicle (HOV) lanes require multiple passengers. In the case of HOV lanes, there is incentive for both the driver and the passenger, as the use of the lane provides shorter commute times.

Easy Rider (San Francisco):

Easy rider is a carpooling initiative in San Francisco that allows commuters to pick up a passenger prior to crossing the Bay Bridge, allowing them to use carpool lanes to bypass tollbooths and save on bridge tolls. This approach to bridge crossing has been occurring for about 30 years in the Bay Area, and has caught on across the region at each of the bridge crossings.

Taxis

Taxis are a useful alternative to owning a personal vehicle. Although generally not viable for daily commute trips, the use of taxis can discourage an individual from purchasing a vehicle. Having a taxi option allows commuters to investigate other forms of transportation for their daily commute, such as active modes and public transit.

Ride sharing

Ride sharing is very similar to carpooling, although it involves a non-private vehicle. The vehicle can be provided by a district, an organization, institution, or company, etc, and carries multiple people to and from work. This is a suitable option for longer commuters in the suburban or rural areas where the benefits of a shared vehicle are largest. The advantages of

this form of transportation are that there is flexibility provided by the fact that the vehicle is controlled by the commuters themselves, allowing them freedom from public transit schedules, and that the driver of the vehicle is also a commuter and does not need to be paid.

Pay as you drive insurance

Pay as you drive insurance is an initiative that allows vehicle premiums to be based directly on how much a vehicle is driven. This type of incentive reduces the number of unnecessary trips, and encourages individuals to choose other modes when possible.

- Implement and maintain carpooling and park and ride facilities in strategic locations throughout the HRM
- Encourage initiatives that promote behavioural changes towards the use of shared transportation modes, reducing the reliance on single-occupant vehicles.

Reduction in residential taxes with proof of no car ownership and/or a membership to carshare or use of transit.

Parking Strategies and Incentives

- Residential parking permits throughout the peninsula and other growth areas will reduce the motivation to bring cars into already high traffic areas.
- Free parking facilities for carpool riders, members of carsharing and bikesharing programs, and reduced parking rates for owners of fuel-efficient vehicles

Active Mobility Options

Build Safe Cycling Connections

A comprehensive active transportation network is a plausible alternative to single-occupancy vehicles for commuting and other non-work trips. The municipality must adopt a long-term plan to improve cycling infrastructure, and connect it to the overall mobility network.

Actions:

- Residents require a well-maintained and functioning bicycle path network. The immediate expansion of a city-wide network of well-marked bike lanes separated from traffic is well overdue.
- Bridge access is crucial and will provide safer access for cyclists and pedestrians, as the current infrastructure is dangerous and not accessible for most people.

Walking - Improve Pedestrian Path Network

Public realm initiatives and safe, dense communities will facilitate walking.

Actions:

- Creation of pedestrianized zones within the city helps businesses, and enhances retail and other activities. It is important to create a pedestrian path network destined to these activity centres.
- Sufficient sidewalk space and a pleasant public realm design streetscapes encourage more people to choose walking over driving.
- Required action plans by developers must be put in place to assess pedestrian connectivity with the existing transport network.
- Relocated push-button pedestrian crosswalk access (or remove them altogether) as many are inaccessible to those with limited mobility (many are hard to reach)
- Address problem crosswalks and intersections
- Make sidewalks more accessible to those with limited mobility
- Prioritize snow and ice clearing on key pedestrian routes

Better Integration of Private Sector Services**Actions:**

- Better integration of private sector services into the mobility system, i.e. taxis, tour buses, use of the waterways (water taxis, smaller, faster ferries) to enhance mobility in the municipality.
- Develop a peak-hour truck delivery and loading strategy within Downtown Halifax and Downtown Dartmouth to ease traffic congestion.
- Further explore the feasibility of a commuter rail service using existing rail infrastructure, in partnership with private sector stakeholders, such as Canadian National Railways (possibly, private-public partnership funding mechanism).

