

## A NEW VISION FOR URBAN TRANSPORTATION

In 1993 the TAC Urban Transportation Council first published this **New Vision for Urban Transportation**. It proposes a 30 year generic vision for Canadian urban areas that can be tailored to fit to local conditions. The vision is supported by 13 decision making principles which point the way to a more desirable future. They call for significant change from past practices in terms of land use and urban structure, the role of single occupant autos relative to other modes, and transportation funding.

Since its publication, the vision has been endorsed by a variety of local governments as well as provincial and national organizations (see the box on page 6), and its principles are starting to appear in the latest municipal plans. The vision has been cited by the Organization for Economic Cooperation and Development as an example of "best thinking on environmentally sustainable transportation in Canada". The National Round Table on the Environment and the Economy, has called it "perhaps the most influential (sustainable transportation) vision statement currently in Canada".

Today, municipal leaders are challenged with delivering livable and sustainable cities in the face of shrinking resources. Since transportation pervades almost every aspect of urban life, it is part of the challenge and must be part of the solution. In that regard, the vision and its principles still provide a valid guide. Therefore this reprint of the original 1993 briefing is offered as a service to all who share in the responsibility for tomorrow's urban transportation systems.

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### CURRENT TRENDS ARE LEADING TO URBAN TRANSPORTATION SYSTEMS WHICH DO NOT MEET NEEDS AND ARE NOT SUSTAINABLE...

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Urban areas exist to serve the economic and social needs of their residents. Transportation is essential to meet those needs because it both serves and helps shape urban development.

The wealth of nations is largely generated in cities and will become more so in the new high technology, information based, globally competitive economies of the future. Urban transportation systems will have to be very productive, efficient, cost effective and accessible to allow cities to generate the wealth needed for quality of life improvements, social services, infrastructure, environmental protection and transportation itself. To achieve that goal will require new approaches to land use, urban design, transportation planning and financing. Continuation of current trends will not work.

#### Land Use and Urban Design

Past practice has been to divide cities into homogeneous, single use areas of relatively low density. Streets are seldom pedestrian friendly. Cyclists and goods carriers must usually make do with whatever roadway space is available. Shopping malls are far from home or work and require large areas, mostly for parking. Suburban or bedroom communities are designed for single family

houses with large lots on cul-de-sacs or winding roads.

The result of such practice is to increase auto travel and maximize travel distances. For the majority of urban residents the auto is not a luxury, but a necessity to move between home, work, shopping, schools, recreation, etc. In most cases walking, cycling and even transit are not viable options.

Overwhelming dependence on the private automobile contributes to urban sprawl, losses in prime farmland, excess consumption of fossil fuel, air and noise pollution, and traffic congestion.

#### Transportation

Per capita automobile ownership is increasing and the average number of occupants per auto is decreasing. Transit serves only a small percentage of total demand and in some areas its market share is decreasing. Trucks are forced to stand in traffic lanes because in many cases off-street loading facilities are not provided. Goods distribution is seldom considered as part of the total urban transportation system; nor is parking usually planned and coordinated to be part of the solution. The potential for cycling cannot be fully realized without special provisions for sharing road-space.

Under heavy traffic loads, roadways and bridges are wearing out faster than they can be repaired with present maintenance budgets. Land and money for new road construction are becoming scarce.

Traffic congestion, inefficiencies and added costs of present transportation systems are becoming economic, financial and social liabilities for the whole urban area. Cities are less able to compete domestically and internationally. Deferred maintenance is always more costly. Families spend more time on the road and less time together. People are exposed to greater health risks.

#### Financing

Municipal and provincial budgets have been the traditional sources of financing urban road construction and maintenance as well as transit subsidies. Federal transfer payments to the provinces and provincial grants to municipalities are decreasing relative to needs as a result of recession, a weak economy, government debt service charges and other factors.

Municipalities are faced with increasing costs for social and other services, decreasing revenue and citizen resistance to higher taxes. Something has to give, and it is often the municipal transportation budget.

