MOVING OTTAWA

THE MAYOR OF OTTAWA'S TASK FORCE ON TRANSPORTATION

FINAL REPORT ◦ JUNE 1, 2007

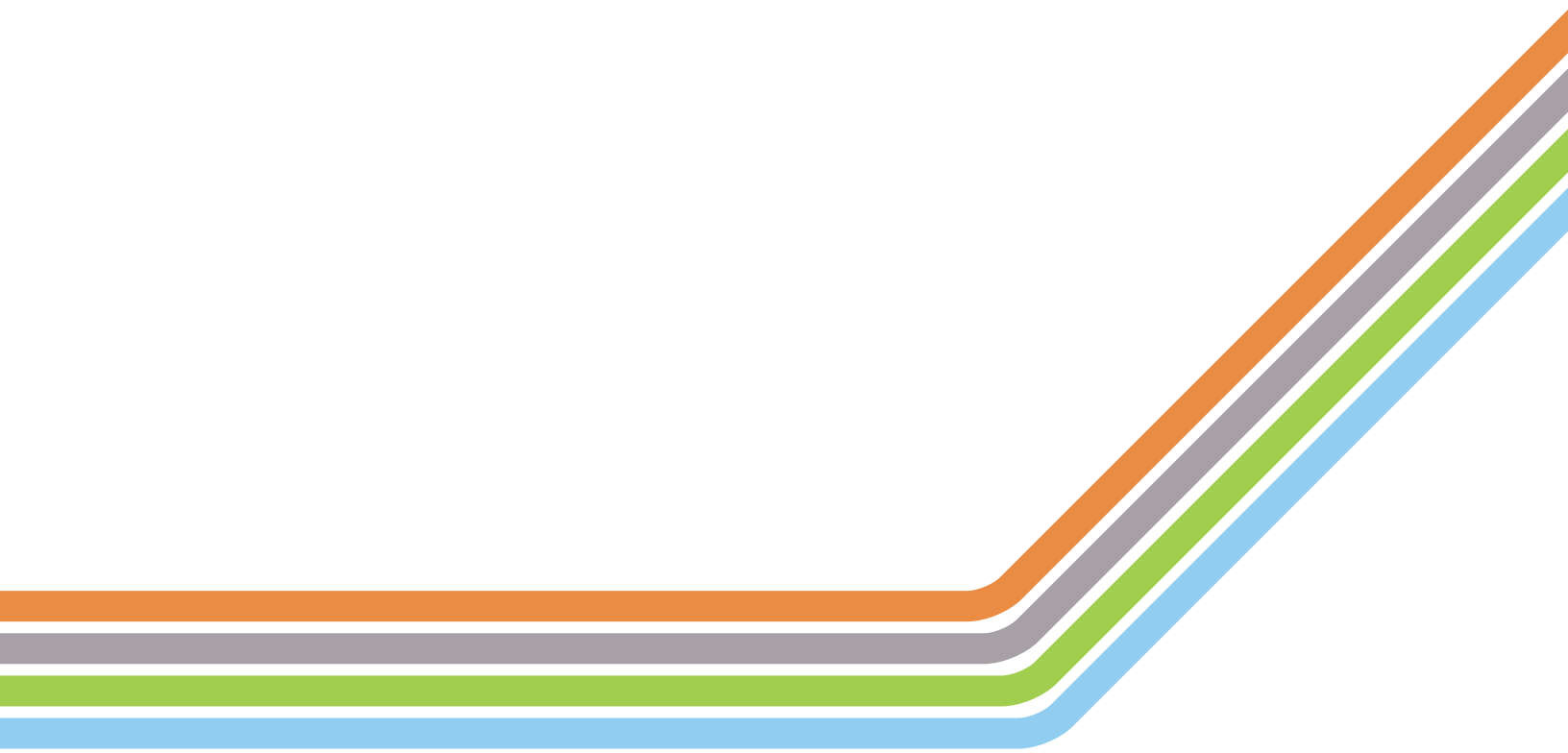


Table of Contents

1. Message from the Chair

Ottawa is at a critical point in its history. Decisions must be taken now if the City is to have the transportation infrastructure it needs to serve all of its citizens.

The Mayor's Task Force on Transportation met on a weekly basis after its mandate was issued in January 2007 to give advice to Mayor Larry O'Brien on the way ahead. The terms of reference were extremely broad and far-reaching, and the Task Force members, all of whom were volunteers, welcomed the opportunity to serve on behalf of the citizens of Ottawa. Although the Task Force was constrained by time and resource limitations, this actually encouraged a strategic focus, leading to a vision for the future of transit in the region. Our work concentrated on core issues that resulted from Council's decision to cancel the former North-South Light Rail Transit project. However, we wish to underscore the fact that our recommendations will require further study and expert evaluation.

The Task Force believes that the citizens of Ottawa expect key decisions to be taken within the mandate of the current Council (2006-2010) that will address the City's growing rush hour congestion problem by initiating an environmentally sustainable transit solution. We are mindful of Council's decision to update the Rapid Transit Expansion Study and support this initiative. However, the Task Force believes that our recommendations for immediate implementation are compatible with this review. The Task Force also believes that to put major decisions on hold pending the update of the study would frustrate Ottawa's citizens.

The Task Force recommends a comprehensive region-wide rapid transit system to accommodate present demand and future growth, built on the strengths of the Transitway and the O-Train. The service would be the responsibility of a new transit authority. Our plan for the construction of a downtown rail tunnel would address the problem of bus congestion in the core and give the City the opportunity to restore Union Station as Ottawa's main transportation hub. These improvements will be innovative, incremental, affordable, environmentally sustainable and fully consistent with the City's Official Plan and Transportation Master Plan.

In keeping with its mandate, the Task Force report is advisory in nature. All decisions with respect to future transit and transportation initiatives in Ottawa are the domain and responsibility of City Council. The Task Force recommendations are made in the spirit of cooperation and in the hope that Ottawa will grow and prosper in the interests of all its citizens.

Respectfully submitted,

The Honourable David Collenette, PC
Chair
Mayor's Task Force on Transportation
June 1, 2007

2. Executive Summary

Canada's capital city deserves a transit system that is enjoyable to ride, accessible, efficient, environmentally sound and developed in accordance with the principles of smart growth. Ottawa's bus rapid transit (BRT) system has served the city well, but demand from current and anticipated growth requires more focus on light rail solutions. Cities across Canada have benefited from light and heavy rail transit. Canada's capital deserves no less. Rail technology, now nearly 200 years old, is being adapted to the modern requirements of cities around the world to meet the serious challenges of congestion and climate change.

A number of key decisions were made in the 20th century that still affect the City's transportation system today. Further key decisions need to be made to deliver a transit system that can help the city grow and prosper as the 21st century unfolds. Ottawa is already experiencing a rush hour congestion problem. Our immediate, short-term and medium-term recommendations address this problem and set the stage to meet future demand. (The Task Force has identified 10 major challenges, each with a corresponding set of solutions, in the table below.)

Mayor Larry O'Brien campaigned on the need to take stock of the City's transportation plans by establishing a task force to recommend changes. The Mayor's Task Force on Transportation believes an innovative, incremental, affordable and environmentally sustainable rapid transit solution should build on the strengths and success of the existing BRT and O-Train infrastructure, with a medium-term goal of starting conversion of both to electric light rail systems. The Task Force also supports the overall direction of the Transportation Master Plan and acknowledges the plan's ranking of modes in the following order: walking, cycling, public transit and cars. While the primary focus of this report is on rapid transit, the Task Force urges the City to move more aggressively to implement the pedestrian and cycling recommendations in the Transportation Master Plan.

Summary of recommendations

Our primary recommendation is to use existing rail corridors and rights-of-way to build an integrated, region-wide, light rail system modelled on the O-Train. By 2017, and in some cases well before, service would extend to Stittsville and Carp in the west, Barrhaven, Smiths Falls and Mitch Owens Road in the south, Orléans and Alexandria in the east, north to the Casino in Gatineau, and to the Ottawa International Airport.

To achieve this vision, improving OC Transpo governance is seen as a critical recommendation. The normal rule for transportation operations in major cities is to set up an arm's-length operating company, in most cases reporting to an independent board of directors appointed by the City Council. This

model would give OC Transpo the operational and planning tools to best serve the citizens of Ottawa and to implement the far-reaching recommendations of the Task Force.

Another key recommendation is to alleviate the current transit bottleneck downtown and build a more inviting streetscape. To achieve this, the Task Force recommends an east-west rail tunnel bored through downtown. Diesel-electric trains operating on a city-wide network would switch to electric mode while in the tunnel.

Outside the tunnel, the tracks would be electrified over time starting with the city core. As service is extended to outlying regions, the trains will initially operate in diesel mode. Using bimode trains will mean no transfers are required to accommodate electric service in the core. Over time, the system will be fully electrified using the latest available technology as funds and demand permit. The advantage of using bimode technology is that it is relatively inexpensive and allows the network to expand at a much faster pace than building a purely electric system.

The Task Force plan relies on a hub-and-spoke system to transfer passengers from buses to trains. In this system, each light rail transit (LRT) station is a hub served by local buses running short routes that can be thought of as spokes. The proposed system also features stations and park-and-rides that will be clean, secure and centres of commercial development.

The Task Force recommends transforming Union Station, now the Government Conference Centre across from the Chateau Laurier Hotel, into a major hub connected to the downtown tunnel. Reverting to its original role as a station will make Union Station a defining feature of the City's transportation network.

The Task Force also welcomes the recent announcement by the federal, Ontario and Quebec governments to study the issue of crossings between Ottawa and Gatineau. The Task Force recommends building a bridge across the Ottawa River east of the downtown core before 2017. This will alleviate the disproportionate share of commercial truck traffic now choking King Edward Avenue that does not belong in the core of a city. Opening up the Prince of Wales Bridge across the Ottawa River to rail freight is another measure that would help reduce truck volumes downtown.

The Task Force had neither the ability nor the access to the necessary expertise in the time available to cost out our medium- and long-term recommendations. However, the Task Force worked under the premise that there is $600 million to $900 million available for transit projects in the short term as a result of the cancelled North-South LRT project. Private finance initiatives and other innovative approaches to financing must also be considered.

In keeping with this spirit of innovation, the Task Force encourages the greening of public transit operations in stages as emerging technologies become viable. Addressing the challenge of climate change and eliminating particulates produced by diesel combustion should be a primary driver of this greening initiative.

The Task Force relied on a set of decision criteria to develop its proposals. Delivering value for money and supporting environmentally sustainable approaches were two of the most important criteria. Consultation with the public, politicians, transit professionals, business groups and potential partners also helped shaped the Task Force's thinking to a great extent. The Task Force remains completely committed to consulting all stakeholders and recommends that the City consults individual citizens and groups in a meaningful way on the merits of this report.

Decision criteria

Using the correct criteria is the key to arriving at the right decision. Decision criteria must also be specific enough to limit interpretation. The Task Force proposes that any system must deliver value for money and conform to the list of most important criteria outlined below.

1. **Service reliability:** The transit system must be reliable and predictable. Trips should adhere to within three minutes of the schedule 95 percent of the time.

2. **Survivability:** The transit system should be designed to minimize the possibility of major disruption to service.

3. **Attracting new riders:** The chief decision criteria is to attract new riders.

4. **Serving underserved areas:** Residents across the city must feel that transit is a viable option in their neighbourhood.

5. **Growth potential:** The solution must have enough capacity now and in the long term.

6. **Transit speed:** The system must be faster than the private automobile over comparable routes.

7. **Comfort:** A reasonable level of comfort is required to attract and retain riders.

8. **System costs:** It is important to consider not only the costs of infrastructure and construction, but also operating costs and life cycle costs.

9. **Network integration:** The system must work seamlessly across the city and include links between walking, cycling, buses, trains, taxis and cars.

10. **Improving streetscapes:** An improved transit system is not only about moving people, but also about creating a better urban environment.

11. **Environmental impact:** The transit solution must have a positive environmental impact. It must address climate change, reduce noise and reduce air pollution (especially particulates from diesel combustion).

Ten major challenges and corresponding solutions

The Task Force has identified 10 major challenges and proposed corresponding solutions.

Challenges	*Solutions*
1. Deliver a timely transit solution for the entire city that meets the Task Force decision criteria.	Deliver a plan that offers tangible and immediate improvements in the short, medium and long term. Develop a new region-wide LRT network that benefits all citizens. Expand the existing BRT in the west as currently proposed in the Transportation Master Plan. Use a hub-and-spoke system to feed the BRT/LRT networks and at the same time better provide transit service within neighbourhoods and areas of the city that are underserved by the current express-bus route model. Focus on a cost-effective, fully integrated, multi-modal transit infrastructure.
2. Deliver a transit solution that strengthens OC Transpo's ability to manage and innovate.	Give OC Transpo more independence and accountability under a new governance structure.
3. Deliver a transit solution that is fiscally responsible, efficient and sustainable.	Leverage investments already made in the O-Train and use existing rail infrastructure to expand the network. Leverage investments already made in existing BRT infrastructure. Build a system that attracts new riders. Explore private sector financing.
4. Deliver a transit solution that addresses sound long-term environmental goals with a particular focus on climate change and particulate emissions.	Move toward a fully electrified LRT system. Move quickly to ensure that only low-emitting buses serve the downtown core.
5. Deliver a transit solution that alleviates pressure on the downtown and beautifies the core.	Build a rail tunnel that allows the Albert and Slater streetscapes to be rejuvenated and promotes underground pedestrian malls that offer shopping, services and all-weather connections through the core.
6. Deliver a transit solution with efficient, clean and safe transfer points.	Reopen Union Station as the major downtown transportation hub. Provide redevelopment opportunities for Bayview Station and VIA's Ottawa Station.

Challenges	*Solutions*
7. Deliver a transit solution that addresses congestion on highways 417 and 174.	Build a rail-based commuter network that is a viable alternative to private car travel. Cooperate with outlying communities to encourage intercity commuters to park-and-ride and take rail into the city.
8. Deliver a transit solution that reduces commercial truck traffic on King Edward Avenue.	Build a bridge across the Ottawa River east of the downtown core. Reopen the Prince of Wales Bridge for rail freight traffic.
9. Deliver a transit plan that earns the support of a strong majority of citizens.	Put into effect the public consultation strategy passed by Council in 2003. Involve the public in the development of concrete and innovative transit solutions. Provide constructive opportunities for feedback. Ensure planning and the decision criteria are transparent.
10. Deliver a transit solution that is embraced by all levels of government and surrounding communities.	Design transit solutions for Ottawa that can be easily integrated with other jurisdictions. Work with other jurisdictions and levels of government to ensure Ottawa's interest are properly considered.

3. Ottawa: Canada's Capital

Ottawa is a city like no other in Canada. As the nation's capital we are home to the federal government, but Ottawa is also so much more than just a government town. The city is home to a burgeoning high-tech centre; two leading Canadian universities and other educational institutions, and the highest concentration of museums and galleries of any region in Canada. The city also has access to parkland and a greenbelt featuring the longest network of recreational pathways of any North American city. Ottawa has the potential to provide a showcase for the best in urban architecture and transit development.

We are also the only major centre in Canada to sit on the border between two provinces. Our diverse citizenry is one of Canada's most bilingual communities, with nearly half a million people speaking both English and French. We are home to almost one million people and yet have managed to preserve some of the best attributes of a smaller centre.

In 2007, Ottawa celebrates its 150th anniversary as the nation's capital. Queen Victoria selected Ottawa as the capital of the United Province of Canada in 1857. Our proud history provides a foundation for a bright future. As Ottawa grows and prospers in the 21st century, public transit must keep pace and support the economic and environmental needs of the city. Ottawa is fortunate to have an established bus rapid transit infrastructure to build on. However, the city lacks the rail infrastructure, supported by a hub-and-spoke feeder system, upon which most big cities rely.

For several critical years, there has been little progress on the transit file while the city's growth, especially beyond the greenbelt, has changed how, when and where people commute. Without a credible and workable region-wide solution, the local economy will suffer and commuters will become more frustrated. The city is at a crossroads. We must seize the opportunity to build a transit system of which future generations can be proud—a transit system that a great capital city deserves.

Historical context: public transit in Ottawa

A number of key decisions were made in the 20th century that affect the city's transportation to this day. The Greber Plan of 1951was a far-reaching attempt to manage growth in the capital region for future generations and provide a balance between development and the protection of natural open spaces. The establishment of the National Capital Commission (NCC) in 1959 was a positive attempt at regional planning, and the results have largely been beneficial. There is no question that the establishment of such a large greenbelt around the city makes Ottawa unique. However this also poses a chal-

lenge to providing cost-effective transit solutions, since much of the residential growth is now concentrated outside the greenbelt and a growing proportion of the workforce is required to commute daily into downtown Ottawa, and to a lesser extent to the Hull area of Gatineau. In addition, some very short-sighted decisions contributed to the current transportation challenge.

Abandoning rail

In the mid 1950s, Ottawa City Council decided to follow the lead of many North American cities and terminate the street railway that had been the backbone of local service. All the more disappointing was the fact that some of the street cars operated in dedicated rights-of-way that are now lost to future transit use.

The second decision, one of the first decisions of the NCC, was to accept Greber's recommendation to relocate the main rail corridor outside the city core. While the resulting beautification of the lands along the Rideau Canal cannot be contested, closure of the historic Union Station denied Ottawa the opportunity, enjoyed by cities like Montreal, Toronto, New York, Boston and Chicago, to have a vibrant downtown transportation hub. The new station at Alta Vista has for many years discouraged rail use because it is in an industrial area a number of kilometres from the core.

The Queensway

The third major transportation decision was to emulate many cities in the 1960s and 1970s by building an urban highway right through the heart of the community along an abandoned rail corridor. The Queensway (Highway 417) has become the vital east-west artery but is severely clogged at rush hour and cannot be expanded in the central area without destroying many beautiful neighbourhoods.

Highway 417 encouraged growth outside the greenbelt, and as with most post-war development in North America, the nature of these suburban residential areas derogates from the high-density, mainstreet and grid design of the traditional cityscape. Large lots on wide and winding boulevards, many ending in cul de sacs, and large shopping malls have made these areas dependent on cars.

Bus rapid transit

Two positive and what some would call seminal decisions have shaped Ottawa's present public transportation plan. The first, taken by the former Regional Municipality of Ottawa Carleton (RMOC), was to build a bus rapid transit (BRT) system, using old railway rights-of-way, vacant land and public expressways. The BRT was engineered to ultimately accommodate light or even heavy rail such as a subway. There is no doubt that Ottawa's BRT system is well established and has enabled many of its citizens to commute quickly to and from the urban core.

However, there are two main problems with the BRT that may impede its ability to meet population growth. The first was not addressing the eventual crowding problem on downtown streets as bus volumes grew. Although there was a proposal to build a two-kilometre bus tunnel in the downtown, the RMOC, wary of the huge cost and because of a change in the provincial funding formula, decided that an on-street solution was required. In the LRT debate of the past two years, there is no question that one of the most controversial elements of the plan was to add LRT vehicles to the bus lanes on Albert and Slater Streets, causing more congestion. This combined with increased use of King Edward, Rideau and Wellington Streets by Société de transport de l'Outaouais (STO) buses from Gatineau poses a challenge to the health of downtown Ottawa.

The second has to do with service reliability—one of the key performance criteria in any transportation system. As more and more people moved from the core into areas beyond the greenbelt, journey times along the BRT became longer, forcing people to sit or stand in buses designed for short city hops. Growing traffic volumes before buses reach the Transitway, combined with rush hour congestion of buses in the downtown core, have affected reliability. This reliability problem has been further exacerbated by service cuts since 2004. In fact, the OC Transpo Rider Attitude Survey of 2005 notes there has been a decrease in the percentage of frequent transit users from 42 percent in 2001 to 37 percent in 2005.

The O-Train

Another key transit development was the RMOC decision to purchase the former CP rail line and provide a shuttle diesel LRT service between Bayview and Greenboro. The success of this project, known as the O-Train and completed at total cost of approximately $40 million, is widely recognized. Passen-

ger volumes are double the original estimate and have reached that figure in less time than was anticipated. The City owns the right-of-way to the south of Ottawa as well as the Prince of Wales Bridge, which connects to rail lines in Quebec, allowing for expansion in both directions. The O-Train line also bisects the VIA main line to which it was once connected.

Although many often refer to the O-Train as a pilot project, there can be no doubt that most users of the link now regard it as a permanent feature of the City's transportation system since it offers connections to the BRT at both ends of the line. One of the key objections in the former north-south electric LRT plan was the proposal to close the O-Train line for a minimum of two years to completely rebuild the track and engage in major engineering and construction.

The LRT debate

The Task Force does not intend to engage in a re-examination of the North-South LRT debate, but it is mindful of the criticisms raised throughout the process. Staff have explained that the electrification of the O-Train route would have addressed a number of issues. The first was to provide rapid transit options to the south of the city, where transit use is lowest; second was to serve new developments planned for the Riverside South community; and third was to divert passengers entering the city core from the heavily used bus routes that use the eastern and north-south BRT and redistribute them to the LRT, which would enter from the more lightly used western approaches to the downtown.

As the debate unfolded, it became evident that the LRT plan did not address sufficiently the problems of east-west transportation nor the congestion problems in the downtown core. Despite the high volume of passengers carried by the BRT to Orléans and Kanata, it is obvious that some type of solution is required to deal with peak hour congestion on the 417. While the recent provincial government decision to widen the highway to three lanes in each direction will help the flow of traffic west of the Highway 416 interchange, it could end up creating a further problem by attracting more vehicles through the centre of the city—a part of the highway that is virtually impossible to widen. There is no question that congestion on the 417 at peak hours cries out for a solution that will attract people from their cars.

The situation today

Transit demand is not being met, customer dissatisfaction is rising and costs are escalating. The downtown core is straining under a capacity load and more congestion appears to be inevitable under the current system. This in turn will likely lead to further declines in service quality and more rider dissatisfaction. Pollution, especially from diesel exhaust particulates, is also a serious problem that will likely only get worse without a rethinking of the current approach to transit.

The way forward

Despite the serious challenges it faces today, Ottawa's public transit system has much to be proud of. The Task Force is confident that it can build on these successes and position Ottawa as a leader in public transportation. In this report, the Task Force proposes a transit plan that is innovative, incremental, affordable and environmentally sustainable. It is also a plan that builds on the infrastructure investments made in the BRT and O-Train system.

4. Task Force Genesis and Mandate

During the municipal election campaign, mayoral candidate Larry O'Brien campaigned on the need to take stock of the City's transportation plans by establishing a task force to re-examine Ottawa's public transit needs.

Six out of every seven voters who cast ballots on November 13, 2006, voted for mayoral candidates who outlined alternative visions to the proposed North-South LRT plan. On December 14, 2006, City Council voted not to proceed with the North-South LRT configuration.

Transportation issues—both vehicular and mass transit—remain a key priority for Ottawa's citizens.

Task Force Mandate

The Mayor's Task Force on Transportation is an external advisory body that reported to Mayor O'Brien on June 1, 2007. Its mandate was to:

- Examine the City of Ottawa's current Transportation Master Plan and all current or proposed transportation infrastructure projects;
- Review available transportation options including bus rapid transit, light rail transit, heavy rail, high occupancy vehicle lanes, new transit corridors, bridges and facilities;
- Review proposed future residential and commercial development plans to assess their impact on existing transportation infrastructure and future needs;
- Solicit input from Ottawa City Councillors, the City of Gatineau, the National Capital Commission on their transportation objectives with a view to ensuring future City of Ottawa initiatives are aligned with an integrated approach to transportation planning within the National Capital Region;
- Provide a forum to receive public input and submissions;
- Make recommendations (short, medium and long term) for development of an integrated rapid transportation plan that alleviates existing east-west pressures, is scalable to account for immediate and growing pressures in the south end, and provides options to reduce congestion through the downtown corridor.

5. Improving OC Transpo Governance

Improving OC Transpo governance is a critical step for implementing the vision outlined in this report. In order to execute this vision, and in keeping with the Mayor's 1,000 days of transformation for Ottawa, the Task Force recommends that Councillors consider a new organizational structure for OC Transpo.

The Task Force recommends separating OC Transpo from the City bureaucracy and setting up an arm's-length operating entity with an appointed board fully accountable to City Council. The Task Force recommends that this recommendation be initiated immediately and be completed within 12 months.

OC Transpo today

Public transportation in cities is one of the major challenges of urban life and as such deserves a dedicated entity within the City government—as opposed to a division of a City department that is dependent on many other departments to achieve performance. OC Transpo is currently a department of City government reporting to Council via the City Manager. This arrangement is not optimal. OC Transpo staff and management complain that bureaucratic obstacles, caused by the fragmentation of management and operational functions, reduce their ability to serve the interest of citizens. An independent governance model incorporating OC Transpo would help ameliorate current problems associated with cumbersome decision-making, cost control, supply of services, union relations and operational decisions relating to route planning.

Guiding principles for a new transportation operating authority

The Task Force recommends that a new operating authority adopt a set of guiding principles designed to lead Ottawa's transit system into the 21st century. These principles should envisage a system that provides seamless, scalable and barrier-free multi-modal transit through an efficient hub-and-spoke configuration that promotes much greater ridership. The system should also leverage existing infrastructure such as rail corridors. The system should be supported with prudent investment in a long-term network that is environmentally sustainable and that can evolve with the least disruption using tried and tested solutions applied in a creative manner.

While the exact form of this operating entity may vary, it should at least have divisions responsible for human resources, fleet management, procurement, strategic planning, parts supply, repair and maintenance, regulation and management of public transportation and traffic engineering.

The best practices for transportation operations in other cities is to establish an arm's-length operating entity reporting to an independent board of directors appointed by the City Council. In such cases, the fiduciary responsibility of the board members is to the transit authority and not to the nominating entity. The transit authority would be accountable to City Council and be required to file an annual report and submit its budget for approval.

The Task Force also strongly recommends that meaningful performance measurement criteria are introduced to determine whether or not OC Transpo is delivering value for money. This will allow for effective comparisons with the operations of similar municipalities, as well as for better informed decisions.

Examples to learn from and follow

In other cities, such as Toronto, the arm's-length commission is managed as a business but reports to a board or commission comprised of City Councillors elected by full Council. The Commission is responsible for the consolidation, coordination and planning of all forms of local passenger transportation within the urban area of Toronto, except for railways incorporated under federal and provincial statutes and taxis. The Commission's functions are to construct, maintain and operate a local passenger transportation system, and to establish new passenger transportation services where required. The Commission may also operate parking lots in connection with the transit system, and may enter into an agreement with municipalities or persons situated within 40 kilometres of Toronto to operate a local transportation service.

Montreal's Agence Métropolitaine de Transport (AMT) also provides a structure with aspects worth emulating. AMT plans, integrates and coordinates actions related to public transit across the metropolitan area. By adopting a firmly metropolitan point of view, AMT makes it possible to apply new ways of doing things such as integrating the various public transit systems, fares, and tickets and passes in use on its territory. It also has the power to review financing methods to ensure greater equity and generate new revenues. Thus, AMT acts as a unifying force, even a catalyst, for metropolitan stakeholders. Proof of this ability can be seen in the AMT's ability to build an extension of the subway to Laval ahead of schedule and under budget.

Another model is provided by TransLink—the Greater Vancouver Transportation Authority—a regional body with vast powers to operate, coordinate, plan, design, finance and build the transportation system and even oversee the building of new trunk roads. The system includes buses, ferries and trains. Despite these sweeping powers, TransLink is a small organization. It relies on service contracts with subsidiary companies. The actual delivery of public transit services takes place through these subsidiary companies and contractors, while the maintenance and improvement of the major road network is done in partnership with the municipalities.

6. Moving Ottawa: The New Transportation System

An innovative, incremental, affordable and environmentally sustainable solution

The Task Force believes its mandate is to provide a strong vision of an integrated system that can gain the support of the citizens of Ottawa.

The Task Force also believes an innovative and affordable rapid transit solution should build on the strengths and success of the existing BRT and O-Train infrastructure with a long-term goal of converting both to electric light rail systems. The primary recommendation is to use existing rail corridors and rights-of-way to build a light rail system modelled on the O-Train, with buses to deliver passengers to LRT stations.