5. Advance Mobility Goals through Innovation

It is important to continually improve our understanding of mobility issues in order to implement policies that are forward-looking and technologically innovative. State of the art Intelligent Transportation Systems (ITS) will play an important role in the development of comprehensive mobility system in order to benefit the consumer making it more convenient, reliable and comfortable to use. Setting technological goals will provide a way for policy-makers to evaluate the system and propose plausible alternatives for any future modifications. Furthermore, the municipality must employ an extensive monitoring and evaluation program to evaluate performances of the mobility system that meets sustainability goals.

Actions

Intelligent Transportation Systems (ITS)

- Automatic Vehicle Location (AVL) technology utilizing a GPS locator system for all transit vehicles in the system would facilitate addressing reliability issues of transit services in HRM. The municipality implemented a limited-scale AVL system, which needs to be expanded to take advantage of full benefits of this ITS application.
- Expanding Transit priority signals at major intersections would allow for the prioritization of buses, providing fast and efficient service throughout the system. In addition, Queue jumps in various configurations would allow transit vehicles to bypass traffic either before or after traffic lights at busy and often congested intersections
- Real-time Passenger Information Systems have proven to be a major feature of successful transit systems. Real-time information should be provided to passengers directly through Internet as well as on screens at all major transit terminals – this will attract more transit riders, reducing idle waiting at transit stops and improve satisfaction
- Enhance amenities in the buses, for example wireless internet service provision to encourage choice riders, especially on higher-order transit vehicles, such as MetroLink
- For road traffic, automatic vehicle detection technologies could be employed to identify real-time congestion conditions, and disseminate the information to the public
- In bus use of visual and audio tools for the visual and hearing challenged.
- Using technology to evaluate the ridership and be able to redefine the routes and times accordingly.

Monitoring the transportation system using technologies

- Continuous monitoring of the transportation system is crucial to maintain service standards. For example, implementing automatic traffic monitoring, and creating long-time profiles of traffic patterns in strategic locations (for example, entry and exit points of the peninsula).
- Undertake assessments of travel behaviour at regular intervals for evaluating how the mobility system is performing to achieve sustainability goals. Computer-assistant Telephone Interviewing (CATI) System could be used to increase efficiency and improve the quality of the data.
- Invest with partners like the universities, in transportation research innovations, developing modelling capacity to forecast travel demand, emission and energy usage.

Innovation in Mobility

- Advance innovation in sustainable transportation initiatives through the use of federal and provincial transportation grants and funding, and through raising local revenues from higher parking rates (cost to park and fines for parking infractions), residential permitting, and transit fare revenues
- Continue to invest in, and develop new programs and initiatives like CarShare, FlexFleet system, rural transit using school buses, Active & Safe Routes to School programs (School Travel Planning, Making Tracks, etc.), FleetWiser, DriveWiser, and Drive Less, which aim to improve mobility options for residents, reduce the number of single occupant vehicle trips, and reduce the environmental and social impact of mobility in the HRM.
- Provide financial incentives, such as location-efficient mortgages, tax rebate for residents who choose not to own a vehicle, tax rebate for CarShare and BikeShare members, based on a yearly minimum usage level
- Underutilized shopping centre parking lots could be integrated with park-and-ride schemes in the rural commutershed centres. These commercial centres often act as transit hubs in rural and suburban areas, and could provide for a seamless connection to bus rapid transit. Park-and-ride lots in commercial areas would also allow for trip-chaining by reducing the number of daily trips taken by people

6. Commit to Continuous Collaboration

A successful mobility strategy should be the outcome of a collaborative process of multi-stakeholder engagement. Public-private partnerships between all levels of governments, non-profit organizations, private enterprises, academic institutions and research groups, create a strong foundation of shared knowledge which is key in generating new ideas and advancing public policy within the HRM. A regional mobility strategy should be a shared and inclusive vision, and one that propagates the continual improvement of the municipality's transportation system to better serve the general public.