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## ***TO PROVIDE TRANSPORTATION SYSTEMS THAT BETTER SERVE THE ECONOMIC AND SOCIAL NEEDS OF URBAN RESIDENTS AND PROTECT THE ENVIRONMENT, A NEW VISION IS NEEDED...***

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### **A Generic Transportation Vision**

This BRIEFING proposes a generic urban transportation vision suitable for large and medium sized urban areas in Canada. The vision is supported by a series of principles or directions, designed to change past trends and result in future cities that are more:

- economically competitive
- socially desirable
- environmentally friendly

and allow:

- greater mobility
- easier access to a wider choice of transportation options

while recognizing:

- economic realities
- the constraints of the existing urban structure.

First and foremost among these principles is the need to change land use and urban design practices. Achieving this part of the vision will therefore require a long term program of gradual change.

### **Unique Local Transportation Visions**

With the generic vision as a starting point, each urban area is encouraged to develop its own unique urban transportation vision by adapting the principles to reflect local conditions. Specific visions will differ among urban areas reflecting their different sizes, land constraints, development patterns, densities, growth rates, etc.

### **Urban Area Visions**

Each specific transportation vision should be developed within the context of an overall urban area vision – defined by an urban development plan with complementary design objectives. That plan should be rooted in reality while offering adequate lifestyle choices; it should distinguish between real needs and less essential “wants” when allocating resources.

It must strike a balance between the requirements of the community, the economy and the environment. Compatibility between land use and transportation is central to that balance. Therefore, while transportation is a ma-

jor part of an urban area vision, the urban vision is much broader.

### **The Need for Cooperation and Leadership**

What kind of urban areas do we want to see in the future? The generic urban transportation vision in this BRIEFING is based on the belief that a more compact form of urban development is more desirable than a less compact form in order to:

- protect and enhance the environment
- conserve natural resources including energy and land
- provide a wider and more balanced choice of accessible and affordable transportation services
- better response to the needs of the majority of residents.

This form of development represents a significant departure from past practice. To achieve it will require the active cooperation of many interest groups. **Political leadership, based on informed public support, will be critical.**

## ***A GENERIC VISION FOR URBAN TRANSPORTATION***

*It is the year 2023:*

- A long term urban development plan has been approved. It emphasizes multi use town centres and high density, mixed use along connecting corridors. Transit has funding and operating priority in those corridors.
- Short-medium term community/neighbourhood plans have been approved. They emphasize compact, mixed use communities based on pedestrian, cycling and transit friendly design.
- Transit, highways, arterials, parking and truck routes are planned and coordinated across the urban area.
- The percentages of trips made by walking, cycling, transit and high occupancy automobiles are all increasing; the percentage of trips made by single occupant automobiles is decreasing.
- The average distance and time for peak hour commuter travel is decreasing.
- An area wide parking strategy is in place and enforced.
- There are very few places which still require on-street goods transfer.
- The physically challenged enjoy universal access to public transport facilities and services.
- Roads and bridges are in a good state of repair.
- Air pollution from motor vehicle sources is declining.
- Urban transportation infrastructure and services are adequately funded from stable and sustainable revenue sources.
- Political leaders have the support of a well informed public when making decisions on urban development and transportation systems to serve the area.

### 1. Urban Structure and Land Use

#### Plan for increased densities and more mixed land use

This principle will reduce dependence on the private auto, shorten trip lengths and encourage modal shifts to walking, cycling and transit. It can be applied at both the macro scale (the whole urban area) and the micro scale (neighbourhood and communities within the urban area). It includes techniques such as intensification, infill and neo-traditional urban design.

The **method at the macro scale** requires the creation of a long term **urban development plan** (30 to 50 years) to provide a context for future growth. The plan should blend economic, social and environmental aspirations, and integrate land use and transportation into a coherent whole. **Elements** of the plan may include:

- development of major multi use town centres in suburban areas, integrated with regional transit.
- high density, mixed use development along major transit corridors.
- transit funding and operating priority where densities and demand levels make this possible.
- a grid pattern of highways and arterials to accommodate truck traffic and passenger demand that cannot be handled by walking, cycling or transit.

**Methods at the micro scale** require the creation of short to medium term **community/neighbourhood plans** (5 to 10 years) to provide direction to decision makers on development applications. **Elements** may include:

- development of more compact, mixed use communities offering a range of housing types, with pedestrian friendly urban design as a prime objective.
- reurbanization of municipal core areas.
- a transit friendly grid pattern of local streets.
- pedestrian, cycling, transit and truck friendly designs including sidewalks and footpaths, cycle lanes and paths, higher densities close to transit stops and off street loading.

For further details on these subjects see Reference 1.