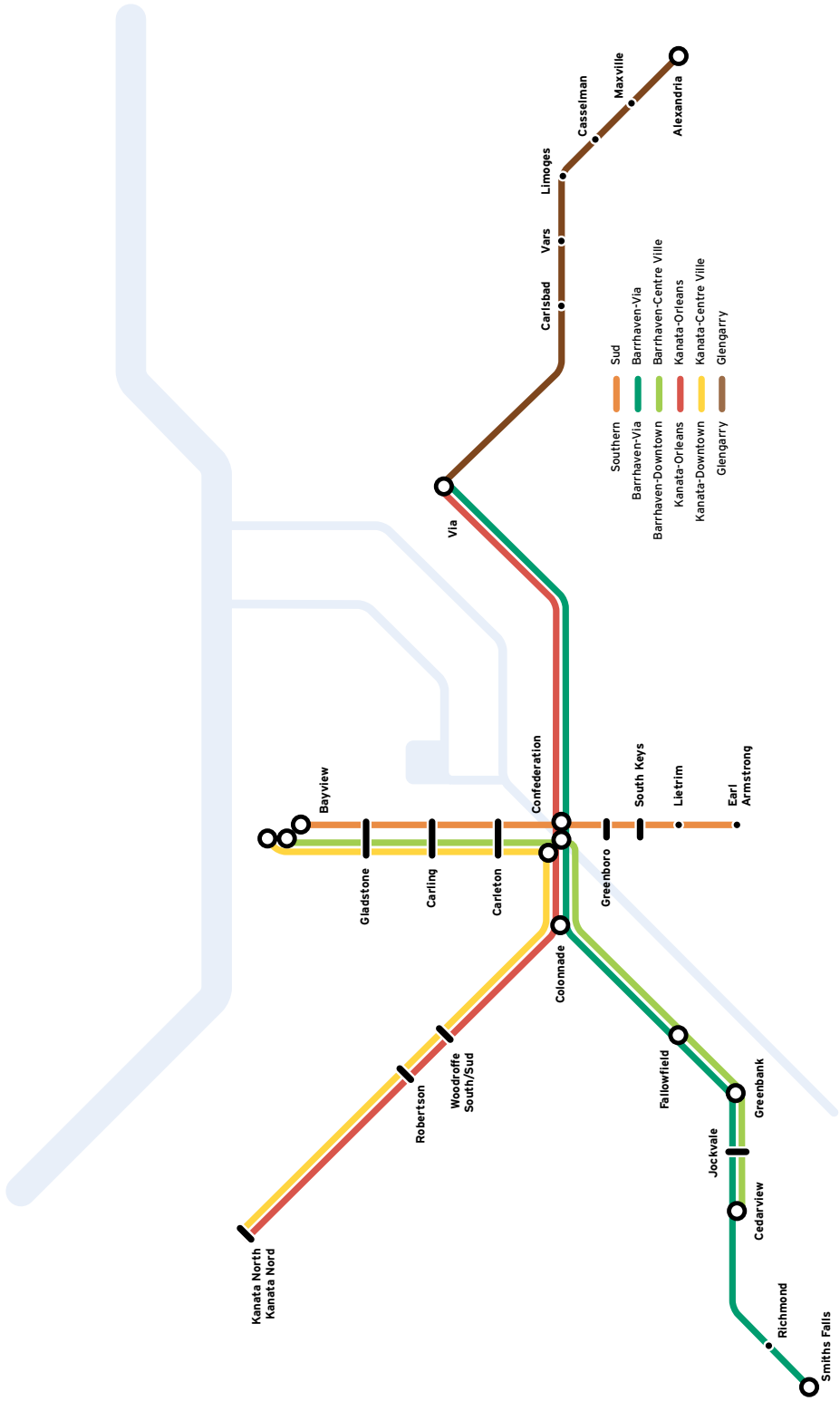
The proposed system will use bimode electric-diesel trains. Over time, this system can be fully electrified using the latest available technology. The cost to do this will not be cheap and will take some considerable time to achieve, but gradually the entire system would be electrified as funds and demand permit. The advantage of using bimode technology is that it is relatively inexpensive and allows the network to expand at a much faster pace than a purely electric solution. This, in turn, allows the City to enjoy the lower operational costs of rail. While diesel trains will generate particulates, the corresponding reduction in car traffic will reduce congestion and deliver environmental benefits, including reducing the greenhouse gases linked to climate change.

In the meantime, the Task Force believes that we should move incrementally towards the goal of an integrated LRT system, keeping in mind that the citizens of Ottawa demand immediate and short-term improvements to the current transportation system. We believe the centrepiece of our strategy should entail an extension of the O-Train as quickly as possible throughout the region, bringing people into the downtown core via a tunnel in bimode electric-diesel trains. While in the tunnel, the trains would switch to electric power.

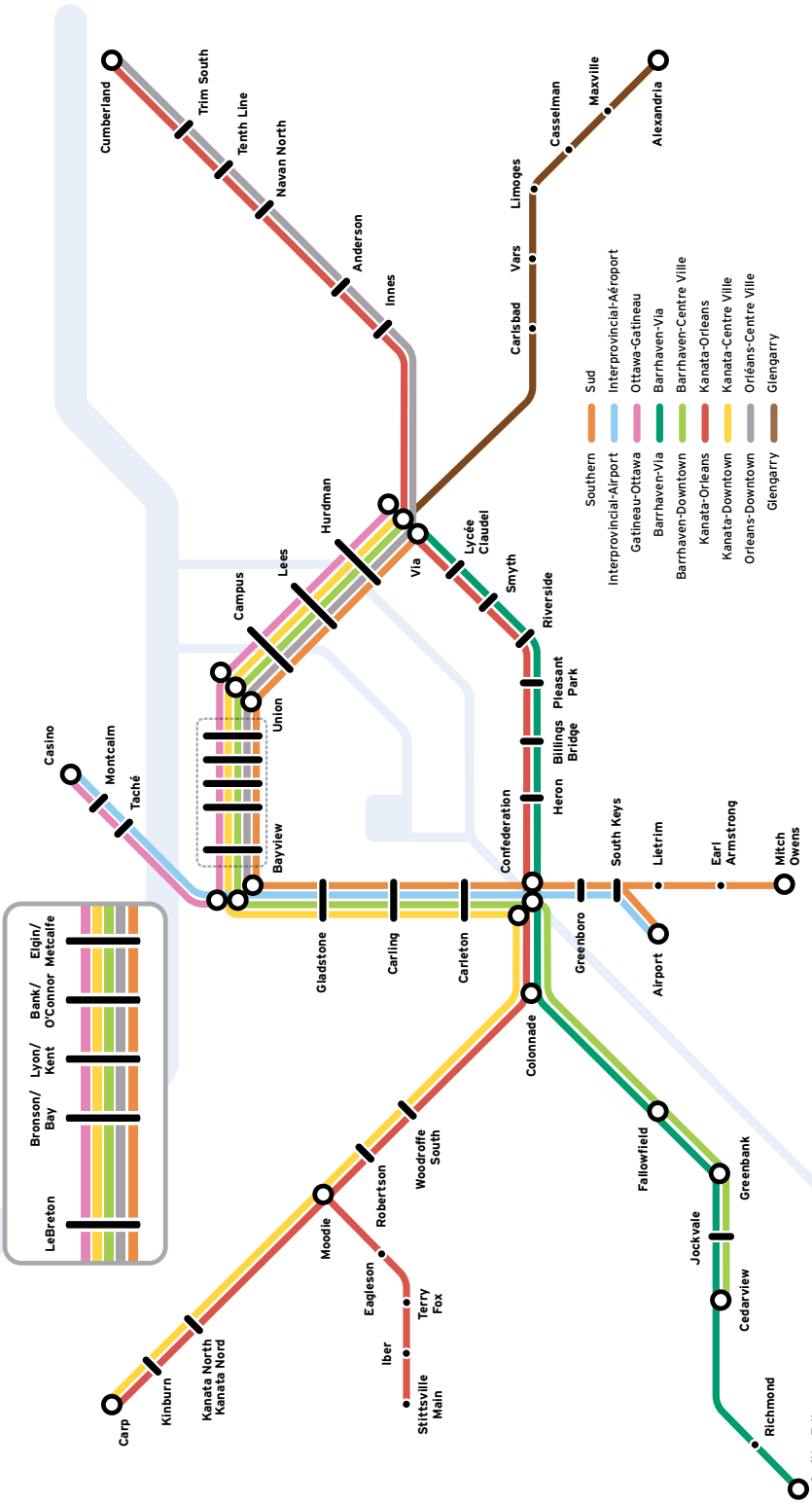
The Task Force believes that the proposed system will entice drivers to switch to public transit. It will use a hub-and-spoke system to bring bus passengers to trains. It will use park-and-ride and kiss-and-ride (drop off areas) to bring car traffic to trains. In the medium term, eastbound bus rapid transit passengers will be transferred onto trains at Bayview station. Similarly, westbound bus rapid transit passengers will be transferred onto trains at the main VIA station. In the medium term, the system will feature a downtown tunnel and service would extend to:

- Stittsville and Kanata in the west
- Barrhaven and Earl Armstrong Road in the south
- Orléans in the east
- the Casino in Gatineau
- Ottawa International Airport

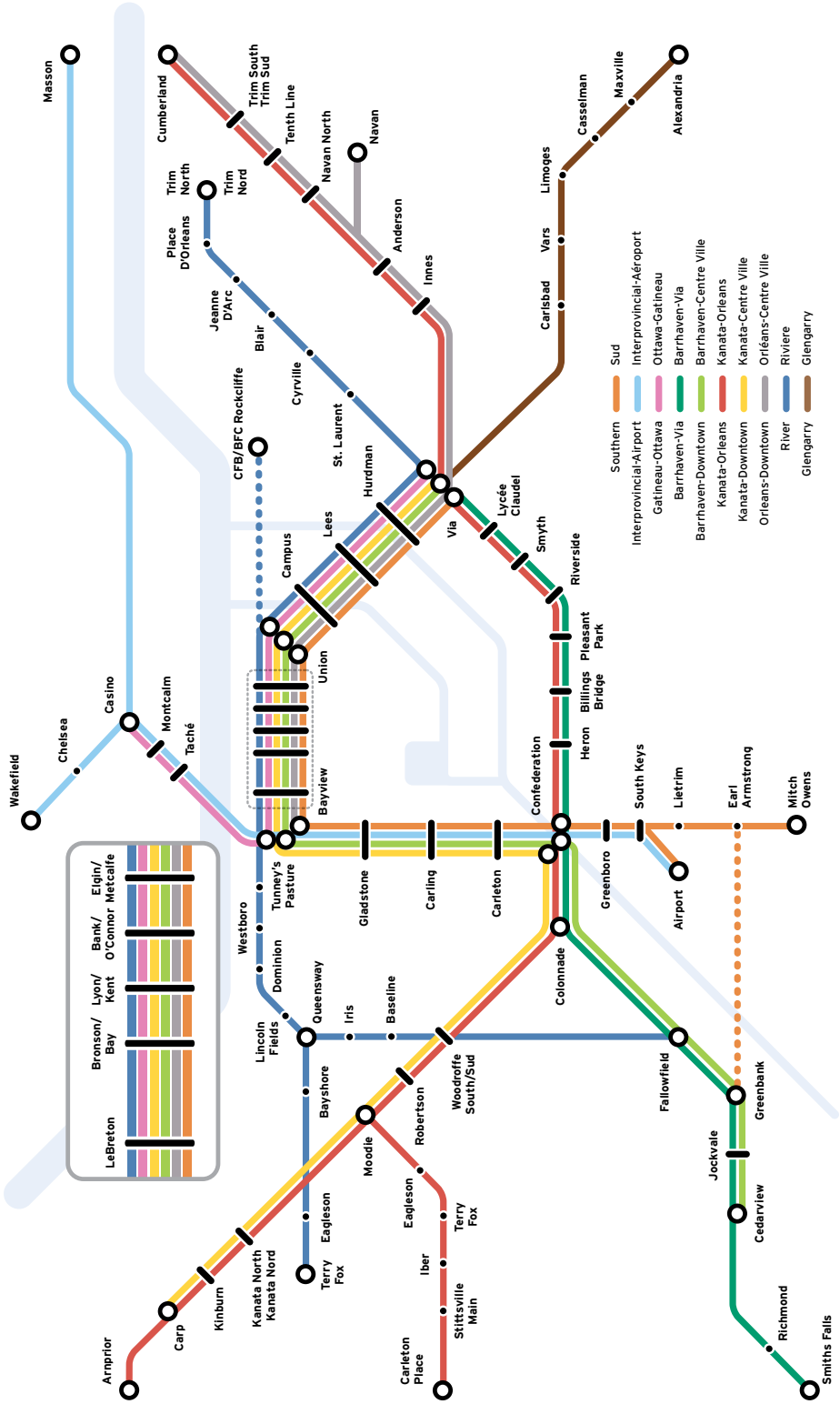
System Map 2010



System Map 2017



System Map 2037



Estimated rush hour LRT travel times

- Stittsville Station—Downtown: 44 minutes
- North Kanata Station—Downtown: 38 minutes
- Cedarview Station—Downtown: 35 minutes
- Mitch Owens Station—Downtown: 38 minutes
- Trim South Station— Downtown: 30 minutes

Timeframe and deliverables

In keeping with its mandate to deliver timely transit solutions, the Task Force has divided its approach into a four-stage ti meframe:

- Immediate—to be started as soon as possible, ideally within 12 months or less
- Short term to 2010
- Medium term to 2017
- Long term to 2037 and beyond

Immediate recommendations in 6-12 months

- Establish a new transit authority that is responsible for OC Transpo.
- The new authority should carry out an immediate evaluation of existing routes in partnership with an independent auditor and the public.
- Adopt the efficiency recommendations of the City's *Downtown Transit Operating Strategies 2007-2010* report dated May 1, 2007 to alleviate the congestion in the downtown core.
- Consider tendering underused routes to private contractors.
- Reappraise and improve bus routes and operating practices.
- Protect existing transit corridors for system development.
- Designate and protect potential corridors for future development and especially protect development over transit stations.
- Start or update environmental assessments on all proposed rail corridors.
- Reserve land for rail chords from the north-south line to the downtown line across Lebreton Flats. (A rail chord is a short section of track, often curved, connecting two lines.)
- Protect land to accommodate a rail extension to Cumberland.
- Continue building the Terry Fox Road extension to serve traffic flowing between north and south Kanata.
- Start an environmental assessment for a downtown tunnel.
- Secure a safety ruling from Transport Canada for LRT track sharing with VIA and Ottawa Central Railway (OCR) trains.
- Begin formal negotiations with VIA to share station infrastructure (Ottawa Station and Fallowfield).
- Begin formal negotiations with the OCR to share tracks.
- Start discussions between Ottawa and Gatineau to extend rail service to the Casino.
- Begin extending the existing O-Train to Earl Armstrong Road.
- Complete the rollout of smart cards and support the post-secondary student-led U-Pass initiative.
- Complete design tendering for the Strandherd-Armstrong Bridge.
- Identify opportunities to implement roundabouts to help calm traffic and reduce congestion.
- Complete an integrated and continuous utility cycle path network strategy and development plan.

Short-term recommendations by 2010

- Extend the existing O-Train to Earl Armstrong Road, and build park-and-rides at Leitrim Road and Earl Armstrong Road (2009).
- Engineer the Ellwood Junction curve (at the Ellwood Diamond where the O-Train tracks intersect the VIA line east of Brookfield Road) to permit rail from the VIA and OCR lines to use the O-Train corridor.
- Construct new stations in VIA/OCR corridors.
- Extend the BRT west as currently proposed in official plan.
- Start rush hour rail service from Kanata (March Road via OCR track) and Barrhaven (Cedarview Road via VIA track) to Ottawa Station (VIA).
- Facilitate service from Smiths Falls to Ottawa Station (VIA) in partnership with Smith Falls.
- Start rush hour service from Kanata North and Barrhaven to Bayview.
- Start rush hour rail service on VIA track from Alexandria-Maxville-Casselman-Limoges-Vars-Carlsbad-Ottawa Station (VIA) in partnership with rural municipalities.
- Partner with eastern and southern counties to increase uptake from commuter bus and/or trains to railheads.
- Explore opportunities to reopen the Prince of Wales Bridge for nightly, and eventually daytime, rail freight traffic.
- Build the Strandherd-Armstrong Bridge across the Rideau River and protect the median for future transit use.
- Convert under-utilized bus routes to smaller shuttle operations.
- Build roundabouts to help calm traffic and reduce congestion.
- As funding becomes available, implement elements of the utility cycle path plan.

Medium-term recommendations by 2017

- Complete the downtown tunnel (2012-14).
- Restore Union Station as the main downtown transportation hub (2012-14).
- Extend service across the Prince of Wales Bridge to Gatineau's Casino du Lac Leamy
- Build a spur to the airport (2012-14).
- Deliver all-day service from Orléans (South end of Trim Road via Hydro right-of-way and VIA track) (2015).
- Run all-day rail service from Kanata and Barrhaven to downtown and Orléans.
- Start peak rail service from Stittsville (Main Street via the former CP line now the Ottawa Carleton Trailway) and Cumberland.
- Start rush hour service to Carp.
- Extend service from Earl Armstrong Road to a park-and-ride at Mitch Owens Road to draw traffic from Manotick.
- Convert north-south BRT to LRT, and run trains from Cedarview Road to Orléans.
- Build a bridge across the Ottawa River east of the downtown core.
- Continue development of cycling and walking infrastructure.

Long-term recommendations to 2037 and beyond

- Provide rush hour LRT service from Carleton Place and Arnprior in the west.
- Provide rush hour LRT service from Wakefield and Masson (with the cooperation of Gatineau Council and transit officials).
- Seek new LRT alignment to Rockcliffe airbase development from downtown.
- Implement service on a branch from the Southern Line across the Rideau River to Cedarview.
- Complete conversion of existing BRT to LRT.
- Construct new LRT lines as demand requires.
- Open LRT service across the Alexandra Bridge and ultimately link Union Station to Gatineau.
- Consider building a ring road as outlined in the Transportation Master Plan but ensure that it incorporates a good public transit component to provide suburb-to-suburb transit.
- Build an LRT link to Scotiabank Place as it develops into a commercial centre.
- Provide rush hour service to Navan

Major Milestones

	IMMEDIATE	SHORT TERM	MEDIUM TERM	LONG TERM
TASK	6-12 MONTHS	BY 2010	BY 2017	BY 2037
Establish a new transit authority responsible for OC Transpo	✓			
Start or update EAs on all proposed rail corridors	✓			
Begin negotiations with potential partners	✓			
Extend the BRT west		✓		
Strandherd-Armstrong Bridge		✓		
Ottawa River Bridge (east of downtown)			✓	
Downtown tunnel			✓ (2012-14)	
Spur to Airport			✓ (2012-14)	
Southern Line		✓ (2009: Earl Armstrong-Bayview)	✓ (Mitch Owens-VIA)	
Interprovincial-Airport Line			✓ (Casino-Airport)	✓ (Airport-Wakefield/Masson)
Gatineau-Ottawa Line			✓ (Casino-VIA)	
Barrhaven-VIA Line		✓ (Smiths Falls-VIA)		
Barrhaven-Downtown Line		✓ (Cedarview-Bayview)	✓ (Cedarview-VIA)	
Kanata-Orléans Line		✓ (Kanata North-VIA)	✓ (Stittsville/Carp-Cumberland)	✓ (Carleton Place/ Arnprior-Cumberland)
Kanata-Downtown Line		✓ (Kanata North-Bayview)	✓ (Carp-VIA)	
Orleans-Downtown Line			✓ (Cumberland-Bayview)	✓ (Cumberland/ Navan-Bayview)
River Line			✓ (begin converting BRT to LRT)	✓ (finish converting BRT to LRT)
Glengarry Line		✓ (Alexandria-VIA)		

Technology and design recommendations

Recommended initial technology: electric-diesel bimode

The Task Force recommends using a rail solution based on similar technology to the O-Train but with one important difference. Currently, the O-Train runs on diesel fuel. The Task Force argues that the City should adopt an electric-diesel bimode train. These are special locomotives or multiple-unit railcars that use diesel or electric power. In the last five years, there has been an upsurge in bimode implementation in North America. This is mature and proven technology, which has been in existence for at least 50 years in the United States and the United Kingdom.

Bimode vehicles are set to be introduced in Canada in Montréal, where bimode locomotives will haul Agence Métropolitaine de Transport (AMT) trains through the Mount Royal tunnel and on to a non-electrified commuter rail line. Recently, the AMT announced a joint request for proposal with New Jersey Transit for bimode vehicles. The UK's Great Central Railway plans to acquire bimode trains.

Bimode locomotives are operated by the Long Island Rail Road and Metro-North Railroad between non-electrified territory and New York City. Amtrak operates a fleet of bimode locomotives in the New York area. In Germany, bimode LRT vehicles are used successfully in Kassel and Nordhausen. A number of manufacturers provide this technology.

Electrification rollout

The Task Force recommends that the system be fully electrified using the latest available technology over time, which could potentially include communications-based signalling and automatic train operation used on many of the world's metro systems. Significant costs will be incurred. But given the serious health effects linked to particulates from diesel exhaust and the challenge of climate change, electrification must be the ultimate goal. In order to develop as complete a system as possible, the Task Force recommends electrification start at the core of the city and converts from diesel to electric elsewhere, in an ever-expanding network towards surrounding areas, as funds and demand permit.

Relying on diesel-electric vehicles initially will speed the introduction of a fully electric system. This is because a bimode diesel system will be cheaper to implement, allowing the network to be expanded relatively quickly. Once the fixed costs of a network are absorbed, additional riders help to push overall system costs down, which in turn allows for reinvestment in an electrified system.

We envisage that the rail corridors used will continue to stretch out towards the rural areas as demand warrants. This outer expansion will initially take place with diesel trains. In effect, the network will constantly expand and convert to electric mode from the inner core going out.

Electric LRT through an Ottawa tunnel

The underground portion of the LRT line would have to be electrified to avoid ventilation problems. This would be costly, but electrification of the tunnel would allow the use of bimode electric diesel trains compatible with the trains on the existing O-Train line. A simple overhead line using a direct current would suffice. A similar approach is used in French and Swiss tunnels.

The Task Force recommends an immediate launching of an environmental assessment to choose the optimal route for the tunnel. The assessment should be completed before 2010 and would allow Council to call for a request for proposal for construction.

Using existing rail corridors

Ottawa's existing rail corridors are central to the Task Force plan. Leveraging this existing resource is also in keeping with the Task Force's emphasis on sustainable, affordable solutions. Ottawa is blessed with a network of functioning rail corridors and rights-of-way that can be converted to rail corridors. Protecting existing transit corridors for public transit is a critical recommendation. For a detailed review of how these rail corridors will serve as the backbone of the proposed LRT system, see Section 8.

Mixing freight and passenger rail traffic

The Task Force's recommendation to use existing rail corridors necessitates track sharing between passenger and freight trains. Task Force consultations with Transport Canada railway safety officials were fruitful and indicate that there should be no regulatory impediment to mixing freight and light rail passenger trains.

One of the major transportation trends of the early 21st century is the blending of the technologies and approaches.[1] The frontier between the classic heavy railway and the traditional light rail transit system is rapidly becoming less distinct. In fact, the US Federal Railroad Administration's interdiction of light or even European heavy trains on North America tracks no longer applies.

The Transport Canada Rail Safety Branch now takes the position that different combinations may be permitted as long as they are demonstrably safe. This performance-based criterion replaces former rigid divisions between types of operations. Transport Canada staff have familiarized themselves with European railway safety practices. This means that the federal regulator becomes a guarantor of a safe railway rather than a watchdog for a pure North American safety model. This in turn opens up more options for Ottawa light rail, potentially allowing mixed operations of various combinations of freight, intercity and commuter passenger trains and light rail.

The Task Force researched the precedent-setting San Diego light rail operation, which in 1981 permitted heavy rail freight on the Trolley line with appropriate time separation. This principle was extended to include a second line. We have also reviewed the Riverside (diesel LRT) Line in New Jersey (Trenton-Camden) and the New Oceanside to Escondido diesel line in California, both with freight and LRT. Even in Ottawa, diesel freight trains operate on the southern portion of the O-Train line with a minimal but safe time separation from LRT trains.

These policy developments and examples bode well for the application of the mixed-mode and mixed-weight principles to a wider network in Ottawa (i.e., diesel operation in from Carp, Kanata and Orléans, wholly or partly over heavy rail line, and electric operation through downtown). In light of this, federal regulation of the existing O-Train line (Capital Railway) has become a benign safety guarantee rather than a threat to the urban railway.

Benefits of a hub-and-spoke system

The Task Force plan relies on a hub-and-spoke system to transfer passengers on to trains and buses serving main line routes on the LRT and BRT. In this system, each LRT station is a hub served by local buses running short routes that can be thought of as spokes. This approach will improve system reliability and permit some redeployment of existing buses to better serve demand for travel within neighbourhoods. It will also allow a re-evaluation of the express-bus network.

The new subway stations in Laval show the way ahead—especially Montmorency and De la Concorde Stations, where bus lines, a rail line and subways connect seamlessly. These new facilities show how transfers can be made efficiently in a hub-and-spoke system.

The Task Force also recommends exploring the use of mini-buses and other smaller vehicles to service off-peak demand and deliver people to the LRT station hubs. There is great potential to deliver increased frequency and more cost-effective service. Shared taxis, also known as taxibuses, should also be considered. Shared taxis fall between private transport and conventional bus transport, with a fixed route but also the convenience of stopping anywhere to pick up or drop off passengers.

The Transitway

The Task Force supports the decision to extend the western section of the Transitway, as outlined in Ottawa's Transportation Master Plan. We recommend converting the Transitway in stages over the next 30 years to carry LRT. The Task Force also recommends a complete re-evaluation of the bus network. In particular, the Origin–Destination Survey should be used as part of this re-evaluation. There should also be a review focused on optimizing the fleet and other equipment.

Roads

The Task Force supports the Transportation Master Plan's design guidelines, which were developed to ensure that all road corridors support adjacent land uses; enhance safety; offer supportive environments for walking, cycling and transit use; and maximize greening opportunities. The Task Force also supports the Transportation Master Plan's emphasis on maximizing the efficient operation of City roads and intersections through a variety of transportation system management measures that include traffic control devices, computerized signal optimization and minor infrastructure modifications to remove bottlenecks. In addition, the Task Force supports developing an advanced traffic management systems strategy to apply developing technologies to manage recurring and incident-based congestion, improve enforcement through automation, and provide real-time information to travellers.

1 Ernest H. Robl, "In the Railway Field," *Mass Transit Magazine*, April 2007

Specific recommendations
The Task Force supports the continued construction of the Terry Fox Road extension. The Strandherd Bridge to Barrhaven should also be built. The City should proceed with its plans to address congestions at the Highway 417 split. In addition, the Task Force recommends that the City incorporate roundabouts where feasible to address congestion and improve traffic calming.

An integrated and transparent planning approach
Roads, bridges, bike paths, roundabouts, sidewalks, etc., are all part of the transportation system, yet these elements are not integrated from a planning perspective. Growth pressures for increased public transit systems are merely one component of an overall growth strategy and infrastructure plan, which needs to be much better coordinated.

Road infrastructure requirements—resulting from new developments, or excess demand for existing roads—need to be addressed in a coordinated manner, and public transit cannot, and should not, address all interconnectivity requirements. Public transit can reduce the requirement for or size of roads, but it cannot remove the requirement for roads.

The Task Force recommends that Ottawa's Long Range Financial Plan annual release be made public and include:

- A multi-year view of funding requirements.
- Prioritization of projects within each category (renewal, growth, new initiatives).
- Identification of funding shortfall, and impact assessment of delayed infrastructure renewal projects (e.g., the cost to fix the pothole now versus what will it cost to rebuild the road later).

There is little connection between public transit funding requirements and road infrastructure requirements, nor with how funds are assigned at budget time. No consultation with the public is conducted on the relative priority of projects. City staff apply a Council-approved process and methodology; however, neither the policy, process or multi-year priority listing is public. The Long Range Financial Plan notes that funding transportation infrastructure is one of the major challenges of growth, and that transportation solutions may need to involve the expansions of both transit and road networks. Further, that investment in sustainable development saves money in the long term.

Cycling
There is more to a cycling plan than painting lines on the pavement. In many European countries and in Victoria and Montreal, there are bicycle-only paths. In Norway and Sweden, bicycles have priority over other vehicles.

In Ottawa, path maintenance also needs to be improved. After car accidents, debris—especially glass—is left in roadside bicycle lanes with the ensuing flat tires and manoeuvring to miss the debris. The surface of cycle paths must be level, clean and safe for fast cycling.

Too often, the needs of cyclists are not considered in design and maintenance planning. A re-engineering of the City's design and maintenance practices is needed if the goals stated in the Transportation Master Plan are to be met. Cycling is prominently featured in the Plan, but little attention appears to be paid to the recommendations. The Task Force supports implementing the Plan's recommendations wherever feasible.

Walking
Humankind's oldest mode of transportation is still the cheapest and most environmentally friendly. More could be done to encourage walking in Ottawa. The design and maintenance of walkways is in need of reengineering in order to meet the policy objectives of the City Transportation Plan. The Task Force supports implementing the Transit Plan recommendations wherever feasible.

Scheduling and regulation systems
Using the Global Positioning System (GPS) and scheduling algorithms will improve reliability and make it easier to regulate and run the public transit system. These options should be explored.