Actions

- Build collaborative partnerships among public agencies, private and non-profit organizations, and academic institutions to promote further interactions among transportation engineers, planners, advocacy groups, transport industry, researchers, and citizens.
- Establish strategic partnerships with university researchers to receive benefits from research products, and create knowledge-base for informed decision-making (see case study of the University of Toronto and research collaboration).
- Establish a Mobility Advisory Board that incorporates both public and private sector stakeholders

- Work with the Provincial government to readdress the “service exchange” that occurred in 1995 that made transit exclusively a Municipal responsibility.

Work to ensure that Provincial level transportation decisions align with Municipal directions. For example, the establishment of the Ingramport connector between exits 3 and 4 may inadvertently open and unplanned for growth centre. If the Province feels that another road is needed to accommodate safety concerns, additional measures

Conclusion

If the above recommendation of implementing the six Big Moves Halifax will significantly reduce its dependence on personal use vehicles.

Some of the highlights:

1. Focused land use priorities with specific objectives, with annual measurement of progress toward these land use objectives.
2. Reallocate transportation investment of mega projects like the third bridge into mobility solutions. This investment must include both staff time and money for infrastructure. The funding must be predictable, and a budget priority.
3. Facilitate collaboration between public and private sectors to provide mobility options.
4. Rethink the way we use vehicles and educate residents on the mobility options. These options include carpooling, rideshares, carsharing and taxi services.
5. Establish an arm’s-length transportation authority that will coordinate the various departments and levels of government that deal with mobility issues, preventing “siloeing”.
6. Develop community design bylaws to ensure that cyclists, pedestrians, and vehicles are priorities when developing neighbourhoods. This includes the provision of end-of-trip facilities.
7. Restructure governmental policies to ensure that all mobility modes are considered in decision making, rather than the vehicles only.
8. Upgrade transit with state of the art technology to easily facilitate reliability, and quickness and comfort and to evaluate routes and times.
9. The Provincial government must reintroduce itself to mobility planning rather than highway planning.

Appendix A

Public Transit

It's More Than Buses Pocket Guide to fast, frequent and reliable public transit for HRM (Planning & Design Centre, FUSION Halifax & Downtown Halifax Business Commission, 2012)

Way Forward for Transit in Nova Scotia <http://www.ecologyaction.ca/content/way-forward-transit-nova-scotia>

Provincial Community Transit Strategy (Community Transit Nova Scotia, 2012)

General Sustainable Transportation

The Sustainable Future Of Nova Scotia: Transportation Solutions Workshop report (Cities & Environment Unit & Mobycon for the Nova Scotia Government, 2012)

Green Mobility Strategy Executive Summary

<http://www.ecologyaction.ca/files/images/file/Transportation/ExecutiveSummary%20GMS.pdf>

Green Mobility Strategy (full report)

<http://www.ecologyaction.ca/files/images/file/Transportation/GMG.pdf>

Municipalities for Green Mobility: A guide to action on sustainable transportation in Nova Scotia

http://www.ecologyaction.ca/files/images/file/Transportation/MGM_Toolkit_5Nov2010.pdf

Our HRM Alliance: To make Halifax Regional Municipality a more liveable and more sustainable place to reside, to work and to play (using 5 key objectives, one of them being: Robust transportation systems. Active transportation and transit must be prioritized.

<http://www.ourhrmalliance.ca/index.php>

Shifting to Sustainable Transportation: A Sustainable Transportation Framework for HRM (Shifting to Sustainable Transportation partnership, 2009)

Shaping Healthy Communities (Heart & Stroke Foundation, 2010)

Transportation Demand Management Plan For Dalhousie University (IBI, UrbanTrans, 2011)

Bikeways Plan for the Urban Halifax Institutional District

Active Transportation

Active Transportation 101: Bringing AT to Your Community and Developing an AT Plan (Ecology Action Centre and the Nova Scotia Department of Health and Wellness, 2012)

School Travel Planning summary http://saferoutesns.ca/images/uploads/STP_one-pager_-_NS_version_2012-13.pdf

Review of International School Travel Planning Best Practices

<http://saferoutesns.ca/images/uploads/STP-Best-Practice-Final.pdf>

Child- and Youth-Friendly Land-Use and Transport Planning Guidelines for Nova Scotia

<http://www.kidsonthefmove.ca/Provinces/NS.htm>

School siting discussion brief (Reducing Childhood Obesity by Increasing Opportunities for Active Transportation)

http://saferoutesns.ca/images/uploads/ASRS_full_12pgs_nov14_web.pdf

Nova Scotia Pathways for People: Framework for Action (NS Health Promotion & Protection, 2006)

A story of the bridges or “What are the most efficient options for moving people?”