### 2. Walking

#### Promote walking as the preferred mode for person trips.

Walking is a part of every person trip. Increased walking is healthy, environmentally friendly, and reduces demand on road and transit systems. The goal is to improve the quality of the walking environment through pedestrian friendly streetscapes and make walking a more attractive choice. **Methods** include:

- increased densities and mixed land use to bring origins and destinations closer together.

- design of public rights-of-way to encourage pedestrian use and not just motor vehicle use (eg: adequate provision and maintenance of inter-connected sidewalks and foot paths).
- protection from inclement weather.
- adequate lighting for safety and security.
- accessibility for the physically challenged.
- street level establishments close to the sidewalk.

### 3. Cycling

#### Increase opportunities for cycling as an optional mode of travel.

Cycling is part of a total urban transportation system and, like walking, is healthy and environmentally friendly. Increased opportunities for safe cycling can best be achieved through urban and community plans, and through provision of facilities. **Methods** include:

- cycle lanes on the public right-of-way and separate cycle networks.
- the needs of cyclists considered in the preparation of community/neighbourhood plans.
- storage facilities at transit stations and on transit vehicles to encourage bike and ride.
- storage facilities in the downtown core, suburban town centres, and other key locations.
- provision of cycle facilities as a condition of development.

### 4. Transit

#### Provide higher quality transit service to increase its attractiveness relative to the private auto.

More attractive service and increased market share for transit are essential elements in achieving this vision. Better transit can reduce reliance on the single occupant automobile. Current demographics, existing urban designs and funding requirements make this a challenging goal, but many things can be done – especially if improvements are aimed at specific market segments (see Reference 2).

The **key method** lies in new urban structure and land use planning approaches as described in Principle #1 above. **Other methods** include:

- develop a hierarchy of transit services (primary on controlled access ways, secondary on exclusive bus lanes or HOV lanes, a feeder network and auxiliary facilities such as park-and-ride).
- give transit funding and operating priority (eg: transit or HOV lanes).
- improve comfort, security, frequency, on time reliability, geographic coverage, access for the physically challenged, and public information services.
- encourage park-and-ride, kiss-and-ride and bike-and-ride by providing appropriate facilities.

- integrate transit stations, schedules and fares in areas with more than one transit system.
- introduce preferential income tax treatment for transit use (eg: make employer provided transit passes a non-taxable benefit).

## 5. Automobile

### Create an environment in which automobiles can play a more balanced role.

The private automobile is the dominant mode of urban transportation and will remain so for the foreseeable future. Current urban structures and land use practices, coupled with the comfort, security and convenience of the auto make this inevitable. However, inefficient auto uses (eg: single occupant vehicles to destinations served by transit) should be reduced, and a more balanced transportation system could be achieved through a combination of **methods**:

- reduce travel demand by bringing origins and destinations close together through higher densities and mixed land use.
- design new suburbs, major developments and redevelopments to be more walking, cycling and transit friendly.
- employ traffic management techniques (including HOV lanes) to achieve more efficient use of roads.
- encourage flexible working hours and ride sharing programs.

## 6. Parking

### Plan parking supply and price to be in balance with walking, cycling, transit and auto priorities.

Parking is an important part of the transportation infrastructure and its provision should be coordinated throughout the urban area much like roads or transit. It is critical to the financial health of retail activities and can complement public transit. In order to make parking part of the solution to traffic congestion problems, it must be both planned and controlled.

The **key method** is to develop a comprehensive on-street/off-street parking strategy including short term, long term, park-and-ride, public and private, supply and price considerations. **Elements** of that strategy may include:

- detailed studies to determine current and future parking supply and demand.
- emphasize short stay over long stay parking downtown.
- on-street parking priced at a higher rate than off-street.
- on-street parking limited to off-peak periods.
- off-street neighbourhood parking structures incorporating retail and commercial uses.
- park-and-ride facilities integrated with the transit system.
- municipal enforcement to ensure a balance of parking supply with demand.