7. Revitalizing Downtown—The Tunnel

Ottawa is a beautiful city with a vibrant downtown core where public transit plays a central role. In fact, the downtown core is the linchpin of the entire transit system. If public transit does not work in the core, the entire city suffers. For this reason, the Task Force spent a great deal of time addressing and analyzing transit challenges downtown and developing corresponding solutions.

Effective public transit encourages people to leave their cars at home, which in turn reduces congestion downtown and improves the quality of life in the core. However, the Transitway's success in bringing people into and through downtown has, paradoxically, begun to threaten the core and the efficiency of the whole transit system.

Albert and Slater Streets, the Transitway's two routes through the core, are at capacity during rush hour—leading to a system that can no longer operate efficiently. Running such high volumes of buses through downtown is at odds with building a vibrant streetscape that attracts a sustainable commercial and residential mix—a mix that is in keeping with the smart growth principles outlined in Ottawa's Official Plan.

To alleviate the bottleneck downtown and build a more inviting streetscape, the Task Force recommends boring a tunnel. It should be built to standard-sized railway specifications. This would allow the tunnel to accommodate a heavy rail solution, should future demand warrant it.

The LRT technology choice for a tunnel

There are a number of possible technology choices for underground LRT. The most suitable, in the short term, is a bimodal diesel-electric system, which would operate on diesel in the outlying areas and on electric power through the tunnel to reduce exhaust requirements. This would have the additional advantage of immediately providing continuity of service with the existing O-Train route. Assuming the other recommendations of the Task Force are accepted, this would also allow the other parts of the proposed system to have direct non-transfer service to the downtown.

Although it might be attractive operationally to have a self-contained downtown section with all-electric light rail vehicles or trains, this option would force transfers onto a fairly short segment of line at both ends. It also precludes through-transit in the downtown core.

Many transfers could be avoided by having a system that allows less expensive technology outside downtown and more advanced (and costly) technology where it is needed in the centre, permitting transfer-free trips from an electric in-town line on to suburban and even rural lines outside the city centre. This technique was first adopted in Karlsruhe in Germany, where city trams (LRVs) run onto the railway system to serve suburbs and neighbouring towns.

Addressing the bottleneck

Nine decision criteria for optimizing downtown

One of the main reasons the North-South LRT proposal failed to achieve popular and Council support was that it didn't adequately address the downtown bottleneck in our transportation system. The Task Force has identified nine critical decision criteria to consider when looking at the transit options for the downtown.

These nine decision criteria all support the chief decision criteria—attracting more riders to public transit. Another important decision criteria, servicing underserved areas, is also addressed through the nine decision criteria applied to downtown and outlined below. These nine criteria show how to dramatically improve downtown transit, which will enable the entire transit network to function more effectively. This will in turn allow the system to expand and meet the needs of underserved areas. It will also improve the travel experience from outlying areas into and through the core, which will build ridership across the transit system.

1. Service reliability

The transit system must be reliable and predictable. Trips should adhere to within three minutes of the schedule 95 percent of the time. Departing ahead of schedule is unacceptable. Service reliability is based upon a number of factors, including operator training, congestion and service design. It is outside of the scope of this report to deal with operator training; however, congestion and service design play an integral part in our report.

2. Survivability

The transit system must be designed to minimize the possibility of major disruption to service. Disruption to service includes factors like accidents (whether involving public transit or other vehicles), severe weather, construction and so forth.

3. Growth potential

The solution must have enough capacity now and in the long term. To spend large amounts of money on a system that will be at or near capacity in the near future is unwise. Any significant investment should be looked at in terms of a solution for the next 50 to100 years.

4. Transit speed

If the goal is to increase ridership, with all of the economic benefits that this entails (reductions in pollution and congestion, savings in road construction, etc.), the system must be faster than the private automobile over comparable routes.

5. Comfort

A reasonable level of comfort is required to attract new riders to the system.

6. System costs

Any realistic examination of options must consider the costs of the different alternatives. However, in discussing the costs of a transit system, it is important to consider not only the costs of infrastructure and construction, but also operating costs and life cycle costs. A system that will require high operating costs to function will require a higher transit cost for its passengers. With speed and comfort, the cost of public transit is the third important factor in attracting new riders.

7. Network integration

Any solution for the downtown must be integrated into the larger public transportation system as it exists now and in the future. Walking, cycling and car travel must also be integrated.

8. Improving the downtown streetscape

An improved transit system in the downtown is not only about moving people, but also about creating a better urban environment for pedestrians, cyclists, business, tourists, residents and the thousands of people who work there. The transit system forms the foundation and stimulus for economic development in the downtown core.

9. Environmental impact
A downtown transit solution must have a positive environmental impact. It must address climate change and reduce air and noise pollution. Efforts to reduce and eventually eliminate particulates from diesel combustion must be prioritized.

Four categories of public transit alternatives

These nine criteria have been applied to the different alternatives for public transit in the downtown. In general, the alternatives can be broken down into four main categories:

1. Surface bus transit
2. Underground bus transit
3. Surface LRT only
4. Underground LRT

Although there are many different variations within each category, the characteristics of the service model tend to be consistent among the different variations. Some of the more important variations are briefly examined here.

1.0 Surface bus transit

The current system of bus transit in the downtown core was adopted during the construction of the Transitway through the late 1970s and early 1980s. At that time, the Transitway was built from the outside in, with the idea of constructing a bus tunnel under the downtown. The tunnel through the downtown was eventually rejected on the grounds of cost, and the current system of eastbound buses in a reserved lane on Slater Street and westbound buses on a reserved lane on Albert Street was adopted. The two streets are four lanes wide with narrow sidewalks that have been expanded at major bus stops, consequently reducing the width of the road to three lanes at stops. This leads to an unfriendly and dangerous pedestrian and cycling environment. It is also a complicated, accident-prone transit corridor for the inexperienced downtown rush hour driver.

As of late 2005, the two streets carried the main Transitway routes and most of the main-line routes travelling through the downtown core. In addition, the streets are used by large numbers of deadheads (empty buses that have completed their route). These deadheads travel in a westerly direction along Albert in the afternoon rush hour and in an easterly direction on Slater during the morning rush hour. Albert Street carries 8,000 transit passengers per hour from the east at the peak of the afternoon rush hour, and Slater Street carries 6,300 per hour from the west in the morning rush hour.

1.1 Service reliability
As discussed above, the current system is operating close to or above its effective capacity. This inevitably means that congestion will result, leading to a lack of service reliability. As there is increased growth, and therefore a need to increase the number of buses on the Albert-Slater corridor, this will only become worse. As the City report *Downtown Transit Operating Strategies 2007-2010* indicates, "Any delay of more than a very few seconds, which could result from such things as weather, a delivery truck in the bus lane, or a bus stopping twice at one platform, takes away capacity which can never be regained until the service levels diminish later on in the afternoon."[2]

The design of the current system is also a factor in the lack of service reliability. Currently, through the downtown, the system operates in a dedicated bus corridor on streets with stops at approximately two-block intervals with numerous different routes at each stop. Because of the large number of different routes at each stop, there are often significant delays in bus loading, leading to excessive dwell times and a back-up in the system, which often results in buses blocking intersections and thus contributing to traffic congestion throughout the downtown core. Moreover, because current transit demand exceeds supply, buses may be on time but unable to take on new passengers because they are full. A spring 2007 Decima Research survey for the City showed only 45 percent of respondents were satisfied with transit services, a 17-percentage point drop from a similar survey conducted in 2004.

1.2 Survivability
By using streets as the route through the downtown, the current transit system is unavoidably delayed by other activities that occur on the street. These delays cannot be considered exceptional, as they are

2 Report to Transit Committee 1 May, 2007, *Downtown Transit Operating Strategies 2007-2010*

inevitable and occur frequently. Accidents on the street or cross streets, construction in the downtown, vehicle breakdowns, the necessity to work on underground services and simply irresponsible private motorists all contribute to system breakdown.

1.3 Growth potential

The existing system has served Ottawa well. But as early as 2004, OC Transpo announced that the downtown was at its capacity.[3] The City of Ottawa's report 2009 Route Network Concepts Evaluation and Recommendations states that "experience in 2003 and 2004 showed that the operation of more than 170 buses per hour eastbound on Slater in the afternoon peak period is not feasible."[4] The same study concluded that although growth in the system could be accommodated until 2009, "in the years after 2009 . . . service levels would need to be increased to accommodate the increasing ridership. These increasing service levels would not be feasible to operate."[5]

As the city grows, clearly there will be an ever-increasing need to provide more service along the existing routes using Albert and Slater streets. In fact, the City of Ottawa's, *2007 Transit Service Plan* calls for the creation of a number of routes bypassing the centre of the city, but also calls for a dramatic increase in service for a number of routes now using the Albert-Slater corridor.[6]

The City report *Downtown Transit Operating Strategies 2007-2010* clearly indicates the challenges faced in accommodating future expansion on Albert and Slater streets even within the next three years.

Thus, it is clear that to continue to rely on the existing service model of surface bus transit through the downtown, using Slater Street for eastbound travel and Albert Street for westbound travel, leaves little or no room for future expansion.

1.4 Transit speed

Transit speed is largely a function of congestion and the system design. The Transitway provides a fast service along its dedicated corridors. However, through the downtown, its operating speed is reduced by congestion and the limitation of operating on city streets. According to the report *Downtown Transit Operating Strategies 2007-2010*, the average time to travel slightly more than one kilometre from Bronson Avenue to Elgin Street is 16 minutes. It goes on to warn that "on particular days with bad weather or other causes, the average travel times will be much higher." The average time amounts to a speed of slightly more than 4 kilometres per hour. Many people could walk the distance much more quickly. If we accept that speed is a requirement of a successful transit system, clearly, through the downtown, our existing system is not satisfactory.

1.5 Comfort

In order to increase comfort levels, the City of Ottawa's, 2007 Transit Service Plan recommends that the service capacity standard of articulated buses be reduced, with the number of people standing being reduced from 28 percent to 23 percent of riders. This clearly indicates that the current level of passenger comfort is not considered acceptable. However, reducing the number of people standing will have the effect of increasing the number of buses required, thus leading to further congestion and lower travelling speeds.

1.6 System costs

Obviously the infrastructure costs of the existing system have long since been paid and can now be considered negligible with respect to the downtown.[7] However, the operating cost of the system will continue to increase dramatically as congestion rises and bus travel speed through the downtown de-

3 OC Transpo Notice posted Fall, 2004 "Congestion on Slater Street in the afternoon rush hour has increased steadily in recent years causing bus delays and slowdowns. This has affected customers waiting for buses downtown, as well as the reliability of the entire transit system. One of the problems has been the number of buses on Slater Street which could not handle the capacity of the afternoon peak period. We will therefore be reducing the number of buses on Slater Street in the afternoon in order to speed up service and improve schedule reliability."

4 City of Ottawa, 2009 *Route Network Concepts Evaluation and Recommendations*, pg. 28

5 City of Ottawa, 2009 *Route Network Concepts Evaluation and Recommendations*, pg. 28

6 City of Ottawa, *2007 Transit Service Plan*: "Transitway routes 94, 95, 96 and 97 will all require service increases, as will direct-to-downtown routes from Orléans, Beacon Hill, Britannia, central Nepean, Kanata, Bells Corners, and Barrhaven, main line routes from Elmvale and Alta Vista."

7 Infrastructure costs for the downtown were never significant in comparison with the expenses of the different transitways. When Albert and Slater were converted for use by the Transitway, a few signs were erected, lines were painted on the roads, sidewalks were widened at stops, and a few shelters were placed through the downtown.

creases. As the City of Ottawa's, 2007 Transit Service Plan indicates, the "growth of traffic congestion on busy streets, which slows the operation of some bus routes and which thus requires more buses to provide the same level of service" will lead to a requirement for more buses but also an increased labour cost for drivers and mechanics. Increased labour cost will inevitably lead to at least some of these increased costs being passed on to the consumer or transit user. OC Transpo estimates that "each minute of delay on Slater Street in the busiest hour of the afternoon rush hour requires three more buses to be in service, at a capital cost of approximately $1.5 million and an operating cost of approximately $260,000 per year."[8] In making the decision to switch to public transit, the cost as well as speed and comfort are key decision criteria.

1.7 Network integration

The existing Albert-Slater corridor forms part of the larger OC Transpo network. However, the limitations of the downtown corridor will require a dramatic change in the nature of the entire OC Transpo network going forward As the *2009 Route Network Concepts* plan describes, "the continued operation of a large number of express routes from residential areas direct to downtown is not sustainable in the longer term because, with continued ridership growth, the number of buses per hour required and the numbers of passengers crowding at bus stops would exceed the capacity of the space available on Albert and Slater streets."[9]

1.8 Improving the downtown streetscape

Since the implementation in the 1980s of the downtown Transitway on Albert and Slater, there has been a steady decline in the environment on those streets. The streets used to support a significant number of restaurants and retail businesses, many of which have since disappeared. The problem is that the endless line of diesel buses during the morning and afternoon rush hours, and the required lack of on-street parking have made the survival of many of these businesses difficult. That said, the streets do retain some measure of life and have not declined to the extent that Rideau Street did when it was closed to all private vehicle traffic, or to the extent that Seventh Avenue in Calgary, a transit mall, did. Still, the current situation is not satisfactory for a city that is the capital of Canada and relies on tourism as its third largest employer.

1.9 Environmental impact

From an environmental perspective, it is irresponsible to have an endless line of noisy diesel buses stopped the length of the downtown emitting vast amounts of dangerous diesel exhaust, which contains cancer-causing particulates.

Surface bus transit variations

There are three main variations of the existing surface bus system that should be considered briefly to determine if the streets offer enough capacity for future growth.

The replacement of articulated buses by double-deckers through the downtown has been suggested as a solution to the existing capacity issues on Albert and Slater streets. Based on numbers from the *2009 Route Network Concepts* plan, if all articulated buses using Slater Street in the afternoon rush hour were replaced with double-deckers, this would allow for a potential increase in capacity of only 9 percent.[10] However, even this modest potential for expansion may be severely limited by increased dwell times at bus stations. According to a study in United Kingdom, the dwell times of double-decker buses are significantly longer than those of articulated buses if more than 10 people are loading or unloading. Increased dwell times will lead to greater congestion and a slower trip through the downtown. Even in the United Kingdom, where the double-decker holds a special place in the affections of many bus riders, many cities have abandoned the double-decker in favour of articulated buses because of the higher capacity and shorter boarding times for articulated buses.[11]

Another variation of the existing system would be the creation of a bus transit mall through the downtown. This would involve the closure of one street, presumably either Albert or Slater, to all vehicular traffic except for buses.[12] This option would not significantly increase public transit capacity

8 Report to Transit Committee May 1, 2007, *Downtown Transit Operating Strategies, 2007-2010*
9 City of Ottawa, 2009 *Route Network Concepts Evaluation and Recommendations*, pg. 29
10 Based on bus manufacturer's stated capacities: www.newflyer.com
11 www.busexplorer.com/WorldBus/BritishDoubleDecker-Text.html

through the downtown. Currently, the streets have narrow sidewalks and a maximum of four lanes that is reduced to three at bus stops. Assuming bus stops were staggered every second block, so that each block would have either a westbound or eastbound stop, this would mean that there would be a total of three lanes available for use by the buses. Currently, in rush hour, the buses use both the bus lane and the adjacent lane on a regular basis. Thus, in fact, the capacity of the streets for public transit would be less than currently exists and congestion would increase.

A third variation of surface bus transit would be to move towards a full hub-and-spoke system using major transfer stations at either end of the downtown. This would require the elimination of all express buses. Instead, a shuttle bus would run between the two hubs at either end of the downtown core. This is similar to the plan put forward by the Friends of the O-Train but using buses instead of LRT to run between the two hubs. While this would decrease boarding times at the stations and thus increase the number of buses able to use the streets, it would not increase capacity dramatically. The majority of the existing buses leaving the downtown core are already at capacity, and the incremental gain does not warrant having every passenger transfer from one bus to another. Most of the disadvantages of the current system would remain in effect, with poor comfort levels and high operating costs for a marginal increase in capacity.

Surface bus transit: conclusion

From the preceding, it is clear that maintaining a reliance on a surface bus system through the downtown is not viable in the medium to long term. This alternative offers little or no potential growth in capacity, and the factors that make service reliability difficult will continue now and in fact get worse as congestion increases. This will also lead to a decrease in transit speed through the downtown and offers no improvement over the existing level of service comfort. Although this option offers relatively minor costs in infrastructure, future operating costs will increase, leading to increased fares. Maintaining the bus system on the street also offers no improvement to the downtown environment, and as volumes increase, the quality of street life will decline. As this alternative offers little growth potential, increasingly poor service reliability and reduced speed, high operating costs and fares, it does not offer an attractive alternative for commuters to abandon their cars and switch to public transit. That said, a few bus routes should continue on the streets to serve local needs.

2.0 Underground Bus Transit

The original plan for Ottawa's bus Transitway included bus tunnels under Albert and Slater streets.[13] This plan was abandoned because of cost, and the existing system on Albert and Slater streets was implemented as a short-term solution. Some people have suggested that Ottawa should now look at constructing the tunnels as a solution to the current congestion problems in the downtown.

2.1 Service reliability
From a service reliability perspective, a pair of downtown bus tunnels would be a satisfactory solution in the short and medium term until congestion became an issue.

2.2 Survivability
By running on a grade-separated route, below existing services, an underground bus system would not be subject to accidents, poor weather conditions and the other inevitable delays of operating on the surface.

2.3 Growth potential
To provide enough capacity for current demand, a bus tunnel through the downtown would require a minimum of two lanes and a platform area in each direction. To attempt to meet the transit demand with only one lane in each direction would lead to a worse situation than now exists at street level. A total width of four lanes and two platform areas would require the boring of two large tunnels under separate streets, as no street in the downtown is wide enough to accommodate a tunnel of this size.

12 Depending upon the route selected, this may not even be possible. For example, it is our understanding that Bell Canada has a permanent easement on the most southerly lane of Albert Street between Bank and O'Connor, which it is unwilling to give up.
13 *Central Area Transitway Grade Separation Feasibility Study*, Delcan, 1988

This was recognized in the original plans developed by Delcan, which called for a 13.5 metre wide tunnel running under both Albert and Slater Streets. This allowed for two bus lanes and a loading platform of six metres at each stop.

A bus tunnel under the downtown offers some potential for future growth, but it should be noted that for much of the length of Albert and Slater streets, buses now already regularly use two lanes during rush hour. Thus, this alternative does offer increased capacity but it may well only be adequate in the short to medium term and may not meet our criteria of offering a solution for the very long term.

2.4 Transit speed

In the short and medium term, transit speed would be satisfactory and would only be limited by dwell times at stations and any future congestion that might occur in the transit tunnels.

2.5 Comfort

The level of comfort of the system would be similar to that which exists on the existing surface system and would not be enhanced.

2.6 System costs

The infrastructure costs for this system would be significant. The only study presented to the Task Force[14] called for the boring of a large tunnel under two streets through the downtown. It would also require expensive air handling to exhaust the vast amount of diesel fumes emitted by hundreds of buses every hour.

Operating costs for this system would be slightly lower than for the surface bus alternative, as the speed of operation through the downtown would be greater. However, because each bus would require an operator, the costs of operating the system would remain relatively high, as there would be no reduction in the number of buses needed to operate the system.

2.7 Network integration

A pair of underground bus tunnels would offer full network integration with OC Transpo's current transit system.

2.8 Improving the downtown streetscape

On the whole, the construction of a pair of downtown bus tunnels, as outlined in a study presented to the Task Force, would be a positive solution for the quality of life of the downtown. This would allow the redevelopment of Albert and Slater streets with the widening of sidewalks, reducing road width to three lanes and making the streets more friendly for pedestrians, cyclists, residents, tourists and the thousands of people who work in the immediate area. In addition, the construction of a bus tunnel could be used to help develop an underground system of walkways linking the downtown core.

2.9 Environmental impact

From an environmental perspective, it would be extremely important to have a powerful air handling system in order to properly ventilate the tunnel of all diesel exhausts and particulate emissions. Furthermore, the way in which the exhaust is dealt with at surface level would have to be studied carefully in order to minimize health hazards.

Construct a downtown bus tunnel: conclusion

The construction of a pair of downtown bus tunnels, as outlined in a study presented to the Task Force, under the downtown core appears to meet the decision criteria for the short and medium term with respect to growth potential, service reliability and transit speed. There remains some doubt as to whether it would meet the criteria over the very long term. When considering the levels of passenger comfort, a downtown bus tunnel offers no improvement over the existing system. Provided mitigating measures were taken to deal with the exhaust from the bus tunnels, this alternative meets the criteria for improving the downtown environment. However, the costs of this solution are unsatisfactory. The initial investment in infrastructure would be very great and would offer little future reduction in operating costs.

14 *Central Area Transitway Grade Separation Feasibility Study*, Delcan, 1988

3.0 Only Surface Light Rail in the Downtown

There are a variety of ways in which surface light rail might be implemented in the downtown. Surface light rail can be added to the existing transit mix as was proposed for the North-South LRT project, it can operate on its own dedicated corridor, or it can operate as the main source of public transit on city streets as the Friends of the O-Train (FOTO) have recommended. All three variations share many of the same advantages and disadvantages, so for the purposes of this study we will focus on the FOTO proposal. The other two options will also be looked at briefly in lesser detail.

3.1 Service reliability
The FOTO proposal would significantly improve service reliability through the downtown. By removing the vast majority of the buses from the streets, congestion would be dramatically reduced and the dwell times of the new LRT system would be relatively minor, as all passengers would alight on the new LRT and subsequently transfer at one of the hubs.

3.2 Survivability
Surface light rail would be subject to many of the same inevitable disruptions and delays in service as surface bus operations. The factors that would seriously detract from service reliability would include problems at intersections, maintenance on underground services, emergency vehicles and countless other problems associated with operating on busy streets. For example, in the fall of 2006, two windows were broken and fell from the top of a downtown hotel onto Albert Street. This necessitated the closing of Albert Street to all traffic for two days. Buses were re-routed along Queen Street, but the delays and traffic jams were felt throughout the downtown. With the FOTO proposal, our transit system would be in absolute chaos should something like that occur again. As the LRT operates on fixed rails, detouring vehicles around an accident is impossible, so the entire transit system would come to a halt until buses could be deployed to reinstate service. The situation is aggravated by the fact that the two lines are a block from each other. The City of Edmonton has found that even operating LRT in the protected environment of a tunnel requires crossover tracks. Without crossovers, the LRT system will function very reliably until something goes wrong. However, when there is a problem, it becomes a serious problem for the entire system.

3.3 Growth potential
FOTO has developed a concept for the downtown in which major hubs would be built at Bayview and Hurdman. Under the proposal, all Transitway buses would be turned at the hubs, and electric LRT vehicles would carry the passenger load between the hubs using Slater Street eastbound and Albert Street westbound through the core.

The FOTO plan offers significant growth potential. FOTO calculates that current passenger volumes could be met by using three LRT vehicles coupled together at three-minute intervals. Future growth could be accommodated by increasing the frequency up to every 90 seconds giving enough capacity to accommodate approximately twice the current demand. However, it is interesting to note that Calgary, which has surface LRT through the downtown, is now approaching its maximum capacity with a population of approximately one million people. Calgary is beginning to look at plans to put the downtown portion in a tunnel along Eighth Avenue.

3.4 Transit speed
As congestion would be dramatically reduced on the two streets, the speed of the service through the downtown would be dramatically enhanced. The only limitation on transit speed would be the need to operate at reduced speeds because of the on-street presence of private vehicles, pedestrians and cyclists. Traffic lights could be synchronized to minimize delays at intersections.

3.5 Passenger comfort
The level of passenger comfort and satisfaction would also be enhanced. Many will cite the problem of requiring passengers to transfer at the hubs on either side of the city as a major problem, but journeys with multiple transfers are common throughout most of the world. Provided the hubs are properly equipped, temperature controlled and well designed, and that they include an engaging mix of commercial services, transfers should not be a major problem.

3.6 System costs

The FOTO proposal would be moderately expensive to build. It would require the construction of major transfer hubs at Bayview and Hurdman, and much of the same construction requirements as were anticipated by the North-South LRT proposal. To minimize future disruptions, it would be necessary to significantly rebuild the services under Albert and Slater streets. In addition, there would be extensive legal costs required to resolve issues of responsibility for service changes with major utility companies.

Operating costs would be dramatically lower through the downtown, as the complete service as proposed would only require 20 operators to cover the length from Bayview to Hurdman in peak periods. This would allow suburban buses to turn at the major hubs and provide better suburban service with no additional drivers or buses.

3.7 Network integration

An aspect of the FOTO proposal that causes some concern is how the downtown proposal fits into the other existing pieces of the network. It would seem only logical to integrate the diesel O-Train line into the new service running through the downtown, rather than requiring these passengers to also transfer at Bayview.

3.8 Improving the downtown streetscape

The removal of all but a small number of buses from the streets of downtown would be an improvement to the downtown environment. While the benefits for the street environment would not be quite as great as the underground bus tunnel, there would still be a substantial improvement in the street environment.

There are, however, some drawbacks to the FOTO proposal. The three LRT vehicles coupled together called for by FOTO would take up a great deal of each city block. Although low-floor cars would be used, the sidewalks would still have to be raised to allow for accessibility at stations. This would be hazard for pedestrians, as the sidewalks would in effect change heights at different places. Additionally, the length of each LRT train would seriously impede access to many of the buildings and garages on the street.

There are also safety concerns related to running surface LRT. For example, in Calgary, on average, there were two pedestrian fatalities per year between 2003 and 2006 involving the LRT system. It is not unreasonable to expect more accidents in a system in which the LRT is not operating on its own right-of-way as it is in Calgary. This would seem to be confirmed by the experience of Houston, where there have been a large number of accidents with LRT vehicles.

3.9 Environmental impacts

Using surface electric light rail through the downtown would have few negative environmental impacts from the perspective of air quality and emissions, and would be a great improvement on the current situation. There is, however, some concern about the impact of noise from daily operation and in particular the grinding of rails on a semi-annual basis. It was also observed in Calgary that some significant vibrations were experienced in street level businesses along the LRT route. Finally, from an aesthetic point of view, it seems unfortunate that the City has spent millions of dollars burying electric lines along Bank Street, only to then string electrical power lines down the middle of Albert and Slater streets.

Surface LRT Variations

Two surface variations of LRT are worth examining further. The first would involve adding surface LRT to the Albert-Slater corridor to eliminate a limited number of bus routes. The second would involve the construction of an LRT transit mall on one of the downtown streets.

Replacing a limited number of bus routes with surface LRT was essentially the approach taken for the North-South LRT project with respect to the downtown. Although this would allow better implementation into the existing network, the fundamental problem remains one of capacity on the streets. For example, under the North-South LRT project, the resulting combination of LRT and bus volumes represented a large increase in the transit volume on the two streets. As importantly, because of the high volume of transit and congestion, the dramatically lower operating costs of LRT would be lost.

Further, the mix of a large number of buses, LRT vehicles, cars, trucks, taxis, cyclists and pedestrians would greatly increase the risk of accidents, causing delays to the system.

The construction of a downtown LRT transit mall is the approach that was taken by Calgary on Seventh Avenue. The adoption of a transit mall would be a tremendous economic detriment to the downtown. In Ottawa, we have tried closing streets to all but public transit in the past. On Rideau Street, eventually the City was forced to reverse itself and some 10 to 12 years later, the street has still not fully recovered. All the buildings along Albert and Slater streets require deliveries, garbage removal, etc. As few of the buildings on Albert and Slater extend through the block, these services must be provided from the street on which they are located.

Albert and Slater streets also have a large number of parking garages with access exclusively from one or the other street. Not only does this have an impact on the direct revenues of the building owners operating the garages, but restricting access to these garages will also significantly reduce the value of their property, as many tenants require at least some parking as a condition of lease. According to the North-South LRT Environmental Assessment, there are 32 garage accesses on Slater Street and 22 on Albert Street. In addition, there are a significant number of on-street parking spots, loading zones, and taxi stands on the streets—all of which are imperative to the survival of the businesses located there.

The following hotels have their only public access fronting on either Albert or Slater streets: ARC the Hotel, the Capital Hill Hotel & Suites, Sheraton Ottawa Hotel, Albert at Bay Suite Hotel, Albert House Inn and Travelodge Doral Inn. Peak times for arrival and departure of hotel guests coincide with transit peak periods. Access by private vehicle traffic, taxis and tour buses is critical for the survival of a hotel.

Surface LRT: conclusion

The adoption of surface LRT, provided that it is exclusive, would appear to meet the decision criteria for transit speed, comfort and operating costs. The growth potential would appear to be adequate in the short and medium term, and service reliability would be satisfactory. But the survivability of the system is a serious concern, because accidents, service work and vehicle breakdowns are all part of daily life on busy downtown streets. The network integration of the plan is another area of concern. While there would be a significant improvement to the street environment with the removal of the buses from Albert and Slater streets, the improvement would not be as great as that experienced with a bus tunnel under the streets.