Both of the two bridges that cross the Halifax Harbour are operating at or near capacity. The Bridge Commission released a report detailing the cost of a third harbour crossing – at minimum the cost was \$1 billion. That is an investment of \$50 million per year for 20 years if the Municipality alone financed the operation in its entirety. In 2010-2011 the operating budget for Metro Transit was \$74.8 million¹. If HRM invested the \$50 million a year it would need for a new bridge it could almost double the transit service it provides. Other uses of that \$50 million could be: \$4 million could be used to purchase a fleet of 200 electric car share cars taking 4000 cars off the roads and save money for the residents to spend elsewhere in the local economy and reduce GHGs. For \$50 million per kilometre¹, HRM could begin servicing the community with a brand new light rail system. Using existing rail lines, HRM estimates that for \$25.85 million a rail service between Bedford Mill Cove and the Halifax Via station could be established with an operating expense of \$4.25 million¹. The harbour, Bedford Basin and the Northwest Arm could be used more with infrastructure to service various public and private innovations.

If HRM continues on the path it has followed for the past 50 years it will need to spend:

- \$1 billion on a third harbour crossing (either a bridge or a tunnel)¹.
- \$16 million to expand congested Bayers Road not including land purchases¹.
- At least \$291 million to expand the entire highway 102 corridor.
- \$2.25 billion for infrastructure improvements¹.

Green Mobility Strategy: The purpose of the Green Mobility Strategy is to facilitate increased provincial investment in sustainable passenger transportation in Nova Scotia. There are eight key recommendations in the Strategy, with suggested action steps. The process used to develop and prioritize the recommendations involved extensive research, convening and gathering input from a citizen advisory committee and public consultations in nine Nova Scotia Communities. <http://www.ecologyaction.ca/files/images/file/Transportation/GMG.pdf>

Appendix B

- [1] McCormick Rankin Corp. Cross Harbour Traffic Needs Assessment. Prepared for Halifax Dartmouth Bridge Commission March 2008. P.43
- [2] Halifax Regional Municipality. Bayers Road/Highway 102 Corridor Study, Report to Transportation Standing Subcommittee June 1, 2011. P. 3
- [3] CBC News. CN, HRM bridge dispute heads to court. Nov 2, 2011. Retrieved from <http://www.cbc.ca/news/canada/nova-scotia/story/2011/11/02/ns-cn-bridges-court.html> on June 15, 2012
- [4] Halifax Regional Municipality. (2009). 2009/10 Council Focus Area Report: Infrastructure. P. 5
- [5] Tim Bousquet. (2012). Washmill underpass celebrated. The Coast. Retrieved from: <http://www.thecoast.ca/RealityBites/archives/2012/01/16/washmill-underpass-celebrated> on June 16th, 2012.
- [6] Tim Bousquet. (2011). Washmill underpass boondoggle swept under rug. The Coast. Retrieved from: <http://www.thecoast.ca/RealityBites/archives/2011/04/21/washmill-underpass-boondoggle-swept-under-rug> on June 16th, 2012.

Parking fees, road tolls, the possibility of a Municipal gas tax and tolls collected from bridge harbour crossings should all become part of a mobility fund that is directly and specifically allocated to improving the mobility network.

- According to a 2011 study by the University of South Florida[7], fewer young people are getting their drivers' licenses. Many of them figure they will never be able to afford a car and consider driving to be hurting the environment and their health.

[7] University of South Florida and Centre for Urban Transportation Research. (). Exploring Changing Travel Trends. Retrieved from: <http://onlinepubs.trb.org/onlinepubs/conferences/2011/NHTS1/Polzin2.pdf> on June 16th, 2012.