## 7. Goods Movement

### Improve the efficiency of the urban goods distribution system.

Efficient goods movement is vital to the economic health and competitiveness of an urban area, but at present many inefficiencies exist. Added costs are passed on to truckers in the form of decreased profits, to consumers through higher prices and to the public with increased congestion. **Methods** to improve goods movement efficiency include:

- cooperative efforts by the trucking industry to give municipalities a better understanding of how to meet industry needs.
- consideration by municipal authorities of the total goods distribution system in all stages of urban planning and development (ie: urban development plan, community/neighbourhood plans, site development plans).
- require off-street loading facilities or zones for all new developments.
- encourage industry to make more use of consolidated delivery services to congested areas.
- improve the truck route network through designated routes, better road geometrics, stronger pavement, etc.

## 8. Inter-Modal Integration

### Promote inter-modal and inter-line connections.

Each mode and each carrier – whether for passengers or goods – should be conveniently integrated with the rest of the urban transportation system. Special planning efforts are required to achieve this. Benefits include more attractive transit services and more efficient goods movement. **Methods** include:

- in the urban development plan, design the location of transit connections to be quick, easy and weather protected.
- in community/neighbourhood plans and site developments, minimize walking distances to transit.
- promote gateway/mobility centres.
- integrate fares and services between transit systems.
- consider inter-city links in developing urban area terminals for passengers and goods.

## 9. New Technology

### Promote new technologies which improve urban mobility and help protect the environment.

New technologies can be used to reinforce desirable changes advocated in this vision. Some **examples** are:

- telecommunications, to reduce peak period travel demand and lessen the strain on the road system.
- Intelligent Vehicle Highway Systems and computerized signal control, to increase the efficiency of existing road systems.



- vehicle locating systems, to allow for demand responsive transit.
- enhanced pollution control equipment and standards for all motor vehicles, to slow the increase in air pollution.
- fuel substitution and increased fuel efficiency.

## 10. System Optimization

### Optimize the use of existing transportation systems to move people and goods.

Improving urban mobility requires a determined effort to make the most of the expensive transportation infrastructure already in place. Minor modifications (lane widening, turning bays, etc.) may be appropriate, but very expensive items (new freeways, bridges tunnels, mass rapid transit, etc.) will have to wait in favour of cheaper options with better payoffs. **Methods** include:

- treat the road system as a multi use public facility which recognizes the needs of pedestrians, cyclists, transit, high occupancy vehicles, autos and trucks.
- make operational improvements through transportation management.
- promote ways to flatten traffic peaks and shift modes through demand management.
- enhance transit services.
- implement supportive parking policies.

## 11. Special User Needs

### Design and operate transportation systems which can be used by the physically challenged.

The number of physically challenged persons will grow in the future as the population ages. Transportation services must be accessible to them. **Methods** include:

- use low floor transit vehicles.
- provide cost effective para transit services (see Reference 3 for an example).
- establish by-laws for minimum numbers of off-street parking stalls for the physically challenged.
- use curb cuts, ramps and other designs to improve access.
- provide for special vehicle access in parking structures.

## 12. Environment

### Ensure that urban transportation decisions protect and enhance the environment.

The two largest sources of air pollution in most Canadian urban areas under normal conditions are motor vehicle emissions and space heating. Improvements in air quality from reduced motor vehicle emissions can be achieved provided there is a determined effort to do so. The first ten principles in this vision all work toward that end. The goal is to strengthen these trends and build environmental considerations into every stage of decision making. **Methods** include:

- develop environmental codes of practice based on a national environmental policy (Reference 4).

- require environmental considerations to be an integral part of the urban development plan, community/neighbourhood plans and site development approvals.
- give funding priority to the most environmentally friendly transportation options.
- consider mandatory regular inspections of motor vehicle emission control systems.
- encourage the development and use of environmentally friendly power sources for vehicles.

## 13. Funding/Financing

### Create better ways to pay for future urban transportation systems.

Realistic means must be found to provide adequate and sustaining sources of funds for new, expanded and properly maintained urban transportation infrastructure and services. Current funding/financing mechanisms do not meet this need.

Funding should be:

- stable over time.
- predictable in magnitude.
- “transparent” (open and easily understood by decision makers and the public).
- increasingly derived from users in proportion to benefits received.
- dedicated by law to urban transportation system enhancements.
- designed to foster an urban transportation system operating at the lowest possible total cost.

There are various options for achieving these funding goals. Differing perceptions surround each, and no consensus has yet emerged. Some suggested **methods** include:

**Redistribution of existing taxes.** Some believe that taxes currently levied on the transportation sector could substantially help meet funding needs if they were allocated or dedicated to transportation rather than being treated as general revenues. The federal excise tax on motor vehicle fuel is often cited in this context. Others suggest that it is unrealistic to propose such a fundamental change in government tax policy.