4.0 Underground LRT

This alternative would involve the removal of all but local buses from the downtown and using surface LRT from a major transfer hub at Bayview to the escarpment immediately west of Bronson Avenue. At this point the LRT would go underground and re-emerge to the surface in the area of Campus Station at Ottawa University and then continue on the surface to the Ottawa Station (VIA). This would require an underground tunnel of two to three kilometres in length.[15]

4.1 Service reliability

From a service reliability perspective, a downtown LRT service would provide the most reliable service of the alternatives examined here. Both Calgary and Edmonton report greater than 95 percent reliability. This is also consistent with Ottawa's O-Train experience.

4.2 Survivability

As with underground bus transit, by running on a grade-separated route, below existing services, an underground LRT system would not be subject to accidents, poor weather conditions and the other inevitable delays of operating on the surface. The inclusion of frequent crossover tracks in the tunnel would be a necessity to ensure that the impact of an LRT breakdown would be minimized.

15 From Bronson Avenue to Elgin Street is 1.2 km, and the exact length of the tunnel will vary depending upon the route selected.

4.3 Growth potential
An underground LRT system provides the greatest growth potential of the alternatives examined here. The only limitation on the size of trains is station size, and stations can be made larger than is immediately required, with sections closed until they are required. The frequency of the vehicles is not restricted by traffic light cycles or other considerations, making the system suitable for frequent service.

4.4 Transit speed
Of the alternatives examined here, an underground LRT system offers the best transit speed.

4.5 Comfort
As in the case of surface LRT, passenger comfort would be enhanced in an underground LRT system. This system would also require passengers to transfer at Bayview and some at Hurdman and the Ottawa Station (VIA); however, passengers using the expanded O-Train route and other routes proposed by the Task Force would have a direct trip into the downtown core.

4.6 System costs
The construction costs of this alternative would be considerable, but a number of downtown businesses have indicated a willingness to participate in the costs of station construction provided that stations are connected directly to their buildings. This has the potential of reducing the costs of this alternative.

The operating costs of a partially underground LRT system would be extremely low. With almost no potential delays, the strengths of an LRT system as an inexpensive, quick people mover would be exploited. Calgary currently estimates that the net operating cost per person of the LRT portion of its transit system is $0.30. OC Transpo's net operating cost per person is $1.27. (Calgary's net operating cost per person is $1.06 for the entire transit system.)[16]

The underground portion of the LRT line would have to be electrified to avoid ventilation problems as outlined in the underground bus section, even if the diesel trains would produce two-thirds less exhaust than buses. The cost of surface rail electrification is estimated at $1.2 million per kilometre for double-track plain line.[17] This would likely be more underground, but electrification of the tunnels would permit the use of diesel-electric bimode trains compatible with the diesel trains on the existing O-Train line. A simple direct current overhead line would suffice, using overhead aluminium rails, as used in tunnels in France and Switzerland. Bimode LRT vehicles are used successfully in a number of cities.

4.7 Network integration
Although this alternative would not integrate as well with the existing OC Transpo network as an underground bus tunnel would, it does offer excellent integration with the other LRT proposals of the Task Force. If all the Task Force's recommendations are accepted, the underground downtown route would integrate seamlessly with all of the proposed LRT routes. And in the long term, the Task Force recommends that the Transitway be converted to LRT.

4.8 Improving the downtown streetscape
The construction of an underground LRT system through the downtown would be a great enhancement to the downtown environment. The removal of all but local buses from Albert and Slater Streets would allow the roads to be reduced to three lanes with wider sidewalks. This would lead to a friendlier environment for cyclists, pedestrians, residents, tourists and the many employees in the area. Within a short period of time, this would lead to a growth in retail and restaurants on the two streets. It could also lead to a system of underground pathways through the downtown and the development of underground retail space as has occurred in both Montreal and Toronto. It is also the best option for improving property values in the downtown core.

4.9 Environmental impact
As the LRT operating in a tunnel would be have a diesel-electric bimode power source and be operating on electricity, there would be little negative environmental impact from this alternative. Noise

16 *Canadian Urban Transit Association 2005 Fact Book*
17 Calculated from estimate by Ian Walmsley, "*What Trains Will Look Like in 2045*," Modern Railways, April 2007

and vibration would also not be a factor. In fact, in Edmonton the southern LRT line passing directly under the University Hospital, which uses equipment that is very sensitive to vibration; no problems have been reported there.

Underground LRT: conclusion

With the exception of the costs of construction, an underground LRT system would appear to provide the best solution based upon our decision criteria. Even the costs of the construction of the project are relatively minor if one considers that the tunnel will be an asset that will be used by transit riders for generations to come. In this context, it is worth remembering that the London Underground celebrates its 145th anniversary in 2008 and the New York subway system celebrated its 100th anniversary in 2004. Furthermore, assuming that operating costs like those in Calgary can be achieved within a reasonable time frame, the return on investment is relatively rapid.

Summary and recommendations for downtown

From the above, it would appear that the proposition of surface bus transit through the downtown corridor is not a viable alternative for the future. Although it is clear that all the decision criteria discussed above should not necessarily be weighted equally, it is apparent that the underground LRT option offers the best long-term alternative for the downtown and the transit system as a whole. This is followed by a surface LRT-only option and by an underground bus tunnel through the downtown. As the underground LRT option appears to be the most viable, it must be examined more closely.

Light-rail tunnel

Underground routes

Given the current Transitway bottleneck downtown, the Task Force recommends that a tunnel be bored through the downtown core. Further, the Task Force recommends that the tunnel be built to accommodate light rail but be bored to have the capacity to carry heavy rail (i.e., a subway) should extra capacity be needed later this century. Task Force meetings with Councillors showed that many of them now appear to be receptive to a tunnel solution, given the obvious congestion on the two streets.

There are a number of viable routes for an underground LRT, which would need to be evaluated in detail. All of the different east-west streets from Laurier to Sparks have pros and cons that must be weighed. The Task Force was told that a tunnel should be north of Slater to take advantage of the optimum rock formation. It has always been envisioned that a tunnel would go under the Canal at the Mackenzie King Bridge. However, ideally the preferred route would cross the canal north of the National Arts Centre to take advantage of the former railway station, known as Union Station, as a major downtown central station.

This route has obvious advantage. The north entrance of Union Station would serve the Byward Market, the Parliamentary precinct, Confederation Square and Rideau Street. The south entrance would serve the Congress Centre. Both entrances would serve the Rideau Centre. A spur could also be built for a future connection with a route to serve the Rockcliffe airbase development and also possibly a route across the Alexandra Bridge to Gatineau. Using one of the streets north of Albert would offer the additional advantage of not disrupting the existing bus service during the construction phase.

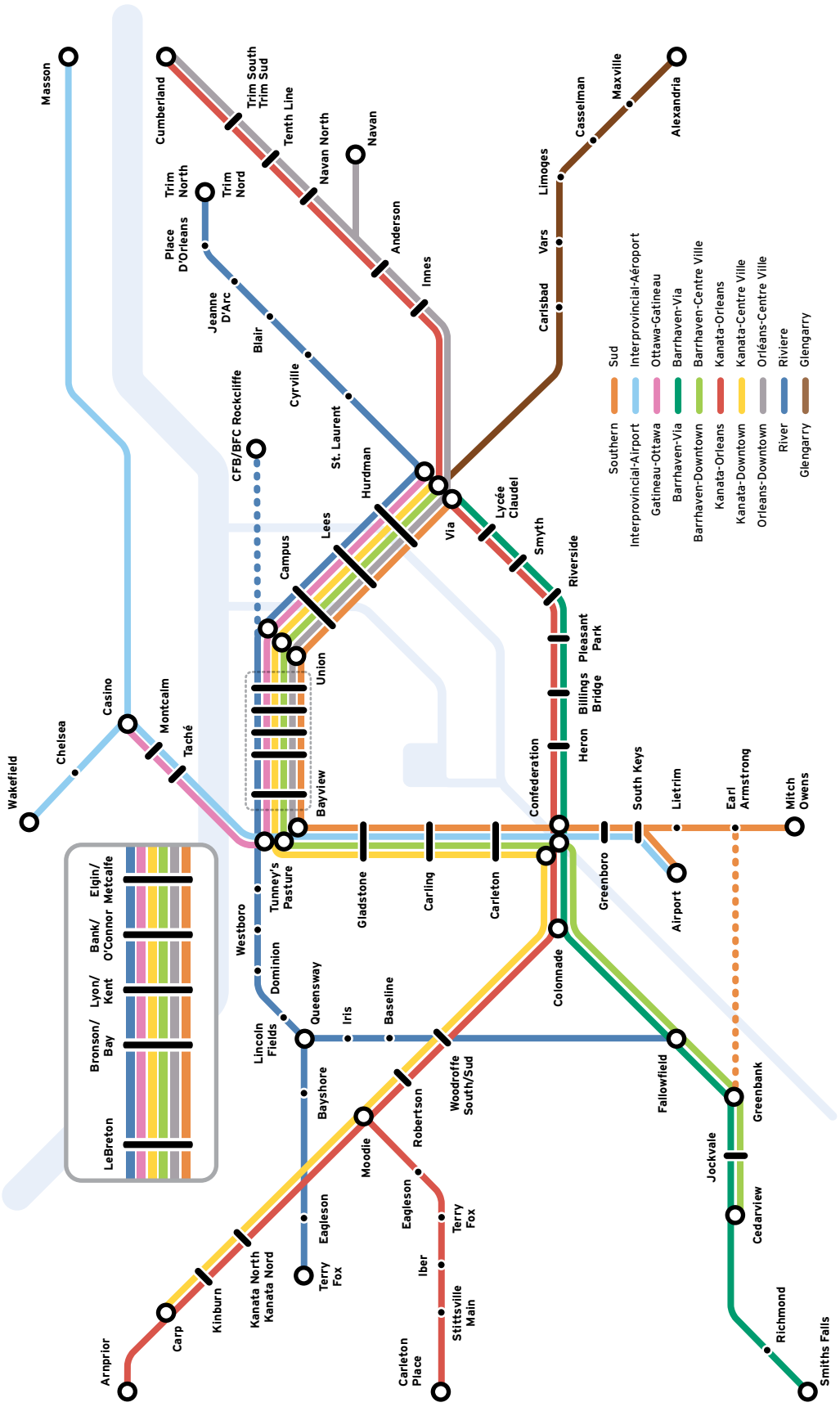
Minimizing downtown disruption

The Task Force recommends a bored tunnel because this option is less disruptive than a cut and cover approach, which consists of digging a large trench and then covering it. We argue that no matter what form a tunnel takes, it should be designed in a way that minimizes disruption in the downtown core.

8. An Integrated, Region-Wide Light Rail Solution

A vision of an integrated, region-wide LRT system guided the Task Force's recommendations for proposed routes across the city. The Task Force attempted, wherever possible, to keep costs to a minimum by proposing to use existing infrastructure, creating an expandable and interconnected network that allows the greatest possible flexibility to accommodate changing passenger volumes and transit demands. The Task Force relied on its decision criteria and the City's 2005 Origin–Destination Survey to propose an LRT network based on the O-Train model. This network would be served by a hub-and-spoke bus system. Riders could also board trains from cars through park-and-rides and kiss-and-rides.

An integrated, region-wide light rail solution



Decision criteria

The Task Force argues that its recommendations for routes across the city deliver value for money and conform to the following list of decision criteria:

1. Service reliability
2. Survivability
3. Attracting new riders
4. Serving underserved areas
5. Growth potential
6. Transit speed
7. Comfort
8. System costs
9. Network integration
10. Improving streetscapes
11. Environmental impact

The limited time the Task Force had to meet its mandate placed constraints on gathering specific data on suburban routes. A smaller amount of available data meant that the Task Force was unable to apply these decision criteria as rigorously as was the case in evaluating options for downtown. It should also be understood that the Task Force intentionally focused a great deal of effort on proposing recommendations to improve transit downtown. The downtown is key to the entire transit system. If the downtown works smoothly, riders moving in and out of the core to outlying areas will have a better transit experience. There are also numerous smaller examples of how improving transit downtown will have a positive ripple effect throughout the system. For example, if buses are replaced by LRT in the core, surplus buses could be redeployed to vastly improve intra-neighbourhood service in outlying areas and as a feeder system to LRT stations.

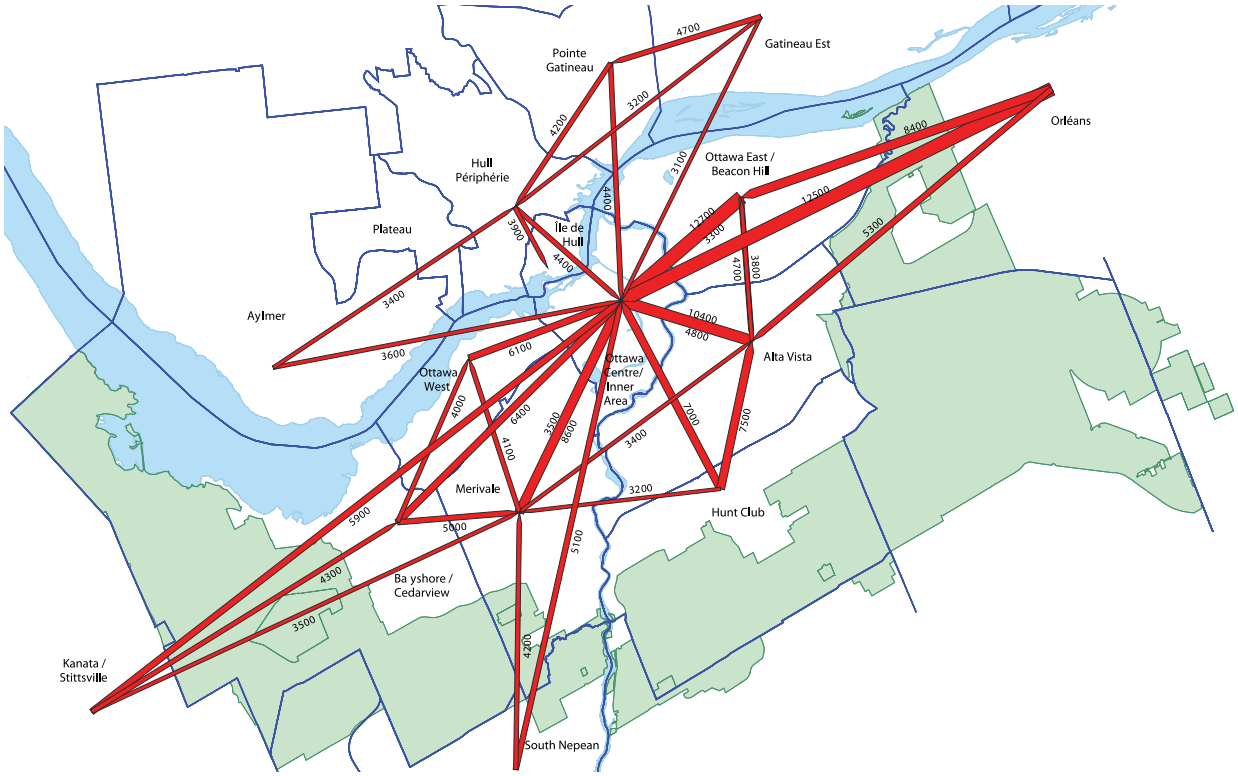
The Origin–Destination Survey

The Origin–Destination Survey played a significant role in the Task Force's evaluation of suburban route options. This survey and the identification of existing rail corridors and right-of-ways allowed the Task Force to propose a vision of a truly integrated, region-wide LRT system. The survey provides a detailed picture of the "who, where, why, when and how" of trips made by residents of the National Capital Region.

The survey was conducted in the fall of 2005 through telephone interviews. In all, 23,912 telephone interviews were completed, representing 5.1 percent of all households in both urban and rural districts of the survey area. Statistically, this is considered a rich sample. The survey data will be used to update the regional transportation model and be applied to many transportation planning studies, such as environmental assessments and the updating of the Transportation Master Plan.

Major Origin-Destination Morning Flows (by districts) 2005

(Only flows greater than 3,000 person trips are shown)



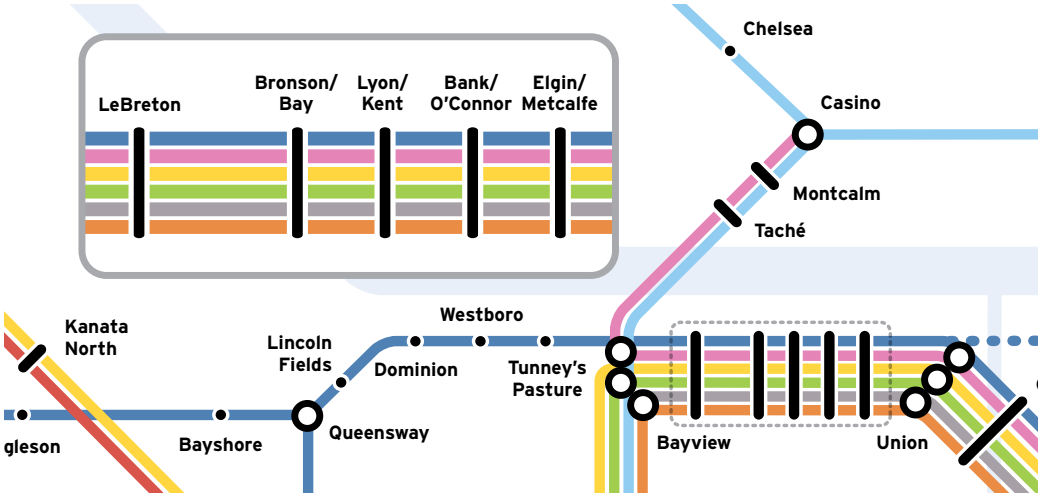
Rail corridors and the train lines that run through them

This section outlines the corridors and the proposed train lines that will run through them. The corridors are existing rail corridors or rights-of-way that that the City could acquire.

Within each corridor, one or more train lines will run over the same set of tracks. For example, several lines will share the tracks in the downtown corridor, which includes the proposed tunnel. The north-south corridor, which stretches from Mitch Owens Road in the south to the Casino in Gatineau in the north, will be used by five separate train lines over the same set of tracks. In some cases, a train line will travel through more than one corridor. The Barrhaven-Downtown Line, for example, begins its journey travelling east through the Barrhaven Corridor then heads north (where the CNR tracks cross the current O-Train tracks) along the North-South Corridor and finally finishes its journey travelling through the Downtown Corridor to terminate at Ottawa Station (VIA).

The Downtown Corridor

Downtown lines



As discussed in the previous section, the Task Force recommends the construction of a downtown tunnel. The line through the tunnel would be double tracked for its entire length and would rely on diesel-electric bimode technology.

The line would cross Lebreton Flats on the surface where there would be a major interchange for buses coming from the western Transitway and Gatineau. There should be a careful modeling and phasing in of the bus transfers in order to ensure smooth transfer of passengers. Six train lines would travel through downtown. The lines would proceed through the downtown in a tunnel from the Bronson escarpment with underground stations, re-emerging in the area of Campus station. From there they would proceed on the surface to the major hub at the Ottawa Station (VIA).

This is the only part of the Task Force recommendations that requires a heavy investment in construction of the route. However, the Task Force feels that the investment is imperative as this section will serve users of the entire system.

If all the recommendations of the Task Force are accepted, by the time the downtown tunnel is completed in 2012-2014, passengers will be able to access the LRT network for a direct LRT trip to the downtown from Kanata North, Bells Corners, Barrhaven, Riverside South and the proposed major STO transportation hub at the Casino in Gatineau. Convenient access to the LRT network will be made by walking, cycling, taking a short bus ride or driving to an LRT station. By 2015, the tunnel will also service passengers coming directly from Orléans South.

In Section 7 of this report, the Task Force applied the decision criteria to the underground portion. However, it should also be noted that the Task Force plan provides an excellent opportunity for the creative integration of public transit into the development of the Lebreton Flats community.

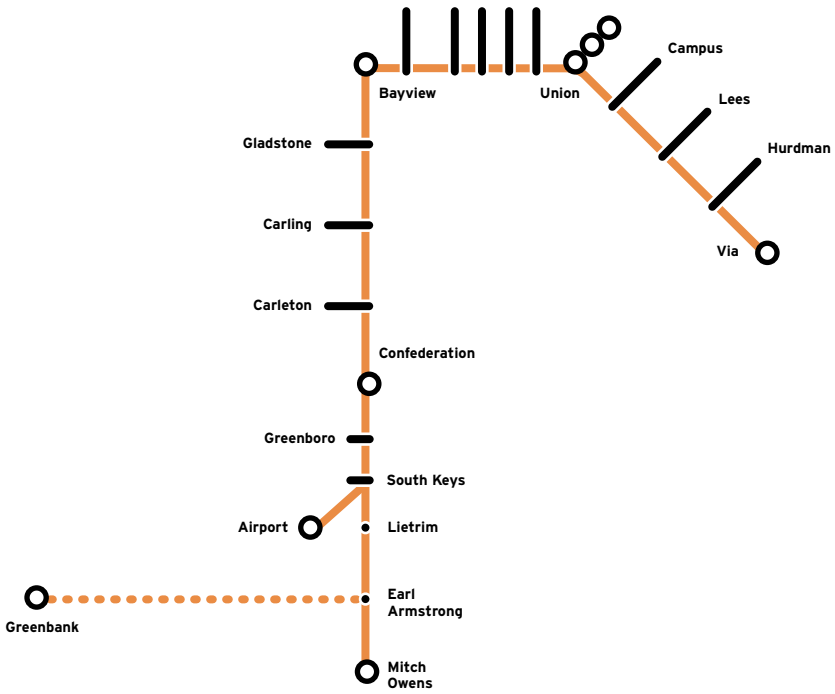
The North-South Corridor

The North-South Corridor would serve as one of the transit system's major components, using the CPR tracks (currently used by the O-Train) and the City-owned Prince of Wales Bridge. This corridor would eventually service riders from Manotick and rural areas farther south, via a park-and-ride at Mitch Owens Road to the major STO transportation hub at the Casino in Gatineau. This corridor would also have a newly constructed spur to the Ottawa International Airport.

A total of five different lines would use this transportation corridor. As with all of the Task Force recommendations these lines would be built incrementally as demand warranted. All the lines listed here are presented below—except for the Barrhaven-Downtown Line and the Kanata-Downtown Line. The Barrhaven-Downtown Line is examined under the Barrhaven Corridor below. The Kanata-Downtown Line is examined under the Cross-City Corridor below.

- The Southern Line
- The Interprovincial-Airport Line
- The Gatineau-Ottawa Line
- The Barrhaven-Downtown Line
- The Kanata-Downtown Line

The Southern Line



This north-south route would serve as the transit system's spine. By 2009, The Task Force proposes that this line runs through the following stations: Earl Armstrong-Leitrim-South Keys-Greenboro-Confederation-Carleton-Carling-Gladstone-Bayview. The Southern Line will also run to the Airport once a spur is completed (2012-14). This link will enhance Ottawa's ability to bid on major international events in the future.

Until the Southern Line is completed, passengers bound for downtown will have to transfer to buses at Bayview. (The Task Force was pleased to note the City staff recommendation made to the Transit Committee on May 16, 2007, that proposed extending the O-Train to Leitrim Road.) Many eastbound buses in the morning are not at capacity at this point on their routes having dropped off passengers at Tunney's Pasture. There is also extra capacity, 148 deadhead buses travel east on Slater in the morning

rush hour and 111 travel west on Albert Street in the afternoon peak period.[18] (Deadheads are empty buses that have completed their route.)

By 2017, this line would be extended south to a new park-and-ride at Mitch Owens to service the Manotick area. As with all of the Task Force proposals, there is interconnectivity between the different lines. Once the Southern Line has been completed, northbound trains would allow for direct service without any transfers from the southern part of the city to the downtown. Stops would include Mitch Owens-Earl Armstrong-Leitrim-South Keys-Greenboro-Carleton-Carling-Gladstone-Bayview-LeBreton-Bronson/Bay-Lyon/Kent-Bank/O'Connor-Metcalfe/Elgin-Union-Campus-Lees-Hurdman-Ottawa Station (VIA).

In the short term, the Task Force argues that the capacity of the O-Train line over which most of the Southern Line will travel, can be increased by adding passing sidings, limited double tracking and improved signal systems, and by lengthening trains and platforms. In the long term, there would be a requirement to bore (not blast) a second tunnel south from Carling Avenue, construct a second tunnel via cut and cover under Dow's Lake, and install full double tracking as required. All of this can be done incrementally, without long interruptions to O-Train service.

According to the Origin–Destination Survey, the South Gloucester-Leitrim area is the "least self-contained district in the National Capital Region." Put another way, this means South Gloucester-Leitrim produces the highest percentage of outward bound trips during morning rush hour (and vice versa in the afternoon). Further, currently only 8 percent of commuters use public transit. At the same time, this area and points further south, defined as the Rural Southeast in the Origin–Destination Survey, are poorly served by public transit service. The Southern Line would provide public transit access to the south of the city where the modal split is lowest; it would also attract riders to approach the core from the west, through Bayview Station, rather than from the east, through Hurdman Station, where bus traffic is higher.

The most popular destination for South Gloucester-Leitrim residents is downtown. Direct northbound service to Bayview and through the core in a tunnel could serve the 22 percent of residents who travel downtown. Interestingly, the Origin–Destination Survey showed that the second-highest destination, involving 17 percent of area residents, was Alta Vista. This suggests that there is strong demand for service to the hospital complex. The proposed Southern Line would allow a transfer at Confederation Station to take passengers east into Alta Vista on the Barrhaven-VIA and Kanata-Orléans Lines. Ten percent of residents indicated that Hunt Club was their primary commute. The Southern Line would serve these riders with hub-and-spoke bus routes originating at the South Keys and Greenboro Stations.

The Merivale area draws 9 percent of commuters from South Gloucester-Leitrim. A transfer from the Southern Line at Confederation Station would deliver these riders to the Merivale area.

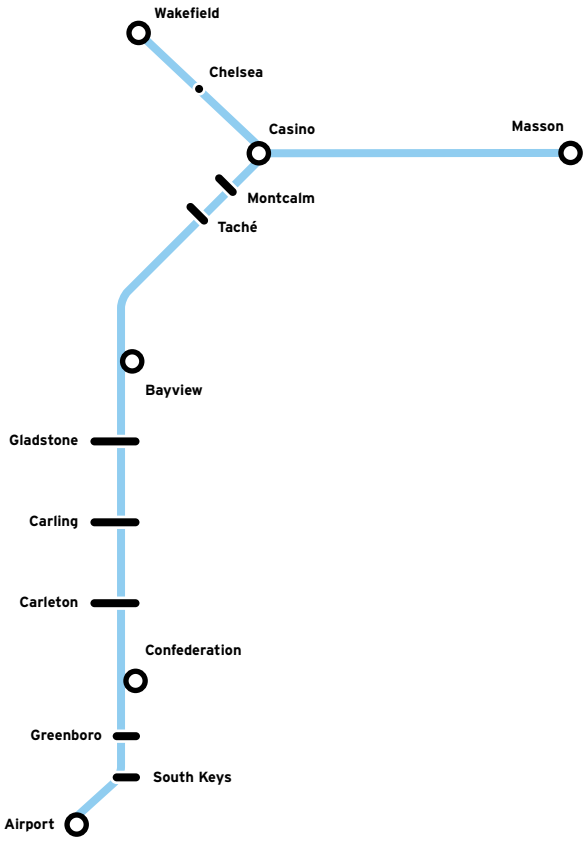
Serving underserved areas is an important Task Force decision criteria. Given the underserved nature of the South Gloucester-Leitrim area and the Rural Southeast, and their potential for new development, the Southern Line has obvious growth potential. This growth criteria, coupled with the Origin–Destination Survey data showing a high level of trips in and out of the South Gloucester-Leitrim area, supports the need for an attractive public transit alternative.

The proposed Southern Line also more than satisfies the Task Force environmental impact criteria. Almost 80 percent of area residents travel in and out by car. Many of them end up clogging the Airport Parkway and Bronson Avenue at rush hour. Offering a comfortable and efficient public transit alternative should reduce car use and deliver a corresponding decline in greenhouse gas emissions linked to climate change.

The Southern Line also helps satisfy the Task Force criteria of improving streetscapes. Reducing traffic on Bronson Avenue and surrounding streets will help improve life in core neighbourhoods. These streets are inevitably affected by noise, pollutants and congestion that detracts from a desired quality of life in a vibrant core.