**New taxes.** Dedicated fuel taxes, licence fee surcharges and frontage levies are proposed by some as ways to raise money for urban transportation. Others argue that these are blunt instruments that do little to encourage more efficient travel behaviour, and that existing tax revenues should be more equitably distributed before new taxes are imposed.

**Roadway pricing.** Proponents say that this can raise money, flatten demand peaks, encourage modal shifts and lead to more efficient use of roadways. Opponents say that roadway pricing is a punitive measure against private motorists who believe they already pay their fair share.

Although opinions vary on the best funding methods, there is widespread agreement that money must be spent wisely on improved urban transportation systems, and that benefits (less congestion, improved mobility, greater efficiency) will outweigh costs.

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## ***POLITICAL LEADERSHIP, SUPPORTED BY AN INFORMED PUBLIC, IS NEEDED TO MOVE AHEAD...***

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Creating and implementing a new urban transportation vision will be an institutional and social challenge, requiring the cooperative efforts of all key players. The final vision will naturally be a compromise – a balanced blending of the often conflicting goals and aspirations of many vested interest groups.

**Someone must take the lead in this process and it is logical that municipal elected officials do so.** They should be supported and encouraged by the appropriate provincial departments and their own urban planning and transportation professional staffs.

Several changes to current institutional arrangements and practices may be required to develop and implement the new vision:

- Most municipal departments are structured on vertical lines (planning,

transportation, transit, sewer, water, etc.). New methods for horizontal communications may be needed.

- Where more than one municipality or more than one level of government has jurisdiction in an urban area, a mechanism will be needed to coordinate and integrate their efforts across the region, at least for planning purposes.
- Public education will be a major key to success. Without it political leaders will not have the mandate to move in the right direction. This can be a very time consuming and expensive exercise, but it is necessary.
- Checks must be built into the decision making process, to ensure that day-to-day decisions are compatible with the vision and its principles.

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### **References:**

- (1) Transit – Supportive Land Use Planning Guidelines, Ontario Ministries of Transportation and Urban Affairs, April 1992, ISBN 0-7729-9734-9
- (2) Modal Shift to Transit Project, Canadian Urban Transit Association, 1992
- (3) Demonstration Project: DATS Brokerage Revisited, Edmonton Transit, 1989
- (4) Environmental Policy and Code of Ethics, Transportation Association of Canada, 1992.

### ***ENDORSEMENTS FOR THE VISION***

#### **Local**

- Halifax Regional Municipality
- Regional Municipality of Ottawa-Carleton
- Municipality of Metropolitan Toronto
- Regional Municipality of York
- Regional Municipality of Hamilton-Wentworth
- City of Regina
- Greater Vancouver Regional District
- District of Saanich

#### **Provincial**

- Association of Municipalities of Ontario
- Saskatchewan Urban Municipalities Association
- Ontario Transportation and Climate Change Collaborative

#### **National**

- Federation of Canadian Municipalities
- Transportation Association of Canada
- Canadian Institute of Planners
- Canadian Institute of Transportation Engineers
- Canadian Urban Transit Association

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## ***THE FUTURE...***

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For the past 18 months the TAC Urban Transportation Council has carefully considered the most practical means of ensuring that future transportation systems:

- are more accessible and increase mobility.
- reduce pollution, frustration and waste.
- make the best use of available resources.
- support the development of urban areas that are economically competitive and socially desirable.

A NEW VISION FOR URBAN TRANSPORTATION is its answer. The vision approach calls for a long term but meaningful program of action and change – one which is beyond the scope of the Council to implement.

However, the Council's mandate does allow it to act as a catalyst, to provide a forum, to help the responsible parties work together toward common goals. The TAC Urban Transportation Council is prepared to do this in the months and years ahead. Your participation will be encouraged and welcome.

**TAC is a national, multi-modal, multi-jurisdictional organization promoting the provision of safe, efficient, effective and sustainable transportation services in support of Canada's social and economic goals.**

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This Briefing was prepared by the TAC sponsored **Urban Transportation Council** and assembled by **John Hartman**, Council Secretary and member of the TAC Secretariat staff. Permission to reproduce or quote is granted, provided the source is acknowledged.

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