18 City of Ottawa, *2009 Route Network Concepts Evaluation and Recommendations*

The Interprovincial-Airport Line

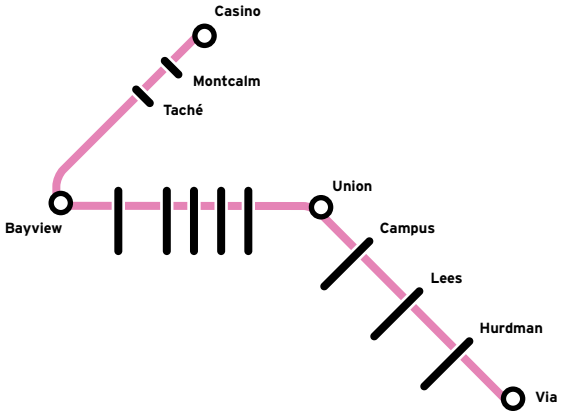


By 2017, the Task Force recommends extending the existing O-train line over the Prince of Wales Bridge to stations at Taché, Montcalm and the STO transportation hub at the Casino. The stops on this line would be Airport-South Keys-Greenboro-Confederation-Carleton-Carling-Gladstone-Bayview-Taché-Montcalm-Casino. The proposed rail service to Gatineau would complement the STO Rapibus project.

By 2037, should the STO choose and should passenger demand warrant, this line could even be extended to Chelsea and Wakefield in the north and Masson in the east to provide rush hour service

The Interprovincial-Airport Line would provide service not only to the airport but to the Confederation Heights area and the Ottawa inner area. According to the 2005 Origin–Destination study, there are currently 7,370 morning rush hour trips to the Ottawa inner area from Gatineau residents. This is a significant market for which there are currently few public transit alternatives.

The Gatineau-Ottawa Line



By 2017, the Task Force proposes that a line would also be created running from the STO transportation hub at the Casino in Gatineau to stations at Taché and Montcalm and across the Prince of Wales Bridge to Bayview and through the downtown tunnel to the VIA station.

In the medium term, the Gatineau-Ottawa Line would turn east at Bayview and run through LeBreton Flats, where there would be a major interchange for buses coming from the western Transitway and STO buses via the Chaudière Bridge. There should be careful modelling and phasing in of the bus transfers in order to ensure smooth transfer of passengers.

According to the 2005 Origin–Destination Survey, there are 13,640 daily morning rush hour trips into the Ottawa Downtown from Gatineau, and 8,390 daily trips from Ottawa to downtown Gatineau. The Gatineau-Ottawa Line would be a tremendous advantage to these passengers. The Alta Vista area, with the hospital complex, also generates a great deal of interprovincial commuting. This area currently draws 4,490 commuters from Gatineau during morning rush hour. A direct line from Gatineau to the Ottawa Station (VIA) with a feeder bus service to the hospital complex should provide a compelling alternative to the use of private vehicles for these commuters.

Interprovincial rail and improving the downtown

The Task Force recommends that a special joint Gatineau-Ottawa committee should be formed to carry this special project forward. Over time, it is anticipated that through negotiations with the STO, the Gatineau-Ottawa and the Interprovincial-Airport Lines will help reduce the number of buses using the King Edward-Rideau-Wellington STO route. For these and other reasons outlined below, the lines to and from Gatineau satisfy the Task Force decision criteria.

The three most important contributions the lines make are toward growth potential, improving streetscapes and environmental impact. As demonstrated in Section 7 and by the Origin–Destination Survey, the downtown core is pushing the limits of its capacity. Running more STO buses to deliver Gatineau commuters into downtown is already reaching the limits of the core's growth potential and is not sustainable. More buses means even more pressure on core streetscapes. The environmental impact of dangerous diesel exhaust particulates from a growing number of buses is also a threat that must be dealt with. The Task Force is confident that these two lines linking Gatineau and Ottawa can play a role in solving these problems.

The Origin–Destination Survey shows a fairly constant share of Gatineau to Ottawa trips, at 31 percent of all morning trips originating in Gatineau. However, the volume of commuters continues to grow dramatically in both directions—from 1995 to 2005, morning trips in both directions increased by 18 percent, to over 60,000, and afternoon trips in both directions increased by 25 percent, to almost 65,000.

While the heaviest traffic flows between Ottawa and Gatineau are driven by Gatineau commuters, there is significant traffic from Ottawa to Gatineau. For example, approximately 17,200 Ottawa com-

muters cross into Gatineau every morning and close to 20,000 return to Ottawa from Gatineau in the afternoon. The two lines running between Ottawa and Gatineau would provide an attractive transit alternative to help serve this demand. In particular, these lines could win over commuters who are accessing southern and western Ottawa destinations almost exclusively by car. This will have the added benefit of providing new riders for STO.

The Barrhaven Corridor

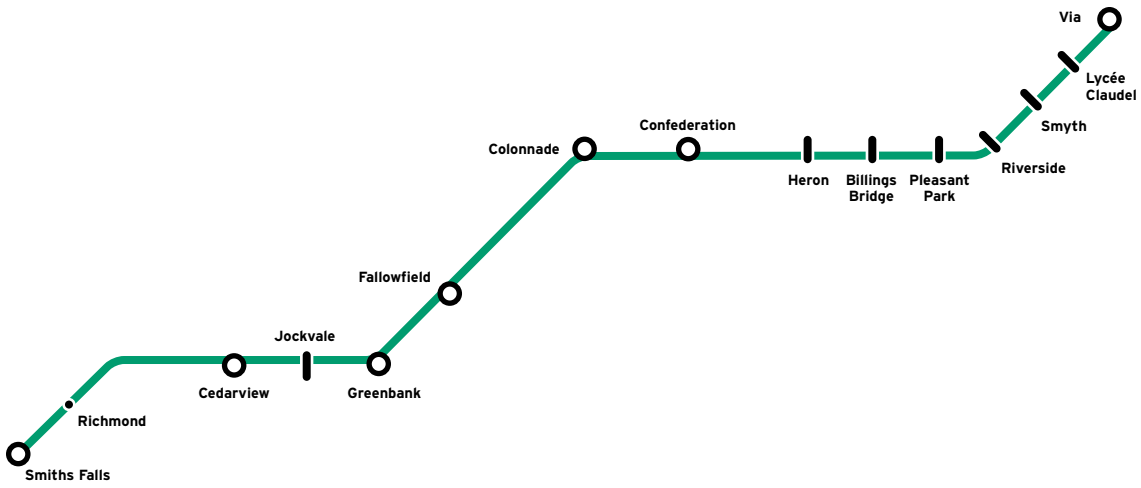
The Barrhaven Corridor would use the VIA railway lines from Cedarview to Ottawa Station (VIA). This corridor would eventually provide LRT service for Barrhaven residents direct to downtown and to Ottawa Station (VIA). Furthermore, with the growth of Barrhaven and the moving of the RCMP Headquarters to the former JDS Uniphase campus on Merivale Road at Prince of Wales, this corridor would also provide a valuable service for commuters from other parts of the city with Barrhaven as a destination.

Two different lines would use the Barrhaven Corridor: the Barrhaven-Ottawa Station (VIA) Line and the Barrhaven-Downtown Line. As with many of the Task Force proposals, the number of trains using each line will vary and increase in response to public demand.

South Nepean follows Orléans as the City of Ottawa district with the second smallest proportion of morning trips destined to it from outside. Only 36 percent of morning trips come from the outside. However, this is forecast to change. From 1991 to 2007, Barrhaven's population has almost tripled from 21,000 to 60,000. As the area grows, it will attract more services and employment centres.

The two Barrhaven lines support the Task Force criteria to propose routes with growth potential. Offering an attractive public transit alternative just as South Nepean is entering a new growth phase helps to satisfy a number of the Task Force criteria, notably, attracting new riders, serving underserved areas, network integration, environmental impact and improving streetscapes.

The Barrhaven-VIA Line

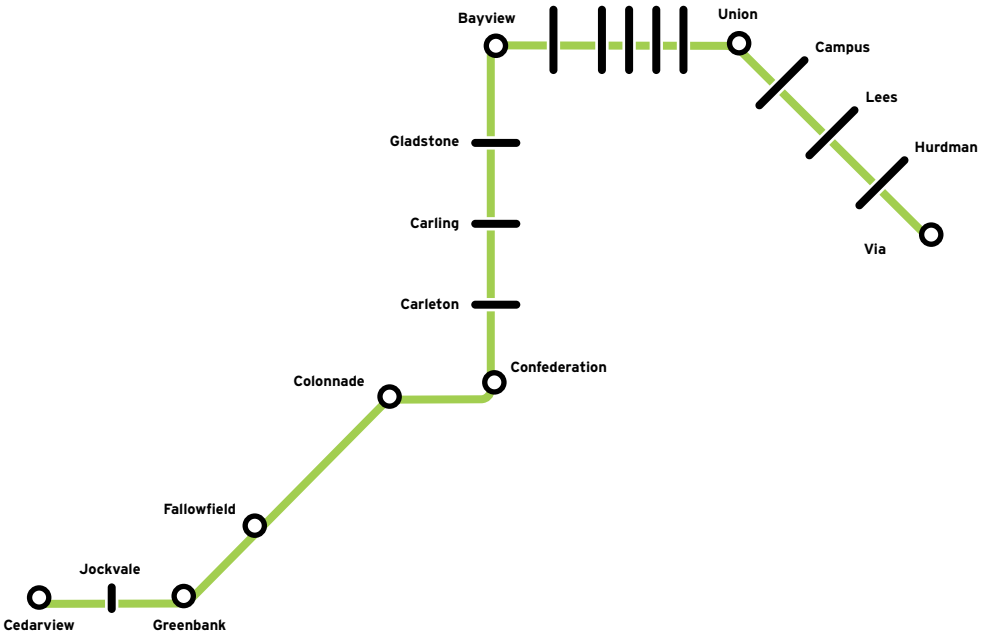


The Task Force recommends that negotiations start immediately with VIA rail to start rush hour service to and from Barrhaven and Ottawa Station (VIA) by 2010. This route would include stations at Cedarview-Jockvale-Greenbank-Fallowfield-Colonnade-Confederation-Ottawa Station (VIA). Service would also be provided to Richmond and Smiths Falls, in cooperation with the town of Smiths Falls.

By 2017, it is anticipated that demand and ridership would warrant increasing this line to all-day service. Stations would also be added at Heron-Billings Bridge-Pleasant Park-Riverside-Smyth-Lycée Claudel.

The 2005 Origin–Destination Survey indicates that South Nepean, which includes Barrhaven and other growing communities, has four major commuter destinations. After downtown, the three most polar destinations are Merivale at 14 percent, Bayshore/Cedarview at 9 percent, and Alta Vista at 8 percent. The Barrhaven-VIA line would serve passengers to Alta Vista and the hospital complex directly. Merivale could be reached by transferring from the Barrhaven-VIA Line at Colonnade Station to a westbound Kanata-Downtown Line or Kanata-Orléans Line. Bayshore/Cedarview commuters could make the same transfer and continue further west. In addition, having a link from the Ottawa Station (VIA) to Barrhaven provides an access route for east end commuters to the new RCMP headquarters.

The Barrhaven-Downtown Line



Once the Ellwood Diamond (where the VIA-CNR tracks cross the current O-Train tracks) has been reconstructed, the Task Force recommends a direct LRT service from Barrhaven to Bayview at rush hour. This service should be available by 2010.

By 2017, it is anticipated that demand would justify establishing an all-day service with trains providing a direct service through downtown to Ottawa Station (VIA). Stations along this route would include: Cedarview-Jockvale-Greenbank-Fallowfied-Colonnade-Confederation-Carleton-Carling-Gladstone-Bayview-LeBreton-Bronson/Bay-Lyon/Kent-Bank/O'Connor-Metcalfe/Elgin-Union-Campus-Lees-Hurdman-Ottawa Station (VIA).

Currently some 17 percent of commuters from South Nepean have the downtown area as their destination during the morning rush hour. This represents a potential ridership in the area of 5,000 passengers without including those that may use the line to transfer to other destinations. This is one of the fastest growing areas of the City of Ottawa, and providing a service that can expand to meet demand is an important consideration with respect to this line.

South Nepean, which includes Barrhaven and other growing communities, has four major commuter destinations. The Origin–Destination Survey lists downtown, at 17 percent, as the most popular destination for commuters. Downtown commuters will be well served by the Barrhaven-Downtown Line running to and from Ottawa Station (VIA) through the core.

The Cross-City Corridor

The Cross-City Corridor would use the OCR/VIA tracks from North Kanata and VIA Rail tracks through the VIA station to the former CP Rail tracks east of Innes Road. From there, it would use the Hydro One right-of-way through the Greenbelt to Tenth Line Road, where it would proceed east along the protected transit corridor to Trim Road. There would also be a spur from Stittsville using the Ottawa Carleton Trailway, joining the main route just east of Moodie Drive. Eventually this corridor would provide rush hour service for residents from Carleton Place to Cumberland.

As with most of the Task Force recommendations, this corridor would be developed incrementally, and service levels would be determined by demand and passenger levels. This corridor would require investments in improving track along some of the corridors, replacing track that has been previously removed, and the construction of new track along the Hydro right-of-way to the east and along the Trailway to the west

Developing this corridor will be cost-effective if one considers that it will service three different LRT lines:

- Kanata-Orléans Line
- Kanata-Downtown
- Orléans–Downtown Line

Kanata-Orléans Line

Eventually, the Kanata-Orléans Line will provide service from one side of the city to the other. However, it will be built in stages.

By 2010, the Task Force recommends starting the Kanata-Orléans Line for weekday rush hour service running through Kanata North-Robertson-Woodroffe South-Colonnade-Ottawa Station (VIA).

By 2017, service would be switched to all-day service with rush hour service to Carp in the west. The eastern portion of the line would be completed by 2015, providing service from one end of the city to the other. The route would include stops at Trim South-Tenth Line-Navan North-Anderson-Innes-Ottawa Station (VIA)-Lycée Claudel-Smyth-Riverside-Pleasant Park-Billings Bridge-Confederation-Colonnade-Woodroffe South-Robertson-Kanata North-Kinburn-Carp. By 2017, the line could extend to Cumberland in the east for rush hour service.

By 2017, a branch would also be constructed from Stittsville with stops at Stittsville Main-Iber-Terry Fox-Eagleson-Moodie, before joining the main Kanata-Orléans Line. This branch would not only provide rush hour service to an area that is currently underserviced, but would also provide service to Kanata South, the Kanata South Business Park and the Bridlewood area. As demand increases, it would move to all-day service.

By 2037, rush hour service could be extended to Arnprior and Carleton Place in the west

The Origin–Destination Survey shows that the downtown core remains the number one destination for Ottawa commuters. However, this doesn't mean that all trips must go through the core. By 2017, the Kanata-Orléans Line would allow riders to travel across the city from east to west while bypassing downtown. Transfers at Confederation Station to the Southern Line, the Kanata-Downtown Line, the Barrhaven-Downtown Line and the Interprovincial-Airport Line would link passengers to the core. The southbound Interprovincial-Airport Line and Southern Line would also link Kanata to the airport.

While it is true that the passenger volumes from one end of the line to the other would be relatively small, the value of this line is the service it provides for shorter segments of the route. This line would pass immediately adjacent to the Kanata North Business Park in which many of the Ottawa's larger high tech companies are located. It would also be very close to the large Morgan's Grant development, and the Brookside development, which is under construction.

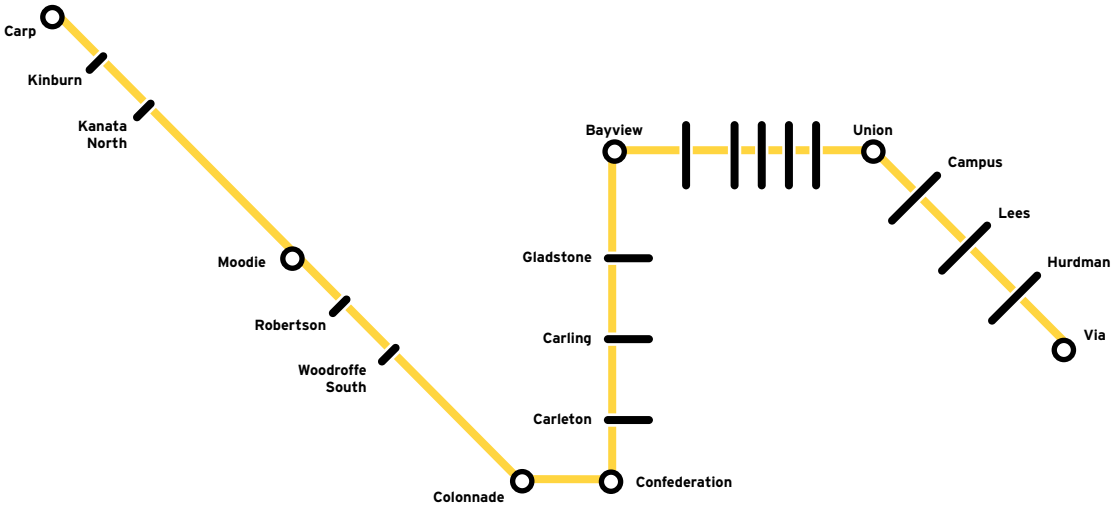
The Origin–Destination Survey clearly shows the demand for non-core commuting. The three top non-core trips identified by the study will all be served by the proposed Kanata-Orléans Line. The Origin–Destination Survey indicates that some 19 percent of trips from Kanata are made to the Bayshore/Cedarview area and 15 percent to the Merivale district. These areas, and Alta Vista with the hospitals, would be served directly by the Kanata-Orléans Line with bus service from each station. The Kanata-Orléans line would also provide service to Barrhaven for the new RCMP headquarters with a change at Colonnade Station. As important as serving outward bound Kanata residents is the need to service residents of other parts of the city who work in Kanata. Currently, the Queensway is bumper to bumper in a westbound direction during morning rush hour as commuters travel to their jobs in Kanata. With a transfer, at Confederation, the Kanata-Orléans line would provide a way for other residents of the city to reach work in the Kanata North Business Park.

The Kanata-Orléans Line will also serve riders making relatively short trips along the line. For example, riders from Bayshore/Cedarview to Merivale account for 19 percent of the trips out of Bayshore/Cedarview District. Trips from Merivale to Alta Vista account for 13 percent of the trips out of Merivale.

The eastern portion of the Kanata-Orléans Line provides service to the southern portion of Orléans, which is a rapidly expanding area. The segment of the line from Orléans to Ottawa Station (VIA) is particularly valuable. According to the Origin–Destination Survey, one of the primary destinations for residents of Orléans is the Alta Vista area. With a fast and comfortable service to the VIA station, this will aid in reducing crowding on the BRT system.

The Kanata-Orléans Line satisfies the Task Force decision criteria. In particular, it addresses the growth potential criteria. As Ottawa grows and more employment and service centres develop outside the core, a line that crosses the city without necessitating a trip through downtown will foster non-core development. This line also helps the core because it allows riders who want to move from east to west (or vice versa) to bypass the core and thus extends the capacity of the core.

Kanata-Downtown Line



By 2010, once the Ellwood Diamond is reconstructed at the intersection of the present O-Train route and the Kanata-Orléans Line, service could begin from Kanata North to Bayview. At Bayview, passengers would transfer on to buses for the final segment of the trip into downtown.

By 2017, with completion of the Downtown Line, there would be all day service from Kanata North direct to downtown, with rush hour service from Carp. This route would offer stations at Carp-Kinburn-Kanata North-Robertson-Woodroffe South-Colonnade-Confederation-Carleton-Carling-Gladstone-Bayview-LeBreton-Bronson/Bay-Lyon/Kent-Bank/O'Connor-Metcalfe/Elgin-Union-Campus-Lees-Hurdman-Ottawa Station (VIA).

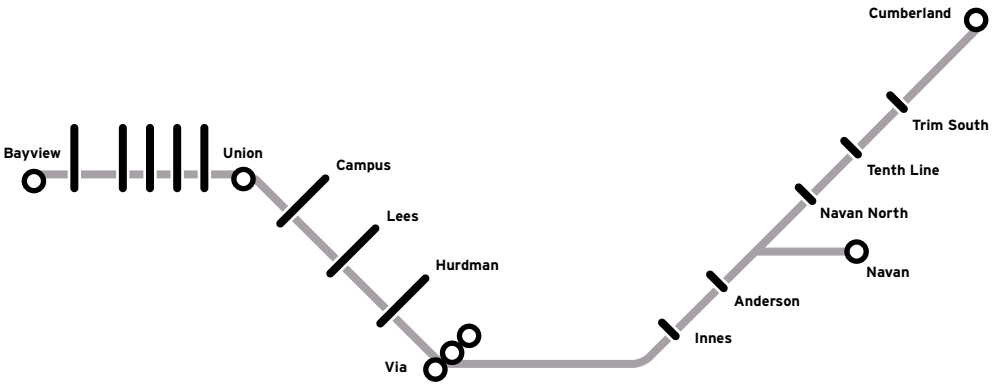
The Origin–Destination Survey shows that the Kanata/Stittsville District is the most self-contained in the National Capital Region, with about 50 percent of all morning trips both from and to that district staying within the district. This is why the Task Force also recommends building a new road linking north and south Kanata within the next 12 months.

However, despite the self-contained nature of the area, there is still strong demand for commuter services. The primary destinations for trips out of the Kanata/Stittsville district in the morning are: Ottawa Centre/inner area, 26 percent, Bayshore/Cedarview, 19 percent, and the Merivale District 15 percent. These areas, accounting for 60 percent of trips, would be served directly by the Kanata-Downtown Line and hub-and-spoke buses. Transferring at Confederation Station to the Southern Line would also give Kanata, with its globally focused high-tech industry, a rail link to the airport by 2014.

The Kanata-Downtown Line would not only service outward-bound Kanata residents, but also some of the many people who travel into Kanata for work. This line would offer service to employees of the Kanata North Business Park and many of the high-tech firms in the area.

The Task Force's growth-potential decision criteria is addressed by the Kanata-Downtown Line. The Origin–Destination Survey also shows that major flows entering the Greenbelt from Kanata are less than 50 percent of those from Orléans. The Task Force argues that if the Kanata-Downtown Line delivers on three other decision criteria: comfort, reliability and speed, it will be able to improve the growth of transit use in Kanata. Improving streetscapes and improving the environment will also be criteria that the Kanata-Downtown Line satisfies as it attracts new riders and reduces car traffic.

Orléans-Downtown Line



Orléans is the city district with the highest transit use. The Task Force proposes an LRT line running along the southern edge of the district to complement the heavy use of the existing BRT and encourage transit-oriented development along the southern edge of the area. By 2037, the Task Force recommends converting the BRT to LRT.

By 2017, after a downtown tunnel is completed, the Orléans-Downtown Line would run through the following stations: Trim South-Tenth Line-Navan North-Anderson-Innes-Ottawa Station (VIA)-Hurdman-Lees-Campus-Union-Metcalfe/Elgin-O'Connor/Bank-Lyon/Kent-Bronson/Bay-LeBreton-Bayview. Rush hour service could also be extended to Cumberland. The Orléans-Downtown Line would use the former CP rail line and then the Hydro One right-of-way through the Greenbelt to Tenth Line Road where it would proceed east along the protected transit corridor to Trim Road.

By 2037, rush hour service could be extended to Navan.

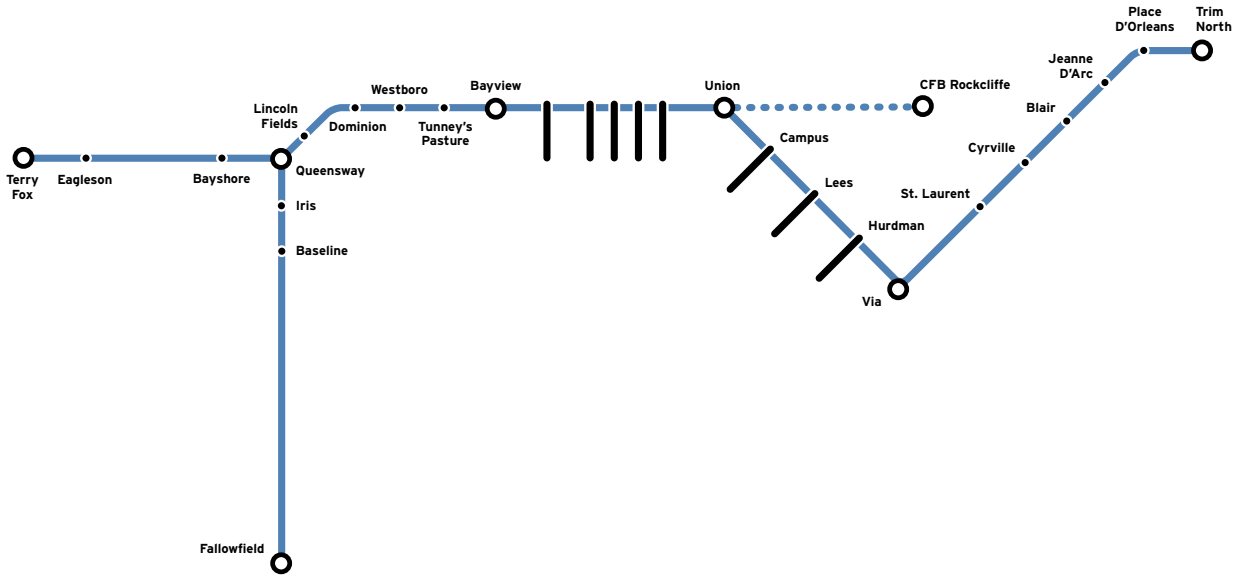
The construction of the Orléans-Downtown Line can occur without disruption to the BRT from Orléans. Once the downtown portion is completed, the bus network should be reoriented to attract riders from all parts of Orléans and Blackburn Hamlet to the Orléans-Downtown Line. This will minimize the transfers that must take place at Ottawa Station (VIA).

According to the Origin–Destination Survey, the primary destinations of trips out of Orléans in the morning are: Ottawa Centre/Inner Area, at 34 percent, Ottawa East/Beacon Hill, at 23 percent, and Alta Vista, at 14 percent. The Orléans-Downtown Line will serve the core and with a transfer at the Ottawa Station (VIA), to either the Kanata-Orléans Line or the Barrhaven-VIA Line, would serve Alta Vista.

The growth potential criteria is addressed in a number of ways by the Orléans-Downtown Line. The BRT is carrying a heavy load at rush hour. An LRT alternative will help to reduce pressure on the BRT and extend its life cycle. The daily traffic jams at the Highway 417 split will also be ameliorated somewhat by commuters who choose the Orléans-Downtown Line over driving their cars.

Orléans is growing and will see more development, particularly along its southern edge. The Orléans-Downtown Line would meet this demand. Also, as Orléans grows it is likely to attract more destination traffic. The Origin–Destination Survey showed that Orléans is the district with the smallest proportion of morning trips destined to it from outside. Only 28 percent of the trips that end in Orléans in the morning come from outside the district. The Orléans-Downtown Line would be able to serve any eventual increases in demand for travel into Orléans as it grows in importance as a destination from outside.

The River Line

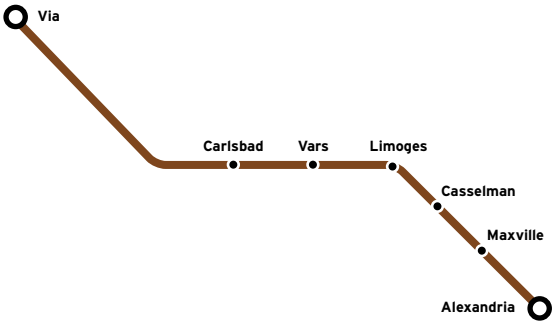


Following completion of the bulk of the proposed LRT network, commencing in 2017 the Task Force recommends converting the Transitway as rapidly as is feasible to a fully electrified LRT. The proposed system would provide two LRT lines from east to west across the city: the Kanata-Orléans Line and the River Line. The River Line would start at Terry Fox Drive and travel along the Transitway through the downtown tunnel and continue through the Ottawa Station (VIA) to the northern end of Orléans at Trim Road. It would also run South from the Queensway to Fallowfield Station. Converting the Transitway now would be very difficult because of the disruption to riders. However, if the proposals of the Task Force are accepted, there would be alternatives for riders while the Transitway conversion takes place.

The River Line fulfills the Task Force decision criteria. In particular, it increases the growth potential of the system and also potentially reduces car traffic on Highway 417. Converting from BRT to LRT offers enhanced reliability and survivability. Speed and comfort would also improve along with system costs. Converting to a fully rail-based system will deliver improved network integration. And removing buses will improve streetscapes and reduce air and noise pollution.

The Origin–Destination Survey lists the downtown core as the number one travel destination. The River Line would offer an enhanced travel experience to and from the core with the added benefit of acting as a cross-city LRT route.

The Glengarry Line

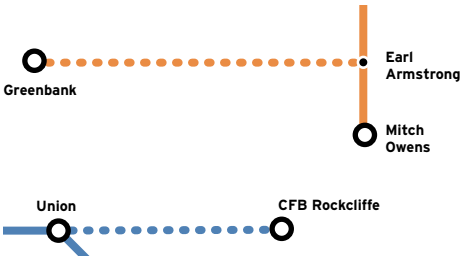


By 2010, the Task Force proposes weekday rush hour service be opened between Alexandria and Ottawa Station (VIA). The Glengarry Line would run from Alexandria-Maxville-Casselman-Limoges-Vars-Carlsbad-Ottawa Station (VIA). This weekday rush hour service would be subject to a financial arrangement with municipalities outside Ottawa in order to protect Ottawa taxpayers. Currently there are groups, notably the North Glengarry-Prescott-Russell Transport Board, that are working with VIA Rail, the Ottawa Carleton Railway and bus operators to improve transit links between these rural communities and Ottawa.

The decision criteria of attracting new riders, serving underserved areas, growth potential, improving streetscapes and environmental impact are all addressed by the Glengarry Line. Reducing rural car traffic coming into Ottawa is the primary way the Glengarry Line satisfies the latter two criteria. This line would also potentially reduce car traffic at the Highway 417 split.

At first glance, it might not seem worthwhile to extend commuter rail to rural areas. However, the Origin–Destination Survey shows that trips from rural districts to urban districts increased by 24 percent between 1986 and 2005 and now represent 67 percent of all morning trips generated in the rural districts. The Glengarry Line would be an attractive option for the growing numbers of commuters coming from the rural areas it would serve.

Possible future extensions



An extension connecting Earl Armstrong Station to Cedarview station, running along the proposed alignment for the cancelled North-South LRT, should be considered. Another proposed extension would service the Rockcliffe airbase development by connecting it to Union Station.

Major Transfer Points

The Task Force has a vision of a network of transit stations designed to encourage travel. Clean, secure stations could not only serve as transit hubs efficiently moving people to and from LRT, they could also become centres of commercial development. These stations could revitalize neighbourhoods and serve as landmarks the way stations do in the world's great cities.

We propose partnering with the private sector to build and operate stations. Associated retail and other commercial opportunities, such as the sale of air rights over stations, should prove attractive to the private sector. Tendering out services and providing amenities are also envisioned.

Union Station

Over the past 150 years, great cities have been shaped and defined in part by great railway stations. Today many of these stations also serve as commuter hubs. Think of Grand Central Station in New York, the Gare du Nord in Paris, London's Victoria Station and Montreal's Gare Central and Gare Windsor.

Ottawa has its own hidden gem, Union Station, now the Government Conference Centre across from the Chateau Laurier Hotel. Union Station was one of North America's first monumental railway stations. Known initially as the Grand Trunk Railway Union Station, it opened in 1912 and served passengers until 1966. The Task Force recommends that it be reclaimed as a major commuter hub and integrated with a downtown tunnel. It would serve the Rideau Centre, the Byward Market, the Congress Centre, Confederation Square, the Parliamentary precinct and the eastern edge of the downtown core. Conceivably in the long term, the Station could be the starting point of a line that would follow the old rail alignment along the embankment of the Rideau Canal and Ottawa River, over the Alexandra Bridge to Gatineau.

Situated near the Rideau Canal and close to the Parliament buildings, Union Station is a key historic element among the buildings immediately surrounding the National War Memorial. It is a public space that the citizens of Ottawa should be proud of. It has the potential to be a defining building for a great capital city.

Bayview Station

Under the Task Force plan, Bayview becomes an important interchange point. The City should issue a request for proposal for a mixed use development where the City would factor the clean-up of this brown-field site into the sale price. The developer would also undertake to build a multi-platform station and provide stabling areas for train storage. This new terminal complex could be renamed. It could have a main entrance on the Somerset Street Bridge—providing a catalyst for redevelopment of the surrounding neighbourhood. At the northern entrance, buses from the west along the Transitway would loop to pick up and drop off passengers. The LRT would run eastwards from Bayview between the existing BRT and the Parkway to enter a downtown tunnel.

Lebreton Station

Lebreton Flats Station should be upgraded and expanded to increase capacity to transfer bus passengers to trains. Lebreton Flats is also being redeveloped for residential use, and this provides a golden opportunity to integrate an LRT station with associated commercial space in this new community. The City should explore these opportunities with the National Capital Commission.

Ottawa Station (VIA)

Under the Task Force plan, Ottawa Station, VIA's main terminal, would be a key hub for commuters coming from the east on LRT from Trim Road along the Hydro Ottawa and VIA right-of-way and the CP track. It would also serve as the primary terminus for northbound LRT passengers transferring to BRT until the downtown tunnel is completed. Westbound BRT riders will also be able to use the station to transfer to LRT heading south and vice versa.

Confederation Station

The Task Force recommends that Confederation Station on the O-Train line be expanded to serve as a major transfer point. This will allow riders from the south and north to transfer east and west and riders from the east and west to transfer north and south.

Fallowfield Station (VIA)

The Task Force recommends that VIA's Fallowfield Station be integrated in the LRT network. Passengers could head east on LRT, initially to Ottawa Station (VIA) or on the current O-Train Line north to Bayview Station and then transfer to BRT. Once the downtown tunnel is built, transfers would no longer be required at Bayview.

Colonnade Station

The Task Force recommends that a station be built at the intersection of the VIA and CN tracks south of Colonnade Road and west of Prince of Wale's Drive. This station would serve as a transfer point allowing, for example, Barrhaven riders to transfer to westbound trains heading to Kanata. It would also serve the Merivale Acres Business Park.

Casino Station

The Task Force proposes working with the STO and the Société des casinos du Québec, which oversees the Casino du Lac Leamy, to create an LRT station and park-and-ride to serve Gatineau and west Quebec residents travelling to and from Ottawa.

Park-and-ride stations

Outlying stations should include park-and-ride facilities. This will encourage drivers to leave their cars outside the city core. Park-and-ride facilities must be safe, well lit and staffed by security guards, and include appropriate amenities.

Other Considerations

Service yards

The Task Force recommends that all LRT maintenance be done in the Walkley rail yards, given its present designation, surplus capacity and the fact that this would be consistent with City brown-field policy. This will, however, necessitate an agreement with the Ottawa Central Railway. Preliminary consultations between the Task Force and the Ottawa Central Railway suggest this maintenance arrangement can be made.

Passenger comfort

The Task Force recognizes that commuters are attracted to the comfort of rail travel. Passenger comfort must be a priority in any proposed system, in order to compete effectively with private car travel. Rail cars, stations and park-and-rides must project a safe, clean and inviting image. The system will also continue to emphasize catering to cyclists, walkers and people with disabilities.

Smart cards

The Task Force supports OC Transpo's decision to proceed with the Smartcard fare system. Funding for the system was approved by Council in the 2007 budget and, if the implementation plan is approved, installation could begin in 2008 and be completed by 2009. Contactless smart cards—credit card–sized plastic cards with an embedded antenna and computer chip—are becoming popular with public transit agencies. The STO's smart card system has shown the way for OC Transpo, and the Task Force recommends building an integrated system.

The contactless electronic link between card and reader equipment allows for the kind of very fast interface that is needed by mass transit. Using refillable smart cards to replace traditional transit tickets or tokens holds the promise of reducing cash handling, equipment maintenance and security costs; increasing convenience for riders; improving collection of ridership data; lending a more modern image to transit; and providing new opportunities for innovative fare structures and marketing. The smartcard system could even be extended to taxis and parking charges, especially at park-and-ride stations. Flexible charging schemes and detailed usage data are other potential benefits.

OC Transpo should also build on its successful Ecopass payroll deduction program. The Ecopass offers riders up to a 15 percent annual saving compared with using a monthly pass. The University of Ottawa was the first organization to get on board with the Ecopass program. Since then, the program has gone on to include people in the fields of high technology, banking, government and hospitality.

Ottawa's post-secondary institutions are working towards a universal student U-Pass. It's a special discounted pass for students that can be added to student fees. This system is used in a number of Canadian cities including Vancouver and Sherbrooke, where congestion has been reduced following a sharp rise in transit use. L'Université du Québec en Outaouais uses a variant of this scheme and has gone from 60 student pass users to over 600. The Task Force urges OC Transpo to cooperate with this student initiative.

9. Alleviating Commercial Truck Congestion on King Edward Avenue

The Task Force welcomes the recent announcement by the federal, Ontario and Quebec governments to study the issue of crossings between Ottawa and Gatineau. The Task Force recommends building a bridge across the Ottawa River east of the downtown core before 2017. The east-end river crossing makes sense because a bridge could easily join with highways on both sides of the river, thereby not destroying traditional neighbourhoods in Quebec and Ontario.

The King Edward Avenue area of Ottawa is shouldering a disproportionate burden of commercial truck traffic, which produces exhaust containing cancer-causing particulate matter. There was a time before the Macdonald-Cartier Bridge when Lowertown was a beautiful tree-filled neighbourhood. More alarming still is the potential for accidents in which trucks, perhaps carrying flammable or toxic substances, crash in the core.

Opening up the Prince of Wales Bridge to nighttime, and potentially daytime, rail freight is another measure that could help reduce truck volumes downtown. Opening the Prince of Wales Bridge to LRT crossing to the Casino creates an opportunity to introduce rail traffic when the LRT is not running. The Task Force discussed this option with Ottawa Central Railway officials and received a positive response. The Forest Engineering Research Institute of Canada in Pointe Claire, which funds rail-freight initiatives for forest products, has expressed interest in this project and has confirmed the firm interest of high-volume shippers in a rail link between Ottawa and Gatineau.

The Task Force also recommends that the City consider building a ring road tied to a new bridge over the Ottawa River as outlined in the Transportation Master Plan. However, the City must ensure that any proposed ring road incorporates a good public transit component to provide suburb-to-suburb transit.

10. Smart Growth

The Task Force developed its plan in accordance with the principles of smart growth. Smart growth is a key principle behind Ottawa's long-range development plans. Ottawa 20/20, Ottawa's Growth Management Strategy, argues transit can play a key role in opening new residential and employment centres that promote a more sustainable city model by allowing people to live where they work.

In communities across Canada and around the world, there is a growing concern that current development patterns—dominated by urban sprawl—are no longer in the long-term interest of our cities, existing suburbs, small towns, rural communities or wilderness areas. Though supportive of growth, communities are questioning the economic costs of abandoning infrastructure in the city, only to rebuild it further out.

Spurring the smart growth movement are demographic shifts, a strong environmental ethic, increased fiscal concerns and more nuanced views of growth. The result is both a new demand and a new opportunity for smart growth.

The features that distinguish smart growth in a community vary from place to place. In general, smart growth invests time, attention and resources in restoring community and vitality to centre cities and older suburbs. New smart growth is more town-centred, is transit and pedestrian oriented, and has a greater mix of housing, commercial and retail uses. It also preserves open space and many other environmental amenities.

In accordance with smart growth, communities are beginning to implement new approaches to transportation planning, such as better coordinating land use and transportation; increasing the availability of high quality transit service; creating redundancy, resiliency and connectivity within their road networks; and ensuring connectivity between pedestrian, cycling, public transit and road facilities. In short, they are coupling an integrated multi-modal approach to transportation with supportive development patterns, to create a variety of transportation options.

The Task Force believes that these principles are reflected in its proposed transit network, particularly in regard to development at the hubs.

The Task Force encourages City Council, City staff and all citizens to support and implement smart growth principles and projects. The transportation network should complement this approach.

11. Accessibility

The Task Force recommends that the proposed transit plan be implemented in accordance with the City of Ottawa Municipal Accessibility Plan 2007, which was unanimously approved by City Council on January 24, 2007. The Task Force supports the City of Ottawa's goal of being inclusive and fully accessible, and it recommends that OC Transpo's Accessible Transit Specialist be engaged early in the project design phase to ensure that all accessibility issues are considered.

The proposed system will build on a variety of current accessibility features and measures including:

- All proposed stations will be fully accessible, like the current low-floor O-Trains and stations.
- The proposed system will be free for all registered Para Transpo customers, as is the case with the current system.
- The discounted Community Transit Pass, which reduces the cost of transit by more than 60 percent for people with disabilities who also have a low family income, will be incorporated in the proposed system's fare structure.

The Task Force also recognizes that people with disabilities represent a significant and growing part of Ottawa's population. According to Statistics Canada, 15 percent of the city's population has identified itself as having a permanent disability—physical, sensory, mental-health related, developmental, learning and/or other health-related. An additional 9 percent of Ottawa's population reported having a temporary disability of some form. As the aging population increases, Ottawa residents will be affected with increased mobility, sight and hearing impairments.

The City of Ottawa has taken great strides in promoting a barrier-free city for its employees and residents. The City is progressively moving towards becoming a fully inclusive community. Accessible, affordable programs and services, facilities and infrastructure are integral to the economic and social inclusion of residents with disabilities. The City recognizes that inclusion means all citizens regardless of the type of disability.

The *Accessibility for Ontarians with Disabilities Act* became law in 2005. The Act is provincial legislation that aims to achieve full accessibility throughout the province by 2025. The Task Force endorses the City of Ottawa's commitment to the Act and its goal of full accessibility. The Task Force also urges the City to continue to move in the direction of providing means-tested applicants with subsidies to enable them to use conventional travel modes like trains, buses and taxis, rather than a dedicated fleet of accessible vehicles.

12. Public Consultation

The citizens of Ottawa are greatly interested in, and care about, city transportation issues. Unfortunately, very few citizens have the time to fully understand the decision-making process nor are most citizens even aware of the number of meetings and variety of documents that are produced leading up to a decision. There is a lack of appreciation and understanding of what are the major City planning documents and the manner in which Council and staff interact to make important decisions. Even some Councillors lament the fact that City staff have a tendency to present solutions, rather than true options for deliberations. Many Ottawa residents do have the expertise, experience and foresight to contribute fully in a public consultation process but are denied this right because they are not encouraged adequately to participate in a meaningful manner.

As observed in the last municipal election, it has been asserted by many that there is inadequate notice and inclusion of public consultation in major transit initiatives. In fact, the City does conduct ongoing public consultations to collect the public's views and opinions on various issues ranging from traffic management to service delivery and environment protection. However, true, meaningful and productive consultation is missing, and the city is worse for it. To understand the existing role of public consultation in the City's transportation decisions an understanding of the City's Transportation Planning Process is required. (See Appendix C for a more detailed summary of each major document in the public transit planning process.)

Meaningful public consultation

The City has all the procedures and policies in place that it needs to conduct meaningful public consultation. The challenge facing the City lies in implementing existing policies and procedures. The City must ensure it implements meaningful citizen engagement strategies and practices. The various task forces struck by the Mayor are excellent examples of advisory groups that support a meaningful public consultation process.

The City of Ottawa approach to public consultation and transportation decisions is primarily that of a representational democracy. This is a form of democracy in which the citizens elect a representative, in this case City Councillors, who are expected to use their own judgement as to which issues

they will address, and what positions they will take on those issues. They are not bound to consult with their constituents, although it is usually in their best interests to do so.

Participatory democracy is a form of democracy that emphasizes broad involvement of citizens in the direction and implementation of decisions. It strives to create opportunities for citizens to make meaningful contributions to decision-making, and has the objective of engaging a wide range of people. This creates a process where the citizens have direct input into the decisions that affect their lives.

Meaningful participation is based on an inclusive process, where input can actually influence or impact a decision, and where the outcome is not predetermined.[19] It is important that the lens of public scrutiny is applied in a real and meaningful way for all major City projects. It is in this way that transparency and democracy is achieved, and that the public assured that value for its money is being achieved according to the public's priorities.

Council's transportation decisions are based primarily on reports and recommendations from City staff, who in turn have been tasked with soliciting public input. However, in practice, City-led public consultations are limited to open houses where the major decisions have already been made at a higher level in the transportation planning process, and confirmation of the validity of the these priorities is not solicited from the public. For example, extensive consultations on the cancelled LRT were conducted by the City at the environmental assessment phase; however, the citizens were not consulted on:

- Should LRT be deployed only for new communities, and the bus transit used to address existing demand?
- What was the impact on the Transportation Master Plan, Infrastructure Master Plan, and Official Plan?
- What was the cross impact on the City's financials, both short term and long term? Did this change the public's view on how best to proceed, or the priorities to advance the program?

A disconnection has been created between what people are asked to comment on and who is asked, as well as their connection to specific projects and their relationship back to transit strategies. Communication and presentations of staff decisions at open houses is not consultation. There exists a public perception of "spin," which is counter-productive. "Individuals can collectively make wise decisions. Wisdom is more widespread that we think."[20] The City's public consultation best practices application would be wise to recognize the wisdom of its citizens. In the end, decisions are more durable and sustainable when those who are affected by the decision have a say in the decision.

The Wikinomics Impact

The development of the Internet and its ability to provide citizens with access to information on any subject throughout the world has changed citizens' expectations on the information provided by its municipal governments. Moving governments into the digital age has been a slow process. "It is simply unacceptable at this point in history that a citizen can use web services to track the movies he is renting, the weather around his house, and the books he's recently purchase, but cannot as easily monitor data regarding the regulations that will directly impact his quality of his work or personal life."[21]

The City of Ottawa website (www.city.ottawa.ca) has made significant efforts to harness the ability of the web to provide information on a multitude of areas about the City. Unfortunately, the data provided on regulations and on transportation or transit-related matters is woefully inadequate and difficult to access. In many cases, the data is all on the public record, yet it is inaccessible to the public, buried deep with the bowels of City Hall and committee minutes. For example, an extensive menu of environmental assessments and their open houses is provided. Yet the information is often out-of-date, and no data on the material to be provided at the open houses or decision-making criteria is accessible. Further oblique references to higher level documents are provided which have no meaning to the public. The material is written in a "government speak," which the average citizen has neither the background nor experience with municipal governance to understand what is being said. The result is a public consultation process that is a one-way communication, often poorly understood, with limited opportunity for meaningful input by the public. Citizens are provided with no opportunity to review the material, in plain language, in advance and respond with subject matter expertise which they may possess.

19 Circle Associates – *Public Involvement & Stakeholder Relations*, 2007

20 *The Wisdom of Crowds:* Why the Many are Smarter than the Few and How Collective Wisdom Shapes Business, Economies, Societies and Nations, James Surowiecki, 2004

21 *Wikinomics*, *How Mass Collaboration Changes Everything*, by Don Tapscott and Anthony D. Williams, 2006

Modifications to the City's website are required to permit the public to interact with staff as easily as it is for them to interact with the rest of the networked world. Simple web-based tools exist today to transform raw public data into formats that is meaningful and useful to community residents and the government policy-makers. The City needs to create new platforms for participation and public knowledge. A good start would be making more public information accessible to people and organizations. For example, the Infrastructure Management Plan should provide a list of all identified road maintenance requirements and their anticipated cost, priority and tentative implementation schedule. This would permit the public to determine, in real terms, what the capital budget shortfall means and how it will affect their ability to move about the City, as well as the real financial status of their City.

As articulated in *Wikinomics*,[22] the web is in the process of another evolution where people are able to dynamically participate in the creation of the products and services they use. While the typical older generation uses the web as an information source, the youth of today use the web as a tool for development. Sites such as You Tube, My-Space, are Facebook are the beginning of an evolution where people can dynamically participate in the development of the services which they use, customized to their individual requirements. This evolution will have a profound impact on citizens' expectations of the role they will play in the development of municipal services, the setting of service quality standards, performance monitoring, and what tools and infrastructure will be used to delivery them. To maintain the confidence and support of the public, Ottawa will be challenged to also evolve the manner in which public consultation is performed and in which opportunities are provided for participative development of its municipal services. The growing accessibility of information technologies puts the tools required to collaborate and create value at everybody's fingertips. Platforms for participation that empower more people to become involved in identifying and resolving problems in their communities can improve public sector governance and enrich democracy. Open platforms and well-designed web services exist today that can provide real innovative solutions when they are applied to municipal challenges, such as the cost-efficient delivery of optimized public transit services.

The pace of technological advances—and their impact on the public's expectations of how consultation and input into the design and delivery of municipal services—is escalating. A "father knows best" approach is no longer acceptable. The City of Ottawa must change how it interacts with the public. Learning how to engage and co-create with a shifting set of self-organized partners will be the best practices and the public consultative mode of the future.

There exists within the Ottawa area, and in fact globally, a uniquely qualified pool of intellectual capital and talent that is enthusiastic about creating a great public transit system. The Transportation Task Force is a first step in this innovative process, and the City is encouraged to continue this involved approach to the development of public transportation solutions.

Task Force consultations

Although the Task Force was not mandated to consult with the public or any special interest groups or decision makers, during its short mandate the Task Force conducted a wide-ranging series of consultations. These consultations involved five main groups:

- Individual citizens
- Community groups
- Politicians
- Transit professionals
- Business associations

Individual citizens

The Task Force received over 500 emails from individual citizens. This input was brought forward at Task Force meetings, incorporated into analysis and decisions, and where appropriate included in this report.

22 *Wikinomics*, *How Mass Collaboration Changes Everything*, by Don Tapscott and Anthony D. Williams, 2006, Pg 198; Quote Jim Willis, director of eGoverment for the Office of the Secretary of State for Rhode Island

Community groups
Several community groups submitted presentations to the Task Force. These presentations were discussed at Task Force meetings and in many cases helped to guide this report.

Politicians
Task force members met with most City Councillors to ensure that a truly city-wide perspective was adopted by this report. The National Capital Commission also made a presentation to the Task Force. These interviews also enabled the Task Force to learn about individual transportation concerns from each of the City wards. These perspectives were relayed at Task Force meetings and incorporated in this report.

Transit professionals
Staff from the city, OC Transpo, Société de transport de l'Outaouais (STO), VIA Rail, Transport Canada and Ottawa Central Railway attended Task Force meetings. A sub-committee of the Task Force also went on a fact-finding mission to review the Calgary and Edmonton light rail transit systems. The expertise and experience of all the public transit professionals who helped the Task Force were extremely useful in guiding this report.

Business associations
Several business groups submitted presentations to the Task Force. These presentations were reviewed at Task Force meetings and in some cases helped to guide this report. The Task Force fully recognizes that its members have strong and well-directed views that are subjective. Further, the Task Force acknowledges that its role is advisory and meant to provide a vision to encourage discussion and dialogue. The Task Force also expects that the Mayor will likely share this report with Councillors and the public. The Task Force sees this as a crucial and appropriate step.

Post-report consultations

The existing, but never implemented, City's Public Consultation Policy Statement, states, "The City of Ottawa is committed to informing and actively involving citizens, community organizations and Advisory Committees on issues that affect them, to the greatest extent possible. The City of Ottawa recognizes that decisions can be enhance by engaging citizens and is committed to a Public Participation process that is inclusive and authentic, meaningful and accountable, and that is an integrated part of the Corporate decision-making process."

The principles of the City's Consultation Policy are:

- Inclusive & Authentic—To the greatest extent possible, the City will involve all stakeholders who are potentially affected by an issue in a transparent and equitable way.
- Sharing & Supportive—Involvement of stakeholders in the decision-making process where their input can impact the decision.
- Accountable & Committed—Setting clear objectives and expectations for a public participation initiative and actively listening to the input of citizens, community organizations and Advisory Committees.
- Meaningful & Responsive—Ensuring consultation is meaningful and valid, with clear objectives and expectations with respect to the ability of the public to impact the decision. Ensuring consultation is conducted in a timely manner that is appropriate to the issue and level of public involvement. Ensuring that participants receive appropriate feedback on the impact of their input is key to making participation meaningful.
- Continuously Improving—Continuously evaluating and measuring the success of the Public Participation Policy and public participation initiatives conducted by the City will form a fundamental part of ensuring public participation is effective and relevant. An annual review of the policy will be undertaken and evaluation mechanisms for each consultation initiative will be used.
- Facilitating & Building Capacity of a Collaborative Community—Strengthening links between the City and the community on public participation initiatives and building capacity in the community for citizen engagement on issues that affect them through a corporate Public Participation Community of Practice.

The Task Force recommends that the new transit authority embrace the City's Public Participation Policy. This means that the transit authority must consult with the public and harness the talents of experts in their various fields in the confirmation and implementation of the Task Force's recommendation. Consultations must offer concrete, practical solutions for consideration by the public. There should also be constructive opportunities for feedback. Transparency must also be a guiding principle.

13. Partners

The Task Force approached its work in the sprit of partnership. We recognize that a viable transit solution for Ottawa will have to draw on support from a wide variety of stakeholders. Each partner has an important role to play, but of course each role will be different.

For example, VIA Rail would be looked to as a working partner helping to determine the nature of some aspects of the proposed system as it relates to track sharing and using Ottawa Station (VIA). The Ottawa Central Railway will be asked to explore track sharing and freight movements over the Prince of Wales Bridge to help reduce commercial truck traffic in the core, in partnership with the Forest Economics Research Institute of Canada.

The Government of Canada would be asked to sell the Canada Conference Centre so it can revert to its former role as a railway station when it was named Union Station. Transport Canada's Railway Safety Directorate will be engaged throughout the planning and construction process to ensure the smooth development of a system with world-leading safety features. The federal government and the Ontario government will also be asked to help fund a new system.

The National Capital Commission would need to negotiate the establishment of a right-of-way through Lebreton Flats and also across the Alexandra Bridge. The Société de transport de l'Outaouais would be engaged through a special joint committee to examine opening up LRT access to the Casino and establish a link with Rapibus.

Most importantly, the citizens and community leaders of Ottawa will play a central role as customers and shapers of the new system.

System stakeholders

- Citizens of Ottawa
- Citizens of Gatineau
- City of Ottawa
- City of Gatineau
- Surrounding municipalities
- OC Transpo
- Amalgamated Transit Union
- Capital Railway
- Société de transport de l'Outaouais
- Government of Ontario
- Government of Quebec
- Government of Canada
- Ottawa Central Railway
- VIA Rail
- The National Capital Commission
- Rural transit bodies
- Private bus companies

14. Finance

The Task Force had a broad mandate but it considered everything through the lens of sound fiscal management. To this end, existing infrastructure is used extensively in this plan. This is not to say that rail corridors will not have to be improved and rails will not have to be replaced. But a transit solution for Ottawa must be financially sustainable. To achieve this, the Task Force recommends using a rigorous set of decision criteria coupled with innovative financing approaches.

Budget

The Task Force was not asked to work within a budget when proposing solutions. Regretfully, there was very little specific financial data available to work with. Instead, the Task Force had to rely on approximate figures available in the public domain. However, despite this, Task Force members recognized that some reference to a proposed budget would help guide their work and give citizens a reference point to use to evaluate the Task Force plan.

The Task Force developed its recommendations under the premise that $600 million to $900 million may be available for transit projects in the short term as a result of the cancelled North-South LRT project. However, the Task Force had neither the ability nor the access to the necessary expertise in the time available to cost out our medium- and long-term recommendations. This would need to be a priority to put our plan into effect, and we recommend that the proposals in this report be integrated into the City's long-term financial plan.

Tunnelling costs

From a number of sources, the Task Force obtained information indicating that the total cost of a tunnel, including stations, boring, tracks and signalling, would be in the range of $450 million. This is consistent with the $143 million per kilometre cost incurred in the recent Laval metro extension in Montreal built by Agence Métropolitaine de Transport (AMT). Discussions with the Edmonton Transit System confirmed this estimate.

Specific to Ottawa, preliminary pricing was obtained in 2005 suggesting that the costs of boring two twin tunnels of a diameter of 20 feet, which would be suitable for LRT operations, were $7,315.50 per linear foot for the first 10,000 foot and then $4,166 per linear foot after that.

Using these rough numbers, for a twin tunnel of maximum of three kilometres (or a total length of 19,685 feet) the cost of boring the tunnel would be in the neighbourhood of $115 million. The same consultant estimated station costs at $75 million to $225 million depending on the design specifications. There would be a requirement for three to five underground stations, depending on the route, to cover the area from Bronson to Campus station.

It is beyond the Task Force's mandate to deliver detailed costing on a tunnel, but for the purposes of this report we suggest using a $450 million estimate to build a tunnel. Once again, it is important to note that some businesses in the downtown core have indicated a willingness to participate in the costs of station construction provided that they are connected to their buildings.

The Task Force does, however, encourage the City to investigate the experiences of other cities that bored transit tunnels. For example, in April 2007, the AMT finished a 5.2 kilometre subway extension to Laval three months ahead of the schedule and $58.6 million under the $803.6 million budget.[23]

Madrid completed a 40.5 kilometre tunnel in under four years in 2003. The cost of the entire project, averaged out to Đ42 million per kilometre (approximately $61 million per kilometre), which included planning, civil works, electrical and mechanical installations, interchanges, maintenance facilities and rolling stock.[24]

Innovative financing

There are a significant number of models for the involvement of the private sector in the provision of public transit. All the private finance rapid transit projects the Task Force examined included design, build, operate and maintain components. The major variation in approaches relates to financing. Some approaches involve payments as projects are built and operated (like most of the proposed Ottawa North-South LRT project), while others involve the proponent providing capital financing (as with the maintenance facility for the Ottawa project). Many recent light rail projects in the United Kingdom and North America, including the Vancouver LRT, were built as private finance initiatives.

Private finance for capital projects

Private finances are often used to help develop new rapid transit projects as a cost management strategy, to speed up the construction of critical transportation infrastructure, and to realize efficiency and creativity in the design and building of the project. See Appendix B for project examples.

Private finance for operations

Some contracting or private finance approaches are more oriented towards system operations than capital projects although they may include some capital element, such as providing buses. See Appendix B for project examples.

Other financing opportunities

The City should explore partnership opportunities with the private sector, with respect to station construction, commercial development at hubs, and air and roof rights. Strategic opportunities to increase revenue, such as adverting and sponsorships, should be explored.

Private finance conclusions

There is the potential for significant savings using private finance arrangements to build rapid transit systems or to operate transit systems including regular bus service. In terms of capital projects, it is easier to talk about how to structure a private finance arrangement once you have decided what to build—and using a private finance arrangement won't make a bad plan into a good plan.

However, the best practices for operations are clear. The City should be deciding what service to provide, ensuring that there is a common integrated fare system and that the transit system works as an integrated network. There is no reason some services can not be provided by contractors, and it would almost certainly be less expensive to do so.

There are constraints, however. The current union agreement prohibits contracting out that will result in layoffs of bus operators or mechanics. With the continued growth of the system and the expected retirement of bus operators over the coming years, this would still allow some services to be contracted and some savings to be realized. It would also be prudent to try this approach on a limited basis at first, to allow potential contractors to develop capability, and to ensure the contracting ap-

23 "The Cartier, de la Concorde and Montmorency métro stations to open April 28," Société de transport de Montréal Press release, April 11, 2007

24 "Madrid confirms its low-cost approach," *International Railway Journal*, May, 2003, Steve Bennett

proach is refined and fully effective. The most obvious areas to consider would be those services that are likely to be eliminated in any case because they do not meet revenue and cost guidelines.

For example, a first pilot project could seek to purchase services such as:

- Low-volume suburban feeder routes, where smaller vehicles might be suitable
- Off-peak, low-volume routing where smaller vehicles might be more suitable
- Rural commuter services

In any contracting approach, a number of issues would have to be addressed:

- Look and feel—would the services look and feel like OC Transpo services?
- Scale—how big should a contract be, recognizing a smaller contract might encourage more bids, while a larger contract would allow more economies of scale?
- Assets—would the City own the vehicles, or expect the contractor to purchase vehicles that meet City specifications?
- Time frame—should the contract run the full length of the vehicle life cycle (especially if owned by the contractor) or be a shorter duration?
- Quality—what quality measures would be used to ensure the service is up to standard, and if the vehicles are owned by the City, that they are properly maintained?
- Environmental impact—vehicle emission standards would be a key criteria.

15. Passenger Security

The Task Force supports OC Transpo's efforts to maintain a safe and secure system through the Transecure and Night Stop programs. In particular, the decision to introduce special constables should be applauded. Uniformed and plainclothes Transit Special Constables are sworn peace officers. They have the powers of a police officer to enforce the *Criminal Code of Canada*, the *Controlled Drug and Substances Act*, the *Liquor License Act*, the *Trespass to Property Act* and the *Safe Streets Act* on all transit vehicles and property.

However, more needs to be done. Submissions from OC Transpo drivers indicate that many drivers do not feel as safe as they should while doing their jobs. The primary problem appears to be inadequate response times to emergency calls and insufficient monitoring of security cameras. If drivers do not feel safe, they cannot make passengers feel safe.

The Task Force recommends a thorough review of OC Transpo security measures and the development of a system of security benchmarks. Also, the first-rate security systems of Calgary, Edmonton and Vancouver should be studied and learned from.

Stations should be designed to minimize threats to users of the system. This includes the re-evaluation of security at all existing stations. Key elements include lighting, cameras, emergency phones and open design. Further, stations should be staffed by a combination of OC Transpo and security personnel.

Terrorist threats

The tragic events in Madrid and London demonstrate that rail and urban transit systems are not immune from terrorist attacks. The Task Force is committed to a system that protects citizens and our community.

Since 2004, Transport Canada has focused on establishing partnerships and building a common understanding within the rail and urban transit community of requirements and current as well as future priorities. As a result of these discussions, Transport Canada is currently implementing a two-year contribution program to address immediate high-risk security priorities in Canada's major urban transit systems. At the same time, work is ongoing with partners to identify future policy priorities. The Task Force recommends exploring partnership opportunities that are focused on security with senior levels of government.

The Task Force supports the City's involvement in Transport Canada's Rail and Urban Transit Security Review. The Review was established to engage other federal departments and agencies, provincial and territorial governments, industry and key stakeholders in a review of rail security issues, and to develop options for a more robust, risk-based security regime in Canada. The Review was expanded to consider high-volume urban transit security.

16. System Safety

A delegation from the Task Force met with senior Transport Canada railway safety officials to present an overview of its recommendations and start a dialogue on safety-related issues. The most fundamental question the Task Force asked related to mixing passenger and commercial rail traffic. The Task Force's recommendation to use existing rail corridors necessitates track sharing between passenger and freight trains. In the past, this has proved a stumbling block. Consultations with Transport Canada railway safety officials were fruitful and indicate that there should be no regulatory impediment to mixing freight and passenger trains.

The Task Force recommends that the City secure a safety ruling for track sharing before June 1, 2008. Further, we urge the City to engage Transport Canada safety officials in a meaningful, constructive and ongoing way. We argue that involving Transport Canada in Ottawa's new transportation plan as it unfolds will pay dividends in the long run. Waiting to present a finished plan to Transport Canada and basing a relationship on bargaining and negotiation will prove counterproductive.

Railway Safety Act review

The City should also take advantage of the Government of Canada's *Railway Safety Act* review. The federal government has stuck a panel that will consult a wide range of stakeholders, including the public, railway companies and their industry associations, railway company employees and their unions, railway customers (e.g., travellers and shippers) and their associations, the provinces and territories, municipalities, aboriginal and environmental groups, and federal government departments and agencies. Individuals and groups will be invited to present their views at meetings across Canada.

This process offers the City a valuable opportunity to develop its transportation plan in accordance with emerging standards and guidelines. We recommend that the City make a formal submission in favour of the most up-to-date safety regime for mixed-rail traffic.

Safety and noise

While noise from locomotive warning whistles and horns has long been the subject of complaints in built-up areas, the danger of not sounding the horn is that motorists and truck and bus drivers may not notice the presence of a train even when visual signals are activated. However, new technology allows for a two-tone on-board locomotive horn that permits the higher-level sound to be used only in emergencies. This new automated horn system can permit the safe operation of trains over grade crossings in built-up or developing areas without creating demand for removal of the sound component of grade crossing protection. This has positive implications for commuter rail and light rail operations. Ottawa's LRT could benefit from the use of this system.

17. The Greening of Public Transit

Clean and green transit is a must for Ottawa. Public transit is at the forefront of testing and evaluating groundbreaking environmental technology—from hydrogen fuel cells to priority traffic signalling. The benefits of public transit start with the fact that one bus or commuter train takes many cars off the road. Benefits extend to factors such as lowering emissions linked to climate change and eliminating particulates from diesel combustion. Currently, carbon particulate emissions in diesel exhaust are listed as the most deadly health-damaging component of pollution. This is why the Task Force recommends that the ultimate goal should be to provide an electric LRT system.

Public transit also offers a simple cost-effective solution to climate change. Transportation is the leading source of greenhouse gas emissions in Canada. But despite carrying millions of passengers everyday, public transit accounts for less than one per cent of Canada's greenhouse gas emissions. And if current green technology and related pilot projects are funded properly, the positive environmental impact of public transit will only be greater.

The Task Force agrees that public, not private, transit is the way forward if we want Ottawa to be a truly green city. There are myriad problems associated with air pollution, ranging from higher rates of asthma to excess risks posed by outdoor exercise. Supporting public transit is the only practical and sustainable way to reduce traffic on Ottawa's roads and bring air pollution under control.

The positive impact of public transit will only increase in the future as more environmentally sustainable technologies come to market. We recommend that policy-makers in Ottawa commit to a program that encourages the ongoing adoption of green technologies as soon as they are feasible. The Task Force also encourages the City to work in concert with federal and provincial governments to help deliver energy efficiency incentives.

The Task Force supports the goals of the Environmental Advisory Committee. Its mandate is to promote the protection, maintenance and enhancement of all aspects of the environment in the City of Ottawa, to safeguard and improve the quality of life of those who live and work in the city, both now and in the future. We also urge City Council to explore the recommendations made by the Committee with respect to transportation and the environment.

Among the sustainable alternatives reviewed by the Task Force were advanced fuel technology and improved engine design—clean diesel, natural gas, electricity, fuel cells and hybrid electric vehicles were examined in turn.

Regenerative braking
A regenerative brake is a mechanism that reduces vehicle speed by converting some of its energy into electrical energy. This electrical energy is then stored for future use or fed back into a power system for use by other vehicles. Regenerative brakes in electric railway vehicles feed the generated electricity back into the supply system. In battery electric and hybrid electric vehicles, the energy is stored for later use.

Renewable energy
Renewable energy comes from environmentally friendly sources of power and energy. Typically, this refers to sustainable and non-polluting energy sources. This includes natural energetic processes that can be harnessed with little pollution. Wind power, small-scale hydropower, solar power, biomass power, tidal power and wave power are prime examples that come under this category. These are sources of energy that could be tapped.

Street and building lighting
The aggregate energy used in street lighting and signage is staggering. New technology using light emitting diodes is expected to result in brighter lighting with lower costs—potentially reducing traffic and crime. Rural lighting will improve as dependency on the grid is reduced with the use of solar energy and other alternative sources.

Hybrid buses
Any vehicle is a hybrid when it combines two or more sources of power. Electric-powered buses with regenerative dynamic braking (to save energy) show much promise. Hybrid buses are catching on with transit systems worldwide—Seattle has a fleet of over 230. A production run of over 200 electric buses, with dynamic regenerative braking, has been started for Vancouver, and some are now being deployed. The possible advent of large capacity lithium batteries may change the future of hybrid buses. However, emission suppression, especially for particulate matter (the most dangerous component for health) still remains a challenge for the foreseeable future.

Hybrid trains
Hybrid trains are starting to make their presence felt. In Japan, testing of hybrid commuter trains is underway. The Hayabusa is a battery-assisted diesel-electric power car. The hybrid drive can cut fuel consumption by a quarter. The idea is to power the train away from the platform using batteries, which are, in turn, topped up by regenerative braking when the train is slowing down to stop at a station. Acceleration is quicker and diesel is saved for the cruising part of the journey.

Union Pacific hybrid trains are flocking to California. In fact, 10 diesel-electric hybrid locomotives, nicknamed "Green Goats," are being built by RailPower Technologies of Vancouver, British Columbia for Union Pacific. They are designed to cut air emissions by 80 to 90 percent and reduce diesel fuel use by 40 to 60 percent compared with conventional diesel-powered locomotives used in switching service.

Hybrid cars
Today's hybrid cars use a rechargeable battery and gasoline. Hybrid cars often recover braking energy and use it to charge the battery. Hybrid engines are smaller. They use the battery to provide extra acceleration power when needed. When the car is stopped, hybrid gasoline motors can shut off and run off their electric motor and battery. Hybrid cars are often lighter and more aerodynamic; tires are often stiffer and inflated higher to reduce drag. Taxis may consider moving to this emerging technology.

Biodiesel
Biodiesel refers to a diesel-equivalent, processed fuel derived from biological sources (such as vegetable oils) that can be used in unmodified diesel-engines. Biodiesel reduces emissions of carbon monoxide by approximately 50 percent and carbon dioxide by 78 percent. Biodiesel contains fewer aromatic hydrocarbons like benzofluoranthene. Biodiesel can reduce by as much as 20 percent the direct (tailpipe) emission of particulates. However, it does produce more nitrogen oxide emissions than standard diesel fuel. Some vehicle manufacturers are positive about the use of biodiesel, citing lower engine wear as one of the benefits of this fuel. However, as biodiesel is a better solvent than standard

diesel, it cleans the engine, removing deposits in the fuel lines, and this may cause blockages in the fuel injectors. Other vehicle manufacturers remain cautious about using biodiesel. Montreal's Biobus ran a successful pilot project in 2002 and 2003 using biodiesel.

Fuel cells

A fuel cell is an electrochemical energy conversion device. It produces electricity from external supplies of fuel and oxygen. These react in the presence of an electrical conductor to produce electricity. Fuel cells can operate virtually continuously as long as the necessary flows are maintained, and they produce no emissions. There are several demonstration projects involving fuel cells and buses, including one in Vancouver.

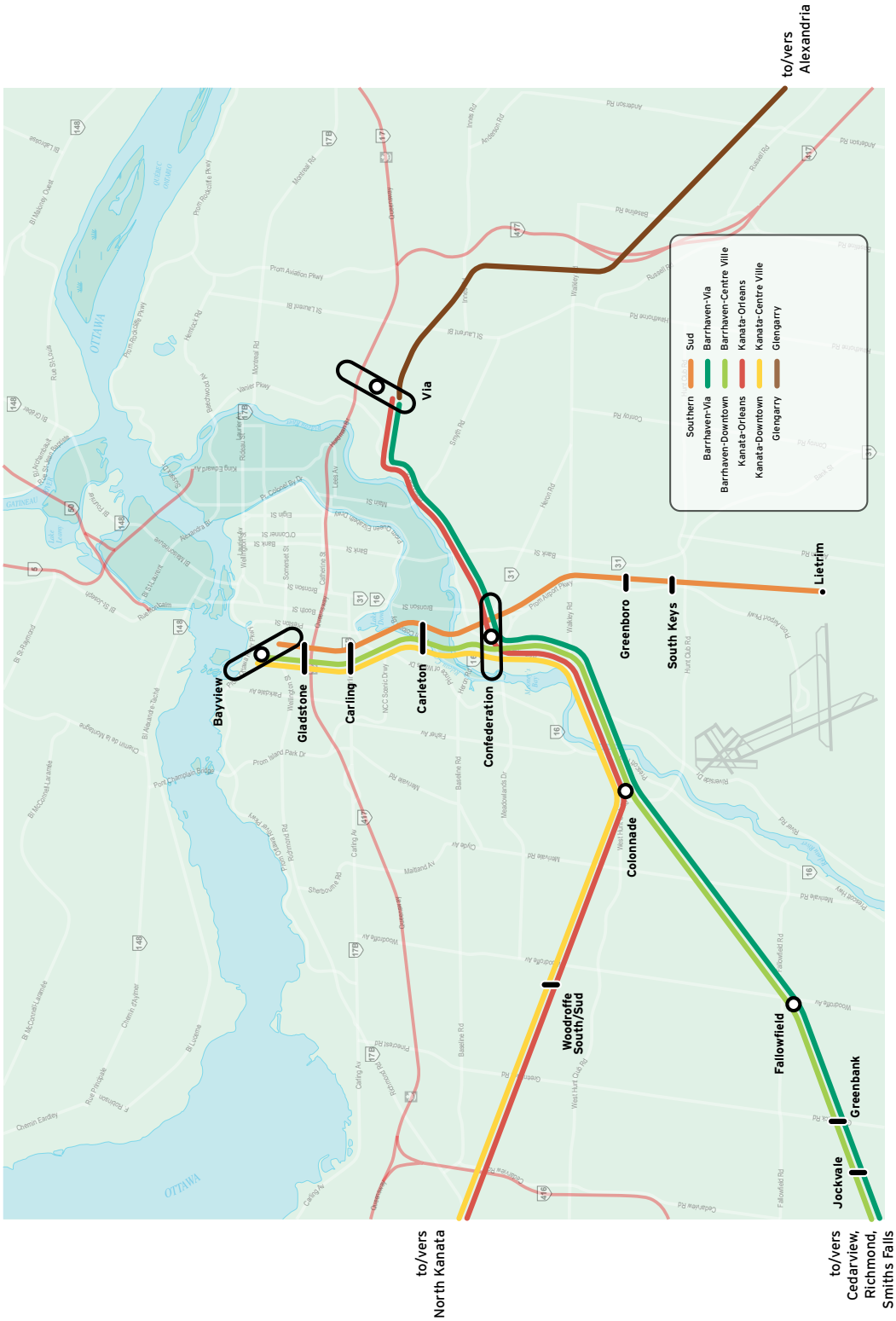
Electric bicycles

In October, 2006, the government of Ontario started a three-year pilot that allows electric bicycles on public streets. These new bicycles are now available in stores with nickel-metal hydride batteries and lithium batteries. Lithium is expected to be standard next year; it provides for more range and faster charging. This hybrid human-battery powered technology could open up cycling to a wider range of people.

18. Appendices

A. System maps

System 2010



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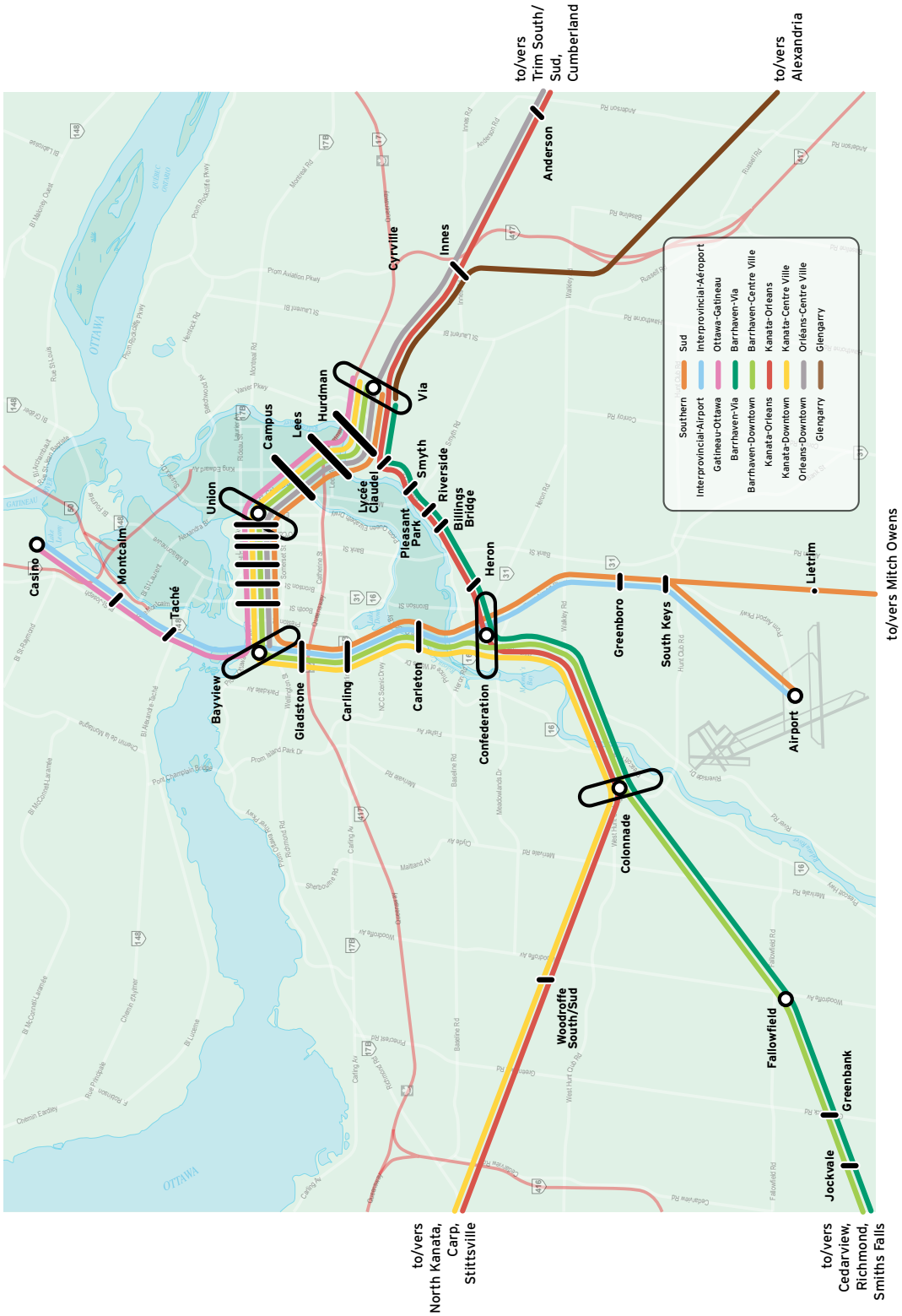
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to/vers Alexandria
to/vers Mitch Owens
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to/vers Cedarview, Richmond, Smiths Falls
Anderson
Innes
Cyrville
Hurdman
Via
Campus
Lees
Union
Lycée Claudel
Smyth
Riverside
Billings Bridge
Pleasant Park
Heron
Casino
Montcalm
Taché
Bayview
Gladstone
Carling
Carleton
Confederation
Greenboro
South Keys
Lietrim
Airport
Colonnade
Woodroffe South/Sud
Fallowfield
Greenbank
Jockvale
Southern
Interprovincial-Airport
Gatineau-Ottawa
Barrhaven-Via
Barrhaven-Downtown
Kanata-Orleans
Kanata-Downtown
Orleans-Downtown
Sud
Interprovincial-Aéroport
Ottawa-Gatineau
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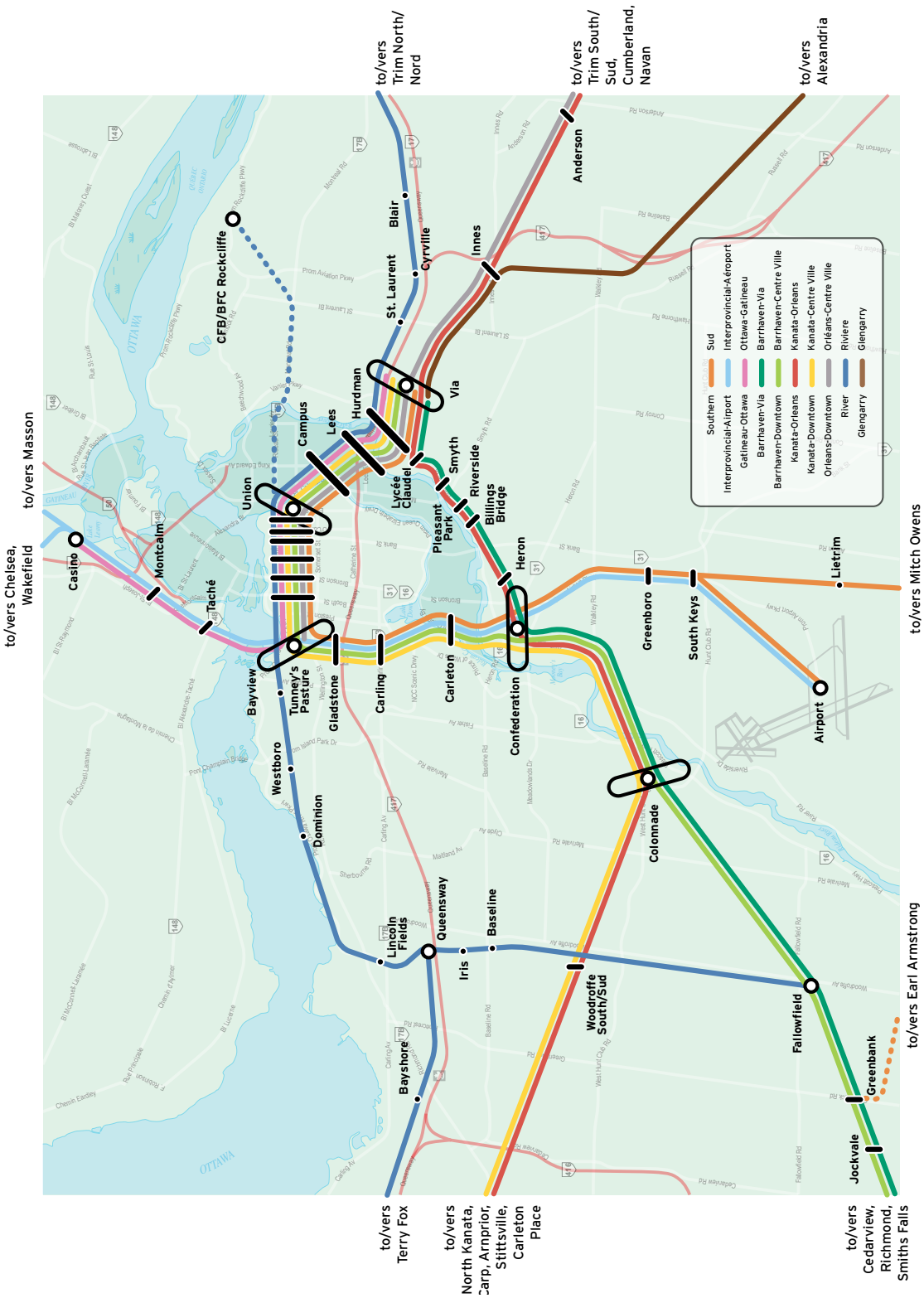
Kanata-Orleans
Kanata-Centre Ville
Orléans-Centre Ville
Glengarry

System 2037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to/vers Earl Armstrong
to/vers Terry Fox
to/vers North Kanata, Carp, Arnprior, Stittsville, Carleton Place
to/vers Cedarview, Richmond, Smiths Falls
CFB/BFC Rockcliffe
Blair
St. Laurent
Cyrville
Innes
Anderson
Hurdman
Via
Campus
Lees
Union
Lycée Claudel
Smyth
Riverside
Billings Bridge
Pleasant Park
Heron
Montcalm
Taché
Casino
Bayview
Tunney's Pasture
Gladstone
Carling
Carleton
Confederation
Greenboro
South Keys
Lietrim
Airport
Westboro
Dominion
Colonnade
Lincoln Fields
Queensway
Baseline
Iris
Bayshore
Woodroffe South/Sud
Fallowfield
Greenbank
Jockvale
Southern Sud
Interprovincial-Airport Interprovincial-Aéroport
Gatineau-Ottawa Ottawa-Gatineau
Barrhaven-Downtown Barrhaven-Via
Barrhaven-Downtown Barrhaven-Centre Ville
Kanata-Downtown Kanata-Orleans
Kanata-Downtown Kanata-Centre Ville
Orleans-Downtown Orléans-Centre Ville
River Riviere
Glengarry Glengarry

B. Private finance examples

Private finance for capital projects examples

VIVA York

In 2006, York Region began service on phase one of its bus rapid transit corridors named VIVA. At a cost of approximately $150 million VIVA will provide 110 stops and 10 terminals for service along four major arterial corridors with a total of 77 articulated buses. The system has gained international recognition for its creativity in the integrated use of GPS, traffic signal management, and fleet management technologies. Under the terms, York will retain control over the design, planning, scheduling, fare structure and fare collection of the system. All assets will be owned by York. The private finance consortium will build the system and provide contract service for operations.

Although it is too early to evaluate, the region estimates it will save approximately 25 percent of operating costs from this arrangement. This is the first (and only) private finance in Canadian history to be applied to a bus rapid transit expansion. It is considered a build, operate, and maintain arrangement.

Hudson-Bergen Light Rail

In 2000, the State of New Jersey completed phase one and two light-rail rapid transit corridor spanning numerous urban centres throughout the state. As a design, build, operate and maintain arrangement with Raytheon Industries, the project resulted in early completion and a significant cost savings. The combination of the design, build, operate and maintain contract with Grant Anticipation Bonds (a federal infrastructure financing program) ensured consistent progress on construction and realized cost savings of over US$300 million, with completion almost five years ahead of schedule.

Las Vegas Monorail

This is at once a success story in private finance but a failure as a rapid transit system. As the first modern rapid transit expansion in the United States fully financed with private capital (and underwritten by the state), the capital cost came in on budget, and at the fixed price of US$650 million. However, operating issues with the contractor—Bombardier Transportation—has resulted in several shutdowns of service, ridership consistently falling below targets set out in the business plan, and a negotiated repayment of approximately $11 million from the consortium for poor performance.

Cancelled Ottawa North-South LRT

The structure of the Ottawa LRT can be considered private finance-light and was similar in its design, build, operate and maintain components to that of many other light-rail expansion projects in North American. As a private finance, it offered a turnkey product, a fixed capital cost for the capital construction of the line itself (excluding all other associated projects), a long-term contract for operation of the system, and, for a period of at least 15 years, the consortium would have been responsible for the maintenance of the system.

Private finance for operations examples

Europe

Contracted operation of public transit is common in Europe, with marked success in Helsinki, Stockholm and Copenhagen. These are pure gross-tender operations with the public transit authority retaining control over the asset, revenue and program; operators simply are contracted for operations. In Helsinki, recent evidence has suggested a drop of nearly 30 percent in costs, unadjusted, since the introduction of competitive tendering.[1] By contrast, when Stockholm's urban transit authority moved toward competitive tendering in 1989, it reduced costs by 35 percent and, in turn, was able to lower its subsidy requirement from 70 percent of costs to 55 percent. In Copenhagen, operating costs for competitive services fell by 18.5 percent between 1989 and 1996.

United Kingdom

The deregulation of bus services in the United Kingdom in the 1990's provides a different approach to private sector involvement. In most communities the industry was simply deregulated, and private

1 When adjusted for normalized price levels, the drop would represent about 20 percent.

bus operators were permitted to provide whatever services they felt were justified. This generally led lower operating costs—but also higher fares and lower ridership, as service was unreliable (operators would cancel them, or change the frequency), passengers couldn't transfer between routes run by different operators, only profitable services were provided, and local municipalities rarely assisted by providing transit priority measures, etc. Some communities did better when a small number of operators cooperated with each other and with the municipality to give a sense of a system. Many communities also reintroduced subsidies to ensure some unprofitable routes were operated.

London Transport took a different approach. Starting in 1984-85, London Transport tendered all non-rail operations under the brand London Buses (and other permitted brands). Each contractor is responsible for service, maintenance, and renewal of assets. London Transport retains responsibility to design the route system, develop the schedule and set fare levels. The former in-house bus operations were split into groups and sold, bidding for service as part of the tender process. Tendering is on a gross-cost basis, with London Transport taking the fare revenue. An experiment with net-cost contracts was abandoned when it was found contractors stopped working as a system. Instead customer satisfaction and other quality measures were introduced and impact contract payments. According to Cox, between 1986 and 1995 unit costs went down by over 40 percent both in London and outside London, but ridership increased marginally in London while it decreased 27.5 percent elsewhere. In his recent report to the HM Treasury, Lord Eddington contrasted the experience in London and elsewhere. He concluded competition is an important element of cost containment, but that competition in the supply of service in a coordinated system was much better than competition in providing service directly to the public.

United States

Starting in the late 1960s and expanding in the 1980s and early 1990s, many local governments and state legislatures introduced competitive tendering processes into their public transit systems. Several states, including Colorado and Indiana, have also specifically introduced state-wide legislation requiring all public transit authorities to contract out a stated portion of their services, normally around 20 percent to 30 percent. Most have opted for a mix of publicly and privately delivered operations. Fifty-two percent of U.S. metropolitan centres competitively tender. All the big five transit markets in New York, Boston, San Francisco, Chicago and Washington tender some of their services, but generally a small share. Of those cities where private operators provide more than 10 percent of service, Dallas, Los Angeles and San Diego are the most successful. Dallas, in particular, notes cost reduction of 50.2 percent,[2] Los Angeles' costs were reduced by 46.5 percent and San Diego's about 35 percent—all three areas employed competitive tendering for between 25 percent to 35 percent of service.

As in all instances, competitive tendering assumes that the asset and program are retained by the public transit authority. In some cases, however, revenue is retained by the private operator. In most it is not.

C. Public consultation background

The lack of active participation by the public is a reflection of a number of factors:

- In general the public expects City staff and Council to perform their responsibilities in a professional and informed manner. In other words, do their job and do it well.
- The public responds poorly to high-level "policy or planning" activities. Again, there is an assumption that common sense and practicality will be practiced by the decision makers.
- The public responds much better when concrete proposals are solicited for input on. However; in this case the connection back to high-level policy or guiding direction has been lost and is little understood by the public.

2 As measured in the cost of vehicle hours.

Planning Document	Effective Date	Function
Ottawa 20/20	April 2003	Establish a vision and framework to manage growth in the city to 2020.
Rapid Transit Expansion Study (RTES)	February 2003	Established Corridors, Transit Priorities, and Technology Options. Key decisions were expand/enhance the Bus Transitway for existing transit community, build LRT for future/new communities.
Ottawa Rapid Transit Expansion Program (ORTEP)	July 2003	Implementation strategy to the advance the RTES Rapid Transit Plan, with #1 priority of the N-S electric LRT project.
Official Plan	May 2003	Manages growth
Transportation Master Plan (TMP)	September 2003	Outlines implementation phasing and provides detailed costing aligned with the Official Plan forecasted growth patterns
Infrastructure Master Plan	June 2003	Provides information to ensure water-related infrastructure services are considered during the planning period.
Long Range Financial Plan	Established 2002, updated annually	Sets prio rities for funding transportation infrastructure including both transit and road networks. Public Transit investments higher priority than roads.

Ottawa 20/20

Between 2001 and 2003, the City of Ottawa conducted broad, community-based consultations to establish a vision and outline a framework to manage growth to 2020. Known as Ottawa 20/20, City Council adopted this vision and its accompanying series of detailed plans. The Ottawa 20/20 vision is of a more "compact, efficient, affordable, and environmentally healthy city – one that affords a high quality of life and offers a range of lifestyle and travel choices." The vision is based on seven guiding principles:[3]

1. A caring and Inclusive city
2. A creative city rich in heritage, unique in identity
3. A green and environmentally sensitive city
4. A city of distinct, liveable communities
5. An innovative city where prosperity is shared among all
6. A responsible and responsive city
7. A healthy and active city.

Under the "Responsible and Responsive City" Principle 6, the City established a policy to conduct business in a broad and open way that makes it easy for everyone to participate and collaborate. It is the finding of the Task Force, that in practice this policy has not been achieved.

Few people realize that Ottawa 20/20 guiding principles are the driving force and philosophical foundation for all subsequent plans and direction for growth in the City of Ottawa. The role of transportation, be it roads or public transit, is included in the Ottawa 20/20 goal of sustainable development. The classic definition of sustainable development is: "Meeting the needs of the present without compromising the ability of future generations to meet their own needs".[4] Sustainable development is a strategy that requires the integration of economic growth, social equity, and environmental management.[5]

3 *www.ottawa.ca/city_hall/corporate_plan/index_en.html*

4 Our Common Future (1987), final report of the World Commission on Environment & Development (Brundtland Commission).

5 City of Ottawa Official Plan, a Component of Ottawa 20/20, the City's Growth Management Strategy, page 2.

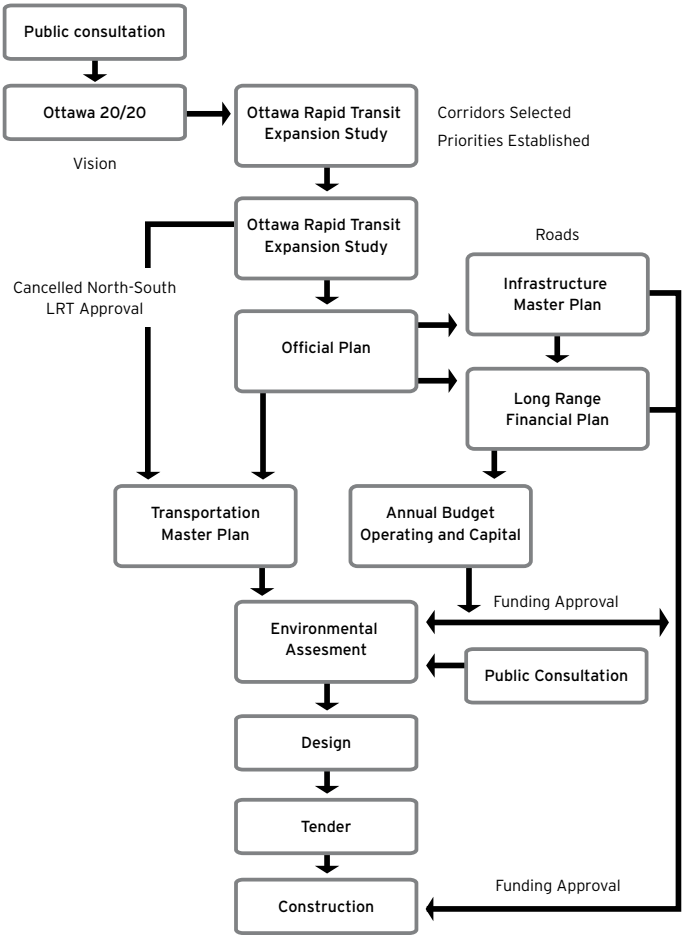
Ottawa 20/20 assigned a high level of importance to public transit, "which not only reduces the need to build new roads and expressways, but also improves the quality of the air we breath, lessens noise from traffic, helps achieve our Kyoto commitment to burn less fossil fuels, and makes travel easier for those who can't afford or choose not to drive a car."

The Ottawa 20/20 approach to Transportation includes five key strategies, which established the foundation for all subsequent phases in the Transportation process:

- Priority on walking, cycling and public transit.
- Public transit as a viable alternative to all residents.
- Enhanced travel choices, shorter distances.
- Transportation demand management.
- Limited long-term parking, especially in centres.

The Planning, Environment and Infrastructure Branch of the City is responsible for implementing the strategies of Ottawa 20/20 that pertain to movement of people and goods, accommodating the City's population growth, and managing the City's finances related to infrastructure. The Branch contributes to the delivery of transportation and infrastructure to meet growth needs by providing strategic planning, environmental assessments and functional planning designs. It also manages the growth of the city and guides land-use and capital-budget decisions by developing and maintaining the Official Plan, a comprehensive zoning by-law, and master plans for transportation. Public consultation and collaboration are noted as an essential part of the Branch's operation.

Transportation Planning Process



Rapid Transit Expansion Study

The purpose of the Rapid Transit Expansion Study (RTES),[6] was to develop a rapid transit network to satisfy the future transit needs of the City of Ottawa. The Rapid Transit Expansion Study was approved by City Council in February 2003. RTES recommended a future rapid transit network for Ottawa, identified technology within specific corridors and proposed an action plan for those corridors. RTES lead to environmental assessment studies for the recommended corridors.

Three transit technologies were reviewed: Bus Rapid Transit (BRT), Light Rail Transit (LRT) and Light Rail Vehicle on Existing Tracks (O-Train). A study was conducted in a phased approach, with direction provided by an Advisory Committee comprised of senior staff, three Councillors, and public and stakeholders. Land use forecasts were used to identify the strongest travel demand patterns for future rapid transit. The recommended Rapid Transit Network was described as a "fusion of public values, technical analysis, and feasibility of future partnerships." A priority plan for future transit infrastructure development was established including:

- Enhance access to rapid transit service for existing communities.
- Introduce rapid transit early as new communities develop in order to shape travel habits to use transit.
- Ease downtown congestion through bypass or new capacity.

It is the opinion of the Task Force that these priorities continue to be valid; however, the subsequent RTES action strategy did not meet these priority needs and was developed with limited comprehensive public consultation.

The action strategies, approved by Council were:

- Recogni ze a strong community preference for rail.
- Utilize electric LRT for new rapid transit corridors.
- Upgrade and expand Bus Rapid Transit for existing corridors.

The study concluded that, "with limited financial resources, it is better to invest in new rapid transit corridors than to replace an existing one." It was "not considered cost-effective to convert the Transitway to LRT at this time." Bearing in mind that RTES was passed by Council in 2003, no review of this significant conclusion was solicited from the public, nor was it revisited when funding was made available from the federal and provincial governments.

To this day, the public in general is unaware that the strategic direction to address growth in transit demand is to establish new corridors, and not to optimize or upgrade existing infrastructure such as the Transitway. Moreover, the option to use non-City owned transit infrastructure, such as the existing VIA rail lines has not been pursued, nor discussed with the public as a viable option. The core congestion issues in the city have not been adequately addressed.

The RTES study used a number of consultation approaches including:

- Membership on the Advisory Committee, Technical Committee and Sounding Board
- Two sets of Open houses, including comment-questionnaire sheets, held 2002.
- A project website for the dissemination of information and identification of study contacts.
- One-on-one liaison through emails, correspondence, telephone conversations and meetings.

It is the subjective view of the Task Force that the public's perception of open houses is that the final conclusions have already been reached, and that they are a one-way information session. Limited opportunity for engaged dialogue is provided, and the decisions are made in a "Father knows Best" type of environment. The general lack of public participation in City Open Houses is a reflection of the public's belief that no opportunity exists to provide meaningful input or influence on the direction and final decisions.

In summary, the RTES study was the pivotal document in the transit planning process. It established corridors (such as the LRT via Carling Avenue and Montreal Road) and their priority, designated the Transitway as the long-term transit provider for existing transit demand, and designated LRT as the top priority to be built for future communities. It would be four years before the public became aware of the implications of these decisions and rejected its conclusions with respect to Light Rail.

Ottawa Rapid Transit Expansion Plan (ORTEP)

Upon approval of RTES, City Council directed staff to develop an implementation strategy for the approved Rapid Transit Network Plan, which was comprised of light rail and bus rapid transit cor-

6 Report to Transportation and Transit Committee and Council, 01 Feb 2003, Ref No. ACS2003-DEV-POL-0010

ridors. Staff were assigned to establish timelines, funding and partnership options and financial implications.

The primary purpose of ORTEP was to initiate activities to establish the priority LRT project, and to undertake environmental assessments for the east-west LRT corridors. As of 2005, OC Transpo service alone consumed more than 10 percent of the City's capital and operating budgets. Proceeding with implementing the RTES Rapid Transit Network would increase this proportion of the public's taxes, use up the full federal and provincial financial contributions, and yet no public consultation of any kind was conducted during this process.

Official Plan

Based under the context of the Ottawa 20/20 initiative, the City of Ottawa Official Plan was enacted on May 14, 2003 and is its guide to the 21st century. The Official Plan brought together 11 urban and rural municipalities plus the regional government into one amalgamated city. The Official Plan forecasts that as of 2020, the population of Ottawa will grow to approximately one million people. The Official Plan manages this growth through the Transportation Master Plan and the Infrastructure Management Plan, among other plans.

The Official Plan states that, "The City will manage growth by directing it to the urban area where services already exist or where they can be provided efficiently". Moreover, the strategic direction in the Urban areas is to establish mixed-use development, served with quality transit, walking and cycling facilities. The Official Plan has set a target that by 2021, 30 percent of all total passenger trips using motorized modes (transit or car) will be on public transit.

Key transit-related strategic directions of the Official Plan include:

- Develop the rapid-transit network and transit-priority network.
- The City protecting corridors for the transit network, including purchase of surplus railway rights-of-way and select utility corridors as they become available.
- Rapid-transit service will be introduced at an early stage in the development of new urban communities.
- Acquire lands for transit rights-of-way.
- Establish multi-use pathways in or adjacent to rapid transit corridors.
- Pursue partnerships with the private sector to develop lands at or over transit stations and park-and-ride facilities.
- Enhance accessibility to public transit through park-and-ride facilities.
- Improve transit service between Ottawa and Gatineau
- Construct pedestrian overpasses to provide access to rapid-transit facilities.
- Provide roads for the safe and convenient movement of goods and people.
- Ensure road corridors function as public spaces.
- Work with other government levels and municipalities to determine the location of future bridge crossings. Keep options open through prohibiting development that might hinder the eventual use of potential crossings and approaches.
- Remove Rideau Street and King Edward Avenue from the City's identified truck route system once an alternative means to accommodate inter-provincial truck travel has been addressed.
- Provide convenient road and transit access to all major inter-city passenger terminals (airport, train and bus stations); and, support the establishment of multi-modal, inter-city passenger terminals.

The Official Plan sets out what land uses are permitted in areas within its boundaries. Any substantive change to the permitted land uses requires the developer to submit an Application for an Official Plan Amendment. Public Consultation is a requirement of Official Plan Amendments, and all stakeholders are permitted to provide in-depth comments. Moreover, stakeholders who disagree with the City's decisions have access to an appeal process through the Ontario Municipal Board. While not perfect, the Official Plan process has shown to be relatively open for public consultation.

Transportation Master Plan

The Transportation Master Plan (TMP) identifies the transportation policies, facilities, and services that the City plans to implement over the next two decades in order to meet forecasted travel demand. The TMP polices guide the operation of the City's day-to-day transportation programs and provides a basis for the annual and five-year capital and operating budgets. The TMP does not establish design or

operating details, but is responsible for defining transportation demand management programs, transportation system management programs, transit-priority measures and walking and cycling initiatives. Public Consultation had no role in the establishment of the existing TMP; however, the Review of the TMP as proposed by the City's Transportation Committee and Transit Committee will include a public consultation process to "confirm priorities and associated funding commitments."[7]

Infrastructure Master Plan

The Infrastructure Master Plan (IMP) manages the development, upgrade, maintenance and repair of the roads and bridges in the City. Due to limited funding available, not all work can proceed at once, and in some cases existing systems are already constrained. While new development can be approved based on Planned or Draft money being available, actual implementation of new development can only proceed based on confirmation of available funding pursuant to the requirements for development in the City Official Plan. In some cases, implementation may be approved on a phased basis up to available funding. Like the TMP, the IMP was development and is managed by the City with no role or opportunity for public consultation. Each year at budget time, the City Councillors are provided with a listing of Staff's proposed infrastructure work to be performed; however, the shortfall on works required, is not publicly available information.

Environmental assessment

Environmental assessment is a decision-making process used to promote good environmental planning by assessing the potential effects and benefits of certain activities on the environment. In Ontario, this process is defined and finds its authority in the *Environmental Assessment Act* (EAA). The purpose of the EAA is to provide for the protection, conservation, and wise management of Ontario's environment. An environmental assessment examines a range of alternatives, identifying both construction and operational impacts on all aspects of the environment—such as human health, transportation, nature, socio-economic, and cultural—and brings forward a recommended plan detailing preferred technology, costs, implementation timelines, special considerations, and all approvals required to proceed with the construction of the project.

As required by the Ontario Government, public consultation plays a major role in the EA process. However, this process is not required to go back and reaffirm how the priorities and how decisions of higher level planning documents are applied. The priorities, corridors, timing, and funding are already determined by staff. This has resulted in a disconnection between where the public would like to make comments and effect change, and where they are permitted to do so.

Long Range Financial Plan

The purpose of the Long Range Financial Plan (LRFP) is to set priorities for all planned infrastructure projects, both new construction and repairs and overhaul of existing infrastructure, across all assets of the City. The LRFP was established in October 2002, and is updated annually. The funding for the LRFP comes from two primary sources, pay-as-you-go contributions from the tax-payer base and development charges. Specific to transportation, funding requirements for roads, bridges and public transit are included. Projects are separated into three categories: renewal, growth, and new initiatives. New initiatives are large one-time projects that provide a new or improved level of service, and include new transit initiatives. Priorities within each category are not made public. In most cases, City Councillors are able to obtain this information from Staff upon request. However, it is not an open public document, and the decision criterion for what gets done when is not even available to Councillors.
The City's transportation network is comprised of 1,415 kilometres of sidewalks, 60 kilometres of Transitway, 5,200 centre-line kilometres of roads, and 95 bridges. Preventative maintenance needs are substantially under-funded. Today, only 48 percent of needed maintenance work is being completed on City roads and infrastructure.[8] Lack of funding to perform rehabilitative work in a timely fashion also leads to a substantial increase in future funding requirements.[9]

As of 2006, the LRFP had a shortfall of $271 million. This shortfall is expected to grow to more than $400 million by 2014. The LRFP states that, "The City's capital infrastructure deficit can be reduced by changing the way the city develops. One alternative is investing in high quality transit, which in turn

7 *Report to Planning and Environment Committee, Agriculture and Rural Affairs Committee, Transportation Committee, Transit Committee,* 20 April 2007, Ref No. ACS2007-PTE-Pol-0011
8 *The Ottawa Citizen*, City Editorial, Page C4, April 25, 2007
9 *Long Range Financial Plan*, Budget 2003

reduces the need to build more arterial roads and expressways. This alternative also provides significant side benefits, such as less air and water pollution, and the creation of high-quality community living. Any increase in the share of trips taken by transit reduces infrastructure costs."
In any given budget year, a list of projects are transferred from the capital budget to the operating budget, that as a general rule are approved to proceed by City Council with few changes. Visibility is not provided to Council nor the public on what projects remain unimplemented, their relative priority or funding requirements.

D. Submissions to the Task Force

- Barrhaven and South Gloucester Transportation Study—Prepared for the Barrhaven Business Improvement Area Transportation Focus Group, Trope Communications, April, 2007
- City of Ottawa, 2007 Transit Service Plan Presentation, March 2007
- City of Ottawa Environmental Advisory Committee, Recommendations—Environmental Aspects of Future Transportation, April, 2007
- Hundreds of emails from the citizens of Ottawa
- LRT Now, The Way Forward, March, 2007
- Sparks Street Heritage Streetcar Committee, The Sparks Street Heritage Streetcar Project, March, 2007
- The Friends of the O-Train Practical Plan October-November, Feb., 2006
- The NCC and Sustainable Urban Transportation in the NCR, March, 2007
- Tunnel Vision is Actually Good for Ottawa Feb., 2007, Andrew Haydon, former Regional Chair
- Updating the City's Long-Term Plan for Rapid Transit, Presentation to Mayor's Task Force, Nancy Schepers, Deputy City Manager, Department of Planning Transit and the Environment, March, 2007

E. Appearances before the Task Force

The following individuals either attended Task Force meetings or met with Task Force members. Many made formal or informal presentations.

- Farhad Abesteh, Executive Board Member, Amalgamated Transit Union, Local 279 (OC Transpo)
- James Allen, General Manager, Ottawa Central Railway
- Salah Barj, Director, Planning and Development, Société de transport de l'Outaouais
- Marie-Josée Bédard, General Manager, Société de transport de l'Outaouais
- Luc Bourdon, Director Rail Safety Branch, Transport Canada
- Calgary Transit officials
- Andre Cornellier, President, Amalgamated Transit Union, Local 279 (OC Transpo)
- Alex Cullen, Councillor, Bay Word, Chair Transit Committee, City of Ottawa
- Edmonton Transit System officials
- Stephen Fanjoy, Representative of the Friends of the O-Train
- Helen Gault, Manager, Transit Service Planning and Development, OC Transpo
- Joël Gauthier, President, Agence Métropolitaine de Transport
- Andrew Haydon, former Regional Chair of Ottawa-Carleton
- Dennis Jacobs, former Director, Policy Planning, Environment and Infrastructure Policy, Transit and the Environment, City of Ottawa
- David Jeanes, President, Transport 2000
- Christena Keon Sirsly, Chief Strategy Officer, VIA Rail
- François Lapointe, Director, Planning, Design and Land Use, National Capital Commission
- Alain Mercier, Director, Transit Services, OC Transpo
- Ottawa City Councillors (the Task Force met with most Councillors)
- Louise Poirier, Councillor, L'Oree du Parc, Chairwoman, Société de transport de l'Outaouais
- Nancy Schepers, Deputy City Manager, Planning, Transit and the Environment, City of Ottawa
- Ian Stacey, former General Manager of OC Transpo
- Translink (Greater Vancouver Transportation Authority) officials

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G. Task Force members

Task Force members were each compensated $1 for their participation. Reasonable expenses were reimbursed and assumed through the budget of the Office of the Mayor. (A full accounting of Task Force expenditures is available through the Office of the Mayor.)

The Honourable David Collenette, PC, BA (Hons), MA is a former Member of Parliament who served under three Prime Ministers in a number of portfolios including Minister of National Defence (1993-96) and Minister of Transport (1997-2003). As Minister of Transport he was key to securing federal assistance for major transit and transportation initiatives across Canada including Ottawa's O-Train. He is now a Distinguished Fellow at Glendon College, York University and has a number of business interests. He is a resident of Westboro.

Roger Beauchesne, P.Eng, MBA, PMP, is a resident of Rideau-Rockcliffe. He is a retired public servant and professional engineer with 32 years of procurement, program and project management experience in the federal public service – managing national and international files – across three departments.

Susan Brownrigg-Smith, BA, is a resident of Barrhaven. She is the founder of Brownrigg-Smith Consulting, a multi-disciplinary consultancy specializing in Canadian Industrial participation, international trade and stakeholder management. She has been a spokesperson for the Community Budget Advisory Team (CBAT) and is Director of Government Relations and Past-President of the Orchard Estates Community Association, serving since 1988.

Terry Findlay, is a resident of Westboro. He has been an OC Transpo driver for 35 years and has been driving the O-Train since its inception. He is a member of the Royal Canadian Legion Branch #480. He brought a front-line perspective to the work of the Task Force.

Harry W. Gow, BA, MSW, is a resident of Chelsea, Québec. In 1976, he co-founded Transport 2000 Canada, a transport consumer network across Canada with international affiliations and has provided recommendations for numerous City of Ottawa transportation plans. Mr. Gow is President of le Conseil regional de developpement durable de 1'Outaouais (CREDDO), and President of les Transports Collectifs des Collines.

Hanif Patni, BA, BBA, MBA, is a resident of Capital Ward and is President and CEO, Conventry Connections. He has 25 years of transportation management experience across three continents. He also serves as Vice President and Treasurer of Ottawa Tourism.

Hume Rogers, BA, MA, is a resident of the Carlingwood area of Ottawa. He is the General Manager of the Capital Hill Hotel & Suites, a position he has held for 25 years. He has served on numerous committees of Ottawa Tourism and is the Coordinator of the Albert-Slater Coalition.

H. Contact information

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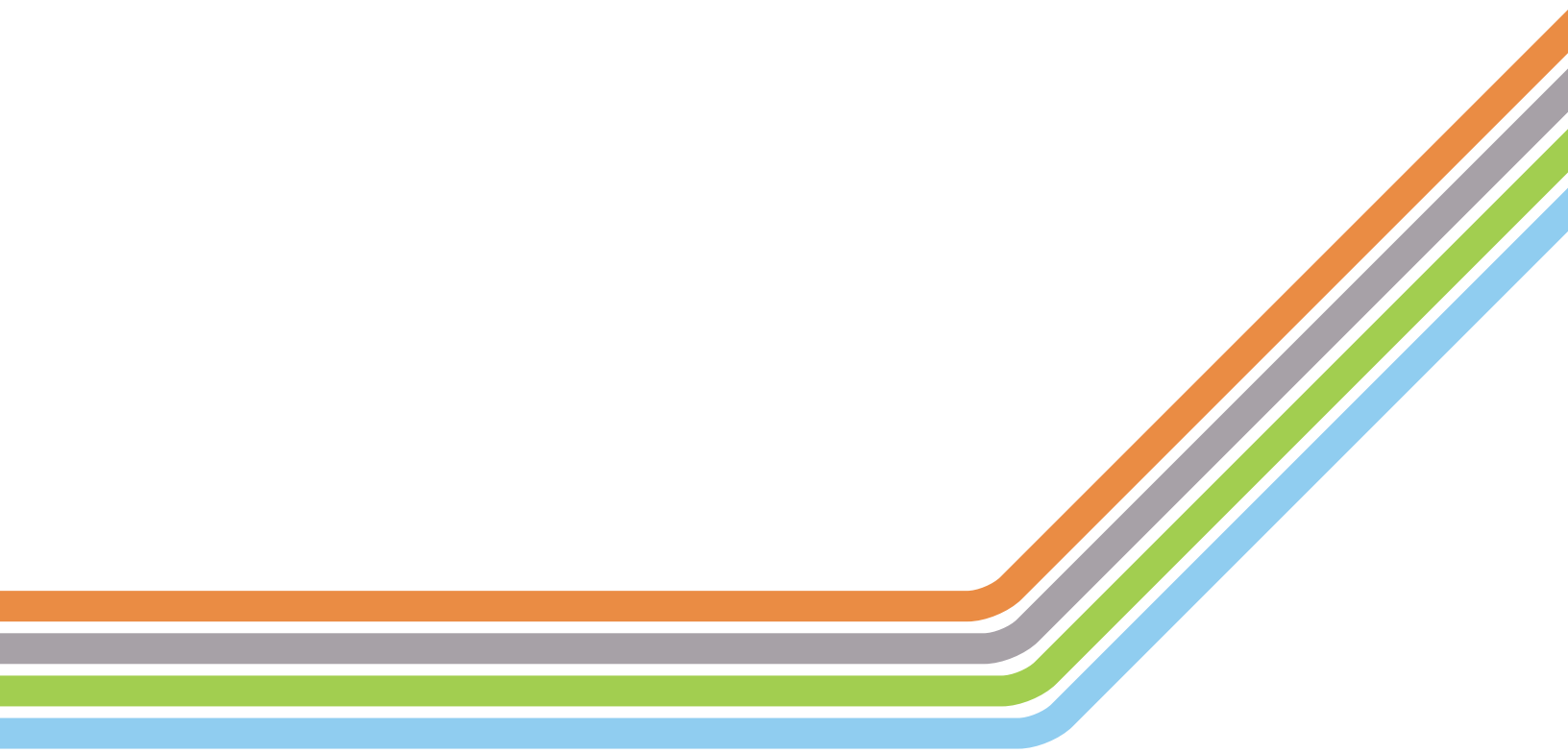
Notes



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